FINANCIAL SERVICES Creatio
sales edition

User guide

ACCELERATE

Contents

Introduction

Financial services Creatio, sales edition can be used to handle a wide range of tasks. These tasks can be grouped into a number of functional blocks.

360° customer view

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Product management

Financial account management

Card account management

Efficiency tools

Time management

Contract management

Document management

Knowledge management

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Maintaining general information about accounts and contacts

With the help of the Accounts and Contacts sections enable you to maintain a centralized customer database. The application can be integrated with social networks, enabling you to populate the contact database with information.The features include locating and merging duplicates, customer segmentation and advanced dashboards tools.

- The [Legal entities] section
- The [Contacts] section

Managing communications

The corporate social network of the bank is designed for the internal discussion and posting news. Financial services Creatio, sales edition also provides convenient means for maintaining your work schedule and planning future appointments and tasks. The Activities and Feed sections are designed specifically for handling such tasks.

- The [Activities] section
- The [Feed] section

Application verifier's home

The Home page section is designed to facilitate the work of application managers. Use the home page to manage cases in a single window with the help of out-of-the-box best practice processes, get instant access to customer's profile, and improve customer experience.

Quickly process tickets in the omnichannel mode, manage incoming and outgoing calls and work with other queue items. Read the feed, keep an eye on the analytical dashboards showing individual and team KPI.

- The [Home page] section

Managing loan applications and profiles

Create and process loan applications in the Applications section. Quickly find and offer products that match customer's needs the best.

Add deal participant profiles based on the information from applications with a single click, to begin processing the borrower's documents. Track information on the deal participants in the Application forms section and use it to make informed decision on whether to grant or deny loans.

- The [Applications] section
- The [Application forms] section

Managing leads

The Leads section is designed to manage both new and existing customer needs, and to monitor the sources of each lead.

The Leads section is based on the unique lead management process that you can use to "nurture" leads – from winning a potential customer, through qualification and distribution stages, to handoff. After you added a lead, the system will check the data, create a new account or contact and will guide you through the lead management process suggesting your next possible steps.

- The [Leads] section

Managing opportunities

The corporate sale business process, which is the foundation of the Opportunities, represents the world's best practice in sales management. The process allows to simultaneously handle a big number of deals as the system suggests the necessary steps for each opportunity phase, from prospecting to signing a contract.

You can use the sales pipeline and other analytical statistics to estimate efficiency at each phase of an opportunity and to determine the bottlenecks.

- The [Opportunities] section

Sales forecasting

Make sure your goals are achieved with sales forecasting tools. You can easily plan sales volumes by managers, accounts or industries. Compare indicators across periods and apply smart filtering tools to get the information you need within a matter of seconds.

Evaluate the probability of meeting sales quotas using the plan vs. actual analysis tools in Creatio. When calculating results the system takes into account both, the amount of closed deals and the amount of opportunities in the pipeline with their probabilities of closure. With the help of Sales

Creatio, managers can easily analyze sales reps efficiency and make the process of reaching sales goals transparent and clear.

- The [Forecasts] section

Field sales

Manage your field force wherever they are. Create a schedule of meetings for each sales rep. View sales rep locations on the map, keep track of planned meetings using geolocation and sales rep check-ins. Leverage the data to analyze the efficiency of the department.

The system can promptly hint on the appropriate actions at each step of your visit to the customer: check-in, goods display monitoring, demo, product selection or placing an order. Each field sales representative can place the results on record in the system immediately after the meeting.

Easily manage all contracts, related specifications and additional agreements using Sales Creatio. Attach electronic versions and photo copies of contracts, keep track of contracts details and history of amendments. From the given order the system allows you to quickly create several contracts for different accounts, copying all the parameters from the same order. Receive orders from a mobile device instantly during a meeting. The system will help to monitor SKUs and to quickly suggest the best product based on the order history.

- About Field sales for Creatio

Managing contracts

To add information about the contracts, track its status and validity period, use the Contracts section. The system allows you to view the individual parameters of each contract, for example, loan value and interest rate for the loan agreement; or currency and fee amount for the current agreement for opening a bank account.

To add information about commercial documentation such as contracts, agreements and specifications, track its status and validity period, use the Contracts section. The system allows you to store information about the contract amount, account's banking details, products in the contract and other data.

Also, Financial services Creatio, sales edition features a standard approval process that allows you to automate commercial document approval procedure.

- The [Contracts] section

Managing documents

Use the Documents section to manage commercial documents, such as regulations, meeting minutes and correspondence. At the same time, you can attach a soft copy of the document for a quick access to its contents.

- The [Documents] section

Managing products

The Products section of Financial services Creatio, sales edition maintains information about bank product parameters. Products can be added in the system manually or by importing them from an Excel file. The folders can be used to consolidate records by different criteria.

The user-customizable product catalog is intended for structuring large number of records. Catalog, groups and advanced search options enable you to match the optimal set of services for the customers.

- The [Products] section

Managing financial accounts and cards

Due to CRM system integration with the in-house bank accounting system, you can accumulate information about cards, current and deposit accounts in Financial services Creatio, sales edition. The Accounts and Cards sections display relevant information about the existing bank products, products in stock, status and other account or card parameters.

- The [Financial accounts] section
- The [Cards] section

Financial indicators

Use the Financial indicators section to analyze the information about the number of current accounts with the customer, account balance, total revenue, amount of accounts receivable and accounts payable and other aggregates of account activity. You may browse the data as a list of records or in the form of summary charts and diagrams. To have a full understanding of customers' revenue, compare target and actual values, analyze the dynamics of change over the period, view data by accounts, customers and segment.

- The [Financial indicators] section

Managing knowledge

Knowledge base is the source for work-related information for employees. Here, you can store answers to the most frequently asked questions, excerpts from documents, bank regulations and other useful information. The articles can be supplemented with files or links to web sources, consolidated in groups, and commented on.

- The [Knowledge base] section

System designer

Financial services Creatio, sales edition has all necessary tools for creating and configuring the application. All configuration tools are available in the system designer.

Create and edit sections, set up section and page properties using the section wizard. Use the detail wizard to add new details or edit existing ones in the sections. Set up appearance by uploading your corporate logos, change the color of the section panel, set up workplaces for different types of users. Use data import to quickly populate the database with initial information. Generate company organization structure, add users, set up functional roles and access permissions. Set up analytical reports and dashboards in the [Dashboards] views and the [Dashboards] section. Use the mobile application wizard to set up the mobile app of your custom configuration. Advanced settings area of the system designer provides access to development tools.

- System designer
- Section Wizard
- Workplaces setup
- Excel data import
- Managing users
- Mobile application wizard

Marketplace

Accelerate time-to-strategy execution with out-of-the box processes, templates and apps easily downloaded and installed from the Creatio marketplace. Extend the functionality of the Creatio platform with numerous applications, ranging from extensions to full-fledged products. Automate processes with ready to use business-processes and templates. Order services from certified Creatio partners.

- marketplace.creatio.com

Synchronization and integration

Employ a built-in utility for data import from Excel to quickly import or export your account and contact data, list of users, product catalogue, documents and invoices, etc.

Enjoy seamless integration with Microsoft Exchange to simplify the processes of synchronizing email, contacts, and tasks. You can adjust synchronization frequency (daily, hourly or more frequent) and always have all the relevant data at hand.

Make and receive calls directly from the Creatio system. Integration with virtual or standard IP PBX systems, support of SIP-numbers of any provider, possibility to connect an unlimited number of external lines enables making all necessary calls directly from the system.

Synchronize emails, calendar and contacts with your Google account. Two-way integration allows you not to switch between applications to send email or manage your calendar.

Keep the entire history of electronic communications with the client in Sales Creatio, regardless of the mail provider. Send and receive email without leaving the application.

- Excel data import
- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service
- Integration with Google services
- Synchronizing user accounts and roles with LDAP
- Phone integration

Business process management

Use the built-in business process modeling systems to automate your processes of any complexity.

Built-in Process designer lets you create complex business process in BPMN notation.

Built-in Case designer is a powerful tool for creating and configuring unstructured processes – "cases". You can easily adapt best-practice cases to your specifics in marketing, sales, service, and any other area, or design your own unique cases that fit your company needs.

The Process log section will provide tools for business process monitoring and analysis. You can view each process instance as a diagram, check which process steps have completed and stop any business process.

- Business process setup guide

Creatio core functions

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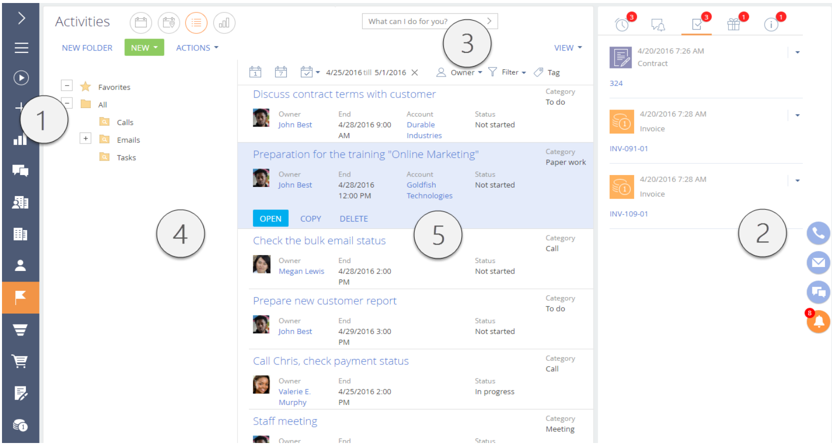
Creatio interface

The Creatio interface (Fig. 1) consists of the side panel, notification panel, command line, folders and filtering area and the content of the page that is displayed at the moment.

Fig. 1 Creatio interface



The side panel (1)

The side panel (or the "section panel") is located in the left part of the screen and is used to navigate through the workplaces and sections. Also, the side panel contains buttons for quick access to the basic system operations.

The side panel buttons

– the "Home" button contains a list of additional commands:

- [Main menu] – opens the home page. The home page contains the list of all sections of the application, and the links to the system designer and the user profile pages.
- [Run process] – opens the process start window.

  NOTE

  Detailed descriptions of the business process automation is available in the Creatio business process documentation.

- [Collapse section panel]/[Expand section panel] – manage the status of the side panel.
- [Workplace] – the list of available workplaces. When you change a workplace, the list of available sections in the side panel will change too. You can edit the list of workplaces and sections. Read more >>>
- [User profile] – opens the user profile page. Read more >>>
- [Exit] – ends the current session. This command opens the login page.

– opens the process start window. If no process has been set up for this button, clicking it opens a window containing the list of all business processes available in Creatio. If there is at least one process set up for this button, clicking it opens a menu containing additional commands:

- [Run process] – the list of main business processes available.
- [Another process] – opens a window with the list of all business processes available in Creatio.

NOTE

You can set up the process start button in the [Process library]. Detailed descriptions of the [Process library] can be found in the Creatio business process documentation.

– opens the "quick add" menu. Select the needed command from the menu to open a new record page in the corresponding section.

NOTE

The menu structure can be set up using the [Quick add menu setup] lookup.

, – collapses/expands the side panel. The collapsed panel displays action buttons and the icons of the current workplace sections. The expanded panel displays action buttons, section names and the current workplace name.

Selecting a workplace

Navigation between the user workplaces is done using the menu on the side panel. You can select the workspace in the main menu of collapsed (Fig. 2) or expanded (Fig. 3) side panel.

Fig. 2 Selecting the workplace in the collapsed side panel

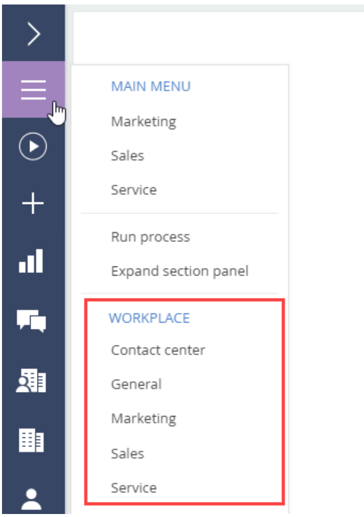
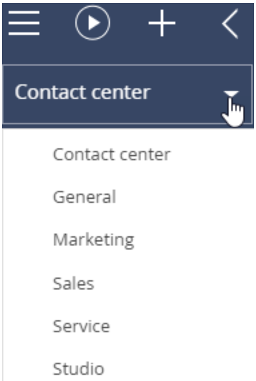


Fig. 3 Selecting the workplace in the expanded side panel



The communication panel (2)

The communication panel is located on the right side of the screen and is used for working with email, making and receiving calls. It is also used for quick access to system notifications for the current user and to the message feeds from other users. Read more >>>

The command line (3)

The command line is used to search for records, add new ones, as well as to perform other actions by entering text commands. Read more >>>

Folder and filter area (4)

The area is used to extend the settings of data filters, as well as to work with the folders of the sections.

The working area (5)

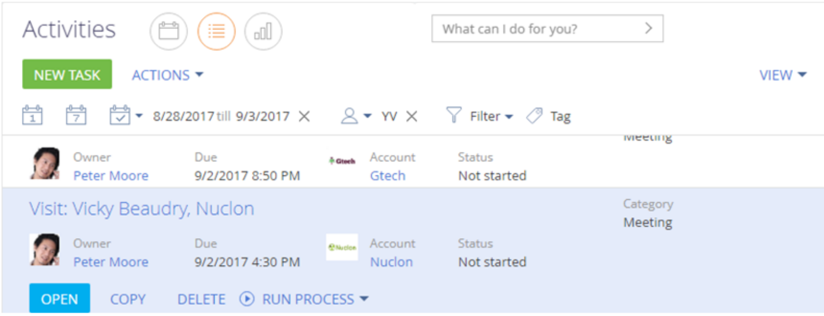
Depending on the section and the selected view, the working area displays the list of section records (for example, the contact list in the Contacts section), the record page, the analytics tools of the current section, as well as special pages, for example, the calendar in the Activities section.

A toolbar (Fig. 4) that enables you to open, copy or delete a record is displayed when you select th record in a list. You can launch a process for the selected record by clicking the [Run process] button.

NOTE

The [Run process] button is enabled only if the start of the business process for a section record is configured. Read more >>>

Fig. 4 List record toolbar



SEE ALSO

- The command line
- The communication panel
- Phone integration
- Filters
- Folders
- System designer

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- Creatio interface overview

Record lists

Data in the system sections as well as on some page details (for example, on the Activities detail of the account page) is displayed as a list. A list contains records, and each record contains a field group.

In this view, the emails and web addresses are displayed as links. Clicking a web address opens a window containing the specified web page. Clicking an email address opens a window where you can create a new message using the default mail client.

Some other values in the system are also displayed as links to allow quick switching between the records. For example, the value in [Owner] field of the Activities section is displayed as link to allow you to switch from the activities list to the activity's owner page.

NOTE

Data displayed in the list can be exported to Excel for future processing. Read more >>>
Use data import in Creatio to add large numbers of records. Read more >>>

List Views

There are two basic views a section can be displayed in.

The list view (Fig. 1) displays records in the form of a simple table. Every object field has a corresponding column.

Fig. 1 List view

Name	Author	Type
Customer Satisfaction Survey	John Best	FAQ
Transforming a New Client into Regular Customer	John Best	FAQ
Manage Access Rights	John Best	FAQ
Measures if Competitors are Dumping	John Best	FAQ
Conducting Telephone Conversations	John Best	Rules and regulations
Business Presentation	John Best	Advertising materials
Acquiring New Customers	John Best	Rules and regulations
Command Line Shortcuts	John Best	FAQ

In the tile view (Fig. 2), fields can be displayed in several rows for each record.

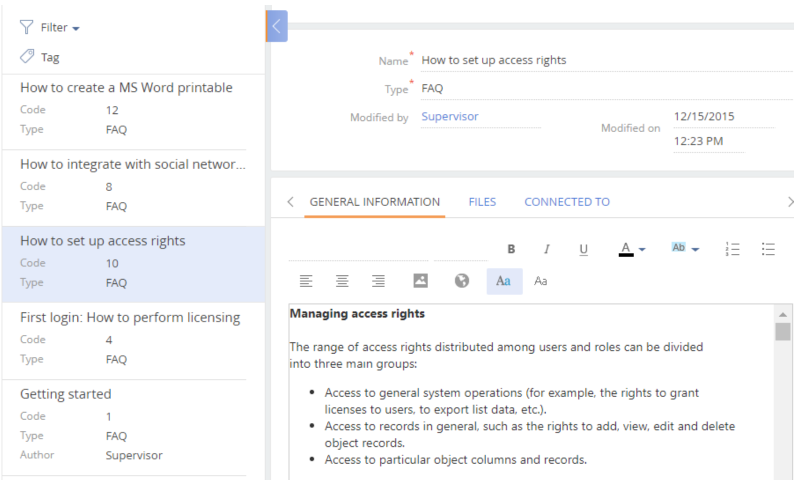
Fig. 2 Tile view

You can choose between the list view and the tile view while setting up the list.

Vertical list

When a record page opens the list is displayed in the additional vertical view (Fig. 3). In this view, the list data is displayed in a column. Each field of the record corresponds to a certain line in the vertical view. When you toggle between records in the vertical view, the right side of the page displays the detailed information about the selected record.

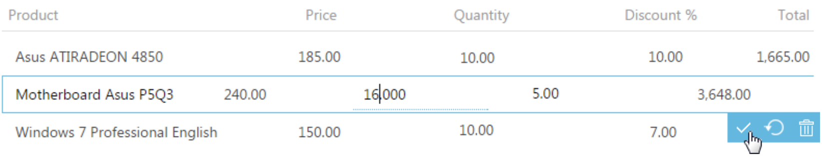
Fig. 3 Vertical view



Editable list

In Creatio you can edit records directly in the list without opening the corresponding pages. The editable list (Fig. 4) is used for fast and frequently changing objects, for example, records on the [Products] detail in the [Documents] section.

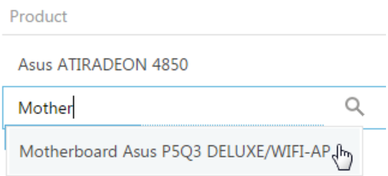
Fig. 4 The editable list



Adding a record

1. Create a new record on the detail. An additional string will appear in the editable list.
2. Click the area where the needed field is, and enter the value (Fig. 5).

Fig. 5 Filling in the field



NOTE

An editable field is underlined by a dotted line.

3. To fill in the next field of the record, press the [Tab] key or click the area where the needed field is. You can also press the [Space] key to check or uncheck checkboxes.
4. When all needed fields are filled in, save the record using the [Ctrl]+[Enter] key combination or by clicking the button.

NOTE

If all requested fields of the record are filled in, the record will be saved automatically after clicking outside of the string area.

Canceling changes

To correct a mistake made when editing a record, cancel the changes by pressing the [Esc] key or by clicking the button. As a result, all unsaved changes will be canceled.

When adding a new record, click the button ([Esc] key) to delete the record.

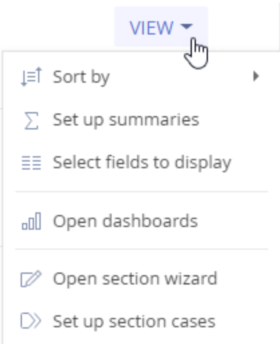
Deleting records

To delete a record, use the button. When deleting a previously saved record, the system will display an additional confirmation message. If the record is not saved yet, the notification about the deletion option will not be displayed.

List setup

You can customize the appearance of a list, its field group and the data sorting parameters. You can also bring up the summary information for displayed records. To set up lists, use the [View] menu (Fig. 6).

Fig. 6 The list setup menu



Menu commands:

- [Sort by] — sorts the list records by the selected column data.
- [Set up summaries] — displays the number of records, amount, average, maximum or minimum value by the data in the selected columns;
- [Select fields to display] – sets up the list of displayed columns, changes their order and appearance.

CONTENTS

- Sorting records in a list
- Setting up summaries by columns
- Setting up columns

SEE ALSO

- Filters
- Folders
- List FAQ
- Exporting list data to Excel
- Excel data import

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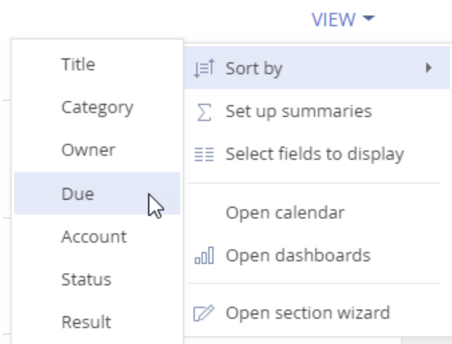
- Creatio interface overview

Sorting records in a list

For convenience, the section records can be sorted by the values in the selected column in ascending or descending order.

To sort records, select the [Sort by] command in the [View] menu. The columns displayed on the section page are listed in the menu. The sorting order (ascending or descending) is indicated next to the name of the column by which sorting is done. For example, all records of the Activities section can be sorted by the values in the [Due] column in descending order (Fig. 7).

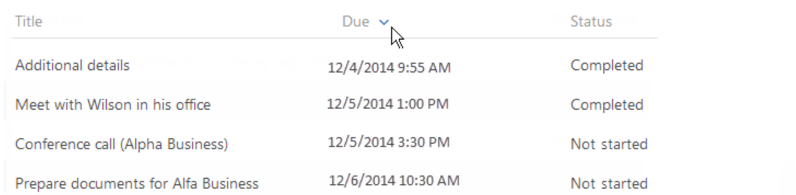
Fig. 7 Data sorting



To sort records by column, select the [Sort by] command in the [View] menu. Then select the needed column. Selecting the column repeatedly changes the sort order. To display the needed column in the menu, set up the section list.

In the list view you can quickly sort records by clicking the column caption (Fig. 8).

Fig. 8 Quick data sorting in the list view



Title	Due	Status
Additional details	12/4/2014 9:55 AM	Completed
Meet with Wilson in his office	12/5/2014 1:00 PM	Completed
Conference call (Alpha Business)	12/5/2014 3:30 PM	Not started
Prepare documents for Alfa Business	12/6/2014 10:30 AM	Not started

NOTE

Creatio automatically saves sorting parameters for each user individually. To return to the default sorting parameters, click the [Restore default settings] button in the user profile. In this case, all custom settings including sorting will be discarded in all system sections.

SEE ALSO

- Setting up columns
- User profile

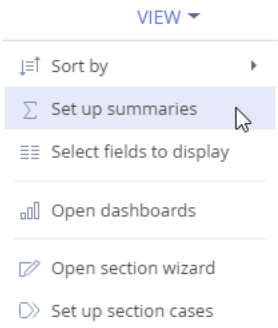
VIDEO TUTORIALS

- Creatio interface overview

Setting up summaries by columns

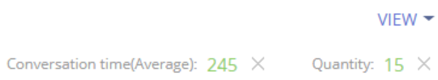
Set up the summaries to display the summary information based on the data in the section columns. Select the [Set up summaries] command in the [View] menu to manage summaries (Fig. 9).

Fig. 9 The [Set up summaries] option



The set up summaries will be displayed in the top right part of the section area (Fig. 10).

Fig. 10 Summaries area in a section

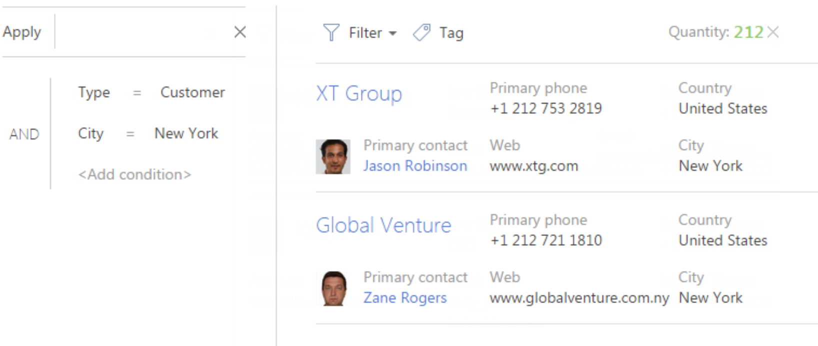


Summaries are used to calculate:

- the total number of records (available for all columns). For example, you can calculate the number of the registered customers in the Contacts section.
- the minimum or maximum value in a column (available for numeric columns, date/time columns). For example, in the Accounts section, you can find out the last date that a new company was added.
- The sum or the average value in a column (for numeric columns only). For example, in the Activities section, you can display the average activity duration.

If the section records are filtered (for example, a folder is selected, or one or more filters are applied), then summaries will be calculated only for the filtered records. For example, if you want to calculate the number of customers from New York, set the corresponding filter and display summaries (Fig. 11).

Fig. 11 Display of summaries for filtered records

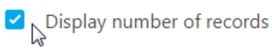


Calculating the number of records in a section

To display the key value, click the [Show] button.

1. Open the needed system section.
2. In the [View] menu, select the [Set up summaries] command (Fig. 9).
3. Select the [Display number of records] checkbox on the opened page (Fig. 12).

Fig. 12 The [Display number of records] checkbox



4. Click the [Save] button to save the user settings.

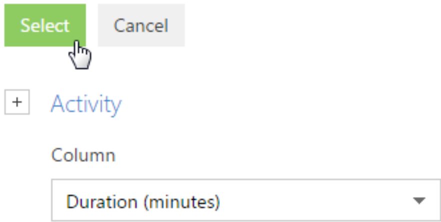
As a result, the total number of system records will be displayed in the summary area.

Calculating summary amount by a numeric column

Described below is the procedure of setting up summaries by column values, using the average activity duration value as an example. To set up:

1. Open the needed section, for example, the Activities section.
2. In the [View] menu, select the [Set up summaries] command (Fig. 9).
3. On the opened page, click the [Add] button.
4. In the list, select the numeric column the summaries should be displayed by, for example, “Duration (minutes)”. Click the [Select] button (Fig. 13).

Fig. 13 Selecting a column



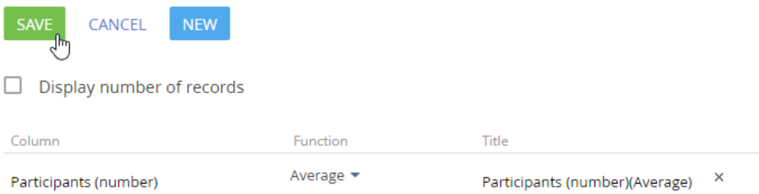
NOTE

To select a column of a subordinate object, click the + button and select the needed subordinate object from the list.

5. On the summary setup page, specify the display parameters for the summary information:
   a. Select the function from the list for calculating data, for example, "Average".
   b. Enter the caption that will be displayed in the summary area, for example, "Average duration (minutes)", and click the button.
   c. Click the [Save] button to save the user settings (Fig. 14).

As a result, the average activity duration will be displayed in the summary area of the Activities section.

Fig. 14 Setting up summaries by column values of an object



To view summaries for specific records, apply a filter or select a folder. For example, you can specify the owner, activity category and the required period of time.

Removing the summary information

To remove summaries from the page, click the × button next to the record in the summary area (Fig. 15).

Fig. 15 Canceling dashboards display

SEE ALSO

- Filters
- Folders

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- Analytics in Creatio. Working with dashboards

Setting up columns

Any list can be set up individually for each system user. You can add or remove columns from a list, edit column position, width and display style.

You can display columns of the current object as well as columns from connected objects. For example, in the list of the [Accounts] section, you can display information about the account's primary contact (such as primary contact's position, phone and email address).

Also, the list can display aggregate columns that show the summary information about the subordinate objects. For example, for the "Account" object, you can calculate the number of activities by account; for the "Contact" object, you can display the date of the last call by customer, etc.

> NOTE
> Objects that contain fields with the current object specified are called "subordinate objects" or "objects with reverse connection".

The name of the connected column is generated in the format "Object.Column", for example, "Primary contact.Job title" or "Account.City". The name of the aggregate column is generated in the format "Function(Object (the way it is connected)).Column". For example, to see the date of the last activity registered for a contact, display the following column in the list: "Maximum(Activity(by column Contact)).End date". The column caption that is displayed in the list can be customized.

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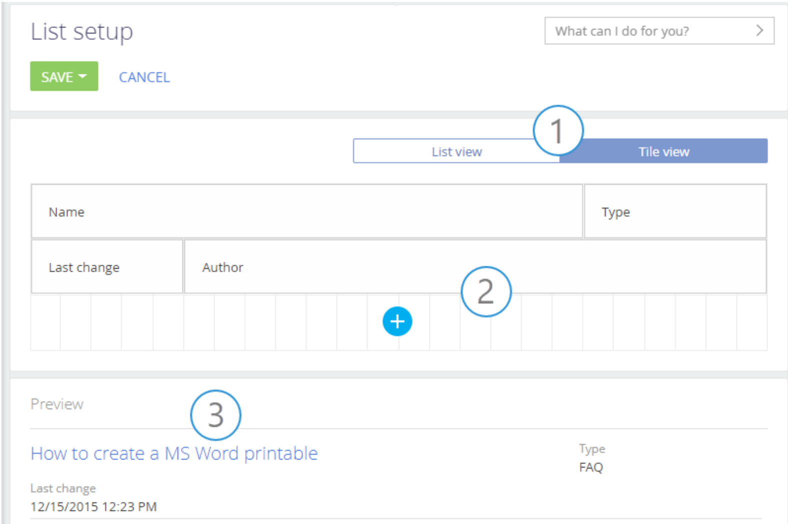
The columns setup window

Select the [Select fields to display] command in the list's [View] menu to open the columns setup page (Fig. 16).

Fig. 16 The columns setup window



The column setup page contains list view modes (1), column setup area (2) and the preview area (3).

List view mode switch (1)

Use these buttons to select view mode for section records.

List mode displays the data as a simple table, each row being a separate record. In list mode, table columns correspond to the section's fields. Use this view for lists where there is no need to display a lot of information about each record.

Tile view shows each record as a set of tiles, each tile representing a field from the corresponding section. A record in tile view usually occupies several rows. Tile view is best used when the list must show a lot of information about each record, as well as images, such as contact profile photos and account logos.

Column setup area (2)

Use the column setup area consists to manage list columns, their size and position. Cells in the tile view can consist of several rows, and cells in the list view can consist of only one row.

Preview area (3)

The preview area shows several records from the current list according to current settings in the list view mode switch and the column setup area. The records in the preview area are not available for editing.

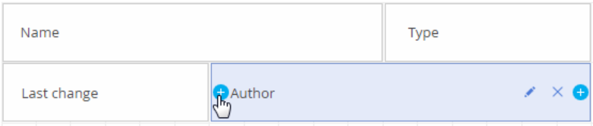
How to set up list columns

To add a new column, click the + button.

- Clicking the button in an empty cell will add a column at that position. In the list mode, you can add columns only if free cells are available in the column setup area. Clicking the + button in the tile view if no free cells are available in the column setup area, will add the column in a new row.

- near the border of any column. Clicking the button on a column in the list (Fig. 17) will add a new column on the right or left of the existing column.

Fig. 17 Inserting a column between existing columns



To set up the display column properties, select it and then click the button. Edit or hide column captions, specify functions and filters for calculating aggregate columns, as well as select the caption display style.

NOTE
You can only setup the [Hide caption] column if you select in the tile view of the record list.

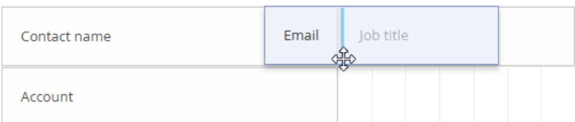
To hide a column, select it and click . If there are no columns in the row after the column has been removed in the tile view, then the row will be hidden.

To adjust column width, drag its left or right border with your mouse (Fig. 18). If no free cells are available in the row, the width of other columns will be modified to accommodate the new column size.

Fig. 18 Changing a column width

To move a column, select it and then drag it to an empty cell with your mouse (Fig. 19).

Fig. 19 Moving a column



To save column settings, click the [Save] button. The changes will be saved for the current user. If the column settings must be saved for all users, select the [Save for all users] command from the [Save] button menu.

NOTE
The [Save for all users] command is available if the current user has permission for the [List setup for all users] system operation.

NOTE
To cancel custom column settings in all sections, click the [Restore default settings] button in the user profile. Read more in the "User profile article.

How to add a column from the current object to the list

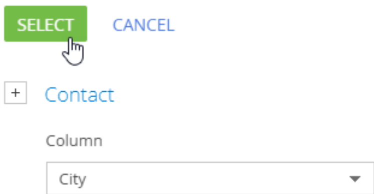
Described below is the procedure for adding current object columns to the list.

CASE
Display the [City] and [Department] columns in the Contacts section.

To do this:

1. Open the Contacts section.
2. In the [View] menu, select the [Select fields to display] command.
3. On the column setup page, click the button.
4. Select the column to be displayed, for example, "City". Click the [Select] button (Fig. 20).

Fig. 20 Selecting a column to be displayed

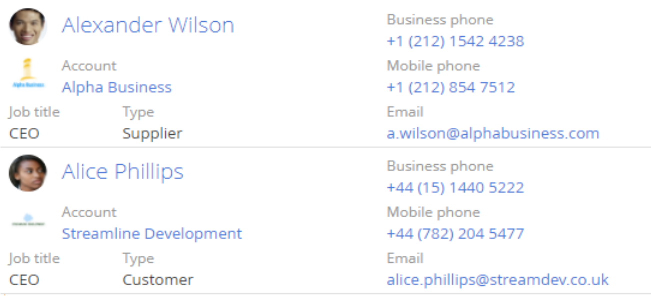


5. In the column settings area, select the added column and set up its width (Fig. 21).

Fig. 21 Widening a column

6. Use the same procedure to add the [Department] column. Use the preview area to optimize the column width (Fig. 22). Click the [Save] button.

Fig. 22 Setting up columns in the [Contacts] section



How to add an aggregated column in the list

You can display aggregate columns of the connected objects. For example, you can get the summary information about the “Account” object by the connected “Activity” object.

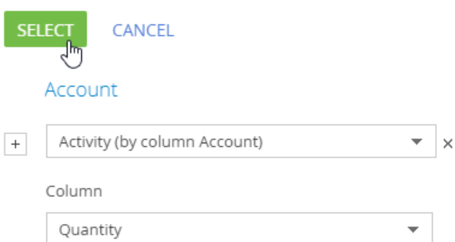
CASE

Display a number of current contact’s activities connected to each account in the list of the [Accounts] section.

To do this:

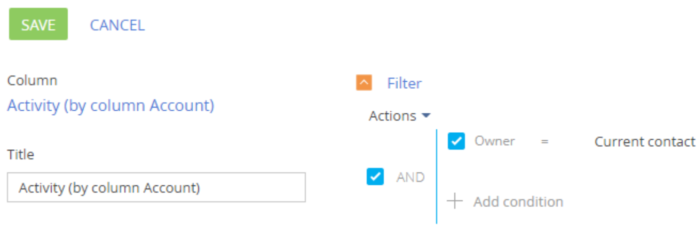
1. Open the [Accounts] section.
2. In the [View] menu, select the [Select fields to display] command.
3. On the column setup page, click the + button.
4. In the opened column selection window:
   a. Click the [+] button next to the object name.
   b. In the added field, select the object with the reverse connection, for example, “Activity (by the [Account] column)”.
   c. In the [Column] field, specify the column of the connected object, for example, “Quantity”.
   d. Click the [Select] button (Fig. 23).

Fig. 23 Selecting an aggregate column



5. On the opened page, specify the display and filter parameters for the selected column (Fig. 24).

Fig. 24 The column setup page



   a. Enter the caption for the column to be displayed, for example, “Number of activities”.
   b. Specify the filter for data aggregating. For example, to display the number of activities, whose owner is the current user, apply filtering by [Owner]: Current contact.
6. Click the [Save] button on the column setup page.
7. Save the column setup parameters.

   As a result, the accounts list will display the number of activities of the current user for each account.

SEE ALSO

- Exporting list data to Excel
- Setting up summaries by columns
- List FAQ

VIDEO TUTORIALS

- Creatio inetrface overview

List FAQ

- How many columns can I add to a section list?
- How do I quickly update the list without reloading the entire section page?
- When I export data, the "You have insufficient rights to perform the operation” message pops up
- How to download detail values?

How many columns can I add to a section list?

Section lists can be displayed in either “list” or “tile” view.

The maximum number of columns displayed in the list view is 24. However, selecting a significant number of columns may be uninformative since the visible area of the list depends on your monitor size. In addition, column width depends on your monitor resolution. Column width may not be sufficient to display the information on smaller monitors (768px, 1024px).

The number of columns displayed in the tile view is unlimited. However, selecting a significant number of columns affects the overall performance of the system due to increased database loading times.

We recommend selecting the optimal number of columns to display the most important data in the list.

How do I quickly update the list without reloading the entire section page?

If you make changes to the list (for example, if you modify filtering conditions or sort list entries) It may be necessary to quickly update the list without having to refresh the section page (by pressing the F5 button, or using the "Reload" command). To update the list data, click on the name of the section (Fig. 25).

Fig. 25 Updating list data in the [Activities] section

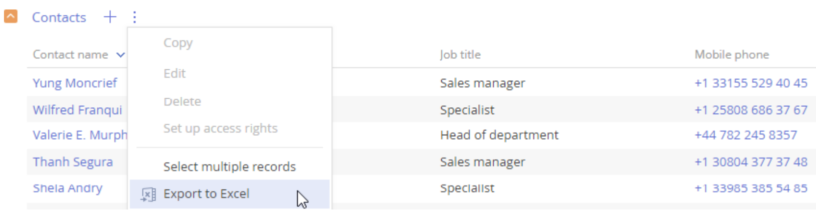
When I export data, the "You have insufficient rights to perform the operation" message pops up

You may have not configured access permission to the [Export list records] system operation.

How to download detail values?

Data from the detail can be exported with the [Export to Excel] command available from the actions menu of the detail (Fig. 26).

Fig. 26 Exporting a detail list to Excel



SEE ALSO

- Universal import from Excel FAQ
- Exporting list data to Excel

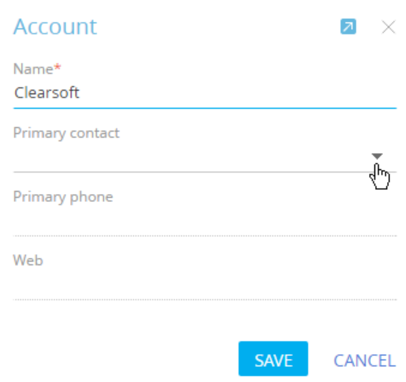
Mini pages

You can quickly add and view records using mini pages.

How to add records using the mini page

When you add records in the [Contacts], [Accounts], [Activities], [Leads], [Opportunities] sections, a mini page opens. Fill the page out and save the changes (Fig. 1).

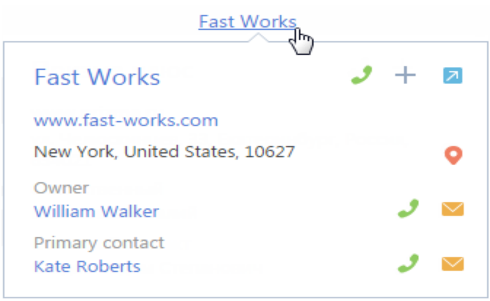
Fig. 1 Adding a new record via mini page



How to view the mini page of a record

You can view mini page for contacts, accounts, activities, leads and opportunities. When you hover the mouse cursor over a hyperlink to open these records, a mini card is displayed (Fig. 2).

Fig. 2 Account mini page



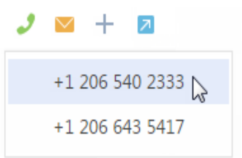
Mini pages contain only those fields that are filled in for the corresponding record. If, for example, the [Address] field is not filled in on the account page, it is not displayed in the mini page of this account.

Which actions are available in mini pages

With mini pages, you can perform the basic actions available on the edit page of the corresponding records.

To make a call, click the button and select the required number (Fig. 3).

Fig. 3 Making a call



NOTE

If the phone integration settings are not set, the button will display phone number. Call management is covered in a separate article.

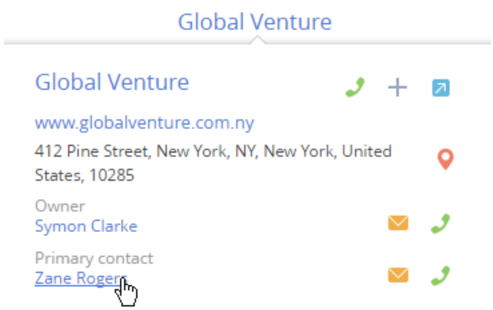
To send an email, click the and select an email address.

NOTE

Working with emails is covered in a separate article.

To open records that are displayed in the mini page, click the corresponding hyperlink (Fig. 4).

Fig. 4 Opening the contact edit page



To open the edit page of a record from its mini page, click the button in the upper right part of the mini page.

NOTE

The information and available actions are different for the contact, account and activity mini pages.

In addition to the ability to call or send emails, you can also create tasks and contacts from the mini pages in the [Accounts] section, as well as view the location of an account on the map.

You can use mini pages in the [Contacts] section to make calls, send emails and check contact's current local time.

To create a task or a contact, click the + and select the required action. To view the location of the account on the map, click the button.

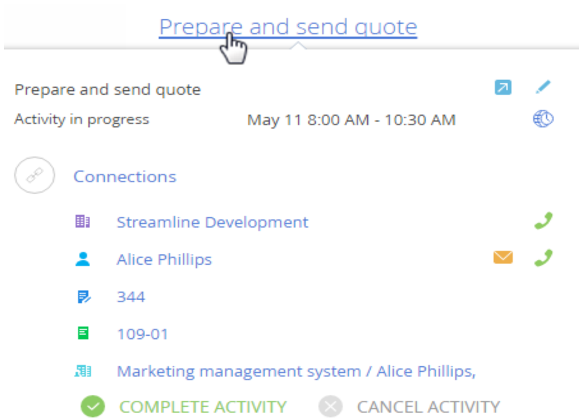
Additional options available in the activity mini page

In addition to making calls and sending emails directly from an activity mini page, you can also:

- Schedule employee and customer activities in different timezones, taking into account the time difference. More information about working with contacts in different time zones is available in a separate article.
- Edit planned date and time.
- Change activity status. If an activity status is “Not started” or “In progress”, you can complete or cancel it as well as specify its result using the mini page.
- Add connected records to an activity mini page.

The information available in an activity mini page depends on which fields are filled in on the activity record page (Fig. 5). If, for example, the [Contract] field is not filled in on the account page, it is not displayed in the mini page of this account.

Fig. 5 The activity mini page



How to add connected records to an activity mini page

Using mini pages, you can connect an activity to a different system record. To connect an activity to a contract:

1. Enable editing by clicking the button at the top right corner of the mini page.
2. Click the + button in the [Connected to] block to add the [Contract] field to the mini page and select a contract from the list.

NOTE

The list of contracts displayed when you hover the mouse cursor over the [Contract] field, is filtered by the [Account] field.

How to add activity participants

1. Click the button to open the record page.
2. Go to the [Participants] tab and click the + button, then select a contact (Fig. 6).

Fig. 6 Adding activity participants

You can exit the edit mode by clicking the button or pressing the “Esc” key.

SEE ALSO

- How to configure mini pages for using in a section
- Example of creating mini pages

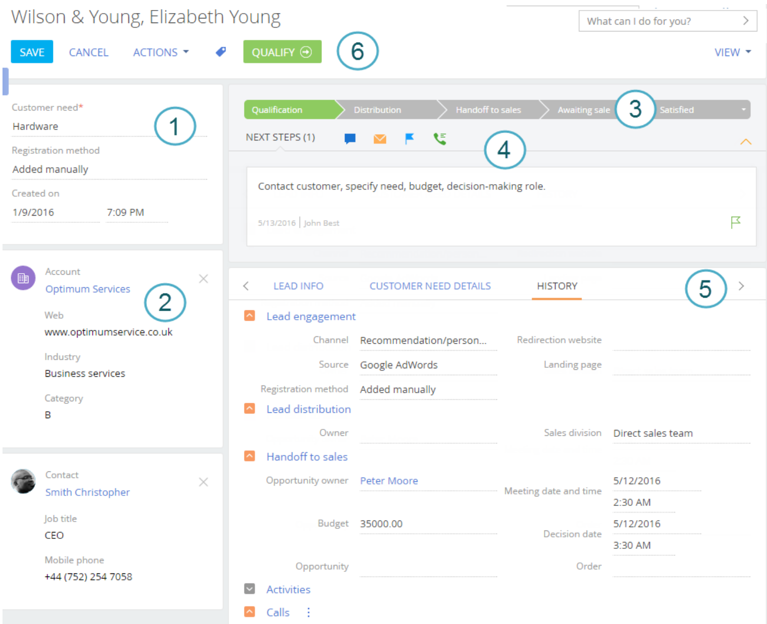
Record pages

All information about the record is available on its edit page. There is no need to move on to other objects in the system — all the main functions are available on the record page.

Each record page consists of several blocks with structured details containing record data (Fig. 1). The page contains:

- Record profile
- Connected information profile
- Page tabs
- Dashboard tile if it was added to the page by user
- Toolbar
- As well as stage indicator and action panel depending on the section.

Fig. 1 Record page



Record profile (1)

The most important information about a record is displayed on the record page in the main sections of Creatio.

Connected record block (2)

Brief information about connected records, for example, client name, job title and mobile phone number in the profile enables you to look through all the key data of the connected record on the page of the main record. A page can contain one or several profiles.

If the connected record in the profile is not specified, you can select it from existing ones or create a new record. You can delete a record connection by clicking at the top right of the profile page.

Workflow bar (3)

In sections where records are maintained by a business process, a workflow bar is displayed. It enables you to see at what stage of the workflow a record is, and quickly move on to the next stage. This makes the case intuitive and simple and helps you to focus on moving forward.

The bar color changes depending on the stage. For example, the workflow bar is colored red if the opportunity is moved to [Closed lost] stage.

NOTE
Use the case designer to set up the workflow bar. Read more >>>

Action panel (4)

With the actions panel you can always see scheduled tasks and with just one click proceed to your activities, work with email or the feed. You don't need to leave the main section because all the work with activity takes place in the mini page.

For sections that use business processes or cases, you can also work with a list of tasks that are scheduled automatically according to the process (case). You can, for example, approve a document (order, memo, etc.) right from the action panel. You can work with the case, communicate with a client, or follow the opportunity history and lead registration data at the same time.

Using the action panel, you can:

- schedule a task
- Send an email .
- Create a case in the self-service portal .
- Create a post in the record feed .
- Record call results .

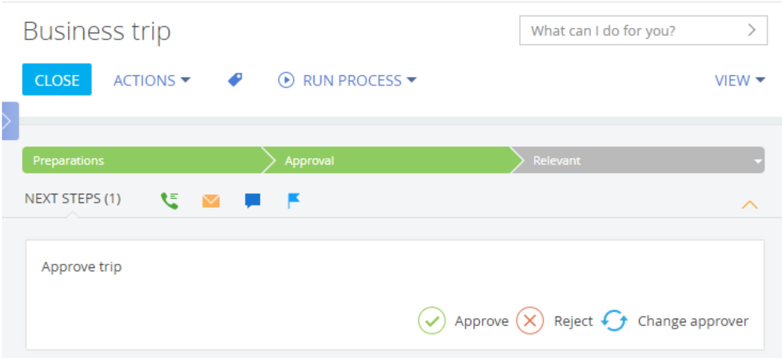
The action panel displays the following:

- Activities connected to a section object in a specific field. For example, in the lead action panel, only tasks that contain the selected lead in the [Lead] field are shown.
- Activities not in a final state.

NOTE
The activity is in its final state when the [Final state] checkbox is selected in the [Activities states] lookup.

- Approval in the "To set" status which is not canceled (Fig. 2).

Fig. 2 Approval on the action panel



The action panel can contain other business process elements, such as user dialogs and other pages that the process is supposed to open.

Page tabs (5)

Detailed information about the record is displayed on separate tabs. For example, the [History] tab contains the history of activities, calls and messages, and information about connected records. The [Feed] tab contains user-published messages related to the record. These tabs contain fields, groups of fields, details and dasboards.

Toolbar (6)

The toolbar contains buttons to perform actions with the record.

- You can save data, cancel changes or close page on the toolbar.
- The [Actions] button enables you to set access rights and subscribe to updates for a selected record. With the help of the action menu you can also perform other tasks that depend on the section, for example, update a contact with social network data, create an order based on opportunity, or send an invoice or order for approval.
- The [Tags] button enables you to set tags to make searching more convenient and to group records.
- The [Print] button enables you to save information about a record in a separate file. Clicking the button opens a list of print forms and reports available in this section. The list of data, displayed in the printed form, depends on the section. After you select a report or a printed form, the information from the record page is stored in a separate file in PDF format.
- You can launch a process for the selected record by clicking the [Run process] button. The [Run process] button is enabled only if the start of the business process for a section record is configured. Read more >>>
- The [View] button opens the section wizard.

Page dashboards (7)

You can configure displaying of dashboard tiles on any record page. A dashboard component displays the system data in various ways, for example, as a chart or a number. Adding of dashboard tiles on record pages is performed in the section wizard. Read more >>>

Fields and details

Information can be displayed as a field or a detail.

A field is an element displayed in the form of a certain value. The value can be specified in a textual, numeric, or logic format, in the format of date or time, and can also be selected from a list or a lookup.

When selecting values from a list or a lookup, the system will offer a list of records starting with the entered value after entering a few characters.

Similar fields can be grouped in field groups. You can minimize groups.

A detail is an element about other objects connected to the selected record. Details are implemented are used when the main record may be connected to more than one record object. For example, the information connected to activity contact, addresses, documents, etc.

Visually, a detail is different from a group field due to the presence of the toolbar for managing data (update and change records, sort, filter, configure details, etc)

The records in a detail can have their own edit pages.

Lookup fields with predicted values

If a lookup field in a section is configured to predict values, Creatio will display the prediction results in the field and automatically rate the quality of the prediction based on the following factors:

Depending on the balance of probabilities, Creatio determines the following prediction types:

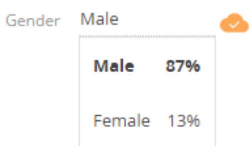
- certain prediction
- near certain prediction
- weak prediction

Certain prediction

Certain prediction is a prediction with an evident leader. In this case, the field is automatically populated with the predicted value, and the icon appears next to it. Save the page if the field is populated correctly.

Clicking the button displays all possible predictions and their probabilities with the most probable item highlighted (Fig. 3).

Fig. 3 Certain prediction

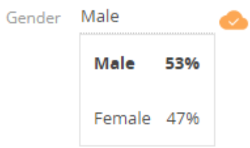


If you modify the field, the button appears. Clicking the button displays all predictions.

Near certain prediction

If there are multiple values with close probabilities, the field is not populated, and the button appears next to it. Clicking the button displays the list of predictions (Fig. 4).

Fig. 4 Near certain prediction



Weak prediction

Weak prediction occurs when Creatio cannot compare the historical data to the data used for analysis.

The button appears next to the unpopulated field. Clicking the button displays the list of predictions and their probabilities.

SEE ALSO

- Mini pages
- Section wizard
- How to create a lookup value prediction model
- Predicting a contact's gender

VIDEO TUTORIALS

- Creatio interface overview

Sharing records

You can manage access rights to the information that you add in Creatio. For example, when registering a new account record, you can specify users who have access to it.

You can manage access rights to certain operations with the records. There are three groups of such operations: read, edit, and delete. For example, the access to the "read" operation means that the user or user group can view the record in the section and open its page.

For each operation, you can choose one of two permissions:

- Granted – the right to read, change, or delete a record.
- Granted/Delegation permitted – the right to perform the operation on the record, as well as to manage access rights to this operation.

  NOTE

  If some access level is disabled it means that you don't have access to a record.

By default, the user who has created a record has the right to perform and delegate all operations with the record. The default access rights to records are defined by the system administrator.

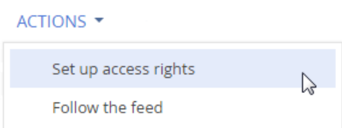
To manage access rights to a record, open the page of the record and select the [Access rights] command in the [Actions] menu.

CONTENTS

Managing access rights

1. Open the page of the record whose access rights must be changed.
2. Select the [Set up access rights] command (Fig. 1) in the [Actions] menu.

   Fig. 1 Switching to access rights setup

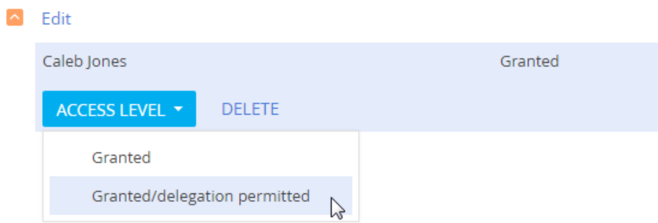
   

3. On the opened access rights page, click the [Add] button and select the operation for which permissions must be set. For example, to grant the right to edit the record, select the [Edit access right] command.
4. In the opened window, select the user or user group for which access rights must be granted. For example, to grant the edit permission to all employee users, select the "All employees" user group. As a result, a new rule will be added to the corresponding page detail. The rule will determine access rights for the selected user or user group to the selected operation on the current record. By default, the access rights to the operation are always defined as "Granted".
5. Tap the [Save] button.

Changing access rights

1. Open the edit page of the record whose access rights must be changed.
2. Select the [Set up access rights] command in the [Actions] menu.
3. On the opened access rights page, in the Read, Edit, or Delete detail, select the record to modify. For example, to allow the user to delegate the right to edit the record, in the Edit detail, select the record that contains the name of this user.
4. In the [Permission] menu, select the permission that must be set. For example, to allow the user manage access rights to the selected operation, select the [Granted/Delegation permitted] command (Fig. 2).

Fig. 2 Changing access rights for the record



5. Tap the [Save] button.

Restricting access

1. Open the edit page of the record whose access rights must be changed.
2. Select the [Set up access rights] command in the [Actions] menu.
3. On the opened access rights page, on the Read, Edit, or Delete details, select the access rights to be canceled and delete it. For example, to restrict the right to edit the record for all users, select the "All employees" record in the Edit detail and click [Delete].

VIDEO TUTORIALS

- User and role management, access permissions

Filters

You can filter records in the list for sections and details in Creatio. The following tools can be used to search and filter records in sections:

- Quick filter;
- Standard filter;
- Advanced filter.

To filter records on the details, a standard filter is used.

Controls for managing filters are located in the upper part of the section page or directly on the detail (Fig. 1).

Fig. 1 Filter area

To manage standard and advanced filters in sections, use the [Filter] menu. To change the parameters of the applied filter either for the section or for the detail, click the filter and edit the needed fields in the filter area.

The filter settings are saved when updating the page, when switching sections or re-logging into the system. To remove a filter, click the × button in its right part (Fig. 2).

Fig. 2 Canceling one filter

NOTE

The [Filter] menu is also used to manage folders. If some folders have been marked as favorite, their list will be displayed in the [Filter] menu. More information about the working with folders can be found in a separate article.

CONTENTS

- Quick filter
- Standard filter
- Advanced filter

SEE ALSO

- Record lists
- Folders

VIDEO TUTORIALS

- Creatio interface overview

Quick filter

Certain sections in Creatio have quick filters. Use a quick filter to filter data by the most frequently used conditions (Fig. 3).

Fig. 3 Using the quick filter

For example, the [Activities] section contains a quick filter as it is needed to analyze employee's activity during a specified period of time. By default, quick filters are enabled. Quick filter parameters may vary depending on the section.

CONTENTS

Quick filter by time period

You can filter records by time period, for example, to display the activities for the current or previous week.

There are three quick filter presets:

- – shows records for the current day.
- – shows records for the current week.
- – shows records for the standard period, for example, “Yesterday”, “Current week”, “Next week”, “Previous month”, and so on. You can also set a custom period by specifying its start and end dates using the built-in calendar.

  NOTE

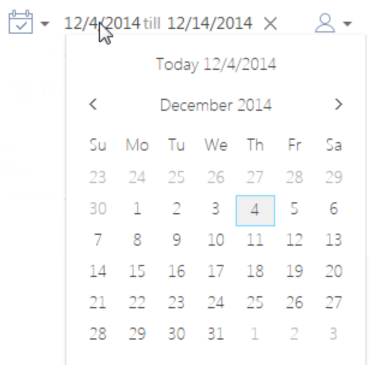
  Previous, current and next week (month) are actual calendar weeks (months). For example, if the previous month was December, then when you select the “Previous month” period in the [Activities] section, the activities will be displayed for the period of time between 1st and 31st of December.

  NOTE

  Use the advanced filter to display records by quarter, half year or other custom periods in the list.

To set up custom filter period, select the start and end date of the period using the built-in calendar. You can open the calendar by clicking the start or end date of the period (Fig. 4).

Fig. 4 Opening the calendar filter



Quick filter by owner

Apply a filter by owner, for example, to display activities by one or more users.

To view data by a certain owner, select the user's name in the filter menu. To view data about several owners, select the [Add owner] option from the menu and specify the user in the opened window.

To cancel a filter by owner, select the [Clear] option from the filter menu.

SEE ALSO

- Standard filter
- Advanced filter

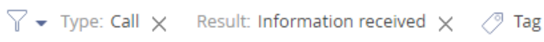
VIDEO TUTORIALS

- Creatio interface overview

Standard filter

The standard filter is used to search for records either in the section or on the details by the values specified in one or more columns. For example, to search for all companies of a specified type or activities that have a specified status and priority.

Fig. 5 Standard filter in the [Activities] section

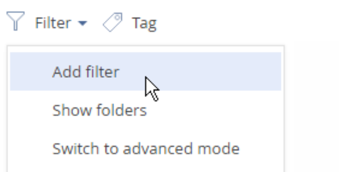


CONTENTS

Applying standard filters in sections

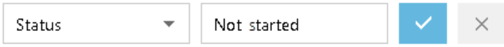
1. From the [Filter] menu, select the [Add condition] option (Fig. 6).

Fig. 6 Adding standard filter conditions for the section



2. In the appeared fields, specify a filter condition. Select a column that you want to search records by and specify the column value (fully or partially). To apply the filter conditions, click the button (Fig. 7).

Fig. 7 Applying standard filter conditions for the section



As a result, the section list will display the records that match the applied filter condition.

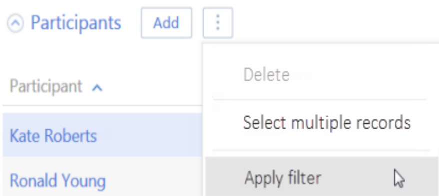
Applying multiple standard filters for the section

You can apply more than one standard filter in a section. To add more filters, select the [Add condition] option from the [Filter] menu once again and specify a filter condition. Once several standard filters are applied, the list will contain only those records that match all filter conditions.

Applying a standard filter for the detail

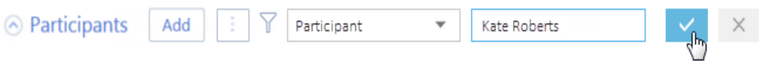
1. Select the [Apply filter] option from the menu (Fig. 8).

Fig. 8 Adding standard filter conditions for the detail



2. In the appeared fields, specify a filter condition. Select a column that you want to search records by and specify the column value (fully or partially). To apply the filter conditions, click the button (Fig. 9).

Fig. 9 Applying standard filter conditions for the detail



As a result, the detail list will display the records that match the applied filter condition.

NOTE

Applying filter condition is possible only for the details with lists.

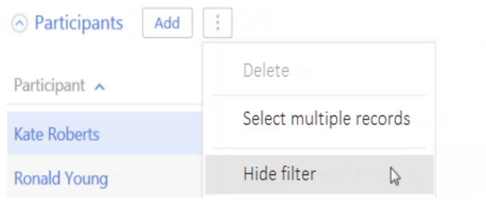
Applying multiple standard filters for a detail

You can apply more than one standard filter for a detail. To add more filters, click the button and specify a filter condition. Once several standard filters are applied, the detail will contain only those records that match all filter conditions.

Removing the filter panel from the detail

The filter panel will be automatically hidden after the page update. To hide the filter panel manually, select the [Hide filter] option in the ⋮ menu (Fig. 10).

Fig. 10 Hiding filter panel on the detail



ATTENTION

This action is available if no other filter conditions are applied.

NOTE

The filter conditions will not be reset if you can expand and collapse the detail (by clicking the button).

SEE ALSO

- Quick filter
- Advanced filter

VIDEO TUTORIALS

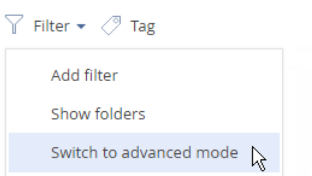
- Creatio interface overview

Advanced filter

If you need to apply a more complex filter with several search parameters and conditions, use the advanced filter. For example, you can use it in the [Activities] section to display all meetings with new customers.

To apply the advanced filter, select the [Switch to advanced mode] option from the [Filter] menu (Fig. 11).

Fig. 11 Switching to the advanced filter mode



NOTE

If you will require the configured filters in the future, you can save a dynamic folder by them.

CONTENTS

- Applying an advanced filter by connected object column
- Applying the advanced filter with grouping filter conditions
- Applying an aggregate filter
- Applying filter by time period

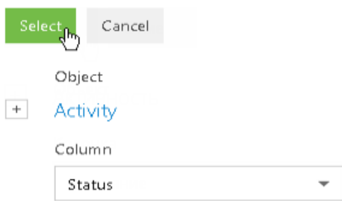
Applying an advanced filter by object columns

You can apply filter by one of the current section columns (for example, you can filter activities by the [End date] column of the "Activity" section or contacts by the [Job Title] column of the "Contact" section).

For example, to filter the uncompleted activities that were changed within the last two weeks in the [Activities] section:

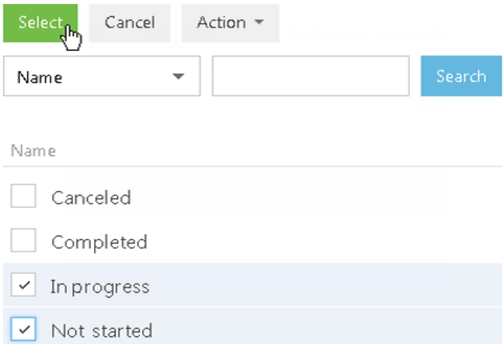
1. Open the [Activities] section. From the [Filter] menu, select the [Switch to advanced mode] option (Fig. 11).
2. In the filter setup area, click the <Add condition> link.
3. In the opened window, select the needed column from the [Column] drop-down list, for example, [Status], and click the [Select] button (Fig. 12).

Fig. 12 Selecting a column for the advanced filter



4. On the filter page, select the needed parameters:
   a. Select the condition type by clicking its symbol, for example, "=".
   b. Click the <?> link. On the opened window, specify the values for the selected column, for example, "Not started" and "In progress". Click the [Select] button (Fig. 13).

Fig. 13 Selecting a value for a column

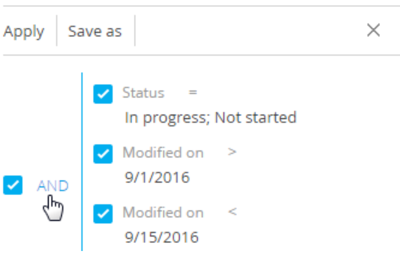


NOTE

When using the "≠" condition, records with unfilled fields are now taken into account.

5. Similarly, add the remaining conditions. For example, specify the threshold dates for the records that were modified.
6. Specify the logical operator for the added conditions, for example, “AND”, by clicking it (Fig. 14).

Fig. 14 Selecting a logical operator



NOTE

The “AND” logical operator is applied if the record must match all conditions in the group. Apply the “OR” logical operator if the record must match at least one of the conditions in the group.

NOTE

By default, the filter area contains one empty root group with the logical operator “AND”.

7. Click the [Apply] button.

   As a result, only uncompleted activities that were changed within the specified period will be displayed in the [Activities] section.

SEE ALSO

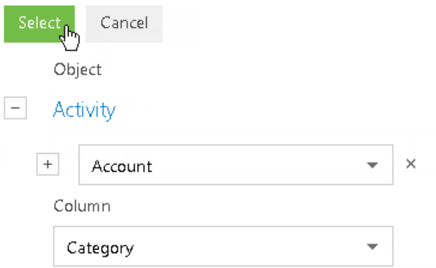
- Applying an advanced filter by connected object column
- Applying an aggregate filter
- Applying filter by time period

Applying an advanced filter by connected object column

You can filter records by the columns of the current record and by the columns of the objects connected to it. Another example, activities can be filtered by the category of the connected account (the [Type] column of the [Accounts] section). For example, to filter activities in the [Activities] section by a certain type of company:

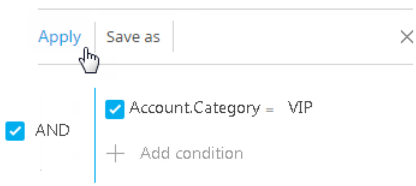
1. Open the [Activities] section. From the [Filter] menu, select the [Switch to advanced mode] option (Fig. 11).
2. Click the <Add condition> link.
3. On the opened column selection page:
    a. Click the + button next to the object name.
    b. In the added field, select the connected object, for example, "Account".
    c. In the [Column] field, specify the column of the connected object, for example, "Category".
    d. Click the [Select] button (Fig. 15).

Fig. 15 Selecting a column of the connected object



4. On the filter setup area, select the needed parameters:
    a. Click the symbol of filter condition to change its type. By default, the "=" condition is indicated.
    b. Click the <?> link. In the opened window, select the needed value for the selected column, for example, "Category = VIP". Click the [Select] button.
5. Click the [Apply] button (Fig. 16).

Fig. 16 Applying filter conditions



As a result, only activities that are connected to accounts of "VIP" category will be displayed in the section list.

NOTE

For example, when the filter is set up for <Account.Type ≠ Customer>, activities will be displayed for the accounts that are not customers and those with the [Type] field unfilled.

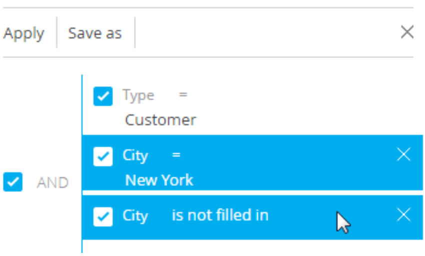
If you use filtered data on a regular basis, click the [Save as] button to create a dynamic folder using this filter.

Applying the advanced filter with grouping filter conditions

You can create advanced filters with several logical operators. For example, you can display all customer accounts who reside in New York, and those that have no city specified:

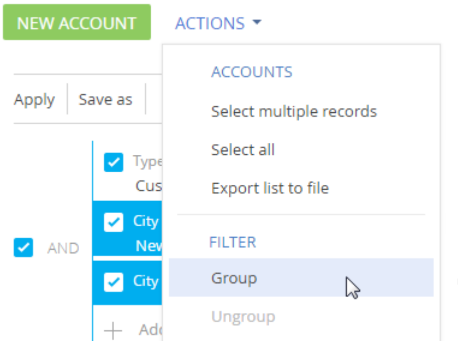
1. Open the Accounts section. From the [Filter] menu, select the [Switch to advanced mode] option (Fig. 11).
2. Apply the "Type = Customer" condition:
    a. Click the <Add condition> link.
    b. In the opened window, select the account column, for example, "Type". Click the [Select] button.
    c. In the filter setup area, click the <?> link. In the opened window, select the needed value for the selected column "Category = VIP". Click the [Select] button.
3. Add the "City = New York" condition in the same manner.
4. To apply the "City is not filled in" condition:
    a. Click the <Add condition> link.
    b. In the opened window, select the "City" column. Click the [Select] button.
    c. In the filter setup area, click the condition type and select the "is not filled in" condition from the menu.
5. Group the needed conditions and set a different logical operator for them:
    a. Holding down the Ctrl key, select the conditions to group (Fig. 17).

Fig. 17 Selecting filter conditions to be grouped



    b. From the [Actions] menu, select the [Group] option (Fig. 18).

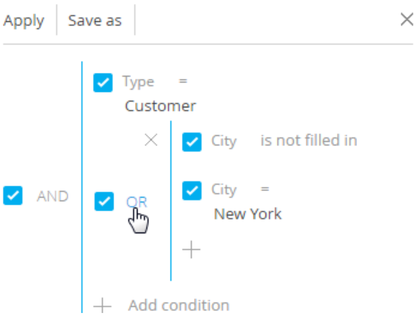
Fig. 18 Grouping filter conditions



As a result, the selected conditions will be combined in a separate group.

c. Set “AND” as the logical operator of the root group and “OR” as the logical operator for the newly created group by clicking the operator name (Fig. 19).

Fig. 19 Setting a logical operator for the group of filter conditions



6. Click the [Apply] button.

   As a result, only the accounts of the “Customer” type for which the “New York” value or no value is specified in the [City] field will be displayed in the section.

SEE ALSO

- Applying an advanced filter by object columns
- Applying an aggregate filter
- Applying filter by time period

Applying an aggregate filter

The aggregate filter allows to filter object records by the connected records in objects with the reverse connection. The following filter conditions can be applied in the aggregate filter:

- Count – a certain number of the connected records exists in the object with the reverse connection for the filtered records. For example, you can filter users who are specified in the [Owner] field for five or more accounts.
- Maximum / minimum – for the filtered records, the object with the reverse connection contains records with a specific maximum (minimum) value in the numeric or the date column. For example, you can select employee users whose last task was completed last week.
- Sum, average – for the filtered records, the object with the reverse connection contains the connected records with the particular sum of values or the average value in the numeric column. For example, you can filter employee users whose average task duration is greater than two hours.

Applying the aggregate filter is identical to applying the filter by connected object columns. For example, you need to obtain a list of users who are owners for the accounts of the “Customer” type. Applying the following aggregate filter will help you compile this list:

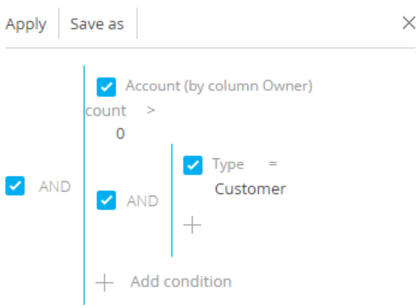
1. Open the section whose records must be filtered, for example, Contacts. From the [Filter] menu, select the [Switch to advanced mode] option (Fig. 11).
2. Click the <Add condition> link.
3. In the opened column selection window (Fig. 20):

   Fig. 20 Setting up a reverse connection object column in the aggregate filter

   a. Click the + button next to the object name.
   b. In the added field, select the object with the reverse connection. For example, to apply an aggregate filter by the [Owner] column of the [Accounts] section, select “Account (by column Owner)”.
   c. In the [Column] field, specify the column of the object with the reverse connection, for example, “Quantity”.
   d. Click the [Select] button.
4. In the filter setup area (Fig. 21):
   a. Select the filter conditions. In this case, the condition is “Quantity > 0”.
   b. Apply the necessary additional conditions: For example, if you need to display only those contacts that are owners for accounts of the “Customer” type, add this condition to the filter.

Fig. 21 Applying filter conditions for an aggregate filter



5. Click the [Apply] button.

   As a result, the record will be displayed in the Contacts section, only if there is an account for which this contact is specified in the [Owner] field.

SEE ALSO

- Applying an advanced filter by object columns
- Applying an advanced filter by connected object column
- Quick filter
- Standard filter

Applying filter by time period

You can filter records by specific period or exact date. For example, display all records added to the section for the last week.

Following types of filters by period are available:

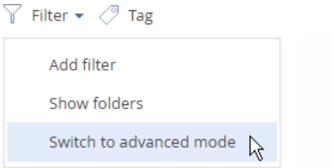
- Filter by exact date
- Filter by standard period
- Filter by annual events.

Filter by exact date

To display data whose date falls within a certain period of time, specify this period in the filter conditions. For example, you can view the activities that took place during your business trip three weeks ago.

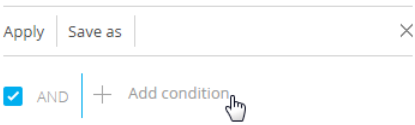
1. Open the [Activities] section
2. From the [Filter] menu, select the [Switch to advanced mode] option (Fig. 22).

Fig. 22 Switching to the advanced filter mode



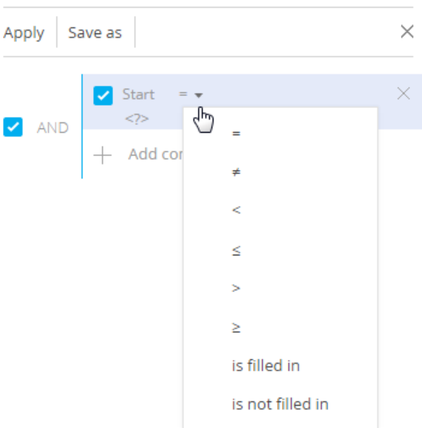
3. When the filter area opens, select the beginning of the period you want to display records for. To do this:
   a. Click the <Add condition> link (Fig. 23). In the opened window, select the needed date column, for example, "Start", to sort activities by the start date.

Fig. 23 Adding column to filter condition



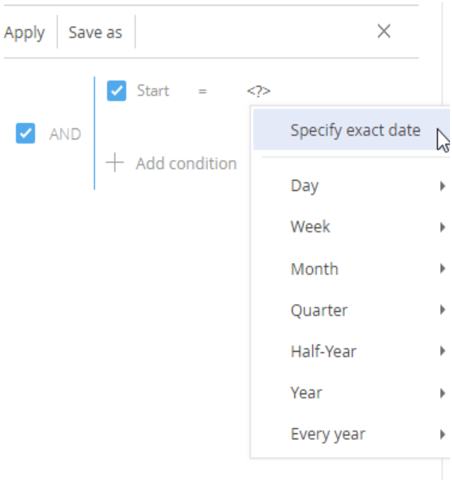
   b. Select the logical operator next to the added column (Fig. 24), for example, "≥" (greater than or equal to), to set this period as the filter start date.

Fig. 24 Selecting filter condition type



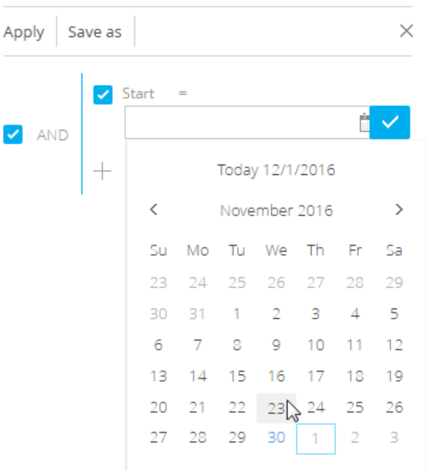
   c. From the <?> link menu, select the [Specify exact date] option (Fig. 25).

Fig. 25 Specifying the exact date of filter period



d. In the opened window, click the button to open the built-in filter calendar, and select the needed date (Fig. 26).

Fig. 26 Built-in filter calendar



4. Specify the filter end date.

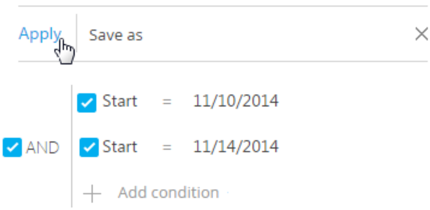
a. Add the “End” column to the filter condition to sort activities by the start date.

b. Then select the “≤” (less than or equal to) condition type.

c. Select the date from the built-in calendar.

5. Make sure that the “AND” logic operator is set for the added filter conditions.
6. Apply the filter by clicking the corresponding button.

Fig. 27 Applying filter



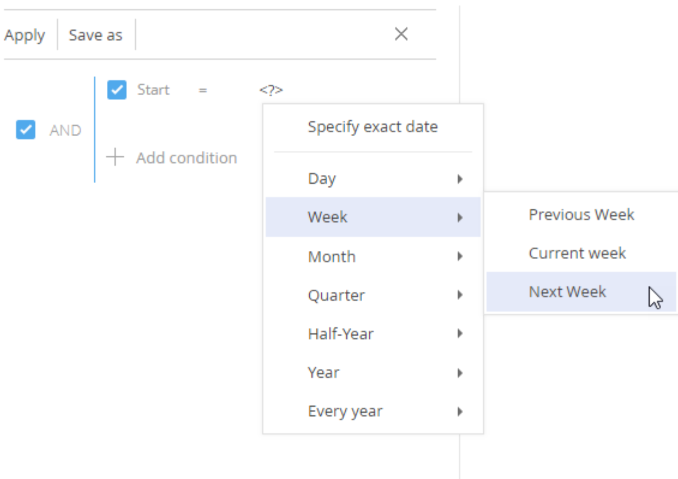
As a result, only activities that started within the specified period will be displayed in the [Activities] section.

Standard filter periods

To facilitate working with filters, use standard filter periods. For example, you can easily display records for the previous, current or next week.

Standard periods are available in the <?> link menu of the filter condition (Fig. 28).

Fig. 28 Selecting standard filter period



Hour

The menu includes options that allow you to display records for the previous, current or next hour. In addition, you can display records for a certain number of previous or next hours. In addition, you can set the exact time to the minute as a filter value.

To do that, select the [Exact time <?>] option and enter the needed time value in the following format – H:MM, for example, “2:43 PM”. Also, you can select a standard time value from the drop-down list.

To define the number of previous or next hours, select the [Previous hours <?>] or [Following hours <?>] option respectively. Enter the needed number in the appeared field. Only integer numbers are acceptable.

Please, note that the previous, current or following hour is not an hour from the current moment, but a full hour starting from the 1st till the 60th minute, for example, from 9:00 to 9:59. Therefore, if the current time is 2:34, the following hour is the period from 3:00 to 3:59, not from 2:34 to 3:33.

Day

The menu consists of options that allow you to display records for the previous, current or next day. In addition, you can display records for a certain number of previous or next days. You can also use a specific day of the month or week as a filter value.

To set a specific day of the month as a filter value, select the [Day of the month <?>] option and enter the needed date in the appeared string.

To set a specific day of the week as a filter value, click [Day] –> [Day of the week <?>] and select the needed day.

Week

The menu includes options that allow you to display records for the previous, current or next week.

Previous, current or next week is a calendar period from Monday till Sunday. It is not a 7-day period starting from the current day. For example, if today is Wednesday, the next week is the period from next Monday till Sunday, not the following 7 days from the current day.

Month

The menu includes options that allow you to display records for the previous, current or next month. You can also use a specific month as a filter value.

To set a specific month as a filter value, click [Month] > [Month <?>] and select the needed month.

Previous, current or next month is a calendar period. For example, if the previous month was December, then when you select the “Previous month” period, the records for the period from December, 1st till December, 31st will be displayed.

Quarter

The menu includes commands that enable you to view recordsf for the previous, current or next quarter.

The previous, current or next quarter is a 3-month period: the 1st quarter includes the 1st, 2nd and 3rd months of the year (January, February, March), the 2nd quarter includes the next three months (April, May, June) and so on. For example, if it's August, the next quarter is the period that includes October, November and December (the 4th quarter).

Half-year

The menu includes options that allow you to display records for the previous, current or next half-year.

Previous, current or next half-year is a 6-month period: the period from January to June is considered the 1st half-year. The 2nd half-year is the period from the July to December. For example, if it's August (included in the 2nd half-year), then the next half-year is the time period from January to June of the next year.

Year

The menu includes options that allow you to display records for the previous, current or next year. You can also use a specific year as a filter value.

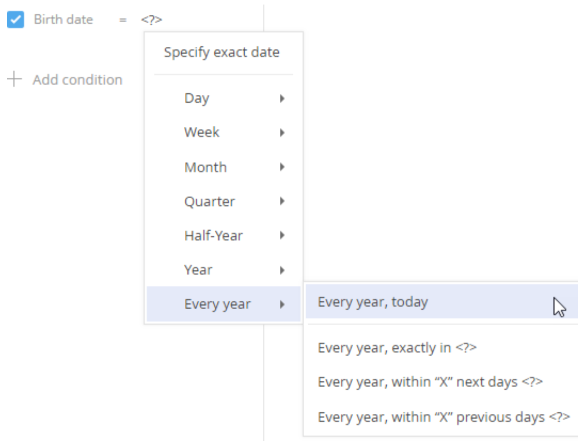
Previous, current and next year is a calendar period. For example, if it's August, 2014, the next year is the period from January to December of 2015 inclusive. It's not a 12-month period starting from August, 2014.

Filter by annual events

The filter takes into account only the day and month of the filtered dates. This filter can be used to track events that repeat each year, such as holidays or noteworthy events of contacts.

Annual event macros are available in the <?> link menu of the filter condition (Fig. 29).

Fig. 29 Filter by annual events.



The menu consists of the following options:

- Every year, today. Displays a list of records whose date matches the current date not counting the year. I.e., contact's birthday is today.
- Every year, exactly in <?>. Displays a list of records whose date will come after a specified number of days not counting the year. I.e., contact's birthday is exactly in 5 days.
- Every year, within "X" next days <?>. Displays a list of records which date falls on one of the next days not counting the year. I.e., contact's birthday is within 5 days or less.
- Every year, within "X" previous days <?>. Displays a list of records which date falls on one of the previous days not counting the year. I.e., contact's birthday was 5 days ago or less.

SEE ALSO

- Applying an advanced filter by object columns
- Applying an advanced filter by connected object column
- Quick filter
- Standard filter

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- Creatio interface overview

Folders

Use folders to organize and segment your records. Setting up folders will assist you to easily find the necessary records among multiple data. For example, in the [Contacts] section, you can create a "New customers" folder that will filter records by the contact type ("Customer") and the record date ("Current month"). If you select a folder within a section, only the records that match folder filter conditions will be displayed. You can add your most frequently used folders in favorites.

A section record can be included into one or more folders.

Working with folders

Two types of folders are used in Creatio:

- Static folders (indicated with the icon) include only those section records that have been added to these folders manually or via convertation from the dynamic folder. "VIP" or "Black list" are the examples of static folders, because the decision to include certain customers into such folders is made for each record individually.

  Static folders can be used to group other folders. For example, static folder "By type" in the [Accounts] section can contain subordinate dynamic folders "Partners", "Customers" or "Competitors".

- Dynamic folders (indicated with the icon) contain only those section records that match the specified filter conditions. For example, you can create a dynamic folder "New customers" for records filtered by the date they were created on.

  ATTENTION

  Static folders are only available in some Creatio sections.

Records cannot be manually included in or excluded from dynamic folders. A record will be displayed in a dynamic folder only if it matches the folder filter. If the record no longer meets the folder filter, it will automatically be excluded from that folder.

For example, your "Competitors" folder filters the records by the account type ("Competitors"). Thus, the companies for which the "Competitor" value is specified will be automatically included in the folder. If the company type changes, the record will automatically be excluded from that folder.

The folders can have a tree-like structure and contain both parent and subordinate folders. The folder structure does not affect the contents of the folders. For example, if a record is included in one of the subordinate folders, it does not necessarily mean it is included in the parent folder.

You can create the necessary folder structure and specify your own rules for the folder contents. The procedures for creating static and dynamic folders are different. Deleting a folder will not result in deleting the records contained in it.

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How to create a static folder

Static folders are only available in some Creatio sections.

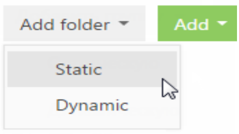
You can create a static folder in the following ways:

- add a folder and fill it with records manually.
- Copy the folder content from a dynamic folder.

To add a static folder manually:

1. In the [Filter] menu, select the [Show folders] option. The folder area will be displayed.
2. In the [Add folder] menu, select the [Static] command (Fig. 1).

Fig. 1 Creating a static folder



NOTE

The [Add folder] button menu is only displayed for sections where you can create a static folder.

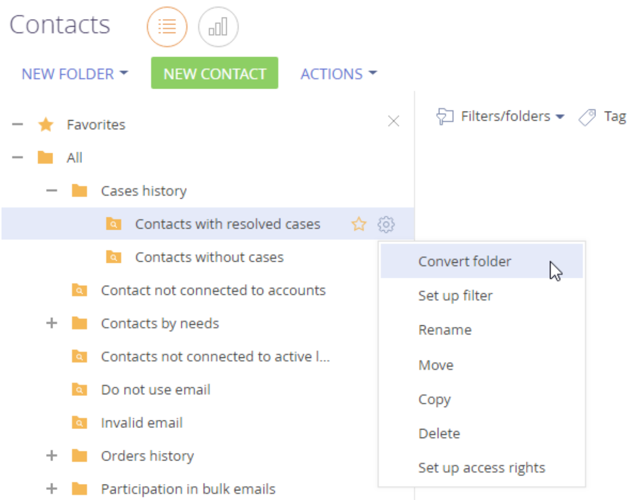
3. Enter the folder name and click the [OK] button in the opened page.

As a result, the new static folder will be added in the section. You need to populate this folder manually. Read more >>>

To create a static folder from a dynamic folder:

1. In the [Filter] menu, select the [Show folders] option.
2. In the folder tree, select a dynamic folder which content you need to include in a static folder.
3. From the menu, select the [Convert folder] option (Fig. 2).

Fig. 2 Converting the dynamic folder to static



4. Enter the new folder name and click the [OK] button in the opened page.

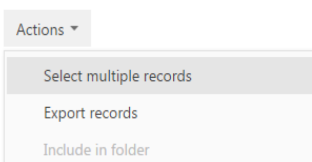
As a result, the static folder will appear as a subfolder of the selected dynamic folder. The content of the folders will be identical at the moment of conversion. Further, you can manually include or exclude records in the folder.

NOTE
The [Convert folder] action does not affect the content of the original dynamic folder.

Adding records to a static folder

1. In the [Actions] menu, select the [Select multiple records] command (Fig. 3).

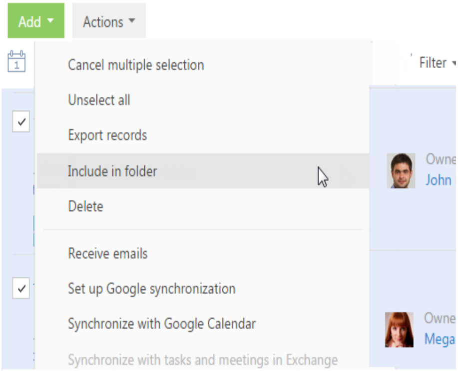
Fig. 3 Switching to the multiple selection mode



NOTE
There is no need to switch to the multiple selection mode if you want to add a single record to the static folder.

2. Check the boxes next to the records you want to include in the static folder.
3. In the [Actions] menu, select the [Include in folder] command (Fig. 4).

Fig. 4 Adding a record to a static folder



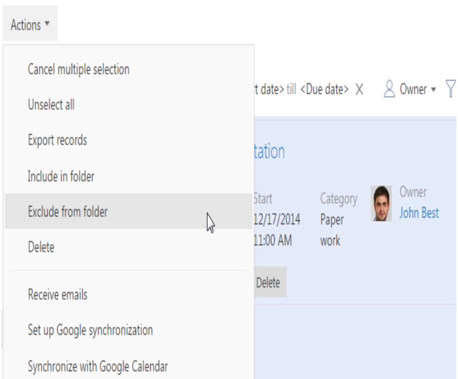
4. In the opened window, select the needed folder and click the [Select] button (or double-click the needed folder).

As a result, records selected in the section will be included in this static folder.

Excluding records from a static folder

1. In the section [Filter] menu, select the [Show folders] command.
2. Select a static folder whose records must be excluded.
3. In the [Actions] menu, select the [Select multiple records] command.
4. Select the records that must be excluded from the selected folder.
5. In the [Actions] menu, select the [Exclude from folder] command (Fig. 5).

Fig. 5 Excluding records from the selected static folder



As a result, the selected records will be excluded from the selected static folder.

SEE ALSO

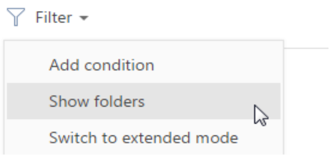
- How to create a dynamic folder
- How to manage favorite folders

How to create a dynamic folder

To create a dynamic folder with the corresponding filter conditions: To do this:

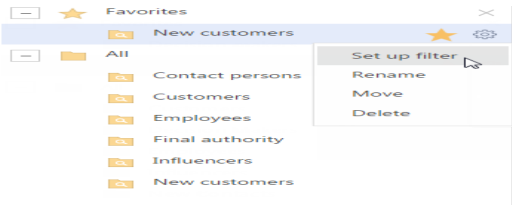
1. In the [Filter] menu, select the [Show folders] command (Fig. 6).

   Fig. 6 [Show folders] command

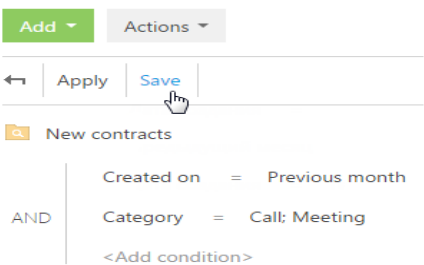
2. Click the [Add folder] button. In the sections where the static folders are available, select the [Dynamic] command in the button menu.
3. Populate the opened window with the folder name and click [OK] – you will see a filter condition setup area appear (Fig. 7).

   Fig. 7 Folder filter setup area

4. Set the needed filter conditions and click the [Save] button (Fig. 8).

   Fig. 8 Saving a folder filter

NOTE

Filter condition setup is identical to the advanced filter setup. Read more >>>

As a result, all the records that meet the filter conditions appear automatically in the section list when you select the folder.

NOTE

You can also save an advanced filter as a dynamic folder. To do this, click the [Save as] button in the filter area.

NOTE

You can copy the necessary folder if you need to create a folder whose filter conditions are partially identical to one of the existing folders. You can also copy the original folder access rights if necessary. To do this, select [Copy] in the button menu of the necessary folder.

SEE ALSO

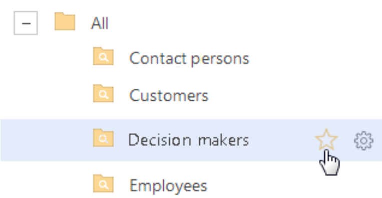
- How to create a static folder
- How to manage favorite folders

How to manage favorite folders

You can add the most frequently used folders to the list of favorites.Both static and dynamic folders can be added to the list.

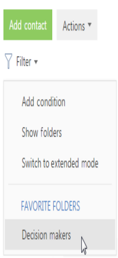
To add a folder to favorites, select it and click the button (Fig. 9).

Fig. 9 Adding a folder to favorites



All added folders are displayed as subordinate to the “Favorite” folder in the folder area. In addition, the favorite folders become available in the [Filter] menu (Fig. 10).

Fig. 10 Selecting the favorite folder in the [Filter] menu



SEE ALSO

- How to create a static folder
- How to create a dynamic folder

VIDEO TUTORIALS

- Creatio interface overview

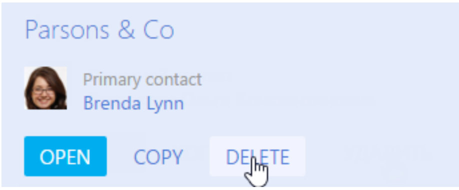
How to delete records

When deleting a Creatio record, you can opt to delete or save its connected records.

How to delete a record from the drop-down list

To delete a record from the drop-down list, select it and press [Delete] (Fig. 1):

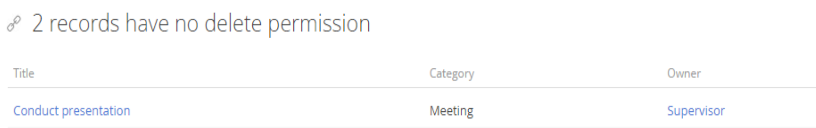
Fig. 1 Deleting a record



Before you can delete a record, the system asks for confirmation. Once you've given your confirmation, the record will be deleted if:

- this record is not connected to other objects in the system.
- this record is not prohibited from being deleted (Fig. 2).

Fig. 2 Insufficient rights to delete a record



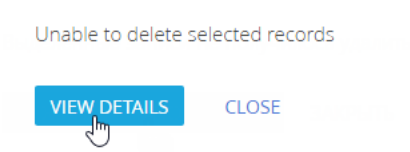
NOTE

To obtain rights to delete records, please contact your system administrator.

How to delete a record connected to other objects in the system

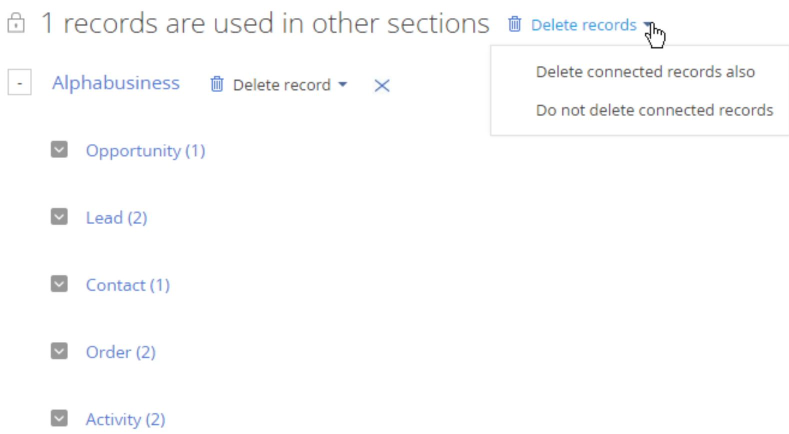
When you try to delete a record connected to other records, a notification appears and you can view the list of connected objects, by clicking [See more] (Fig. 3).

Fig. 3 Viewing objects connected to a record



The opened page displays objects that the record is connected to. Information on the record and connected objects is conveniently grouped in the sections in which they are contained (Fig. 4).

Fig. 4 Deleting a record connected to other sections



To view detailed information on the objects connected to the record, click the button to the left of the section in which they are contained.

After analyzing the drop-down list, you can:

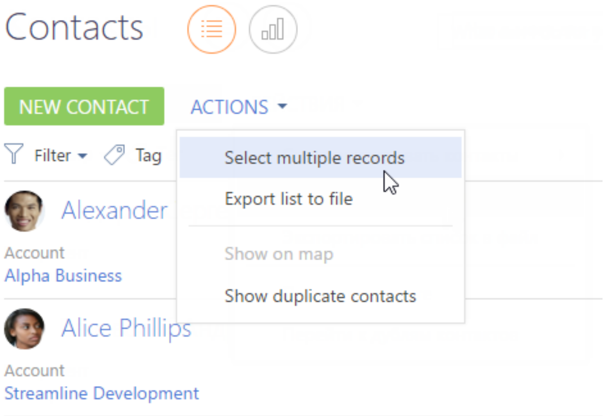
- Remove the record from the list and leave it in the system. To do this, click the button to the right of the record name.
- Delete the along record with all the connected objects. To do this, click [Delete records] and then click [Delete connected records]. The connected objects can have their own connections that need to be handled separately.
- Delete a record and leave the connected objects in the system. To do this, select the [Do not delete connected records] command.

How to delete multiple records

To delete multiple records:

1. In the [Actions] button menu, click [Select multiple records] (Fig. 5).

Fig. 5 Selecting multiple records to delete



2. Select the records you wish to delete.
3. In the [Actions] button menu click [Delete].

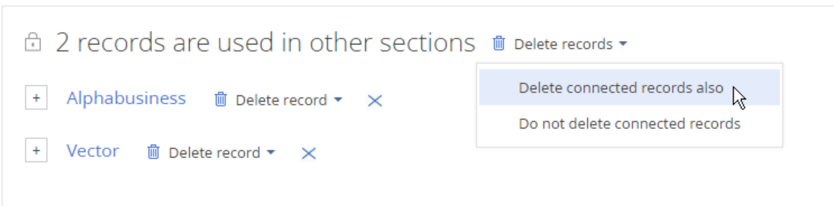
NOTE

The number of records selected for deletion is displayed in brackets on the [Actions] button.

A notification displays the number of successfully deleted records and the records not deleted due to their connections to other objects.

If you need to delete all records from the drop-down list and their connections, click the [Delete records] button and select the [Delete connected records] command (Fig. 6).

Fig. 6 Deleting multiple records connected to other objects



If you need to delete records from the drop-down list selectively, and examine the list of objects connected to those records. Read more >>>

SEE ALSO

- Record lists
- Finding and merging duplicates
- Filters
- Folders

Attachments and notes

To work with additional information in Creatio, use the Attachments and notes tab. The tab contains the [Attachments] and [Notes] details.

Use these details to store external files, links to web resources and extended descriptions of the record. The tab is available in all system sections. For example, in the [Contacts] section, you can add documents that represent the history of your interactions with the contact; in the [Activities] section, add files that have been prepared within a task.

How to use the views of the [Attachments] detail

The [Attachments] detail has the following views:

– the tile view. In this view, the files and links added to the detail are displayed as icons. The icon appearance varies depending on the file extension.

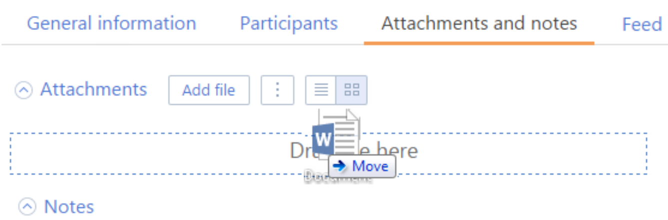
> **NOTE**
> The icons for different file types can be set up in the [File extension] lookup. For the files whose types are undefined in the lookup, a default icon is used.

– the list view. In this view, the files and links added to the detail are displayed as a list of records. Use this view to delete a file or edit a link.

How to add a file

1. Open the needed record, for example, the activity page. Open the [Attachments and notes] tab.
2. On the [Attachments] detail, click the [Add file] button. You can also drag the file and drop it into the detail (Fig. 1).

   Fig. 1 Dragging a file into the [Attachments] detail

   As a result, the selected file will be saved on the detail.

How to add and edit a link

1. On the [Attachments] detail, in the menu, select the [Add link] option.
2. On the displayed page, enter the link address in the [Name] field and save the page.

   As a result, the link will be added to the detail.
3. If you need to edit the link, in the list view, click on it and select the [Change properties] option from the menu.

How to add a link to a knowledge base article

1. On the [Attachments] detail, select the [Add link to knowledge base] option from the ⋮ menu.
2. In the displayed window, select the needed knowledge base article and click the [Select] button.

   As a result, the selected link to the knowledge base article will be added to the detail.

How to download a file

To download the file that has been added to the [Attachments] detail, click its title. Specify the location to save the file to.

How to delete a file from the [Attachments] detail.

1. Open the list view by clicking the ☰ button.
2. Select the file, and then select the [Delete] option from the ⋮ menu.

How to work with notes

The [Notes] detail is used to store additional text information about the section record. On the detail, you can edit and format the text of the notes using the built-in formatting tools. You can also add an image or an external link to the detail.

If you switch to another tab of the page, the information on the [Notes] detail will be saved. To save the notes, save the record.

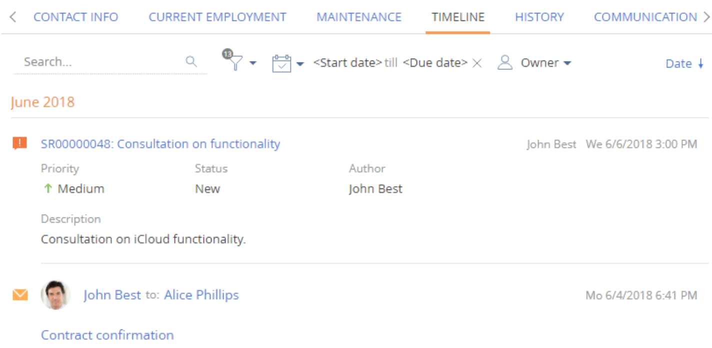
Timeline

Use timeline to get chronological insights of your customer history. The Timeline tab (Fig. 1) provides quick access to information about tasks, communications, additional materials and other linked objects in Creatio.

This tab is available by default in the following sections:

- [Contacts]
- [Accounts]
- [Leads]
- [Opportunities]
- [Cases].

Fig. 1 Example of the [Timeline] tab



NOTE

You can add the [Timeline] tab to other Creatio sections using developer tools. Read more >>>

The timeline displays linked records in chronological order. The following types of records are displayed on the timeline:

- tasks
- calls
- emails
- feed messages
- files
- links
- contracts
- documents
- projects.

In some sections, the timeline displays additional types of records. The timeline content is determined by the Creatio product and section specifics. For example, in bank products the history of the customer's cases, invoices and cards is also displayed in the timeline.

Timeline controls:

– apply filter by date

– apply filter by record type

The records on the [Timeline] tab are displayed as a list. Click a record title or the button to open the connected record.

Depending on the text volume, the list records may be displayed in a "collapsed" view mode. You can expand a collapsed record by clicking the [Show more] button.

The timeline records are grouped by months. By default, newer records are displayed first. You can sort records by date in ascending or descending order using the [Date] ↓ or the [Date] ↑ buttons.

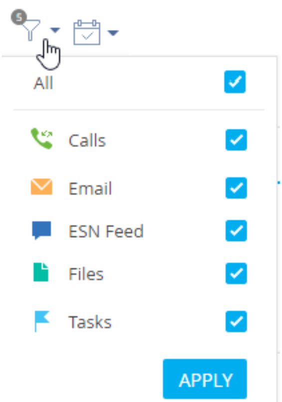
Filters

The following quick filters are available in the timeline:

- by date
- by assignee
- by linked object type

The number over the pipeline icon indicates the number of timeline record types currently selected. (Fig. 2).

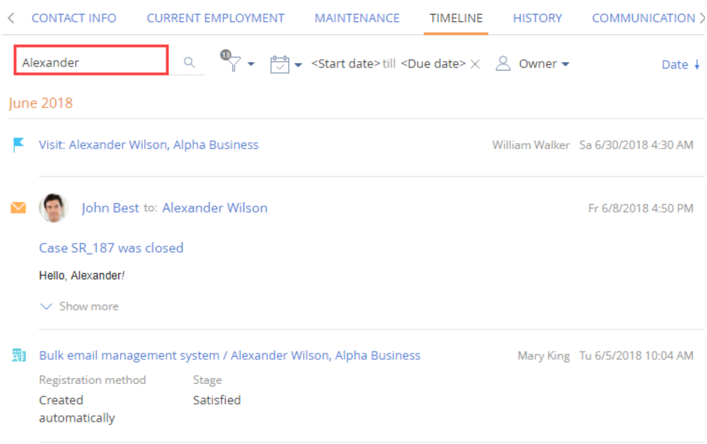
Fig. 2 Applying filter by timeline record type



Search

Use the search string on the [Timeline] tab to find timeline records quickly. The search string looks up for feed messages and email texts (Fig. 3).

Fig. 3 Search by the key word



Refreshing or closing the page will reset the timeline search.

SEE ALSO

- Record pages
- Attachments and notes

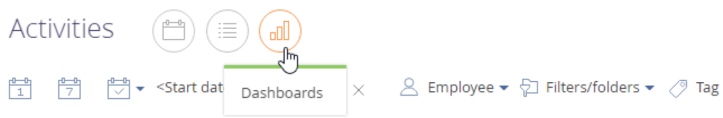
Dashboards

Use Creatio dashboards to analyze section statistics. There are several ways to visualize statistics in the system, such as charts, calculated indicators, special lists. For example, you can track the current status of the employees' tasks, display various ratings, etc.

Dashboards are available:

- In the Dashboards view of Creatio sections (Fig. 1). This view displays the general statistics for the section records (taking the current filters into account), such as, for example, top 5 overdue activities of current owner in the [Activities] section.

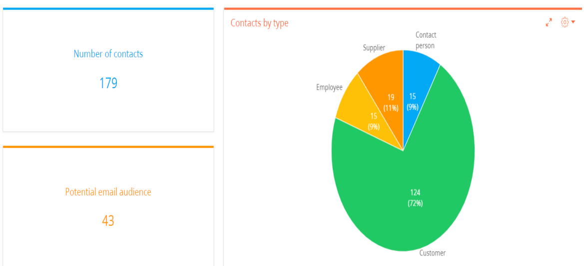
  Fig. 1 Opening the [Dashboards] view in the [Activities] section

- On record pages. Here you can configure displaying of any analytical data of Creatio records, such as the number of communications with a contact for current month.
- In the [Dashboards] section. The section displays system-wide analytics based on the data from different Creatio sections. For example, you can view the list of best employees of the current month.

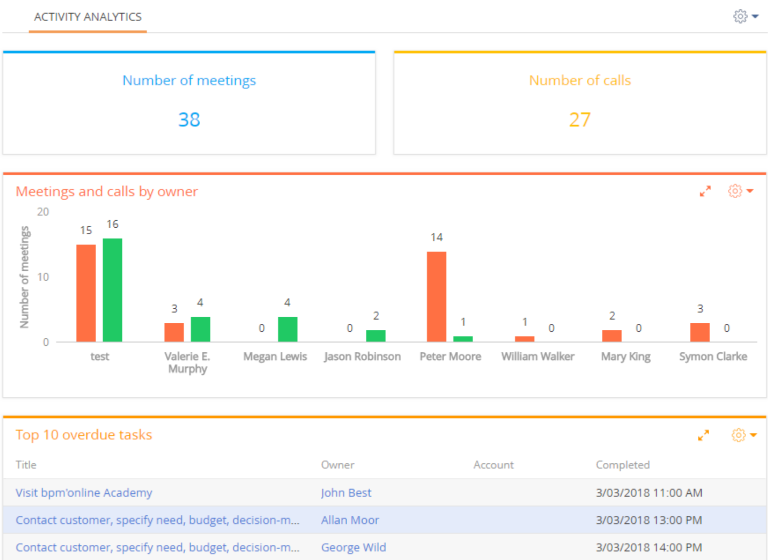
Analytical data is visualized via special dashboard tiles, each of which is a separate chart, list or metric (Fig. 2).

Fig. 2 Examples of dashboard tiles



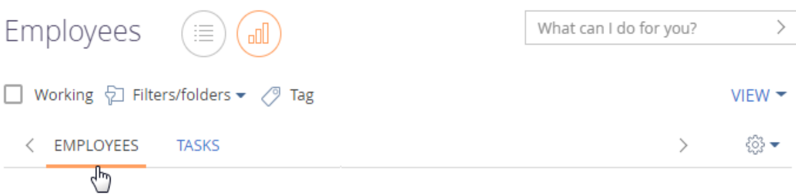
Dashboard tiles are placed on dashboard tabs (Fig. 3).

Fig. 3 An example of a dashboard tab



The dashboard tiles, their titles and contents are fully customizable. You can add custom dashboard tabs and populate them with dashboard tiles (Fig. 4). For example, the [Employees] tab can display statistics on the efficiency of your employees, and the [Tasks] tab can show information about employees' activities.

Fig. 4 Selecting a dashboard tab



NOTE

Detailed instructions on setting up dashboard tabs and dashboard tiles are available in separate chapters.

CONTENTS

VIDEO TUTORIALS

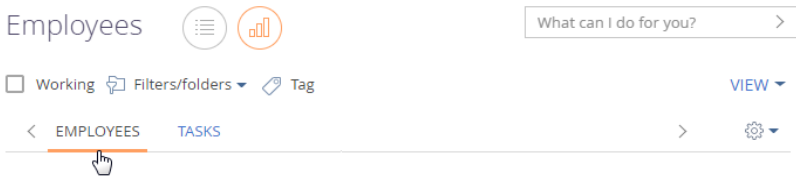
- Analytics in Creatio. Working with dashboards

ACCELERATE

Dashboard tabs

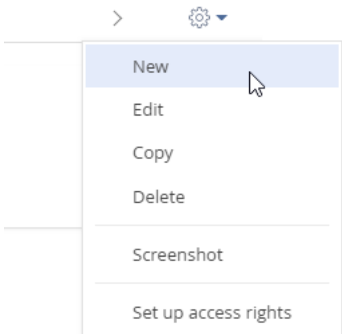
You can access dashboard tabs (Fig. 5) in the [Dashboards] view (available in all standard sections), or in the [Dashboards] section.

Fig. 5 Dashboard tabs in the [Activities] section



To create a new dashboard tab, click the button and select [New] (Fig. 6).

Fig. 6 Adding a new dashboard

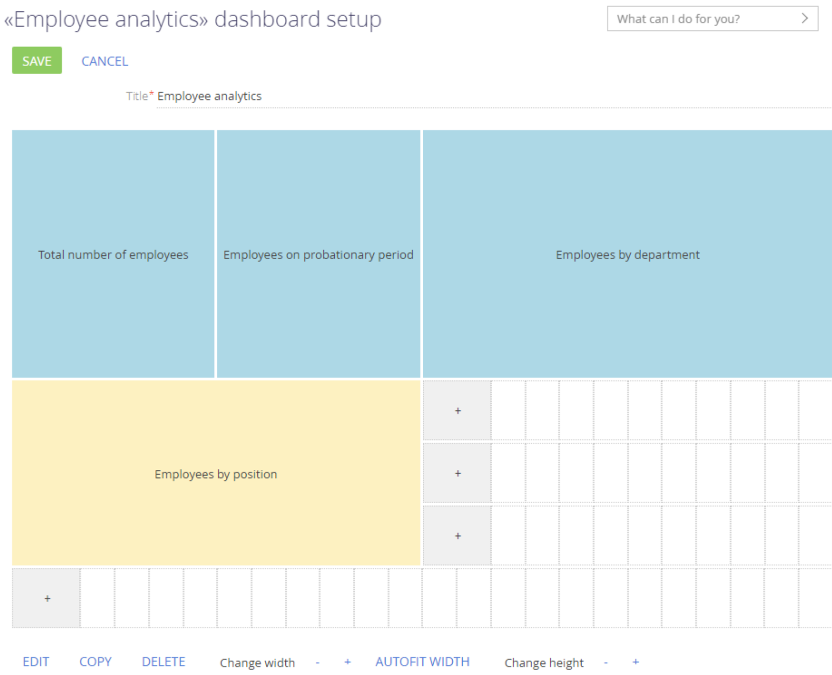


NOTE

If your company employees use different Creatio localizations, make sure you set up the dashboards in English (the “base”) localization to enable common access. A dashboard configured in any other language will not be available for users who work with other Creatio localizations (“cultures”).

To edit, copy, or delete a dashboard, open it and select the corresponding command in the tab area menu. The dashboard setup page (Fig. 7) will open. The page contains the [Title] field and the dashboard tile setup area.

Fig. 7 Dashboard setup page with examples of adding dashboard tiles



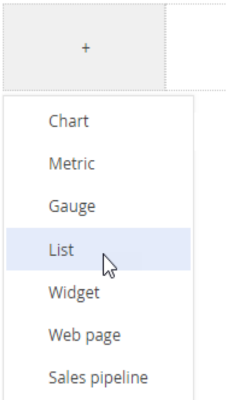
Dashboard setup

The dashboard setup page (Fig. 7) enables you to:

- add new dashboard tiles
- edit the existing tile settings
- copy the existing tile
- delete a tile from the dashboard

Click the [+] button of the dashboard setup area to add a new tile to a dashboard. Select the type of the tile in the button menu (Fig. 8).

Fig. 8 Adding a new dashboard tile



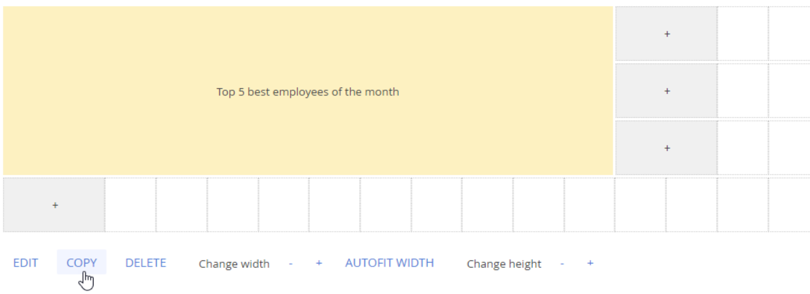
As a result, the corresponding dashboard tile setup page will open. Different settings needed for different dashboard tiles are covered in subsequent articles.

NOTE

If you need to add a dashboard tile whose settings mostly repeat those of an existing one, you can copy the existing tile and change its settings.

To edit, copy, or delete a dashboard tile, select it and click the [Edit]/[Copy/[Delete]] button below the tile setup area (Fig. 9).

Fig. 9 Copying an existing dashboard tile



NOTE

You can also double click a dashboard tile to edit it.

ATTENTION

To save the changes after adding or editing a dashboard tile, first save the dashboard tile itself, and then save the dashboard setup page that contains the tile.

SEE ALSO

- Dashboard setup

- Dashboard tiles

VIDEO TUTORIALS

- Analytics in Creatio. Working with dashboards

Dashboard tiles

The following types of dashboard tiles are available in Creatio:

- Chart displays information on dynamics and/or percentages, such as monthly sales dynamics or distribution of customers by industry. Read more >>>
- Metric displays a single numeric value, for example, the total number of current employees. Read more >>>
- List displays a list of Creatio records with specific settings, such as displayed columns, filter, sorting and record limit. For example, the list can display top 3 efficient employees of your company. Read more >>>
- Pivot table is a view option provided for the dashboards of the "List" type. It displays data as a table with grouping fields in its rows and columns. The intersected cells display the calculated summary data. Read more >>>
- Widget enables to apply additional widgets set up by a developer, such as exchange rate or weather widgets. Read more >>>
- Gauge displays a single numeric value (much like "Metric" tiles) on a custom scale, which shows whether the value is "good" (green), "average" (yellow) or "bad" (red). This type of tile is great for displaying KPIs, such as average duration of employee's calls, number of uncompleted activities, etc. Read more >>>
- Web page displays a web page as a dashboard tile. For example, you can add a search engine page, an online currency converter or your corporate website page to a dashboard tab. Read more >>>
- Sales pipeline helps to analyze transition of Creatio opportunity records through stages (i.e. how many opportunities have moved from the "Qualification" to the "Presentation" stage, etc.) during a specific period of time. This dashboard tile is available in Creatio products that contain the [Opportunities] section. Read more >>>
- Full pipeline helps to analyze the complete life cycle of a customer need in Creatio by tracking both the lead and opportunity stages based on the lead conversion through stages within one pipeline (i.e. how many customer needs have gone all the way from the lead "Qualification" stage to the "Closed won" opportunity stage) during a specific period of time. This dashboard tile is available in Creatio products that contain the [Opportunities] section. Read more >>>

NOTE

If your company employees use different Creatio localizations, make sure you set up the dashboards in English (the "base") localization to enable common access. A dashboard configured in any other language will not be available for users who work with other Creatio localizations ("cultures").

CONTENTS

- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile

- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

SEE ALSO

- Dashboard tabs

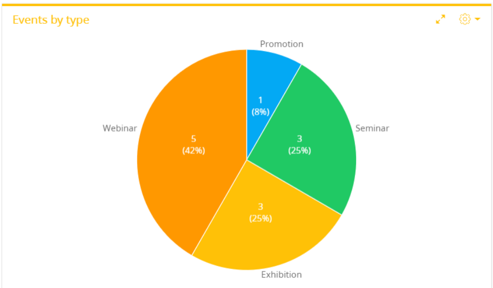
VIDEO TUTORIALS

- Analytics in Creatio. Working with dashboards

The "Chart" dashboard tile

The "Chart" dashboard component displays system summary information. For example, you can use a chart dashboard to display distribution of events by types (Fig. 10).

Fig. 10 The "Chart" dashboard tile



You can change the data display mode of an existing chart tile.

- Diagram mode – spline, line, pie, etc. Read more >>>
- List mode – record list used as a basis for building a chart. Read more >>>

Use the toolbar buttons at the top-right of the dashboard tile to change the chart type or switch to the list mode.

- – opens dashboard tile menu. The menu items vary depending on the dashboard tile type.
- – opens a chart in the full screen mode. Click the button again to go back to original size.

  NOTE

  You can also close a maximized dashboard by pressing the Essc key on the keyboard.

- – switch back from the list mode to the diagram mode. For instance, you can get back from the list type to the chart type view mode.

You can "drill down" a chart element (for example, a pie chart section or a bar chart column) and display its data as a separate chart or list. To do this, click the necessary chart element. Read more >>>

NOTE

Changes of the chart view properties made within a dashboard tile (for example, switching to a list view mode or changing the chart type) will not be saved when reloading the page. Creatio will only save the changes made in the dashboard settings.

To edit the chart, double click it on the dashboard setup page. Read more >>>

CONTENTS

SEE ALSO

- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

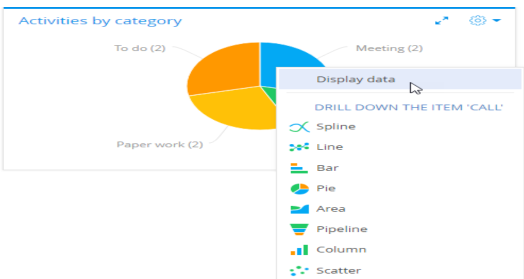
Diagram mode

The diagram mode is the default mode of the "Chart" dashboard tile.

In this mode, the button menu contains additional menu items:

- [Display data] – switches the chart to the list view mode.
- [Change chart type] – select one of the menu items to display the data using another chart type (Fig. 11).

Fig. 11 Selecting the chart type in the diagram mode



The diagram can display up to 50 values by default. If you have more values, an icon ( ) in the left top corner of the dashboard notifies you about exceeding the data volume for display. You can click this icon to display all values.

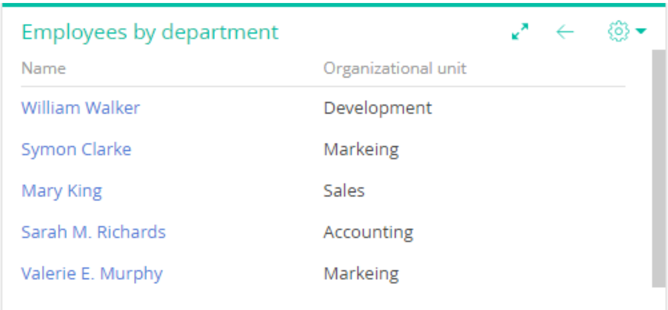
SEE ALSO

- List mode
- Viewing chart element details
- Setting up the “Chart” dashboard tile

List mode

A “Chart” dashboard tile can be displayed as a list (Fig. 12).

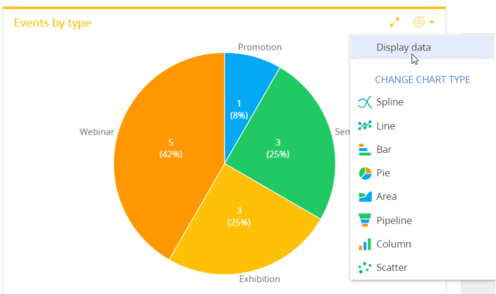
Fig. 12 The “Chart” dashboard tile list mode



To switch to the list mode, use the [Display data] item from the menu or from the chart element menu.

- To display all chart data in the list mode, click button and select [Display data].
- To display the data of a specific chart element (a section or a column) in the list mode, click the element and select [Display data] in the opened menu (Fig. 13).

Fig. 13 Switching to the list mode of the “Promotion” element.

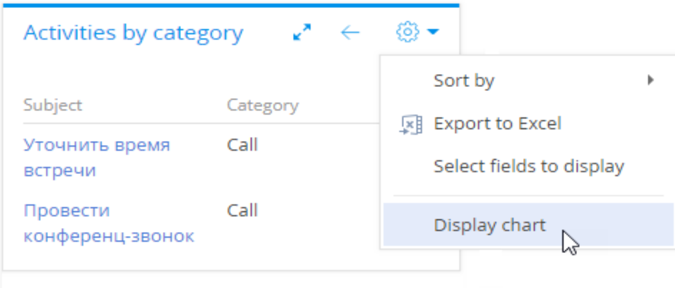


In the list mode, you can:

- Set up the columns. Read more >>>
- Sot data by the displayed columns.
- Export list data to Excel Read more >>>

To switch back to the chart mode, use the [Display chart] command (Fig. 14) or click the ← button.

Fig. 14 Returning to the chart mode



SEE ALSO

- Diagram mode
- Viewing chart element details
- Setting up the “Chart” dashboard tile

Viewing chart element details

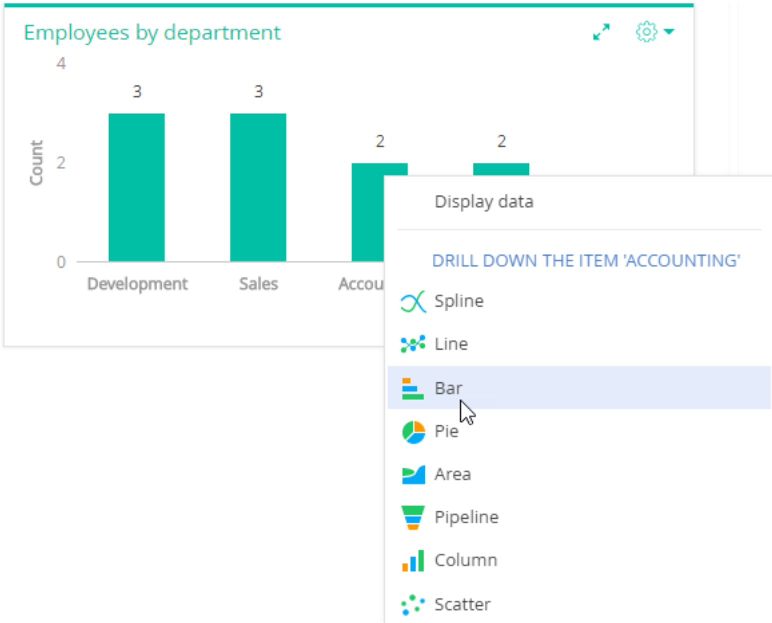
You can bring up additional information about any chart element, such as a column, an area, or a segment. For example, when analyzing a chart, which displays employees by departments, you can “drill down” the R&D department and display the number of positions in the R&D department.

Any element of the new chart can be “drilled down” as well. For example, you can display how developers are grouped by their role in decision-making.

To “drill down” a chart element:

1. Click the needed chart element.
2. Select a chart type in the menu (Fig. 15).

Fig. 15 The chart menu. Changing the chart view



3. In the opened window, specify the column the chart should be based on, for example, the "Job" column of the current object.

   As a result, the dashboard tile will display how the employees of the R&D department are grouped by positions.

   Click the ← button of the dashboard tile to return to the previous chart.

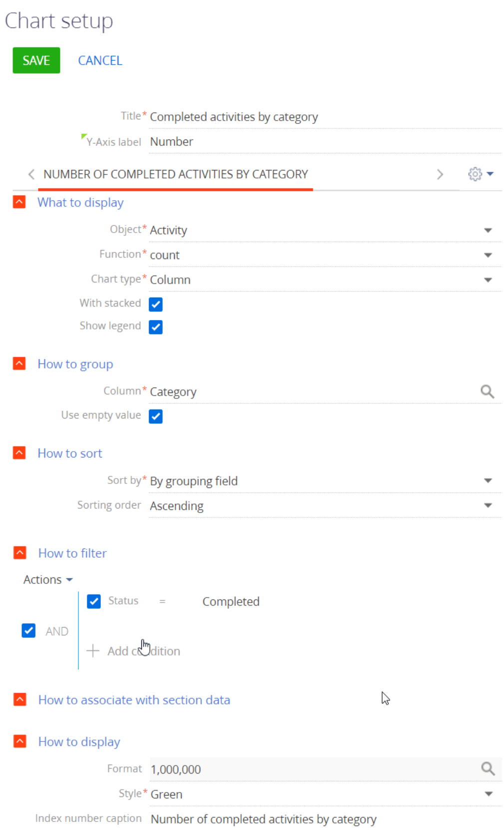
SEE ALSO

- Diagram mode
- List mode
- Setting up the "Chart" dashboard tile

Setting up the "Chart" dashboard tile

A chart setup page (Fig. 16) will open when you add or edit a chart on a dashboard panel. Here you can set up the primary chart parameters: – data, title, filters and display conditions.

Fig. 16 Chart setup page.



[Title] – the chart name that will be displayed on the dashboard tile.

[X-axis label] and [Y-axis label] – the labels of X and Y-axes that will be displayed on the chart. These fields are only displayed for the charts that contain axes ("spline", "line", "area chart" and "scatter chart").

What to display

[Object] – Creatio object (section, detail or lookup) whose records you want to use for building the chart. For example, to calculate the average call duration (calls are activities of the "Call" category), select the "Activity" object.

[Function] – the type of value that should be displayed on the chart. The following chart functions are available:

- "count" – the value is used to build a chart by the number of records in the selected Creatio object. For example, you can calculate the number of activities of each type.

- “maximum”, “minimum”, and “average” – the values calculated by numeric column (or a date column with the exception of the “average” function) in the specified object. For example, you can calculate the average duration of employee activities.
- “sum” – the sum of values of the specified numeric column of the selected object. For example, you can calculate the employee's total activity duration for a week.

[Column] – the column to be used in the calculation. The list includes numeric columns and date columns. For example, specify the “Duration (minutes)” value to calculate the average call duration by managers (Fig. 17). This field is not displayed if the “count” value is selected in the [Function] field.

[Chart type] – the type of the chart: “Bar chart”, “Pie chart”, etc.

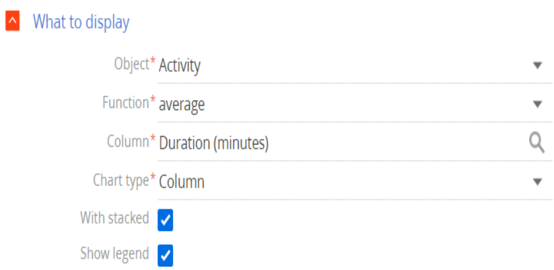
[With stacked] – select the checkbox to display the chart with total sums of certain “stacked” values. A “with stacked” chart displays the result of calculations as a total sum of separate data types represented by the chart columns. The size of each column depends on the value of a corresponding data element. This chart type may be useful if you need to compare both, the total sums and separate values of data. For example, the chart can simultaneously display the opportunity amount at each stage by different employees or the contribution of each stage in the total sum.

The [With stacked] checkbox displays for the “Column” and “Bar” chart types. If you set up a chart with several series, the “With stacked” checkbox will apply to all the series. If you select this checkbox for one series of the chart, it will automatically be selected for all the series of the chart with the “Column” and “Bar” types. Similarly, if you deselect it in one of the series, it will be automatically deselected for all the chart series.

[Show legend] – select the checkbox to display the legend for the chart. The legend displays the chart color and the text entered in the [Index number caption] field at the top of the configured dashboard. If the [Index number caption] field is not populated, the legend displays the name of the object that was used to configure the dashboard.

The [Show legend] checkbox displays for the following chart types: “Spline,” “Line,” “Area,” “Scatter,” “Column,” or “Bar.”

Fig. 17 Setting up the [What to display] field group for a chart

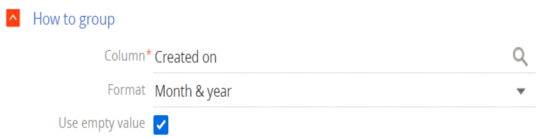


How to group

[Column] – the column to group the chart values by (each value in this column will be represented as a separate chart element – bar, sector, etc.). For example, to calculate the number of new activities within a specific time period, specify the “Created on” value. You can group data by any column of the selected object.

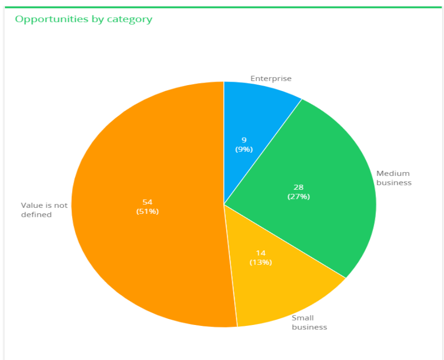
[Format] – the format of dates that will be displayed on the chart, for example, “Week” or “Month & Year”. This field is displayed if the date value is selected in the [Column] field in the [How to group] block. For example, to see the number of new activities by months, specify “Month and year” in the [Format] field and “Created on” in the [Column] field.

Fig. 18 Setting up the [How to group] field group for a chart



[Use empty value] – if the checkbox is selected, the chart will include the records, whose grouping column is not populated (Fig. 19).

Fig. 19 “Opportunities by category” chart including empty values

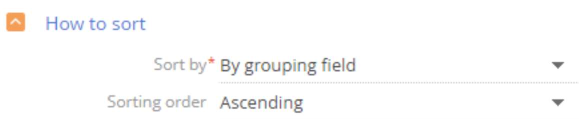


How to sort

[Sort by] – the value to sort chart areas by. For example, the values in the “Activities by owner” chart are grouped by the [Owner] field, with each chart block representing a certain number of activities. Select “By grouping field” to sort chart areas alphabetically (in this case by the [Owner] field) or select “By selection result” to sort chart areas by number of activities.

[Sorting order] – the sorting order for the chart areas (by the values selected in the [Sort by] field) in ascending or descending order (Fig. 20).

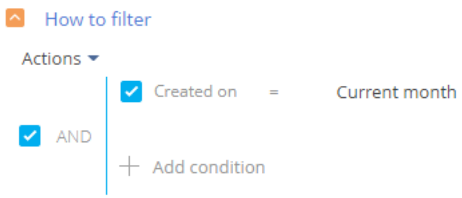
Fig. 20 Setting up the [How to sort] field group for a chart



How to filter

Use the standard filter area to filter the chart data. For example, to create a chart that displays how contacts were added within the specified time period, specify the needed period in the filter conditions, for example, “Created on = Current month” (Fig. 21).

Fig. 21 Setting up the [How to filter] field group for a chart



The filter becomes available when the [Object] field is populated.

NOTE

You can find more information about the advanced filter in a separate article.

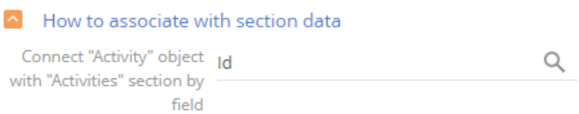
How to associate with section data

[Connect ... object with ... section by field] – select a chart object column in this field if you want to display the data according to the section filters. If you leave this field unpopulated, the applied section filters will not affect the chart data. The field will be populated automatically if you configure dashboards for the object of the current section. The field is displayed if the [Object] field is populated and is not available at all if you configure charts in the [Dashboards] section.

You can connect a chart to section records in a number of ways.

1. The chart is built based on the records of the current section (the chart object corresponds to the section object). For example, when creating a chart in the [Activities] section, you select “Activity” in the [Object] field. In this case, the connection field is populated automatically with the [Id] column.
   a. If you select the [Id] column in the field (Fig. 22), the chart will be built based on the records that correspond to the filter conditions specified in the section. For example, if you apply a filter to the [Activities] section list so that only completed activities are shown, the “Activities by owner” chart will display only the information related to the completed activities.

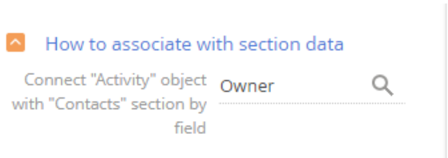
Fig. 22 Connecting a chart to a section by the “Id” field



   b. If you clear the connection field, the chart will display the information for all section records, regardless of the set filter conditions.

2. The chart is based on the records from another section (the chart object is different from the section object). For example, there is an "Activities by owner" chart added to the [Contacts] section to display number of activities by owner. The chart object columns available for selection in the [Connect...] field are filtered according to the current section object (in this case, the available columns will be [Contact], [Owner], [Created by], etc.).
    a. If you populate the [Connect...] field (Fig. 23), the chart will use only records that are connected to the section records via the specified column. Then, if you set a filter in the [Contacts] section, the chart will only display the information related to the activities whose owners are displayed in the section. Or you can select the "Author" column – in this case, the chart will only display the information related to the activities added by the specified contacts.

Fig. 23 Connecting a chart to a section by the "Owner" field



    b. If you leave the connection field unpopulated, the chart will display the information for all records of the chart object, regardless of the section filter conditions.
    c. The chart data may not be related to the section data at all (in this case, the [Connect...] field should also be left empty). For example, you can add the "Activities by owner" chart to the [Knowledge base] section.

How to display

[Format]] – the display format for the metric. The display format is set up in a separate window. To open the window, click . Specify the accuracy of the fractional part of the numeric indicator, i.e. the number of digits after decimal point. For example, set the "1" value to display the metric number with one digit after decimal point. To display the digit without the fractional part, set the number of digits to "0".

If the chart has more than one series, you can specify the rounding parameters for each chart series separately.

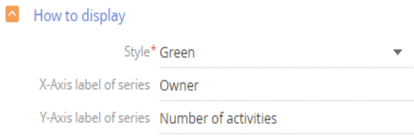
[Style] – select the color of the dashboard tile title and chart elements.

[X-Axis label], [У-Axis label] – you can specify labels for X- and Y-Axes for each chart series. These fields (Fig. 24) are only displayed for the charts that contain axes ("spline," "line," "area chart," and "scatter chart").

[Index number caption] – you can specify the text that will display at the top of the dashboard for each chart series.

The field displays for the following chart types: "Column," "Bar," "Pie," and "Pipeline."

Fig. 24 Example of setting up the [How to display] group of fields for the “Spline,” “Line,” “Area,” and “Scatter” chart types



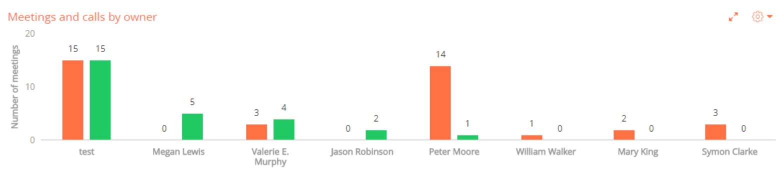
NOTE

If you populate both the [X-axis label], [Y-axis label] as well as [X-Axis label of series] and [Y-Axis label of series] fields, a single-series diagram will display the values of the [X-axis label] and [Y-axis label] fields.

Displaying several series on a chart

You can display several sets of data called “series” on your chart. For example, you can display meetings and calls of employees on separate series (Fig. 25).

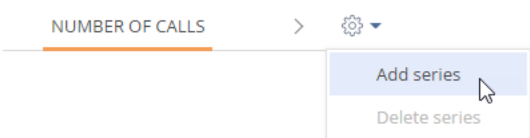
Fig. 25 Example of a chart with two series



To add series to a chart:

1. In the button menu of the chart setup page, select the [Add series] command (Fig. 26).

Fig. 26 Adding a new series to a chart



2. On the new series tab, populate the required fields and save the page.
3. Save the chart setup page and the dashboard setup page that contains the chart.

As a result, the chart will display the new data series.

If one of the series contains a chart that is not compatible with other series, Creatio will use the first selected chart type for all series. For example, if you select a “Line” chart for the first series and a “Bar” chart for the second series, both charts will be displayed as a “Line” chart (Fig. 27).

If you select the [With stacked] checkbox in one of the series of the “Column” or “Bar” chart type, it will be automatically selected for all the series of the corresponding “Column” or “Bar” chart. In this case, the chart will display as a column chart with stacked or a bar chart with stacked.

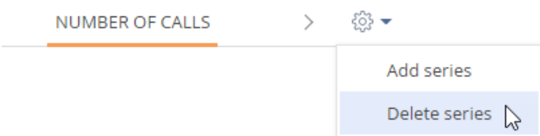
Fig. 27 Chart compatibility

	Spline	Line	Area	Column	Column with stacked	Scatter	Bar	Bar with stacked	Pipeline	Pie
Spline	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Line	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Area	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Column	Yes	Yes	Yes	Yes	With stacked	Yes	No	No	No	No
Column with stacked	Yes	Yes	Yes	With stacked	Yes	Yes	No	No	No	No
Scatter	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Bar	No	No	No	No	No	No	Yes	With stacked	No	No
Bar with stacked	No	No	No	No	No	No	With stacked	Yes	No	No
Pipeline	No	No	No	No	No	No	No	No	Yes	No
Pie	No	No	No	No	No	No	No	No	No	Yes

To delete series:

1. Select the series tab you want to delete.
2. In the button menu of the chart setup page, select the [Delete series] command (Fig. 28).

Fig. 28 Deleting a series from chart



Save the chart setup page and the dashboard setup page that contains the chart.

SEE ALSO

- Diagram mode
- List mode
- Viewing chart element details
- Dashboard tabs
- Dashboard setup

The "Metric" dashboard tile

The "Metric" dashboard tile (Fig. 29) displays a calculated numeric value or a date according to specific Creatio data, for example, total number of employees per department.

Fig. 29 "Metric" dashboard tile

Metrics can display the following data types:

- The total number of either all or filtered records of a system object, for example, the number of all Creatio contacts.
- Minimum or maximum value of a numeric field or a date field, for example, minimum or maximum call duration.
- Sum or the average value of a numeric field, for example, the total amount of paid invoices.

Setting up the "Metric" dashboard tile

A metric setup page will open when you add or edit the "Metric" dashboard tile on a dashboard panel. You can set up the primary metric parameters here – data, title, and display conditions.

[Title] – the name that will be displayed on the dashboard for this tile.

What to display

[Object] – Creatio object whose data must be displayed in the metric.

[Function] – the type of value that should be displayed on the tile. The following functions are available:

- "count" – number of object records, for example, total number of employee records in Creatio.
- "sum" – the sum of values by column, for example, total duration of employees' calls.
- "average", "minimum", "maximum" – respective values by column, for example, the average duration of employees' calls (the "average" function is not available for date fields).

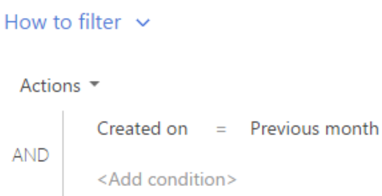
[Column] – the column to be used in the calculation. The list includes numeric columns and date columns. For example, specify the "Duration (minutes)" value to calculate the average duration of calls by managers (Fig. 30). This field is not displayed if the "count" value is selected in the [Function] field.

Fig. 30 Setting up the [What to display] detail for an indicator

How to filter

Use standard filter to select records for calculation of the metric value. For example, you can display the average duration of calls made by employees for the previous month only via the following filter conditions: "Created on = Previous month" (Fig. 31).

Fig. 31 Setting up the [How to filter] detail for metric



The filter is available if the [Object] field is populated.

NOTE

You can find more information about the advanced filter in a separate article.

How to associate with section data

[Connect ... object with ... section by field] – populate the field if you want to display the data only for records currently displayed in the section list. If you leave this field empty, the filters applied in the section will not be considered when calculating the indicator value. The field is displayed if the [Object] field is populated, but it is not displayed when yo uset up a metric in the [Dashboards] section.

Different cases of using this field are covered in the "Chart" dashboard tile description. Read more >>>

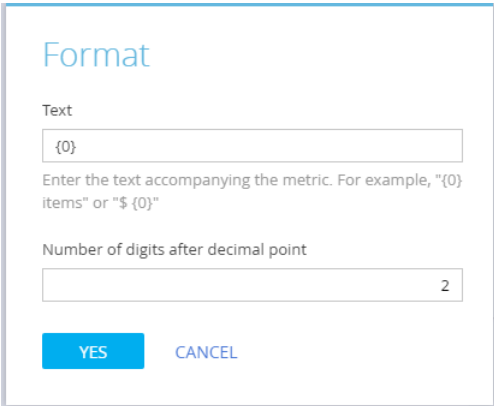
How to display

[Style] – the color of the title and metric value.

[Font size] – the metric text size – "Default" or "Large".

[Format]] – the display format for the metric. The display format is set up in the additional window (Fig. 32). To open the window, click .

Fig. 32 Metric display format window



[Text] – the text accompanying the metric. For example, if the metric should be "Total employees: 513", where 513 is the actual calculated metric, enter the following value in the [Text] field: "Total employees: {0}". If the format should be "513 employees", enter the mask value: "{0} employees"

NOTE

If you insert the variable incorrectly, the numeric value will not be displayed on the tile. To restore the variable, clear the field and save changes in the window.

[Number of digits after decimal points] – accuracy of the fractional part of the metric. For example, set the "1" value to display the metric number with one digit after decimal point. To display the digit without the fractional part, set the number of digits to "0".

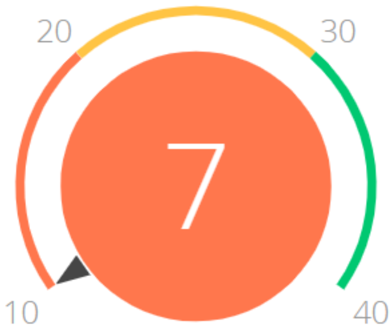
SEE ALSO

- Dashboard tabs
- Dashboard setup
- The "Chart" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

The "Gauge" dashboard tile

The "Gauge" dashboard tile (Fig. 33) displays a metric in relation to an arbitrary scale. For example, use this dashboard tile to display the number of conducted meetings of a manager if the desired rate is known. You can also use it to monitor the balance between the planned and actual number of calls an agent is required to make per day.

Fig. 33 "Gauge" dashboard tile



On the color scheme, the red interval displays the undesirable level of values, yellow – the satisfactory level and the green one displays the desirable level. The color of the gauge circle depends on the interval that the current value is in.

Gauges can display the following data types:

- The total number of either all or filtered records of Creatio object, for example, the number of calls per manager a day.
- Minimum or maximum value of a numeric field, for example, minimum or maximum call duration.
- Sum or the average value of a numeric field, for example, the total amount of paid invoices.

The settings of the "Gauge" dashboard tile are similar to Setting up the "Metric" dashboard tile, but you need to additionally set up the scale to measure the calculated value against.

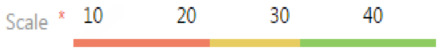
Gauge scale setup

The scale settings are located in the [How to display] field group on the gauge setup page.

1. In the [Style] field, specify the color of the gauge title.
2. In the [Display order] field, select "The more the better" or "The less the better".

   The display order determines the order of "good"/"average"/"bad" segments on the gauge scale. In the first case the red interval will be displayed on the left, in the second case - on the right.
3. On the gauge scale (Fig. 34), specify:
   a. The first two fields on the gauge scale determine the minimum and maximum values of the first segment (red or green, depending on the value in the [Display order] field).
   b. The third value determines the maximum value that falls into the second (yellow) segment.
   c. The fourth value determines the maximum value that falls into the third segment (red or green, depending on the value in the [Display order] field).

Fig. 34 Example of gauge scale setup



4. Specify the accuracy of the fractional part of the numeric indicator, i. e., the number of digits after decimal point, in the [Format] field. For example, set the "1" value to display the metric number with one digit after decimal point. To display the digit without the fractional part, set the number of digits to "0".

   The display format is set up in a separate window. To open the window, click in the [Format] field.

   Once all fields on the [How to display] field group are populated, the gauge preview will be displayed.

   NOTE

   The "Gauge" dashboard tile now displays big numbers with separators in accordance with the user culture.

SEE ALSO

- Dashboard tabs
- Dashboard setup
- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

The "List" dashboard tile

The "List" dashboard component (Fig. 35) displays system information as a list with the specified number of records.

Fig. 35 The “List” dashboard tile

Top 10 overdue tasks

Title	Owner	Account	Completed
Contact customer, discuss the decision-making role.	Symon Clarke	Infocom	12/21/2017 12:00 PM
Call to the development center, get deadlines of bug fixes	Megan Lewis	Accom (sample)	1/4/2018 10:00 AM
Describe in the article solution of the problem connected with CPU cooling	Mary King	Global Venture	1/7/2018 5:00 PM
Install an additional memory on the server	Valerie E. Murphy	Apex Solutions	1/10/2018 2:30 PM
Installing 64-bit OS on the server	William Walker	Axiom	1/16/2018 3:00 PM
Contact customer, specify need, budget, decision-making role.	Caleb Jones	Diamond Systems	1/16/2018 6:00 PM

Show more

The list displays records of a particular object with custom filter and sorting settings.

Values of lookup columns that display records from Creatio sections are displayed as links to the corresponding records. For example, a primary column for the “Activity” object is the [Title] column. Thus, activity titles will be displayed as links to the corresponding activity pages.

NOTE

The column titles in the “List” dashboard tile correspond to Creatio column titles.

To manage how the data are viewed, use the toolbar buttons located at the top-right of the dashboard tile.

- – opens dashboard tile menu. You can export the dashboard tile list to Excel via the [Export to Excel] menu command. The [Show as multi-line text] or [Sow as single line text] menu commands enable you to set up the text display mode on the list dashboard tile.
- – opens the dashboard tile in the full screen mode. Click the button again to go back to original size.

NOTE

You can also close a maximized dashboard by pressing the Essc key on the keyboard.

- The [Show more] link enables viewing all the available data if their number exceeds the number displayed on the dashboard tile.

NOTE

By default, the “List” contains the number of records that was specified in the [Number of records] field on the [Display options] tab of the “List” dashboard setup page. Clicking the “Show more” link will expand the dashboard tile to your entire browser window and automatically load additional records to the list.

Setting up the “List” dashboard tile

A list setup page will open when you add or edit a list on a dashboard. You can set up the primary list parameters here – data, title, filters and display conditions. Populate the [Title] and [Object] fields at the top of the page.

[Title] – the name that will be displayed on the dashboard for this tile.

[Object] – Creatio object whose records are displayed in the list.

On the [Column setup] tab, set up the columns that will be displayed on the tile. List setup is described in a separate chapter.

> **NOTE**
> Column setup area is only available if the [Object] field is populated.

Set up the data display conditions on the [Display options] tab.

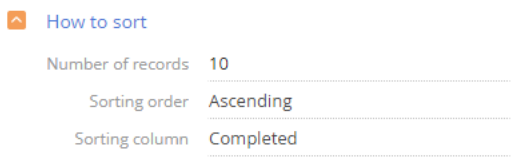
How to sort

[Number of records] – the number of records that will be displayed in the list (Fig. 36).

[Sorting order] – the order in which the values are displayed in the list by the column selected in the [Sorting column] field.

[Sorting column] – the column used for sorting records in the list. You can select columns added on the list column setup page.

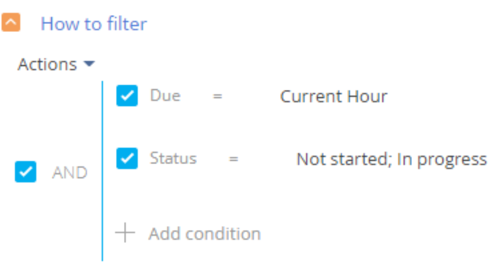
Fig. 36 Example of the [How to sort] field group setup in the “Top 10 overdue tasks”



How to filter

Use standard filter to select the records that will be displayed in the list. For example, to display the overdue activities, set up the “Due < Current hour” and “Status=Not started; In progress” filters (Fig. 37).

Fig. 37 Example of the [How to filter] field group setup in the “Top 10 overdue tasks”



The filter is only available if the [Object] field is populated.

> **NOTE**
> You can find more information about the advanced filter in a separate article.

How to associate with section data

[Connect … object with … section by field] – populate the field if you want to display the records connected to the currently displayed section records. If you leave this field empty, the filters applied in the section will not affect the records in the "list" dashboard. The field is displayed if the [Object] field is populated and is not available in the [Dashboards] section.

More information about connecting the dashboard records to the section records is available in a separate article. Read more >>>

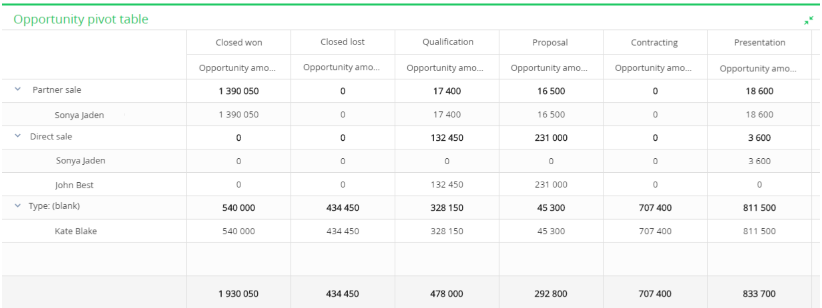
How to display

[Style] – color of the dashboard tile title.

Pivot table

A pivot table (Fig. 38) is a view option provided for the dashboards of the "List" type. It displays data as a table with grouping fields in its rows and columns. The intersected cells display the calculated summary data. You can use the pivot tables to analyze sales by regions or employees.

Fig. 38 A "pivot table" dashboard tile view



Opportunity pivot table

	Closed won	Closed lost	Qualification	Proposal	Contracting	Presentation
	Opportunity amo...	Opportunity amo...	Opportunity amo...	Opportunity amo...	Opportunity amo...	Opportunity amo...
Partner sale	1 390 050	0	17 400	16 500	0	18 600
Sonya Jaden	1 390 050	0	17 400	16 500	0	18 600
Direct sale	0	0	132 450	231 000	0	3 600
Sonya Jaden	0	0	0	0	0	3 600
John Best	0	0	132 450	231 000	0	0
Type: (blank)	540 000	434 450	328 150	45 300	707 400	811 500
Kate Blake	540 000	434 450	328 150	45 300	707 400	811 500
	1 930 050	434 450	478 000	292 800	707 400	833 700

ATTENTION

The pivot tables only work in the current versions of Chrome, Firefox and Safari browsers.

Set up a "pivot table" dashboard tile view

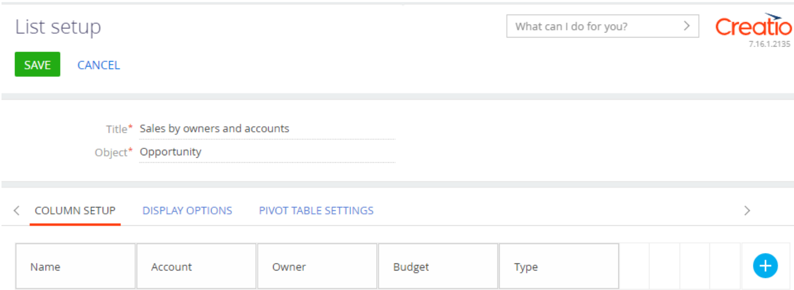
CASE

Calculate the summary budgets of direct and partner sales by owners and accounts.

To calculate the summary budgets:

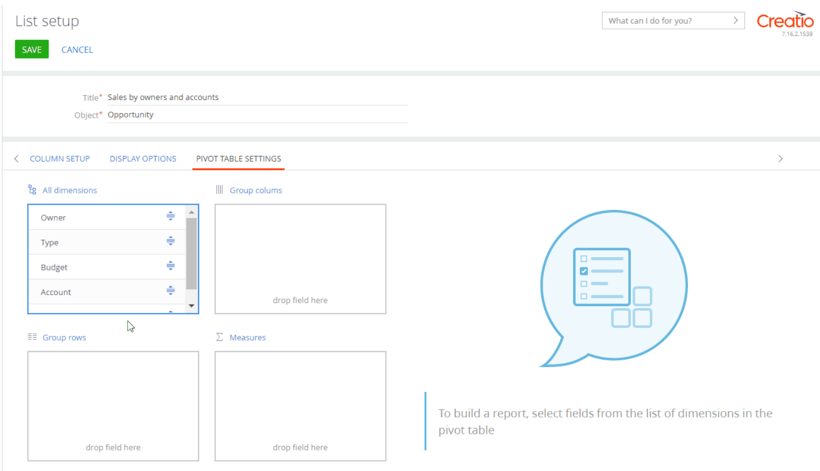
1. Set a "list" dashboard and specify all columns, whose values you need to display on the [Column setup] tab. In our example, these are the following columns: [Type]; [Owner]; [Account]; [Budget] (Fig. 39). Learn more about working with lists in the "Setting up the "List" dashboard tile" block.

Fig. 39 Setting up list columns



2. Click the [Pivot table settings] tab and drag the needed columns from the [All dimensions] block to the corresponding blocks (Fig. 40).

Fig. 40 Setting up a pivot table



   a. The [Group rows] block enables grouping the columns in pivot table rows. The higher the column is placed in the block, the higher the grouping level. To change the level of grouping, drag the column to the needed place in the block. In our example, drag the [Type] and [Owner] columns to the [Group rows] block.

NOTE

You can set up a pivot table with an unlimited number of rows, however, only 10 000 rows can be displayed at a time. To see all the rows, restructure the table by deleting some of the levels that are less important.

   b. The [Group columns] block enables grouping by columns in a pivot table. The higher the column is placed in the block, the higher the grouping level. To change the level of grouping, drag the column to the needed place in the block. In our example, drag the [Account] column to this block.

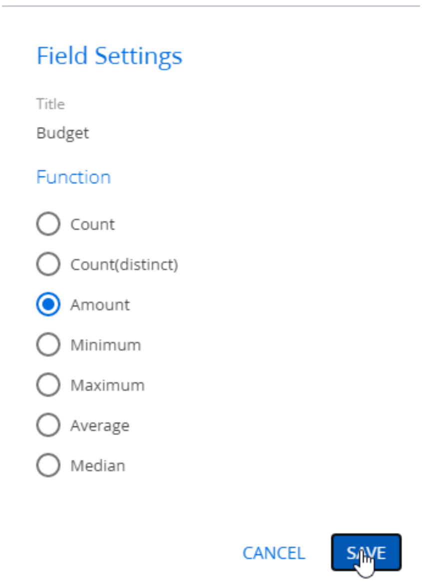
NOTE

The pivot table can display no more than 250 columns at a time. If your table contains more columns, try changing the display format to include fewer levels or set a filter condition.

c. The [Measures] block enables calculating the amount or the number of values by column. By default, Creatio calculates the amount for numeric columns and the number for other column types.

To change the value calculation function, click for the needed column. As a result, a window for selecting the calculation function will open (Fig. 41). Select the function and click [Save]. In our example, drag the [Budget] column to this block and set its calculation function to "Amount".

Fig. 41 Setting up the calculation function of a column



NOTE

If you accidentally place a column to a wrong block, you can drag it to the needed block using the cursor.

You can also delete the column by clicking and drag it back to the needed block from the [All dimensions] block.

3. Click [Save].

As a result, a pivot table will display. You will be able to change the grouping of rows, columns and values, if needed. Drag the columns to the needed blocks using the mouse, the table will restructure automatically.

NOTE

To display a "List" dashboard in the regular view instead of the pivot table view, delete the column names from the [Group rows], [Group columns], and [Measures] blocks on the [Pivot table settings] tab by clicking .

SEE ALSO

- Dashboard setup
- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "Widget" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

The "Widget" dashboard tile

The "Widget" dashboard tile is used to display custom dashboard tiles in Creatio sections.

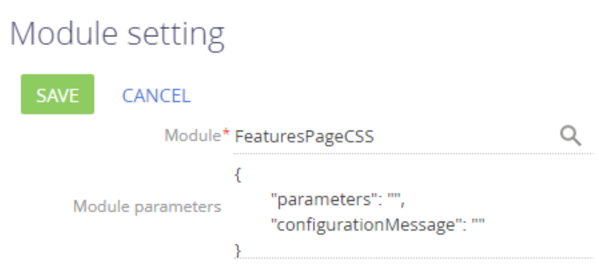
Setting up the "Widget" dashboard tile

A page (Fig. 42) with the following setup parameters opens when you add a "Widget" dashboard tile on a dashboard panel:

[Module] – widget program module to be displayed on the dashboard.

[Module parameters]] – parameters to be passed to the selected module.

Fig. 42 Widget setup page.



NOTE

Adding and setting up widgets are performed as part of developer customization. More information about dashboard widget setup is available in a separate article.

SEE ALSO

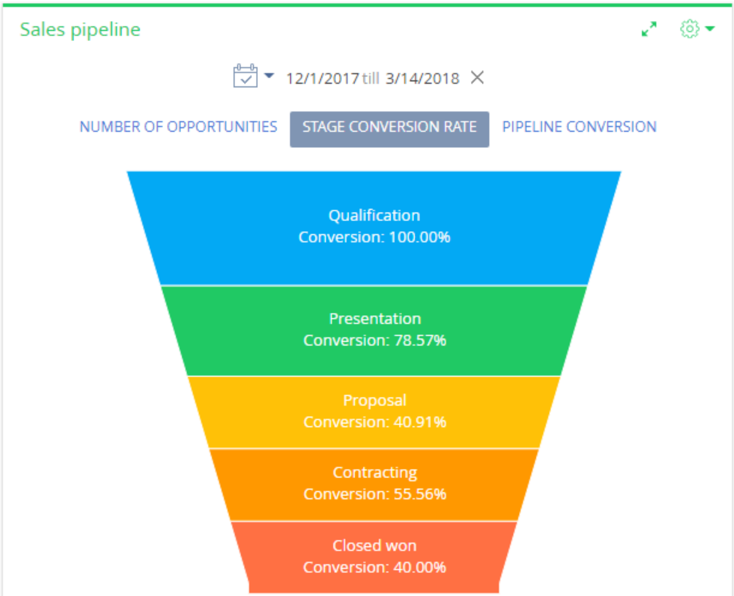
- Dashboard setup
- The "Chart" dashboard tile
- The "Metric" dashboard tile

- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

The "Sales pipeline" dashboard tile

The "Sales pipeline" dashboard tile is available in Creatio products containing the [Opportunities] section. This dashboard tile is primarily designed to analyze sales dynamics by stage (Fig. 43).

Fig. 43 "Sales pipeline" dashboard tile



NOTE

The "Sales pipeline" dashboard tile should be distinguished from the "Chart" dashboard tile of the "Pipeline" type. The "Chart" dashboard tile is described in a separate article.

The diagram element height corresponds to the number of current opportunities at the corresponding stage. The list of stages displayed on the diagram is configured in the [Opportunity stages] lookup. Opportunities with "Closed lost", "Closed won", "Closed rejected" and "Closed rerouted" statuses are not taken into account in the pipeline.

The sales pipeline has its own quick filter, which you can use to display data for a certain period of time, for example, for the current month.

NOTE

The quick filter functions are described in a separate article.

The sales pipeline can display data in the following views.

Number of opportunities displays how the opportunities that started during the specified time period are grouped by stages by the end of that period.

For example, 15 opportunities started during the selected period on the [Proposal] stage. Thus, the pipeline will display 15 opportunities at this stage.

Stage conversion rate displays the percentage of opportunities that have moved from a stage to a higher stage during the specified time period.

For example, there were 20 opportunities at the "Contracting" stage within the selected period. If 10 out of these 20 opportunities have moved to a higher stage than the [Contracting] stage by the end of the selected period, the [Contracting] stage conversion rate is 50%.

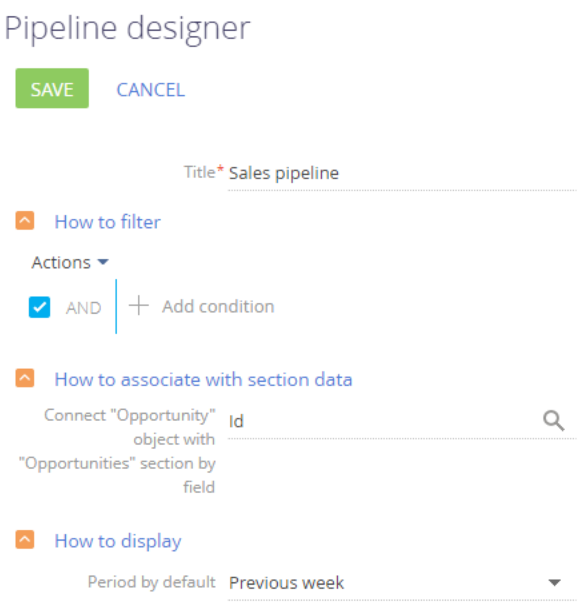
Pipeline conversion displays the percentage of opportunities at a certain stage, during the specified period against the total number of opportunities that started during this period.

For example, 100 opportunities started during the selected period and 55 of them passed the [Presentation] stage, so the monthly conversion rate of the [Presentation] stage is 55%.

Setting up the "Sales pipeline" dashboard tile

A pipeline setup page (Fig. 44) will open when you add or edit a sales pipeline on a dashboard panel. You can set up the primary parameters here – pipeline title, data, and display conditions.

Fig. 44 "Sales pipeline" dashboard tile setup page



How to filter

Use this detail to specify conditions for selecting the data for building the sales pipeline. For example, to display the sales dynamics within the sales pipeline for a certain owner only, specify the required owner in the filter conditions.

> **NOTE**
> Opportunities with the "Closed lost", "Closed won", "Closed rejected" and "Closed rerouted" statuses are not taken into account.

How to associate with section data

[Connect ... object with ... section by field] – populate the field if you want to display the data only for the selected records of the current section. For example, specify the "Opportunity" value. As a result, the pipeline will only be built based on the records whose [Opportunity] field contains the same value as in the similar field of the [Opportunity] object.

> **NOTE**
> The sales pipeline is built based on the [Stage in opportunity] object records..

If you leave the field empty, the filters applied in the section will not be considered when building the pipeline.

The field is not displayed when setting up analytics in the [Dashboards] section.

What to display

[Period by default] – a standard filtration period to be used in the quick filter for the sales pipeline, for example, "Current month".

> **NOTE**
> The quick filter functions are described in a separate article.

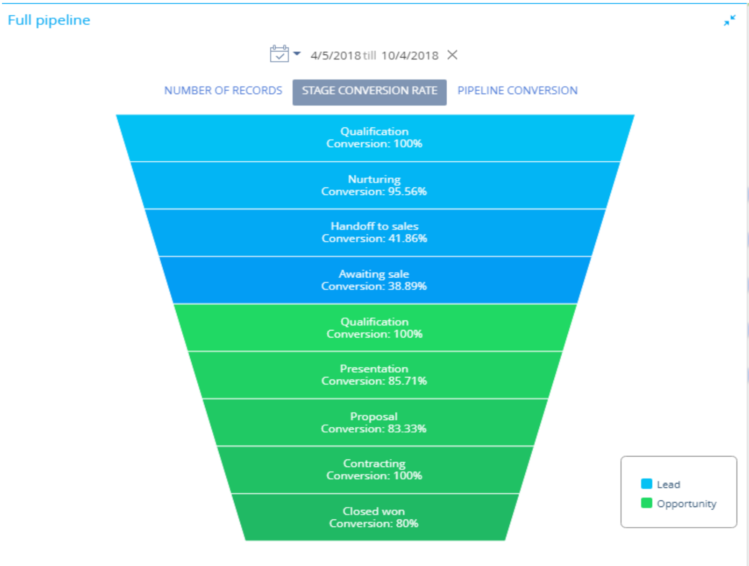
SEE ALSO

- Dashboard tabs
- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile
- The "Full pipeline" dashboard tile
- "Web page" dashboard tile

The "Full pipeline" dashboard tile

The "Full pipeline" dashboard tile is available in Creatio products that contain the [Opportunities] section. This dashboard tile is used to analyze sales dynamics by stage, starting with lead registration and up to closing of the corresponding opportunity (Fig. 45).

Fig. 45 The “Full pipeline” dashboard tile



NOTE

The “Full pipeline” dashboard tile should not be confused with the “Chart” dashboard tile of the “Pipeline” type. The “Chart” dashboard tile is described in a separate article.

The diagram element height corresponds to the number of leads and opportunities that are currently at the corresponding stage. The list of stages displayed on the diagram can be configured in the [Lead stage] and the [Opportunity stages] lookups.

The full pipeline has its own quick filter, which you can use to display data for a certain period of time, e.g., for the current month.

NOTE

The quick filter functions are described in a separate article.

The full pipeline can display data in the following views:

Number of records view displays how the leads and the registered opportunities that started during the specified time are grouped by stages by the end of that period.

For example, of all leads that were registered during the specified period, only 150 have reached the [Qualification] stage by the end of the period. Thus, the pipeline will display 150 leads at the [Qualification] stage.

Stage conversion rate displays the percentage of leads and opportunities that have advanced to a higher stage during the specified time.

For example, there were 20 opportunities at the [Contracting] stage during the specified period. If by the end of the specified period 10 out of these 20 opportunities have advanced to a stage higher than the [Contracting] stage, the stage conversion rate will be 50%.

Pipeline conversion displays the percentage of leads/opportunities at a certain stage, during the specified period against the total number of leads that started during this period.

For example, 100 leads were registered during the specified period, 5 out of these 100 leads reached the [Closed won] stage. Consequently, the [Closed won] stage conversion makes up 5% against the total number of registered leads.

Setting up the "Full pipeline" dashboard tile

When you add or edit a full pipeline, a dashboard tile setup page will open on the dashboard panel. Here you can set up the primary parameters, such as pipeline title, data, and display conditions.

How to filter leads

Set up a filter for selecting the leads to include in the full pipeline. For example, you can display the conversion dynamics of leads registered from a landing page or leads of a particular customer need type.

How to filter opportunities

Set up a filter for selecting the opportunities to include in the full pipeline. For example, you can display the dynamics of leads that were converted to opportunities of the "Enterprise" category or only opportunities with issued orders.

SEE ALSO

- The "Sales pipeline" dashboard tile
- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Widget" dashboard tile
- "Web page" dashboard tile

"Web page" dashboard tile

The "Web page" dashboard tile is designed to display web pages on a dashboard. For example, a search engine page, an online currency converter or your corporate website.

Setting up the "Web page" dashboard tile

To set up the dashboard tile, go to the web page designer page. You can open the designer page by adding a new "Web page" tile to the dashboard or by editing the exiting tile. You can learn more about how to add a new tile to the dashboard in the "Dashboard tabs" article.

1. [Title] – the title of the web page.
2. [Page URL] – the link to the web-page to display on the dashboard. The URL must include the protocol type ("http", "https"), for example, "http://www.creatio.com".

ATTENTION

If your Creatio application uses secure data transfer protocol ("https"), the "Web page" dashboards will support only links with secure protocol. The pages that use unsecured "http" protocol will not be displayed in the "Web page" dashboards on Creatio sites that use "https".
If the application website uses "http" protocol, the "Web page" dashboards will support both "http" and "https" links.

NOTE

To add a Youtube video to the dashboard, use the link specified on the [HTML- code] tab, which opens when you click the [Share] button on the video page.

3. To configure the width or color of the dashboard tile border, specify CSS styles in the [Styles] field. Note that you can only use CSS to set up the styles in this dashboard tile, the HTML styles will not apply. For example, if you enter the following parameters: "border-width: medium; border-color: red; border-style: solid", the border will be of average width and red color.

NOTE

Website-wide restriction to display other sites using iframe will prevent the "Web page" dashboards from displaying. Such restrictions may be part of website security policy. You can check if similar restrictions exist on a website using a web-browser console (in most browsers, you can open the console by pressing F12). The iframe restriction is enabled if the console displays the following errors: X-Frame-Options: DENY or X-Frame-Options: SAMEORIGIN.

SEE ALSO

- Dashboard setup
- The "Chart" dashboard tile
- The "Metric" dashboard tile
- The "Gauge" dashboard tile
- The "List" dashboard tile
- The "Sales pipeline" dashboard tile
- The "Full pipeline" dashboard tile
- The "Widget" dashboard tile

Dashboards on a record page

You can configure displaying of dashboard tiles on any record page tab or in the record profile. The following types of dashboards are available on record pages:

- chart
- metric
- gauge
- web page.

The analytics can be added on the section record page using the section wizard or detail wizard.

NOTE

The settings of dashboard tiles on record pages are similar to those of the corresponding regular tiles You can find more information about the setup in tile descriptions.

Adding a communication dynamics chart on the contact page

Let's create a chart that would display dynamics of communications with the customer on the [History] tab of the contact page. To add a chart on the contact page:

1. Open a contact page and select the [Open section wizard] option from the [View] menu.
2. Open the page designer by clicking the [Page] button on the wizard navigation panel (Fig. 46).

Fig. 46 Page designer

3. Click the [History] tab (the one that will display the diagram) on the right side of the wizard panel (Fig. 47).

Fig. 47 Switching to the [History] tab

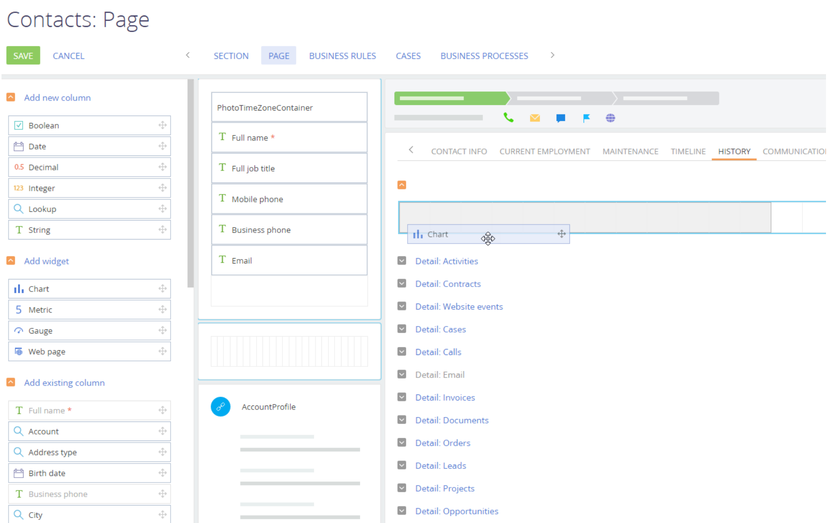
4. Add a new field group, which will contain the diagram by clicking the [New filed group] button at the bottom of the page. Locate the field group at the top of the [History] tab page.

NOTE

If you need to add analytics on a page detail, use the detail wizard instead of the section wizard.

5. Expand the "Add widget" block and select a dashboard tile. In this case, it is the "Chart" tile. Drag it on the tab (Fig. 48). Areas in which the chart can be added will be highlighted in blue.

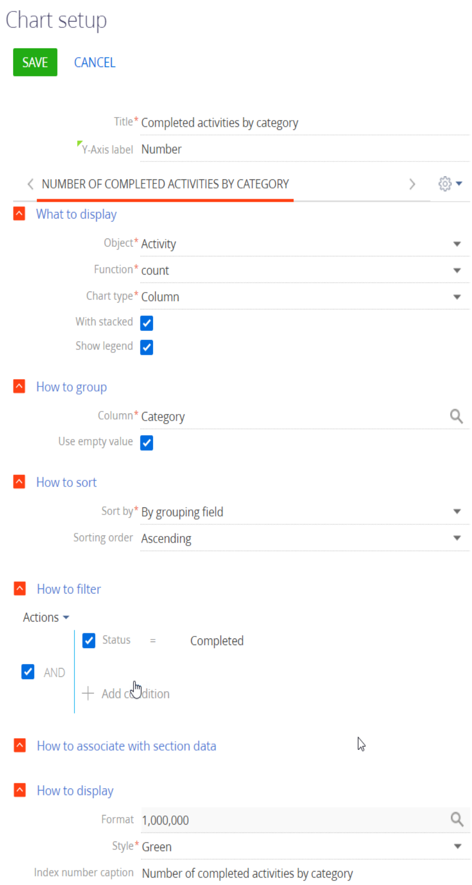
Fig. 48 Adding a chart on the contact page



6. On the opened setup page (Fig. 49), specify parameters for the chart with two series that would display the number of calls and emails of the contact for the current month. Set the parameters as follows:
   - [Title] – "Calls and emails for the current month".
   - [Object] – for the first series, it is the "Call" object, and for the second series, it is the "Activity" object.

- [Function] – “Count”.
- [Chart type] – “Line”.
- Grouping by the “End date” column for calls and the “Due” column for activities.
- Configure filters. Specify the “End date = Current month” for calls. Specify two conditions for activities: “Type = Email” and “Due = Current month”.
- Associate the object with the section by the “Id” column of the “Contact” object.
- Save your settings.

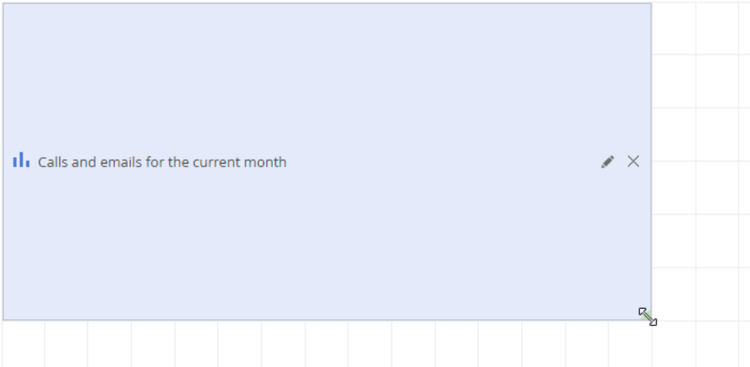
Fig. 49 Setting up the “Calls and emails for the current month” chart



More information about the “Chart” dashboard configuration is available in a separate article.

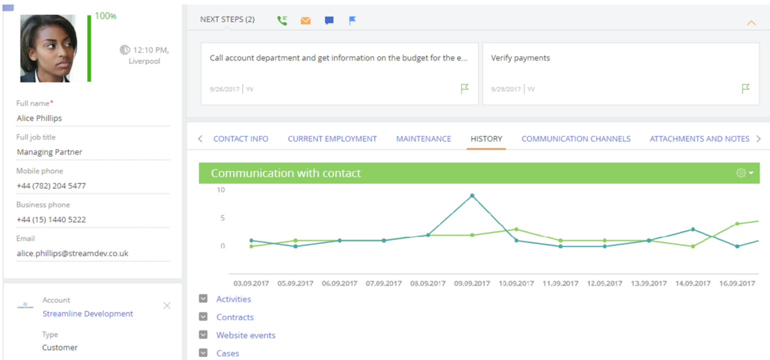
7. For correct displaying of the data, adjust the size of the chart (Fig. 50).

Fig. 50 Resizing the chart



As a result, the chart showing the dynamics of communications with the contact for the current month will be displayed on the contact page (Fig. 51).

Fig. 51 Record page with a configured dashboard tile



NOTE

You can display the data used for building the chart as a list. Read more >>>

SEE ALSO

- Analytical reports
- Dashboard tabs
- Dashboard tiles

VIDEO TUTORIALS

- Analytics in Creatio. Working with dashboards

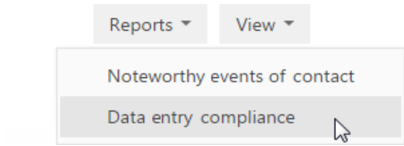
Analytical reports

Analytical reports show summarized section information. For example, reports of the Contacts section can be used to view the list of contact's noteworthy events or analyze the section data compliance.

Reports are available in the Analytics view. To view the report:

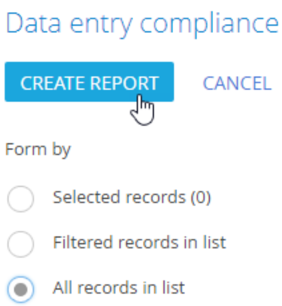
1. Select a report from the [Reports] button menu, for example, Data entry compliance (Fig. 52).

   Fig. 52 Selecting a report

2. On the opened page, specify how the report should be created, for example, based on all section records.
3. Click the [Create report] button (Fig. 53).

   Fig. 53 Selecting the method of forming the report

   As a result, your browser will start downloading the report file in PDF format.

SEE ALSO

- Dashboards on a record page

The communication panel

Use the communication panel to work with customers and colleagues with no need to switch from your current tasks. Make calls, process emails, make approvals and use corporate social network easily. The reminders and system notifications will make sure you never miss any important events.

Fig. 1 The communication panel

The communicational panel consists of the following tabs:

-  – consultation panel. The tab is available only in bank customer journey and designed for providing consultations to current and potential customers. Use the consultation panel to search for clients in the database and initiate consultations.
-  – CTI panel. The telephone tool in Creatio can make and receive calls directly in the system.
-  – Email. Use this tab to work with emails. Send and receive emails and connect them to other objects in the system. Read more >>>
-  – Feed. This tab displays the messages of the Feed section. Use this tab to view messages you follow, as well as to add new messages and comments. The functionality is identical to the functionality of the [Feed] section.
-  – Notification center. This tab displays notifications about events stored in the system. Read more >>>
-  – Business process tasks. Displays uncompleted business process-related tasks. Read more >>>

CONTENTS

SEE ALSO

- Managing calls

- Working with emails

Notification center

Click the button in the communication panel to open the notification center in Creatio. In this section you will find notifications about activities or invoices, comments to your records or mentions in a corporate social network, system notifications. The number on the button displays a total number of new messages in the notification center. Information messages are displayed on separate tabs:

- – reminders created for you by activities or invoices. Read more >>>
- – notifications about events connected to your posts in enterprise social network. For example, if you were mentioned in a post, received comments on your record in the feed or somebody liked it. Read more >>>
- – the list of notifications that must be approved. Read more >>>
- – notifications about the noteworthy events of contacts and accounts. Read more >>>
- – system messages about completed actions in the system. For example, information about import results. Read more >>>

Reminders and approval notifications are active until they are processed. Feed notifications, messages about noteworthy events and system notifications are considered to be read by switching to the corresponding tab. The history of notifications is stored on the tab for a month after they are created. The read notifications are not added to the tab count nor to the common notification center count.

NOTE
The period of time that read notifications are stored in the system can be modified in the "Notification storage period (days)" system setting. The period is 30 days by default.

CONTENTS

How to process notifications in a pop-up window

All information messages in the notification center are displayed as pop-up windows. They are displayed only once. The notifications received after logging off from Creatio will be displayed in the pop-up windows upon the next log in.

NOTE
Your browser may ask you permission to display pop-up windows. If the pop-up windows are not displayed, check the settings of your browser. The pop-up windows are not supported in Internet Explorer.

To hide a notification, click the button of the pop-up window. By doing this, the notification will be considered to be unread and will be added to the number of the unread notifications on the corresponding tab.

To open a page for a notification, click the banner in the pop-up window.

You can disable pop-up notifications in your user profile, by clicking the [Notification settings] button and clearing the [Enable popups] checkbox.

SEE ALSO

- How to work with reminders
- How to work with feed notifications
- How to work with approval notifications
- How to work with noteworthy event notifications
- How to work with system messages

How to work with reminders

You will not miss upcoming meetings or deadlines with the reminders. All reminders that are due are displayed on a separated tab in the notification center. To view reminders, go to the tab. The tab number displays the total number of your active (unprocessed) reminders.

Create a reminder on the invoice or activity page by selecting the checkbox in the [Reminders] fields group.

Data that is displayed in reminders

The reminders display activities of any category ("Meeting", "To do", etc.) that meet the corresponding criteria:

- You are the owner or the author of the activity;
- The activity has the "Not started" or "In progress" status;
- You or any other system user created a reminder on this activity for you.

The invoices that meet the following criteria are also displayed in the reminders:

- you are the owner for the invoice;
- the invoice has the "Draft", "Unpaid" or "Partially paid" status;
- you or any other system user created a reminder on this invoice for you.

The reminder contains the title of the task or invoice number, the date, the customer of an activity or an invoice. An icon shows if an activity is a meeting or a call.

The key information in the reminder is displayed as hyperlinks. Click the task title to view its page.

How to create a reminder

Create reminders for invoices and activities in the [Reminders] fields group of the record page. To create a reminder for the activity:

1. Open the page of the activity that you wish to create a reminder for.
2. Select the checkbox in the [Reminders] fields block:
    a. Select the [Remind owner] checkbox to create a reminder for the user specified in the [Owner] field of the page.

b. Select the [Remind reporter] checkbox to create a reminder for the user specified in the [Reporter] field.

3. Specify the date and time when the reminder should be displayed for the user.
4. Save the record.

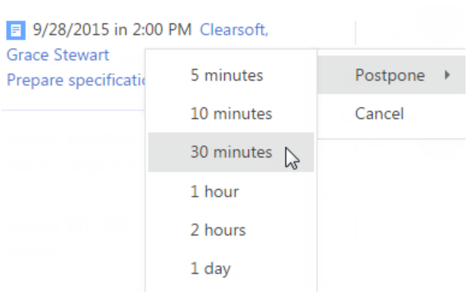
If the activity is not completed, the notification will be displayed in the notification center at the specified time for the user selected in the [Owner] or [Author] field.

How to process a reminder

All the notifications on the tab of the notification center are active until they are processed. You can cancel the reminder or postpone it. You can also process all the reminders at once or each separately.

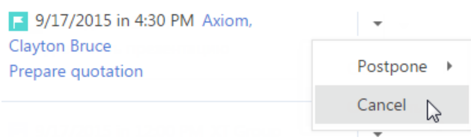
To postpone a reminder, select the [Postpone] option from the menu and specify the time (Fig. 2). The reminder will not be displayed in the list and the number of unread reminders will decrease. The reminder will be renewed at the end of the time specified.

Fig. 2 Postponing a reminder to a later period



To cancel a reminder, select the [Cancel] option from the menu (Fig. 3). The reminder will not be displayed in the notification center any more.

Fig. 3 Cancelling a reminder



NOTE

A reminder will be cancelled automatically if the activity is moved to its final "Completed" status, and the invoice to its final "Paid" payment status.

To simultaneously process all reminders, use the [Postpone all] or [Cancel all] option on the notification tab.

SEE ALSO

- How to work with feed notifications
- How to work with approval notifications
- How to work with noteworthy event notifications
- How to work with system messages
- How to process notifications in a pop-up window

How to work with feed notifications

You will be informed if someone mentions you in a post, comments on or likes your posts in the feed.

The feed notifications are displayed on the tab in the notification center. The number on the tab displays the total number of unread feed messages.

The tab gives notifications about the following events:

- Someone commented on your message in the feed section;
- Someone mentioned you in a message or in a comment;
- Someone liked your post or comment.

After opening the tab, all new notifications will be marked as read and will not be displayed on the tab. If a new notification is received when the tab is open, the notification will be marked with a gray color and it will be added to the notification count. Click a notification to mark it as read. As a result, the emphasis will be removed.

SEE ALSO

- How to work with reminders
- How to work with approval notifications
- How to work with noteworthy event notifications
- How to work with system messages
- How to process notifications in a pop-up window

How to work with approval notifications

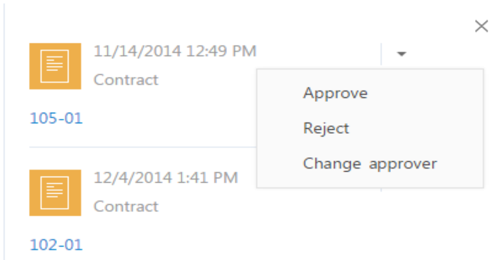
Use the tab of the notification center to receive information about records that need to be approved. The notification tab displays the total number of records to be approved. The name of the notification corresponds to the record that must be approved. Notifications also display the date and time of submission for approval. To view the record page, click the approval caption.

How to process an approval

All notifications on the tab in the notification center are active until they are processed. You can set approve or reject an approval or delegate the approval to someone else. After processing an approval the notification will not be displayed in the tab and the notification count will be updated.

Process approvals using the approvals actions menu (Fig. 4).

Fig. 4 Approvals actions menu



- [Approve] – sets a positive result for the approval.

  NOTE

  By default, approval comments are optional. You can make the [Comment] field required by editing the [Accept approval without comment] system setting.

- [Reject] – sets a negative result for the approval.

  NOTE

  If the approver chooses to reject an approval, a pop-up window will open where you can enter your comments. The comment will be displayed on the approval page.

- [Change approver] assigns a different user as the approver. This action opens a window where you can choose the user or user group. Approvers can be changed only if the [Approval may be delegated] is selected for this approval in the Process Designer.

  NOTE

  You can also process an approval using the [Approvals] tab or the action panel on the page of the required document.

SEE ALSO

- How to work with reminders
- How to work with feed notifications
- How to work with noteworthy event notifications
- How to work with system messages
- How to process notifications in a pop-up window

How to work with noteworthy event notifications

Creatio reminds you about upcoming noteworthy events with your colleagues and customers through the tab of the notification center. The tab count displays the total number of unread notifications about noteworthy events.

Data that is displayed in noteworthy events

The tab notifies you about birthdays or foundation days of accounts for the current day or the next two days. and the next two business days.

NOTE

Use the "Noteworthy events notification period, days" system setting to change the period of time for noteworthy events notification. The period is two days by default.

A history of read notifications for noteworthy events is stored on this tab for a month.

You will receive notifications for the following contacts and accounts:

- Contacts and accounts for which you are an owner.
- Contacts of type "Employee" or those for whom "Our company" is specified as an account.
- The main contacts of the accounts for which you are an owner.
- Contacts and accounts specified for the orders of which you are an owner. Orders with "Draft", "Confirmation" and "In progress" status are considered.
- The contacts and accounts specified in opportunities for which you are an owner (by the [Customer] field and the [Contacts] detail of the opportunity). The opportunities that are not at the final stage are considered and those which were completed successfully during the previous half-year.

  NOTE

  Use the "Noteworthy event notification period for opportunity participants, months" system setting to change the period of time of successfully closed opportunities to notify about the noteworthy events. The period is six months by default.

- The contacts and accounts specified in activities for which you are an owner (by the [Account] field and the [Participants] detail of the activity). Only activities that do not have a final status are considered.

The noteworthy event notification list is updated every 24 hours. You will receive a notification about the upcoming event at once if you were assigned as the owner for a contact, account or opportunity.

How to process a notification for the noteworthy event

To view additional information about a contact or an account, click a hyperlink in the notification. A contact or account page will opened. If you need to perform any action connected to the upcoming event, create an activity for it. To do this, select the [New task] option in the actions menu.

SEE ALSO

- How to work with reminders
- How to work with feed notifications
- How to work with approval notifications
- How to work with system messages
- How to process notifications in a pop-up window

How to work with system messages

All Creatio system messages are displayed on the tab. These messages do not require your attention. They are: messages about Excel import, contacts and accounts duplicates search or bulk email sending notices.

The tab count displays the total number of unread system messages. All messages are considered as read if you open the tab. The history of notifications is stored on the tab for a month after they are created.

SEE ALSO

- How to work with reminders
- How to work with feed notifications
- How to work with approval notifications
- How to work with noteworthy event notifications
- How to process notifications in a pop-up window

Business process tasks

The [Business process tasks] tab helps you keep track of the tasks that are linked to your business processes and cases right from the communication panel. Click the button to view business process action notifications. The counter of the button displays the number of tasks that require your attention.

Which data are displayed in the notifications

The notifications display case and process steps (also known as "user actions") that require some form of activity from you. These process-related actions may include completing Creatio activities, sending emails, editing records, filling out pre-configured pages, etc. The tab displays process tasks where:

- You are specified as the owner.
- The process task status is "Running".

By default, the tab displays notifications about the process tasks for the current day. Select the [Show future tasks] checkox at the top of the notification panel to display all notifications.

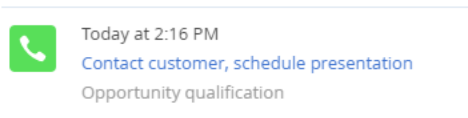
Each notification (Fig. 5) displays the following information:

- The icon of the corresponding business process element.
- Date and time of the step execution.
- Step title.
- Business process or case title.

NOTE

You can modify the business process title displayed in the notification by editing the [Process instance caption] caption parameter in the process properties of the process designer.

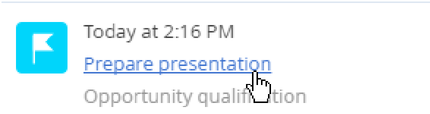
Fig. 5 Business process task notification



Working with the business process task notifications

All notifications on the tab in the notification center are active until they are processed. Click the process task title to open the page where you can complete this process task (Fig. 6).

Fig. 6 Executing a business process task



Perform the process task on the opened page: complete the opened activity, send the email, save the record, etc. If the process task is canceled or postponed to a later time, the corresponding notification will be updated automatically.

After completing the process task, the notification will no longer display on the communication panel.

Once all process steps have been completed, the counter on the  button disappears.

SEE ALSO

- The communication panel
- Creatio business processes overview

Excel data import

Use data import in Creatio to add large numbers of records. You can add customer databases, lists of products, lookup records and other data in a matter of minutes using .xlxs files.

Use data import to populate your database with records before you start working with Creatio You can also use import for updating existing records.

> ATTENTION
>
> We recommend you to import data after you set up Creatio permissions, since imported records will be assigned default permissions.

To import information from an Excel spreadsheet to Creatio:

1. Prepare the imported file in the *.xlsx format. Learn more in the "How to prepare a file" article. Use the following excel files as templates:
   - An example of the file for importing accounts
   - An example of the file for importing contacts
   - An example of the file for importing products
2. Run the Import Wizard: go to a section in which you need to import data and select the [Data import] action from the [Actions] button menu. You can import data to details or lookups in the same way. In this case, the object for import will be selected automatically.

   > NOTE
   >
   > The data import can be launched from the system designer. In this case, you will need to specify the object (section, detail or lookup) for import manually.

3. Add an imported file: drag and drop your Excel file on the Import Wizard page, or click [Select file] and locate the file. Specify the column mapping by connecting the columns from the Excel file to the fields in the Creatio import object.
4. Select the columns for identifying duplicate records: select columns whose data must be unique for each of the imported records. Depending on whether the value of a column in the imported file coincides with the database value, Creatio either creates a new record or updates the existing record. For example, such a column can be a contact's "Full name": if a contact record with the same full name already exists in the database, Creatio updates the existing record, if a contact record with such a full name does not exist, Creatio creates a new record.

   > NOTE
   >
   > These steps cover the general import procedure. For detailed instructions on the most common import cases, please see the corresponding articles in the contents of this section.

5. Run the import process. The process runs in the background.

   You can abort data import by stopping the "FileImportProcess" process in the [Process log] section. When you cancel the import, the process status changes to "Canceled" and the data import terminates.

CONTENTS

- How to update product prices
- How to update information about product availability?
- Universal import from Excel FAQ

How to prepare a file

To successfully upload data, make sure the file meets the following criteria:

- The file is in *.xlsx format.
- The file is not damaged.
- The file does not contain active hyperlinks. Disable all active hyperlinks in the file before importing.
- The file contains the correct column captions and data (having the column headings in the imported file match the field names in Creatio will save you time on column mapping during import).
- The file contains no additional data except for the column titles in the first row.
- The file contains no more than 50,000 rows approximately. The exact limit for the number of rows in the imported file is not a fixed value and may change depending on the number of columns and information volume specified as column values.

Follow these recommendations while entering values in the columns of the imported file:

- Make sure that the cell formats in the file correspond to the columns in Creatio. For example, for the [Full name] column, specify "Text" format, and for the [Start] column, specify "Date" format.
- If you are importing website addresses, social network page addresses or any other URLs, they must not be active hyperlinks. Disable all active hyperlinks in the file before importing.
- Specify one of the following date formats for the values:

  ```
  OO/FF/[[[[=
  OO0FF0[[[[=
  OO1FF1[[[[=
  ```

  Here, “MM” is for month, “DD” is for day and “YYYY” is for year.
- If you import a value to the date/time column, specify the time after the date using a space.

  Below are the correct value formats for the date/time fields.

  ```
  23053037"4<23<22"RO
  2305304237"36<24<22
  2315314237"4<25<22"RO
  2315314237"36<26<22
  23/53/4237"4<27<22"RO
  23/53/4237"36<28<22
  305304237"4<29<22"RO
  2305304237"24<2:<22"RO
  2305304237"24<2;<22"ro
  23053037"24<32<22"CO
  ```

- The values of Boolean fields, such as [Do not use email] must be specified in one of the following formats (not case sensitive):

  ```
  [gu1Pq
  Vtwg1Hcnug
  ```

```
312
-1/
[gu1Pq
Vtwg1Hcnug
[1P0
```

- Specify the values in the required fields. For example, specify the [Full name] field for contacts and the [Name] field for accounts. The exceptions are the required fields, which are automatically populated by default, such as the [Status] and the [Owner] fields. If you leave these fields blank, they will be automatically populated with default values. For example, these are the [Status] and the [Owner] fields.
- Be aware that lookup values not found in Creatio will be created automatically. When checking the values, the opening and closing spaces and letter case are not taken into account, while special characters are important. For example, if the imported file has the "customer" value and the [Contact types] lookup contains the "Customer" value, new values will not be added to the lookup and the record will be linked to the existing lookup value. However, if the “Client” contact type is specified in the import file, a new “Client” value will be added to the [Contact types] lookup. To avoid duplicates in the Creatio lookups, check the lookup values in the imported file.

  NOTE

  Before adding an import file, please ensure that all plugins are disabled in your browser. Certain plugins may cause errors during the import process.

SEE ALSO

- How to import a customer database

How to import a customer database

Let's have look at an example of importing customer database from an Excel file.

ATTENTION

Before importing contacts ensure that the [Order of first/last names] system setting has the “Last name, First name [Middle name]” value. It is necessary to correctly display contact names per separate columns: [Last name], [First name], [Middle name].

To import data, go to the [Contacts] section and perform the [Data import] action from the [Actions] button menu. The import page with automatically selected object will open in a new browser tab.

Uploading a file

Use the first page of the wizard to upload the Excel file to the automatically selected object.

NOTE

If you opened the data import window from the system designer you need to specify the object for import.

Click the [Select file] button and choose the Excel file containing your customer database. You can also drag-and-drop the file.

NOTE

File format and volume validation is performed at this stage.

Click the [Next] button.

NOTE

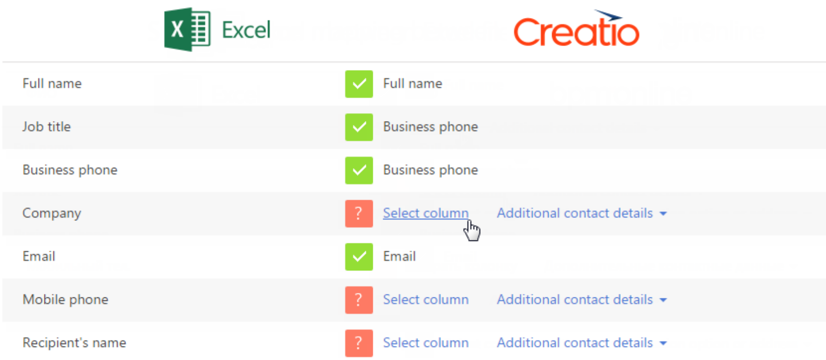
Before adding an import file, please ensure that all plugins are disabled in your browser. Certain plugins may cause errors during the import process.

How to set up columns

On the next wizard step, you need to specify the column mapping in your file. Match columns in the selected Creatio object to the columns in the imported file. On this step:

- If the name of the column in the file corresponds to the name of the column in Creatio, it will be mapped automatically. For example, if the name of the contact in your file is specified in the "Full name" column, the system will automatically map the [Full name] column on the contact page in Creatio. Automatic mapping is performed for the columns of the main object.
- If the column name in the file differs from the column name in Creatio, you need to map that perform column manually. For example, if the imported file with contacts has "Company" column where the contact's employer company is specified, you need to map the "Company" column from the Excel file to the [Account] column in Creatio. To do this, click the [Select column] link (Fig. 1) and select the [Account] column from the list of contact columns.

Fig. 1 Selecting a column for mapping



Importing additional information

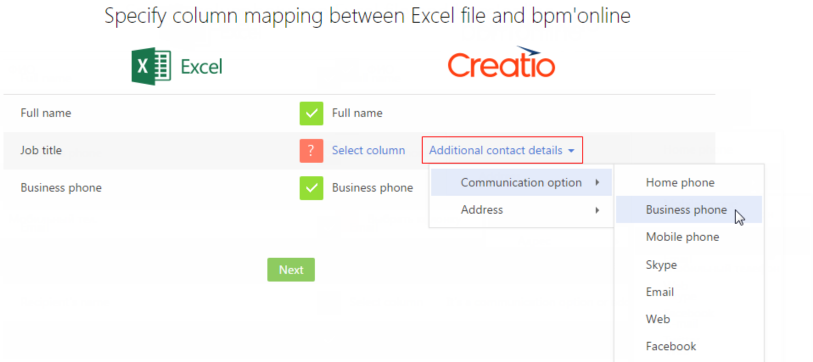
When importing contacts and accounts, you can also upload additional details of the objects, e.g., records from the [Communication options] and [Addresses] details. Use this feature if you need to upload multiple addresses or different communication options of one type, for example, several mobile phone numbers.

NOTE

Please note that the communication options and addresses can be imported either to the main object columns or to the details. When importing to the main object columns, the communication option data will also be saved in the details. By importing only to the primary object columns you can upload only one communication option and address of each type from the list of available ones. The columns that correspond to the main object columns can be used for the duplicate search during import.

When mapping [Communication options] and [Addresses] detail, click the [Additional contact details] and select the required column (Fig. 2).

Fig. 2 Selecting a column to correspond to the [Communication options] and [Addresses] details



NOTE

In Creatio you can only import an address of one type in the [Addresses] detail.

Click the [Next] button to start importing the file.

NOTE

If the data is imported to the [Accounts] section, and the "Primary contact" column is populated in, the [Career] tab of the [Job] tab will be filled in automatically.

Duplicate parameters

Use the [Duplicate management] page to specify duplicate search parameters. If duplicate records are found in the import file, only the first record will be uploaded. Duplicates will not be imported.

You can perform a duplicate search by the values of one or several columns.

NOTE

Be aware that the columns of the main object are used while searching for duplicates in the communication options and addresses for contacts and accounts the columns.

To use a column for duplicate search during import, select the checkbox for this column on the [Duplicate management] page of the Import Wizard. When selecting several columns for the duplicate search, they are joined using the "AND" logical operator which means that duplicate records will have similar values in both selected columns. For example, you can set the duplicate check for the contacts in the [Full name] and [Email] columns (Fig. 3). If several contacts are found with the same full name and email address, only one contact will be uploaded into the system.

Fig. 3 Setting duplicates search rules while importing

NOTE

Use the duplicate search while importing to update existing Creatio records. For example, you can update phone numbers for multiple contacts. To do this, make sure that the imported file contains a column that also exists in Creatio and can uniquely identify each contact in both. Set the duplicate search by this column(s) that all imported records are considered duplicates. As a result, existing contacts will be updated with new phone numbers, and other fields that are left blank in the imported file, will not affect data in Creatio.

Uploading data

Click the [Start data import] button after specifying columns for duplicate search. The import process will start. If you close the page, the import will proceed in background mode.

After the import is completed, you will receive a confirmation message with the number of uploaded records. You will also receive a system notification with file name and the number of imported records in the notification center.

NOTE

You can abort data import by stopping the “FileImportProcess” process in the [Process log] section. When you cancel the import, the process status changes to “Canceled” and the data import terminates. You can view the data that managed to be imported into the system before the process stopped.

Check the import result in the [Contacts] section. You can go to the list of imported records from the “import finished” message. All imported records will be automatically tagged with the time and date of import. Later you will be able to easily find all imported records, using a filter by the corresponding tag.

NOTE

You can tag the imported records and open their list only when importing records to a section.

You can view information about errors during import in the [Excel import log] lookup. This lookup contains data about those records that were not imported.

Please note that Creatio will add all lookup values that were specified in the imported file but are not found in Creatio lookups, e.g., cities, contact and account types, etc. If you have not specified the values for the auto-fill fields in the imported file, these fields will be filled with the default values.

SEE ALSO

- How to prepare a file

How to import contact communication options

In addition to the primary contact details of your customers, you can import additional information, such as communication options and addresses. They are located both in the primary object (Contact, Account) and on details on the [General information] tab.

- If communication options are contained in the same import file as the primary object records (contacts or accounts), they will be imported along with primary object information. These communication options will be saved both in the primary object ("Contact" or "Account") and on the [Communication options] detail. In this case, you can upload only one communication option and address of each type. Communication options and addresses that are located in the primary object can be used to search duplicates during import. For more information, please see the Customer base import article.
- If communication options and addresses are located in a separate file, they can be imported after importing the customer database. To do this, select "Contact communication option" or "Account communication option" object.

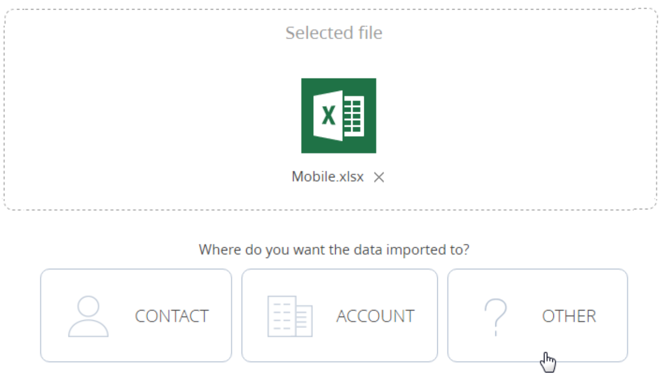
Below is an example of importing communication options from a single file.

Prepare the import file. To do this, enter the contact full names in the first column, enter communication option types, such as "mobile phone" in the second column and the phone numbers in the third column. To import several communication options of the same type for a single contact, add a new row for each phone number in the imported file. The records in the [Full name] column must match the records of the similar column in the customer database file imported earlier.

Import the prepared To do this:

1. Open the System Designer by clicking the button in the top right corner of the application window.
2. Click the [Data import] link in the [Import and integration] block. A data upload page will open in a new tab of your browser.
3. Click the [Select file] button and specify the prepared import file or drag the file directly to the Import Wizard page.
4. Click the [Other] button to select an import file (Fig. 4).

Fig. 4 Selecting object for import



5. Select "Contact communication options" from the drop-down list and click the [Next] button.

NOTE

If you are importing communication options for the [Accounts] section records, select the [Account communication options] object.

6. On the next wizard step, specify the column mapping in your file. In this case, the "Number" and "Type" columns are mapped automatically, and the "Contact name" column must be mapped to the [Contact] column.

   NOTE

   To map the columns in the imported Excel file and Creatio automatically, make sure that the column titles in the Excel file must match corresponding column names in Creatio.

7. On the [Duplicate management] page, select the "Contact" and "Number" columns. The selected columns will be used to check if the imported records already exist in Creatio. Click the [Start data import] button.

If you close the page after starting data import, the import will continue on the background. You will receive a notification from the notification center when the import is complete. Check the import result in the [Contacts] section.

SEE ALSO

- How to prepare a file
- How to import a customer database

How to import contact addresses

Contact records can contain information about several addresses of different types: business, home, delivery, etc. Only one of these addresses can be set as the primary address and copied to the address column of the [Contact] object.

First, prepare the import file. Each row in the Excel file must contain a contact's full name that must be identical to the full name value of the contact record, one address and its type. Select the contact's primary address in the [Primary] column and set the "True" value. For the rest of addresses, set the "False" value. Specify country, city and postal code in the separate columns of the imported file (Fig. 5).

Fig. 5 An example of Excel file ready for address import

Full name	Address type	Address	City	Country	Index
Alexander Wilson	Legal	148 Flint Street	Atlanta	USA	
Alexander Wilson	Home	25 Washington Rd	East Point	USA	
Alexander Wilson	Business	148 Flint Street	Atlanta	USA	

To import prepared data on the addresses detail:

1. Enter the record of a random contact in the [Contacts] section.
2. Click the button of the [Addresses] detail and select the [Data import] action.
3. Click the [Select file] button and specify the prepared import file or drag the file directly to the Import Wizard page.
4. On the next step, the "Address", "City", "Country", "ZIP/postal code", "Primary" and "Address type" columns are determined automatically, and the "Full name" column must be mapped to the [Contact] column. Click the [Next] button.

   NOTE

   To map the columns in the imported Excel file and Creatio automatically, make sure that the column titles in the Excel file must match corresponding column names in Creatio.

5. Select the [Contact], [Address type] and [Address] columns on the "Duplicate management" page of the Import Wizard. Click the [Start data import] button.

The import process runs on the background. After the import is complete, you will receive a message in the notification center. Check import results.

SEE ALSO

- How to prepare a file
- How to import a customer database

How to update product prices

To update multiple product prices, import data on the [Prices] detail of the [Prices and availability] tab on the product page. To do this, prepare the import file that contains the following columns:

- Unique codes of products whose prices must be updated.
- Currency.
- New product prices.
- Price list from which the prices originate.

If the same product is part of several price lists, each price list mush have a separate row in the imported file (Fig. 6).

Fig. 6 An example of Excel file ready for importing product prices

Code	Currency	Price	Price list
122268	USD	200.00	Base
347802	USD	3000.00	Base
347802	USD	3500.00	For Distributors
975355	USD	400.00	Base
922306	USD	40.00	For Partners
922306	USD	56.00	Base
975355	USD	564.56	Base

To import data on the [Prices] detail:

1. Open the record of a random product in the [Products] section.
2. Click the button of the [Prices] detail and select the [Data import] action.
3. Click the [Select file] button and specify the prepared import file or drag the file directly to the Import Wizard page and click [Next].
4. On the next step, map all file columns to corresponding Creatio columns. If the column names in the Excel file are identical to those in Creatio, they will be mapped automatically. Click the [Next] button.
5. Select the duplicate search parameters: the "Product" (by a unique code) and "Price list" columns. Click the [Start data import] button.

Creatio will notify you when the import process is complete. You can view the results in the [Products] section and the detailed information about the import can be found in the [Excel import log] lookup.

SEE ALSO

- How to prepare a file

How to update information about product availability?

To add up-to-date information about product availability in warehouses to Creatio, you can import data to the [Availability] detail of the [Prices and availability] tab on the product page.

First, prepare the import file with the following columns:

- Unique codes of products whose prices must be updated.
- Warehouse where the product is stored.
- Number of units available.
- If several products were ordered but not paid for, specify their quantity in a separate column.
- Quantity of products in stock.

If identical products are stored in different warehouses, then each of them has to be specified in the import file as a separate row. Products with zero availability must also be specified in the import file (Fig. 7).

Fig. 7 Prepared import file.

Code	Warehouse	In Stock	Reserved	Available
244685	Regional Warehouse	250	40	210
367898	Central Warehouse	750	0	750
367898	Regional Warehouse	0	0	0
111659	Central Warehouse	200	0	200
111659	Regional Warehouse	1500	200	1300
996658	Central Warehouse	1440	120	1320
686657	Central Warehouse	0	0	0

To import data from the prepared file to the [Availability] detail:

1. Open the record of a random product in the [Products] section.
2. Click the ⋮ button of the [Availability] detail and select the [Data import] action.
3. Click the [Select file] button and specify the prepared import file or drag the file directly to the Import Wizard page and click [Next].
4. On the next page, map all file columns to corresponding Creatio columns. If the column names in the Excel file are identical to those in Creatio, they will be mapped automatically. Click the [Next] button.
5. Specify the duplicate search parameters by the "Product" (by a unique code) and "Warehouse" columns. Click the [Start data import] button.

The import process runs on the background. After it is completed, you will receive an appropriate notification. The import results can be viewed in the import log or on the [Prices and availability] tab on the product page.

SEE ALSO

- How to prepare a file
- How to update product prices
- Universal import from Excel FAQ

Universal import from Excel FAQ

- Will the field values be overwritten when I reimport data from Excel?

- Why do duplicate records appear after import?
- How do I import records to page details?
- How do I import products with characteristics?
- How do I import opportunities with products?
- How do I import leads with customer need types?
- The percentage of profile completion displayed in the list after import is incorrect. How can I update it?
- How do I update a single column without modifying other columns during import?
- How do I import records, view results and then roll back any changes made during the import?
- My import file has separate columns for first, last and middle names, while Creatio has a single [Full name] field. How do I import contacts?
- What columns should be included into the import file?
- How do I import users from Excel?

Will the field values be overwritten when I reimport data from Excel?

When you import, Creatio analyzes the imported file, identifies the columns (using the title row) and then analyzes the data itself. Creatio checks whether imported records are duplicates, using the columns that you selected on the corresponding step of the import wizard. It is recommended to select columns that contain unique values (those that uniquely identify each record) to avoid errors and save the data. If the records are identified as duplicates, all field values from the file will overwrite the current values. Otherwise, Creatio will create new records with the values from the Excel file. If the file contains empty values for imported columns, the corresponding field values in Creatio will not be deleted.

Why do duplicate records appear after import?

During the import process, Creatio checks imported records for duplicates. To do this, the system uses the columns that you select on the corresponding step of the import wizard. For the records that were identified as duplicates, existing field values will be replaced with those from the imported file (unless the value in the imported file is empty). If you select the columns that contain values that are not unique, duplicate records will not be identified as such. As a result, Creatio will import the records from the Excel file as new Creatio records, thus creating duplicates.

How do I import records to page details?

To import the data on the page detail, go to the detail and select the [Data import] action from the button menu. The import page with automatically selected object will open in a new browser tab.

How do I import products with characteristics?

Unlike communication options and addresses, product characteristics cannot be imported along with the product records. The proper import process is divided into several stages.

1. Import a file with all products and general product information, including the [Name] column, as well as additional [Code] and [Price] columns.
2. Next, populate in the [Characteristics] lookup. If there are only a few characteristics, you can add them manually, by specifying name, type and notes. To import characteristics, open the [Characteristics] lookup and run the [Data import] action from the [Actions] button menu. The

file for import must contain at least two columns: The "Name" column, which will contain the names of all characteristics, and the "Value type" column with values like "String", "Integer", "Decimal", etc.

3. After adding all product characteristics to the lookup, you can start importing records on the [Features] detail of the [Products] section. This table must contain separate columns for product name, feature name and feature value.

How do I import opportunities with products?

Importing opportunities with products is done in two stages: first import opportunities, then import opportunity products. Prepare an excel file with opportunity records and another file with opportunity products that has columns for opportunity and product names.

1. Go to the [opportunities] section and run the [Data import] action from the [Actions] button menu. Upload the table with opportunities.
2. Open a random opportunity record and run the [Data import] action from the button of the [Products] detail. Please note that opportunity names must be unique and match the names of imported opportunities. If you have several opportunities with identical names, the corresponding products will be added to the first opportunity in the list. Likewise, the product names must match the products in the [Product] section. Otherwise, new product records will be added in the [Products] section.

How do I import leads with customer need types?

To import leads with the [Customer need] field, add the corresponding column to the imported Excel file. If the customer need column was not automatically mapped by the Import Wizard, you will need to map it manually. The customer need values in the imported Excel file must match the values in the [Need types] lookup. If the values in the imported Excel file are different from those in the lookup, they will be added to the lookup as new values.

How to import the lookup contents?

To import a lookup contents, populate the columns in the import file that correspond to columns displayed in the lookup (for example the "Name" and "Description" columns). Enter the lookup in which you need to import the data and perform the [Import data] action from the [Actions] button menu. After mapping columns and setting parameters for deduplication, start the data import.

The percentage of profile completion displayed in the list after import is incorrect. How can I update it?

The percentage of profile completion is updated when you open the corresponding account or contact page, save a record or modify calculation rules in the corresponding lookup. Because of this, after importing the displayed percentage of profile completion may be out of date. To update the percentage, run the [Update the profile data population] business process.

How do I update a single column without modifying other columns during import?

To modify values of a single column, add at least one column for connection with section records and duplicate search, and a column with imported data. Any fields that are not represented in the imported Excel file, will not be modified during import.

How do I import records, view results and then roll back any changes made during the import?

Creatio is aimed at data accumulation and analysis. In most cases, DBMS functions are used to roll back changes and restore a database to a previous state. There are several options you can use to safely view changes that will be implemented after import:

- Test import and settings by importing small batches of data (2-3 records). In this case, you can delete imported records to roll back the changes.
- You can request a database backup to test and configure the system on a separate site.
- You can use development options to implement automatic regular deletion of unnecessary data.

My import file has separate columns for first, last and middle names, while Creatio has a single [Full name] field. How do I import contacts?

The [Full name] column in the [Contact] object is required and must be specified in the imported file. If your imported Excel file has separate columns containing first, last and middle names, perform the following simple steps:

1. Create a "Contact name" column in the imported Excel file.
2. Fill in the "Contact name" column. You can use a simple Excel formula to combine text from several cells into one.
3. Save and import the resulting file.

What columns should be included into the import file?

If you are unsure which columns the imported file must contain, use one of the options below to resolve the problem. Open the section where you plan to import records, and create a column in your Excel file for each needed section column.

Alternatively, download an Excel template that contains all columns of the needed object:

1. Open the System Designer.
2. In the [Admin area] block, click the [Advanced settings] link.
3. In the setup menu, select [Import data].
4. In the opened window, in the [Object] field, select the object whose records you plan to import, for example, "Contact", "City" or "Product". Enter object name or open the lookup window and use its filtering options.
5. Click the [Download template] button.

An Excel file containing all columns of the selected object will be downloaded. Required columns will be highlighted in orange, Examples of import files:

- An example of file for the import of accounts
- An example of file for the import of contacts
- An example of file for the import of products

How do I import users from Excel?

You can import Creatio users and portal users from Excel. Learn more in the “Setting up LDAP integration” article.

SEE ALSO

- How to prepare a file
- How to import a customer database
- Exporting list data to Excel

Finding and merging duplicates

NOTE

This guide is relevant for Creatio version 7.13.3 and up. The guide for previous versions is available in a separate article - "Finding and merging duplicates".

Duplicate records may appear in Creatio whenever users add new records to system sections. Finding and merging duplicates helps maintain the quality of your data in any Creatio section.

- Bulk duplicate search Launched for the whole database. Launched manually or automatically.
- Local duplicate search checks for duplicates for a particular record. It is run automatically, when a new record is added and saved in a section.

Additionally, you can manually merge any records in a section, even if they were not flagged as duplicates. This option is available for all system sections. This process is covered in the "Arbitrary merging of records" article.

By default, duplicate search is available in the [Accounts], [Contacts] and [Leads] sections. In Creatio, duplicate search is executed with the help of pre-configured rules, e.g., duplicates may be identified by searching for identical phone numbers or email addresses automatically. Creatio enables you to customize these rules:

- Customize out-of-the-box duplicate search rules for contacts, accounts and leads to suit your specific needs.
- Create custom rules for any Creatio section, including custom sections. This process is described in more detail in the "Duplicate search rules" article.

ATTENTION

To ensure the correct operation of bulk duplicate search, on-site users need to install additional components. Learn more in the "Setting up bulk duplicate search" article.

CONTENTS

Searching for duplicates

CONTENTS

How to search for duplicates

Bulk duplicate search

Bulk duplicate search runs manually or automatically.

You can initiate duplicate search manually in any section that has at least one duplicate search rule. For example, to run duplicate search in the [Contacts] section, use the [Show duplicate 'Contacts'] action. Once the search is complete, Creatio will display a list of records that have been identified as duplicates.

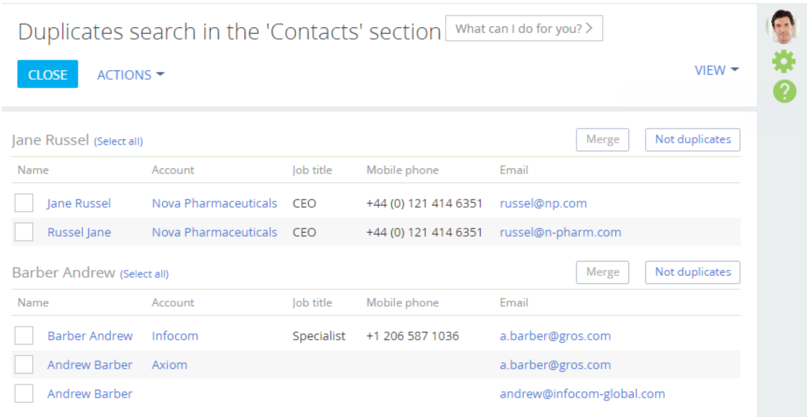
Automatic search is performed according to a configured schedule. Read more about registering font families in the “Setting up a schedule for an automatic general duplicate search” article.

ATTENTION

To open the duplicates, users must have permission to read and edit records in sections that will be used for the duplicate search, as well as permission to the “Duplicates search” (CanSearchDuplicates) system operation. Learn more about access permissions in the “Object permissions” and “System operation permissions” articles.

Regardless of whether you search manually or automatically, the results are displayed on the duplicate search window (Fig. 1).

Fig. 1 Duplicate search results example in the [Contacts] section



NOTE

To set up columns displayed in the list of duplicates, click [View] and select [List setup].

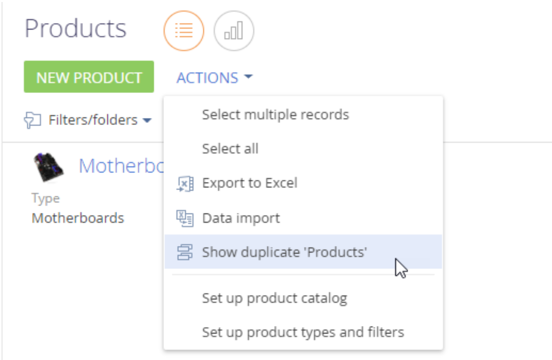
There are several ways to open this page:

- In a section, in the [Actions menu], select [Show duplicates] (Fig. 2).

NOTE

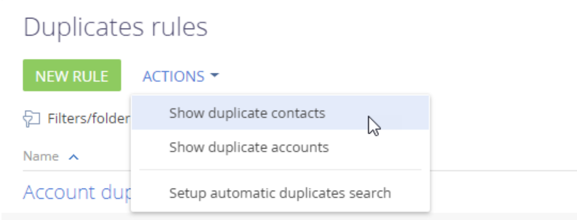
The [Show duplicates] action is available if at least one duplicate search rule is available in the section. Learn more in the “Duplicate search rules” article.

Fig. 2 Switching to the page with results using the action menu in a section



- Open the system designer by clicking and then click [Setup duplicates rules]. Select the [Show duplicate accounts] or [Show duplicate contacts] option in the [Actions] menu (Fig. 3). This option is available for the [Contacts] and [Accounts] sections.

Fig. 3 Switching to the page with duplicate search results using the [Setup duplicates rules] section



How to search for and process duplicates

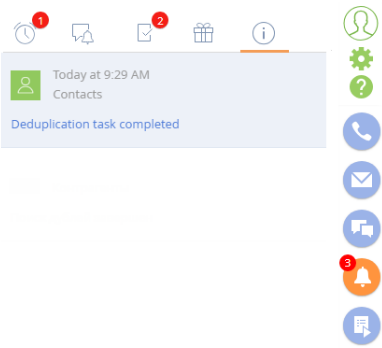
1. Open a section where you want to search for duplicates. For example, open the [Contacts] section.
2. In the [Actions] menu, select [Show duplicate 'Contacts'] (Fig. 2).

   A page with found duplicates will open. If the duplicate search was performed earlier (e.g., automatically), its results will be displayed on this page. You can process previous duplicate search results before searching again.
3. On the opened page, in the [Actions] menu, select [Run duplicate search].

   Creatio will look for duplicates in the background. In the meantime, you can continue working with the system.

   Once the duplicate search is complete, you will receive a notification on the tab of the notification center (Fig. 4).

Fig. 4 Notification about duplicate search completion

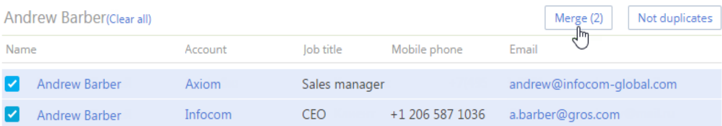


4. Open the link in the notification to view the results of the duplicate search. You can also open this page in several other ways (Fig. 2, Fig. 3):

   Duplicate records that were found based on the active duplicate rules are grouped, so that all records in a group are potential duplicates of a single record (Fig. 5).

   You can merge each group of records into a single record or indicate that the records in the group are not duplicates. They will be added into the list of exceptions for the next duplicate search.

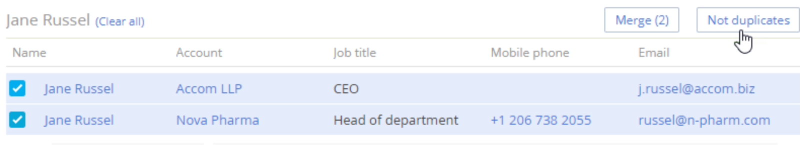
Fig. 5 Selecting duplicates for merging



   a. To merge duplicates, select the necessary records, and click [Merge].
      All selected records in the group will be merged into one that contains all the unique data from all merged records. If same field contains different data for the selected records, Creatio will prompt you to select which data needs to be saved. Read more about registering font families in the "How duplicates are merged" article.

   b. To add records to the list of exceptions, click the [Not duplicates] button for the group containing only unique records (Fig. 6).
      As a result, Creatio will not consider records in the group as potential duplicates for the next duplicate search.

Fig. 6 Example of records which are not duplicates



How to search for duplicates when saving records

Creatio starts looking for duplicates when you save records. If a duplicate search page opens while saving a new record, it is likely that the created record already exists in the system.

NOTE

The opened page will display all similar records, even if the user does not have the appropriate access permissions to view them. However, Creatio will only display the columns that match the pre-configured duplicate search rules.

You can return to editing the record or save it. If you save the record, it will be displayed in the duplicate search results in the future. A detailed guide on how to merge records or add them to the exception list is available in a separate article - "How to search for and process duplicates".

Arbitrary merging of records

You can merge any number of records at will, without running duplicate search. Merging is available for section records, as well as lookup values.

To do this:

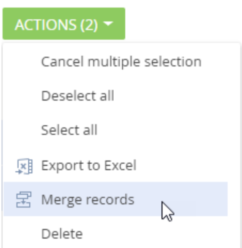
1. Enable the multiple record selection mode in the list by clicking [Actions] > [Select multiple records].

   NOTE

   You can select multiple records in the section by using the Ctrl or Shift keys. Hold down the Ctrl key to select multiple records in a random order. Hold down the Shift key to select a group of files that are contiguous (i.e. next to each other).

2. Select records to merge.
3. From the [Actions] menu, select the [Merge records] option (Fig. 7).

Fig. 7 Merging lookup values



NOTE

By default, the [Merge records] operation is available only to system administrators, which means that you need to grant permissions to other users manually. To do this, in the [Operation permissions] section, open the "Duplicates search" system operation (CanSearchDuplicates) and, on the [Operation permission] detail, provide permissions to the necessary users/roles.

Creatio will merge the selected records. If the records have different values in the same fields, duplicate merge window will open. Select the values to be saved in the merged record and click the [Merge] button. Read more about registering font families in the "An example of saving data when merging duplicates" article.

Once the records are merged, you will receive a notification. Refresh the page to view the results in the list. A single record will remain instead of the merged records. Detailed information about merging duplicates is available in a separate article - "How duplicates are merged."

SEE ALSO

- How duplicates are merged
- How the duplicate search works
- Duplicate search rules

How duplicates are merged

When you click the [Merge] button on the duplicate page, the unique data from all merged records is saved in one resulting record automatically. As a result:

- The record with the earliest date in the [Created on] field is used.
- The unique values of the fields and details of the duplicate records are saved in the resulting record. All activities, calls, leads etc. that were connected to the merged records will be available on the details of the resulting record.
- Identical phone numbers will not be duplicated even if different types are specified, e.g., if the same phone number is specified as a business and mobile phone.
- Identical communication options, addresses and noteworthy events will not be duplicated.
- If some field values are different (e.g., full name, phone numbers, etc.), you can select which values will be saved in the resulting record. You can also select which text note will remain after merging.
- All external links that point to the merged duplicate records will point to the resulting record.
- Creatio saves the feed posts of all merged records in the resulting record.
- If any of the merged records are referenced in the records of other sections, e.g., in the [Primary contact] field or in the [Contacts of accounts] detail of the [Accounts] section, the resulting record will keep the connections to records from other sections after merging.

An example of saving data when merging duplicates

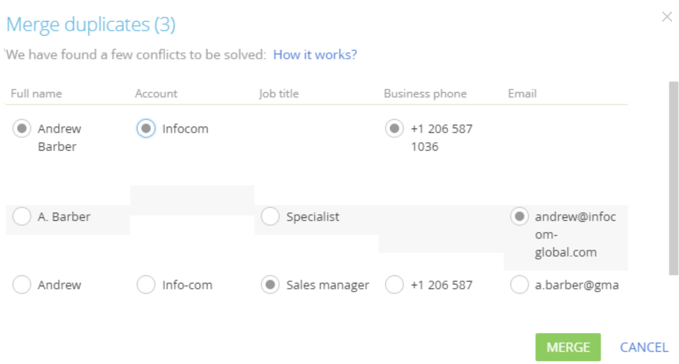
If values for the same field are different, you need to specify which data is to be saved to the resulting record when merging.

An example of which data is saved in the resulting records after merging is available in the table below:

FIELD	DUPLICATE 1	DUPLICATE 2	DUPLICATE 3	RESULTING RECORD
[Full name]	Barber Andrew	Andrew Barber	A. Barber	Decided by the user
[Type]	—	Client	Contact person	Decided by the user
[Account]	—	Infocom	—	Infocom
[Mobile phone]	—	+1 206 5871036	+1-206-587-10-36	Decided by the user
[Business phone]	+1 206 480-3801	—	+1 206 480-3801	Decided by the user
[Email]	a.barber1891@gmail.com	a_barber1891@gmail.com	—	Decided by the user
[Skype]	barber_andrew	—	—	barber_andrew

A window for merging duplicates will open (Fig. 8).

Fig. 8 Resolving deduplication conflicts



Select the radio button next to the records to be merged and click the [Merge] button.

Only one record will be saved after merging. All objects that were connected to the merged records will now be connected to this record. For example, if the radio buttons are selected as it is shown on the picture (Fig. 8), the resulting record will contain the following data:

- [Full name]: Andrew Barber
- [Type]: Customer
- [Business phone] +1 206 480-3801

- [Mobile phone] +1-206-587-10-36
- [Email] a.barber1891@gmail.com

SEE ALSO

- Duplicate seach setup
- How to search for duplicates when saving records
- How the duplicate search works
- Arbitrary merging of records

How the duplicate search works

The duplicates search mechanism is identical to the global search mechanism.

Creatio uses data indexing to remove all special characters, and divide all remaining symbols and numbers into two or three characters and records them in the index, which is then used by the search mechanism.

> NOTE
> Actual section records are not modified during indexing.

Local search procedure:

1. The user creates and saves a new record.
2. Creatio processes new data (removes all special characters, and divides all remaining data into two or three characters) and requests Elasticsearch to search for records, which contain the specified symbols.
3. Creatio displays all matches, according to at least one active duplicate search rule (the [Use this rule on save] checkbox must be selected for this rule).

   > NOTE
   > You can learn more about duplicate search rules in a separate article - "Duplicate search rules".

   Matches with word swapping will also be found.

The bulk search is executed in a similar way, taking into account the active duplicates search rules. Please note that the list of duplicates will not display the records which were excluded earlier via the [Is not a duplicate] button. You can learn more about processing duplicate records in a separate article - "How to search for and process duplicates".

All phone numbers are compared to each other, regardless of the phone number type: [Business phone], [Mobile phone], [Home phone]. For example, if the same phone number is registered as a business phone in one record, and as a home phone in another – the record will be considered a duplicate.

SEE ALSO

- How to search for duplicates when saving records
- Duplicate seach setup
- Arbitrary merging of records

Duplicate seach setup

CONTENTS

SEE ALSO

- Setting up bulk duplicate search

Duplicate search rules

Duplicate search is performed with the help of a set of rules. By default, Creatio includes out-of-the-box duplicate search rules for the [Accounts], [Contacts], [Leads] sections.

> NOTE
> All pre-configured rules are described in the "Pre-configured duplicate search rules for contacts and accounts" article (version 7.12.0).

You can perform the following actions in Creatio:

- create new duplicate search rules based on a text or a lookup field in any section
- enable or disable individual rules
- specify which rules will be used while saving a record
- remove unused rules

> NOTE
> Default rules designed to search for contact and account duplicates in leads cannot be deleted. The process of disabling these rules is described in more detail in the "How to disable a duplicate search rule" article.

How to create a new duplicate search rule

1. Open the system designer by clicking in the top right corner of the application window.
2. Click [Setup duplicates rules] in the "System setup" block.
3. Click the [New rule] button.
4. Set up the rule (Fig. 9):
    a. In the [Type] field, select a section which will use this rule, e.g., "Products". You can create a rule for a section if the [Indexing for full-text search] checkbox is selected in its properties.

    b. Click + on the [Attributes] detail and add a column (or multiple columns) that will used to search for duplicates. Please note that the [Attributes] detail can only store text and lookup fields.
    If you select multiple attributes, e.g., "Code" and "Name", the duplicate search is performed via the "AND" operator, i.e., Creatio will look for records in which both the code and the name are duplicated. When creating several rules with only one attribute, e.g., if the first rule contains only the "Code" attribute and the second one contains the "Name" attribute, then the duplicate search is performed via the "OR" operator, i.e., displays records in which either the code or the name are duplicated.

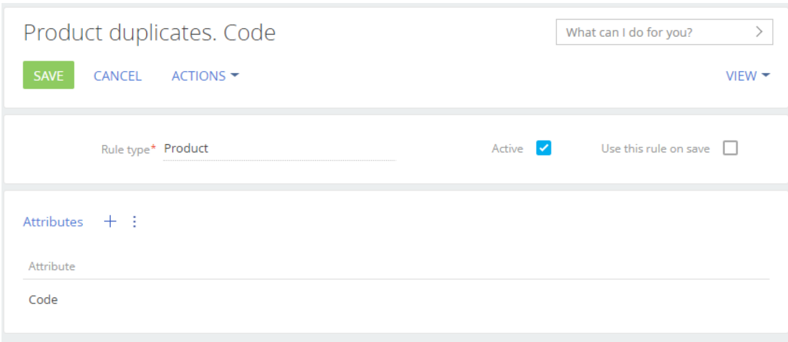
NOTE

If search conditions overlap, Creatio will use the more strict rule when searching. For example, if the following duplicate search rules are configured: "Full name match" and "Full name and mobile phone match", Creatio will only consider the records that have matching full names as duplicates since the corresponding rule is greater.

c. Select the [Active] checkbox.

d. Select the [Use this rule on save] checkbox to use this rule while saving the record.

Fig. 9 Creating a new duplicate search rule



5. Save the changes.

   Creatio will display a message prompting the user to log in to the system again. As a result, duplicates search will be performed according to the created rule, and the action [Show duplicates] will appear in the corresponding section.

How to disable a duplicate search rule

You can deactivate a rule (permanently or temporarily) and it will not be used to search for duplicates. To do this:

1. Open the System Designer by clicking in the top right corner of the application window.
2. Open the [Setup duplicates rules] link.
3. Select a rule in the list and click [Open].
4. Remove the [Active] checkbox.
5. Click [Save] to apply the changes.

   As a result, the rule will not be used to search for duplicates. You can re-activate it anytime.

SEE ALSO

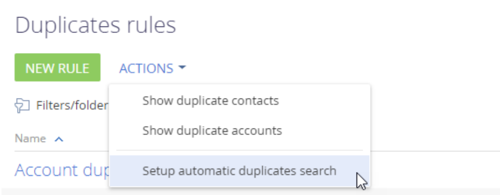
- Setting up a schedule for an automatic general duplicate search
- Bulk duplicate search
- How to search for and process duplicates

Setting up a schedule for an automatic general duplicate search

In Creatio, you can set up a schedule for an automatic general duplicate search, e.g., three times a week. To do this:

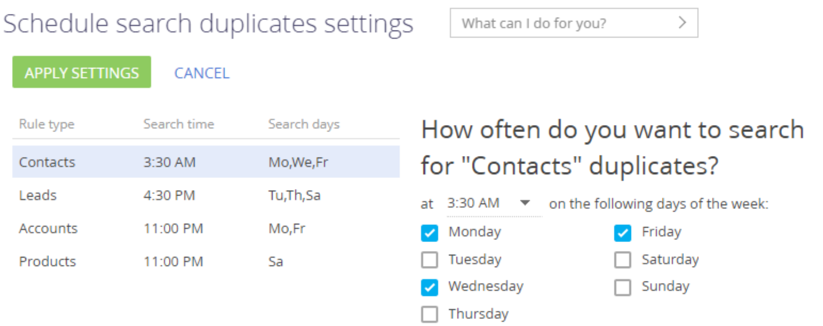
1. Open the system designer by clicking the button in the top right corner of the application window.
2. Open the [Setup duplicates rules] link.
3. Select the [Setup automatic duplicate search] option from the [Actions] menu on the duplicate search page.

Fig. 10 Opening the automatic duplicate search setup window



4. Set the parameters for the automatic duplicate search on the [Duplicate search schedule] page (Fig. 11):

Fig. 11 Duplicate search schedule setup



   a. Select a section, for which the schedule will be configured. The list only displays the sections that have at least one duplicate search rule configured.
   b. Select the time for the search to run.
   c. Select the day of the week for the search to run.

5. Click the [Apply] button.

   As a result, a duplicate search will be performed automatically based on the active rules. Please note that merging duplicates automatically is not performed in this case - all found records need to be processed manually.

To disable the automatic duplicate search, clear the values in the time and date field, or clear the checkboxes for the days of the week of the search and save the changes. The auto duplicate search will be disabled in any of these scenarios.

SEE ALSO

- Searching for duplicates
- How duplicates are merged
- How the duplicate search works
- Arbitrary merging of records

Data enrichment

Maintain the completeness and relevance of the customer base via the data enrichment functionality. You can add new users to the system, and enrich contact and account data from all available sources in a few clicks.

In Creatio, you can enrich data in three ways:

- add new contact data to the contact page from the correspondence
- add new account data from the open Internet sources
- enrichment of contacts and accounts data from their profiles in social networks

ATTENTION

To enable data enrichment from correspondence and open sources, Creatio on-site users will need to specify a cloud service key in the corresponding system setting. More information about the setup is available in a separate article.

CONTENTS

SEE ALSO

- How to set up data enrichment
- Working with emails

Contact profile enrichment

Contact profile enrichment is a quick an easy way to update contact records with latest information about their communications, addresses, noteworthy events and accounts in the system. You can create a new contact from the incoming email, add new data to the contact page, link the contact record with its profiles in social networks and obtain new data.

CONTENTS

SEE ALSO

- Account profile enrichment

Enrichment of contacts from the incoming emails

Smart enrichment allows you to maintain up-to-date contact data and create new contacts in a few clicks. When an email is received from a contact, the system automatically searches for new information about the contact in the message text, for example:

- contact full name

- account name of the contact
- phone numbers
- email addresses
- social network accounts
- websites

If the information is found, you can add it to the existing contact or create a new contact record.

> **NOTE**
> If the communication option type cannot be determined for information found in the email signature, the default communication option type will be assigned to the communication options added during enrichment. For example, for phone numbers it will be "Business phone". You can change the type of these communication options on the contact page. The default communication option types are defined in the [Default type of contact communication options] system setting.

CONTENTS

SEE ALSO

- How to set up data enrichment

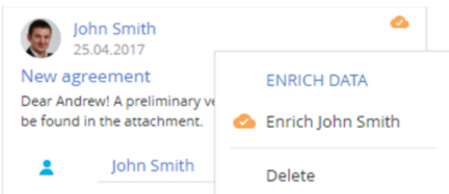
Contact profile enrichment from the incoming email

The incoming emails are checked for enrichment data upon downloading. Creatio analyzes the data in individual emails and email threads (enriching profile data of all thread participants). The signatures of incoming email messages are compared with the contact records in the system. If enrichment data are found, the button appears next to the message header in the email message area of the communication panel.

To enrich a contact profile:

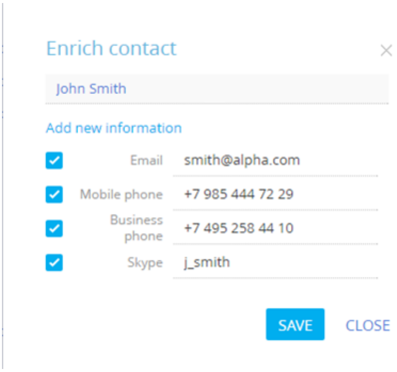
1. Click the button.
2. A menu with a list of all contacts to create or update records will be displayed. Select the [Enrich "contact name"] action (Fig. 1)

Fig. 1 Enrichment of contacts from the incoming email



3. In the opened window, select the data you want to add to the contact page from the email messages found in the signature (Fig. 2).

Fig. 2 Data enrichment window



NOTE

If the message is included in an email thread, the contact enrichment window will contain information on both the current contact and any other contacts identified in the thread, such as contacts from a forwarded message. Check the list of enrichment data before adding them to the system.

4. Save the new data.

NOTE

The contact data for enrichment, that were not selected by the user will be remembered by the system and will not be offered for this contact anymore.

As a result, the information found in the emails will be added to the contact page and updated in all correspondence for the previous 7 days. The new data will also be reflected on the profile data complete indicator.

SEE ALSO

- How to enrich contact profile from the contact page
- How to add a new contact from an email
- How to enrich contact profile from the case page
- How to process emails

How to enrich contact profile from the contact page

You can run smart enrichment of the contact data directly from the contact page. If enrichment data is available, the button will appear in the contact profile. Data enrichment from the contact page is similar to the enrichment data from an email message.

After adding the data to the contact page, the button will disappear from the email messages in the communication panel and from the contact page.

SEE ALSO

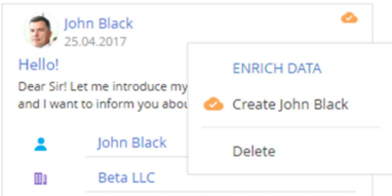
- Contact profile enrichment from the incoming email
- How to add a new contact from an email

How to add a new contact from an email

If an email is received from a contact that has not been registered in the system, the sender's data will be displayed as “unrecognized” in the emails. In this case, you can create a new contact record directly from the incoming email. To do this:

1. Open the emails area in the communication panel.
2. Select the author of the email for which you want to create a contact.
3. Tap the button.
4. Select the [Create “contact name”] from the data enrichment menu (Fig. 3).

Fig. 3 Creating a new contact from the email conversation



5. Select the contact data that you want to add in the opened window.
6. Save the changes.

As a result, a new contact will be added to the system. The [History] tab of the new contact page displays all email messages in the last 7 days where this contact appeared as the sender or recipient. The email will be automatically linked to the new contact.

SEE ALSO

- Set up data enrichment
- How to process emails
- Working with emails FAQ

How to enrich contact profile from the case page

Creatio enables you to enrich contact data directly from the email chain on the case page. Use data enrichment on the case page to:

- populate the contact record with new data found in the email signature
- add a new email address to the contact page
- create a new contact based on the email and nickname of the applicant and specify it as a contact for the case.

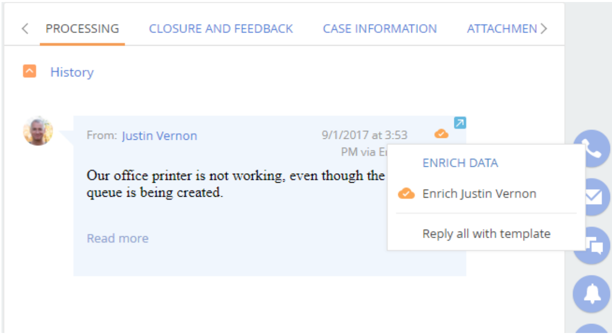
ATTENTION

Adding a new email address to the contact’s page and creating a new contact from the email chain is only available if automatic contact registration for unknown email addresses is disabled. Use the [Automatically create new contacts for unknown email addresses] system setting to manage the way Creatio handles unknown email addresses.

Existing contact profile enrichment

The button will appear in the email chain on the case page If Creatio detects new data in the email signature (Fig. 4). The process is similar to the email data enrichment on the communication panel.

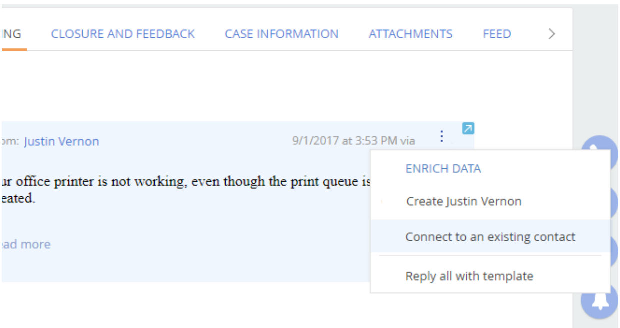
Fig. 4 How to enrich contact profile from the case page



Adding a new email address for an existing contact

If the case was registered based on an unknown email address of an existing contact, you can easily add the new address to the contact's page directly from the case page. Click the [Connect to an existing contact] button and specify the contact to enrich (Fig. 5).

Fig. 5 Adding an email address for an existing contact

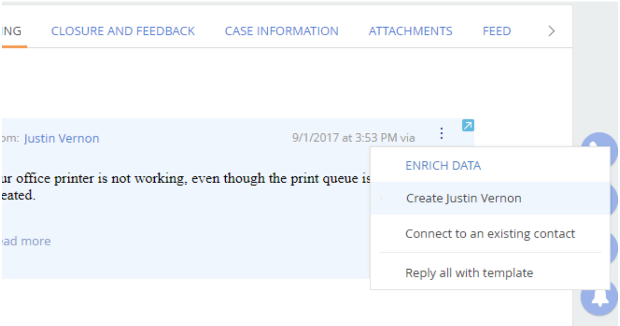


Upon adding a new email address to the contact's communication options, the email will be displayed on the [Email] detail on the contact's page. Creatio will prompt you to select the contact as the main contact in the case.

Creating a new contact

If the case was created based on an email from an unknown contact, you can also create a new contact from the case page. Adding a new contact that way is similar to adding a contact from an email on the communication panel (Fig. 6). Creating a new contact only requires the name and the email address of the case contact, specified in the "From" field in the email (e.g., John Best, <john.best@gmail.com>).

Fig. 6 Creating a contact from an email on the case page



The email used to create a contact will be displayed on the [Email] detail on the contact's page. Creatio will prompt you to select the contact as the main contact in the case.

SEE ALSO

- How to add a new contact from an email
- Contact profile enrichment from the incoming email

Receiving contact information from Facebook

Integration with Facebook allows you to maintain the information about contacts stored in the system.

Run the [Update with social networks data] action to receive additional information about a contact. To run the action, specify the Facebook account on the [Communication option] detail of the contact page.

CONTENTS

SEE ALSO

- Receiving account information from Facebook
- Additional setup

Connecting a contact to its Facebook account

1. On the contact page, expand the [Communication options] detail and click the button.

   NOTE

   Only one communication option with the "Facebook" type can be added on the contact page.

NOTE

If you have not used Facebook integration before, when you click the button, the Facebook authorization window will open.

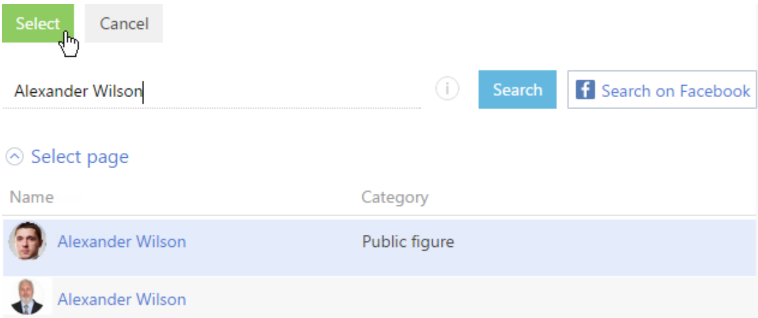
2. The displayed Facebook search page will contain public pages and profile pages of the contact, if any. You can change the search criteria or enter the link to the page in Facebook if it is known.

NOTE

If the link to the Facebook profile of the account does not have a numeric user ID, the profile will not be displayed among the results.

3. Select an account to add to the [Communication option] detail of the contact page (Fig. 7).

Fig. 7 Selecting a contact account



As a result, a new record with the “Facebook” type will be added to the [Communication options] detail. If the account doesn't have a photo, it will be added from the Facebook page.

NOTE

If a contact has both a profile page and a public page, it is recommended to add the public page to the [Communication options] detail because the public page contains more information about the contact.

SEE ALSO

- Populating the contact page with Facebook information
- FAQ on populating the contact page with Facebook information
- Connecting an account to their Facebook account

Populating the contact page with Facebook information

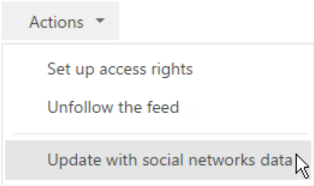
Let's review the example of populating the contact page with photo from the Facebook page of the contact.

NOTE

Populating the contact page with data from the Facebook public page is described in the “Populating an account page with Facebook information” article.

1. On the contact page, expand the [Communication option detail] and make sure the contact is connected to the proper Facebook account.
2. Select the [Update with social networks data] option from the [Actions] menu (Fig. 8).

Fig. 8 Selecting the [Update with social networks data] action



3. On the displayed page, you can select a new contact photo and click the [Save] button.

   As a result, the contact photo on the contact page will be updated.

SEE ALSO

- Populating an account page with Facebook information
- Fields completed in Creatio from a Facebook page
- FAQ on populating the contact page with Facebook information

FAQ on populating the contact page with Facebook information

- Why searching by user page address on Facebook returns no results?
- Why aren't some of the existing pages displayed among the results of the search by Facebook user name and last name?
- Why does the [Update with social networks data] action result in different amount of fields updated for different contact records?
- Why the field for entering Facebook address becomes inactive after a Facebook profile has been added?
- How to obtain access to the Facebook page of the contact if it is protected by privacy settings?

Why searching by user page address on Facebook returns no results?

In the Facebook social network, in addition to profile page, a user can have a public page. Facebook public pages are visible to everyone, regardless of whether a viewer is a registered Facebook user or Page fan.

Due to changes in Facebook privacy policy, searching for a user profile by unique page name is unavailable for third-party applications. If the link to the Facebook profile of the account does not have a numeric user ID, the profile will not be displayed among the search results. For example, search request "www.facebook.com/zuck" will return no results, while searching for "https://www.facebook.com/4" will return Mark Zuckerberg's page. You can also search by user's first and last names.

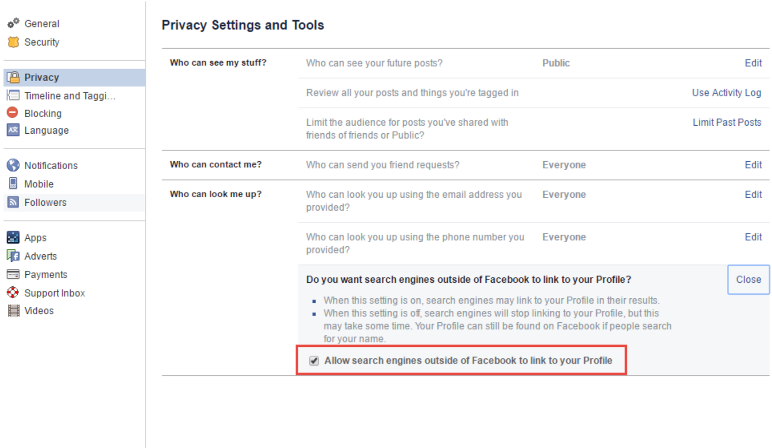
Searching for public pages has not changed, they can be found using direct links of any type.

Why aren't some of the existing pages displayed among the results of the search by Facebook user name and last name?

Facebook search data is provided through the Facebook API. If a Facebook user restricted indexing of their page by search systems, this user's data will not be found by Creatio.

To search for personal pages via third-party applications, a user must permit tho show their profile in search results (Fig. 9).

Fig. 9 Facebook privacy settings page



Why does the [Update with social networks data] action result in different amount of fields updated for different contact records?

Due to changes in Facebook privacy policies, third-party applications can obtain limited amount of information from personal user pages. If a contact has both a profile page and a public page, it is recommended to add the public page to the [Communication options] detail because the public page contains more information about the contact. The list of Creatio fields that can be filled in from a public Facebook page is available in a separate article.

Why the field for entering Facebook address becomes inactive after a Facebook profile has been added?

When adding a new Facebook profile link, the field becomes unavailable for editing because Facebook API generates an individual link for every contact.

How to obtain access to the Facebook page of the contact if it is protected by privacy settings?

If the Facebook personal page of the contact is protected by privacy settings, the contact data cannot be enriched from this page. This is due to Facebook privacy policies,. To quickly switch from Creatio to contact data on Facebook, add a link to the user profile on the contact page as a communication option of the "Web" type. This link can be obtained from the enrichment of contacts from the incoming emails if the contact has links for profiles in social networks in the signature or after the search in Facebook.

SEE ALSO

- Connecting a contact to its Facebook account
- Populating the contact page with Facebook information

- Fields completed in Creatio from a Facebook page

Account profile enrichment

You can save time on searching and entering contact details of an account using the profile enrichment function. Profile enrichment includes:

- Adding company website address and logo on a new account page. This function is performed if you select one of suggested company names from the drop-down list when filling out the [Name] field of a new account record. Read more >>>
- Adding communication options to an account page: phone numbers, email addresses and social network profile. This is performed automatically, when you run the [Enrich data] action. Read more >>>
- Adding information from the social network public pages to an account page. Performed by the [Update with social networks data] action. Read more >>>

To enable data enrichment, Creatio on-site users will need to specify a cloud service key in the corresponding system setting. Read more >>>

CONTENTS

SEE ALSO

- Contact profile enrichment
- Additional setup

How to enrich the account data from the open Internet sources

Use the [Enrich data] action to run automatic search for account information. Click the button to run this action.

> **NOTE**
> To access the data enrichment function, you need to have permission for the [Can enrich account data] system operation.

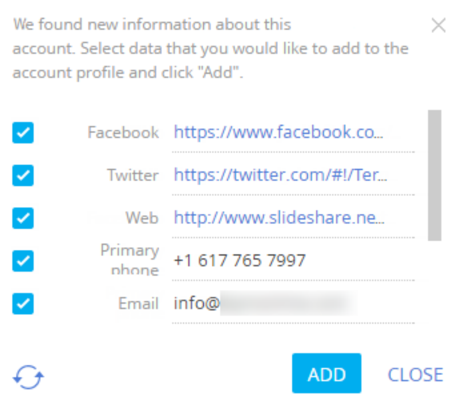
> **NOTE**
> Before running the data enrichment, make sure that the account profile contains at lease company name and website address.

As a result, Creatio will search open sources for the following account data:

- email addresses
- phone numbers
- account profiles in Twitter, LinkedIn, Google+, Youtube, Instagram, SlideShare and Pinterest social networks.

When the search is complete, a window with a list of found communication options will open (Fig. 10).

Fig. 10 Data enrichment window



You can edit the communication options in this window. Select records that must be added to the account page and click [Add]. The data will be saved on the account page:

- email addresses will be saved as “Email” communication options
- phone numbers will be saved as “Primary phone” communication options
- Facebook profile pages will be saved as “Facebook” communication options
- Twitter profile pages will be saved as “Twitter” communication options
- LinkedIn, Google+, Youtube, Instagram, SlideShare, Pinterest profile pages will be saved as “Web” communication options.

To run the search again, click the button in the data enrichment window.

NOTE

You can change the number of displayed communication options of each type using system settings. Read more >>>

SEE ALSO

- Set up data enrichment
- Account data enrichment from the open Internet sources FAQ

Account data enrichment from the open Internet sources FAQ

- Data enrichment cannot find account information. Why?
- Why does the list of found data contain invalid values?
- How do I limit the number of records in the data enrichment window?

Data enrichment cannot find account information. Why?

Data enrichment function searches account information in open sources. The list of the sources is confidential. If the search does not return any account information, please try the following:

- Ensure that data enrichment function is properly configured in your Creatio.
- Ensure that account name matches the corresponding company name.
- Add at least one company website in the [Web] field of the account page. Ensure that the specified website address is correct.
- Specify company email.
- Check the [Social links enrichment limit], [Phone number enrichment limit] and [Email enrichment limit] system settings. Their values must not be "0".

If the problem persists, the following may be the case:

- There is no information about the company in the open sources, or Creatio could not find the company based on the entered data. Please contact Creatio support and send a list of companies that cannot be found. We will use this information to improve the data enrichment function.
- Creatio was unable to find new information. All information obtained through data enrichment is already available in the account profile.

New Creatio versions will use more sources and better search algorithms for data enrichment.

Why does the list of found data contain invalid values?

Creatio searches information in unstructured data from the open sources using AI-like algorithms that can process unclear data. As a result, the data enrichment window may contain invalid communication options. We recommend reviewing the data enrichment results before saving them in the account profile.

The data search and recognition algorithms will be perfected with each Creatio update.

How do I limit the number of records in the data enrichment window?

Open sources may contain dozens of communication options for certain companies, such as emails of different departments, branches and offices. Use the following system settings to limit the number of different types of communication options displayed in the data enrichment window:

- [Social links enrichment limit]
- [Phone number enrichment limit]
- [Email enrichment limit]

By default, each limit is set to "10".

To change the limit:

1. In the system designer, open the [System settings] section.
2. Go to the [Creatio cloud services] > [Data enrichment] folder and open the needed system settng.
3. In the [Default value] field, enter the maximum number of communication options to display in the data enrichment window.

As a result, Creatio will limit the number of communication options of this type displayed in the data enrichment window.

SEE ALSO

- How to enrich the account data from the open Internet sources

Receiving account information from Facebook

Integration with Facebook allows you to maintain the information about accounts stored in the system.

Run the [Update with social networks data] action to receive additional information about an account. To run the action, specify the Facebook account on the [Communication option] detail of the Creatio account page.

CONTENTS

Connecting an account to their Facebook account

1. On the account page, expand the [Communication options] detail and click the button.

   NOTE

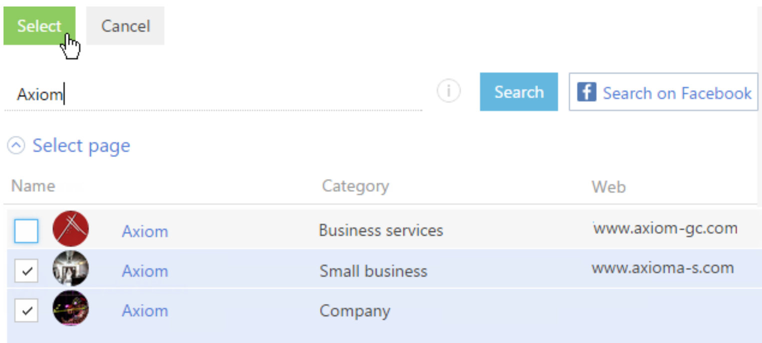
   If you have not used Facebook integration before, when you click the button, the Facebook authorization window will open.

   NOTE

   To add one more communication option with the "Facebook" type to the existing ones, click [Add] —> [Social networks] —> [Facebook].

2. The displayed Facebook page will contain the list of public pages that meet the search criteria. You can change the search criteria or enter the link to the account page in Facebook if it is known.
3. Select the Facebook accounts to add to the detail (Fig. 11).

Fig. 11 Selecting the public pages of a Creatio account

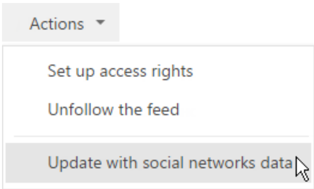


As a result, a new record with the "Facebook" type will be added to the [Communication options] detail.

Populating an account page with Facebook information

4. On the account page, expand the [Communication option] detail. Make sure that the detail contains the needed Facebook pages of the account.
5. Select the [Update with social networks data] option from the [Actions] menu (Fig. 12).

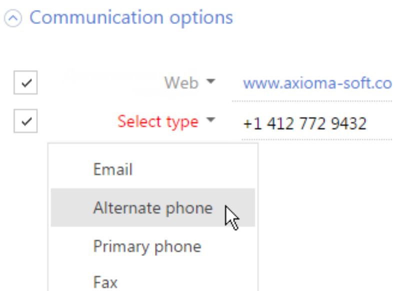
Fig. 12 Selecting the [Update with social networks data] action



The displayed page will contain the account data stored in Creatio and the information from all Facebook public pages that are specified on the [Communication options] detail of the account page.

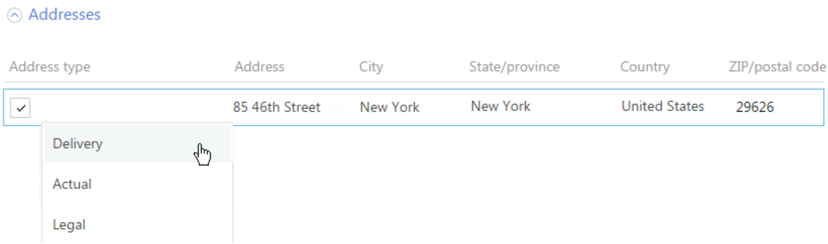
6. Analyze and select the data to add to the existing account information:
   a. On the [Communication options] detail, select the communication options to be saved in Creatio. To add a phone number, specify its type, for example, "Primary phone" or "Extension number" (Fig. 13).

Fig. 13 Selecting a communication option type



   b. On the [Address] detail, enter the value in the [Address type] field. If necessary, edit the following fields: [City], [State/province] and [Country] (Fig. 14). Select the addresses to be saved in Creatio.

Fig. 14 Selecting an address type



c. Edit the information on the [Noteworthy events] detail by specifying the event type, for example, “Company foundation day”.

d. If necessary, edit the [Notes] detail.

7. After you edit and save all the needed data from Facebook, click the [Save] button on the page.

   As a result, the information will be added to the corresponding page details.

   ATTENTION!

   On the population page, if you deselect the information that has been previously added to Creatio, this information will be deleted from the account page after the data population is completed and the changes are saved.

Fields completed in Creatio from a Facebook page

Let's review the list of fields that can be populated in Creatio based on the data from Facebook. Fields of the public page that can be mapped to the Creatio fields are located on the [About] tab of the Facebook public page and are described below.

Facebook field	Creatio field
Website	Web is saved on the [Communication options] detail.
Phone	To save a phone number, in Creatio, specify its type, for example, “Business phone” or “Mobile phone”. is saved on the [Communication options] detail.
Email	The email address. is saved on the [Communication options] detail.
Start Date	The start date is saved on the [Noteworthy events] detail.
Address	The address. is saved on the [Addresses] detail.
Short Description	Notes are saved on the [Attachments and notes] detail.

SEE ALSO

- Facebook integration setup (for “on-site” Creatio applications only).

ACCELERATE

Approvals

Creatio enables the users to submit records for approval by other users who can choose to approve or reject the record. There are two types of approvals based on who the approver is:

- Approval by a specific employee, for example, a department manager.
- Approval by an employee of the specific role (user group), such as "Finance department", "Administration", etc.

NOTE

To submit one record for approval to several employees, create an approval for each of them.

By default the approval functions are available in the [Contracts], [Invoices], and [Orders] sections. You can enable approving in any section.

How to approve a record

If someone has submitted a record for your approval, you can approve, reject or forward it to another employee. You can manage your pending approvals with the help of:

- The notification center on the communicational panel. Read more >>>
- The [Approvals] tab on the section record page. Read more >>>
- The action panel of the record page. Read more >>>

CONTENTS

How to set up approvals

To set up approvals in a section:

- Enable the approval function in the section wizard.
- Set up approving process in the in the process designer or case designer.

How to enable approving in the section

1. Select the [Open section wizard] option from the [View] menu in the list of the corresponding section.
2. Select the [Enable approval in section] checkbox on the [Section] tab.
3. Save the changes. Saving may take some time.

As a result:

- The [Approvals] tab will appear on the section record pages (Fig. 1). You may need to refresh the record page to display the tab.
- A new tab will appear in the notification center for approvers where they can view pending approvals and process them (Fig. 2).

NOTE

Enabling approvals in the section wizard will not automatically create a business process or case for approving. You will need to set up the process or case manually.

ATTENTION

After enabling approving in section it is not possible to clear the [Enable approval in section] checkbox. If you do not use this function, delete the [Approvals] tab from the section page. Read more >>>

Fig. 1 [Approvals] tab on the [Documents] section record page

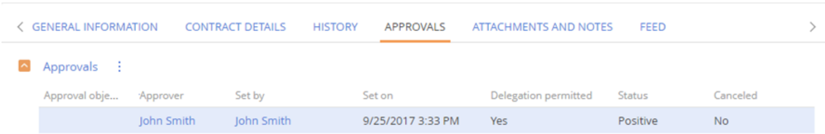
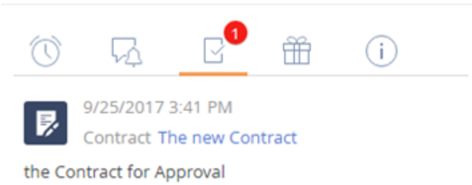


Fig. 2 Tab with the approval notifications



How to set up the approving process

Depending on the specifics and complexity of your approval process, you can set up your approval sequence in:

- the process designer
- the case designer.

If the approval process is complex and has several stages, use the process designer.

If the approval process is simple and has no complex conditions and transitions, or if it does not have a set sequence and is difficult to structure, use the case designer.

NOTE

More information about setting up the section cases can be found in the process setup documentation.

- If you set up approvals in the case designer, the approval will be created automatically when a corresponding case stage is activated.
- If you set up approvals in the business process designer, user the [Approval] business process element to specify the approval's behavior.

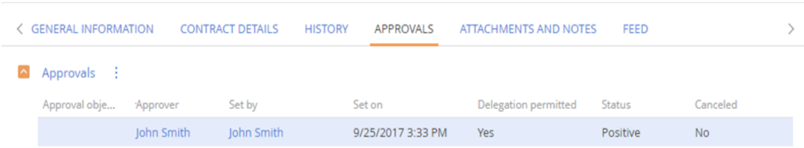
[Approvals] tab

The [Approvals] tab is displayed on the record page if the approvals are enabled in the section (Fig. 3).

NOTE

By default the tab is available in the [Contracts], [Invoices], and [Orders] sections. Adding the tab to another section can be preformed in the section wizard. Read more >>>

Fig. 3 [Approvals] tab on the record page.



The [Approvals] detail contains information about all approvals created for the current record.

Approval objective	Purpose of the approval. The field is populated once the approval is created.
Approver	An employee or a specific role that was specified as an approver when the approval was created. If a role is selected instead of specific user, any employee who is a member of the organizational role can process the approval. The field is populated once the approval is created.
Set by	Name of the employee who processed the approval.
Set on	Date and time when the approver processed the approval.
Delegation permitted	If this checkbox is selected, the approver can forward the approval to another employee or a group.
Status	Approval result, ("Positive","Negative", etc). If the approval has not been processed yet, it has the "To set" status.
Delegated from	Name of the employee who forwarded the approval. This field is populated if the approver choses to delegate the approval. For example, initially, a sales department manager is specified in the [Approver] field. If the approval is later delegated to the finance department, the [Delegated from] field will be populated with the name of the sales department manager.
Canceled	The checkbox indicates that the approval has been canceled and another approval is valid at the moment. You cannot cancel an approval manually, the checkbox is selected and cleared automatically, according to the business logic of the approval process. For example, Creatio can automatically select the [Canceled] checkbox for the current approval if the other approval of the same record from the same approver has the "Negative" status.
Notes	Approver's comments about the approval result. The field is filled in once the record is approved or rejected.
Waiting for my approval	The checbox enables filtering the approvals with the [Canceled] checkbox cleared, whose approver is the current user.

Approving actions

Use additional commands in the actions menu of the [Approvals] detail to manage approvals.

[Show all approvals]/[Show active approvals] – displays all approvals for the record, or only those for which the [Canceled] checkbox cleared. By default, it displays active approvals only.

[Approve] – sets the approval with a positive result. After you confirm the action, the approval status will be changed to "Positive".

> NOTE
> By default, the approval comments are optional. You can make the [Comment] field required by editing the [Accept approval without comment] system setting.

[Reject] – sets the approval with a negative result. Select this action to open an additional window for entering approval comments. After you confirm the action, the approval status will be changed to "Negative".

[Change approver] – changes the employee assigned as approver. The action is available for approvers if the [Delegation permitted] checkbox is selected for the approval and the [Delegated from] field is not filled in. This action opens a list of users and user groups that comprise the organizational structure of your company. The user selected in this list will be specified in the [Approver] field, and the current user will be specified in the [Delegated from] field.

[Delete] – deletes the selected approval. Requires administrator privileges. An approval can only be deleted after being approved/rejected by the approver or if it is canceled.

The [Approve], [Reject], and [Change approver] commands can be used for approvals in the "To set" status. The [Canceled] checkbox should be cleared.

Approval notifications

You can enable approval's email notifications in the properties of the [Approval] element in the business process or case.

The command line

Use Creatio command line (the field labeled "What can I do for you?") to quickly access the frequently used operations, such as opening a record page or running a business process.

The command line is similar to the search line of web search engines. For example, enter the name and click button or press the [Enter] key, to find a contact record.

Execute other commands in the same way. For example, enter the command "Create Contact" to instantly open a new contact page or "Run Process" to launch the corresponding business process. The command line can recognize several variations of the same command. For example, both the "Create Contact" and the "Add Contact" are both valid commands.

If you enter a partial command, the system will offer you a list of several options. For example, if you enter "Create A", the system will offer the following options: "Create Account" and "Create Activity".

CONTENTS

Global search

You can search the system data by entering a search query in the command line. Creatio always searches in all sections (including custom sections).

> NOTE
>
> On-site users need to perform preliminary registration of the global search. Learn more in the "Global search setup" article.

How to search

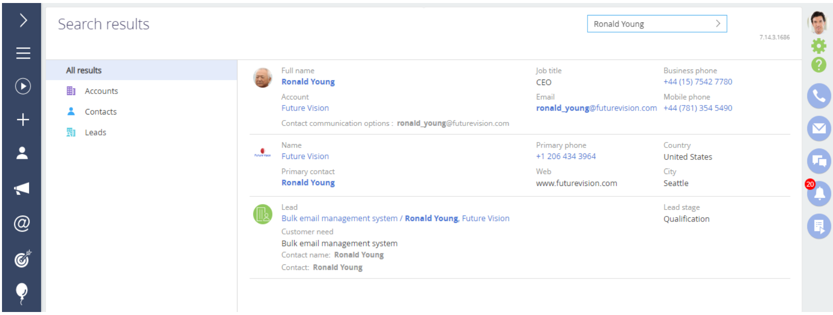
- The records are searched by their text and lookup fields as well as the following details: [Addresses], [Communication options] and [Banking details]. For example, you can find an account by its alternative name, phone number, address or account number.
- Files and links on the [Attachments and notes] tab of the record page can be found by their name or description.
- Search requests are processed taking into account common typos and morphology of different word forms in English (other languages are not currently supported). The query is not case-sensitive. You only need to enter the search text, for example, contact last name or the name of the knowledge database article. For a more accurate search, add more details to your search query, for example, "ronald young director future vision".

> NOTE
>
> To include certain section's data in global search results, open the section wizard for the necessary section and select the [Indexing for full-text search] checkbox. Learn more about indexing in the "Configure section properties" article.
>
> Indexing is enabled in the following sections by default: [Contacts], [Accounts], [Employees], [Knowledge base], [Leads], [Opportunities], [Products], [Orders], [Invoices], [Contracts], [Documents], [Projects], [Services], [Service agreements], [Configuration] (advanced settings), [Cases], [Problems], [Changes], [Campaigns], [Events] and [Marketing plans].

How the search results are displayed

The search results are displayed as a list of records containing the text of the search query or a part of it. The text that matches the search query is highlighted in bold for each found record (Fig. 1).

Fig. 1 A list of search results



The results are ranked by relevance both in the actual results list and with any configured filters. For example, if the search is performed from the [Contacts] section the records of this section are displayed at the beginning of the list, and records from other sections of the system will be displayed below. For example, if you set up a filter by contact on the search result page, contacts with matching names will be displayed at the top of the list.

If a user does not have permissions for a specific object column, e.g., for viewing an invoice amount, such column is not displayed on the page of global search results.

NOTE

The rules for displaying search results are determined using the [Global search default entity weight] and [Global search default primary column weight] system settings.
To display search results taking morphology, typos and fuzzy matches into account enable the [Display search results with partial match] system setting.
To manage the amount of displayed search results with partial match and increase the chances of finding data for inaccurate search requests, set a value for the “Match threshold for displaying in search results (percent)” system setting.
System settings are described in more detail in “The [System settings] section” article.

Example: searching contacts by phone number

Lets find a contact by its phone number.

1. Enter the phone number in any format in the command line. You can enter only part of the number, with or without special delimiter characters.

2. Click the button or press the [Enter] key.

   After processing the search query, a list of results will be displayed with the contact you were looking for at the top of the list and other records that contain the entered phone number afterwards.

Displaying multi-language data

Starting from version 7.14.0, Creatio can display localized data in the global search results in the preferred language of the user. For example, if the [Full name] field is localized, French users will see its value in French, and English users will see it in English.

This option is enabled via the "Show localized data in the global search results" system setting (UseLocalizableGlobalSearchResult). If the setting is disabled, localized data will be displayed according to the language selected for the system user (specified in the "System operations user" system setting).

NOTE

Data localization is enabled using development tools. Read more in the "Enabling multi-language object schema" article.

SEE ALSO

- Navigation in the system
- Creating records
- Business process launch
- The command line setup
- Global search setup

Navigation in the system

You can use the Go to section command of the command line to quickly display contents of any folder in any section. For example, while working with the [Activities] section, you can easily open the "Customers" folder in the "Accounts" section. To do this, enter the command: "Go to section Accounts Customers".

When you enter the command, the drop-down list will display commands for opening other folders in that particular section.

SEE ALSO

- Global search
- Creating records
- Business process launch
- The command line setup

Creating records

To create records from the command line, use the Add command. When you enter it, the drop-down list will display commands for creating records in various sections, such as "Add Activity", "Add Contact", etc.

The name of the new record can also be specified as part of the command. For example, enter "Add Contact Jones" in order to create a contact whose last name is "Jones". As a result, a contact page will be opened containing "Jones" in the [Full name] field.

SEE ALSO

- Global search
- Navigation in the system
- Business process launch
- The command line setup

Business process launch

To start a business process, enter the Run process command and the process name in the command line. For example, if there is a "New employee registration" process set up in the system, enter the "Run process New employee registration".

NOTE

The list of processes available for selection in the command line is defined in the [Process library] section. Managing your business processes is described in a separate book.

SEE ALSO

- Global search
- Navigation in the system
- Creating records
- The command line setup

The command line setup

To create new commands for the command line, enter: create custom command. You can specify the command text (for example, "My tasks"), select the key word (for example, "Go to section") and then stipulate additional parameters depending on the selected key word (for example, you can choose the [Activities] section and dynamic folder "My tasks").

Key words represent types of operations that can be performed by the command line.

- Search – for finding records.
- Go to section – for navigating through sections and folders.
- Add – for creating records in system sections.
- Run process – for launching a business process.

NOTE

If any objects were configured in the system, for example, new sections were renamed or added, then to make them appear in the command line, you must perform the action "Generate metadata for command line macros" in the system settings page. This action is available by clicking the button in the right upper corner of the advanced settings page.

Make sure to log out and log back in before using the newly registered command. Otherwise, it will have no effect.

SEE ALSO

- Global search
- Navigation in the system
- Creating records
- Business process launch

VIDEO TUTORIALS

- Interface overview

User profile

The profile page is used to set up individual settings for current user.

There are several ways to open the user profile page:

- Choose the [User profile] option from the main menu.
- Click the [Profile] link on the home page.
- Click the profile picture at the top right corner of the window and select [Your profile].

Change password	Click this button to change your account password in Creatio. You will need to re-enter current password.
Localization	Select the interface language. This affects only common interface captions and does not change the language of the section records and lookup values.
Time and date format	Time and date format For example, when you select the "Brazilian (Brazil)" time format, the date will be displayed as dd.mm.yyyy, 00:00 and if you select "English (USA)" — mm/dd/yyyy 00.00 PM The time and dates on record pages both in the list and in the exported files are displayed in the format specified in the user profile.
Time zone	Select the default time zone. The list of available time zones is configured in the [Time zones] lookup.
The command line settings	Set up the list of additional commands recognized by the Creatio command line, for example, commands that are used for viewing a list of your tasks or any other group of records. These commands are custom so they are only available for the users who added them.
Configuring the Call Center parameters	Configure agent's telephony parameters, such as telephony server address, phone line, login and password.
Email accounts	To send and receive email messages in Creatio, set up the parameters of your email accounts using the [Email accounts] button. Here you can also view the number of new messages that has been received in each of your mailboxes.
Accounts in external resources	You can synchronize Creatio contacts with your Google contacts, as well as Creatio tasks and meetings with your Google calendar. Facebook and Twitter can be used to search for additional data and contacts within your social networks.
Restore default settings	Restore default interface settings, such as column layouts in section lists, parameters for sorting records, etc.

NOTE

The system automatically saves custom interface settings, such as list columns layout, parameters for sorting records, etc. For each section, it also saves the information about active system views (sections will open in the views that were selected for them previously).

NOTE

The list of available time zones in the [Time zones] lookup must match the list of time zones set up on the production server with the deployed Creatio.

SEE ALSO

- Phone integration
- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service
- Integration with Google services
- Integration with social networks

VIDEO TUTORIALS

- Creatio inetrface overview

Working with emails

Email integration features in Creatio enable you to enrich the history of your cooperation with customers. The emails that you receive will be automatically bound to other objects in Creatio. You can create and manage emails and run business processes by email directly in Creatio.

NOTE
To receive and send emails in Creatio, you need to set up the email provider connection parameters, add an email account and set up mailbox synchronization. If your email provider uses IMAP/SMTP protocol, you will need to set up the integration with the mailbox by IMAP/SMTP protocol. There are pre-configured providers for popular email services, such as Gmail, Yahoo and AOL mail. If you use the MS Outlook email service, set up the integration with MS Exchange.

Open the email area by clicking the  button on the communication panel. The button counter displays the number of unread email messages.

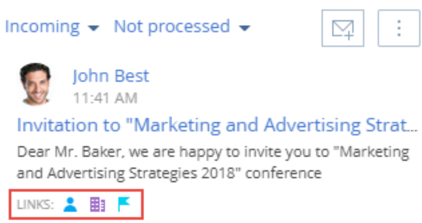
At the top of the [Email] tab on the communication panel you can see filters and buttons for managing emails (Fig. 1). You can:

- Create a new email-message. Read more >>>
- Add a new account and set up your mailbox. Read more >>>
- How to upload emails to Creatio Read more >>>
- You can filter your mails, for example, display only the outbound or unprocessed email messages.

Fig. 1 Filters and buttons for managing emails

Email messages are displayed as a list. You can see the sender's data, time of sending, email subject and the initial text in every email. At the bottom of each email you can see the icons of all bound objects (Fig. 2). You will understand what Creatio records your email is bound to and what additional data you have at a single glance.

Fig. 2 Displaying of email bound objects on the communication panel



NOTE
You can learn more about how to bind email messages to other Creatio objects automatically or manually in separate articles.
How to set up automatic binding of emails to other Creatio objects. Read more >>>
How to bind emails to Creatio records manually. Read more >>>

CONTENTS

SEE ALSO

- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service

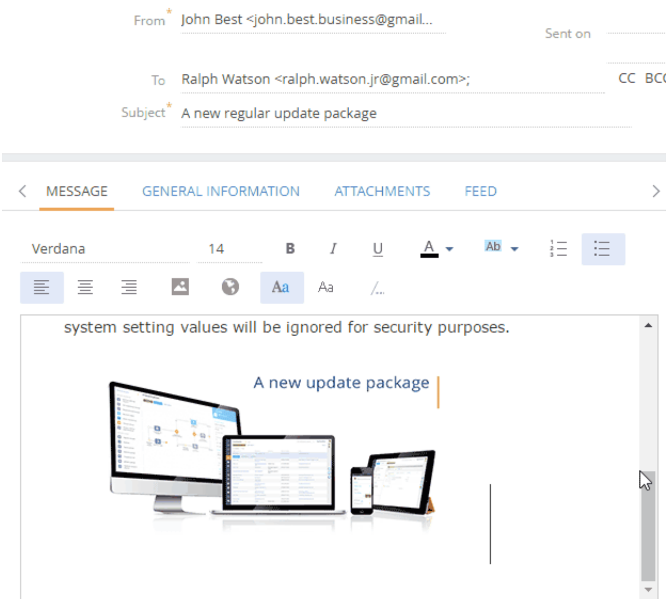
VIDEO TUTORIALS

- Email with Marketing Creatio

How to create a new email from the communication panel

1. Click the button on the communication panel.
2. To create an email, click the button.
3. On the email page, populate the required fields:
   a. In the [From] field select the mailbox to use for sending this email. If you configured an email signature, it will be added to the text area.
   b. Specify the recipient's email.
   c. If necessary, click the [Cc] and [Bcc] buttons to display the [Carbon copy] and [Blind carbon copy] fields.
   d. Specify the subject of the message.
   e. Enter the body of the email.
   f. To add an image to the email body, paste it from the clipboard or drag-and-drop the image to the email text (Fig. 3).

Fig. 3 Using the drag&drop feature to add an image



4. Click the [General information] tab.
    a. Populate the standard activity fields (such as [Show in calendar], [Start], [Due], etc.) if the email must be displayed as a calendar activity.
    b. If the email is bound to other Creatio objects, such as accounts and documents, populate the corresponding fields in the [Connected to] field group.
5. To add an attachment, click the [Attachments] tab of the email page.
    a. Click the [Add file] button.
    b. In the opened window, select the file to attach.

NOTE

By default, the maximum size of an attachment is 10 MB. You can change this value in the “Attachment max size” (MaxFileSize) system setting.

6. Click the [Send] button.

    As a result, the email will be sent from the mailbox, specified in the [From] field to the addresses specified in the [To], [Cc] and [Bcc] fields. The email sending status will be changed to “Completed”.

SEE ALSO

- How to create a new email based on a template
- How to upload emails to Creatio
- How to set up a personal mailbox

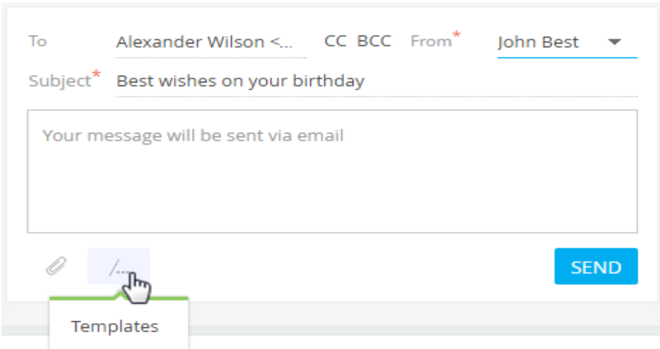
How to create a new email based on a template

You can use email templates when sending emails with the action panel button. The action panel is available in several system sections, such as [Contacts], [Accounts], [Leads], etc.

To create an email based on a template:

1. Click the button on a record page action panel.
2. In the email message area, populate the needed fields ([From], [To], [Subject], etc.).
3. Instead of entering a message text, click the [/...] button to open template lookup (Fig. 4).

Fig. 4 Selecting a template for an email



4. Select the needed template.

NOTE

The template list displays the records from the [Email templates] lookup. If you are creating an email from a contact page, the list displays only those templates that have the "Contact" specified as a source of macros, as well as any templates that have no source specified at all. Same applies to accounts, leads, etc.

As a result, the text of selected template will be added to email. Macros, such as recipient's name and sender's name will be highlighted in the text.

5. Edit the template text, if needed, and click the [Send] button.

NOTE

Email templates are available only when sending emails from the action panel. Email templates are not available when creating a message through the communication panel, or from the [Communication options] detail on pages of certain Creatio sections.

You can add and modify templates in the [Email templates] lookup. The content designer is used for creating and editing email templates.

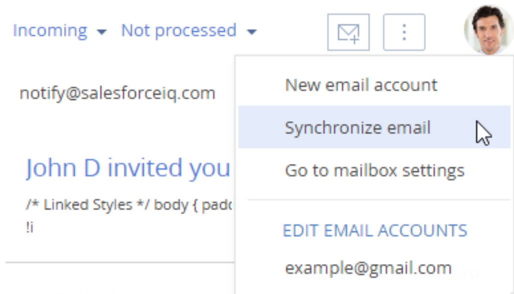
SEE ALSO

- Content designer

How to upload emails to Creatio

1. Click the  button in the communication panel.
2. From the  menu, select the [Synchronize email] option (Fig. 5).

Fig. 5 Synchronizing email



As a result, emails will be downloaded from the synchronized email server folders. Email attachments will be automatically added to the [Files] detail of the [Attachments] tab.

NOTE

You can set up periodic synchronization of the email account using synchronization setup page.

SEE ALSO

- How to process emails
- How the fields are populated for downloaded emails
- How to set up a personal mailbox

How to process emails

An email is considered processed if either the [Account] or [Contact] is specified and at least one of the connection fields, for example, [Opportunity] or [Contract], is filled in.

NOTE

Emails in which the [Contact], [Account] and [Case] fields were automatically populated are not processed.

When uploaded, the emails are processed automatically according to the email binding rules. For example, if the subject of the email contains an invoice number, this email will be automatically connected to the corresponding invoice. Read more >>>

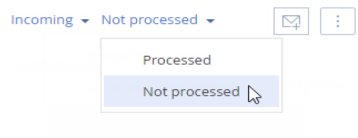
NOTE

An email is considered processed if the [Needs processing] checkbox on the email page is cleared. The checkbox is selected/cleared automatically.

The emails that were not processed automatically require manual processing. To process an email:

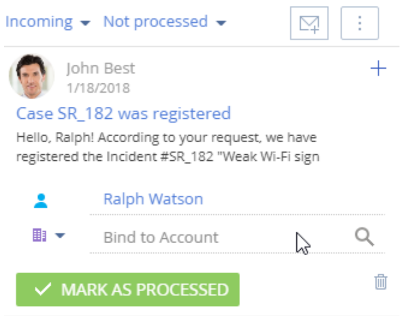
1. Display the unprocessed emails by selecting the [Not processed] filter (Fig. 6).

Fig. 6 Filtering emails



2. Select the email to process (Fig. 7).

Fig. 7 Selecting an unprocessed email



3. Bind an email to Creatio records. More information about binding emails is available in a separate article.
4. Click the [Mark as processed] button.

   As a result, this email will no longer be displayed in the list of unprocessed emails and the [Needs processing] checkbox on its page will be cleared. To view the list of processed emails, select the [Processed] filter in the filter area.

SEE ALSO

- How to upload emails to Creatio
- How the fields are populated for downloaded emails
- How to set up rules for binding emails to other Creatio objects automatically
- How to bind emails to Creatio records manually
- How to create a new record in a section based on an email message.
- How to set up a personal mailbox

How to run a business process by email

You can set up the list of business processes involved in the email management. For example, if a customer expresses interest in your products in his email, a new lead has to be created, if the email contains a request or a question, the system has to register a case.

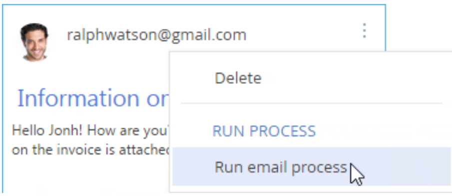
NOTE

Detailed descriptions of the business process automation is available in the Creatio business process documentation.

To run a business process by email:

1. Click the button on the communication panel.
2. Select the email to run the business process by.
3. From the menu, select the process to run by the current email (Fig. 8).

Fig. 8 Running a process by email



As a result, the business process will be run by the selected email.

NOTE

To display the business process in the menu of the email, add the "Email Process" tag, as well as a parameter with the "RecordId" code and the [Unique identifier] data type in the business process parameters (see business process documentation for more information).
You can change the tag using the "Email processes tag" (EmailProcessTag) system setting.

SEE ALSO

- How to process emails
- How to set up a personal mailbox

How the fields are populated for downloaded emails

Each time an email is downloaded, Creatio automatically performs initial email processing.

1. The [From] field value is associated with the communication options of contacts and accounts registered in the system. If the match is found, the [Account] and [Contact] fields on the email page will be automatically filled in.
2. If no match is found, the system analyzes the values in the [To], [Cc] and [Bcc] fields. Then, if the match is found, the [Account] and [Contact] fields on the email page will be automatically filled in.

NOTE

When matching the [To], [CC] and [BCC] fields with contact communication options, any contacts connected with Creatio user records will be ignored.

3. Creatio also verifies the rules for binding emails to other Creatio objects. For example, if the email subject contains an invoice number, the email will be automatically bound to the corresponding Creatio invoice. Read more >>>

The emails uploaded to Creatio will be populated as follows:

Creatio field name	Email message field name
From	Values of the corresponding email fields.
To	
Cc	
Subject	
Body	Message body.
Start date	Date and time when the email was created in the mailbox.
Due	
Author	User that received this email message.
Owner	
Status	The “Completed” value.
Priority	It is populated depending on the email importance, for example, “Average”, “High”, or “Low”.
Email status	The “Sent” value.

SEE ALSO

- How to process emails
- How to set up rules for binding emails to other Creatio objects automatically
- How to set up a personal mailbox

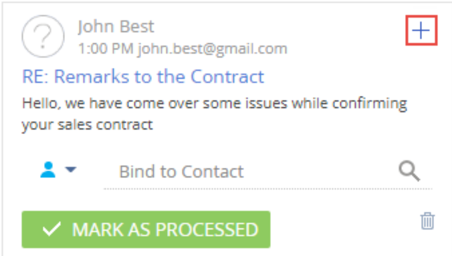
How to create a new record in a section based on an email message.

You can create a new record in any Creatio section based on an email message from the communication panel. For instance, you can add a new contact based on an email from an unknown sender. His email address and name will be automatically filled in on his edit page with the data from the linked email message. If you add another record (i.e., an opportunity, invoice or an order), Creatio will automatically populate its corresponding fields on the edit page with the contact data from the email message. Thus when you create a new opportunity the field [Customer] on the opportunity edit page will contain the name of the account or contact.

Below is an example of creating a new record based on an email message for a contact.

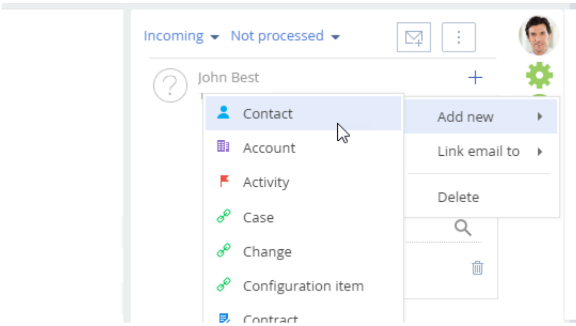
1. Click the  button on the communication panel.
2. Select an email message.
3. Click the + button in the top right corner of the email message and select [Add new] command (Fig. 9).

Fig. 9 Adding a new record based on an email message in the communication panel



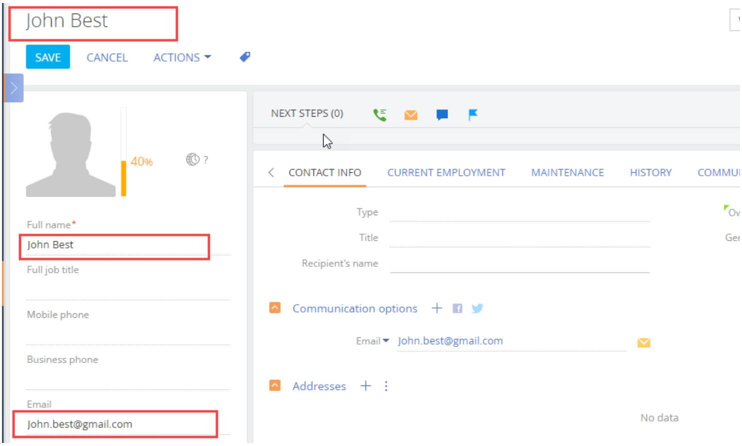
4. Select an object (the type of Creatio record to create) from the menu, for example, "Contact" Fig. 10).

Fig. 10 Selecting the type of Creatio record to create



5. A new contact edit page will be created, its [Name] and [Email] will be populated with the email message data. You can modify the entered data manually before saving the changes (Fig. 11).

Fig. 11 Page of the contact, created from the email message



As a result, a new record based on the email message data will appear in the [Contacts] section .

SEE ALSO

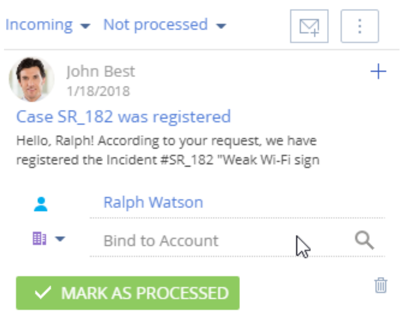
- How to process emails
- How to bind emails to Creatio records manually
- How to set up rules for binding emails to other Creatio objects automatically
- How the fields are populated for downloaded emails
- Working with emails FAQ

How to bind emails to Creatio records manually

You can bind email messages to other records manually:

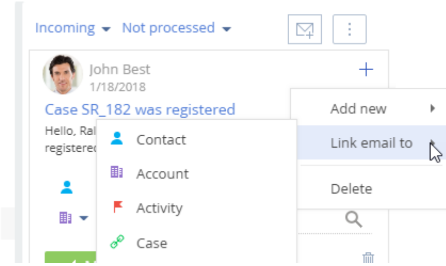
- By using a special email field where you can specify a Creatio record to bind (Fig. 12).

Fig. 12 Binding an email message to another record using email message fields



- By clicking the + button in the top right corner of the email message (Fig. 13).

Fig. 13 Binding an email message to another record using the + button

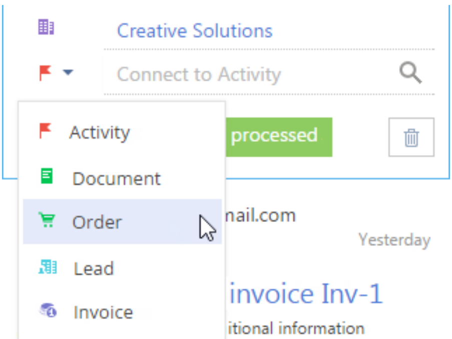


- By using the [General information] tab of the email message page. To open the email message page, click its subject.

To bind an email message to a Creatio record:

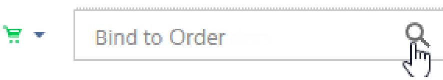
1. Click the button on the communication panel.
2. Select the email message that needs linking to another record.
3. Click the and select the necessary object, such as “Activity” (Fig. 14).

Fig. 14 Selecting an object (Creatio section) to link an email to one of its records



4. Select the record to link the email to in the lookup field. (Fig. 15).

Fig. 15 Binding an email to a Creatio account



As a result, the bound email message will be displayed in the [History] tab of the activity page.

You can also bind an email message to other Creatio records using the button in the top right corner of the message. To do this:

1. Click the button and select [Link email to] command (Fig. 13).
2. From the displayed menu, select an object, for example, "Account".
3. In the opened window, select the necessary account from the lookup.

The two methods of binding emails to Creatio records work identically.

SEE ALSO

- How to process emails
- How to create a new record in a section based on an email message.
- How to set up rules for binding emails to other Creatio objects automatically
- How the fields are populated for downloaded emails
- Working with emails FAQ

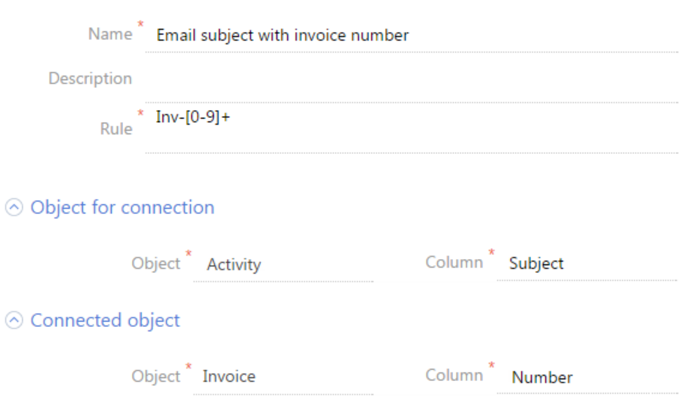
How to set up rules for binding emails to other Creatio objects automatically

To bind an incoming or outgoing email to other Creatio objects, set up the binding rules in the [Rules for connecting emails to system sections] lookup. For example, if the email subject contains an invoice number, the email will be automatically bound to the corresponding Creatio invoice.

To set up the binding rules:

1. Open the system designer by clicking the button in the top right corner of the application window.
2. Click the [Lookups] link in the [System setup] block.
3. Open the [Rules for connecting emails to system sections] lookup.
4. On the lookup page, click the [Add rule] button or open an existing rule for editing.
5. On the displayed page, populate the required fields (Fig. 16):

Fig. 16 Setting up the binding rules



ACCELERATE

a. Specify the rule name, for example, "Email subject with invoice number".

b. In the [Rule] field, enter a regular expression that would match the subject text, such as the invoice number prefix.

CASE

For example, if the following invoice auto numbering format is set up as follows: Inv-1, Inv-2, Inv-3, ..., Inv-n, the regular expression is: Inv-[0-9]+. As a result, when the following email is received - "Additional information for Inv-53", Creatio will automatically verify whether the specified invoice exists. If the invoice is found, the [Invoice] field on the email page will be populated with the corresponding value.

NOTE

To ensure the correct connection between emails and Creatio records, set up different auto numbering patterns for different objects. For example, the auto numbering mask for invoices is "Inv-{0}", for orders – "Ord-{0}", for contracts – "Cont-{0}", etc. In Creatio the record auto numbering is set up using the system settings.

c. Populate the [Object for connection] field group. To automatically bind emails to Creatio objects, select "Activity" in the [Object] field. In the [Column] field, specify the field to bind by. Creatio matches emails based on their subjects. Use the [Subject] column for indicating the subject.

d. Populate the [Connected object] field group. In the [Object] field, select the Creatio object, such as "Invoice". In the [Column] field, select the column for which the search is done. In this case, the column is [Number].

6. Save the rule.
7. Similarly, add the rules for other sections.

   As a result, the message subjects will be checked according to the configured rules each time an email is downloaded or sent from Creatio. If the match is found, the connection fields will be automatically populated. In addition, such messages will be automatically considered processed.

SEE ALSO

- How to set up a personal mailbox
- How to process emails
- How to bind emails to Creatio records manually
- How the fields are populated for downloaded emails
- Working with emails FAQ

Setting up sending localized emails

Localized email templates in Creatio enable you to send emails to your customers in their native language. This function is used when sending template-based email messages from the action panel, communication panel, as well as when sending notifications on business processes.

Perform the following steps to set up sending localized emails:

- Set up the languages that will be used for your communication with customers. Read more >>>
- Set up localized email templates. Read more >>>

Setting up languages for contact communication

The preferred language is specified on the corresponding [Contact] page. It is the language used for sending notifications to the contact. It does not depend on the interface languages configured for user operation or the default language. The [Customer languages] lookup values are used to specify languages and generate multilingual templates.

- Only the languages with the [Is used] checkbox selected in the [Customer languages] lookup are available for selection on the [Contact] page.
- By default, all languages listed in the lookup are available for usage in email templates. If you add inactive language to a template, the [Active] checkbox will be selected for this language in the [Customer languages] lookup.

The deactivated language becomes unavailable in the [Preferred language] field menu on the contact page, but is still displayed if it was specified earlier. The email template tab in such language is hidden, but emails will still be sent if this language is specified on the contact page.

If you reactivate a language, all the earlier created templates will be displayed in the lookup.

Setting up localized email templates

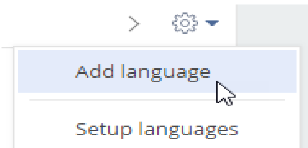
You can set up localized email template in the [Email templates] lookup or in the content designer.

To create a localized template:

1. Open the [Email templates] lookup in the [Lookups] section of the system designer.
2. Select the template to which you want to add localizations.
3. Click the button. In the menu, you will see all languages with the [Active] checkbox selected in the [Languages] lookup. Select a template language you want to add.

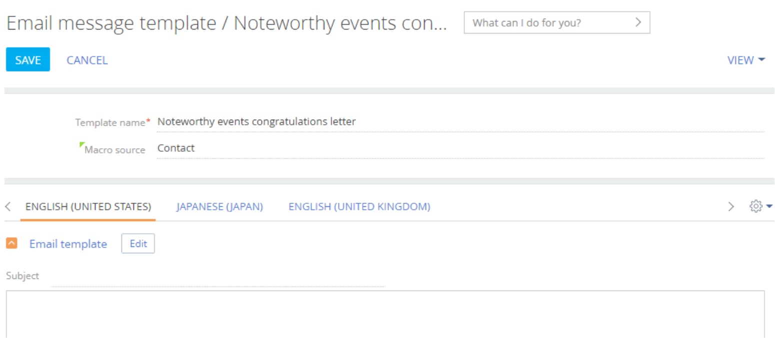
   If there are no active languages in Creatio yet or you want to add a tab with the language that has not been activated, select the [Add language] menu option (Fig. 17) and select the template language you want to add in the opened window. The [Active] checkbox for this language will be selected automatically.

   Fig. 17 Adding languages to the template

4. After you select the language, Creatio will prompt to copy the content of an existing template to the added tab. Select this option if you need to use the configured layout for the added localization.
5. If you need to add several languages into a template, reproduce steps 3 and 4 for each localization. As a result, several tabs for creating emails in the selected languages will be displayed on the template page (Fig. 18).

Fig. 18 Localized email template



6. Select the necessary tab and enter the email subject. To switch to editing the email body, click the [Edit] button. The content designer page will open. You can learn more about creating templates via content designer in a separate article. Similarly you can create emails in every of the selected languages.
7. Save the changes.

NOTE
When copying a multilingual template, all of its saved localizations will be copied.

How to define a language when sending multilingual email messages

To define the language of a template that is sent to a customer Creatio verifies:

1. Whether the preferred language is populated on the contact page.
   - If the field is populated, the template in the specified language will be sent to the recipient.
   - If the field is not populated, Creatio will switch to the next verification stage.
2. Whether the language of mailbox from which the email is sent is specified (only for Creatio service products).
   - If the language of the mailbox is specified, the email in mailbox language will be sent to the recipient.
   - If the language of the mailbox is not specified, Creatio will switch to the next verification stage.
3. Whether the [Default language for messages] system setting is populated.
   - If the system setting is populated, the email in the system setting language will be sent to the recipient.
   - If the system setting is not populated, the email in the system default language will be sent to the recipient.

SEE ALSO

- How to create a new email based on a template
- Working with emails FAQ

- Content designer

Working with emails FAQ

Why do I receive an email notification that login/password is incorrect after mailbox registration?

Email server security settings sometimes block access to mailboxes from third-party applications. If you entered all information correctly during email account registration, but still received a notification about incorrect user name or password, do the following:

1. In the mailbox settings, enable IMAP access. Usually, email forwarding and working with POP/IMAP protocols settings are in a separate settings group.
2. In the email account security settings, enable access to your email account from third-party applications.
3. In most cases, the email server sends users an email about mailbox external connection attempt. In most cases, you can confirm the connection authenticity by following a special link from this email.
4. Repeat the mailbox registration procedure.

How do I set up a custom email provider?

To set up an email provider integration, you need to open ports 25 and 587 on the Creatio application server. On the email provider selection page, click the [Add provider] button, select the provider type and fill out all send/receive settings. Please see dedicated articles for detailed procedures for IMAP/SMTP and MS Exchange email provider setup.

Why no emails can be received in Creatio after successful mailbox synchronization setup?

This may occur if one of the following is the case:

1. An application required custom field was added to the “Activity” object.

   To enable receiving emails, modify the field attributes, making it required on the page level, but not required in the “Activity” object.
2. Emails, received from an IMAP mail server have been downloaded to Creatio and then deleted, or they had been downloaded in any other email client earlier.

   To receive the emails in the system, change the name of the lookup that was created based on the “EmailSynchronizedKey” object to any random name.

How to set up a shared mailbox?

Shared email accounts are used for emailing between the support team and the users. Shared mailbox setup is similar to individual mailbox setup in general, but has a number of additional steps.

Why the outgoing emails are not imported to Creatio?

You can set up import of all emails from your mailbox to Creatio. Alternatively, you can import emails from specific malibox folders only. Check your email account folder settings for email import.

If your mailbox security settings restrict access to certain mailbox folders for third-party applications, these folders will be unavailable for importing in Creatio. To permit access to these folders for third-party applications, modify your mailbox security settings.

Also, in some cases, outgoing emails may not import from MS Outlook, because not all email servers support saving emails sent from third-party applications.

Why do I receive the “Error sending email, please contact system administrator” message when trying to send emails?

This error may be the result of the following:

- Sending emails is restricted on the provider level;
- No connection to SMTP server;
- One of the following ports is closed on the SMTP server: 25, 465, 587.

Contact your system administrator to determine the exact cause of the error and correct it.

I cannot see the [Email] detail in the [Contacts] section. Why?

The [Email] detail is not displayed for contacts who have the “Employee” value specified in the [Type] field, and the “Our company” value specified in the account profile. Use Creatio development tools to modify this logic.

Working with currencies

In Creatio, you can store monetary values in multiple currencies. The values that you enter will be automatically converted to different currencies according to the exchange rates. These functions are available in products with the [Products], [Orders], [Invoices] and [Contracts] sections.

The currencies are used in special “currency fields”.

CONTENTS

How to work with currency fields

In Creatio, you can enter monetary amounts in the special currency fields. For example, you can specify a product price in a “currency” field.

Currency fields store both the monetary amount and the currency in which this amount is specified. Click a currency field title to view the list of available currencies. The list contains currencies that are available in the [Currency] lookup (Fig. 1).

Fig. 1 Selecting currency from the list in the currency field

NOTE

If the [Currency] lookup contains only one record, the list of currencies in the currency field will be unavailable.

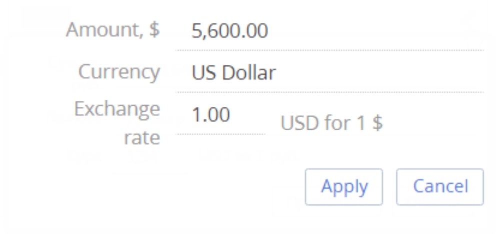
If you change currency in a populated currency field, the amount will be automatically converted to the new value according to currency exchange rates.

NOTE

Read more about how Creatio converts currencies in a separate article.

Clicking the button in the currency field displays an additional edit window (Fig. 2).

Fig. 2 Additional currency field edit window



In this window you can:

- View the equivalent of the specified monetary amount in the base currency in the [Amount] field. This is a non-editable field.
- Change the currency of the monetary amount (will be recalculated automatically).
- Edit the exchange rate of a currency in relation to the base currency, the amount will be recalculated automatically. The new rate will be in effect only for the current record.

  NOTE

  Use the [Base currency] system setting to specify the "base currency". All exchange rates will be calculated according to the base currency.

- View the value of the multiplicity ratio between the specified currency and the base currency when determining the exchange rate.

  NOTE

  When you select the base currency, the [Rate] field is automatically filled in with the "1" value and becomes grayed-out.

To save changes in the additional window, click the [Apply] button or anywhere outside of the currency field edit window.

SEE ALSO

- How is the monetary amount calculated during conversion

How is the monetary amount calculated during conversion

You can work with various currencies in Creatio. The conversion is performed automatically, taking into account the conversion currency exchange rate in relation to the base currency and multiplicity ratio.

- The base currency is the currency based on which the rate for all other currencies is set. Use the [Base currency] system setting to select a base currency.
- The conversion currency is any other currency to which the money is converted.
- The exchange rate determines the conversion currency amount in the base currency.
- The multiplicity ratio indicates how many monetary units of the base currency correspond to the set exchange rate.

The exchange rate and ratio of the currency are specified in the [Currencies] lookup (Fig. 3).

The exchange rate of the conversion currency is specified in terms of the base currency taking into account the ratio. Currency rates are automatically re-calculated according to their base currency exchange rates and ratio.

For example if the Yen is the base currency and the USD will have the 56537.3 exchange rate value for the 1000 ratio in the [Currencies] lookup, the exchange rate will be displayed in the additional window of the currency field as 17.6874 USD for 1000 Yen.

Fig. 3 – Possible content of the [Currencies] lookup

Name	Short name	Symbol	Ratio	Rate
Euro	EUR	€	100	107.1300
Yen	UAH	hrn.	100	1.9400
US Dollar	USD	$	1	1.0000
Australian Dol...	AUD	aud	100	79.9600

NOTE

The [Currencies] lookup structure is described in a separate chapter. Use the “Base currency” system setting to select a base currency.

How to set up exchange rates

Set up the exchange rates for proper currency conversion towards the base currency. To do this:

1. Open the [Currencies] lookup.
2. Set the “1” value for the rate of the base currency.
3. Select the currency to set up the rate (for example, euro). Click .
4. On the opened currency settings page, set the ratio, for example “1000”.

   NOTE

   For a more accurate calculation of prices during conversion, specify a high ratio for currencies, for example “1000”.

5. Specify the exchange rate between the current currency and the base currency in the [Rate] field, considering the ratio. Save the changes.

   CASE

   If the base currency is yen and the euro to yen ratio is 63.9655, specify the “63965.5” as the exchange [Rate] and “1000” as the [Ratio].

6. Repeat steps 3 through 7 for all currencies specified in the lookup.

Update all data in the lookup if the exchange rates are changed,

Calculating exchange rate with ratio.

The following formula is used for calculating exchange rates in Creatio:

```
]Tcvg_?]Coqwpv"kp"eqpxgtukqp"ewttgpe{_,]Tcvkq_1]Coqwpv"kp"dcug"
ewttgpe{_
```

CASE

1000 Japanese yen are worth 0.84 US Dollars. Yen is selected as the base currency and the dollar ratio is 100. The actual conversion is as follows:

]Tcvg_?3;062,32213222?30;6

Thus, when the ratio is 100, the US dollar exchange rate to yen is 1.94

Calculating monetary amounts during conversion

When converting monetary amounts from the base currency into another currency, use the following formula:

]Coqwpv"kp"eqpxgtukqp"ewttgpe{_?]Tcvg_,]Coqwpv"kp"dcug"ewttgpe{_1
]Tcvkq_

For example, 1,000 yen must be converted to US dollars. Yen is selected as the base currency, the USD / yen exchange rate is 1.94 and the ratio is 100. The actual conversion is as follows:

]Coqwpv"kp"eqpxgtukqp"ewttgpe{_?30;6,3222132 2?3;06

Thus, the amount of 1000 yen is equal to 19.40 USD.

When converting monetary amounts from one currency to another, calculations are made based on the base currency. The following formula is used:

]Coqwpv"kp"eqpxgtukqp"ewttgpe{*4+_?]Coqwpv"kp"eqpxgtukqp"
ewttgpe{*3+_,]Tcvkq*3+_,]Tcvg*4+_1]Tcvkq*4+_,]Tcvg*3+_

For example, USD 100 must be converted to euro Yen is selected as the base currency. The dollar / yen exchange rate is 1.94, with the ratio of 100 and the euro / yen exchange rate is 1.73, with the ratio of 100. The actual conversion is as follows:

]Coqwpv"kp"gwtq_?322,322,30951322,30;6?:;04

Thus, USD 100 is converted to EUR 89,20.

How to calculate the product price in an order

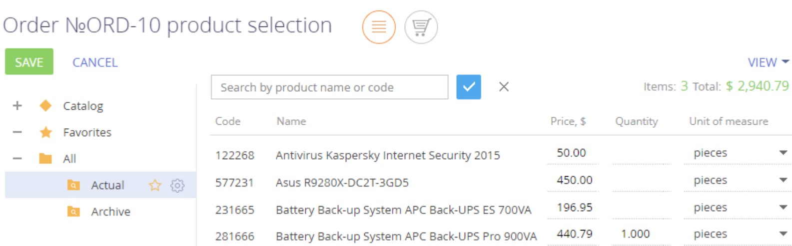
Let's see how the product price is calculated in an order.

CASE

The order currency is yen. Add a product with the price is specified in US dollars to the order. The base system currency is yen, the ratio of US dollar is 100, the product price is USD 14.6.

Click + on the [Products] detail to add products to the order. On the product selection page, all products are priced in the currency used for the order (Fig. 4). In this case, "yen".

Fig. 4 The order product selection page



For the products with the base price specified in foreign currency, the product price is automatically converted to the base currency according to current exchange rate specified as follows:

```
]Rtqfwev"rtkeg_,]Tcvkq_1]Gzejcpig"tcvg_"Ç"3608,32213072;4?;89062
```

As a result, a new product will be added to the detail. The price of the product will be specified in yen. The [Price] and [Total] fields are populated automatically and are not available for editing.

SEE ALSO

- How to work with currency fields
- The [Currencies] lookup

The [Currencies] lookup

This lookup contains a list of currencies used in mutual payments with customers, partners, suppliers, and the like.

Name	[Name] – indicate the name of the currency, for example, “US Dollar” or “Euro”.
Code	Specify a banking code that is used for a specific currency, for example, US dollar code is 840.
Short name	Shortened currency name, such as “USD” or “EUR”.
Symbol	Currency symbol, such as “$” or “€”.
Ratio	Specify the currency amount for which the exchange rate will be calculated (for example, 1, 10, 100).
Description	Additional information about the currency.
Show currency sign	Choose the appropriate option from the drop-down list. Choose [on the left] or [on the right] options to display the sign before or after the amount.

[Exchange rate] detail

Information about exchange rates is stored on the [Exchange rate] detail.

Start	The starting date for the exchange rate. The start date of a new exchange rate is considered the end date of the previous exchange rate.
Exchange rate	Exchange rate between the base currency and the current currency. Enter a value according to the currency ratio, specified in the currency card. The value for the base currency must be set to “1”.
End	The ending date for the exchange rate. Populated automatically,when the starting date of new exchange rate is set. This is a non-editable field.

NOTE

The base currency is used to calculate the financial performance indicators, for example, it can be “US Dollar”. Use the “Base currency” system setting to select a certain base currency.

SEE ALSO

- Working with currencies

Currencies FAQ

- How to calculate the price of the product in an opportunity, if the base price list is listed in US dollars, and the base system currency is the Yen?
- How the currency conversion is performed in orders?
- Can I use different currencies for an order and its invoices?

How to calculate the price of the product in an opportunity, if the base price list is listed in US dollars, and the base system currency is the Yen?

The price of a product in opportunity is always converted to the system base currency. When the product is added to the opportunity the automatic conversion of the product price to the base currency is performed according to the exchange rate specified in the [Currencies] lookup. The page of a product in the opportunity displays the product price for one unit and total price of products specified in base currency and calculated according to the exchange rate available at the date of the offer. These data will be displayed in the order created based on an opportunity.

If the exchange rate has changed dramatically before order creation, remove the obsolete product data from the opportunity after the agreement with the customer. When you re-add the product to the opportunity, its price and total cost will be recalculated according to the current exchange rate.

How the currency conversion is performed in orders?

Currency conversion in an order occurs when you select or change the order currency. When adding products to the order, their prices will be automatically converted into the currency indicated on the order page at the current exchange rate. In case of changing the currency of an already created order, the prices and the total amount specified on the [Products] tab of the order page will be converted to the new currency. More information about price calculation of the a product in an order described in a separate article.

Can I use different currencies for an order and its invoices?

Yes you can. For example, when selling products or services to foreign customers, you can keep information on products in an opportunity and in order in the base currency and still issue invoices in the corresponding foreign currency at the exchange rate available on the date of invoicing.

SEE ALSO

- How is the monetary amount calculated during conversion
- How to work with currency fields

Managing calls

In Creatio, all base telephony features (for example, receiving incoming calls and making outgoing ones, putting calls on hold and transferring them to another number) are available on the communication panel. To display the [Calls] tab, click the button.

By default, internal calls are available in the system. Set up integration with telephony to enable external calls. To make and receive calls, use a headset.

CONTENTS

SEE ALSO

- Phone integration setup
- Feature Comparison for supported phone systems

Outgoing call

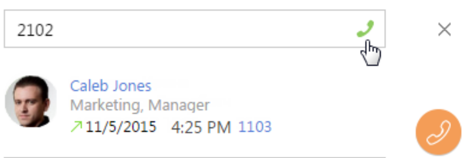
Outgoing call can be made in a number of ways. You can either dial the number manually on the communication panel, make a call using the calls history or click the call button on the contact page.

Manual dial

If you know the telephone number that you want to call:

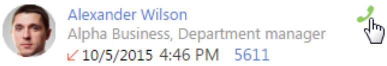
1. On the [Calls] tab, enter the phone number in the tab field and click the call button or press the [Enter] key (Fig. 1).

   Fig. 1 Manual dial

   You can also make a call by clicking the call button next to the name of the needed subscriber in the calls history (Fig. 2).

Fig. 2 Dialing from the calls history



2. Wait for the connection (Fig. 3).

Fig. 3 Outgoing call

3. If the connection is successful, the call will be switched to the conversation mode.
4. To end the call, click the end call button.

Searching a subscriber by name

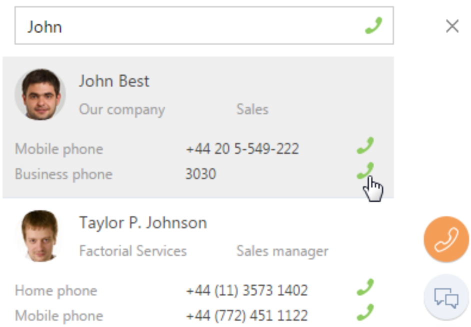
If you know the name of the contact that you want to call:

1. On the [Calls] tab, enter the contact name or a part of it in the tab field. The system will search for contacts whose name contains the entered fragment and will display those contacts on the tab.

   NOTE
   To start searching, enter three or more characters.

2. Find the needed subscriber in the list and click the call button next to the phone number you want to call (Fig. 4).

Fig. 4 Searching a subscriber by name



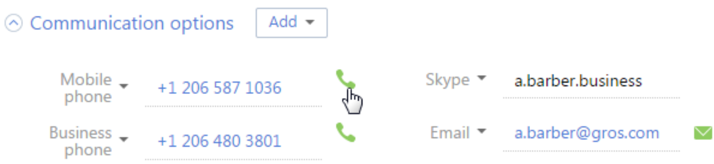
3. Wait for the connection.

Quick dial from record pages and from the list

You can call a contact (an account) from the contact/account page or from the section list.

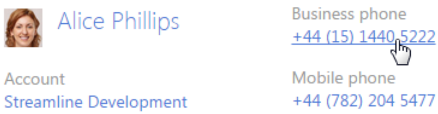
1. To start a call from the contact page:
   a. On the Communication options detail, click the phone number or the call button next to the number you want to call (Fig. 5).

Fig. 5 Quick dial from the record page



   b. Wait for the connection.
2. To make a call from the section list, click the phone number that is displayed as a link (Fig. 6).

Fig. 6 Quick dial from the list



Incoming call

By default, the section is hidden. It expands in the right side panel of the screen when incoming call is received (Fig. 7).

Fig. 7 Incoming call

1. To start the conversation, click the call answer button or pick up the phone if the button is unavailable.
2. To decline a call, click the end call button.

NOTE

The type of the Call Center used in Creatio determines whether the answer button is displayed for an incoming call or not. For example, the answer button is available when working with Oktell Call Centre and is not available when working with Asterisk Call Center. If your telephone network supports this feature, and you would like to use it, open the Call Centre parameters setup page and select the [Enable picking up phone from application] checkbox. The setup page can be opened from the user profile.

Subscriber identification

In Creatio, a subscriber is identified by the phone number during both an outgoing or an incoming call.

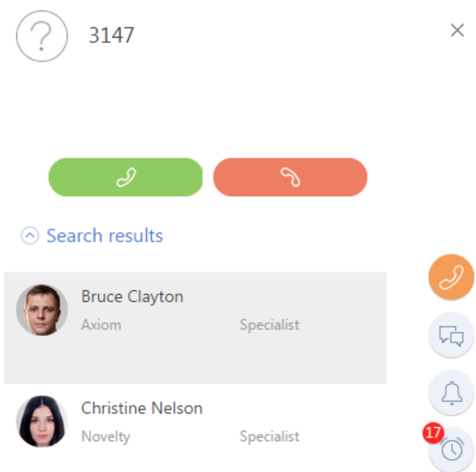
1. If a subscriber (a contact or an account) is identified by the phone number while calling, the name of the subscriber will be displayed on the call panel (Fig. 8).

   Fig. 8 Subscriber identification

2. If the same phone number is specified for more than one contact or account, the list of those subscribers will be displayed on the call panel. To select the needed subscriber, click the subscriber's record in the list (Fig. 9).

   Fig. 9 Selecting one of the contacts found by the phone number

3. If you need to change the selected subscriber, open the additional menu next to the subscriber's name and select the [Select another record] option (Fig. 10).

Fig. 10 Selecting another subscriber

NOTE

The information about the selected subscriber will be saved in the call history in the [Calls] section.

If a subscriber is not identified by the phone number while calling, at the end of th call you will be able to create a contact or an account or connect a call to the existing contact or account via the call history.

Conversation mode

Once a call is received, on the panel, it switches from the dial mode to the conversation mode (Fig. 11).

Fig. 11 Conversation mode

To end the call, click the end call button or put down the phone.

Putting calls on hold

While you are on a call, you can put the call on hold so that the subscriber is still on the line but cannot hear you.

Click the button on the call panel to put a call on hold. Click the button to resume conversation.

NOTE

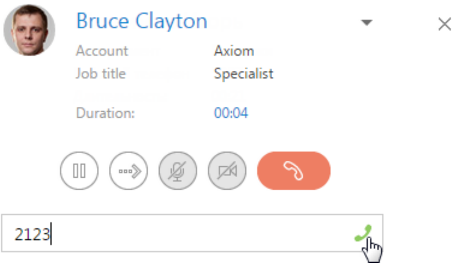
The call cannot be transferred or finished when it is on hold.

Transferring calls to another number

While you are on a call, you can transfer the call to another phone number. by the following steps:

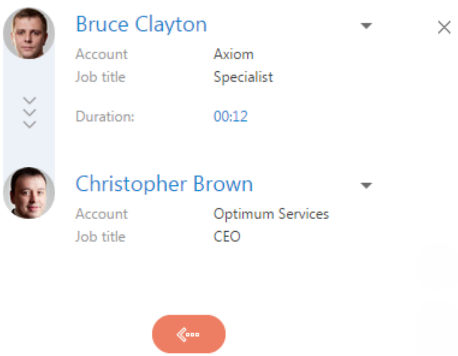
1. Click the button on the call panel. An additional field will be displayed. Use this field to enter the phone number that you want to transfer the call to. Also, the calls history will become available on the tab. Use it to transfer the call to a subscriber that you recently contacted.
2. Enter the phone number or select the needed subscriber from the calls history and click the call button (Fig. 12). You can also find the needed subscriber by name.

Fig. 12 Dialing when transferring the call



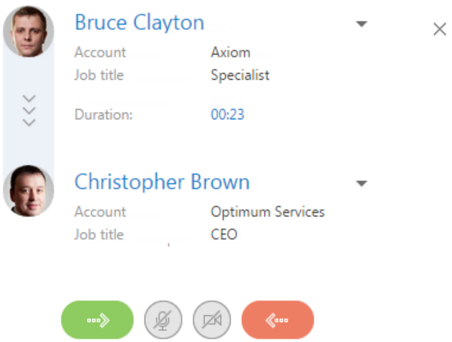
3. The call will be put on hold, and the system will start establishing the connection with the subscriber whom you transfer the call to. The information about subscribers will be displayed on the call panel (Fig. 13).

Fig. 13 Connecting to another subscriber when transferring the call



4. To quickly transfer the call, put down the phone, so both subscribers will be connected, and you will be disconnected from the conversation.
5. To make an attended transfer, wait for the connection with the subscriber whom you transfer the call to. In case if the connection is successful, the call panel will display additional buttons used to finish the transfer or to cancel it (Fig. 14).

Fig. 14 Conversation with a subscriber while transferring the call



Video calls

In Creatio, you can make video calls if Webitel integration is configured in Creatio. Video communication is available only for internal calls.

Setting up video calls

You can enable/disable video calls in Creatio. To manage video calls setup:

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the displayed page, select/deselect the [Use video] checkbox to enable/disable video calls.

When video calls are enabled, during the call, you see the video image of the user that the connection is established with and share your own video image.

Video call mode

In the video call mode, the communication panel additionally contains the video area. At the bottom of this area, the following buttons are available:

/  – play/pause buttons, that resume and pause the video stream, respectively.

/  – sound on/off buttons.

 – slider for managing the sound volume.

 – activate/exit the full screen mode.

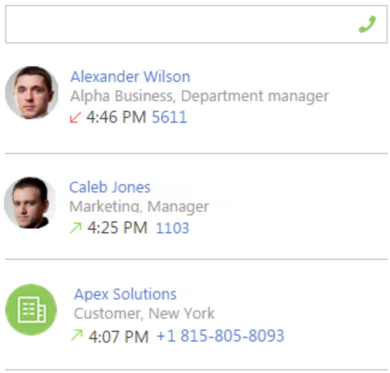
Also, during the video call, the video area contains a scrollbar and a time indicator to show you the time that has passed from the beginning of the call.

Calls history

You can view the recent calls history on the communication panel. It is available if the user is neither in a conversation mode nor searching for a subscriber. The history is also available when transferring a call to another number.

The calls history chronologically displays the recent incoming, outgoing and missed calls, and brief information about the accounts/contacts that a connection was established with (Fig. 15).

Fig. 15 Calls history



NOTE

The number of calls displayed in the history can be set up in the "Number of records on the "Calls history" tab" system setting.

NOTE

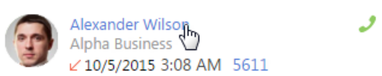
Do not close the browser window when making a call via the Creatio interface for proper saving the call history. If the window was closed during the conversation, the call ent dime and its duration will not be saved.

The calls history displays information only about the latest communication session with a certain subscriber (account or contact). For example, if you call several numbers specified on the [Communication options] detail of a contact, the calls history will display one record for this contact with the number that was dialed last.

If you called a subscriber and now you need to call another of his/her numbers, go to the contact/account page from the calls history and make a call from the subscriber page.

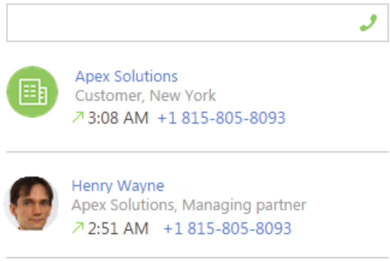
To do that, in the calls history, click the name of the contact/account. It is displayed as a link (Fig. 16). The subscriber page will open. On the page, select the needed number from the numbers available on the [Communication options] detail. You can call directly from the contact/account page by clicking either the phone number or the call button next to the number on the [Communication options] detail (Fig. 5).

Fig. 16 Opening a contact page from the calls history



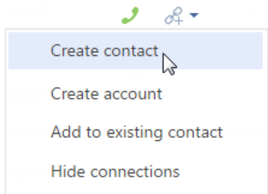
If the same phone number is associated with several subscribers (contacts and/or accounts) in the system, then when the connection is established, different subscribers will be identified, and the calls history will display separate records for each contact/account (Fig. 17).

Fig. 17 Calls history for one number associated with several users



In addition to viewing completed incoming and outgoing calls, you can create a contact or account, connect the call with an existing contact and display connected activities. To process a call, use the menu, which you can open by clicking the button (Fig. 18).

Fig. 18 Call processing menu



To add a contact for the call subscriber, select [Create contact]. New contact page will open. After saving the contact, the corresponding phone number will b automatically added to the [Communication options] detail. By default, “Mobile phone” will be set as the communication option type.

You can add an account based on the call subscriber. To do this, select the [Create account] menu command. After saving the account, the corresponding phone number will b automatically added to the [Communication options] By default, “Primary phone” will be set as the communication option type.

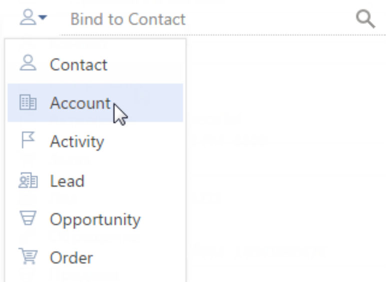
To connect a call to an existing contact or account, select the [Add to existing contact] menu command and select corresponding record from the lookup. The phone number from the call will be added to the [Communication options] detail of the selected record.

To display call connections to contacts, accounts and other records, select the [Show all connections] menu command. Connected account, contact and activity will be displayed below the general call information (Fig. 19).

Fig. 19 Call connections

You can connect the call to a system record by selecting a record type in the menu and clicking the button (Fig. 20).

Fig. 20 Selecting a record type to bind a call to



Call recording and playback

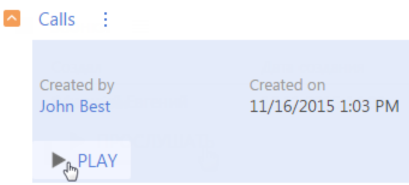
Recording and playback of calls is available in Creatio if your Call Center supports this feature. Call recording and playback rules can be set up in such office call centers as Oktell and Webitell.

NOTE

Additional setup is required to enable call playback.

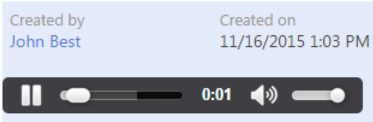
To play a call record, go to the [History] tab of the needed contact or account. Select the needed call record on the [Calls] detail and click the [Play] button (Fig. 21).

Fig. 21 Playing a call record



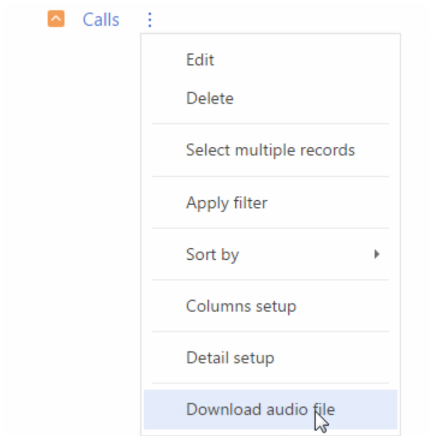
Call records are played in a web player with basic playback options (Fig. 22).

Fig. 22 Record playback



You can also download call record as an audio file by selecting the [Download audio file] menu command (Fig. 23).

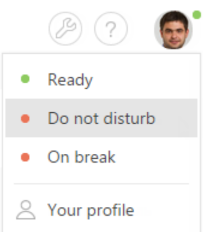
Fig. 23 Downloading call record file



Agent status menu

Agent status menu is displayed when you click the user image located in the top right corner of the screen (Fig. 24).

Fig. 24 Agent status menu



The list of available agent statuses depends on the telecommunications system that is used and can be set up in the [User status for message exchange] lookup.

SEE ALSO

- Phone integration setup

Time zones

To efficiently communicate with customers and employees around the world, Creatio takes into account timezones of each contact.

This enables you to:

- Quickly identify the current local time of an employee or a customer when planning activities and communications.
- Synchronize employee and customer activities in different timezones, taking into account the time difference.

The current local time and time zone is displayed for all contacts and activities.

CONTENTS

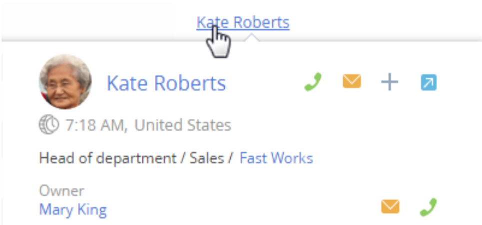
How to determine the current local time for a contact

The current local time is displayed for each contact on the contact page in the contact profile and on the contact mini page.

To quickly view a contact's local time, hover your cursor over the contact's name in the list. A contact mini page will open, in which the contact's current time is displayed under the contact's photo.

- Time zone information, displayed on the contact mini page, includes:
- Contact's current time
- Country or city name (Fig. 1)

Fig. 1 Contact's local time, as seen on a mini page



When you hover the mouse cursor over the time, the time zone is displayed.

How time zones are determined

To determine local time of a customer or employee, information from the [Addresses] detail of the contact record page is used.

Contact's time zone is automatically determined by the city specified in the home address, or the contact's country of residence, if the city is not specified.

NOTE

Cities are assigned to time zones in the [Cities] lookup. The countries have the same timezones as their capital cities. When adding new records in the [Cities] lookup, be sure to specify a time zone for each new city.

If a contact record page has 2 addresses of "Actual" type, the address that was added last is used for determining the time zone. If no address of "Actual" type is specified, the last added address is used, regardless of its type.

If no address is available on the contact page, the legal address of the connected account is used for determining the time zone. If a legal address is not specified for the connected account, then the time zone is determined by the last entered address of the account.

If the contact is a registered system user, then information from the user profile is used to determine the time zone.

> NOTE
>
> If no information can be found in the system to determine contact's time zone, the time zone icons will look like this: ? .

How to plan activities for participants in different time zones

Use the time zone function to plan tasks, calls and other activities with contacts in different time zones. The time zone function is available on the activity page and mini page. To plan an activity with participants in different zones:

1. Add a new record in the [Activities] section and add a participant(s).
2. On the record page, or its mini page, click the button to specify the time zone, where the activity will be held. It can be your current time zone or the time zone of any of the participants.
3. Specify the activity time in the selected time zone.

   The system will automatically calculate the time difference and correctly plan the activity in both your and participant's calendar.

> NOTE
>
> To calculate the time difference, use the time zone data specified in the user profile. If no time zone is specified in the user profile, the "Default TimeZone" system setting is used.

The system schedules activities in the local time of each participant. For example, if you want to schedule a call to a contact located in Los Angeles (UTC -8) for 10:00 a.m. Los Angeles local time, and you are located in New York (UTC -5), just specify the contact's local time. A new activity will appear in the calendar of your contact for 10:00 a.m. In your calendar, the activity will be scheduled for 1:00 p.m.

SEE ALSO

- User profile

Localization

Creatio supports localization into multiple languages. You can manage the list of languages in the system designer of the [Languages] section.

NOTE

Access to the list of languages and translation is configured using the “Access to “Languages” section” and “Access to “Translation” section” system operations. Setting up permissions for various operations is described in a separate article.

Creatio interface is translated into following languages:

English (United States)	Portuguese (Brazil)
Arabic (Saudi Arabia)	Romanian (Romania)
Dutch (The Netherlands)	Russian (Russia)
Hebrew (Israel)	Thai (Thailand)
Spanish (Spain)	Ukrainian (Ukraine)
Italian (Italy)	French (France)
German (Germany)	Czech (Czech Republic)
Persian (Iran)	Swedish (Sweden)
Polish (Poland)	

All localization tools are built-in, there is no need to install or set up additional software in Creatio. Translation of the interface and other elements is performed in the [Translation] section.

NOTE

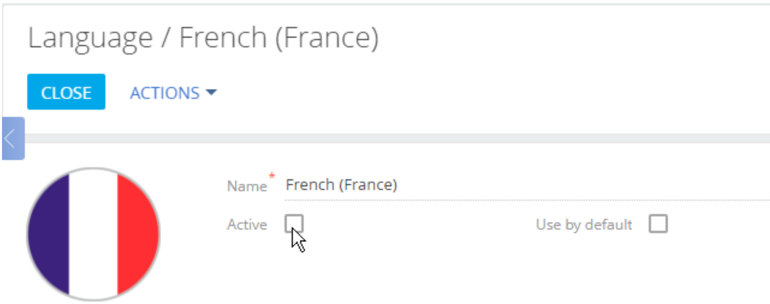
If the needed language is present in the list above but is not available in the [Languages] section, contact Creatio technical support. Indicate Creatio version and product you use in your request.

How to enable an interface language

Only English language is available in the user profile by default. You need to enable the needed languages in the [Languages] section to add them to the list of languages in the user profile.

1. Go to the [Languages] section in the system designer.
2. In the list of languages, locate the language you need and click [Open].
3. On the language page, select the [Active] checkbox (Fig. 1).

Fig. 1 Enabling additional language



4. Save the changes.

   As a result, Creatio compilation will start and you will see the enabled language appear in your Creatio user profile after the compilation is finished.

ATTENTION

Compilation is a required step when enabling additional languages. If a language is enabled, but the application is not compiled, the user who selected this language will not be able to log in.

NOTE

If you cannot access Creatio after switching languages, you can quickly access the [Configuration] section by adding "/dev" after Creatio application URL and initiate compilation from there.

CONTENTS

SEE ALSO

- How to set up access to perform operations

How to change Creatio language

You can change the system interface language in the user profile. These settings apply individually to the users who changed their language.

1. Click the profile picture at the top right corner and select [Your profile].
2. On the profile page, select the needed language from the available list and save the changes (Fig. 2).

Fig. 2 Changing the interface language

After changing language, you will need to log in again.

NOTE

If you do not see the needed language in the list, it may be disabled. You can find more information about enabling additional languages in a separate article.

NOTE

System administrators can change interface language for different users in the [Users and roles] section.

Creatio interface, including sections, columns, pages and lookups will be displayed in the language specified in the user profile (if the corresponding translation is available). The actual section data, such as account or contact names, notes and knowledge base articles are not localized and will always be displayed in the language they were entered.

NOTE

If a value has s a translation for the currently selected language, it will be displayed in that language. If no translations are found, the value will be displayed in the language it was originally added.

SEE ALSO

- User profile page
- Add new languages
- How to translate the interface and system elements in Creatio
- User page

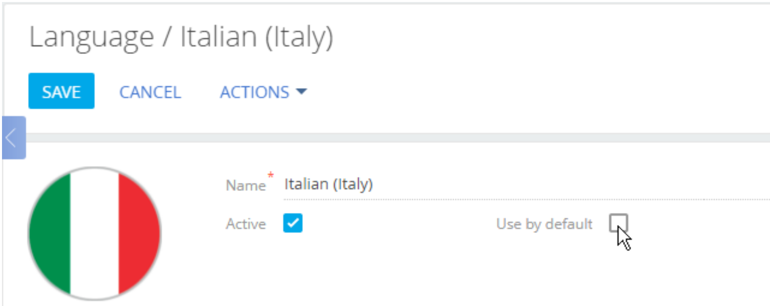
How to set the default language

After adding a new user account, system administrator specifies user's interface language (culture) on the user page of the [Users and roles] section. You can set default interface language for all users. This will help when adding large numbers of users at once (i.e., by importing users, when using SSO, etc.).

To set the default language:

1. Go to the [Languages] section in the system designer.
2. Select a language and click [Open].
3. Select the [Use by default] checkbox on the opened page (Fig. 3).

Fig. 3 Setting the default language



NOTE

The [Use by default] checkbox can be enabled only for one language.

4. Save the changes.

When you create a new user, the default language will be automatically selected in the user's profile.

NOTE

If the culture is not specified for the user, the interface language and localized data will be displayed in the language, specified in the [Primary culture] system setting. More information about system settings is available in a separate article.

Users can change language in their profile after logging in to the system. After changing the language, the interface will be displayed in that language next time the user logs in.

SEE ALSO

- How to change Creatio language
- Add new languages

Add new languages

If you are localizing your Creatio application to one of the languages that are not yet available, you will need to add that language in the [Languages] section first.

1. Go to the [Languages] section in the system designer.
2. Click the [New language] button. A new language page opens.
3. In the [Name] field, select the language you want to add.

NOTE

The list of languages is located in the system lookup, and is non-editable.

4. Select an image to be used as an icon for that language.
5. Save the changes.

SEE ALSO

- How to change Creatio language
- How to set the default language
- How to translate the interface and system elements in Creatio

How to translate the interface and system elements in Creatio

You can localize custom Creatio elements, e.g., sections, lookups, into languages available in the [Languages] section. The translation is performed in the [Translations] section of the System Designer (you can also open the [Languages] section by clicking the [Go to translation] button).

The records in the [Translation] section represent a list of strings requiring translation. You can enter translations directly in the list, without opening new pages.

NOTE

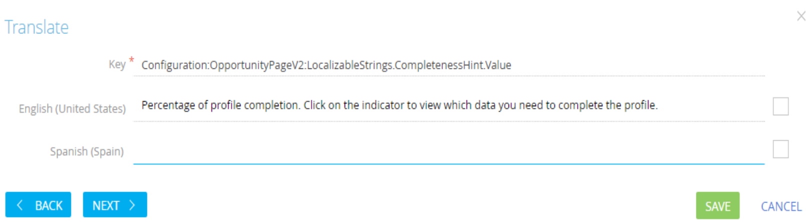
Strings from the non-customizable interface (most of it is located on the "Advanced settings" page) are called "Core" resources. Core strings are not available in the [Translation] section. Core resources are stored in the form of MS Visual Resources (.resources files) along with Creatio executable files on the application server. The .resources files are localized using specialized localization tools (for example, Passolo, Catalyst, etc.).

The translation is performed using the following columns:

- [Key] – a system string name that shows the context of the string. This is a non-editable column. Read more >>>
- [English (United States) - Default] – the default language in Creatio is English.
- You can add a separate set of columns for each additional language. Use the [View] > [Select fields to display] command to set up the displayed languages in the translation section (usually, adding the target translation columns is enough).
- [Verified] – use this column for translation review. The checkbox will be automatically cleared for new translation strings and strings where source has changed since the translation verification.
- [Modified on] – standard Creatio column showing the date and time when the current record was last modified.

If the untranslated text is short and fully displayed in the [Translations] section string, translate it right in the editable list. More complex texts are easier to translate in the translation string edit window (Fig. 4).

Fig. 4 Translation string edit window



1. Use the standard filters to select records for translation.
2. Click the string to modify, then click the  button to switch to edit mode.
3. Translate the text and save the changes.
4. Click the [Next >] button to display next sting in the edit window and the [< Back] button to display the previous string in the list.

5. When the translation is complete, close the translation edit window and click the [Apply translations] button. The newly translated strings will be displayed in the system next time a user with the corresponding language selected in their profile logs in.

NOTE

The [Translation] section is designed for localization of custom functions. To translate the whole system to a new language, we recommend exporting translation strings and using professional localization tools.

CONTENTS

How to identify a translation string by a key

The context of the translation string is represented with the [Key] column. Use the [Key] column in the [Translation] section to determine the context of each translation string. There are two general types of translation strings: configuration resources and data resources, each having specific key structure.

NOTE

Before starting the localization, we recommend getting a basic understanding of the system architecture, and the general functions of the [Configuration] section.

Structure of the configuration resource keys

Configuration resources contain translations for buttons, columns, notifications and other interface elements. The structure of their keys is: <Resource type>:<Schema name>:<Key>.

<Resource type> – is always “Configuration”. It indicates that the string is a configuration resource.

<Schema name> – internal name of the schema in which the translation string is located. “Schemas” are the “building blocks” of a Creatio configuration. There are three types of schemas: objects (they represent database tables), pages and processes. For example, “Activity” is the “Activity” object schema, “ActivityPageV2” is activity edit page schema, and “ActivitySectionV2” is the section page of the [Activities] section.

NOTE

The list of all schemas is available in the [Advanced settings] section, on the [Configuration] > [Schemas] tab.

NOTE

You can view internal names of schemas created for custom sections in the Section Wizard. Schema names for custom sections are generated automatically, based on the value in the [Code] field, entered on the first step of the Section Wizard.

<Key> – location of the string within the schema.
The following types of keys are used in the configuration resources:

- “Caption” – schema name. For example, the string “Configuration:ActivityPageV2:Caption” contains caption of the “ActivityPageV2” schema.
- “Columns” – key for strings that contain column names of an object schema. The “Columns” keys have the following structure: “Columns.<column internal name>.Caption”. For example, the “Configuration:Activity:Columns.Author.Caption” string contains the caption of the “Author”

column in the “Activity” object. Object column titles are used as the names of the corresponding fields on the section lists, record pages and details. Thus, by localizing a column in an object, you will localize the corresponding captions in the section and detail lists and pages.

- “LocalizableStrings” – key for localizable strings that were added directly by developers. These strings can be found in any schema (object, page, business process). Usually these are not standard translation strings (i.e. Not object fields) in the page schemas, such as menus, messages, etc. The key has the following structure: “LocalizableStrings.<Internal name of the string>.Value”. The internal name of the string is specified by the developer or generated automatically by the Section Wizard. For example, the string “Configuration:ActivityPageV2:LocalizableStrings.CallTabCaption.Value” contains caption of the [Calls] tab of the activity page.

Keys for configuration resource strings that are unique to business processes are as follows:

- “Parameters” – the string contains process parameter names and values. The process parameter name key syntax is as follows: “Parameters.<Parameter internal name>.Caption”. The key syntax process parameter names is as follows: “Parameters.<Parameter internal name>.DisplayValue”. For example, the string “Configuration:CreateInvoiceFromOrder:Parameters.CurrentOrder.Caption” contains the name of the “CurrentOrder” parameter in the “New invoice based on this order” process.
- “EventsProcessSchema” – key of an embedded process string. Embedded processes handle business logic of objects and usually contain localizable error and message texts. The syntaxis of the embedded process string keys is similar to that of the regular process strings (with the addition of “EventsProcessSchema” at the beginning of the key).
- “BaseElements” – the string contains information about process elements. The key syntax depends on the information type. For example, the key “BaseElements.<element internal name>.Caption” identifies an element caption on the business process diagram, “BaseElements.<element internal name>.Parameters.<element parameter internal name>.Caption” – key for a process element parameter name string, “BaseElements.<element internal name>.Parameters.<element parameter internal name>.Value” — key for a process element parameter value string.

NOTE

Business process schema names are available in the [Name] column of the [Process library] section (you will need to add this column to the list via the [Select fields to display] command, or open a process properties page). Read more >>>

NOTE

The translation strings whose key ends with “DisplayValue” contain process diagram captions (seen on the diagram only) and do not require translation.

Below are examples of configuration resource keys and their meaning.

- Configuration:ActivityPageV2:LocalizableStrings.ActivityParticipantTabCaption.Caption – the name of the [Participants] tab on the activity page.

  “Configuration” – configuration resource key.

  “ActivityPageV2” – activity page schema.

  “LocalizableStrings” – localizable string.

  “ActivityParticipantTabCaption” – localizable string internal name, identifying it as the [Participants] tab.

  “Caption” – the string is the caption.

- Configuration:Account:Columns.Type.Caption – the title of the [Type] column in the "Account" object.

  "Configuration" – configuration resource key.

  "Account" – "Account" object schema.

  "Columns" – object column.

  "Type" – column name.

  "Caption" – column title.

- Configuration:ImportSettingsPage:EventsProcessSchema.LocalizableStrings.ErrorMessage.Value error message in the embedded process of the "ImportSettingsPage" schema.

  "Configuration" – configuration resource key.

  "ImportSettingsPage" – import settings page schema.

  "EventsProcessSchema" – identifies that this is a string from an embedded process.

  "LocalizableStrings" – localizable string.

  "ErrorMessage" – error message.

  "Value" – message text.

- Configuration:AutoGeneratedPageUserTask:Parameters.InformationOnStep.Caption – name of the [Information on step] parameter of the [Auto-generated page] business process element.

  "Configuration" – configuration resource key.

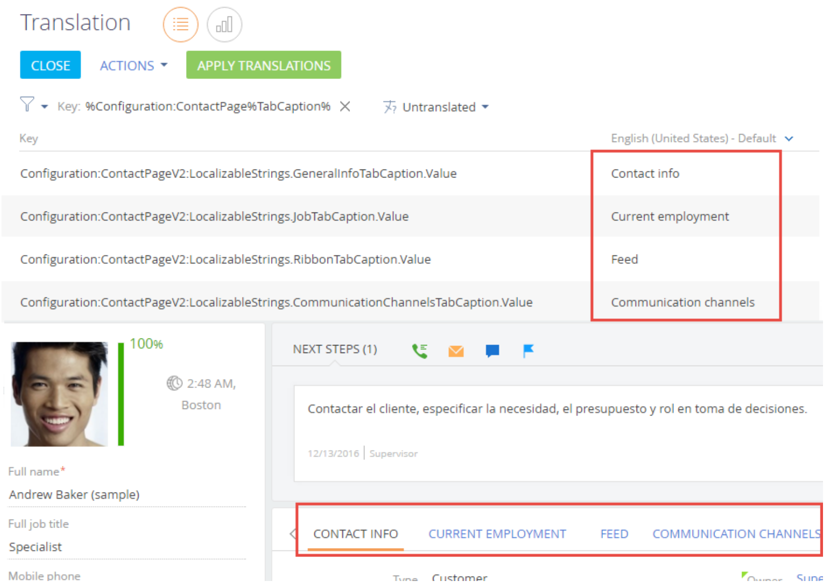
  "AutoGeneratedPageUserTask" – identifies that this is a schema of the [Auto-generated page] process element.

  "Parameters" – the string contains parameter information.

  "InformationOnStep" – internal name of the [Information on step] process element parameter.

  "Caption" – parameter title.

Fig. 5 Examples of translation strings and their location in the interface of the contact page



Structure of the data resource keys

Data resource keys identify data, such lookup records, that must be localized. The key format is <Resource type>:<Table name>.<Column name>:<Record Id>.

<Resource type> – is always “Data”. It indicates that the string is a data resource string.

<Table name> – name of the table (object) that contains the localized string. For example, “AddressType“ refers to the lookup table that contains address types.

<Column name> – table column name in the database. For example, [Description] or [Name].

<Record Id> – unique Id of the localized record. Record ID is a unique code that can be viewed in the database or in the browser address bar by opening a specific record.

Below are examples of data resource keys and their meaning.

- Data:ActivityCategory.Name:42c74c49-58e6-df11-971b-001d60e938c6 – a activity category name.

  “Data” – this is a data resource.

  “ActivityCategory” – the table (object) is “Activity category”.

  “Name:” – the localized value is in the “Name” column.

  “42c74c49-58e6-df11-971b-001d60e938c6” – record Id.

- Data:ContactType.Name:60733efc-f36b-1410-a883-16d83cab0980 – a contact type name.

  “Data” – this is a data resource.

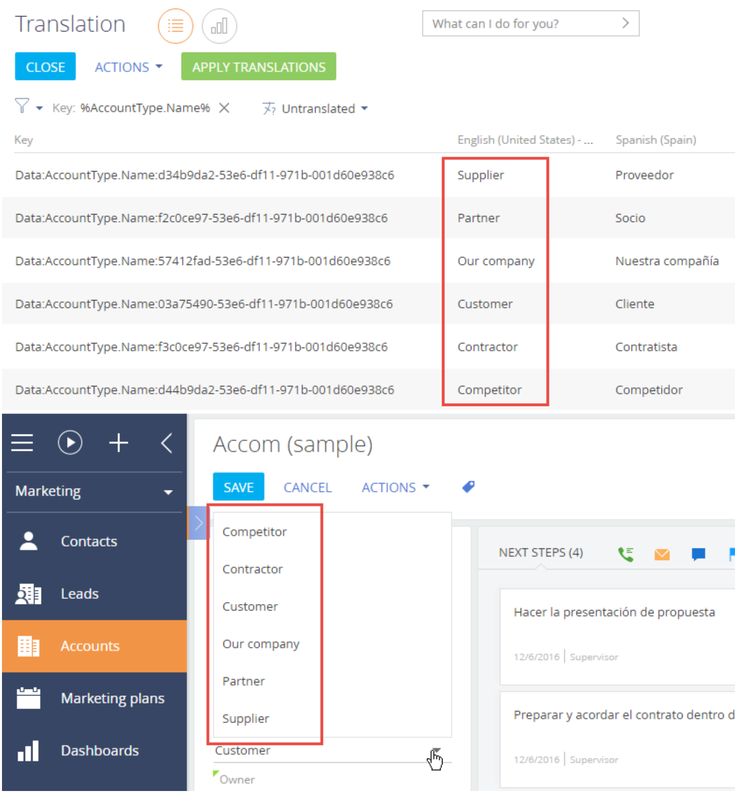
  “ContactType” – the table (object) is “Contact type”.

  “Name” – the localized value is in the “Name” column.

  “60733efc-f36b-1410-a883-16d83cab0980” – record Id.

- Data:SysDashboard.Caption:e2895654-6ce4-4ef8-a126-5f75f49d9073 — a "Dashboard" tab name.
  "Data" – this is a data resource.
  "SysDashboard" – table (object) is "SysDashboard" (this object contains dashboard settings).
  "Caption" – the localized value is in the "Caption" column.
  "E2895654-6ce4-4ef8-a126-5f75f49d9073" – the record Id.

Fig. 6 Examples of data resource translation strings in the [Translation] section and in on the account page



SEE ALSO

- How to select specific translation strings using filters
- How to display untranslated strings
- How to update the list of translations

How to select specific translation strings using filters

The [Translation] section has a set of standard filters that you can use to search for specific translation strings. Since the [Key] column contains information about the string context, you can filter strings by this column to select only strings that are used in a specific part of the system: page, detail, mini page, etc. page, detail, mini page, etc.

NOTE

The translation string key structure and meaning are covered in a separate article.

To filter the strings, first you need to determine the schemas that implement the functions that you need to localize. To do this, use the [Configuration] tab of the [Advanced settings] window. Alternatively, you can access the required function (for example, open the page that you need to localize) and check its schema name in the browser address bar. For example, when the [Contacts] section is open, the following URL in the address bar looks like this: “http://creatioapp.com/0/Nui/ViewModule.aspx#SectionModuleV2/ContactSectionV2/”. The name of the [Contacts] section schema is “ContactSectionV2”.

NOTE

When searching schema names in the [Configuration] section, be sure to check if the search results contain schema names with “V2” suffix. If search results contain schema names both with and without suffix (for example, “ContactSection” and “ContactSectionV2”), make sure that you translate strings for the schema with the “V2” suffix.

NOTE

Strings whose keys contain “Configuration”, followed by the schema name and the word “Caption” (for example, “Configuration:SchemaName:Caption”) contain schema titles (displayed in the [Configuration] section) and do not require translation.

How to filter configuration resources

Configuration resources include list column and page field names, tab captions, field group names, etc. For example:

- To translate the column names in the [Contacts] section and the corresponding field names on the contact page, apply the following filter by the [Key] column: “Configuration%Contact%Column%”.
- To translate the section page of the [Contacts] section, apply the following filter by the [Key] column: “Configuration%ContactSectionV2%”.
- To translate the contact mini page, apply the following filter by the [Key] column: “Configuration%Contact%MiniPage%”.
- To translate contact section record page, apply the following filter by the [Key] column: “Configuration%Contact%ContactPageV2”%. A section record page can have significant number of translation strings if separate pages are used for different types of records.
- To translate detail list and record page, apply the following filter condition: “Configuration:Contact%Detail%”. In the list of filtered records, locate the name of the required detail schema. Then, apply a new filtering condition with the name of the needed detail schema, such as “Configuration%ContactCareer%” (for strings of the [Job experience] detail).
- If a section contains built-in reports, apply the following filter condition to select their translation strings: “Configuration%Contact%Report%”.

Additionally, to select strings used in the contact synchronization functions, use the following filter: “Configuration:Contact%SyncSettings%”. Use the “Configuration:%NotificationProvider%” filter to localize notifications.

ATTENTION

Translation string text may contain variables represented by numbers in braces, such as {0}. Make sure that translation includes all variables from its source text.

How to filter data resources (localized lookup records)

To localize lookup values for a specific section, first determine which lookups are used in the section. To do so, filter translation strings by the [Key] column, using the following filter: "Data:Lookup.Name%". The resuting string list will contain names of all registered lookup schemas. You can also use the folders in the [Lookups] section of the system designer to check which lookups are associated with which section or function. Use lookup schema names to filter records from the needed lookups. For example, the "Data:Job%" filter condition will return all records from the [Job titles] lookup.

The [Contacts] section, for instance, uses the following lookups:

- [Contact types] – ContactType.
- [Contact roles] – ContactDecisionRole.
- [Salutations] – ContactSalutationType.
- [Contact genders] – Gender.
- [Job titles] – Job.
- [Departments] – Department.

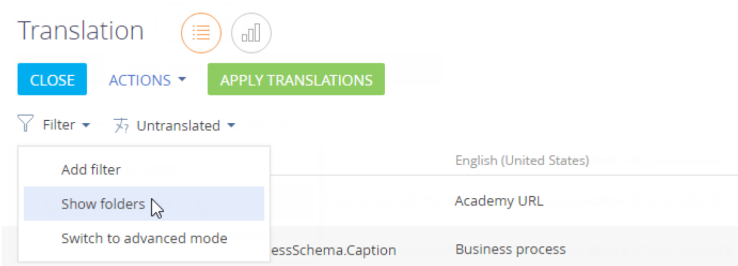
Lookups are not necesserily used on the record pages. For example, the [Reasons for job change] (JobChangeReason) lookup is used on the [Job experience] detail in the [Contacts] section.

How to maximize translation efficiency using static folders

Use static folders to avoid creating complex filters. You can manually add specific strings for translation (for example, all lookups used in specific section) and then woork only with the trans strings in the folder.

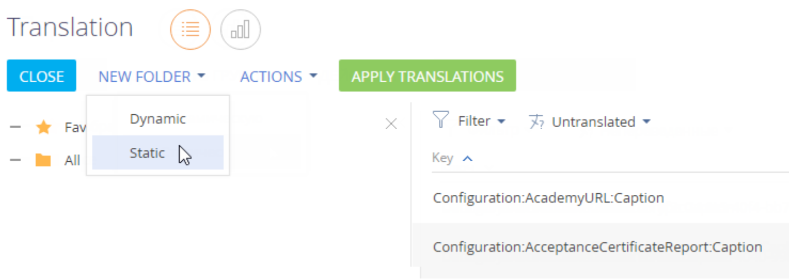
To create a static folder, in the [Filter] menu, select [Show folders] (Fig. 7).

Fig. 7 Enabling folder tree



Click [New folder] and select [Static] (Fig. 8).

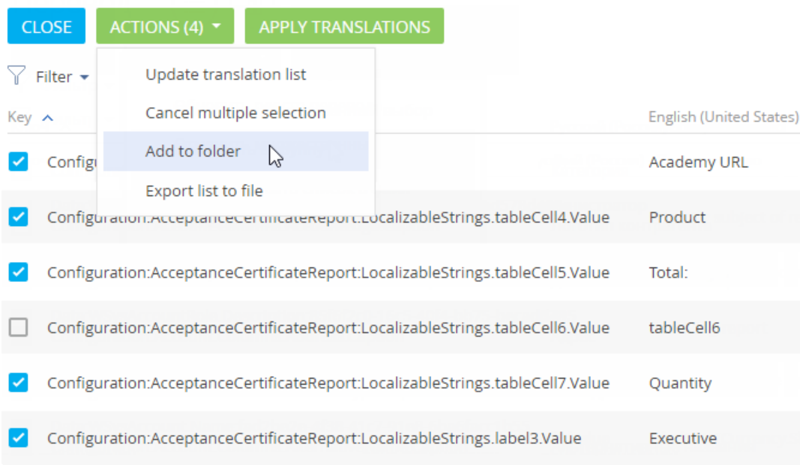
Fig. 8 Adding a static folder



Enter the name of the new folder and click [OK].

Apply a filter to select required strings, then add filtered strings to the folder. Apply next filter and add filtered strings to the folder (Fig. 9).

Fig. 9 Adding records to the static folder



This way you can create and save a list of strings used in a specific section or other system function and later use a single folder to access them all.

SEE ALSO

- How to identify a translation string by a key
- How to display untranslated strings
- How to update the list of translations
- How to import translations from Excel

How to display untranslated strings

To display untranslated strings, use the “Untranslated” filter and specify the target translation language. For example, in the “Untranslated” filter you have specified Spanish. The list will display strings that have a name or description of an item in Russian in the “Russian (Russia) - default" column, and the “English (United States)” column will not be filled in or will have the same value as “Russian (Russia) - default" column .

SEE ALSO

- Add new languages
- How to change Creatio language

How to update the list of translations

After creating a new section or column or adding new values to the lookup, new strings will appear in the system. To work with an up-to-date list of untranslated strings, update the translation list. To do this, click the [Actions] button, select [Update translation list]. This action starts searching for new untranslated strings. We recommend you to update your list every time you start translating.

> **NOTE**
> The translation list update occurs every time you enter the [Translations] section.

SEE ALSO

- Add new languages
- How to change Creatio language

How to import translations from Excel

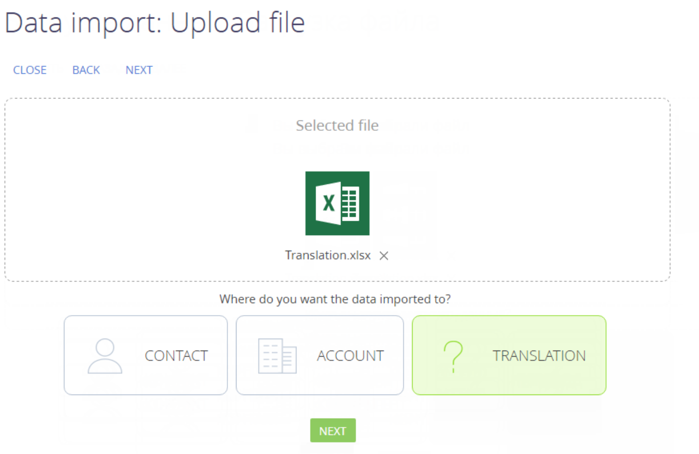
You can use Excel import to quickly export and import translations. To do this:

1. Open the [Translations] section and select the needed strings. Searching and filtering translation strings is covered in a separate article.
2. Use the [Export list to file] action in the [Translation] section to obtain a template for the import table. An .xlsx file with the currently displayed records and columns will be downloaded.

> **NOTE**
> Columns required for translation are the [Key] column, as well as source and target language columns.

3. Open the system designer and click the [Data import] link. Drag the XLSX file with translations and click [Other]. Select the “Translation” object (Fig. 10).

Fig. 10 Importing the translation file



4. Set up duplicate check by the [Key] column and click [Start data import].
5. After importing, perform the [Apply transfers] action in the [Translation] section.

SEE ALSO

- How to identify a translation string by a key
- How to select specific translation strings using filters
- Excel data import
- Exporting list data to Excel
- List FAQ

How to identify errors with applying translations

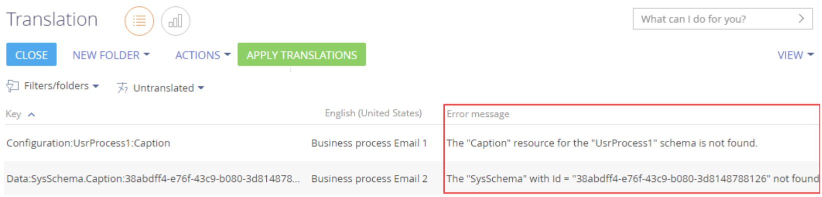
After completing the translation and clicking the [Apply translations] button, some UI elements may remain untranslated because of errors in the process of applying translations (e.g., the schema of the translated resource has been deleted, etc.).

NOTE

If a translation resource has been deleted, the corresponding translation strings will be deleted as well when the translations are applied. This does not result in a translation application error.

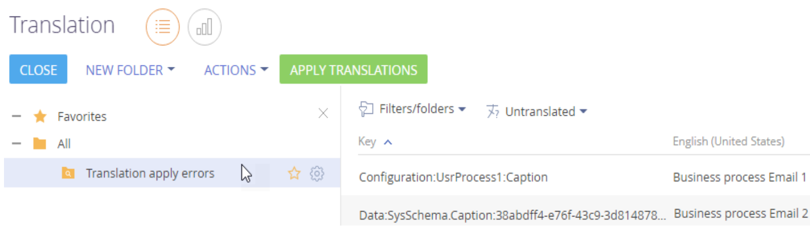
f an error occurs when applying translations from a string, Creatio records the error text in the [Error message] column in the [Translation] section list (Fig. 11). To display the [Error message] column in the list of translation strings, add the [Error message] column to the list view via the [Select fields to display] command of the [View] menu.

Fig. 11 [Error message] column in the section list



Use the [Translation apply errors] folder (Fig. 12) to quickly view all strings with error messages. To open the [Translation apply errors] folder, click the [Show folders] option in the [Filter] menu of the [Translation] section.

Fig. 12 Folder with translation apply errors



You can create additional folders using a filter by the [Error message] column to view specific translation errors.

If the [Error message] column is empty for a translation string, then it has been properly applied and should be displayed in the UI.

SEE ALSO

- How to translate the interface and system elements in Creatio
- Setting up columns
- Working with folders

Hot keys

This article lists keyboard shortcuts available in Creatio (a.k.a. "Hot keys"). Using keyboard shortcuts improves your efficiency by decreasing the time spent on frequent micro operations, such as saving mini pages, navigating lists, working with the campaign designer.

In the below table, you can find the most often used keyboard shortcuts.

> NOTE
> The table contains the shortcuts used for Windows OS. For Mac OS, use the "Command" key instead of "Ctrl"

Section list	
Select multiple adjacent records. Click the first record, press and hold the Shift key, and then click the last record.	Shift + click the record
Select multiple separate records.	Ctrl + click the record
Move up and down the record list. One of the records in the list has to be selected.	↑ and ↓
Open the selected record.	Enter
Save the record after editing.	Ctrl + Enter Ctrl + S
Confirm the action in the dialog windows.	Enter
Mini page	
Move the cursor to the next field.	Tab
Move the cursor to the previous field.	Tab + Shift
Save the mini page.	Shift + S Ctrl + S
Close the mini page without saving.	Esc
Tags	
Navigate between tags. To display the full list of tags, press ↓ in the tag selection string.	↑ and ↓
Select and apply tags.	Enter
Global search	
Search for currently entered value.	Enter
The [Activities] section	

Navigate the tasks in the chronological order. To do this, select the task and press the key.	Tab
Move the selected task up and down the calendar.	↑ and ↓
Move the selected task to previous or next day.	← and →
The [Dashboards] section	
Close the opened dashboard tile.	Esc
The [CTI panel] tab in the communication panel	
Dial the number entered manually.	Enter
Campaign designer	
Copy selected elements.	Ctrl + C
Paste selected elements.	Ctrl + V
Select all elements.	Ctrl + A
Select multiple separate elements.	Ctrl + click the element
Search for elements.	Ctrl + F
Delete selected elements.	Delete
Run the campaign.	Ctrl + Enter
Open help.	F1

SEE ALSO

- Process designer hot keys

Sections

CONTENTS

The [Leads] section

A lead represents an interest in services of your bank and expressed by a potential customer. For example, new leads emerge if you receive a call from a contact who was previously interested in your services. With Creatio leads, you can work both with the customers who are ready to make a deal or those who need some more time to consider a purchase.

Leads can be registered manually or imported from an Excel file.Leads can also be created automatically if you set up automatic lead registration for your landing pages.

> NOTE
> If the [Create contact] checkbox is selected for a landing record, then when a customer submits a landing form, Creatio will create both a lead and a contact record.

Using the Leads section, you can manage the lead nurturing process from the moment a potential customer expresses an interest in your products up to the handoff to sales. In this section, you can store communication options and general information about potential customers, and track lead sources.

Views

The section has two views:

- – The list view displays a list of records. The list of columns and their functions are covered in the description of the lead page Read more >>>.
- – The dashboard view displays charts, metrics and gauges with statistics on your leads. Read more >>>

CONTENTS

SEE ALSO

- Record pages

VIDEO TUTORIALS

- Lead management

Lead management process

The lead management process starts with qualifying a new lead and continues as you nurture the lead. This changes the lead stages. The lead management process creates activities and as these activities are completed, their results influence the process flow.

> **NOTE**
> By default, the lead management is performed by a business process. To switch to a more flexible "case" format, disable the default lead management business process, clear the value of the [Lead management process] system setting and save it. Set up a case in the [Leads] section using the case designer.

CONTENTS

SEE ALSO

- Lead qualification
- Lead distribution
- Lead handoff to sales
- Awaiting sale
- Leads FAQ

VIDEO TUTORIALS

- Lead management

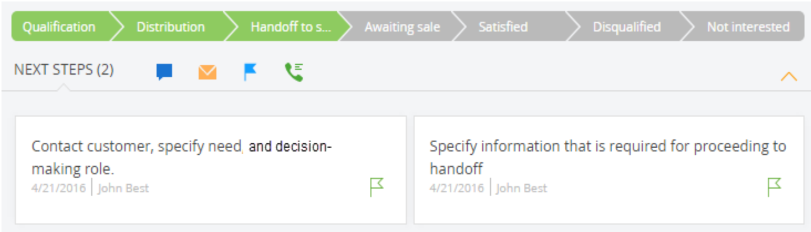
Working on the process

To run the lead management process, click the [Qualify] button, which is displayed in the list when selecting a lead record or on the new lead page.

Use the workflow bar and action panel at the top of the lead page (Fig. 1 /) to manage a lead stages. With the workflow bar, you can switch to any stage, skip a stage or return to any previous one.

Using the action panel, you can manage activities created when managing a lead. Customer need details, lead management history and other information are available on the tab dashboard. Check tips for each stage by hovering the cursor over the ⓘ icon.

Fig. 1 /Lead management process



SEE ALSO

- Lead stages
- Leads FAQ

VIDEO TUTORIALS

- Lead management

Lead stages

If the lead management business process is active, Creatio automatically adds linked activities and suggests steps that the user should take on each stage of lead processing:

1. Qualification

   Populate the contact and legal entity data and select the type of customer's need. Read more >>>

2. Distribution

   Assign the lead owner. Read more >>>

3. Handoff to sales

   On the [History] tab, open the "Contact the customer and specify the availability and actuality of the need, budget, parameters as well as their role in decision-making" activity. Set the task result to "Handoff to sales". After the results are saved, the "Specify information required for handoff to sales" activity will be added. Read more >>>

4. Awaiting sale

   After the "Specify information required for handoff to sales" activity is populated, the lead will be handed off to sales and will remain on the "Awaiting sale" stage. An opportunity connected to the lead is added automatically and is displayed on the lead page [History] tab. Read more >>>

5. Customer need has been satisfied.

SEE ALSO

- Working on the process
- Lead qualification
- Lead distribution
- Lead handoff to sales
- Awaiting sale

- Leads FAQ

VIDEO TUTORIALS

- Lead management

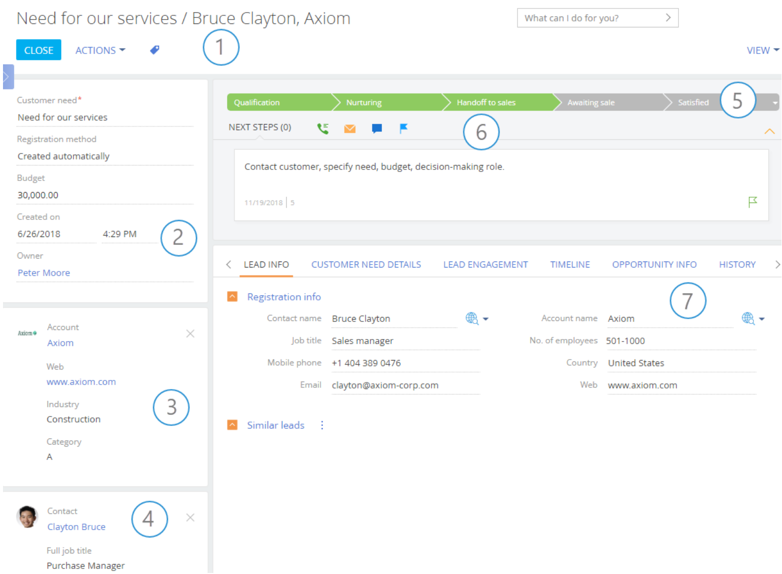
Lead page

In Creatio, a lead can be created in the following ways:

- added manually in the [Leads] section
- imported from Excel
- created automatically via registering on a landing page.

The lead page (Fig. 2 /) consists of a toolbar (1), a lead profile (2), legal entity (3) and contact (4) profiles, as well as a standard workflow bar (5), action panel (6) and tabs (7).

Fig. 2 /Lead page



The toolbar (1)

The toolbar contains buttons for performing different actions with the record.

Lead profile (2)

General information about the lead.

Customer need	Potential customer need, for example, the category of product or service of your bank in which the potential customer is interested. The field is required, you can customize the available values in the [Need types] lookup.

Registration method	Lead registration method, for example, registered manually, created automatically from a landing page, or upon adding a consumer case.
Created on	Date and time when the new lead record was added. This is a non-editable field.
Owner	The employee who is assigned as the owner responsible for proceeding the lead to handoff.
Predictive score	The probability of successful lead conversion to an opportunity according to scale from 1 to 100 points. Read more >>>

Legal entity profile (3) and contact profile (4)

Contact and legal entity profiles are located under the lead profile. The legal entity profile displays the name, website URL, the industry and category of the company whose need is recorded.In the contact profile, the contact person's name, full job title and mobile phone are displayed.

If all required data have been populated when creating a lead record, they will be automatically displayed on the lead page after the qualification. The profiles will be populated with additional data on the Qualification stage. Read more >>>

Workflow bar (5)

The workflow bar enables tracking and executing the stages of lead management process. Read more >>>

Action panel (6)

The action panel provides additional hints about the lead owner's "to-do list" and enables scheduling lead-related tasks, sending emails, adding feed posts and recording call results without leaving the lead page. Read more >>>

The [Lead info] tab

Registration info

The detail contains information about the the lead is received from.

Contact name	First name, middle name, last name of the contact. If the field is populated, click to search for additional information about the contact on LinkedIn or Facebook. For Facebook search, specify the contact email in the [Email] field.
Job title	Position held by the contact, for example, "Department manager". You can customize the values available in this field in the [Job titles] lookup.
Mobile phone	Mobile phone number.
Email	Email address.

Legal entity name	Name of the potential customer bank. If the field is populated, click to search for additional information on LinkedIn and Google.
No. of employees	Number of employees in the prospect's bank.
Country	The location of the potential customer.
Web	Bank web-site.

Similar leads

This detail contains a list of leads that match the current lead according to the duplicate search rules. By default, the [Similar leads] detail contains records with the same name, email and customer need.

The [Customer need details] tab

This tab contains detailed information about the needs of the potential customer.

Need maturity	Probability of making a sale. Need maturity level ranges from "Suspected" to "Sales-ready". Populate this field and add the necessary comments to it while working with the lead. The value can also be changed automatically when executing the lead management process, for example, if the corresponding business process has been set.
Notes	Additional comment about the customer need.

Parameters

The detail contains the list of specific need parameters stored in the [Parameters] lookup.

Products

This detail is designed for storing the list of products that the customer is interested in.

You can only add products specified for the selected need type.

> **NOTE**
> Use the [Set up customer needs] command of the [Actions] menu in the [Leads] section to match your products to each need type.

The [Lead engagement] tab

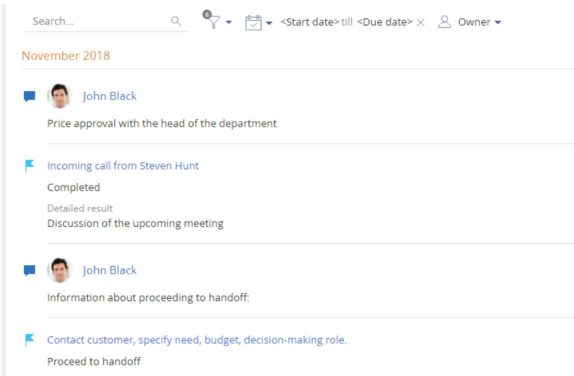
The tab contains information about how the lead was engaged.

Channel	The lead acquisition channel – type of the resource that delivered the lead, for example, “Social accounts”.
Source	Specify the source of information that was used for lead acquisition.
Registration method	Lead registration method, for example, "Added manually" or "Created automatically".
Redirection website	The site from which the user arrived at the landing page, which resulted in creation of a new lead. The field is not editable and is populated automatically when receiving a lead from the landing page.
Landing page	Name of the landing from which a lead was created. The field is not editable and is populated automatically when receiving a lead from the landing page.

The [Timeline] tab

The tab contains the chronologically listed Creatio records linked to the lead. Read more >>>

Fig. 3 The [Timeline] tab records



The [Opportunity info] tab

The tab contains detail information about the opportunity connected with the lead.

Opportunity	Opportunity that is connected to the lead. The field is populated automatically at the handoff to sales stage.
Opportunity owner	Select the sales manager assigned as the owner for the opportunity. The contacts who have users created in Creatio are displayed in this field. Field can be populated manually when a new lead is added, or at the handoff to sales stage.

Sales division	Your bank division which is in charge of the lead handoff. The field can be populated manually when a new lead is added, or at the handoff to sales stage.
Next actualization date	Planned date of actualization of the deal data.
Meeting date and time	Date and time of scheduled meeting. The field can be populated manually when a new lead is added, or at the handoff to sales stage.
Decision date	Expected customer decision timeline for the opportunity. The field can be populated manually at the creation of a lead or at the handoff to sales stage.

The [History] tab

The tab contains Creatio records connected to the lead.

Stages

The list of stages that the lead has come through including the current lead stage. The detail data is added automatically when a lead changes its stage and cannot be edited.

Activities

Tasks linked to the lead. Displays information from the [Activities] section. To connect an activity to the lead, populate the [Lead] field of the activity page.

Calls

The list of incoming and outgoing lead calls. This detail displays information from the [Calls] section. To connect a call to a lead, populate the [Lead] field of the call page.

Email

Emails that are connected to the lead. To connect an email to the lead, populate the [Lead] field of the email page.

The [Attachments and notes] tab

The [Attachments and notes] tab contains additional information about leads, as well as attachments and links to web resources. Read more >>>

Attachments

This detail is used to store attachments and links related to the lead. For example, you can attach documents that display the history of communication with the lead, or any useful links.

Notes

The [Notes] detail is used to store additional text information about the lead, edit and organize notes. If you switch to another tab of the lead page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays messages connected with the current lead.

SEE ALSO

- Lead duplicate search

- Lead management process
- Leads FAQ

VIDEO TUTORIALS

- Lead management

Lead qualification

The qualification stage is a part of the lead management process and is used to check completeness of information about the contact or legal entity to which the lead is linked. This stage starts after the lead information has been saved.

If you are sure you do not need to add additional lead information, qualify the lead without opening its page. To do this, select the record in the list and click the [Qualify] button.

If data about the contact and legal entity linked to a lead needs to be checked or supplemented, open the lead record page and populate the contact profile and legal entity profile. In the profile, you can either add new records about an legal entity or a contact, or select from the existing ones.

You can also populate information about a contact and an legal entity on the [Lead info] tab. For example, update contact or legal entity information by adding a mobile phone number or website address. After checking and entering all the required information on the qualification page, click the [Qualify] button.

> **NOTE**
> If you enter the name of a contact or an legal entity on the [Lead info] tab, a new contact or legal entity will be added to the system on the lead qualification stage.

If the lead information is insufficient to contact the customer, disqualify the lead by clicking [Actions] > [Disqualify] > [Incorrect data].

SEE ALSO

- Lead distribution
- Lead handoff to sales
- Leads FAQ

VIDEO TUTORIALS

- Lead management

Lead distribution

The lead distribution stage is a part of the lead management process. On this stage, the owner and the nurturing strategy are determined. Since the owner is appointed at the qualification stage, after qualification, the lead is transferred to the "Handoff to sales" stage, and the "Distribution" stage is skipped. If necessary, you can return to this stage and specify the employees responsible for the handoff to sales, and determine the further strategy of working with the lead. You can continue working with the customer and advance the lead to the handoff stage, keep record of a postponed interest and continue nurturing the customer or stop working with them.

To move to the distribution stage, click the [Distribute] button on the workflow bar at the top of the lead page. When a lead is being transferred to this stage, the "Lead management: Distribution" page is created in the action panel. Click the [Execute] button and go to the lead distribution page.

CONTENTS

- Lead distribution result

VIDEO TUTORIALS

- Lead management

Lead distribution page

General information

	This is a non-editable field. The field is populated on the lead qualification stage.
Customer need	Customer need type that was specified in the lead. This is a non-editable field. The field is populated on the lead qualification stage.
Legal entity	legal entity linked to the lead. This is a non-editable field. The field is populated on the lead qualification stage.

The [Handoff to sales] tab

On this tab, specify the data required to proceed the lead to handoff.

Contact info, Legal entity info

The contact and legal entity data linked to the lead are displayed in this field group. These fields are non-editable. These fields are populated during the qualification stage.

The [Customer need details] tab

The tab displays the characteristics of customer's needs. For example, the need type, maturity, lead stage. You can also add a list of products based on which a lead was created. If you have identified other needs of this client, add them on the same tab.

Parameters

This detail contains additional parameters of the lead. The parameters set for the selected need type are shown as fields.

Products

This detail is designed for storing the list of products that the customer is interested in.

Leads

You can add a new lead, for example, if a contact expresses interest in additional products or services. The leads are linked through the [Leads] detail of the contact page specified in the [Contact] field of the distribution page.

The [Folders] tab

The [Folders] tab displays the list of folders that contain a contact connected to the lead. To include the contact to the folder, click the + button. The [Contacts] section group list will open which does not yet contain this contact. To remove the contact from the folder, select the [Delete] command of the [Actions] button menu.

SEE ALSO

- Lead distribution result
- Lead handoff to sales
- Leads FAQ

Lead distribution result

After confirming and entering the required information on the distribution page, choose a strategy for working with the customer.

If the customer's interest is confirmed, advance the lead to the next stage to specify the need. To do this, in the [Distribute] button menu select the [Start proceeding to handoff] command. As a result, the lead proceeds to the "Handoff to sales" stage. If the [Remind owner] checkbox is selected on the distribution page, a notification will be sent to the user responsible for proceeding the lead to handoff.

If there is no point in communicating at the moment, but the customer has a postponed interest, select the [Continue nurturing] command in the [Distribute] button menu. As a result, the lead remains at the distribution stage, and you can continue working on it later.

If the customer is no longer interested in your products or services, select the [Not interested] result. The lead will advance to the "Not interested" stage.

SEE ALSO

- Lead handoff to sales
- Leads FAQ

Lead handoff to sales

Handoff to sales is a part of the lead management process. The lead moves to this stage automatically after qualification. Contact the customer and find out more about the potential opportunity. After estimating the customer's potential, you can hand the customer over to a particular sales manager taking into consideration the manager qualification and profile. As a result, you can run the handoff or proceed to order for this customer. If the customer has a postponed interest, you can return the lead to distribution and continue nurturing.

At this stage a task is created in Creatio displayed on the workflow bar. Execute the task by clicking its name or the [Complete] button. This task fields will be populated as follows:

- [Subject] – "Contact the customer and specify the need, parameters and customer decision-making role."
- [Owner] – the employee responsible for distribution. If the owner is not specified at the stage of distribution, the field will be populated with the name of the task author.
- [Reporter] — the employee who created the task.
- [Start] — time when the lead proceeds to handoff (in other words, selecting distribution result [Proceed to handoff]).
- [Due] — the expected time for the sale to be completed.
- [Show in calendar] — an attribute that determines whether the task is displayed in the calendar
- [Priority] — the task priority, for example, "Medium"
- [Category] — the task, for example, "To do"
- The [Lead], [Contact] and the [Legal entity] fields of the [Connected to] detail are also populated in the task.

The further process flow depends on the task result.

Proceeding to handoff

If you are ready to start the handoff for the customer, select the "Proceed to handoff" task result. The system will ask you to enter additional notes for the handoff. After that, a new task will be created to enter information about proceeding the lead to handoff. While executing it, populate the following fields.

Need type	Customer need type that was specified in the lead.
Sales owner	Select the sales manager assigned as the owner for the opportunity. The contacts who have users created in Creatio are displayed in this field.
Sales division	Select the division that handles the opportunity, for example, direct sales department or affiliate sales department.
Meeting date and time	Specify date and time of the first meeting with the customer.
Decision timeline	Date and time when the customer is ready to make a decision about the opportunity.
Notes	Additional notes about the handoff. Information specified in the [Result details] field of the lead proceed to handoff page will be displayed here. Once the page is saved, you can see the specified note in the lead feed.

The data entered will be displayed in the [Proceed to handoff] field group on the [History] tab of the lead page. You can edit it later.

Once the page is saved, the note about the handoff will be added to the lead details. The lead then proceeds to the "Awaiting sale" stage. On the lead page, the "Sales-ready" need maturity will be set.

Back to distribution

If the customer is not interested at the moment, but communication with the customer is still available and the possibility to close the opportunity still exists, complete the "???" task and select "Back to distribution" in the [Select results] field of the task completion mini page. In this case, the lead will return to the "Distribution" stage, and the "Discovered" need maturity is set on the lead page.

Task reschedule

If you need to postpone the task for some defined period, complete it and select "Rescheduled" in the [Select results] field of the task completion mini page. The lead will remain at the "Handoff to sales" stage. A new task for proceeding lead to handoff will be created.

Not interested

If the customer need is not confirmed, complete the "???" task and select the "Not interested" in the [Select results] field of the task completion mini page. In this case, the "Not interested" need maturity will be set on the lead page. The lead will remain at the "Handoff to sales" stage. Later on, after the customer's need is renewed, you can continue working according to the process.

SEE ALSO

- Awaiting sale
- Leads FAQ

VIDEO TUTORIALS

- Lead management

Awaiting sale

All lead management stages are complete. Creatio will add a record in the Opportunities section, based on the lead. Corporate sales process will start for the new opportunity. If the corporate sales process is successfully completed, the lead will then proceed to the final "Need satisfied" stage.

VIDEO TUTORIALS

- Lead management

SEE ALSO

- Corporate sale process

Lead duplicate search

The lead duplicate search helps to obtain information about customers with similar needs and to eliminate duplicate leads. In contrast to searching for duplicate contacts and legal entities, the lead duplicate search cannot start manually. The results of the lead duplicate search are displayed automatically on the [Similar leads] detail of the lead page. Duplicates cannot be merged since several similar needs may arise from one customer.

The lead duplicate search in Creatio is performed according to the pre-configured rules for searching for duplicates grouped as "Similar leads". To enable or disable individual rules:

1. Go to the system designer.
2. Open the [Setup duplicates rules] link.
3. In the section [Filter] menu, select the [Show folders] command.
4. In the list of folders, select the "Similar leads" folder. The list will display the pre-configured duplicate search rules.
5. Select a rule from the list to be enabled or disabled and click the [Open] button.
6. On the rule page:
   a. Clear the [Active] checkbox to disable the rule.
   b. Select the [Active] checkbox to enable the rule (Fig. 4).

Fig. 4 Selecting the [Active] checkbox for the lead duplicate search rules

Click [Save].

The lead duplicate search will be performed based on the rules with the selected [Active] checkbox.

SEE ALSO

- Finding and merging duplicates
- Leads FAQ

Actions in the [Leads] section

In addition to the basic actions, there are several additional actions available in the [Leads] section.

Set up customer needs

This action opens the content of the [Need types] lookup for editing. On the lookup page, you can add, edit or delete needs. Here you can also select products that correspond to each need.

Here you can also select products corresponding to any need.

- The products that were added to the [Product in need type] detail will be available on the [Products] detail of the lead and opportunity pages with the same type of customer need.
- The parameters that were specified on the [Parameters] detail will be displayed as fields on the [Customer need details] of the lead page and [Opportunity details] of the opportunity page.

Evaluate predictive score

Initiate calculation of the probability for successful conversion of selected leads to opportunities. Read more >>>

Dashboards in the [Leads] section

The Dashboards view contains: diagrams, metrics, rating lists and reports.

NOTE

More information about working with dashboards and dashboard setup can is available in the corresponding articles.

The [Leads analytics] tab

The [Leads analytics] tab displays the analytics about leads.

NOTE

Filters set in the section will be applied to all dashboard tiles.

Lead sources	Diagram displaying how leads are grouped by source.
New vs. sales-ready leads by month	Chart displaying the dynamics of adding new leads and lead handoff. Leads that were added and those that are proceeded to handoff are displayed on separate bars and are grouped by month.
Leads by need type	Diagram displaying how leads are grouped by the need type. Leads on the “Disqualified” and “Not interested” stages are not taken into account.
Leads by maturity	Diagram displaying how leads are grouped by need maturity.

The [Lead pipeline] tab

The [Lead pipeline] tab shows how leads are grouped by stage.

NOTE

Filters set in this section will be applied to all dashboard components, except for "Number of sales-ready leads this month".

Lead pipeline	A pipeline displaying how leads are grouped by stage. Leads that have the "Disqualified" and "Not interested" stages are not taken into account.
Number of leads in pipeline	A metric displaying the number of leads that the [Lead pipeline] is based on. Leads that have the "Disqualified" and "Not interested" stages are not taken into account.
Number of sales-ready leads this month	Calculated indicator displaying the number of leads that have proceeded to the "Awaiting sale" stage in the current month. It is created based on the records in the [Process log] section.

The [Leads analytics] tab

Analytical data on the dynamics of working with a lead..

Lead attraction dynamics	A chart that enables you to monitor the quantitative dynamics of the lead transition through the stages of lead management process: from attraction — to client's need satisfaction.
Leads	The total number of leads attracted per period.
Qualified leads	The number of leads that have passed the qualification stage and are ready for handoff to sales.
Opportunities	The number of leads that are on the "Awaiting sale" and "Satisfied" stages.
Victories	The number of leads transferred to the "Satisfied" stage. The result of managing these leads was a successful sale.

The [Lead owner efficiency this month] tab

Analytical information about the work results of the employees.

NOTE

Filters set in the section will be applied to all dashboard components.

Activities related to leads	Diagram displaying activities linked to leads and grouped by owner. The diagram displays only activities that started in the current month.
Effective activities related to leads	Diagram displaying activities linked to leads and grouped by owner. Only completed activities that started in the current month are displayed.
Sales-ready leads	Diagram displaying activities linked to leads grouped by owner. The diagram displays only activities started in the current month, and activities that require an order to be created or can proceed to handoff.

SEE ALSO

- Dashboards
- Leads FAQ

How lead predictive scoring works

Lead predictive scoring enables minimizing the amount of working time that your managers spend on low potential leads and increasing the number of leads converted to opportunities. The prediction is performed for every qualified lead. It takes into account the lead parameters and the working history.

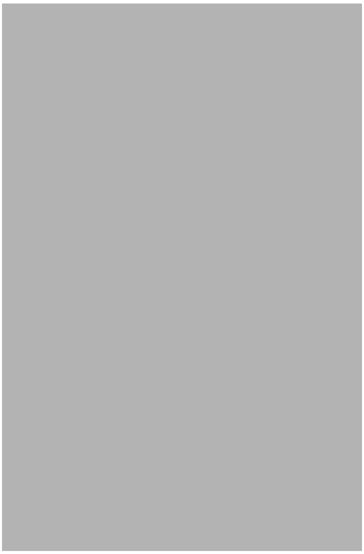
- How to launch lead predictive scoring
- What data are processed by predictive scoring

As a result, the predictive score (Fig. 5) is displayed on the lead page. It represents the probability of lead conversion to a new opportunity on a scale from 1 to 100 points.

NOTE

In case the predictive score is not displayed in the lead profile, you need to verify if lead predictive scoring is enabled and a trained model instance exists in the [ML models] section of Creatio.

Fig. 5 Lead profile with a predictive score



Depending on the probability of lead conversion to opportunity Creatio determines general likelihood of lead conversion:

-  – high predictive score (80-100 points)
-  – medium predictive score (50-79 points)
-  – low predictive score (1-49 points)

Predictive scoring is not performed for non-qualified leads and the predictive score for such leads is set to "0" .

The predictive score is regularly recalculated since lead nurturing process is having a constant impact upon the probability of its conversion to opportunity. The score can either be raised or decreased if the lead information has not been updated for a long time.

NOTE

You are able to modify the base prediction model The configuration of the models can only be performed by developer tools.

How to launch lead predictive scoring

You can launch lead predictive scoring for a single record as well as for all the lead records being nurtured. You can launch it automatically or manually for a selected record.

Automatic predictive scoring

Predictive scoring is initiated automatically:

- During lead qualification. In this case the score prediction is only performed for the qualified lead.
- Every day, when Creatio is not excessively used. In this case the score prediction is performed for all the leads being nurtured.

To set up automatic prediction launch for all the leads in the pipeline, open the predictive scoring page in the [ML models] section and indicate the method of starting the batch prediction as "Execute daily at maintenance window".

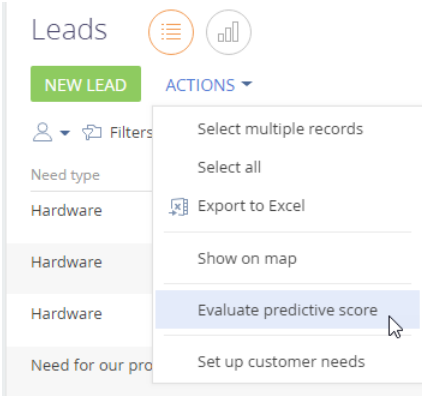
NOTE

You can set up the time period when Creatio is least loaded (for the purpose of running resource-heavy processes) in the [Maintenance periods] lookup.

Manual launch of predictive scoring

To manually launch predictive scoring for any lead, highlight the record whose score needs to be displayed in the [Leads] section, and select the [Evaluate predictive score] command from the [Actions] menu (Fig. 6).

Fig. 6 Manually launching lead predictive scoring



What data are processed by predictive scoring

To evaluate the lead predictive scoring, the machine-learning model analyses the data of the lead and its linked records. We recommend populating bpm'onlline with maximum information about the lead for its processing during the predictive scoring.

During the scoring process, the machine-learning model takes the following lead and its linked object data into account.

- Lead need type.
- Availability of a qualified contact and contact details (role, type, department, job title, mobile phone, business phone).

  If there are no contact details on the lead page, Creatio verifies if these details are populated on the corresponding contact page.
- Availability of a qualified account and account details (category, industry, type, number of employees, web site, country).

  If there are no account details on the lead page, Creatio verifies if these details are populated on the corresponding account page.
- Lead engagement data (source, channel, website events, landing).
- Lead aggregated indicators:
  - number of days after lead qualification
  - number of leads per contact
  - number of leads per contact registered within the last 2 weeks
  - number of phone calls and emails per lead (monthly, quarterly, total)
  - number of days after the last phone call
  - number of days after the last email

Lack of one or several parameters from the list might have considerable impact upon the lead predictive score accuracy.

SEE ALSO

- Lead page
- Leads FAQ

Leads FAQ

- How to assign the owner of a lead?
- What is the purpose of the "Continue nurturing"? The lead remains at the "Distribution" stage. Nothing has changed.
- What's the difference between the lead source and lead channel?
- What's the difference between the [Legal entity] and [Legal entity name] fields on the lead page?
- What is the logic of automatic contact creation?
- What data from the lead page are passed to the contact page?
- How does the contact and legal entity search work when qualifying a lead?
- How do I start the lead management process?
- How to disable a base sub-process?
- How to change the standard lead management process? How do I add or modify process stages?
- How to search for duplicates?

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- Lead management

How to assign the owner of a lead?

Lead distribution includes the assignment of the lead owner, need clarification and the decision to nurture further or proceed to handoff.

This step is optional and may be performed at any lead stage, except the final stages ("Awaiting sale" and "Satisfied").

As the owner assignment is not a mandatory action, after the qualification stage is complete the lead is transferred to the "Handoff to sales" stage. To assign an owner, you need to return to lead distribution by clicking the lead distribution stage on the workflow bar (located at the top of the lead page), or go to the [History] tab and specify the owner on the [Lead distribution] detail.

What is the purpose of the "Continue nurturing"? The lead remains at the "Distribution" stage. Nothing has changed.

The decision to hand off a lead to sales or to continue the nurturing is made based on whether there is sufficient information to start the sale and whether the customer is ready for a deal. If the customer is not interested at the moment, but communication is still available and the possibility to close the opportunity exists, select the "Back to nurturing" task completion result.

During the nurturing, you can determine the further strategy of working with the lead: to clarify the customer need or to specify missing data.

As a result, the lead remains at the distribution stage, and you can continue working on it later. Otherwise, you'd have to select the "Not interested" stage and such a lead would become unavailable for further work.

What's the difference between the lead source and lead channel?

Lead channels are resources involved to attract leads, for example, search engines, email, social networks, media resources, etc. A lead source is a specific resource from which a lead is transferred into Creatio, for example, the Google search engine, email, Facebook, etc.

What's the difference between the [Legal entity] and [Legal entity name] fields on the lead page?

The legal entity information can be found in two places:

- On the [Registration info] detail of the [Lead info] tab. The fields on the details are populated automatically when you add a new lead to Creatio and only with the data that the user provided during registration on the landing page. I.e., if the user has not entered a company name when registering on the landing page, the [Legal entity] field on the [Registration info] detail will be blank.
- The legal entity profile is located on the left side of the lead page. This interface enables you to register a new company or to associate an existing legal entity with the lead based on registration data from the [Lead info] tab. For instance, if a user has specified a company that has been added in the [Legal entity] section, Creatio will pull in the profile information for the legal entity, and will enable you to associate it with the lead.

What is the logic of automatic contact creation?

A contact is added automatically when creating a new lead via landing page if the [Create contact] checkbox is enabled.

When adding a new lead manually:

- If the lead is added for an existing contact, this contact will be specified in the corresponding profile on the lead page and you can connect the lead and contact records via the [Select from similar] option.
- If the contact specified in the lead mini page does not exist, it will be added automatically after clicking the [Qualify] button.

What data from the lead page are passed to the contact page?

When a contact is created automatically, all basic information about the contact (name, communication options) is passed to the contact page from the lead page.

How does the contact and legal entity search work when qualifying a lead?

Contact and legal entity profiles are located in the left part of the lead page. These blocks contain general information about contact and legal entity connected with the lead. If a contact or legal entity are similar to the existing ones, the existing contact or legal entity can be connected with the lead page via the [Select from similar] option.

legal entityConditions that enable selecting from similar contacts and legal entities are described below.

Similar contact:

- Values of the [Contact name] and [Email] fields on the lead page are equal to the [Contact name] and [Email] fields on the contact page.

- Values of the [Contact name] and [Mobile phone] fields on the lead page are equal to the [Contact name] and [Mobile phone] fields on the contact page.

Similar legal entity:

- Value of the [Legal entity name] field on the lead page is equal to the [Legal entity name] field on the legal entity page.
- Values of the [Legal entity name] and [Country] fields on the lead page are equal to the [Legal entity name] and [Country] fields on the legal entity page.

How do I start the lead management process?

By qualifying the lead, you begin to work on the process. The lead management business process starts automatically after clicking the [Qualify] button and continues running as you work with a lead.

You can also customize the lead management business process according to your needs. To do this, create a new business process or copy an existing one and change it accordingly. Specify the name of the new process in the "Lead management business process" system setting. The details of the business process features are described process setup documentation.

How to disable a base sub-process?

To disable a base sub-process, copy an existing business process and give it a new name. Disable the required sub-process and specify the name of the new process in the "Lead management business process" system setting More ways of configuring and working with business processes are described in the process setup documentation.

How to change the standard lead management process? How do I add or modify process stages?

You can delete, change or add process stages, and change the list of activities in accordance with your needs.

To change the set of stages and transitions between them use the [Lead stage] and [Available transitions between lead stages] lookups.

To change the list of basic activities, which are created during the process execution, you need to replace the default process with a custom copy.

To do this:

1. Open the [Process library] section.
2. Find the default process that you want to change. The lead management process consists of several sub-processes, each referring to a particular stage. When searching for a sub-process, pay attention to its name and the lead finance prefix. For example, if you need to change the "Qualification" stage of the lead management process, look for a process called "Lead qualification (lead finance)".
3. Create a copy of the base lead management process by clicking the [Copy] button record in the process record.
4. Make the required changes in the copy. You can change the elements, remove elements or add new ones.
5. Save the edited copy and publish.

6. Specify the name of modified copy in the [Value by default] field of the “Lead management business process” system setting.
7. Go to the original version of the corporate sales process and disable it by clicking the [Actions] —> [Disable].

NOTE

Detailed descriptions of business process management are available in the Creatio business process documentation.

After performing the settings, the system will use the custom lead management process.

How to search for duplicates?

The lead duplicate search helps to obtain information about customers with similar needs. You can delete duplicate leads manually, if needed. Leads that look like duplicates will be displayed on the [Similar leads] detail. Detailed information about this functions is available in a separate article.

The [Legal entities] section

All information about customer companies, partners, competitor banks, subsidiaries and branches of your bank, as well as insurance companies, that you interact with are stored in the [Accounts] section, up-to-date and easily accessible at any time.

Use the [Legal entities] section of Creatio to keep record of legal entity information, track connections between companies, group companies by various criteria and analyze the relevant statistics. For example, data on the number of employees can be used to estimate the size of the company.

Views

The section has several views:

- — list of legal entities. displays legal entities as a list of records. The list columns are covered in the description of the legal entity page below.
- – legal entity analytics displays charts, indicators and ratings that can be used to analyze legal entities.Read more >>>

CONTENTS

SEE ALSO

- Percentage of profile completion
- Record pages

Legal entity page

In Creatio, legal entities can be:

- added manually;
- saved after lead qualification;
- imported from an Excel file;

NOTE

When creating a legal entity manually, Creatio will offer to select a legal entity from the list. The data enrichment function must be set up beforehand. More information about data enrichment setup is available in a separate article.

Legal entity profiles are located on the left. They contain basic information about the legal entity and its primary contact.

The action panel, which contains activities, posts, and emails, created when working with the legal entity, is located at the top of the page.

Using the action panel, you can:

- schedule a task
- – send an email.
- – create a post in the record feed.
- – make phone call notes.

Tabs, which contain legal entity fields and details, are located below the action panel.

Record profile

General information about the legal entity.

Photo	The logo of a legal entity. It is displayed on the page of the legal entity. and next to the name of the legal entity. In the section list and in the feed. Click the button to add a new image by using the standard file selection window. We recommend uploading a square image (aspect ratio: 1:1). Click on the button to remove the logo. If you mouse over the photo area, the buttons will become visible.
Account name	Official name of the company.
Owner	Name of the Creatio user responsible for working with the legal entity.
Web	Company web-site.
Primary phone	Primary phone number for contacting this company.

– data enrichment button. Read more >>>

Customer profile

General information about the customer service conditions.

Type	Type of the account depending on its role in relation to your company, such as "Customer", "Partner" or "Insurance company". The legal entity types can be used for filtering in other fields, so we do not recommend deleting the values from the [Account types] lookup.
Category	Category that defines how important the legal entity is for your company. For example, "A" – top importance, "D" – low importance.
Branch	Bank's branch where the legal entity is assigned.
Owner	Creatio user responsible for working with the legal entity.

Primary contact profile

The primary contact profile is located below the legal entity profile and displays full name, job title, work and mobile phone numbers, an email address of the primary contact for the current legal entity.

The [General information] tab

The tab contains primary information on the legal entity, such as segmentation fields, communication options, connections to other contacts and legal entities, banking details.

Alternate names	Aliases or additional names of the legal entity, such as abbreviation of the company name.
Non-resident	Select this checkbox if this legal entity is registered in a foreign country.
Blacklisted	Select this checkbox if this legal entity has been added to the bank's black list.
Blacklisted on	Date of adding the legal entity to the bank's black list. This field is displayed on the page after selecting the [Blacklisted] checkbox.
Reason for blacklisting	Circumstances surrounding the blacklisting of the legal entity. This field is displayed on the page after selecting the [Blacklisted] checkbox.
Company code	Unique code of legal entity It is used to distinguish companies with identical names. The legal entity code is non-editable and is populated automatically based on the specified template. Use the "Legal entity code mask" system setting to customize auto numbering for legal entities.

Segmentation

Additional information about the legal entity.

Business entity	Indicates whether the legal entity is private-owned, state-owned or of mixed ownership.

Legal entity	Type of legal entity, e.g. “Corp.”, “Inc.”, “Ltd.”.
No. of employees	Approximate number of employees in the company, for example “51–100” or “501–1000”.
Annual revenue	Possible annual revenue ranges for companies, for example, “15–20 million” or “20–30 million”.
Industry	Business field that the legal entity operates in, for example, “IT Company”, “Business services”, or “Manufacturing and distribution”.

Addresses

List of all addresses of the legal entity.

Address type	Type of legal entity address, for example, delivery, legal, actual address, etc. It is defined when a record is added. You can change it afterward.
Primary	Indicates the primary address. The primary address of a legal entity is displayed in the list and the record profile. By default, the [Primary] checkbox is selected for the first address added to the [Addresses] detail, but you can select this checkbox for a different address at any time. Only one address can be set as the primary address at a time (if you select the checkbox for a new address, the checkbox for the previous primary address will be cleared).
Address	Street, building number and other details of the company address.
Country State/province City	Location of the company. The [State/province] and [City] fields are connected to the [Country] field. For example, if a city is located in a certain country, then when you populate the [City] field, the [Country] field will be populated automatically. Similarly, if you populate the [State/province] field, the [Country] field will be populated automatically. When you populate the [Country] field, the [State/province] and [City] fields will show only those regions and cities that correspond to the selected country. You can associate a region with a certain country in the [States/provinces] lookup, and associate a city with a country – in the [Cities] lookup. Use the [Districts] lookup to associate a district with a country.
ZIP	Postal code of the company.

NOTE

The list displays the primary address of a legal entity (the address for which the [Primary] checkbox is selected).

After you populate one or several addresses of the legal entity the [Show on map] section action becomes available.

Communication options

The detail contains the list legal entity's communication options: phone numbers, email addresses, website URLs and social network profiles. The detail fields are displayed when you select the corresponding commands in the + menu.

Types of the legal entity communication options.

Primary phone	Phone numbers that can be used to contact the company. Communication option types are defined when a record is added (you can change them later).
Alternate phone	
Fax	
Web	Website and email addresses of the company.
Email	
Facebook	Social network profiles of the legal entity. A separate page is used to link social network accounts to legal entities.
Twitter	

NOTE

If a legal entity has multiple web addresses, the list displays the address that was entered last.

You can use default types of communication options or add custom ones. Use the [Communication option types] lookup to add custom types of communication options.

NOTE

Custom communication option types fall into one of the pre-set "communication types": Email, Phone, Skype, SMS, Social network or Web. Be sure to select one when adding a custom communication option type.

Buttons on the [Communication options] detail:

– call the company. The button is displayed on the page if at least one "Phone" communication option field is populated. Click the button to open the communication panel and dial the corresponding phone number.

NOTE

Phone integration is required to make calls. Read more >>>

– email the company. The button is displayed on the page if at least one "Email" communication option field is populated. Click the button to create a new email draft with the corresponding account specified in the [To] field. If you have synchronized your mail client with Creatio, the draft will be created directly in the Creatio. Otherwise, your default mail client will open.

– visit the company website. The button is displayed on the page if at least one "Web" communication option field is populated. Click this button to open the corresponding website. The website will be opened in your default browser.

– open Facebook search page for selecting the company's Facebook accounts for adding to the list of the account's communication options. If a Facebook account has already been added as a communication option, then clicking this button will open the Facebook page of the legal entity.

Banking details

The tab also displays banking details of the legal entity.

Legal entity	Name of the company whose banking details are given. This is a non-editable field.
Opportunity name	Name of the legal entity's banking information, such as "Primary bank account".
Manager	Names of the chief accountant and CEO of the company.
Chief accountant	
Country	Country of the banking details for the legal entity If the selected country has a specific template for banking details in the [Countries] lookup, then this template will appear in the [Banking details] field.
Legal entity	Full name of the legal entity that will be used as part of payment details.
Banking details	Complete information on the legal entity's banking details, for example, account number, SWIFT number, ABA Code, etc.
Notes	Additional information about the banking details,

Noteworthy events

List of the legal entity's noteworthy events.

Type	Type of the noteworthy event, for example, "Company day". Defined when a record is added. You can change it afterward.
Date	Date of the noteworthy event.

The [Contacts and structure] tab

This detail displays information about the company contact persons and structure.

Organizational structure

This detail displays the company structure and divisions.

Legal entity	Name of the company whose organization structure is established. This is a non-editable field.
Division	Name of the company division. If you select a value in the [Division] field, this field will be populated with the selected value.
Department	Name of the company department.

Manager	Name of the division manager.
Description	Additional information about the division.

[Add root item] – adds root items, such as company departments.

[Add subordinate item] – adds a subordinate item for the selected one, for example, a unit within a department.

Legal entity’s contacts

The list of company employees. The detail displays contacts who have this company specified as the current employer on the [Job experience] detail or the contact profile.

To add a new contact to the system, use the + button on the detail. A new contact page will open with the current accountlegal entity specified. Once the page is saved, the employment history detail will display the record about the contact's new place of work.

The [Timeline] tab

The [Timeline] tab contains chronologically organized entries that represent records linked to the current legal entity. Read more >>>

The types of linked records on the legal entity timeline include:

- leads
- opportunities.

The [Connected to] tab

Connections between the current legal entity and other legal entities and contacts.

Legal entity	Name of the company which a relationship is established for. This is a non-editable field.
is a/an	Relationship type, for example, “Partner” – “Holding company”. When you select a relationship, the inverse relationship type is automatically populated in the [Inverse relationship] detail.
for	Name of the company or person who is connected to this legal entity.
Actual	The checkbox indicates whether the relationship is relevant at the present time.
Function	Any additional information about the entities.

– chart showing the legal entity connections. The chart shows the “Holding company – Subordinate company” type connections of the legal entity.

> NOTE
>
> You can change the type of the displayed connections using the “Connection type - "Parent legal entity” system setting.

– list showing the accountlegal entity connections.

The [History] tab

The [History] tab contains system records connected to the legal entity.

Activities

Tasks connected with this legal entity. The detail displays information from the [Activities] section. To connect an activity to the legal entity, populate the [Legal entity] field of an activity page.

Calls

The list of the subscriber's incoming and outgoing calls. This detail displays information from the [Calls] section. To connect a call to a legal entity, populate the [Legal entity] field of the call page.

You can playback a recorded call directly on the detail. Read more >>>

Emails

Emails connected to the current legal entity. To connect an email to the legal entity, populate the [Legal entity] field of an email page.

Contracts

A list of contracts concluded with the current legal entity. This detail displays information from the [Contracts] section. To connect a contract to anlegal entity populate the [Customer] on the contract page.

Opportunities

A list of opportunities, connected with the legal entity. Displays records from the [Opportunities] section. To connect an opportunity to an legal entity, populate the [Customer] field on the opportunity page.

Documents

This detail contains a list of documents connected to the selected legal entity . This detail displays information from the [Documents] section. To connect a document to the legal entity, populate the [Legal entity] field of a document page.

Invoices

A list of invoices connected to the company. Displays information from the [Invoices] section[Bank accounts] section Financial accounts are connected with legal entities by the [] field of the financial account page.

Leads

List of leads that are qualified as the selected legal entity. This detail displays information from the [Leads] section. The lead is connected to the legal entity by the [Qualified as legal entity] column of the [Leads] section.

Accounts in external banks

The list of accounts that the company opened in other banks.

Bank	The bank in which the account was opened. You can select legal entities of the “Bank” type.
Account number.	The number of the account that the company opened in a different bank.
Type	Account type, for example, “Card” or “Current”.

Update on	The date when the information about the account became known.
Account turnover	Known cash flow of the account.
Currency	The currency of the account.
Primary	This checkbox identifies that the account is primary.
Description	Additional information about the account.

Cards

The list of the company's cards, which displays information from the [Cards] section. To connect a card to a legal entity, populate the [Customer] field of a card page.

Financial indicators

The list of financial indicators.

Indicator type	Type of financial indicator, such as “Fixed capital” or “working capital”.
Value	Numeric value of the indicator.
Currency	The currency in which the value of financial indicator is specified.
Value type	Value type of the financial indicator, for example, “Actual” or “Planned“.
Time period	Time interval for which the value of the financial indicator is measured.
Start Date	The starting date of the time period.
End date	The end date of the time period.
Time period type	Type of selected period, such as “Month”, “Quarter”, “Year”.

The [Attachments and notes] tab

Additional information about the legal entity, as well as files and web-resources related to the legal entity. Read more >>>

Attachments

Use this detail to store files and links related to the legal entity. For example, on this detail you can add documents that reflect the legal entities relationship history, or links to the company's web resources.

Notes

The [Notes] detail is used to store additional text information about the legal entity. You can edit and organize notes on the detail. If you switch to another tab of the legal entity page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays the messages from the [Feed] section that are connected to the current legal entity.

SEE ALSO

- Percentage of profile completion

Finding and merging duplicates

In Creatio, you can search for duplicates and eliminate them. When creating new records, the system automatically checks for duplicates. You can also schedule a periodic duplicates search for legal entities and contacts. Read more >>>

SEE ALSO

- General duplicate search
- How to search for duplicates when saving records

The [Legal entities] section actions

In addition to the standard actions, the section also contains special actions.

Show duplicate legal entities

The [Show duplicate legal entities] action opens an additional page that contains all possible duplicates of the legal entities. After the duplicates search is completed, records are added on the page automatically. Read more >>>

Show on map

The action shows the list of the selected legal entities on a map. Launching the action opens a window that displays legal entities selected in the list. If the address is not filled in for all selected legal entities, the action will not be performed. If the address is not filled in for some legal entities or filled in incorrectly, then the corresponding information will be shown in the opened window.

> NOTE
> You can select multiple legal entities in the section using the [Select multiple records] action.

If a legal entity has several addresses populated, e.g., physical address and delivery address, the map displays all the specified addresses. To view the detailed description, click one of the addresses.

> NOTE
> If a legal entity position is not accurate on the map, open the [Addresses] detail and set the point corresponding to the legal entity location on the map.

Update with social networks data legal entity

This option allows you to populate the legal entity page with additional information from Facebook. Read more >>>

Actions when saving a record

When you save an legal entity record, additional actions are available.

Adding a new contact person for a legal entity

When you save a new legal entity page, a message will appear prompting you to add a new contact person for this record. If you click the [Yes] button the page of a contact, where you can enter information about a primary contact for the legal entity. Click the [No] button to cancel the action.

Duplicates search when saving a record

When you save a legal entity, a duplicates search page might open. It means that this record might be already registered in the system. You can edit the new record or indicate that the records found are not duplicates of the newly saved record.

Print

Legal entity summary	Displays summarized information about the company. The table contains a list of communication options and addresses of the company as well as the history of interaction with it. This print option is available on the legal entity page in the [Print] menu.

Analytics in the [Legal entities] section

The [Analytics] view contains summary data on the section: charts, metrics, ratings and reports.

NOTE

More information about working with dashboards and dashboard setup is available in the corresponding articles.

The [Legal entity analytics] tab

The [Legal entity analytics] tab displays the summary of information about accounts that are registered in the system.

NOTE

Filters set in the section will be applied to all dashboard components.

Customer base growth	This diagram shows the number of new clients who were added to the system by month. Only legal entities of "Customer" type are used for calculation.
Number of customers	Indicator displaying the number of legal entities of the "Customer" type registered in Creatio.
Customers by industry	Diagram displaying how customers are grouped by industry.
Customers with no contacts specified	List of 5 accounts that don't have any connected contacts. The data is sorted in alphabetical order.
Customers with no recent activity	The list of top five customers who have no activities connected to them or the end date of the last uncompleted activity has passed. It displays records sorted in ascending order of the latest activity date. Clients without activities or with the earliest activities will be in the top of the list.

Reports

Data sufficiency	The list of fields on the legal entity page is given as a table. For each field the table contains the number of records where this field is filled in and the corresponding percentage. It also displays the number of entries that have no data in this field.

SEE ALSO

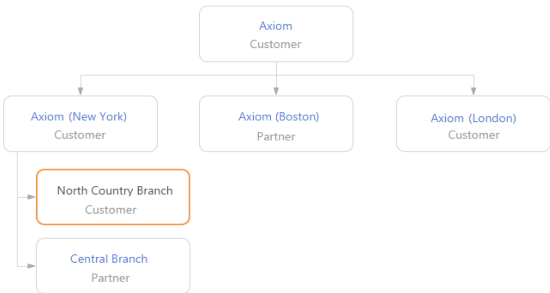
- Dashboards

How to merge several companies into one holding/company group

Make connections between accounts in Creatio to facilitate centralized communication and work flow between legal entities. Use the chart to manage relationships with parent and subordinate legal entities.

To view the location of a legal entity within the relationship structure, open the [Connected to] tab of the legal entity page. The currently selected legal entity is highlighted (Fig. 1).

Fig. 1 Company group chart



Click the button to view the legal entity's relationships chart. Click to switch to the list view.

The chart only shows the “Holding company – Subordinate company” type connections of the account.

NOTE

You can change the type of the displayed connections using the “Parent account relationship type” system setting.

Let's create a corporate structure that includes subsidiaries (subordinate legal entities) with branches.

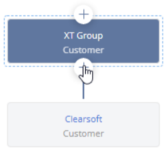
1. Open the page of the “holding legal entity” (the one that represents the head office) and go to the [Connected to] tab.
2. Click the legal entity block, then click + to add a subsidiary (subordinate company Fig. 2).

   Similarly, you can add a parent company to the structure. For this, click + in the upper part of the block.

Fig. 2 Adding a subordinate company

3. In the window that opens, locate the subordinate company –> click [Select]. If the subordinate company is not yet registered in Creatio, add a new record by clicking [New].
4. To add other subordinate companies, click the parent company block again, –> click in the lower part of the block, and repeat the previous step (Fig. 3).

Fig. 3 Adding a second subordinate company



NOTE

If the selected company already has a parent object specified, Creatio will notify you about this. You can either replace the parent company or cancel adding a subordinate company.

5. Similarly, add the subordinate company branches.

NOTE

If the added company already has subsidiaries, these subordinate companies will display on the diagram as well.

6. To delete a connection between legal entities, select the company connection you want to delete and click .

SEE ALSO

- How to view the history of a holding/company group activities

How to view the history of a holding/company group activities

Use the history to view and analyze the cooperation process with the holding company and all of its affiliates. This will enable you to view opportunities are in progress for both the holding and each subordinate legal entity.

To view the history:

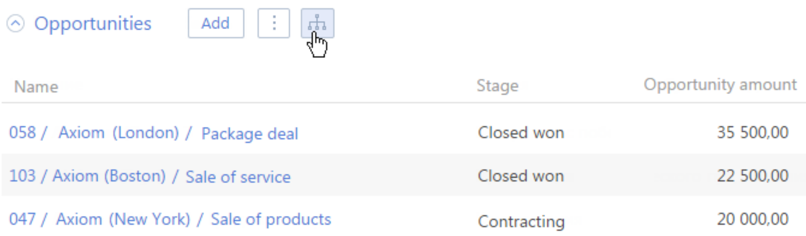
1. On the parent legal entity page, go to the [History] tab.
2. Unfold the [Opportunities] detail and click the button.

NOTE

The button is displayed on the [History] tab details and only for parent legal entities, if subordinate companies have connected records.

As a result, the detail will show the opportunities of the subordinate companies of the legal entity (Fig. 4).

Fig. 4 Viewing the opportunity history of the subordinate companies



You can use the following details to view the opportunities history of the subordinate companies: [Activities], [Invoices], [Opportunities], [Contracts], [Leads] on the [History] tab, and on the [Contacts of legal entity] of the [Contacts and structure] tab.

The history is only displayed for the first and second nesting levels. This means that if the subordinate company has its own subordinates, the records connected to these subordinates will not be displayed for the selected legal entity.

SEE ALSO

How to merge several companies into one holding/company group

The [Contacts] section

Contacts in Creatio are your bank's customers, legal entities, your bank employees and other business or personal contacts.

Use the Contacts section to manage information about contacts, group them by various parameters, analyze the history of interactions with customers, and view the resulting statistics.

Views

The section has several views:

- – list of contacts. Displays contacts as a list of records. All list columns are described below in the context of the contact page.
- – analytics on contacts. Displays charts, indicators and ratings for analyzing contacts.

CONTENTS

SEE ALSO

- The [Legal entities] section > Finding and merging duplicates
- Integration with the MS Exchange service
- Integration with Google services
- Integration with social networks
- Contact profile enrichment

Contact page

In Creatio, a contact can be:

- added manually;
- imported as an Excel file;
- saved after lead qualification;
- received through synchronization with social networks.
- received through Google synchronization.

- created with incoming mail processing;
- created with Single Sign-On authentication.

ATTENTION

To synchronize with external resources, you need to perform the initial setup. Social network integration, Google synchronization, and Single Sign-On technology are described in separate chapters.

NOTE

Contact personal data are stored in the contact's profile, on the [Communication channels] and [Addresses] details at the [Contact info] tab and on the [Job experience] detail at the [current employment] tab. In the database, they correspond to the following tables: "Contact", "ContactCommunication", "ContactAddress" and "ContactCareer."

The contact profile and connected legal entity profile are located on the left side of the contact page. Profiles contain basic information on the current and connected records.

The action panel, which contains activities, posts, and emails, created when working with the contact, is located at the top of the page.

Workflow bar options:

- – schedule a task.
- – send an email.
- – create a post in the record feed.
- – make phone call notes.

Tabs, which contain contact fields and details, are located below the action panel.

Record profile

General information about a contact.

Photo	A photo is displayed on the contact's page as well as next to the contact name when displayed in other sections and in the feed. Click the button to add a new photo. We recommend uploading a square image (aspect ratio: 1:1). Click on the button to remove the photo. If you mouse over the photo area, the buttons will become visible.
Time zone and city	Contact's time zone and current time, determined automatically, using data on the [Addresses] detail. Read more >>>
Full name	First name, middle name, last name of the contact. This field is not displayed on the contact page but can be displayed in the list. The contact name is filled in automatically based on the values of the [Last name], [First name] and [Middle name] fields.
Full job title	Contact's job title, for example, "Director" or "Department manager."
Mobile phone	Mobile phone number. The value is synchronized with the [Communication options] detail of the [General information] tab.

Business phone	Business phone number. The value is synchronized with the [Communication options] detail of the [General information] tab.
Email	Email address. The value is synchronized with the [Communication options] detail of the [General information] tab.

Service profile

General information about the contact's service conditions.

Owner	Name of the user responsible for the contact.
Branch	Name of the bank branch which provides services to the contact.
Segment	Here you can specify which kind of customer the contact is, e.g., regular or VIP.

Legal entity profile

The profile of the legal entity contains the name, type, and owner of the legal entity, as well as the website address, primary phone, category and industry of the company that is the contact's employer.

Changing the legal entity specified in the profile will also change information on the [Job experience] detail of the contact page. Likewise, modifying the information on the [Job experience] detail will update the legal entity specified in the contact's profile.

The [General information] tab

The tab contains date and place of birth, citizenship, home address, noteworthy events and connections to other contacts or legal entities.

Type	Contact type: customer, contact person or employee.
Preferred language	The language to use by default for automated communications with the contact. Affects the language of email notifications. If no preferred language is set for a contact, the notifications will be sent in English (the default language). The drop-down list of this field contains only languages whose status is set to "Active" in the [Customer languages] lookup.
Age	Contact's age. The field is populated automatically and is grayed out if automatic calculation of contact age is enabled. Creatio calculates a contact's age based on the value in the [Birth date] field. If the [Birth date] field is empty, the value in the [Age] field will be "0." If you disable the automatic calculation of contact age, the [Age] field will become editable. More information is available in the "Contact age calculation" article.
SSN	Contact's social security number

Communication options

This detail contains the list of contact's communication options, as well as the list of the banned ones.

The detail fields are displayed when you select the corresponding commands in the + menu.

Types of contact's communication options.

Business phone	The phone numbers you can use to contact the contact. Communication option types are defined when a record is added (you can change them later).
Mobile phone	
Home phone	
Skype	Contact's Skype account.
Email	Website and email addresses of the contact.
Web	
Facebook	Contact's social network profiles. A separate page is used to link a social network account to the contact
Twitter	
Do not use email	Checkboxes signify which communication options should not be used to contact a contact. For example, if a contact does not wish to receive mails, select the [Do not use mail] checkbox. For example, if a contact did not consent to receive emails, select the [Do not use Email] checkbox. When sending bulk emails via the [Send email] element in the business process or case, Creatio ignores the [Do not use email] checkbox selected in the [Communication options] detail.
Do not use phone	
Do not use SMS	
Do not use mail	
Do not use fax	

NOTE

The record list displays the last of the entered email addresses of the contact.

You can use default types of communication options or add custom ones. Use the [Communication option types] lookup to add custom types of communication options.

NOTE

Custom communication option types fall into one of the pre-set "communication types": Email, Phone, Skype, SMS, Social network or Web. Be sure to select one when adding a custom communication option type.

ATTENTION

If the MS Exchange integration is configured, it is not recommended to change default communication option types, since this may lead to synchronization errors. More information about contact fields is covered in a separate article.

Buttons on the [Communication options] detail:

– call to a contact. The button is displayed on the page if at least one field of the "Phone" type communication options is available Click the button to open the communication panel and dial the corresponding phone number.

NOTE

Phone integration is required to make calls. Read more>>>

– email the contact. The button is displayed on the page if at least one “Email” communication option field is populated. Click the button to create a new email draft with the corresponding account specified in the [To] field. If you have synchronized your mail client with Creatio, the draft will be created directly in the Creatio. Otherwise, your default mail client will open.

– visit the contact’s website. The button is displayed on the page if at least one “Web” communication option field is populated. Click this button to open the corresponding website. The website will be opened in your default browser.

– open Facebook search page for selecting the contact’s Facebook accounts for adding to the list of the contact’s communication options. If a Facebook account has already been added as a communication option, clicking the button will open the contact’s Facebook page.

Addresses

List of all addresses of the contact.

Address type	Type of address of the contact, for example, “Registration” “Business.” Defined when a record is added. You can change it afterward.
Primary	Indicates the primary address. Select this checkbox to display this address in the contact profile. By default, the [Primary] checkbox is selected for the first address added to the [Addresses] detail, but you can select this checkbox for a different address at any time. The checkbox in the original record will be cleared.
Address	Street, building number and other details of the contact’s address.
City Country	Contact’s location. The [State/province] and [City] fields are connected to the [Country] field. For example, if a city is located in a certain country, the [Country] field will be populated automatically when you fill in the [City] field. Similarly, if you enter a province in the [State/province], the [Country] field will be populated automatically. When you fill in the [Country] field, the [State/province] and [City] fields will display only those regions and cities, which correspond to the selected country. You can associate a region with a certain country in the [States/provinces] lookup, and associate a city with a country – in the [Cities] lookup.
ZIP	Postal code of the contact’s address.

NOTE

The list displays the contact’s primary address.

Noteworthy events

List of contact’s noteworthy events.

Type	Type of the noteworthy event, such as “Birthday” or “Company day.” Defined when a record is added, but can be changed.

Date	Date of the noteworthy event.

NOTE

Noteworthy events of the “Birthday” type are linked to the [Birth date] field of the contact. If you populate the [Birth date] field, a "Birthday" noteworthy event will be automatically created for the contact. Likewise, if you add a noteworthy event of the “Birthday” type, the [Birth date] field will be populated accordingly. The same applies whenever the existing data is modified.

Connected to

Connections of the contact with other contacts and legal entities.

	Name of the contact for whom a connection is established. This is a non-editable field.
is a/an	Relationship type, for example, “Employee” or “Employer.” When you select a connection, the inverse connection type is automatically filled in the [Inverse relationship] detail.
For a contact	Name of the connected legal entity or name of the connected contact.
Actual	The checkbox indicates whether the relationship is relevant at the present time.
Notes	Any additional information about the entities.

The [Additional information] tab

The tab contains the following information about the contact:

Last name	Last name, first name, and middle name of the individual.
Name	
Middle name	
Birth date	Contact’s date of birth.
Age	Contact’s age at the time of document submission. The field is filled in automatically or by running the corresponding action menu command based on the contact’s date of birth and is not editable. Learn more in the “Contact age calculation” article.
Title	Honorific, for example, “Mr” or “Mrs.”
Gender	Gender of the contact.
Citizenship	Citizenship of the contact.
Social status	The general social group that the contact belongs to, e.g., “Public servant”, “College student”, e.t.c.

Consent to the processing of personal data	Select this checkbox if a contact has given consent to process their personal data.
Blacklisted	Indicates that the contact is in the bank's blacklist.
Blacklisted on	Date when the contact was added to the blacklist.
Reason for blacklisting	Date when the contact was added to the blacklist.

The [Employment] tab

The tab displays all information about contact's employment, including the current job and the previous ones.

Type of employment	Indicates whether the employment of the contact is a full time, part-time or seasonal.
Employer	Legal entity profile
Job title	Position held by the contact, for example, "Department manager."
Full job title	Exact job title, such as "Sales department manager." If you select a value in the [Job title] field, this field will be filled in with the selected value.
Department	Company's department where this contact works, for example, "Sales" or "Marketing."
Role	Contact's influence in the decision-making process, for example, "Decision maker," "Influencer."

The data on the [Current employment] tab is synchronized with the information on the [Job experience] detail.

If you fill in the [Legal entity] and when saving the page of the contact a message will appear prompting you to add a new record on the [Job experience] detail. When you click [Yes], a record with the new place of employment is automatically added on the [Job experience] detail. This information includes the company name and a day when the contact started working at the company. The [Primary] and [Current] checkboxes are also selected.

When you change the information in the fields of the [Current employment] tab that is associated with the [Job experience] detail (for example, information about the company, department, and position of contact), a message will appear prompting you to add a new record on the [Job experience] detail or to update an existing record. When a new record is added in the [Job experience] detail, the [Primary] and [Current] checkboxes are selected for this record, and the [Started on] field is filled in with the current date. The [Current] checkbox will be cleared for the previous place of work and the [Worked till] field will be filled in with the current date.

If you clear the [Legal entity] field on the [Job experience] detail, the [Current] checkbox is automatically cleared for this place of work, and the [Worked till] field is filled in with the current date.

Job experience

Information about all employers of the contact.

	Current contact. This is a non-editable field.
Legal entity	Contact's employer
Job title	Position held by the contact, for example, "Department manager."
Full job title	Exact job title, such as "Sales department manager."
Department	Company department where the contact works.
Start date	Date when the employee was assigned to work in this position.
Due date	Date when the employee left the job.
Primary	The checkbox indicates that this place of work is the principal one.
Current	The checkbox indicates the company where contact works at the present time.
Reason for job change	The reason why the employee decided to accept this position, for example, "Interesting work" or "Promotion."
Notes	Additional information about the contact's employment.

NOTE

The [Current employment] field group displays information about the place of work for which both the [Primary] and [Current] checkboxes are selected.

The data on the [Job experience] detail is synchronized with the information in the [Current employment] field group.

If either of the [Primary] and [Current] checkboxes is cleared for a record in the [Job experience] detail, the data about the place of work will be automatically cleared in the [Current employment] field group. When a record with the selected [Primary] and [Current] checkboxes is modified, the data in the [Current employment] field group is updated automatically.

If you select the [Primary] and [Current] checkboxes for another record in the [Job experience] detail, a message will appear asking whether the contact is still working in the specified position. If you click the [Yes] button, the [Primary] checkbox for the previous place of work will be cleared. If you click the [No] button, the [Current] checkbox for the previous place of work will be cleared.

The [Timeline] tab

The [Timeline] tab contains chronologically organized entries that represent records linked to the current contact. Read more >>>

The types of linked records on the contact timeline include:

- leads
- opportunities.

The [History] tab

The [History] tab displays records that are connected to the current contact.

Activities

Tasks and meetings that are connected to the current contact. The detail displays information from the [Activities] section. To connect an activity to a contact, fill in the [Contact] field of an activity page.

Calls

The list of the subscriber's incoming and outgoing calls. This detail displays information from the [Calls] section. To connect an activity to a contact, fill in the [Contact] field of an activity page.

You can playback a recorded call directly on the detail. Read more>>>

Sales

A list of opportunities, connected with the contact. The detail displays information from the [Opportunities] section. To connect an opportunity with a contact fill in the [Customer] detail on the opportunity page.

Documents

This detail contains a list of documents connected to the selected contact. This detail displays information from the [Documents] section. To connect a document to a contact fill in the [Contact] page of the document.

Invoices

A list of bank accounts of the contact. Displays information from the [Invoices] section[Bank accounts] section To connect an invoice to a contact fill in the [Contact] page of the invoice.

Email

Emails that are connected to the current contact. To connect an email to a contact, fill in the [Contact] field on the [General information] tab of the email page.

Leads

List of leads that are qualified as the selected contact. This detail displays information from the [Leads] section. The lead is connected to the contact by the [Qualified as contact] of the [Leads] section.

Contracts

A list of contracts concluded with the current contact. This detail displays information from the [Contracts] section. To connect a contract to a contact fill in the [Customer] field on the contract page.

Cards

List of credit/debit cards of the contact that displays information from the [Cards] section. To connect a card to a contact, fill in the [Customer] field of a document page.

The [Attachments and notes] tab

The [Attachments and notes] tab contains additional information and related links to web resources. Read more >>>

Attachments

Use this detail to store files and links. For example, on this detail, you can add documents that reflect a contact's history or links to web resources.

Notes

The [Notes] detail is used to store additional text information. You can edit and organize your notes on the detail. If you switch to another tab of the contact page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays the messages from the [Feed] section that are connected to the current contact.

SEE ALSO

- Integration with the MS Exchange service
- Integration with Google services
- Enrichment of contacts from the incoming email

Finding and merging contact duplicates

In Creatio, you can search for duplicates and eliminate them. When creating new records, the system automatically checks for duplicates. You can also schedule a periodic duplicates search for legal entities and contacts. Read more >>>

SEE ALSO

- General duplicate search
- How to search for duplicates when saving records

The actions in the [Contacts] section

Show duplicate contacts

The [Show duplicate contacts] action opens an additional page that contains all possible duplicates of contacts. After the duplicates search is completed, records are added on the page automatically. Read more >>>

Show on map

This action shows the location of selected contacts on a map. Launching the action opens a window that displays contacts selected in the list. If the address is not filled in for all selected contacts, the action will not be performed. If the address is not filled in for some contacts or filled in incorrectly, then the corresponding information will be shown in the opened window.

NOTE

You can select multiple contacts in the section using the [Select multiple records] action.

Update with social networks data

This option is for populating the contact's page with additional information from Facebook. Read more >>>

Synchronize with Google Contacts

This action is for synchronizing Creatio contacts with Google Contacts. Read more>>>

Set up Google synchronization

This action is available in the actions menu of the [Contacts] section. It sets up the integration between the Google Contacts and Creatio contacts. When you start this action, a setup window will open. Read more>>>

Synchronize with Contacts in Exchange

The action is displayed in the actions menu if the Microsoft Exchange email provider is added to the system. The action is available if a MS Exchange account is set up in Creatio . It is used for synchronizing Creatio contacts with MS Exchange. Read more>>>

Update the values in the "Age" column

Run this action to manually initiate updating the values in the [Age] column for contacts.

> NOTE
> This menu command is available for users who have permission to the "Can run actualize contact age process" (CanRunActualizeContactAgeProcess) system action.
> If automatic updating of values in the [Age] field is disabled, this [Actions] menu command will be unavailable for all users. To disable automatic updating of the [Age] field, disable the "Enable updating contact ages" (ActualizeAge) system setting.

The values in the [Age] field will update in the background. You will be notified when the process is complete. As a result, the age of the contacts will be recalculated, and the values in the [Age] field will be updated. The age is calculated based on the value in the [Birth date] field. If the [Birth date] field is empty, the value in the [Age] field will be "0." More information is available in the "Contact age calculation" article.

> NOTE
> We recommend running the [Update the values in the "Age" column] action during the non-business hours.

Schedule daily update of the "Age" column

The action lets you set up the time for automatically updating the values in the [Age] field on a daily basis.

> NOTE
> This menu command is available for users who have permission to the "Can run actualize contact age process" (CanRunActualizeContactAgeProcess) system action.
> If automatic updating of values in the [Age] field is disabled, this [Actions] menu command will be unavailable for all users. To disable automatic updating of the [Age] field, disable the "Enable updating contact ages" (ActualizeAge) system setting.

The default time is 01:30 AM (UTC). Creatio will calculate the actual update time taking your time zone into consideration. For example, a user in the UTC+1 time zone runs the [Schedule daily update of the "Age" column] action. Creatio will display the default time as "02:30 AM" and change the displayed time zone to "UTC+1."

The value in the [Age] field will be recalculated for the contacts whose birth date falls onto the day when the calculation is run.

Actions when saving a record

Whenever a contact record is saved, Creatio may run the following business logic:

Update age

Creatio updates the value in the [Age] field of a contact, whenever the corresponding contact record is saved. The contact's age is calculated based on the value in the [Birth date] field.

> NOTE
> Clearing the checkbox in the "Enable updating contact ages" (ActualizeAge) system setting will disable updating contact age when saving the corresponding contact record.

Duplicates search when saving a record

When you save a contact, a duplicates search page might open. It means that this record might be already registered in the system.

You can edit the new record or indicate that the records found are not duplicates of the newly saved record.

Print

Contact summary	This displays the summarized information about the contact person. The table contains a list of communication options and addresses of the contact as well as the history of interaction with it. This print option is available on the contact's page in the [Print] menu.

SEE ALSO

- Finding and merging contact duplicates
- Percentage of profile completion

Analytics in the [Contacts] section

The [Analytics] view contains summary data on the section: charts, metrics, ratings and reports.

> NOTE
> More information about working with dashboards and dashboard setup can be found in the corresponding articles.

The [Contact analysis] tab

Summary data about contacts.

> NOTE
> Filters set in the section will be applied to all dashboard components.

Reports

List of contact's noteworthy events.	This table contains a list of contacts and their noteworthy events for the selected period. It also includes their phone numbers and displays names of employees who are responsible for these contacts.
Data sufficiency	The list of fields on the contact page is given as a table. For each field the table contains the number of records where this field is filled in and the corresponding percentage. It also displays the number of entries that have no data in this field.

SEE ALSO

- Dashboards

Contact age calculation

You can segment your customer database by age groups. Creatio automatically calculates contact age based on the value in the [Birth date] field. If the [Birth date] field is empty, the value in the [Age] field will be "0." Please take this into account when setting up filters that use this field.

Creatio updates the value in the [Age] column in the following instances:

- Whenever a new contact record is saved or the value in the [Birth date] field is updated. In this case, the value in the [Age] field is updated only for the current contact.
- On running the [Update the values in the "Age" column] action in the [Contacts] section. In this case, the age will update for all contacts.
- Daily, at a specific time. The age is calculated only for those contacts whose birthday is on the current day.

Age calculation setup

The following age calculation settings are available:

- set up a time for daily updating of contact ages
- disable daily update of contact age
- disable any automatic updates of contact age.

Use the system settings in the "Contact age" folder.

> **NOTE**
> More information about system settings is available in a separate article. Be sure to specify the system setting code (as opposed to its localizable title).
> Users require permission to the "Can run actualize contact age process" (CanRunActualizeContactAgeProcess) system action.

To set up regular automatic update of contact age, go to the [Contacts] section and run [Actions] > [Schedule daily update of the "Age" column]. Your changes will apply during the next scheduled update of the [Age] column.

To disable daily updating of the [Age] column, clear the checkbox in the "Enable automatic daily update of the contact ages" (RunAgeActualizationDaily) system setting. After this, the age calculation function will be performed only on saving contact records.

To disable age calculation completely, clear the checkbox in the "Enable updating contact ages" (ActualizeAge) system setting. This disables the age calculation functionality, regardless of the values of other system settings in the “Contact age” folder. If the age calculation functionality is disabled, the [Age] field on the contact page becomes editable.

SEE ALSO

- Contact page
- Description of system settings

Percentage of profile completion

You can monitor the percentage of completed profile data for contacts and legal entities and track process flow using convenient visual tools. You can configure how the percentage of complete data will be calculated according to your internal requirements. The system will ask you to fill in the missing data for account, contact or opportunity page.

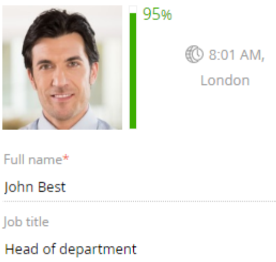
The system allows you to set up complete data analytics and view information grouped by owners.

CONTENTS

Analyzing profile data

The indicator on a legal entity, contact or opportunity page displays the percentage of profile data complete (Fig. 1). The profile data complete indicator is located at the top left corner of a user page.

Fig. 1 Contact page data complete indicator



NOTE

Recalculation of the profile completeness indicator is performed when opening the contact page or legal entity page and when saving or changing the recalculation rules in the lookup. To update the percentage, for example, after importing data from Excel, run the [Update the profile data population] business process.

The unsatisfactory data percentage is marked red on the indicator, the satisfactory data percentage is marked yellow and the complete data percentage is of green color.

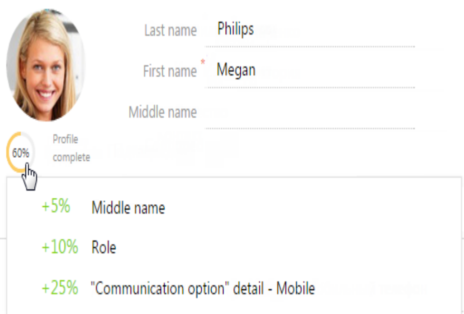
The indicator also shows the total percentage of data completeness. The indicator readings will depend on how many fields are filled in on a page. You can modify how each value item on a page will contribute to the calculation of profile data complete. For example, you can set up the calculation so that filling in the "Role" field on a contact page will add 10% to the percentage of the profile completion.

NOTE

For more information about the data completion calculation settings, read the corresponding article.

Click the indicator to view a hint about how many fields or details should be filled in to increase the percentage displayed. If there are several unfilled items, they will be displayed in the descending order of the percentage that they add to the indicator when filled in (Fig. 2).

Fig. 2 Hints about completing a contact page profile



SEE ALSO

- Complete data calculation settings
- Percentage of profile completion

Complete data calculation settings

Creatio allows you to customize the parameters used for the calculation of the profile data. You can set up the scale to be displayed on a contact, legal entity or opportunity page.

The data complete calculation can be customized for the [Contacts], [Legal entities] and [Opportunities] sections. The customization process is similar for all these sections.

To set up the data complete calculation for contacts, legal entities or opportunities:

1. Open the [Lookups] section. To do this, open the system designer by clicking the button at the top right corner of the application. In the [System setup] block, click the [Lookups] link.

   NOTE

   You can set up access rights to this action using the [Access to "Lookups" section] system operation.

2. Select the [Data entry compliance] lookup in the list Select the lookup record and click the [Open content] button.
3. On the opened page, select the section for which you want to configure the data complete calculation: [Contacts], [Legal entities] or [Opportunities].

   For example, let's configure the data complete calculation settings for contacts. To do this, select the [Contacts] record in the list and click [Open].
4. On the opened page, you can set up the scale and the parameters of the indicator.

Indicator scale setup

The incomplete data percentage is marked red on the indicator, the satisfactory data percentage is marked yellow and the complete data percentage is of green color (Fig. 3).

To set up the profile data complete indicator, define the ranges of values to be regarded as incomplete, satisfactory and complete profile data. To set up access permissions:

1. Specify the upper limit of the range to be assigned to the incomplete profile data. This is the lowest possible value that is satisfactory. By default it is set to "50%."
2. Specify the upper limit of the range for the satisfactory level of the profile data complete. This value will also serve as lower limit for the "complete" level. By default it is set to "80%."

Fig. 3 Profile data complete indicator

NOTE

The lower limit of the incomplete data range is non-editable and always equals "0%". Similarly, the upper limit of the complete data range is non-editable and always equals "100%".

Indicator attributes setup

You can set up the indicator attributes to define how different types of profile data entered impact the percentage of the profile data complete. For example, you can configure the settings so that entering information about a contact's company will add 15% to the percentage of the profile data complete.

NOTE

The [Attributes] detail of the [Data entry compliance] lookup uses an editable list which is described in a separate article.

To set up the data complete attributes:

1. Go to the [Attributes] detail toolbar and click the + button.

   NOTE

   The total percentage of the data complete attributes must equal 100%. You can add a new attribute only if the total percentage of the already added attributes is less than 100%.

2. Select the required attribute from the drop-down list. An attribute can be:
   a. A field value on a page. For example, contact role.

   NOTE

   Fields to be filled in with numeric type values are considered filled in if they contain any value except 0.

   b. Information on connected tabs. For example, calls connected to a contact.

   NOTE

   The [Activities] detail displays the connected "Task" type activities only.

   c. Values for different types of detail fields.

      [Addresses] and [Communication options] tabs of contacts and legal entities have different types of values to be filled in their fields. Each address type (legal, postal etc.)

and each communication option (mobile phone, email etc.) is considered a separate attribute.

3. Specify the amount of percentage you want an attribute to add to the indicator of the profile data. For example, you can set up the calculation so that specifying a mobile phone number for a contact will add 25% to the percentage of the profile data complete.

   You can configure other attributes in the same manner.

   NOTE

   When you add a new attribute to the [Data population percentage] column, the maximum possible value is set by default.

4. When you finish the setup process, save the changes made to the [Data entry compliance] lookup. All indicators displaying the legal entity profile data completion will be updated automatically.

SEE ALSO

- Analyzing profile data
- Percentage of profile completion

The [Employees] section

Use the [Employees] section to maintain information about the bank employees. This section enables you to add and maintain personal data, probation periods, onboarding plans, up–to–date information on career movements of employees.

Views

The section has two views:

- – employee list. Displays employee data as a list of records.
- – employee analytics. Admission and dismissal dynamics, dismissal reason analytics and other indicators are available in this view.

The "Working employees" quick filter is used in this section. The filter displays only employees with empty "Due date" field in [Career] tab or the date has not come yet.

CONTENTS

SEE ALSO

- Contact page

Getting started with the [Employees] section

Perform initial setup before working with the [Employees] section:

- Configure the list of job titles of your bank employees. Read more >>>
- Configure hierarchical structure of departments and divisions to display your company structure and career movements of the employees. Read more >>>
- Fill the [Employees] section with data. Read more >>>

CONTENTS

SEE ALSO

- The [Contacts] section

Configure job titles of employees

The staffing table of your company may be different from the staffing table of the other companies. Therefore, contact and employee positions are stored in separate lookups. To configure employee job titles according to your staffing table:

1. Open the System Designer by clicking in the top right corner of the application window.
2. Click the [Lookups] link in the [System setup] block.
3. Select the [Employees] folder in the lookups section.
4. Open the [Employee jobs] lookup.
5. Add a new record to the lookup by clicking the [New] button.
6. Enter job name and description.
7. Repeat steps 5 to 6 for all job titles from your company staffing table.

SEE ALSO

- Configure departments structure of your company
- How to create a new record in the [Employees] section

Configure departments structure of your company

Configure hierarchical structure of departments and other structural units to maintain information about the company employees and their career movements. To do this, edit the records in the [Organization structure items] lookup. To configure the structure:

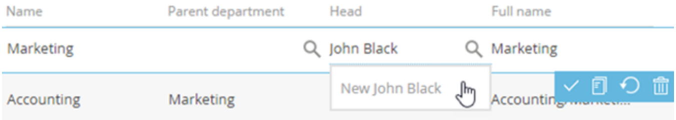
1. Open the System Designer by clicking in the top right corner of the application window.
2. Click the [Lookups] link in the [System setup] block.
3. Select the [Employees] folder in the lookups section.
4. Open the [Organization structure items] lookup.
5. Add a new record to the lookup by clicking the [New] button.

   NOTE

   Start adding company departments from general to specific. This will help to set links between the departments and form the full names of departments and divisions.

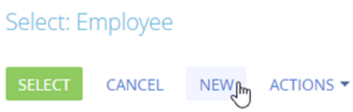
6. Enter the name of the organizational unit, for example, "Board of Directors".
7. Specify the name of this organizational unit manager in the [Head] field. Click the button and select the manager from the list of employees. If the [Employees] section is empty, you can add a head of department in two ways:
   - Enter an employee name in the [head] field. You will be prompted to create a record in the [Employees] section with specified name (Fig. 1). A mini page of adding a record to the [Employees] department will open by clicking the prompt field. Fill out the contact page and click [Save]. The created contact will be specified in the [Head] field of the [Organization structure items] lookup.

Fig. 1 Creating new record in the [Employees] section from the [Organization structure items] lookup



- Click the button and click the [New] button in the opened window (Fig. 2). The new contact record page will be opened. The main personal data and communication options will be passed to the employee's page from this new record. Specify a legal entity, department and position for the new employee. Save the page. As a result, new employee will be specified as a head of the department in the [Organization structure items] lookup.

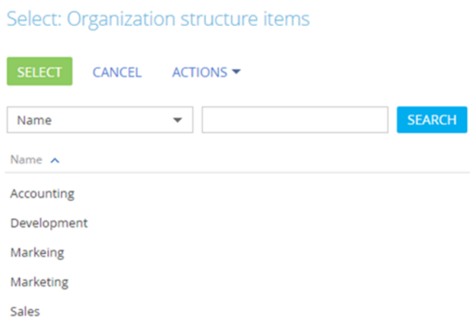
Fig. 2 Adding new record to the [Employees] section from the value selection window



8. Configure the status of created department in the bank structure by specifying the parent department.
9. Repeat steps 5 through 8 for all departments of your company.
10. Full name of the organizational unit will be generated automatically. The values of the [Name] and [Parent department] fields will be used in its name.

As a result, a full hierarchical structure of the bank will be generated and displayed at the selection of the employee's organizational unit (Fig. 3). A manager's profile will be populated on the employee's page according the information about employee's organizational unit.

Fig. 3 Organizational unit selection window of the employee's page



SEE ALSO

- Configure job titles of employees
- How to create a new record in the [Employees] section

How to create a new record in the [Employees] section

A new record in the [Employees] section is created based on the existing contact. The employee's page will pull information such as personal data, contact and address information, noteworthy events and career changes from the corresponding contact page. Records can be imported or added manually.

NOTE

Data import is described in the corresponding article.

To create a new record in the [Employees] section manually:

1. Click the [New employee] button.
2. Specify in the mini page:
    - A contact based on which an employee record will be created.
    - Employee's job title, for example, "Department manager".
    - Exact job title, such as "Sales department manager".
    - Department, for example, "Marketing".

    NOTE

    A list and hierarchical structure of departments is configured in the [Organization structure items] lookup. For more information on importing communication options is available in a separate article.

    - Employee legal entity
3. The following data will be automatically passed to the new employee page from the contact page, if they were specified:

- Communication options.
- Addresses.
- Noteworthy events.
- Career.

The data about the user, its organizational and functional roles will be added.

4. Add the information about employee's career at your company on the [Career] tab.
5. Save the page.

Next time you edit the data on the employee page, the changes will also be reflected on the employee's contact page.

SEE ALSO

- Configure job titles of employees
- Configure departments structure of your company
- How to track information about former employees

How to track information about former employees

In the [Employees] section, enter the data about all employees of your company, both current and former. The base of contacts will help to work with recruiting agencies, black lists of job seekers or when an employee returns to the bank. To set up a list of employees:

1. Add data about your former employees to the section. You can add data manually or import from a file (for more information please see the "How to create a new record in the [Employees] section" article).
2. Open the [Career] tab on the employee page and fill the [Due date] and [Reason for job change] fields.

   NOTE

   An employee is considered as working with empty "Due date" field in [Career] tab or the date has not come yet.

3. If you have information about further career of your former employee, add it to the [Job experience] detail.
4. Save the changes.

Only records of working employees are displayed in the section list and in folders by default. Disable the "Working employees" quick filter to display the full list of employees.

SEE ALSO

- How to create a new record in the [Employees] section

Employee page

Basic employee data (full name, communication options, title, date of birth, division is available) on the left of the employee page. The employee's manager information is also available in the profile area.

The action panel located at the top of the page. The action panel contains activities created when working with an employee. It also displays employee's activities from their schedule.

Using the action panel, you can:

- schedule a task
- send an email to an employee
- create a post in the record feed
- Record call results .

NOTE
The data displayed on the action panel of the employee page is synchronized with the action panel of the corresponding contact page. For example, a task scheduled using the action panel on the employee page will also be available on the contact page.

Tabs below the action panel display detailed information about the employee.

Case profile

General employee information

Photo	Employee’s photo. Photos are pulled from the corresponding contact pages. It can be changed only on the contact page.
Full name	First and last name of the employee. The field displays the data specified on the contact page. If you change the name on the employee page, the data on the contact page will also be updated.
Job title	Employee's current position (e.g. “Director” or “Head of Department”). The field is populated with the [Employee jobs] lookup values.
Full job title	The field is populated automatically – it duplicates the title selected in the [Employee jobs] lookup. If necessary, the title may be edited.
Organizational unit	Bank’s organizational unit where the employee works. The field is populated with the [Organization structure items] lookup values. At the same time, if the manager of the organizational unit is specified in the lookup, their data will be automatically displayed in the manager’s profile on the employee's page.
Legal entity	The employer’s legal entity name is specified in this field. You may only select the legal entities with the “Our bank” type. If you update this field, the legal entity field of the contact page will also be updated.
Business phone	Employee's business phone number. The field displays the [Communication options] detail value of the [Contact info] tab of the employee and contact pages.
Email	Employee's email address. The field displays the [Communication options] detail value of the [Contact info] tab of the employee and contact pages.
Birth date	Employee's birth date. The field displays the [Noteworthy events] detail value of the [Contact info] tab of the employee and contact pages.

Gender	Employee's gender. The field displays the value of the [Contact info] tab of the contact page. This field cannot be edited on the employee page.
Owner	The Creatio user who is the author of this record in the [Employees] section and maintains the information about this employee. The field is populated automatically once the record is created.

General information about the owner

Photo	Photo of the contact owner Photos are pulled from the corresponding contact pages. It can be changed only on the contact page.
Full name	First and last name of the owner The field group displays the data that is specified on the contact page. This field cannot be edited on the employee page.
Mobile phone	The field group displays the data that is specified on the contact page. This field can not be edited on the employee page.
Business phone	

NOTE

if the owner of the organizational unit is indicated in the [Organization structure items] lookup, their data will be automatically displayed in the owner's profile on the employee's page. If the owner is not specified the lookup, you can specify them manually, from the employees list.

The [CI details] tab

The [Contact info] tab contains general contact information about the employee (contact and address data, noteworthy events etc.). The data on the [Basic information] tab is synchronized with the corresponding data on the contact page. If you change the communication options or any other data, enter new information on the employee page, and it will also be displayed on the contact page.

Communication options

This detail contains the list of employee's communication options, as well as the list of the restricted communication channels. The tab displays the [Communication options] detail values of the contact page. If you change the communication options on the employee page, the data on the contact page will also be updated.

The detail fields are displayed when you select the corresponding commands in the [Add] menu.

Business phone	Phone numbers that can be used to contact the employee. Communication option types are defined when a record is added, but can be changed.
Mobile phone	
Home phone	
Skype	Skype account of the employee.
Email	Website and email addresses of the employee.
Web	

Facebook	Social network profiles of the employee. This field is populated by searching for the social network profile of the employee on a separate page.
Twitter	
Do not use email	Checkboxes indicate which communication options should not be used to contact the employee. For example, if a contact does not wish to receive SMS, select the [Do not use SMS] checkbox.
Do not use phone	
Do not use SMS	
Do not use mail	
Do not use fax	

– call the employee. The button is displayed on the page if at least one "Phone" communication option field is populated.

– opens the Facebook search page where you can select an employee's social network profile and add it as a communication option. If the employee's account has already been added as a communication option, the button will be displayed in a blue color. Click to open the Facebook page of the account.

Addresses

List of employee addresses. The detail displays the [Addresses] detail value of the [Contact info] tab of the contact page.

Address type	Type of address of an employee, e.g. "Home" or "Work". Defined when a record is added, but can be changed.
Address	Street, building number and other details of an employee's address.
City	Employee location. The [State/province] and [City] fields are connected to the [Country] field. For example, if a city is located in a certain country, the [Country] field will be populated automatically when you fill in the [City] field. Similarly, if you enter a province in the [State/province], the [Country] field will be populated automatically. When you fill in the [Country] field, the [State/province] and [City] fields will display only those regions and cities, which correspond to the selected country. You can associate a region with a certain country in the [States/provinces] lookup, and associate a city with a country – in the [Cities] lookup.
Country	
ZIP	Postal code of an employee.

Noteworthy events

List of employee's noteworthy events. The field displays the [Noteworthy events] detail values of the contact page.

The [Career] tab

The tab displays all information about career changes of an employee, including current and previous positions and the place of work. When editing data on the [Career] tab of the employee's page, changes will also be displayed on the [Workplace] tab of the employee's contact page.

General information

The field group contains such information as employment and dismissal dates, probation period and the dismissal reasons of an employee. For current employees the information on the current position is displayed in these fields.

Start date	The date the employee started working in your bank.
Probation ends	The end of the probationary period.
Reason for job change	This field is populated with the [Reason for job change] lookup values.
End date	Date of dismissal.

Career in our company

Employee’s career changes within the bank.

Legal entity	The employer legal entity name is specified in this field.
Organizational unit	Bank’s organization structure unit where the employee works, for example “Sales” or “Marketing”.
Job title	Employee’s title, for example, “Department manager”. The field is populated with the [Job title] lookup values.
Full job title	Exact job title, such as “Sales department manager”. This field is automatically populated with the value that is selected in the [Job] field, but may be edited if necessary.
Start date	Date when the employee was assigned to work in this position.
Due date	Date when the employee left the job.
Current	Checkbox indicates the company where an employee works at the present time.

The [Career in our company] detail data is synchronized with the general career information fields of the employee profile. For example, if you change the date in the [Start date] field of the [Career in our company] detail, the date in the [Start date] field of the [General information] field group also changes. When entering the end date, the [Current] checkbox the automatically removed from the previous job record.

Let’s take a look at the process of transferring an employee to another department / unit within your bank:

1. Select the record that indicates the current position of the employee on the [Career in our company] detail.

2. Go to the edit page of the record by clicking [Edit] in the action menu of the detail. Specify the end date for this position and save the changes.

   NOTE

   If you populated the [End date] and [Reason for job change] fields, the [Current] checkbox is automatically removed from the job record.

3. Add a new employee position by pressing the + button and fill in all the necessary data (e.g. new position, start date, organizational unit, [Current] checkbox).

As a result, the data in the [Basic Information] field group will also update.

Job experience

Information about all work places of an employee. The data specified on the [Career] detail of the linked contact page is displayed here. These details need to be updated when the employee is hired and dismissed.

The [User Account] tab

If an employee is a Creatio user, their information and roles are displayed on the [User Account] tab. Upon registering a new user account for an employee, all connected data will be displayed on the [User account] tab of the employee page automatically.

The user login and the [Active] checkbox on the [User Information] detail cannot be edited.

The data on the [Organizational roles] and [Functional roles] details may be edited on the employee page. If edited, the data will be updated on the contact page as well.

The [Attachments and notes] tab

Detailed information about an employee, as well as attachments and links to web resources. Read more >>>

Attachments

Used to store employee document copies. For example, you may add an employee's ID scan copy, employment contract, etc. to the detail.

Notes

The [Notes] detail is used to store additional text information about an employee. You can edit and organize notes on the detail. If you switch to another tab of the employee page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays the messages from the [Feed] section that are connected to the employee record.

SEE ALSO

- Contact page
- User and role management

The [Activities] section

Use the Activities section of the Creatio to optimize your working day management, create schedules, plan activities for other employees, track interconnections between activities and other system sections, and keep records of completed tasks.

Views

The section has several views:

- – displays activities as an electronic day planner. Read more >>>
- – displays activities as a list of records. All list columns are described below in the context of the activity page.
- – activity analytics. It displays charts, indicators and ratings that can be used to analyze activities.

Filters

There are several quick filters set in the section:

- By date (the [Start] and [Due] fields) – the filter displays activities, which overlap with the specified time period. For example, if the activity time period is longer than the one specified in the quick filter and these time periods overlap - the activity will be displayed as a result of filtration.
- By responsible employee (data in the [Owner] field and the [Participants] detail of an activity page).

NEXT

- Calendar
- Task page
  - General information
  - The [General information] tab
  - The [Participants] tab
  - The [Attachments and notes] tab
  - The [Email] tab
  - The [Calls] tab
  - The [Feed] tab
- Actions in the [Activities] section

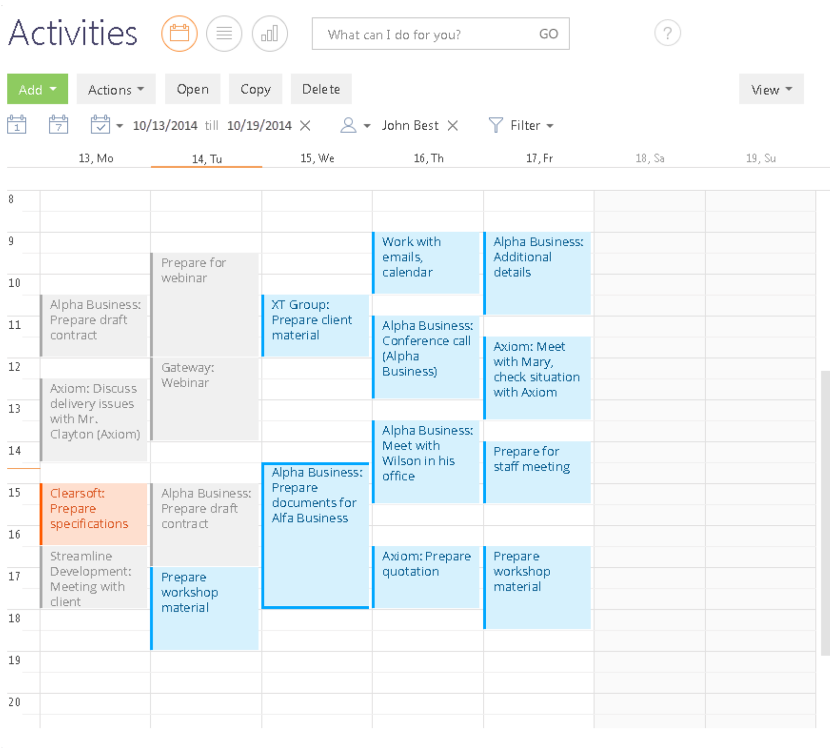
SEE ALSO

- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service
- Integration with Google services

Calendar

The calendar view (Fig. 1) displays activities as an electronic day planner.

Fig. 1 The calendar view



You can add, copy, delete, as well as open an activity for viewing or editing using the toolbar buttons. When you copy an activity, the list of its participants will be copied too. Activities in the calendar can be filtered in the same manner as records in the list.

The calendar area

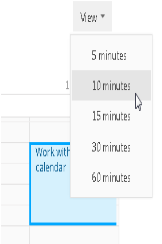
The calendar area is divided into days. The date and day of the week are displayed in the heading of each day column. The title of the current day is highlighted.

In the calendar area activities are displayed in the form of rectangular blocks whose height corresponds to the duration of activities. The current time is highlighted with an orange line. To scroll the calendar vertically, use the scrollbar at the right of the calendar or the [Up] and [Down] keys on your keyboard.

The calendar scale

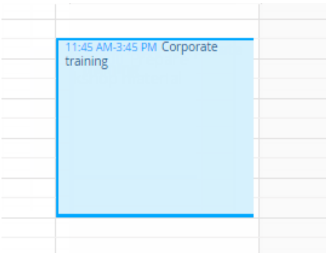
A calendar cell can display time intervals from 5 to 60 minutes. You can modify the calendar scale by selecting the corresponding command from the [View] menu (Fig. 2).

Fig. 2 Changing the calendar scale



The calendar scale influences the accuracy of how activities are displayed (a calendar cell is always fully occupied). For example, if the cell is set to the interval of "60 minutes", the activity with 1 hour 20 minutes duration occupies 2 cells. In this case, the accurate duration of the activity is displayed (Fig. 3).

Fig. 3 Activity start and due date in the calendar

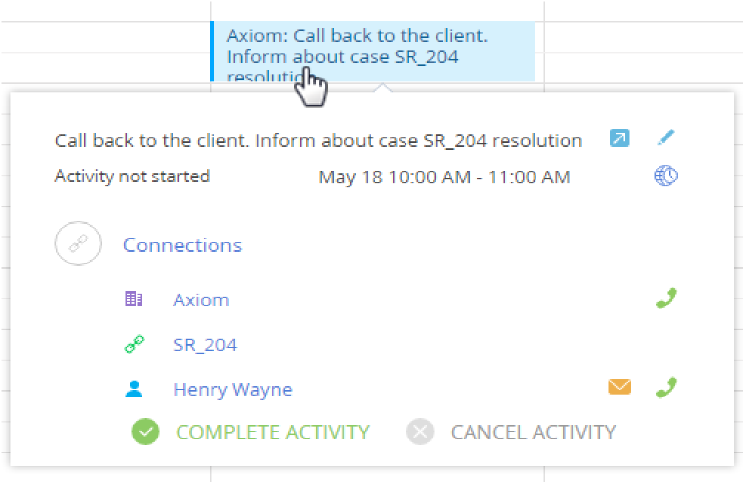


NOTE

If the legal entity is specified for an activity, its name will be displayed in the calendar before the activity subject.

If the current calendar scale does not allow to display the accurate start and due time, you can see it on a mini page that appears when you mouse over the activity subject. In addition to timing, the mini page contains basic activity information (Fig. 4).

Fig. 4 Activity mini page in the calendar view



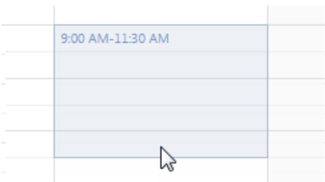
NOTE
Information displayed on a mini page depends on which fields are filled-in on the activity page. For more information on mini pages, please refer to the separate article about mini pages.

Add activities from the calendar view

You can add tasks to the section directly from the calendar. To do this:

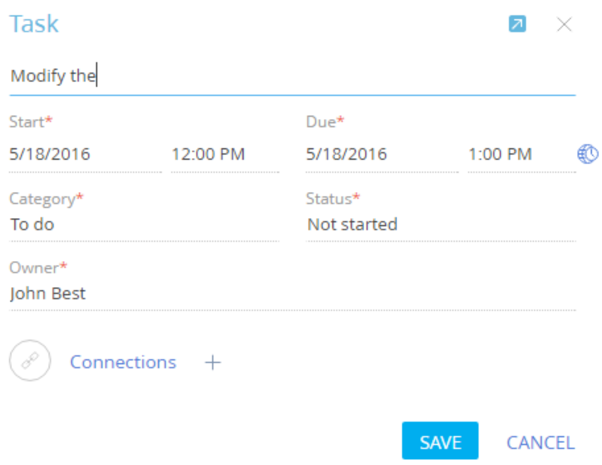
1. Use the mouse to highlight the time period required to complete the activity (Fig. 5).

   Fig. 5 Highlighting a time period in the calendar view

2. Start typing the activity subject. A an activity mini page will open already containing the added text (Fig. 6).

Fig. 6 Adding a task



3. Enter text, connect activity to other records and save your changes.

   As a result, a new task will be added to the system.

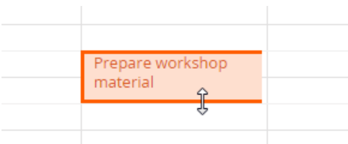
How to edit activities in the calendar

To edit an existing activity directly in the calendar view:

1. Click the subject of the needed record in the calendar area. Activity mini page will open.
2. Click the button to switch the mini page to edit mode, then make necessary changes and save the mini page.

You can also change activity duration without opening its mini page. To do this, place the cursor at the activity time border, click the left mouse button and drag it to the desired time mark while holding down the left mouse button (Fig. 7).

Fig. 7 Changing activity duration in the calendar view

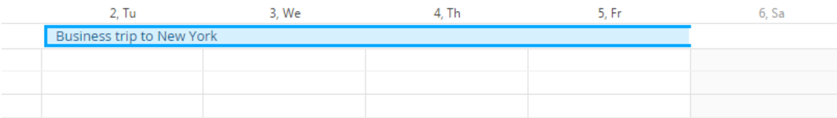


To move the activity to another date or time, drag it to the desired time in the calendar view. If some of the activities are scheduled for the same time, those activities will be displayed in the calendar view within the same time interval.

Long activities

An activity is considered as "Long" if it lasts more than 24 hours (for example, a business trip or a vacation). Such activities are displayed above the calendar (Fig. 8).

Fig. 8 Display of long activities in the calendar view



If the start or due date can not be specified within the time period that the calendar displays, it will display either the start date or the due date of the activity (Fig. 8).

Activity colors in calendar view

Activities in the calendar view are highlighted with different colors depending on their status and due date.

- Activities are highlighted red when their due time has already passed while those activity were not in the final state yet (overdue activities).
- Blue is used to highlight activities that are not in the final state (not started or in progress) and have not passed their due time yet.
- Grey is used to highlight activities that are in the final state (completed or canceled).

Task page

In Creatio , a task can be:

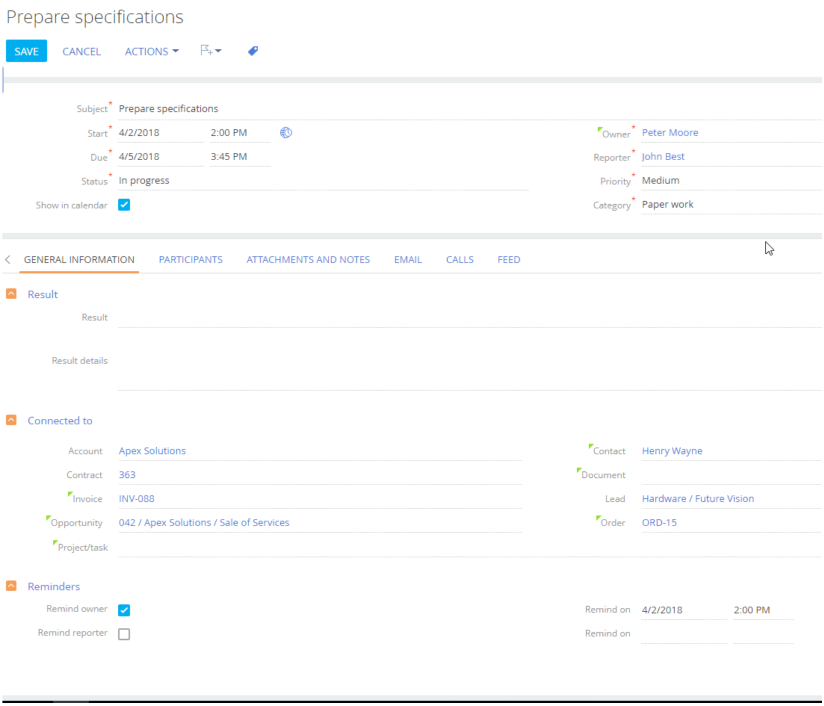
- added manually;
- received through MS Exchange synchronization;
- received through Google synchronization.

ATTENTION

To synchronize with external resources, you need to perform initial setup. MS Exchange synchronization and Google synchronization are described in separate chapters.

The task page consists of a group of general data fields and some tabs (Fig. 9).

Fig. 9 An example of a task page



General information

General information about activity

Subject	Goal of the activity, for example, “Prepare documents” or “Presentation”.
Start date	The date and time when the task should be started and finished. By default, the [Due] field value is 30 later than the [Start] field value. Use the time zone icon ( ) when planning acivities for participants in different time zones. Read more >>>
Due date	
Duration (minutes)	Length of the activity. The fields are not displayed on the activity page, but can be viewed in the list.
Duration (hours, minutes)	
Status	Status of the activity, for example, “In progress” or “Completed”.
Owner	User who is responsible for performing the activity.
Author	User who initiates the new activity.

Priority	Priority of the task, for example, “High” or “Medium”.
Category	Category of the activity, for example, “Meeting” or “Paper work”.
Calendar	Select this checkbox to make the activity visible in the calendar view.

The [General information] tab

The tab contains general activity data, such as its result, connection of the activity to other system objects and reminders for owner or author.

Result

This detail specifies what has been accomplished after performing the activity.

Result	Result of the activity. The field becomes editable, when the status of the activity is changed to “Completed” or “Canceled”. For different categories of activities the appropriate options for the [Result] field are available.
Result details	Detailed information about completing the activity. The field becomes editable, when the status of the activity is changed to “Completed” or “Canceled”.

Connected to

Information about system records connected to the activity.

Legal entity	Company or person that is connected to the activity. When a contact is selected. The [Legal entity] field is filled in automatically with the contact information.
Contract	Contract that is connected to the activity.
Opportunity	Opportunity that entails performing the activity. If you select an opportunity, then the [Contact] and [Legal entity] fields will be automatically filled in with the data from the fields of the selected opportunity.
Document	Document that is connected to the activity.
Lead	Potential customer the activity is created for. When you select the value, the [Legal entity] and [Contact] fields will be automatically filled in with values from the lead page.

Reminders

This detail is used for creating reminders for the activity.

Remind owner Remind author	Used for reminding the owner and/or author about an activity at a specified time. Information about new reminders will be displayed on the owner's and/or author's communication panel.

Remind on	Date on which the owner or author of the activity will receive reminder.

The [Participants] tab

The tab contains the list of the contacts who participate in the task/call. By default, when a participant is added to the detail from the contact list, the detail will display the information from the [Job title] and [Business phone] fields of the contact page. Also, the activity will appear among the activities of all users specified in the detail.

> NOTE
> The contact specified in the [Owner] or [Contact] field will be added to the [Participants] detail automatically. When you copy an activity, the list of its participants will be copied too.

The [Attachments and notes] tab

The [Attachments and notes] tab contains additional information about the current task and attachments and links to the web resources related to the activity. Read more >>>

Attachments

Use this detail to store files and links related to the activity. For example, on this detail you can add documents or useful links related to the activity.

Notes

The detail is used to store additional text information about the activity. You can edit and organize your lead notes on the detail. If you switch to another tab of the activity page, the information on the [Notes] detail will be saved.

The [Email] tab

Emails that are connected to the activity.

The [Calls] tab

The list of incoming and outgoing calls connected to the activity. Displays information from the [Calls] section. To connect a call to activity, fill in the [Activity] field of the call page.

The [Feed] tab

The [Feed] tab displays posts from the [Feed] section that are connected to the activity.

SEE ALSO

- Integration with the MS Exchange service
- Integration with Google services

Actions in the [Activities] section

Synchronize with Google Calendar

Launches the synchronization between Google calendar and Creatio tasks. The action is available in the actions menu of the [Activities] section. Read more >>>

Set up Google synchronization

Launches the synchronization setup between Google calendar and Creatio tasks. The action is available in the actions menu of the [Activities] section. Read more >>>

Synchronize with tasks and meetings in Exchange

This action is displayed in the actions menu if the Microsoft Exchange email provider is added to the system. The action is available if a MS Exchange account is set up in Creatio . It is used for synchronizing the Creatio activities with tasks and meetings in MS Exchange. Read more >>>

Analytics in the [Activities] section

The [Analytics] view contains summary data on the section: charts, metrics, ratings and reports.

> NOTE
> More information about working with dashboards and dashboard setup can is available in the corresponding articles.

The [Activity analytics] tab

Analytics on the activities.

> NOTE
> Filters set in this section are applied to all dashboard components. Particularly, filters by date and responsible employee.

Reports

Activity report	Activities of the current user for the previous week. The [Completed activities] part displays all completed activities for the specified time period where the selected user participated (as listed in the [Participants] detail of the activity page). The [Incomplete activities] part displays overdue activities (whose due time has already passed while the activity was not in its final state) which the selected user is responsible for.

SEE ALSO

- Dashboards

The [Products] section

The Products section contains information about bank products offered by your bank. Use this section to maintain a detailed description and parameters for each product.

Views

The section has several views:

- – displays products as a list of records. Information about the list columns and their purpose can be found in the description of the product page.
- – displays charts, numeric indicators, and lists used to analyze documents. Read more >>>

Product categories

The [Add] menu offers a list of product categories and their subordinate types. The menu also contains product bundles. You can set up the structure of the product categories, types, and product bundles in the [Product categories and types] lookup.

CONTENTS

The product page

The product page contains the set of the general data fields, as well as the page tabs.

Common data

General information about the product.

Name	The product name. When adding a new product, the [Name] field is filled in automatically with the values of the [Product category] and [Product type] fields. You can modify the product name at any time.
Available for	Select the type of client that can purchase this product. For instance, Contact.

The [General information] tab

The tab contains data on product availability and requirements.

General information

Product code	Identifier of the product. The product code is often used, for example, if two products have the same name.
Status	By default, the product has one of the following three statuses: "In development", "Current" or "Outdated". When you select the "Outdated" status, the [End date] field is filled in with the current date.
Insurance company	Legal entity that is providing the insurance product. This field is not available for non-insurance products.
Contract date	Date of the insurance contract for this product. This field is not available for non-insurance products.
Contract number	Number of the insurance contract for this product. This field is not available for non-insurance products.
Start date	The dates that determine the period, during which the product is available.
End date	
Category	Product category, such as "Financing" or "Bank cards". This field is not displayed on the product page, but it is displayed in the list.
Type	Types of products offered within the current category. This field is not displayed on the product page, but it is displayed in the list.

Product details

The [Product details] detail is used for storing the conditions under which the product can be provided to a client. Different products have different sets of conditions. Use the different tabs of the [Product details] page to specify customer parameters, product features, requirements, and other product details.

The [Product bundle] tab

The tab contains the names of the product bundles in which the current product is included. Product bundles are records of the Products section with the "Product bundle" category.

To add a service bundle, click the [+] button and select the required bundle.

Product bundle	The name of the product bundle.
Category	Product category, to which the bundle belongs.
Type	Product type, to which the bundle belongs.

The [Products] tab

This tab is displayed on the page of the product bundle and is designed for storing the list of products that are included in the bundle.

To add products to a bundle, click the [+] button and select the required products.

The [Attachments and notes] tab

The [Attachments and notes] tab is used to store additional information about the product, related files, and links to web resources.

Attachments

Use this detail to store files and links related to the product. For example, here you can add a link to the product overview.

Notes

This detail is designed for storing comments about the product. You can edit and organize notes and if you switch to another tab of the product page, the information on the [Notes] detail will be saved. For more information about working with attachments and notes please see this article.

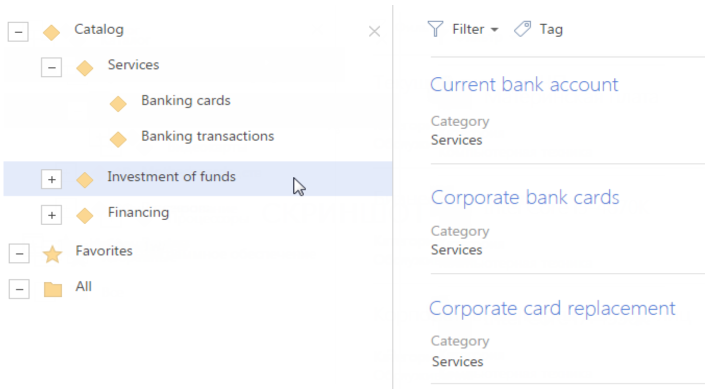
The [Feed] tab

The [Feed] tab displays messages related to the product.

Product catalog

The product catalog is a separate folder tree in the [Products] section that can be identified with the icon (Fig. 1).

Fig. 1 The product catalog



The catalog structure is created based on categories, types, filter conditions, and other grouping criteria that you can set for products. This enables you to classify and quickly search for needed products.

To switch to the catalog, in the [Products] section, select [Filters/folders] -> [Show folders] -> [Catalog] -> [Products].

SEE ALSO

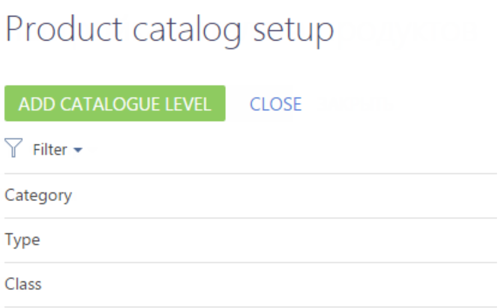
- How to set up catalog levels
- Catalog search extended mode

How to set up catalog levels

You can set up catalog levels by certain grouping criteria, for example, by category and type. To do this, use the [Set up product catalog] in the actions menu of the [Products] section.

Select the [Set up product catalog] action to open and configure the list of catalog levels (Fig. 2).

Fig. 2 The setup page for the product catalog



To add a new catalog item, click the [Add catalog level] button. On the opened page, specify:

- Name – catalog level name that is displayed in the list of the catalog setup page.
- Product field – product page field, which is used for product categorization on this level of the catalog. For example, select the [Category] field so that the catalog folders on this level correspond to the product categories, e.g., "Cards", "Financing" (Fig. 1).

  NOTE

  Only lookup fields on the product page can be used to create catalog levels.

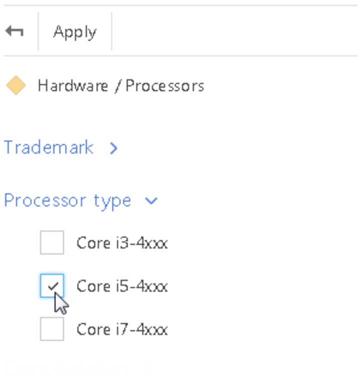
This catalog item hierarchy is defined by the sequence in which the levels are located on the setup page. For example, to group the products by type on the upper level of the catalog, then move the "Product type" level up by using the  button on the setup page.

Catalog search extended mode

For each product type, you can set up additional parameters that will help you search by product field or feature. This will make searching through the catalog more convenient. You will be able to quickly find items that match the needed parameters. You can also do it while selecting products in documents, invoices, or orders.

Additional search parameters are available in the catalog for the item set up by product type, and for all nested items. Click the  button that will be displayed to the right of the item name. The search area will open (Fig. 3).

Fig. 3 Catalog search extended mode



To search for products by needed value, select the checkbox in front of it (for the lookup field) or enter the text (for the field of the “String” type) and click the “Apply” button.

The list of search parameters is set up with the help of the [Set up product types and filters] action. When you select this action, the list of records of the [Product types] lookup opens.

- Name – the name of the product type. This is a required field.
- Category – the category to which this product type belongs.
- Notes – any additional information about the product type.

Filters

This detail is used to set up search conditions that will be displayed for this type in the product catalog. In the catalog, you can filter data by product column and feature with the “Lookup” and “String” field type.

The [Add] button menu of the [Filter] detail contains the following commands:

[Filter by product field] – adds catalog display conditions by product column. When you select this command, the list of product page fields opens. For example, to display a product catalog of a specific type, select the [Trademark] column.

[Filter by feature] – adds search conditions by product feature. When you select this command, the list of product features opens. For example, you can add filtering by CPU frequency for the laptop.

The values of the selected fields will be displayed in the search area when clicking the button in the catalog structure.

SEE ALSO

- How to set up catalog levels

How to specify product details

In Creatio, a set of product details comprises the complete profile of a product. These details consist of:

- Customer parameters – requirements that the customer must meet to be able to purchase the product. Customer parameters include age limitations, working experience, etc.
- Product features – static parameters that characterize the product. Product features include product currency, early repayment, etc.
- Sales conditions – product details that change depending on each particular sale. For example, the interest rate for a 12-month loan will be different from that of an 18 months loan.
- Documents package – the list of documents that the customer must provide in order to purchase the product. For example, if a customer needs to provide an internal passport, an extract from a salary account, etc., to purchase a banking product.
- Condition change criteria – additional conditions that can affect the product details. Condition change criteria include positive credit history, which can justify decreasing the interest rate.

Each record on the [Product details] detail is a separate set of conditions. A product can have multiple sets of conditions with different terms.

CONTENTS

SEE ALSO

- The [Contacts] section
- The [Lookups] section

How to set up customer parameters

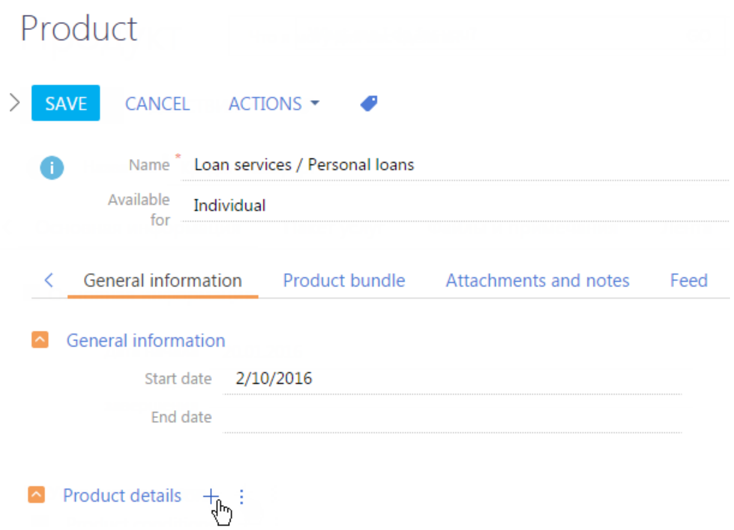
This article covers the setup procedure for the customer's parameters. For example, the customer has the following parameters:

- Age: 21 to 65 years.
- Residency status: resident.
- Employment status: has been employed for no less than 12 months with the current employer.
- Has been a local resident for no less than 6 months.

To specify the customer parameters:

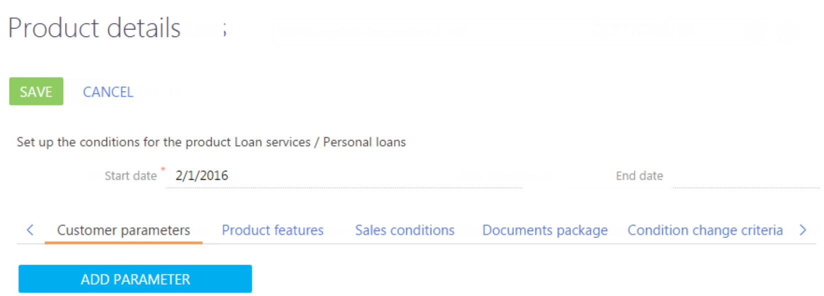
1. Go to the [Products] section, create a new product, or open the needed product page.
2. Click the + button on the [Product details] detail (Fig. 4).

Fig. 4 Adding a product condition



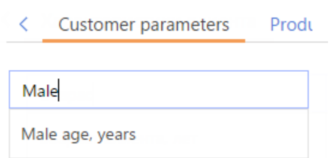
3. On the [Product details] page (Fig. 5) enter the start and end dates for the product conditions.

Fig. 5 Product condition page



4. Click the [Add parameter] button on the [Customer characteristics] tab.
5. Select “Male age, years”, for example, in the empty field (Fig. 6).

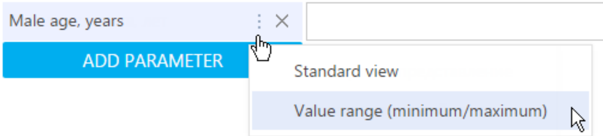
Fig. 6 Selecting characteristics



As a result, the [Male age, years] field will appear on the [Customer parameters] tab.

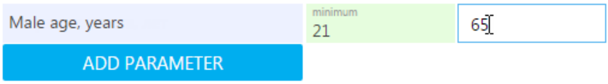
6. To specify a range instead of one specific value, change the view of the field for entering values:
    a. Place the cursor over the selected value.
    b. Click the ⋮ button.
    c. Select [Value range (minimum/maximum)] (Fig. 7).

Fig. 7 Changing the field view



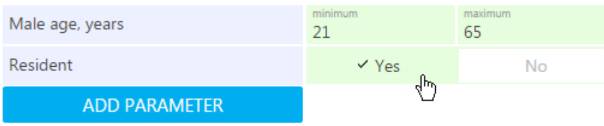
    d. Enter the required range of values (Fig. 8).

Fig. 8 Specifying a value range



7. Click the [Add parameter] button. Select the [Resident] parameter, for example, and set the value to “Yes” (Fig. 9).

Fig. 9 Specifying a Boolean value



8. Click the [Add parameter] button. Select the “Total work record” and specify “12” in the field that appears to the right, for example (Fig. 10).

Fig. 10 Specifying a fixed numeric value

9. Add and fill in the parameters for residence.
10. Click [Save].

As a result, the specified customer parameters (Fig. 11) will apply when matching products to applications.

Fig. 11 Example of customer parameters

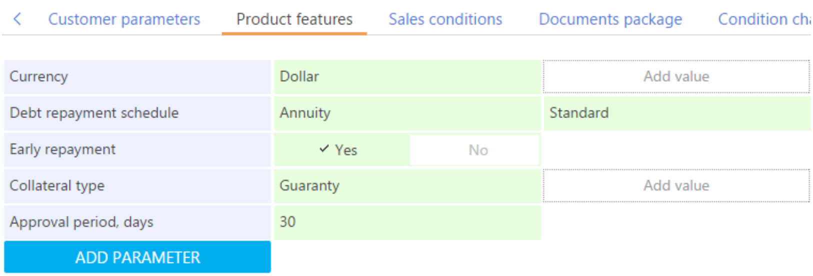
SEE ALSO

- How to set up product features
- How to set up sales conditions
- How to set up the document package
- How to set up condition change criteria
- The [Product categories and types] lookup
- The [Lookups] section

How to set up product features

Use the [Product features] tab to set up the static characteristics of a product (Fig. 12).

Fig. 12 An example of a product feature list



Typical loan features include repayment conditions, currency, repayment schedule, etc.

Creating a list of product features is identical to creating a list of the customer's parameters.

SEE ALSO

- The product page
- How to specify product details
- How to set up customer parameters
- How to set up sales conditions
- How to set up the document package
- How to set up condition change criteria

- The [Product categories and types] lookup

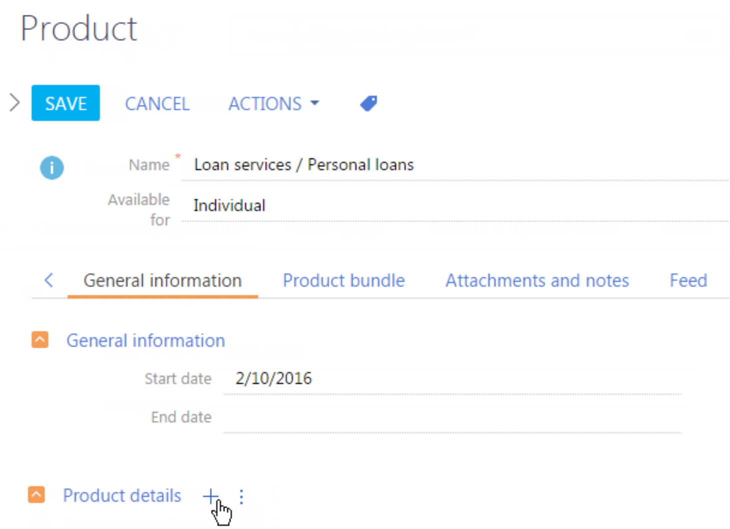
How to set up sales conditions

The [Sales condition] page is designed for setting up those product characteristics that change depending on the specifics of a sale, for example, the correlation between the interest rate and the term of the loan, special conditions for different customer categories, etc.

Here we will set up an example of sales conditions for a loan product in which the interest rate depends on the customer segment, loan term, and amount.

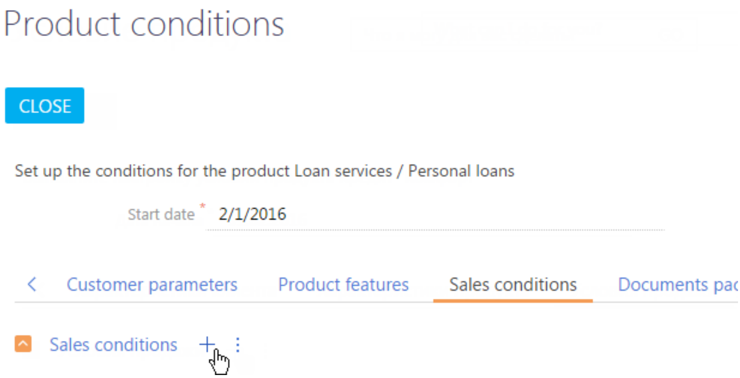
1. Go to the [Products] section and open the needed product page.
2. Click the + button on the [Product details] detail (Fig. 13).

Fig. 13 Adding a product condition



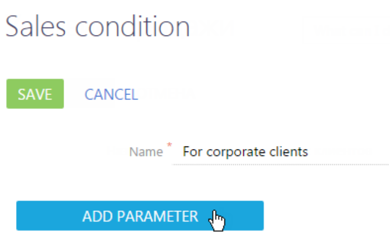
3. Go to the [Sales conditions] tab.
4. Click the + button on the [Sales conditions] tab (Fig. 14).

Fig. 14 Adding opportunity conditions



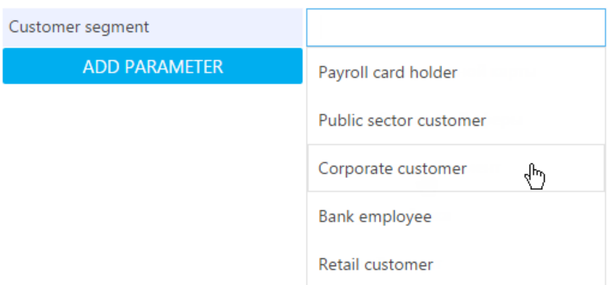
5. On the opened page:
   a. Enter the sales condition name, for example, “For corporate customers”.
   b. Click the [Add parameter] button (Fig. 15).

Fig. 15 Creating opportunity conditions



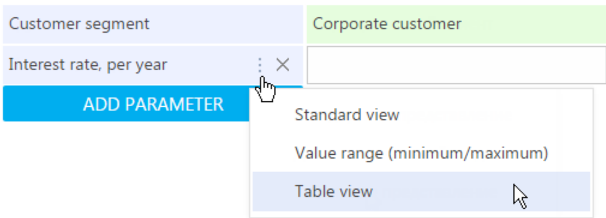
6. In the appeared field select the “Customer segment” and specify “Corporate customer” value for it (Fig. 16).

Fig. 16 Selecting a value



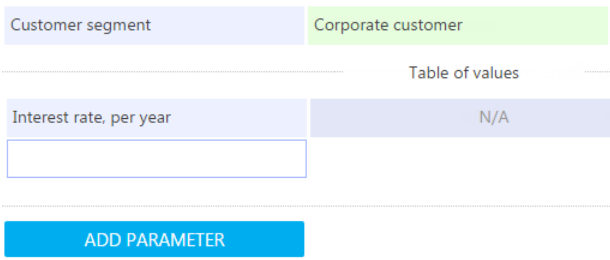
7. Click the [Add parameter] button and select "Interest rate, yearly".
8. Change the view of the value entry field to table view:
    a. Place the cursor over the selected value.
    b. Click the ⋮ button.
    c. Select "Table view" (Fig. 17).

Fig. 17 Selecting table view to create opportunity conditions



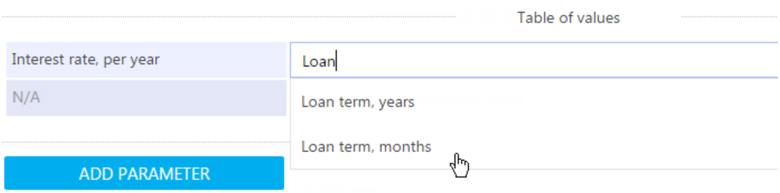
As a result, the [Interest rate, yearly] parameter will switch to the table view (Fig. 18).

Fig. 18 Table view of an opportunity condition parameter



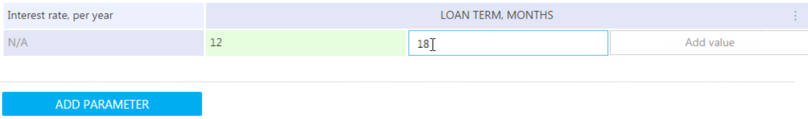
9. Select [Loan term, months] in the right part of the table (Fig. 19).

Fig. 19 Opportunity condition in a table view



10. Specify the terms in months for which the loan can be granted in months (Fig. 20).

Fig. 20 Specifying the loan terms

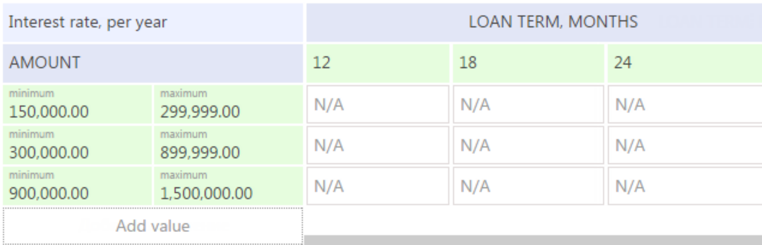


Interest rate, per year	LOAN TERM, MONTHS		
N/A	12	18	Add value

ADD PARAMETER

11. In the left part of the table, select the "Amount" value, and specify available ranges for the credit amount (Fig. 21).

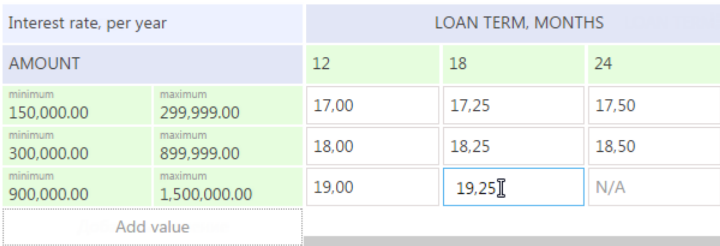
Fig. 21 Formulating the credit amount ranges



Interest rate, per year		LOAN TERM, MONTHS		
AMOUNT		12	18	24
minimum 150,000.00	maximum 299,999.00	N/A	N/A	N/A
minimum 300,000.00	maximum 899,999.00	N/A	N/A	N/A
minimum 900,000.00	maximum 1,500,000.00	N/A	N/A	N/A
Add value				

12. Specify the interest rates for each intersection of the loan term and the amount (Fig. 22).

Fig. 22 Formulating interest rates that depend on the loan terms and amounts

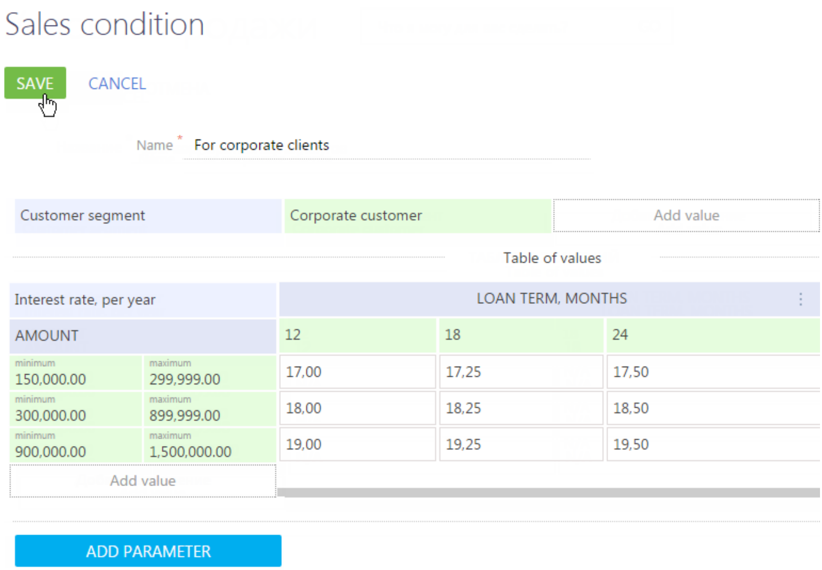


Interest rate, per year		LOAN TERM, MONTHS		
AMOUNT		12	18	24
minimum 150,000.00	maximum 299,999.00	17,00	17,25	17,50
minimum 300,000.00	maximum 899,999.00	18,00	18,25	18,50
minimum 900,000.00	maximum 1,500,000.00	19,00	19,25	N/A
Add value				

13. Click the [Save] button to save the generated table of the opportunity conditions.

As a result, opportunity conditions will be formed for the corporate customers of your bank (Fig. 23). For example, if a corporate customer applies for a loan of 300 000 USD for 12 months, the interest rate will be automatically set to 18%.

Fig. 23 Formulated product opportunity conditions



SEE ALSO

- The product page
- How to specify product details
- How to set up customer parameters
- How to set up product features
- How to set up the document package
- How to set up condition change criteria
- The [Product categories and types] lookup

How to set up the document package

Use the [Documents package] tab to set up the list of documents required for the product.

The document package can be created automatically or manually. The automatic formulation of the document package is used if a standard document package is required for a product. You can set up the standard document package in the [Product categories and types] lookup.

The document package is manually created if a customer must provide additional documents.

SEE ALSO

- The product page
- How to specify product details
- How to set up customer parameters
- How to set up product features
- How to set up sales conditions

- How to set up condition change criteria
- The [Product categories and types] lookup

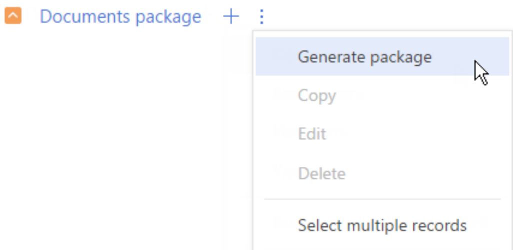
How to set the standard document package

To enable automatic adding of standard documents to the [Product details] page, set up the [Product categories and types] lookup first. After this, select the [Generate package] item in the menu of the [Documents package] tab to add documents from the standard package to the product.

To set up a document package:

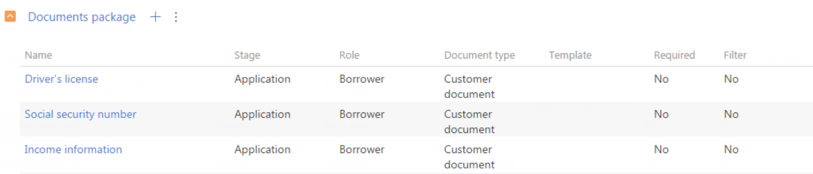
1. Choose the relevant condition from the[Product details] detail and click the link in the name to go to its respective page.
2. Choose the [Document package] in the opened [Product details] page.
3. Click the ⋮ button and select the [Generate package] command (Fig. 24).

Fig. 24 Adding a default document package for a product



As a result, the list of the documents that was set up in the [Product categories and types] lookup for this product will be added to the [Documents package] tab (Fig. 25).

Fig. 25 Documents in the product document package


Documents package

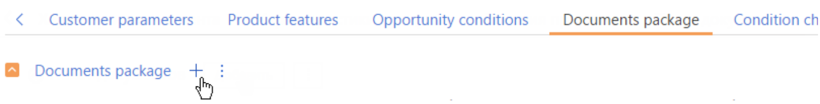
Name	Stage	Role	Document type	Template	Required	Filter
Driver's license	Application	Borrower	Customer document		No	No
Social security number	Application	Borrower	Customer document		No	No
Income information	Application	Borrower	Customer document		No	No

Manually adding documents

Additional documents are added to the standard package manually. For example. a document certifying military obligation may be required for men below 27 years of age. Let's consider an example of adding an extract from salary accounts for clients who are employees of the bank. To do this:

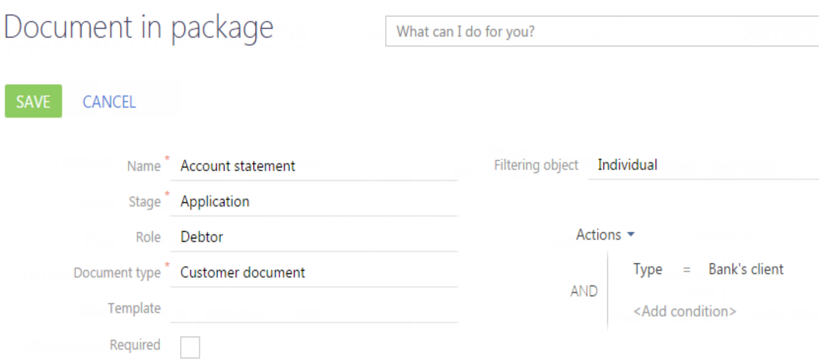
1. On the product page, open the current product condition by clicking the link in the title. Click the + button on the [Document package] tab of the [Product details] page (Fig. 26).

Fig. 26 Manually adding documents



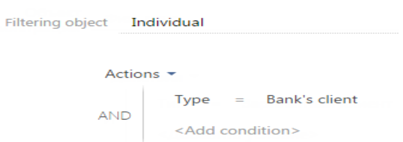
2. On the [Document in the package] (Fig. 27) page, enter the name of the document, for example, "Statement from the salary account".

Fig. 27 The [Document in package] page



3. Select the belonging group of the document, for example, "Income confirmation". The group list is set up in the [Document groups] lookup.
4. Select a product sale stage, at which the document must be submitted.
5. Select the role (“Borrower”, “Debtor”, “Warrantor”, etc.) who must submit the document.
6. Type of the document, e.g., “Customer document” or “Regulation”.
7. Select the document template if the document is a Creatio printable.
8. If the document is required and must be submitted during contracting, select the [Required] checkbox.
9. Configure the conditions in the filtering block. Create a filter by contact type. (Fig. 28). To do this, specify the "Contact” object and the "Type” column in the filter column selection window.

Fig. 28 Using the quick filter example



10. Click [Save].

As a result, the document will be added to the [Documents package] detail. The document will be available only for individuals of the "Bank's client" type.

SEE ALSO

- The product page
- How to specify product details
- How to set up customer parameters
- How to set up product features
- How to set up sales conditions
- How to set up condition change criteria
- The [Product categories and types] lookup

How to set up condition change criteria

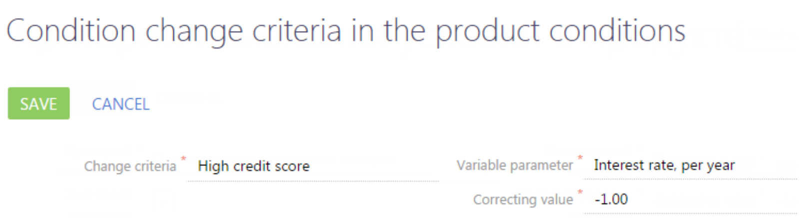
The [Condition change criteria] tab of the [Product details] page contains additional criteria that can affect the sales conditions of the product. For example, the interest rate of a loan may be lowered if the customer has an exceptionally high credit score.

Use the [Product categories and types] lookup to set up the list of available criteria.

To add condition change criteria to a product:

1. Go to the [Products] section and open the needed product page.
2. Click the + button on the [Product details] tab.
3. Go to the [Condition change criteria] tab.
4. Click the + button.
5. Fill out the fields on the opened [Condition change criteria in the product conditions] page (Fig. 29):

Fig. 29 Example of the condition change criteria in a product



   a. Select a value from the lookup in the [Change criteria] field.
   b. Enter the value for the criteria. For example, select the checkbox for Boolean criteria.
   c. In the [Variable parameter] field, select the product feature that is affected by the criteria. For example, select "Interest rate, per year." The values are selected from the [Default feature] lookup.
   d. In the [Correcting value] field, enter the value by which the variable parameter value must be adjusted.

NOTE

To decrease the variable parameter value, enter the correcting value a preceding "-" character. Otherwise, the variable parameter value will be increased by the correcting value.

6. Click [Save].

SEE ALSO

- The [Product categories and types] lookup
- The product page
- How to set up customer parameters
- How to set up product features
- How to set up sales conditions
- How to set up the document package

Actions in the [Products] section

This section features additional actions in addition to the standard ones.

Set up a product catalog

This action opens the product catalog setup page. Read more >>>

Analytics in the [Products] section

The [Analytics] view contains summary data on the section: charts, metrics, ratings, and reports.

The [Product analytics] tab

Product summaries.

NOTE

Filters set in the section will be applied to all dashboard components.

New products	List of ten recently added products. Only products with the "Current" status are counted. The data is sorted in descending order. Recently added records are displayed at the top of the list.
Products by category	Diagram displaying the number of products divided into categories.
Most popular products	List of five products with the most contracts signed. Only contracts with the "Signed" status are counted. The data is sorted in descending order by the number of contracts.
Least popular products	List of five products with the least contracts signed. The list includes products with no contracts as well. The data is sorted in ascending order by the number of contracts.

SEE ALSO

- Dashboards

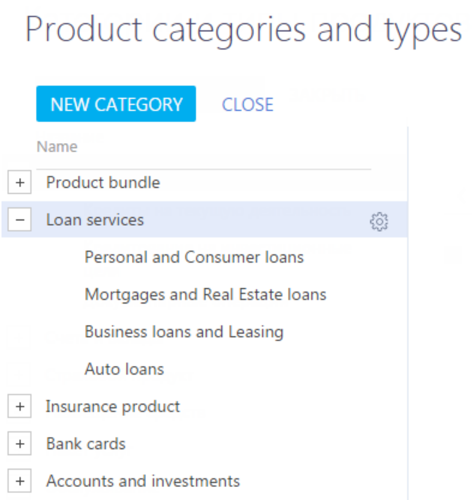
The [Product categories and types] lookup

The [Product categories and types] lookup is designed for creating a hierarchy of bank products and assigning parameters to the product categories and types. You can also add document packages that will determine which documents are required for each product. Finally, the lookup contains criteria by which a manager can modify the product sales conditions.

Lookup structure

The [Product categories and types] lookup contains the list of product categories. A product category can encompass a number of product types (Fig. 30).

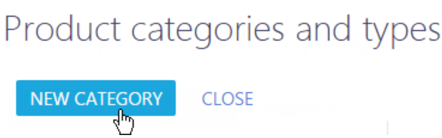
Fig. 30 The structure of the [Product categories and types] lookup



To add a product category to a lookup:

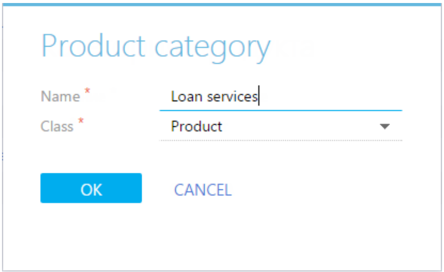
1. Click the [New category] button (Fig. 31).

Fig. 31 Adding a product category to the [Product categories and types] lookup



2. Enter the product category name and select the class: "Product", "Insurance product" or "Product bundle" (Fig. 32).

Fig. 32 Adding a new product category

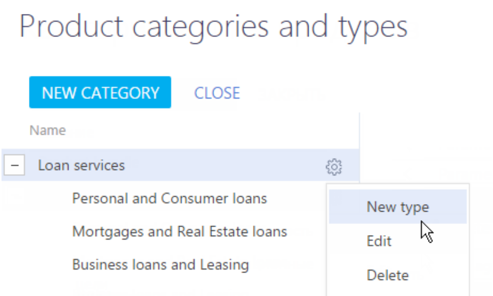


3. Save the changes.
4. Add other product categories to the lookup in the same manner.

To add products to a category:

1. Select the needed category in the area on the right side of the lookup page and click the button.
2. Select the [New type] command (Fig. 33).

Fig. 33 Adding a new product type to a category



3. Enter the product type name.
4. Save the changes.
5. Add other product types of this category in the same manner.

The [Parameters] tab

The tab contains parameters that apply to all products of the selected category or type. The tab contains a list of parameters.

The [Document package] tab

The tab contains the list of documents that must be submitted.

Document	Name of the document, e.g., “Passport” or “Driver's license”. This is a required field. The value is selected from the [Identity documents] lookup.

Document group	The name of the folder where you can add the documents to use in loan applications. For example, "ID" or "Income statement". The group list is set up in the [Document groups] lookup.
Stage	Name of the product sale stage on which the document must be provided.
Role	The role of the person who submits the document in the contract, e.g. “Debtor“, “Warrantor“, etc.
Document type	Type of the document, e.g., “Customer document” or “Regulation”.
Template	The template of the document's printable.
Required	Select the checkbox if the product cannot be sold if the customer does not submit this document.

SEE ALSO

- How to set up condition change criteria

The [Opportunities] section

In Creatio you can manage all opportunities in a single section. Here you can capture information about the deal development from the moment a client is interested in cooperation with your bank and until the deal is closed.

Outline tactics, key competitors, their strengths and weaknesses, as well as key parties to the deal and their roles in decision-making. Predict the success of an opportunity, based on the current opportunity stage, the likelihood and date of its closure.

The system stores a complete history for each opportunity: emails, discussions in the feed, files and comments. You can view a list of leads, which the selected opportunity closes, work with a range of products and services that are implemented as part of the sale.

To manage long opportunities, use the corporate sales process. Manage sales quickly — in one click you can jump to the required stage by using the workflow bar. At each stage of opportunity, a list of suggested next steps is displayed on the workflow bar. This helps organize and simplify the sales manager work.

Use charts, metrics and rating lists to analyze statistical data. You can track opportunities, evaluate their statuses and evaluate sales manager performance. Analyze the effectiveness of your sales managers at each opportunity stage by using the sales pipeline. You can estimate the conversion rate between stages, pipeline completeness, and compare pipelines of individual managers or sales teams. The sales pipeline graphically displays how the sales plan is executed. The system provides in-depth information on every opportunity stage as well as company-wide opportunity statistics.

CONTENTS

SEE ALSO

- Percentage of profile completion

VIDEO TUTORIALS

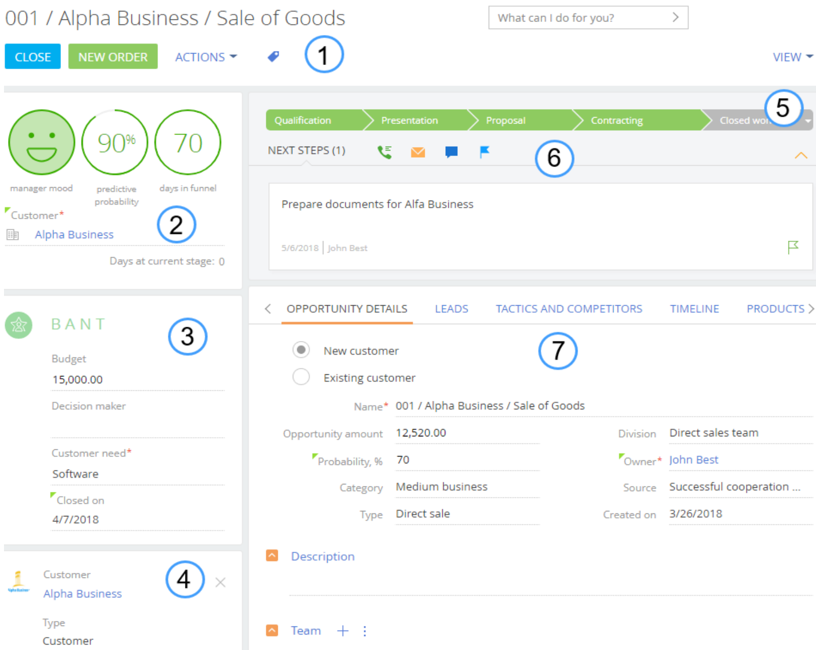
- Managing opportunities Long sales

Opportunity page

In Creatio, you can add new opportunities manually or automatically by converting sales-ready leads.

The opportunity page (Fig. 1) consists of the standard toolbar, opportunity, BANT and customer profiles, as well as a standard workflow bar (5), action panel (6) and tabs (7).

Fig. 1 Opportunity page fragment



Opportunity toolbar (1)

The toolbar contains buttons to perform actions with the record. In addition to the standard toolbar options and actions, the opportunity toolbar contains the [New order] button for quick creation of new orders for the sold products. Read more >>>

Opportunity profile (2)

General information about an opportunity.

Manager mood	Emoticon that expresses how the assigned manager feels about the opportunity. Manager mood is used for reference only and does not affect the business logic of opportunities and sales processes. Click the emoticon to change the manager mood. A list of available options is set in the [Manager's mood] lookup.

Predictive probability	Displays the predictive probability of successful closing of opportunity. The predictive probability value is calculated automatically, based on the current opportunity data and general trends of similar previously closed opportunities. This enables the manager to evaluate the potential of an opportunity at a glance and increase the overall work efficiency by concentrating on opportunities with higher probability. Read more >>> If predictive probability function is disabled, the "Probability" indicator displays the [Probability] field value.
Days in funnel	The number of days the opportunity exists in Creatio. The value is calculated automatically. • If the stage is final the value is calculated automatically, based on the [Created on] and [Closed on] fields of the [Opportunity info] tab. • If the [Closed on] field is not populated, the current date is used.
Customer	Contact or account who is the buyer party of the potential deal. It is a required field. Read more >>>
Days at current stage	The number of days an opportunity is at the current stage. The calculation is based on the [Stages] detail of the [Opportunity history] tab. On this detail, Creatio analyses the record with the [End date] field unpopulated and calculates the number of days between the date in the [Start date] column and the current date. If the stage is final, the number of days at the current stage becomes hidden.

BANT (3)

The "Budget-Authority-Need-Timeframe" approach in opportunity identification enables sales managers to validate the prospect of a particular opportunity. Looking at the combination of the four BANT indicators enables the sales managers to analyze the chances of successfully closing the opportunity. In Creatio, the BANT indicators are represented by the four fields in the BANT profile.

Budget	Budget – What is the prospect's budget? Approximate amount the customer is willing to spend.
Decision maker	Authority – Does the prospect have decision-making authority, or is this an influencer? A contact who has a decisive role or impact upon the final decision about a sale. The field is locked. To populate the field: **1.** Select a contact from the [Contacts] detail on the opportunity page. Click the ⋮ and select the [Edit] command. **2.** Select the "Decision maker" role in the [Role] field.
Customer need	Need – What is the prospect's business need? Type of the customer need. For example, a product or service the customer is interested in. The field is required and is populated when a new opportunity is created.

Closed on	Time frame – In what time frame will the prospect be implementing a solution? The date when you plan to close this opportunity (if the opportunity is not closed yet) or actual date the opportunity was closed on. The actual end date of the opportunity is specified in the field automatically, when the opportunity enters its final stage. The field then becomes non-editable. If the opportunity stage is set to a non-final stage, the field becomes editable again.

Customer profile (4)

The customer profile displays information from the customer's account or contact record. If a field is not populated for the corresponding account or contact, it will not be displayed in the profile.

Customer profile can display the following account page fields:

- [Name]
- [Type]
- [Owner]
- [Web]
- [Primary phone]
- [Category]
- [Industry].

Customer profile can display the following contact page fields:

- [Name]
- [Full job title]
- [Mobile phone]
- [Business phone]
- [Email].

Workflow bar (5)

The workflow bar on the opportunity page shows the current stage of the opportunity and enables quick navigation between opportunity stages. Read more >>>

By default, the workflow bar shows Creatio out-of-the-box sales workflow. You can use Creatio case management tools to customize the opportunity workflow bar and create your own stages based on the specifics of your business. Read more >>>

Action panel (6)

The action panel provides additional tips about manager's "to-do list" for the current opportunity and enables scheduling tasks, sending emails, creating posts in the feed and recording call results without leaving the page.

The [Opportunity details] tab

The fields on the [Opportunity details] tab contain opportunity specifics.

New customer/Existing customer	Select either option depending on whether it is a first or a repeated customer sale. The information assists in analyzing an opportunity strategy and choosing the best sale tactics. It is also a good tool for a business owner to analyze the number of new customers and assess business development. This value is used for reference only and does not affect the business logic of the opportunity.
Name	Primary display field for opportunities. Opportunity title will be displayed in the lists and lookups that reference this opportunity. It is a required field.
Opportunity amount	The estimated cost of the offered products or services.
Probability	The chances of closing the deal For example, at the qualification stage of the deal the sales probability could be “60%” and when the contract is signed – “90%”. The values in this field can range from “0” to “100”. Maximum value depends on the current stage of the opportunity: for example, the probability on initial stages cannot be 100%. This dependency is set up in the [Opportunity stages] lookup. The field displays the probability assessed by the sales manager and can be modified manually, while the [Predictive probability] value from the opportunity profile is calculated automatically by Creatio If predictive probability function is disabled, the corresponding opportunity profile indicator displays the [Probability] field value.
Category	The type of the opportunity customer, for example, “Small business” or “Enterprise”.
Type	Type of the sale. You can select either “Direct sale” or “Partner sale” from the drop-down menu.
Division	A business unit that handles the current opportunity. It corresponds to the structural unit of your company that is in charge of handling this kind of opportunity, e.g. – “Direct sales team” or “Partner sales team”. Values are set up in the [Division] lookup.
Owner	Creatio user responsible for working with the opportunity.
Source	The source of information that led to creating this opportunity. You can select from a drop-down menu (for example, “Customer referral”, “Cold call”, etc.).
Created on	Opportunity start date.

Description

In the [Description] field, type-in any general information about the opportunity that you could not fit into existing fields.

Team

Information about the opportunity participants on the seller's side.

Account	Name of the company where the opportunity participant works. For example, in addition to your co-workers, opportunity team may include employees from your partner and contractor companies.
Contact	Name of the opportunity participant. If the [Account] field is populated, the lookup values in this field are filtered by the selected account.
Role	The role of the participant in the opportunity, for example, "Sales representative" or "Presale".
Description	Additional information regarding the participant or the specific role that the participant plays.

Contacts

Information about the opportunity participants on the customer's side. Add the list of customer contacts involved in the deal to the detail.

Contact	Customer's contact person for this opportunity. Only contacts of the customer's account are available. You can select the [Primary contact] checkbox next to the field to mark the specified contact as the "go-to" contact in this opportunity. Only one contact can be set as primary.
Role	The role of the participant in the opportunity, for example, "Contact person" or "Decision maker".
Influence	Contact's influence on the final decision regarding the purchase, e.g., "High" or "Medium".
Loyalty	Contact's attitude towards this opportunity. For example, "Interested", "Not interested".
Description	Additional information about the customer's contact.

The [Decision-making factors] detail of the opportunity contact page

The [Decision-making factors] detail on the page of opportunity contact displays factors that influence the contact's interest in closing this opportunity successfully, e.g., "Reliability", "Profitability", "Productivity improvement", etc. Specify decision-making factors on the corresponding detail when adding an opportunity contact.

NOTE

To view the [Decision-making factors] detail, select a record on the [Contacts] detail of the [Opportunity details] tab, click ⋮ and select [Edit].

The [Leads] tab

The [Leads] tab contains a list of customer needs (leads) connected to the opportunity. It displays information from the [Leads] section. To connect a lead to an opportunity, populate the [Opportunity/ Order] multi-lookup field on the [Opportunity info] tab of the lead page.

If an opportunity is created based on a sales-ready lead, the corresponding lead will be automatically added on the [Leads] tab of the opportunity.

The [Tactics and competitors] tab

Information about strong and weak points of the company and its competitors.

Our weaknesses	Competitive advantages and disadvantages of products/services offered by your company.
Our strengths	
Sales tactics	Recommendations on working with the opportunity. All changes in sales tactics are recorded on the [Tactic history] detail of the tab.
Verified on	The date of the latest discussion of the sales tactics with the manager. The changes in the discussion date are recorded on the [Tactic history] detail of the tab.

Competitors

Information about your competitors in this opportunity.

Manufacturer	Name of a manufacturer of a product sold by your competitor in this opportunity.
Supplier	The competitor company of the opportunity. You can select from accounts of the "Competitor" type.
Competitor product	Product offered by the competitor company. You can select the product from the [Competitor products] lookup. When the value of the [Competitor product] field is populated, the [Manufacturer], [Weaknesses] and [Strengths] fields are populated automatically with the corresponding field values of the competitor product.
Weaknesses	Competitive advantages and disadvantages of a product offered by the competitor company. The fields are populated automatically if the [Competitor product] field is filled in.
Strengths	
Winner	The checkbox is selected in case this competitor wins the deal.

Tactics history

Information about the previously used sales tactics in this opportunity. Records are added to the detail automatically when the [Sales tactics] or [Verified on] field values are changed. The detail will be displayed after the value in the [Sales tactics] field changes for the first time.

The [Timeline] tab

The [Timeline] tab displays opportunity tasks, communications, additional materials and other opportunity linked objects in chronological order.

The [Products] tab

A list of products that you are selling as part of the opportunity.

Product	The name of a product being offered.
Price	Cost of a product unit.
Number of licenses	Quantity of products offered.
Amount	Total cost of the selected quantity of products.
Quoted on	Quotation date for the product.
Interest	Customer's interest in the offering after the proposal has been made, for example, “Confirmed”.
Comment	Additional information about offered product.

The [Opportunity history] tab

The [Opportunity history] tab contains information about opportunity progress and Creatio records connected to it.

Stages

The list of completed opportunity stages. You can change the owner of the selected stage or enter a comment.

Stage	A clearly defined phase of the opportunity, such as “Qualification” or “Contracting”. Non-editable field.
Start	The start and end dates of the opportunity stage. Non-editable field.
Due	
Owner	Name of the employee responsible for the opportunity stage.
Notes	Additional information about the opportunity stage.

Records are automatically added on the detail based on the information entered on the opportunity page. A new record will be added each time the opportunity stage is changed. The [End date] column field for the previous stage will be automatically populated with the current date.

When you select the final stage, the current date will be entered as start and end dates.

NOTE

The final stage of the opportunity is considered to be the one that has the [Final] checkbox selected in the [Opportunity stages] lookup.

Activities

Tasks that are connected to the current opportunity. This detail displays information from the [Activities] section. To connect an activity to an opportunity, populate the [Opportunity] field on the [General information] tab of the activity page.

Calls

Displays phone calls related to the opportunity.

Emails

Displays emails related to the opportunity. You can set up automatic binding of emails to other Creatio objects. Read more >>>

You can also bind emails to Creatio records manually. Read more >>>

Documents

A list of documents connected to the selected opportunity. It displays information from the [Documents] section. To connect a document to an opportunity, populate the [Opportunity] field on the [General information] tab of a document page.

The [Customer history] tab

The tab contains information about customer relations within the opportunity.

Contacts

The list of customer contacts involved in the deal. This detail displays information from the [Contacts] section: a list of contacts for which this company is indicated as the place of work on the [Job experience] detail of the contact [Current employment] tab. Detail is displayed only if the account is selected in the [Customer] field of the opportunity profile. Click the + to create a new contact in the [Contacts] section.

Opportunities

A list of other sales for this customer. Detail contains all opportunities with the same contact or account as in current opportunity.

Activities

Tasks, emails and calls that are connected to the opportunity customer's account. It displays information from the [Activities] section. To connect an activity to an account, populate the [Account] field n the [General information] tab of the activity page.

Attachments and notes

Files related to the opportunity customer's account.

The [Attachments and notes] tab

The [Attachments and notes] tab contains additional information about the current contact, as well as attachments and links to the web resources related to it. Read more >>>

Attachments

Use this detail to store files and links related to the opportunity. For example, here you can attach a file or a scan copy of the document related to the opportunity.

Notes

The [Notes] detail is used to store additional text information about the opportunity. You can edit and organize your lead notes on the detail. If you switch to another tab of the opportunity page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays messages and posts connected to the current opportunity.

SEE ALSO

- Add a new opportunity
- How to specify a customer in an opportunity
- Actions in the [Opportunities] section
- Corporate sale process
- Opportunities FAQ

Add a new opportunity

In Creatio you can create opportunities manually or work with opportunities created automatically when a lead is transferred to the "Awaiting sale" stage.

Registering an opportunity manually.

To add a new opportunity, simply fill out a few required fields. Then you can run the corporate sales process and follow the system tips gradually entering information on the current opportunity stage.

To register an opportunity:

1. Create a new record in the [Opportunities] section.
2. On the displayed page, fill in the required fields:
   a. In the [Name] field, enter the deal name, for example, its reference code and customer.
   b. Specify the potential customer for whom the opportunity is created. Read more
   c. Fill in the [Need type] field to specify the product category of your company in which a customer is interested.
   d. If you are aware of any additional information about this deal you can also enter it on the opportunity page.
3. Save the page.

   NOTE
   If the [Create lead for opportunity] is selected then when an opportunity is added to the system, a lead connected to it will also be added.

As a result, a new opportunity will be added to the system. Now you can start the corporate sales process.

How to register an opportunity automatically

If the [Run opportunity process] system setting is selected, the system will register a new opportunity when a lead is transferred to the “Awaiting sale” stage.

The following fields will be filled in: [Customer], [Department], [Owner] and [Created on] fields as well as a number of fields on the [Parameters] detail. The values of these fields are filled in on the handoff to sales page, which is filled in on one of the lead management process stages. The products from the lead page will also be copied.

The [Name] field values will be formed as a concatenation of the following values on the opportunity page:

[Customer] / [Number of registered opportunities +1]

You can set up a dynamic folder, for example, by using the [Date] filter.

NOTE

The corporate sales process will start automatically when a lead is handed off to sales.

SEE ALSO

- How to start the corporate sale process
- The [Leads] section > Lead handoff to sales
- The [System settings] section > System settings description
- Opportunities FAQ

How to specify a customer in an opportunity

In Creatio you can manage opportunities either by legal entities or contacts.

To specify the customer legal entity or contact, use the [Customer] field in the corresponding profile on the opportunity page. You can select the customer on the opportunity page from the drop-down list or lookup.

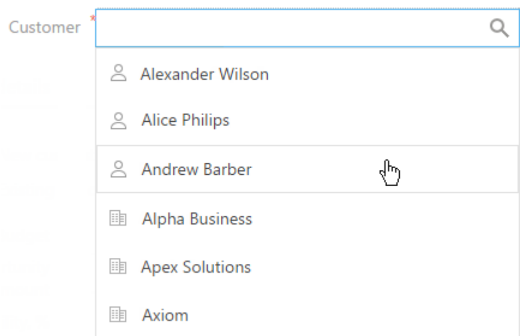
How to select a customer from a drop-down list

Use the drop-down list to quickly search for a customer. This is useful if you remember the exact name of the company or contact

1. Open the drop-down list from the [Customer] field using one of the following options:
   - Place the cursor in the lookup field and press the [Down] key.

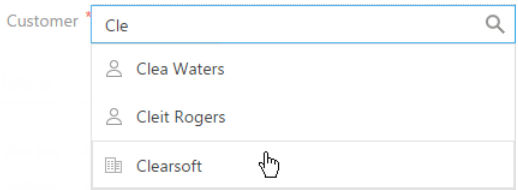
     An alphabetical list of all contacts and legal entities will be displayed (Fig. 2).

Fig. 2 A drop-down list for the [Customer] field



   - Start typing the needed name in the [Customer] field. Enter a few characters to search by in the [Customer] field (Fig. 3).

Fig. 3 The [Customer] field with an applied filter



2. Select the contact or account from the list.

   Now, the [Customer] field is filled in with the specified value.

   NOTE

   You can modify the number of symbols when you apply the filter. Also, you can select the filtering method: "starts with" or "contains". Use the [Minimal number of symbols for list filtering] and [Comparing type for line columns] system settings to modify these values.

How to select a customer using the lookup window

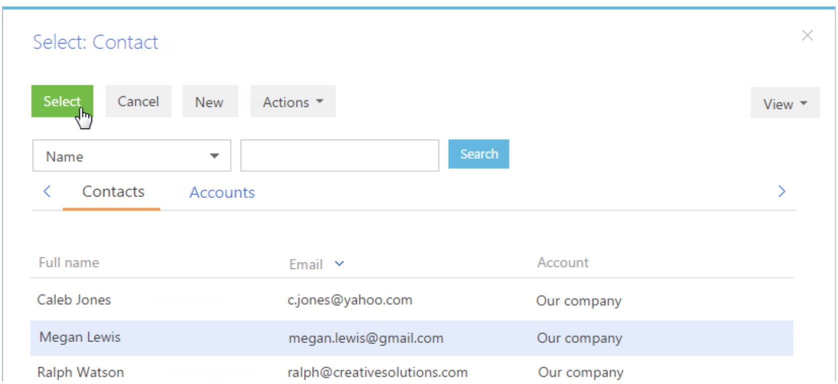
You can also use a lookup window to search for a customer by details other than their name. This is useful, for example, if you only have customer's email addresses. You can use search function, set up columns and sort records.

1. Open the lookup window (Fig. 4) by clicking the button in the [Customer] field.

   NOTE

   You can specify several characters in the [Customer] field and press the [Enter] button. In this case, a lookup window will open containing the filtered values.

   Fig. 4 Selecting the [Customer] field from the lookup window



2. Click the needed tab.
3. Select the customer by double clicking the corresponding record.

   As a result, the [Customer] field will be filled in with the selected account or contact.

SEE ALSO

- System settings description
- Corporate sale process
- How to start the corporate sale process
- Opportunities FAQ

Actions in the [Opportunities] section

In addition to basic section actions, the [Opportunities] section has the following available action options:

The [Assign Owner] action

The action can be run from the [Opportunity] section page. It enables a user to select an opportunity from the record list and change/assign owner without opening the opportunity page. The assigned owner will be displayed in the [Owner] field on the opportunity record page.

The [Run corporate sale process] action

The action can be run from the page of a particular opportunity. You can apply this action for manually created opportunities and start using the corporate sale process in a click. Read more>>>

Corporate sale process

Use the corporate sale process for maximum efficiency of working with opportunities. The process is based on best practices of closing long sales and prompts optimal steps on each stage of the deal.

The corporate sales business process involves working with the [Opportunities], [Activities], [Contacts] and [Legal entities] sections.

The process starts with the qualification stage and continues running until the opportunity is closed. This changes the opportunity stages. The opportunity management process creates activities. As these activities are completed, their results influence the process flow.

The process consists of several stages, each stage involves certain sequence of steps:

- Qualification
- Presentation
- Proposal
- Contracting
- Ending a process

Analyze and clarify the customer need based on information accumulated by Creatio. At the Qualification stage, enter all information you have on an opportunity and prepare a presentation — the system will prompt the sequence of actions to ensure constant progress and increase the chances of eventual closing of the deal.

Introduce the client to products and services your bank at the presentation stage. Coordinate the date and time of the proposal presentation. Record the results in the system and prepare a proposal that meets the client requirements as fully as possible.

At the proposal stage, familiarize the client with the prepared document, coordinate all the details and proceed to the preparation and internal approval of the contract.

When moving to the Contracting stage, the contract is sent to the client. At this stage, discuss additional details and conditions. After agreements are reached and the documents are ready, sign the contract with the client.

You can go through the process or you can skip any stage or return to a previously completed stage of opportunity.

NEXT

- How to work with the corporate sales process
- The [Qualification] stage
- The [Presentation] stage
- The [Proposal] stage
- The [Contracting] stage
- How to complete the process

SEE ALSO

- Opportunities FAQ

VIDEO TUTORIALS

- Managing opportunities Long sales

How to start the corporate sale process

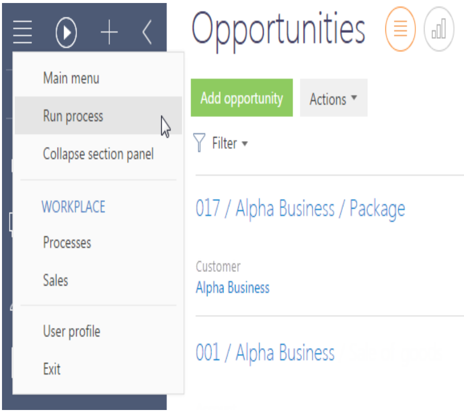
There are several convenient ways for you to start the corporate sales process. For example, If you start working with a new opportunity, we recommend that you run the process from the side panel or from it the command line. In this a case, the opportunity will be created while running the process. If you manually created an opportunity earlier, and now wish to continue working with it, use the corresponding command on the opportunity page.

- Starting the process with the [Start process] action
- Running a process from the command line
- Starting the process with the [Run corporate sale process] action
- The corporate sales process starting automatically

Starting the process with the [Start process] action

1. In the ☰ button menu, select the [Start process] action (Fig. 5).

Fig. 5 Running a process from the side panel



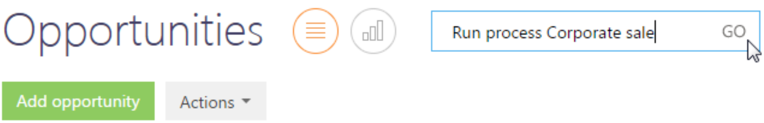
2. In the opened window, select the "Corporate sale" process and click the [Start] button.

   As a result, the corporate sales process will start from the qualification stage. The new opportunity page will open with a prompt to fill in in its data fields.

Running a process from the command line

1. To start a process, type in the “Run process” command in the command line and then continue by typing in the name of the process – “Corporate sale” (Fig. 6).
2. Press the [Enter] button.

Fig. 6 Running a process from the command line

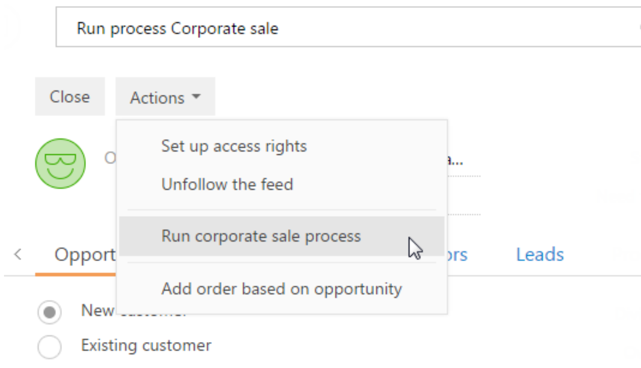


As a result, the corporate sales process will start from the qualification stage. The new opportunity page will open with a prompt to fill in its data fields.

Starting the process with the [Run corporate sale process] action

1. Open the page of the opportunity you wish to start the corporate sales process by.
2. In the [Actions] button menu, select the [Run corporate sales process] command (Fig. 7).

Fig. 7 Starting a process from the opportunity page



As a result the corporate sales process will be started from the stage on which the opportunity currently is.

The corporate sales process starting automatically

The corporate sales process can be started automatically when a lead is transferred to the "Awaiting sale" stage. In this case, the process starts from the qualification stage.

NOTE

To start the corporate sales process automatically, the "Run opportunity process" system setting must be selected.

SEE ALSO

- How to work with the corporate sales process
- The [Leads] section > Lead handoff to sales
- The [System settings] section > System settings description
- Opportunities FAQ

How to work with the corporate sales process

The corporate sale process breaks opportunities into stages, with each stage having a clear goal and completion criteria.

You can advance process stages by completing the activities and entering data on the opportunity page and other pages that are monitored by the process.

Below is a list of stages and activities that are created at each process stage.

1. Qualification.
   a. Contact the client, assess the needs, coordinate the date and time of the presentation.
   b. Prepare presentation.
   c. Conduct presentation.
2. Presentation.
   a. Contact the client, coordinate the date and time of the presentation.

   b. Prepare and agree on the proposal within the company.
3. Proposal.
   a. Present the proposal.
   b. Contact the client to obtain comments and approval of the proposal.
   c. Prepare and approve the contract within the company.
4. Contracting.
   a. Send the contract to the client.
   b. Contact the client to clarify the contract status and the date to receive comments.
   c. Approve and sign the contract with the client.
5. Closed won.
   a. After completion of the "Approve and sign the contract with the client" activity, the opportunity status will be automatically changed to "Closed won".

NEXT

- How to work with the process activities
- What happens if one of the activities is skipped
- How to move through the process stages

SEE ALSO

- How to start the corporate sale process
- The [Qualification] stage
- The [Presentation] stage
- The [Proposal] stage
- The [Contracting] stage
- How to complete the process
- Opportunities FAQ

How to work with the process activities

Creatio will create activities with lists if actions that must be performed on each opportunity stage. All activities are displayed on the action panel at the top of the opportunity page. You can perform a task directly in the action panel via the mini pages or by going to the full task page.

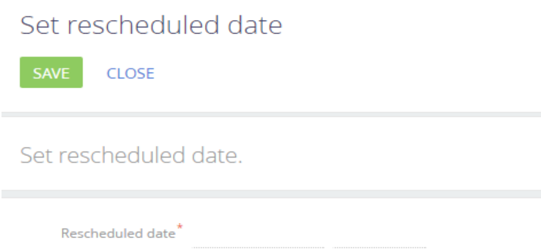
How to perform a task in the action panel

When performing a task in the action panel, you work with the activity mini page. The mini page is displayed when you click the task title or click the [Close] button.

1. Click the task title. A task mini page will open with [Close task] and [Cancel task] actions. The mini page displays the following data: the task status, deadline, and the list of task-related objects, for example, owner, legal entity, opportunity, etc.
2. Click the [Complete] button. In this case, the task is automatically finished, and the mini page displays fields to enter the results. Enter the task result and, if necessary, enter a detailed comment. If a task must be rescheduled, a page for entering the new date and time of the task

will open (Fig. 8). After you specify the new date, Creatio will create a new task, which will be added on the action panel.

Fig. 8 Entering date and time when rescheduling a task

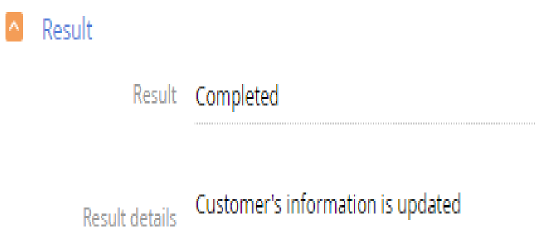


3. Open the mini page edit page by clicking the button if you need to change the task date and time, owner, add connected objects, etc.

How to perform a task by opening its page

1. Click the activity title on the [Opportunity history] tab. The task page will open.
2. Complete the task and enter the result. Process activities usually have buttons for selecting activity results.
3. Select the appropriate result of the completed activity (Fig. 9).

Fig. 9 Entering the activity results



4. Optionally, enter a detailed comment to the activity result in the [Result details], and click [Save].

The next step of the corporate sales process will be activated.

SEE ALSO

- What happens if one of the activities is skipped
- Opportunities FAQ

What happens if one of the activities is skipped

If one or more of the stage activities was not completed, and the opportunity was moved to the next stage with the workflow bar, then the activity will be canceled automatically. The system will generate a new list of activities corresponding to the current opportunity stage.

NOTE

Automatically and manually created uncompleted tasks will not be canceled when moving to the next stage. Uncompleted tasks do not affect transition to next stages.

SEE ALSO

- How to work with the process activities
- How to move through the process stages
- Opportunities FAQ

How to move through the process stages

Moving through stages via the workflow bar

You can go from one process stage to another in the order that is convenient for you. All transitions between stages are carried out using the workflow bar. If necessary, you can skip one or several stages of the process, for example, if all the necessary materials for the current stage have been prepared at an earlier stage. This can be done by changing the process stage on the workflow bar and clicking [Save]. In this case, the [Opportunity history] tab will display the corresponding activity, which will also be displayed on the action panel. Uncompleted activities of the current stage will be canceled.

After an opportunity has moved to the final stage, you cannot go back to previous stages.

How to automatically move through stages during the sales process

If the sales process is running for the opportunity and after all activities of the current stage are completed, you will automatically move to the next stage.

NOTE

You can return to any stage by using the workflow bar. Each stage can be performed as many times as required to manage an opportunity.

SEE ALSO

- How to work with the process activities
- Opportunities FAQ

The [Qualification] stage

The qualification stage is the first in the corporate sales process and is performed no matter how the process was started. Read more >>>

Stage goal

The goal of this stage is to make sure that there is a scheduled time to make a decision and a presentation is prepared.

What happens in the system

The opportunity page opens. The “Set opportunity owner” task is displayed on the action panel. Perform the task by clicking the [Complete] button and save the changes.

NOTE

The first task that is generated according to the corporate sales process has the "Set opportunity owner" title. To perform it, click the task title or click [Start] and save the changes on the opportunity page. The action panel will display the process tasks.

At this stage, 2 more tasks are generated. It is necessary to clarify the customer need, arrange the meeting time for a presentation and conduct the presentation. Task notifications will go to the responsible manager and appear in the calendar.

Perform tasks directly on the task bar via the activity mini page. If you are aware of some additional information at this stage, enter it on the opportunity page. Click [Save].

Stage results.

As a result, the process goes to the presentation stage.

SEE ALSO

- How to start the corporate sale process
- How to work with the corporate sales process
- Workflow bar
- How to specify a customer in an opportunity
- Opportunities FAQ

The [Presentation] stage

The process moves to the presentation stage after the qualification stage. If required, you can move to this stage from any process stage.

Stage goal

The goal of this stage is to present your bank products and services. At this stage, the sales manager prepares the presentation with respect to the customer needs. After performing the presentation, the manager enters the information about the results.

What happens in the system.

At this stage, the manager prepares a presentation based on the data about the customer needs, conducts the presentation and enters the results.

The manager then needs to do the following:

1. Choose the most appropriate presentation for this particular customer in your knowledge base library. Think about the questions you want to ask the customer, collect some examples for demonstration, define the list of contacts who will represent the customer and the list of existing competitors. You can edit the field by entering your actual presentation time. After the presentation, change the values of the [Status] and [Result] activity fields and save the changes.
2. Contact the client to clarify any remaining questions, and receive feedback on the presentation. Agree on the date and time of the proposal presentation. Edit the data in the corresponding task.

   NOTE

   Supplement the data on the opportunity page as you receive more information.

3. Prepare and approve the proposal, considering the data obtained in the course of the presentation and interaction with the client. Check the readiness of the presentation, handouts,

business cards and brochures. Complete the activity by selecting the desired result on its mini page.

Stage results.

The current stage is completed. Now you can move to the proposal stage.

SEE ALSO

- How to move through the process stages
- How to work with the corporate sales process
- Opportunities FAQ

The [Proposal] stage

The process advances to the proposal stage after the qualification stage. If required, you can advance to this stage from any process stage.

Stage goal

The goal of this stage is to prepare a proposal that will satisfy the customer needs to the fullest.

What happens in the system.

At this stage, tasks concerning the proposal presentation, agreeing with the client and preparation of documents for the deal are created for the opportunity owner.

1. After the proposal presentation, enter the results in the system.
2. Contact the client to discuss and mutually agree on the sales conditions.
3. If the intention of the client is confirmed, prepare a contract and approve it within the company.

Stage results.

After these tasks are performed, the stage is completed. You can move to the contracting stage.

SEE ALSO

- How to move through the process stages
- How to work with the corporate sales process
- Opportunities FAQ

The [Contracting] stage

The process moves to the contracting stage after the qualification stage. If required, you can advance to this stage from any process stage.

Stage goal

Approve and sign the contract with the client.

What happens in the system

After you prepare a contract, activities will be created for agreeing on and signing the contract. If the activity is completed, the stage will end, and the [Stage] field on the opportunity page will automatically be filled in with the "Closed won" and become non-editable.

Stage results

If the stage was successfully completed, the opportunity will have a "Closed won" status.

SEE ALSO

- How to work with the corporate sales process
- How to complete the process
- Opportunities FAQ

How to complete the process

The final stage is an important component of any sale, as at this stage you can determine the real amount of income and number of hours spent on the sale. Entering the detailed information about the opportunity during the closure process will help you analyze won and lost opportunities and get a better idea of how to plan your sales efforts more efficiently to guarantee success in the future.

You can complete the corporate sales process at any stage. To do this, select one of the final stages:

- Select "Closed won" if the opportunity was completed successfully. For example, when you signed a contract with the customer. Check if the information on the opportunity page is up to date, create an order and schedule the activities related to the customer. When you select this final stage option, responsible manager will receive a notification of a successfully closed sale.
- Select "Closed lost" if the opportunity was not completed successfully. The responsible manager will receive a notification about the unsuccessful sale.

SEE ALSO

- How to work with the corporate sales process
- Opportunities FAQ

How to work with a sales pipeline

The sales pipeline is used to analyze opportunities, as well as to plan new opportunities. You can estimate the conversion rate between stages, pipeline completeness, and compare pipelines of individual managers or departments.

- How to view a sales pipeline
- How to set up the sales pipeline
- How to read the sales pipeline
- How to compare pipelines

How to view a sales pipeline

To view the sales pipeline:

1. Open the [Dashboards] view in the [Opportunities] section by clicking the button.
2. Go to the [Sales pipeline] tab or the [Compare pipelines] tab.

How to set up the sales pipeline

By default, the pipeline displays the following stages:

1. Qualification
2. Presentation

3. Proposal
4. Contract
5. Closed won

NOTE
By default, the "Canceled lost" stage is not displayed in the sales pipeline.

You can include or exclude the display of certain stages in your pipeline. You can also set up the opportunity stages displayed in the [Opportunity stages] lookup.

To set up the display of opportunity stages:

1. Open the system designer by clicking the button.
2. Go to the [Opportunity stages] lookup.
3. For the opportunity stage to be displayed in the sales pipeline, select the [Y] checkbox in the [Display in pipeline] column. To exclude a stage from the sales pipeline, leave this checkbox unselected.
4. Save the changes.

How to read the sales pipeline

By default, the [Sales pipeline] displays the analytical information on the sales distribution by stages for the current user for the current month.

The diagram element's height corresponds to the number of opportunities with an up-to-date status. Opportunities with "Closed lost", "Closed won", "Closed rejected" and "Closed rerouted" statuses are not taken into account.

Select the pipeline slice you need to analyze:

- The number of opportunities displays how opportunities that started during the specified time period are grouped by stages by the end of that period. For example, the "Qualifications" displays the number of opportunities, which have the "Qualification" stage specified on the [Stages] detail, and this opportunity falls within the selected time period.
- Stage conversion rate displays the percentage of opportunities that moved from one stage to another stage during the specified time period. The diagram displays all opportunities that have records for the selected period on their [Stages] detail. The value of the conversion rate is calculated as the ratio of the current stage to the previous one. For example, on the "Qualification" stage, the number of sales in the pipeline is 10. The stage conversion is 100% The number of sales on the "Presentation" stage is 4. The stage conversion rate is calculated as the ratio of the "Presentation" stage to the "Qualification" stage multiplied by 100. In our example, the "Presentation" stage conversion rate is 40%.

  NOTE
  If the number of sales is 0 at the upper pipeline stage, then the conversion rate of the next stage will be 100%. If the number of sales is 0 at the "Qualification" stage, then the conversion rate of the "Presentation" stage will be 100%.

- To the first stage — the diagram shows the percentage of leads that moved to the "Qualification" stage. The sales percentage on the "Qualification" stage is always at 100%. For example, on the "Qualification" stage, the number of sales in the pipeline is 10. At the "Presentation" stage the number of sales is 5. The stage conversion rate of the "Presentation" stage is calculated as the ratio of the "Presentation" stage to the "Qualification" stage multiplied by 100. In our example, the "Presentation" stage conversion rate is 50%.

NOTE

If the "Qualification" stage contains no data, the sales percentage on all stages is 0.

How to compare pipelines

The [Pipelines comparison] tab displays two dashboard components: "Sales rep pipeline" and "Company pipeline". The "Sales rep pipeline" involves filters settings, whereas the "Company pipeline" does not.

SEE ALSO

- Dashboards
- Opportunities FAQ
-

The [Opportunitystages] lookup

he list of possible stages ofopportunityfor example, "Needs analysis", "Negotiations". The lookup is used on the opportunity page.

Name	Name of the opportunity stage.
Number	The number is used to define the sequence of stages in the sales pipeline.
Description	In the description of the stage, you can specify when the opportunity must be transferred to the next stage.
Maximum probability	The maximum available value, in percent, that can be specified in the [Probability] field of the opportunity edit page to indicate the possibility of successful opportunity closure on the given stage.
Period for planning the next step, days	The maximum interval between activities scheduled for an opportunity on the given stage.
Final	Select this checkbox if the given stage is the last stage of the opportunity.
Successful	Select this checkbox for the final stages of the won opportunities. The field is non-editable if the [Final] checkbox is not selected.
Show in funnel	Select the checkbox to enable corresponding stage in the "Sales Pipeline" dashboard.
Show in progress bar	Select the checkbox to enable corresponding stage on the workflow bar of the opportunity page.

SEE ALSO

- Opportunity page
- Opportunities FAQ

Opportunities FAQ

- Can you work with opportunities not by a process?

- How to change the standard sales process?
- How to change basic tasks that are created to custom tasks?
- How to change the opportunity mini page fields?
- Under what conditions is the [DM] field filled in on the opportunity page?
- What does the "Use the corporate sales process 7.8" in the "System settings" block of the system designer mean?
- How to set up different processes for different opportunity types?
- Why is the amount calculated incorrectly after changing currency?

Can you work with opportunities not by a process?

If your bank's approach to sales management is different from the one in Creatio, you can work with the [Opportunities] section without using the pre-defined sales process.

In this case, do not start the corporate sales process and just change the stage on the opportunity page manually. Fill in the required fields, enter information in the tabs and details.

For the process to not run automatically when transferring a lead to the [Awaiting sale] stage, disable the "Start sales process" system setting.

Information about what happens in the system, if the sale process was launched, but one or several stages or activities were skipped, is available here.

How to change the standard sales process?

You can delete, change or add process stages, and change the list of activities in accordance with your needs.

To change the process:

1. Open the [Process library] section.
2. Find the default process that you want to change. The corporate sales process consists of several subprocesses with each referring to a particular opportunity stage. When searching for a subprocess, pay attention to the name and the 7.8.0 (Finance) prefix. For example, if you need to change the "Qualification" stage, look for a process called "Opportunity qualification 7.8.0 (Finance)".
3. Create a copy of the basic corporate sales process by clicking the [Copy] button record in the process record.
4. Make the required changes in the copy. You can change the elements, remove elements or add new ones.
5. Save the edited copy and publish.
6. Go to the original version of the corporate sales process and disable it by clicking the [Actions] —> [Disable].

   NOTE

   Detailed descriptions of business process management are available in the Creatio business process documentation.

After performing the settings, the system will use the custom corporate sales process.

How to change basic tasks that are created to custom tasks?

To change the list of basic activities, which are formed during the corporate sales process, you need to replace the basic sales process with a custom copy. For more information about changing a default process, see above.

After you have made the necessary adjustments at each stage of the updated sales process, the system will form the activities that you have added/changed.

How to change the opportunity mini page fields?

The fields that are displayed on the opportunity mini page can be configured with development tools. Detailed information on creating and editing mini pages is available in the Creatio Development Guide.

Under what conditions is the [DM] field filled in on the opportunity page?

The [DM] field in the "BANT" profile of the opportunity page contains the name of the contact who is the decision maker for the opportunity. The field is filled in automatically. To specify the decision maker on the opportunity page, add the contact and in the [Role] field enter "DM" on the [Contacts] details of the [Opportunity data] tab.

> NOTE
>
> The [Decision maker] field pulls the data from the opportunity page, not from the page of the contact that also contains the [Role] field. This field denotes the decision maker for the whole company. At the same time a different person may make decisions about the sale.

What does the “Use the corporate sales process 7.8” in the “System settings” block of the system designer mean?

This option is not available in the basic system configuration. It can be displayed, if your bank uses the corporate sales process of earlier Creatio versions. Detailed information about the corporate sales process is available in a separate article.

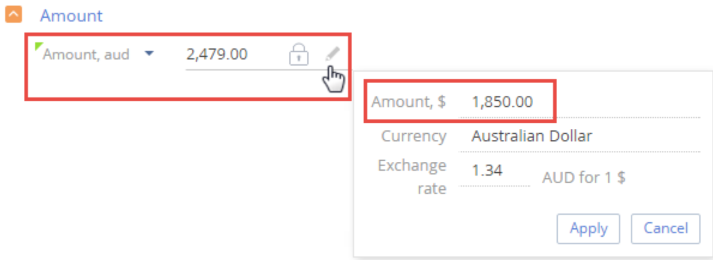
How to set up different processes for different opportunity types?

This functionality can be implemented exclusively in the project revision process. Users cannot perform this setup.

Why is the amount calculated incorrectly after changing currency?

When you change the currency of the [Amount] multi-currency field, the value in the field and in the multi-currency edit pop-up are different (Fig. 10).

Fig. 10 Different values in a multi-currency field and the corresponding multi-currency edit pop-up



After changing currency in a filled-in multi-currency field, the specified amount will be automatically converted to the new value according to currency exchange rates. At the same time, the [Amount] field on the multi-currency edit pop-up displays the amount in base currency. This is a non-editable field. Working with currencies is covered in a separate article.

SEE ALSO

- Workflow bar
- How to work with the corporate sales process
- How to work with a sales pipeline

The [Contracts] section

The Contracts section of Creatio is designed for storing information about the contracts for bank services.

Views

The section has two views:

- – list of contracts. Displays contracts as a list of records. All the list columns are described later in this chapter. Read more >>>
- – contract dashboards. Displays charts, metrics and gauges for analyzing contract statistics. Read more >>>

CONTENTS

Contract page

A contract page contains a set of fields with general contract data and several tabs.

General contract data

General information about a contract.

Number	Contract number. Creatio generates the number automatically. Use the "Contract number mask" system setting to customize auto numbering of contracts.
Type	Contract type. The [Contract types] lookup contains the following types: “Contract”, “Addendum”.
Status	The current status of the contract. The [Contract statuses] lookup contains the following statuses: “Signed”, “Draft”, “To be signed”, "Canceled”.
Product	Product of the contract.

Owner	The name of a manager who is responsible for signing the contract.
Signed on	The date when the contract was signed.
Start Date	The start date of the contract validity.
End date	The contract expiry date.

The [General information] tab

This tab contains information about the contract, its customer, as well as links to other contracts.

Legal entity	A legal entity of the contract.
Legal entity banking details	Legal entity payment details. You can select data from the [Banking details] detail of the [Legal entity info] tab on legal entity page.
Contact person	Contact person of the legal entity. You can select data from the [Contacts] detail of the [Contacts and structure] tab on legal entity page.
Branch/Office	A branch of the bank the legal entity is assigned to.
Our banking details	Payment details of the bank. You can select data from the [Banking details] detail of the [Legal entity info] tab on your bank page.

Connected to

This field group contains other Creatio objects connected to the contract.

Opportunity	An opportunity connected to the contract. The connection is based on the [Contracts] detail of the opportunity page.
Parent contract	The current contract is subordinate to this contract. The field is editable only for contracts of the "Addendum" type and is populated automatically for contracts added to the [Subordinate contracts] detail.

Subordinate contracts

The detail contains connections to other contracts for which the current contract is a parent contract. Only contract records with the "Addendum" type are available on the [Subordinate contracts] detail.

To add a new subordinate contract, click the + button. The [Parent contract] field on the subordinate contract page will be populated automatically.

To connect an existing subordinate contract to the current contract, click the ⋮ button and select the "Connect to existing" option from the menu.

The [Parameters] tab

The [Parameters] tab contains contract-specific conditions, for example, currency, amount and payment terms specified in the contract.

The [History] tab

The tab contains Creatio records connected to the activity.

Activities

Activities connected to the contract. Displays information from the [Activities] section. Activities are linked to contracts via the [Contract] field of the activity page.

Email

This detail displays emails connected to the contract. Emails are linked to contracts manually or automatically according to the [Rules for connecting emails to system sections] lookup.

Documents

Documents connected to the contract. This detail displays information from the [Documents] section. Documents are linked to contracts via the [Contract] field of the document page.

Invoices

Invoices connected to the contract. This detail displays information from the [Invoices] section. Invoices are linked to contracts via the [Contract] field of the invoice page.

Cards

Cards connected to a contract. Displays information from the [Cards] section. The connection of a card to a contract is based on the [Contract] field of the card page.

The [Approvals] tab

This tab contains information about all created and processed approvals. Working with the [Approvals] detail is described in a separate article. Read more >>>

The [Attachments and notes] tab

This tab contains additional information on the contract as well as related files and Internet links. Read more >>>

The [Feed] tab

This tab displays feed messages connected to the contract. You can post comments in the contract feed or view other Creatio users' comments.

> **NOTE**
> Working with the feed is described in a separate article. Read more >>>

SEE ALSO

- The [Products] section
- The [Activities] section
- The [Cards] section
- Communication panel
- The [Feed] section

Document approval process

If you need to approve a contract, for example, agree upon its terms with other employees, use Creatio approvals. As part of the standard approval procedure, an "approver" employee sets the approval result (approved or rejected). Approving contracts is identical to approving orders and invoices. Working with approvals is covered in a separate article. Read more >>>

SEE ALSO

- Approval procedure
- The [Approvals] tab

Actions in the [Contracts] section

The [Contracts] section contains standard actions, as well as the [Send for approval] action.

Send for approval

The [Send for approval] action initiates the approval process. When you run this action, additional dialog opens, where you can select the approver, approval objective and specify whether delegation is permitted or not. The action is available on the contract page.

The approval procedure is identical for the [Contracts], [Invoices] and [Orders] sections and is described in a separate article. Read more >>>

SEE ALSO

- Approving procedure

Dashboards in the [Contracts] section

The Dashboards view contains consolidated analytics (diagrams, metrics, rating lists and reports) based on the section data.

NOTE

More information about working with dashboards and dashboard setup is available in a separate article. Read more >>>

The [Contract analytics] tab

The [Contract analytics] tab displays consolidated information about contracts.

NOTE

Filters set in the section will be applied to all dashboard tiles.

Contracts to be prolonged next week	The list of contracts with the [Signed] status whose End date falls within the next week.
Upcoming contracts to be signed	The list of contracts to come into effect. This dashboard tile displays the contracts with the "Signed" status and the start date corresponding to the current or the following day. The tile data are sorted in chronological order.

Number of contracts to be prolonged	The diagram displays the number of contracts whose status is "Signed" and whose End date falls within the current or next month. The contracts are grouped by the end date. The tile data are sorted in chronological order.
New vs signed contracts by month	The diagram displays contract amount monthly dynamics. The contracts are grouped by the start date. The tile data are sorted in chronological order.

SEE ALSO

- Dashboards

The [Documents] section

In Creatio , the Documents section is designed to manage documentation. You can use this section to register regulations, minutes of meetings and correspondence. In Creatio, you can also store external document files, for example, files received from customers.

Views

The section has several views:

- – documents list. It displays documents as list of records. All list columns are described below in the context of the document page.
- – document analytics. It displays charts, indicators and ratings that can be used for analyzing documents.

Filters

The following quick filters are available in the section:

- By date (the [Date] field of the document page);
- By owner (the [Owner] field of the document page).

NEXT

- Document page
    - The [General information] tab
    - The [History] tab
    - The [Attachments and notes] tab
    - The [Feed] tab

Document page

The document page consists of the field group that contains general data, and several tabs.

Common data

General information about the document.

Number	The number of the document. Creatio automatically generates numbers in accordance with a specified pattern. Use the “Document number mask” system setting to customize automatic numbering of documents.
Type	Type of the document, for example, “Disclosure statement”.
Status	The current status of the document, for example, “Active” or “Inactive”.
Date	Document registration date.
Owner	Creatio user responsible for working with the document. The contacts who have at least one user created in Creatio are displayed in this field.

The [General information] tab

This tab contains information about connected records from other sections.

Specify the legal entity and contact connected to the document.

Connected to

The field group is used to connect a document to records from other sections. If you fill in the [Documents] detail of a record, the record will be connected to the specified document.

The [History] tab

The [History] tab contains system records connected to the document.

Activities

Tasks that are connected to the document. This detail displays information from the [Activities] section.

Related documents

A list of documents connected to the selected document.

The [Actions] button menu contains the following options:

- [Associate with existing] – connects previously added documents to the selected document.
- [Delete connection with selected] – deletes connection with a document without deleting the document from the system.

The [Attachments and notes] tab

Additional information about the current document, as well as attachments and links to the web resources related to it. Read more >>>

Attachments

Use this detail to store files and links related to the document. For example, here you can attach a file or a scan copy of the document received from a customer.

Notes

The detail is used to store additional text information about the document. You can edit and organize your notes on the detail. If you switch to another tab of the document page, the information on the [Notes] detail will be saved.

The [Feed] tab

Feed messages connected with the current document.

The [Cards] section

The Cards section is designed to store information about bank cards. On the card page, you can view the type of the card, its payment system, current status, expiration date, linked accounts and other important information.

Views

The section has several views:

- – displays cards as a list of records. All list columns are described in the card page.
- – displays charts, indicators and ratings with analytical data. Read more >>>

CONTENTS

Card page

The card page consists of several tabs with fields that contain general data.

Common data

Card number	Card number.
Contract	Contract under which the card has been issued.
Owner	Contact or legal entity who is the owner of the card account. This field is non-editable and filled in automatically with the contact or legal entity specified in the contract.
Product	Product for which the card has been issued. This field is non-editable and filled in automatically with the product specified in the contract.

The [General information] tab

The tab contains primary information about a card: its type, expiration date, linked accounts and other important information.

Type	Card type, “Credit” or “Debit”.
Payment system	Payment system type, for example, “Visa” or “MasterCard”.

Card category	Card category, for example, “VisaElectron” or “MasterCardGold”. The [Card category] and [Payment system] fields are connected. If the [Card category] field is filled in, the [Payment system] field is filled in automatically. If the [Payment system] field is filled in, the [Card category] field displays only the categories that correspond to the selected payment system type. You can associate a card category with a payment system in the [Card categories] lookup.
Cardholder	The contact who uses the card.
Branch	Branch that the card is serviced by. You can select legal entities of the “Our bank” type.
Office	Office that the card is serviced by. You can select legal entities of the “Our bank” type.
Primary	If a client has a number of cards for the same card account, select this checkbox for the primary card.
Multicurrency	If a client has a number of cards for the same card account, select this checkbox for the primary card.

Status

The detail contains information about the card status, start and end date.

Opened on	Date the card was issued on.
Valid until	Card expiration date.
Status	Current card status, for example, “Active” or “Blocked”.

Invoices

The detail contains the list of accounts linked to the current card. It displays information from the Accounts section. To connect an account to a card, fill in the [Cards] detail of the account page.

The [Attachments and notes] tab

This tab contains detailed information about the card, as well as attachments and links to the web resources related to the card. Read more >>>

Attachments

Use this detail to store files and links related to the card. For example, you can attach documents that display the history of interaction with the cardholder.

Notes

The [Notes] detail is used to store additional text information about the card. You can edit and organize your notes on the detail. If you switch to another tab of the card page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays the messages from the [Feed] section that are connected to the current card.

Analytics in the [Cards] section

The [Dashboards] view displays the section summary information:

> NOTE
>
> More information about working with dashboards and dashboard setup can is available in the corresponding articles.

SEE ALSO

- Dashboards

The [Financial accounts] section

The Financial accounts section is used to store information about the bank accounts of your customers. Here, you can store any important data about a bank account, such as its number, customer's name, current status of the account, etc.

Views

The section has several views:

- – displays bank accounts as a list. Information about the list columns and their purpose can be found in the description of the bank account page.
- – displays charts, numeric indicators and lists used to analyze financial accounts. Read more >>>

CONTENTS

SEE ALSO

- The [Cards] section

Financial account page

The financial account page contains a set of fields used for displaying general data and page tabs.

Common data

General information about the financial account.

Number	Unique financial account number.
Contract	Contract for which the financial account was opened.
Legal entity	for which the financial account is recognized.
Product	Name of the banking product that is connected to the financial account. The field is non-editable and is populated automatically with the product specified in the contract.

The [General information] tab

The tab contains the basic attributes of the account.

Type	Account type, for example, “Deposit”, “Card”, “Credit”.

Currency	Currency of the account.
Balance	Actual financial account balance.
Branch	Name of the branch or office in which a financial account is opened. Fields lookups contain the lists of legal entities of “Our bank” type.
Office	

Status

The detail contains information about the current status of the financial account.

Opened on	Dates on which the current financial account was opened and activated.
Activated on	
Status	Status of the current financial account, for example, “Active”, “Blocked”, “Closed”.

Cards

A list of cards that are registered under the current financial account, which displays information from the [Cards] section. To connect a card to an account, populate the [Accounts] detail of the card page.

The [Attachments and notes] tab

Detailed information about the financial account including attachments and links to web resources. Read more >>>

Attachments

Use this detail to store files and links.

Notes

The detail is used to store additional text information. You can edit and organize notes on the detail. If you switch to another tab of the financial account page, the information on the [Notes] detail will be saved.

The [Feed] tab

Feed messages related to the current financial account.

Dashboards in the [Financial accounts] section

The [Dashboards] view displays the section summary information:

> NOTE
>
> More information about working with dashboards and dashboard setup is available in the corresponding articles.

SEE ALSO

- Dashboards

The [Financial indicators] section

This section contains information about financial indicators of your customers, for example, revenue for a certain time period, net income, account receivables etc.

Views

The section has several views:

- – displays financial indicators as a list of records. All list columns are described below in the context of the financial indicator page.
- – displays charts, indicators and ratings. More information about working with dashboards and dashboard setup can be found in the corresponding articles.

Folders

Use section folders to easily select the time period for financial indicators.

CONTENTS

Financial indicator page

Complete financial indicator data is displayed on the [General information] tab.

Indicator type	Type of the financial indicator, for example, "Revenue" or "Number of open accounts". To add an indicator to the lookup, click the button and in the displayed window, click the [Add] button.
Value	Numeric value of the financial indicator, for example, the amount of funds.
Currency	Currency that the amount of funds is specified in, for example, "US Dollar".
Value type	Value type of the financial indicator, for example, "Actual" or "Planned".
Time period	Time period of the financial indicator. Select the value from the time period lookup. The field is filled in automatically if the period limited by the values in the [Start date] and [End date] fields corresponds to a period specified in the lookup. If the lookup does not contain the needed time period, you can add it manually. To add an indicator to the lookup, click the button and in the displayed window, click the [Add] button. You can also add a time period when saving the financial indicator page if the period limited by the values in the [Start date] and [End date] fields does not correspond to a period specified in the lookup. The system will ask you to confirm adding the time period.

Start date	The dates of start and end of the time period. The fields are filled in automatically when the value is selected in the [Time period] field. Once the [Time period] field is filled in, the fields become non-editable.
End date	
Time period type	Type of the time period, for example, “Half-year“, “Quarter“, “Custom period“. The field is filled in automatically according to the period specified in the [Start date] and [End date] fields. The field is non-editable if the [Time period] field is filled in.

Connected to

Legal entity	Customer that the financial indicator is specified for.
Legal entity segment	Group of customers that the financial indicator is specified for. Select from the folders that are set up in the [Legal entities] section.
Account	Customer's bank account.

SEE ALSO

- The [Cards] section
- The [Financial accounts] section

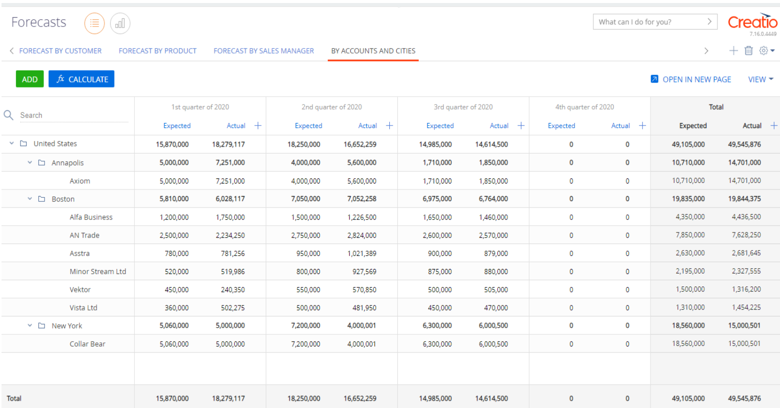
The [Forecasts] section

Use the [Forecasts] section to plan the financial, quantitative, or temporal metrics, as well as analyze the actual KPIs, determine the bottlenecks, and increase the efficiency.

Forecasts in Creatio

The forecasting functionality enables out-of-the-box planning sales volumes by managers, accounts, or industries. You can also create custom forecasts for any type of data, set up custom forecasting indicators and periods. All forecasts are available in the [Forecasts] section (Fig. 1 /).

Fig. 1 /The [Forecasts] section



	1st quarter of 2020		2nd quarter of 2020		3rd quarter of 2020		4th quarter of 2020		Total	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
United States	15,870,000	18,279,117	18,250,000	16,652,259	14,985,000	14,614,500	0	0	49,105,000	49,545,876
Annapolis	5,000,000	7,251,000	4,000,000	5,600,000	1,710,000	1,850,000	0	0	10,710,000	14,701,000
Axiom	5,000,000	7,251,000	4,000,000	5,600,000	1,710,000	1,850,000	0	0	10,710,000	14,701,000
Boston	5,810,000	6,028,117	7,050,000	7,052,258	6,975,000	6,764,000	0	0	19,835,000	19,844,375
Alfa Business	1,200,000	1,750,000	1,500,000	1,226,500	1,650,000	1,460,000	0	0	4,350,000	4,436,500
AN Trade	2,500,000	2,234,250	2,750,000	2,824,000	2,600,000	2,570,000	0	0	7,850,000	7,628,250
Asstra	780,000	781,256	950,000	1,021,389	900,000	879,000	0	0	2,630,000	2,681,645
Minor Stream Ltd	520,000	519,986	800,000	927,569	875,000	880,000	0	0	2,195,000	2,327,555
Vektor	450,000	240,350	550,000	570,850	500,000	505,000	0	0	1,500,000	1,316,200
Vista Ltd	360,000	502,275	500,000	481,950	450,000	470,000	0	0	1,310,000	1,454,225
New York	5,060,000	5,000,000	7,200,000	4,000,001	6,300,000	6,000,500	0	0	18,560,000	15,000,501
Collar Bear	5,060,000	5,000,000	7,200,000	4,000,001	6,300,000	6,000,500	0	0	18,560,000	15,000,501
Total	15,870,000	18,279,117	18,250,000	16,652,259	14,985,000	14,614,500	0	0	49,105,000	49,545,876

The forecasting functionality enables:

- creating multiple forecasts
- configuring forecasts based on different Creatio data
- configuring forecasts by custom sections
- configuring the forecast periods
- grouping data by different parameters
- configuring custom rules for calculating metrics
- setting up access permissions to each forecast separately.

The section has two views:

- Forecasts. Displays all the configured forecasts.
- Forecast dashboards. Displays charts, metrics, ratings, and other analytics based on the forecast data.

Each of the forecasts in the section displays as a separate tab, where you can configure the following properties:

- Forecast entity – the object whose data is forecasted. For example, you can configure the forecast by responsible managers, sales types, legal entities, customer needs (leads), or products. You can also specify a custom section as the forecast entity. Read more >>>
- Data grouping. You can group the forecast entities if they are too many to show as a plain list. For example, in a sales forecast, you group the customer legal entities by their location: countries, regions, and cities. A forecast can have up to 10 grouping criteria, organized as a hierarchy of groups (e.g., country->region->city). You won't be able to change data grouping after you save the forecast.
- Forecast periods. Three forecast periods are available out-of-the-box: "Month," "Quarter," and "Year." You can add a custom period, e.g., day, week, six months, etc. Read more >>>
- Expected and actual data. You can populate the forecasted and actual data in several ways: enter the data manually, calculate it using a formula or pull the data from Creatio.
- Access permissions. You can restrict the access permissions to a forecast for specific roles and users.

For example, you can create a quarterly sales forecast by sales managers and group them by departments. To do this:

- Specify "Contacts" as the forecast entity and select grouping by the "Department" field of the "Contacts" object.
- In the Period type field, specify "Quarter."
- In the columns with actual data, display the total amounts of the won opportunities, where the managers were the owners.

Similarly, you can set up forecasts by leads, contracts, and other entities for your employees.

Forecast entity setup

You can only specify the entity (an "object") while creating a new forecast and cannot change the object of an existing forecast. We recommend that you select objects that are rarely modified. This type of object better suits for the long-term analysis of data. Examples of good forecast entities include responsible managers (contacts), customers and partners, their need types (product or service categories of your bank), opportunity types, products. Use objects like leads, activities, opportunities, invoices, and orders for calculating the expected metrics, and not as the forecast entities.

> **NOTE**
> When you add a forecast by an entity that has not been used in forecasts before, Creatio will add a new database table in the background. This table will store all the forecasts configured for this entity.

Learn more about setting up forecasts in the "Set up a forecast" article.

Forecast period setup

Three forecast period types are available out-of-the-box: "Month," "Quarter," and "Year." You can create custom periods as well. Use the [Periods] and [Period types] lookups to manage forecast periods.

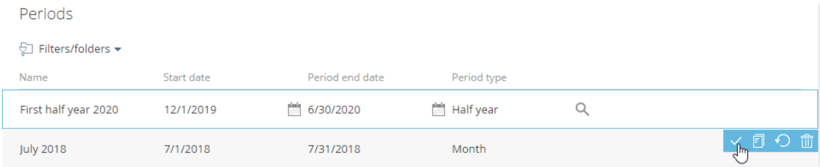
> **NOTE**
> The [Periods] and [Period types] lookups are not registered in Creatio by default. You need to register these lookups before they become available in the [Lookups] section. Read more about working with lookups in the "Creating and registering lookups."

To set up a new period:

1. Click ⚙ to open the System Designer.

2. Open the [Lookups] section and find the [Period types] lookup.
3. Click [New].
4. Enter the name of a new period type, e.g., “Half-year”.
5. Click and save the changes.
6. Open the [Lookups] section again and find the [Periods] lookup.
7. Click [View] -> [Set up fields to display] and add the “Period type” column to the section list. Save the changes.
8. In the lookup list, click [New] and populate the name, period type, the start and end dates for the new period (Fig. 2 /).

Fig. 2 /Setting up a new period



9. Add the missing periods up to the end of the current year. For example, with a period that is six months long, you will only need two periods.

As a result, new periods become available for your forecasts.

Forecast metric calculation setup

The forecast metrics are calculated in the forecast columns. The following forecast column types are used:

- Editable – you enter the value manually.
- Value from object – Creatio pulls the necessary data from the database.
- Formula – you specify a formula for calculating the value based on the data available in Creatio.

For new forecasts, a single [Expected] column is available by default for each period. You can edit this value. You can change the column settings or delete the column completely.

To add a column to the forecast, select the period and click + . A setup window will open. In this window, specify the column title and select its type. If you specify the “Value from object” or “Formula” type for your column, you will have to populate parameters that appear in the setup window.

To change the column settings, hover your cursor over the column title and click on the left.

To hide a column, hover your cursor over the column title and click –> select the [Hide column] checkbox. This checkbox is only available for columns with the “Value from object” and “Formula” types.

To delete a column, hover your cursor over the column title and click –> [Delete].

SEE ALSO

- Set up a forecast

Set up a forecast

Setting up a forecast includes the following general steps:

1. Creating a forecast. At this step, you select the forecast entity and period, as well as group the data. Read more >>>
2. Setting up columns. Read more >>>
3. Adding data for calculation. Read more >>>
4. Setting up permissions. Read more >>>

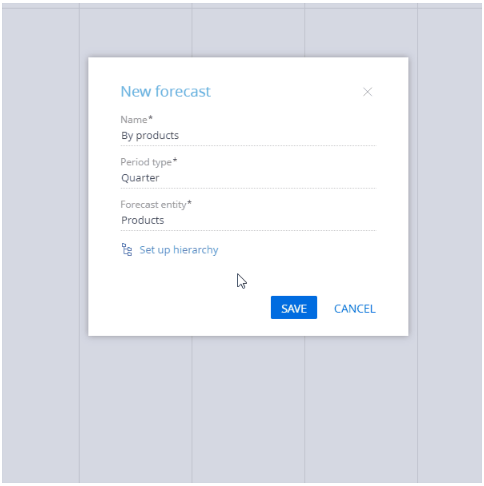
Let's have a look at how to set up a forecast for product sales. Forecast parameters are as follows:

- Forecast entity: Product.
- Grouping of data: by category, type, and brand.
- Forecast period: Quarter.
- The calculation must be based on paid invoices.
- Sales managers and their owners should have access to the forecast.

Create a forecast

1. In the [Sales] workplace, open the [Forecasts] section.
2. In the top left corner of the workspace, click +.
3. In the opened window:
    a. Enter the name of the new forecast. In our case, it is "By products."
    b. Select the period. In our case, it is "Quarter."
    c. Specify the forecast entity. In our case, it is "Products."
    d. Set up the hierarchy – specify the fields, whose values will be used to group the data in the forecast. In our example, these are "Category," "Type," and "Brand" (Fig. 3 ⁄).

Fig. 3 /Setting up the forecast hierarchy



4. Save the new forecast.

NOTE
The parameters that you set at the stage of creating your forecast will not be available for editing once you save the new forecast.

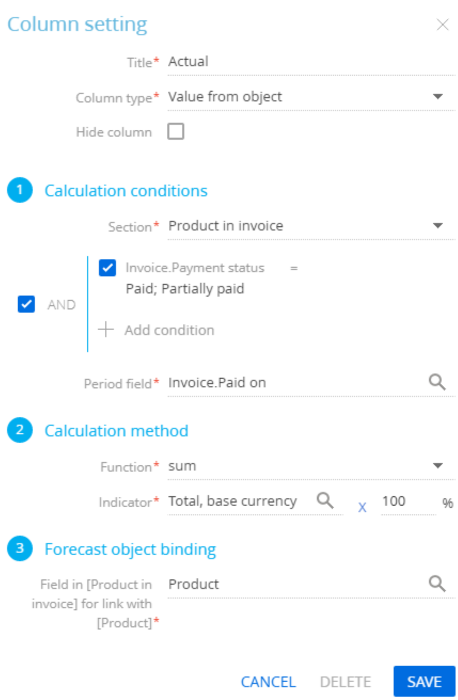
Setting up the forecast columns

Add two columns to each period: [Actual] and [Actual, %].

To set up the [Actual] column:

1. Click + to the right of the [Expected] column.
2. In the opened window, specify the name of the new column ("Actual") and its type ("Value from object"). The window will display a list of column parameters.
3. Populate the column parameters.
   - [Section] – Creatio object that has the needed data. In our case, it is "Product in invoice." Apply filters that would consider only the paid or partially paid invoices within the specified time when calculating the actual forecast data.
   - [Function] – method of calculation. The function can be "sum," "count," or "average." For this case, select "sum."
   - [Indicator] – the value that is the base for calculation. In our case, it is "Total, base currency."
   - [Forecast object binding] – a field that connects the data object ("Product in invoice") and the forecast entity ("Product"). In our case, this is the "Product" field.
4. Click [Save].

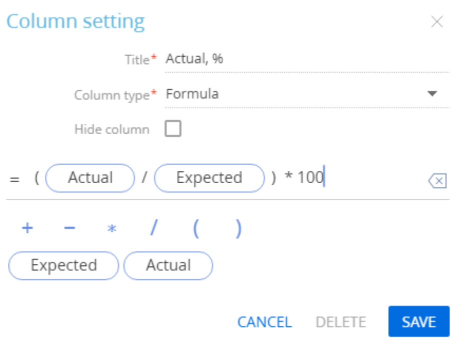
Fig. 4 /Example of setting up a column of the "Value from object" type



To set up the [Actual, %] column:

1. Click + to the right of the [Actual] column.
2. In the opened window, specify the name of the new column ("Actual, %") and its type ("Formula"). The window will display a field for entering the formula, available columns, and mathematical operations.
3. Set up the formula that will calculate the column value (Fig. 5 /).
4. Click [Save].

Fig. 5 /Example of setting up a column of the “Formula” type



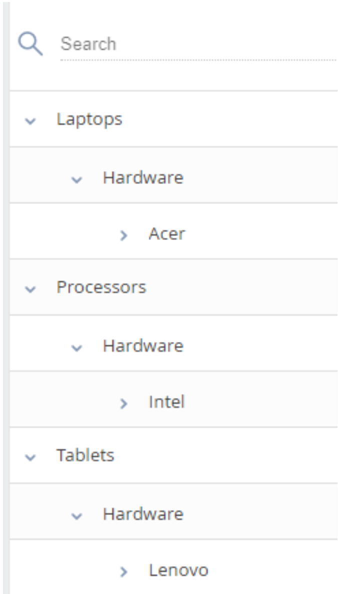
Adding data for calculation

To add forecast data:

1. On the forecast tab, click [Add].
2. In the opened window, select the needed records of the forecast entity. In our case, you will be selecting from the list of products.
3. Click [Select].

As a result, the list of selected records will appear on the left panel of the forecast. The records in the list will be grouped as per the pre-configured hierarchy (Fig. 6 /).

Fig. 6 /Example of configuring a list of forecast records



Managing access to forecasts

You can set up permissions for forecasts and separate records within them.

Setting up permissions for a forecast

To enable only sales managers and their superiors to access the configured forecast, assign the access permissions for the forecast tab. To set up access permissions:

1. Open the forecast tab.
2. Click –> [Set up access rights].
3. On the opened page, set access permissions to the created forecast.
   a. Click [New] and select the “Read access right” option in the menu. In the opened window, select the “Sales managers” role.
   b. Similarly, set the read, edit, and delete permissions for the superiors of the sales managers.
4. Save the changes. As a result, the forecast will be available only for sales department employees.

Setting up permissions for a forecast record

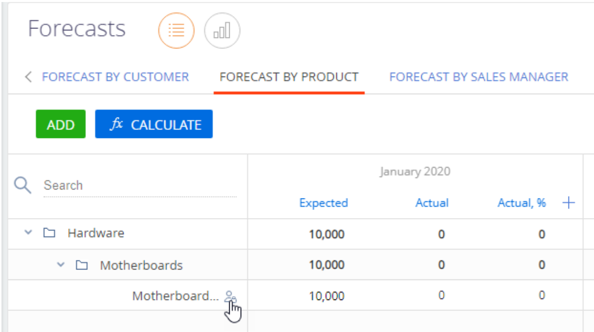
You can manage permissions to separate records in a forecast. For example, you can restrict specific employees from viewing or modifying forecasts for specific products or customers, giving exclusive access to specific types of employees, e.g., executives. To do this:

1. Go to the [Forecasts] section and open the needed forecast tab.

2. Select the record, whose permissions you need to set up.

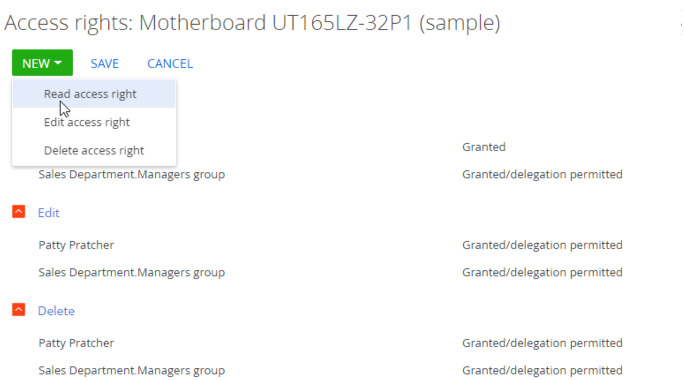
3. Hover your cursor over the record and click (Fig. 7 /).

Fig. 7 / Example of selecting a record to configure access permissions



4. On the page that opens, click [New] and select “Read access right”, “Edit access right”, or “Delete access right” in the drop-down menu (Fig. 8 /). Read more about the types of permissions in the “Managing object operation permissions” article.

Fig. 8 / Example of setting up record access permissions



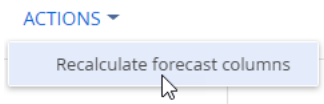
5. In the opened window, select a user or a role, e.g., “Sales Department Managers group” role.

6. Click [Save]. As a result, only the the employees of the selected role (e.g., Sales Department Managers) will be able to view, edit, or delete the forecast record.

Calculating the forecast metrics

In the [Forecasts] section, the calculation of the actual metrics is triggered by the [Recalculate forecast columns] action (Fig. 9 /).

Fig. 9 /Running the recalculation of forecast metrics



Click [Actions] -> [Recalculate forecast columns] to update the numbers of the currently open forecast. After the calculation is finished, you will receive a notification on the communication panel. As a result, the calculated forecast metrics – in our case these are the [Actual] and [Actual, %] columns – will be populated with values derived from the system and calculated using the specified formula.

SEE ALSO

- The [Products] section
- The [Opportunities] section

The [Knowledge base] section

The Knowledge base section represents an electronic library of documents that are used by employees need every day. For example, here you can store the answers to frequently asked questions, rules and regulations, document templates and advertising materials. You can use this section to quickly find, discuss and evaluate articles.

ATTENTION!
While adding new knowledge base articles within the main Creatio application, the portal users are automatically granted the right to read these articles. If necessary, you can change permissions.

Views

The section has several views:

- – displays knowledge base articles as a list of records. All list columns are described below in the context of the knowledge base article page.
- – displays charts, indicators and ratings that can be used to analyze the knowledge base articles.Read more >>>

CONTENTS

Knowledge base article page

The knowledge base article page consists of the field group containing general data, and several tabs.

General data

General information about the article.

Title	Knowledge base article title.
Type	Knowledge base article type, for example, “Rules and regulations” or “FAQ”.
Modified by	User who last edited the article. This is a non-editable field.
Modified on	Date and time of the last modification of the knowledge base article. This is a non-editable field.

The [General information] tab

The [General information] tab contains text input area and additional areas for the article tags and comments.

Resolution	Page area where you can enter and format the article text. The name of this area is not displayed on the page.

Comments area

The bottom part of the tab contains the comments area. Functionality of this field is identical to that in the [Feed] section of the system. Knowledge base article comments are displayed in the [Feed] section and on the communication panel.

The [Attachments] tab

Use this detail to store files and links related to the knowledge base article. For example, on this detail you can add accompanying documents or useful links related to the article. Read more >>>

SEE ALSO

- The [Feed] section

Analytics in the [Knowledge base] section

The Analytics view contains: diagrams, metrics, rating lists and reports.

NOTE

More information about working with dashboards and dashboard setup can be found in the corresponding articles.

SEE ALSO

- Analytics

The [Landing pages and web forms] section

Landing page – a page on your website used for gathering information from website visitors and creatig records in Creatio based on the gathered information. Creatio can connect to your landing pages and use the information to generate the potential customers database and nurture the leads before handing them off to sales.

ATTENTION

Creatio supports integration with CMS that enable to add custom HTML and JavaScript code. You will need an additional connector to integrate with other CMS (for example, WordPress). More information can be found at the Creatio Community and Marketplace websites.

With the help of landing pages, you can set up registration of any system object that participate in leading a customer to sale in Creatio. Based on the data retrieved from the submitted web forms, Creatio can create leads, contacts, event participants and other system records. For example, you can use your website page containing special subscription offers, shopping cart page, user registration page or multimedia download page as your landing page.

NOTE

This article contains the most typical example of using landing pages and web forms to gather leads.

To set up landing page integration in Creatio:

1. Create landing pages on your website. Follow the general rules and recommendations while designing your landing pages.
2. Connect your landing page to Creatio and set up the field mapping between the lead page and landing form.To set up the connection of the landing page to Creatio, copy the unique code generated in Creatio for your landing page and paste it into your website page code. The field mapping will be done through the HTML code you embedded in your landing page.As a result, each lead generated from the landing page of your website will automatically be saved in the Leads section for further nurturing in Creatio.
3. Set up the landing forms processing. The form filled out by your customers will only provide the information that will be used in Creatio. Depending on the purpose of the landing page, you can set up the autofill feature for some of the lead page fields. For example, the subscription form for credit card special offer can automatically be connected to the “Loans” need.

NOTE

The procedure for landing page setup is similar for all types of landings, regardless of the object where it adds records.

CONTENTS

How to create a landing page on your website

It is important that you create unique landing pages for each of your offers targeted at certain audiences. For example, you can create an email input form for the customers who visit your website for the first time to sign them up for company newsletter; create another form for downloading the materials offered on your website; create the most detailed landing form for the customers who are ready to place an order, buy a service or negotiate in person.

The better you develop your landing page with the customer need maturity in mind, the more potential customers will be willing to start communicating with your brand regardless of the decision-making stage they are at.

To reach the maximum website conversion, follow the general recommendations when creating landing pages.

Page layout

- Create individual unique landing pages for each of your offers.
- Try to convey the message in the header of your landing page as precisely as possible.
- Your landing page design should be user friendly and correspond to the target audience.
- Use concise wordings, do not overload your landing page with text information.

Landing page fields

- Design your data collection form so as to make sure you will get the most relevant information from your customers without asking them to input too much information.
- It is important that you include in your landing page the fields to collect the customer contact information - email or phone. We recommend that you make these fields required.
- Make sure that the customers who fill out your landing page web form have a clear understanding of the fact that they are sharing their contact information and are ready to communicate with your brand. Include a field in your landing page form that the customers will use to confirm that they agree to receive marketing materials (“opt-in”).
- Use data entry validity check for the most important fields of the form to get the valid contact information from the customers.

What else to include in your landing page

- It is critical that you include a call-to-action button, such as “Buy”, “Sign up”, “Watch demo”, “Question” etc.
- Create a page that your customer will be redirected to upon clicking a call-to-action button.

SEE ALSO

- How to connect your website landing page to Creatio
- How to set up autofill for lead page fields not filled in by the customer
- Setting up redirects from landing page forms
- How to set up landing page using Creatio on-site

How to connect your website landing page to Creatio

After publishing landing pages on your website, perform the following steps:

1. Add a new record in the [Landing pages and web forms] section.
2. Modify the generated HTML code.

3. Add the modified HTML code to the code of the landing page on the website.
4. Set up default values for the fields that are not filled in on the landing page.

NOTE
Landing pages should be set up by your website developer.

ATTENTION
Creatio supports integration with CMS that enable to add custom HTML and JavaScript code. You will need an additional connector to integrate with other CMS (for example, WordPress). More information can be found at the Creatio Community and Marketplace websites.

CONTENTS

Adding new records in the [Landing pages and web forms] section

Create a separate record in the [Landing pages and web forms] section for each landing page on your website. To do this:

1. Go to the [Landing pages and web forms] section, click the [New] button and select the type of landing page integration (Fig. 1).

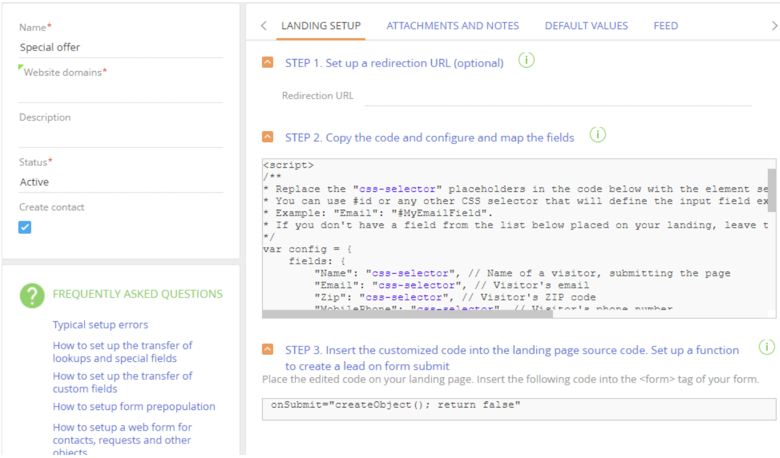
   Fig. 1 Creating a new landing page

2. Populate the fields on the opened page:
   a. [Name] – landing page name in Creatio ;
   b. [Website domains] – your landing page URL;

   NOTE
   In the [Website domains] field, specify all domains used to host the landing page. The domains must be separated with commas.

   c. [Description] – additional information about the landing page
   d. [Create contact] – select this checkbox to enable the automatic creation of both a lead and a contact when a form on the landing page is completed
   e. [Redirection URL] – the URL that is opened after the landing page form is completed.

Fig. 2 Populating the landing page fields



3. Click the [Save] button.

NOTE

Ensure that unique HTML code in the [STEP 2. Copy the code and configure and map the fields] block contains a link to the redirection page of the one was specified in the [Redirection URL] field, for example: redirectUrl: "https://mysite.com/submit/thank-you-page"

SEE ALSO

- How to edit unique HTML code
- Adding the modified HTML code to the landing page code
- How to create a landing page on your website
- How to set up autofill for lead page fields not filled in by the customer
- Setting up redirects from landing page forms
- Landing page setup FAQ

How to edit unique HTML code

ATTENTION

This article covers the process of editing HTML code for a lead registration form.

To correctly fill out the fields of a lead record added automatically after a registration on a landing page, edit the unique HTML code and add the edited code to the landing page code.

The list of lead page fields that are filled out upon a registration on a landing page is located in the “fields” block of the generated HTML code. Match these fields to the web form fields. Below is an example of the “fields” block in the HTML code.

```
hkgnfu<
$Pcog$<"$euu/ugngevqt$."11"Pcog"qh"c"xkukvqt."uwdokvvkpi"vjg"rcig
$Gockn$<"$euu/ugngevqt$."11"Xkukvqt)u"gockn
$\kr$<"$euu/ugngevqt$."11"Xkukvqt)u"\KR"eqfg
```

```
$OqdkngRjqpg$<"$euu/ugngevqt$."11"Xkukvqt)u"rjqpg"pwodgt
$Eqorcp{$<"$euu/ugngevqt$."11"Pcog"qh"c"eqorcp{"*hqt"dwukpguu"ncpfkpi"
rcigu+
$Kpfwuvt{$<"$euu/ugngevqt$."11"Eqorcp{"kpfwuvt{"*hqt"dwukpguu"ncpfkpi"
rcigu+
$HwnnLqdVkvng$<"$euu/ugngevqt$."11"Xkukvqt)u"lqd"vkvng"*hqt"dwukpguu"
ncpfkpi"rcigu+
$WugGockn$<"$euu/ugngevqt$"11"Nqikecn"xcnwg<")vtwg)"gswcnu"vq"
xkukvqt)u"qrv/kp"vq"tgegkxg"gocknu
```

Which fields can be mapped to a lead record?

You can set up mapping for both standard lead fields and custom fields. Field mapping setup for custom fields, lookups and non-standard fields is covered in separate articles.

Below are values of standard fields from the HTML code and corresponding lead page fields:

- "Name" —> [Full name];
- "Email" —> [Email];
- "Zip" —> [ZIP code];
- "MobilePhone" —> [Mobile phone];
- "Company" —> [Legal entity name];
- "Industry" —> [Industry];
- "FullJobTitle" —> [Job title].
- "UseEmail" —> This checkox indicates whether the customer agreed to receive promotional materials.

The fields that are not used in the landing web form can be deleted from the HTML code.

How to match web form fields to the lead record fields

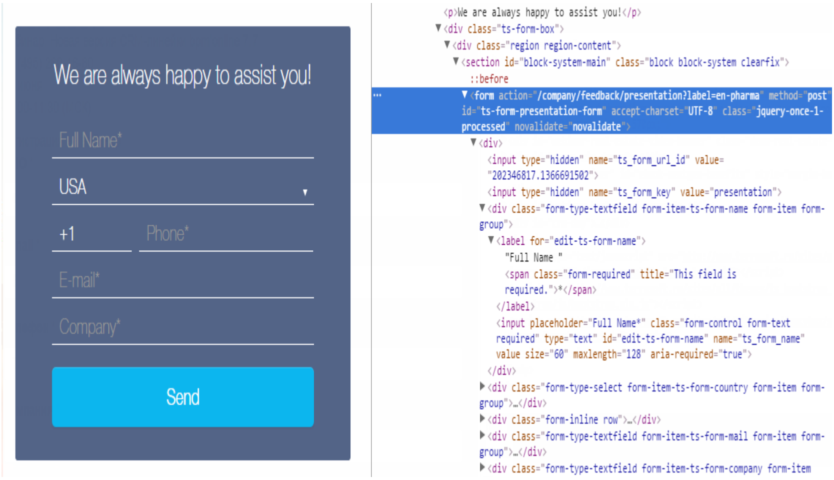
To fill in the lead page, replace the "css-selector" expression with the id or class of the corresponding field of the landing page form.

1. Copy unique HTML code in the [STEP 2. Copy the code and configure and map the fields] into any text editor.
2. Replace the "css-selector" text in the code to the corresponding selector name from the code of the landing page on your website.

   The procedure for viewing source code may be different in different browsers. Below is an example of filling out the [Full name] field in Chrome.

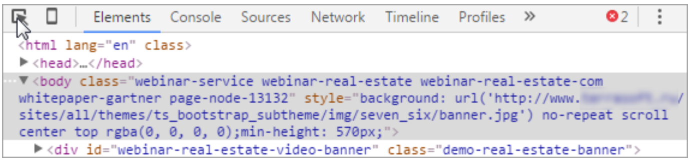
   a. Go to the landing page and open the source code (Fig. 3).

Fig. 3 Example of a landing page source code



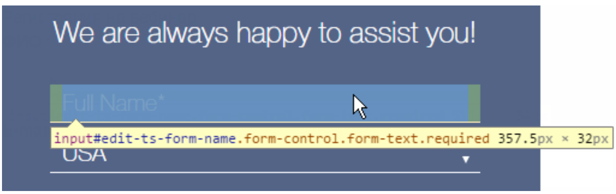
b. Click the icon in the source code area (Fig. 4).

Fig. 4 Selecting a code item on the page



c. Click the [Full name] field on the landing page (Fig. 5).

Fig. 5 Selecting an item to view code



d. The code of the selected field will be highlighted in the source code area of the page (Fig. 6).

Fig. 6 Highlighted code fragment that corresponds to the [Full name] field

```
</label>
<input placeholder="Full Name*" class="form-control
form-text required" type="text" id="edit-ts-form-name"
name="ts_form_name" value size="60" maxlength="128"
aria-required="true">
</div>
```

e. Copy the value that is contained in the “id” parameter of the source code (Fig. 7).

Fig. 7 Copying the “id” value from the source code

```
<input placeholder="Full Name*" class="form-control
form-text required" type="text" id="edit-ts-form-name"
name="ts_form_name" value size="60" maxlength="128"
aria-required="true">
```

f. Replace the “css-selector” of the “Name” value of the source code:

```
hkgnfu<"}
$Pcog$<"$%gfkv/vu/hqto/pcog$."11"Pcog"qh"c"xkukvqt."uwdokvvkpi"vjg"
rcig
$Gockn$<"$euu/ugngevqt$."11"Xkukvqt)u"gockn
$\kr$<"$euu/ugngevqt$."11"Xkukvqt)u"\KR"eqfg
```

ATTENTION

You can use the “id” or “class” values to replace the “css-selector” parameters of the landing page fields. If the “id” value is used, be sure to put the “#” character before it when editing the HTML code. For example, #edit-ts-form-name.

3. Replace “css-selector” for the remaining other fields in the same manner.

NOTE

Delete any fields in the generated HTML code that are not used on the landing page.

Recommendations on field mapping setup

- One web form field can be mapped to several fields in Creatio. For example, the value specified by the customer in the “Name” field of your form can be used to automatically fill in the [Name] (of the contact) and [Name] (of the legal entity) fields of the lead page in Creatio.
- One field of a lead page in Creatio can only be mapped to one field of your web form. You should not set up your lead page field to be autofilled with values from two fields of your form, because one of the values will overwrite the other one.
- We recommend that the mapped fields are of the same type and format. If a lookup field form is filled in by the customer with a text value that matches a lookup value, the field will be filled in with that value. For example, if your form contains a “Country” text field and the customer enters “USA” in that field, which matches a lookup value in the countries lookup, then the [Country] lookup field on the lead page in Creatio will be filled in with that value. There is also some additional input logic implemented for [Country], [State/province] and [City] fields. In case the field values entered by the customer cannot be found in Creatio, those values will automatically be saved in the additional text fields of the [Verification required] block on the lead page.
- Lookup fields must have the same list of values. In case the lookup values of your form fields do not correspond to Creatio values, those fields will remain blank or will be filled in with a default value (this feature can be set up).

Add the modified HTML code to the code of the landing page on the website.

SEE ALSO

- Adding new records in the [Landing pages and web forms] section
- How to create a landing page on your website
- Setting up a landing page for adding records to Creatio
- Map custom fields between a landing page and Creatio
- How to set up mapping of lookups and other non-text fields
- How to set up autofill for lead page fields not filled in by the customer
- Landing page setup FAQ

Setting up a landing page for adding records to Creatio

When you add a new record in the [Landing pages and web forms] section, you can select one of the default web forms: a lead or an event participant registration (Fig. 7).

However, you are not limited the default web forms. In fact, you set up a landing page web form for adding records of any kind, including contacts and accounts.

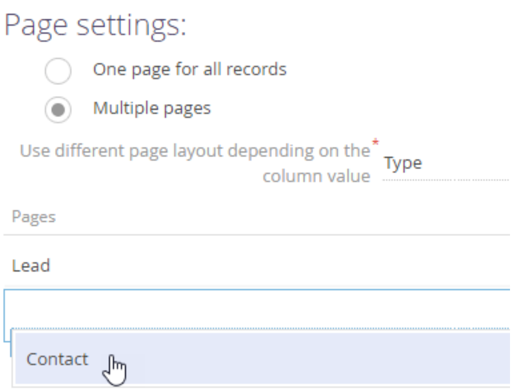
To set up a landing page for adding a custom record:

1. Add a new type of landing page to the "Landing types" lookup.

   For example, to create a web form for new contact registration, add a new record in the lookup and select the "Contact" object in the [Object] field. Working with lookups is covered in a separate article.

2. After adding a new web form in the "Landing types" lookup, use the Section Wizard to add a new type of record in the [Landing pages and web forms] section. To open the Section Wizard, go to the [Landing pages and web forms] section, and in the [View] menu select [Open section wizard] (Fig. 8).

   Fig. 8 Adding a new record type in the Section Wizard.

   Working with the Section Wizard is covered in a separate article.

For example, to set up a contact registration form, add a new page on the section settings step and select the new landing type. Click the [Add] button to add a contact registration form in the [Landing pages and web forms] section.

3. Add a new record in the [Landing pages and web forms] section. To do this:
   - Click the [New] button and select the form that you set up: "Contact registration form".
   - Fill out the opened landing edit page.
   - Set up default values for the required fields on the [Default values] tab. If any of the required fields is not filled in on the web form, these fields will be filled in with the values that you set up here,
   - Save the record.
4. After adding a new landing page record, set up mapping between the web form on your website and Creatio. To do this:
   - Edit the unique HTML code.
   - Add the modified code to the source code of the landing page on your website.

   The procedure for mapping a landing page web form to Creatio is covered in a separate article. The article covers mapping of the [Leads] section fields. Fields from other sections are mapped in a similar way. Editing the unique HTML code and adding the modified code to the website source code are similar, regardless of the section used by the landing page.

SEE ALSO

- How to create a landing page on your website
- Adding new records in the [Landing pages and web forms] section
- How to connect your website landing page to Creatio
- Map custom fields between a landing page and Creatio
- How to set up mapping of lookups and other non-text fields
- Landing page setup FAQ

Map custom fields between a landing page and Creatio

ATTENTION

This article covers the process of editing HTML code for a lead registration form.

To enable automatic lead registration when a user fills in the web form fields, you need to set up mapping between the landing page and Creatio.

The mapping procedure for standard fields is covered in a separate article.

If the landing web form contains fields that are not on the standard lead page, then to transfer these fields add the custom fields that correspond to the fields of the web form to the lead page and then configure the mapping. To do this:

1. In the [Landing pages and web forms] section of Creatio, open the record that corresponds to your landing page. Copy the HTML code from the [Landing setup] —> [STEP 2. Copy the code and configure and map the fields] into any text editor.
2. Find the "fields" fragment in the copied HTML code. This block contains a set of lead columns and all custom fields. Find the following expression in the "fields" code block:
   "UsrField": "css-selector"

"UsrField" corresponds to the Creatio field name, and "css-selector" is the "selector" this field in the code of the landing page.

3. Replace the "css-selector" expression to the id or class of corresponding field in the landing form and place the unique html code in the landing page code. Learn more about the import process in a separate article. Read more >>>

   NOTE

   Use this method only for mapping text fields, such as full name, commentary, etc. Lookups and other fields require development and are covered in a separate article.

As a result, if your customer fills in the fields of the web form on the landing page, their value will be displayed in the user fields on the page of the lead in Creatio.

SEE ALSO

- How to create a landing page on your website
- Adding new records in the [Landing pages and web forms] section
- How to connect your website landing page to Creatio
- How to set up mapping of lookups and other non-text fields
- Landing page setup FAQ

How to set up mapping of lookups and other non-text fields

Landing page web forms may use non-standard fields, such as radio buttons or drop-down lists with lookup records.

ATTENTION

The settings below are performed by the website administrator.

To set up mapping of web form radio buttons to Creatio fields:

1. Add a hidden field to the landing page html-markup. The id value of this field can be custom:

```
>kprwv"v{rg?$jkffgp$"kf?$"kfQhTcfkqdwvvqp$"1@
```

2. In the "fields" block of the Creatio landing page code, set up mapping between the lead field and the new hidden field:

```
$WutHkgnf$<"$%kfQhTcfkqdwvvqp$
```

3. The value, selected with a radio button, must be passed to the hidden field created earlier. Add an expression that contains this value to the landing code before the fragment that calls the create lead function (createLead):

```
xct"kfQhTcfkqdwvvqp"?"
&*)kprwv]pcog?pcogaqha{qwtatcfkqdwvvqp_<ejgemgf)+0xcn*+=
```

4. Save the changes.

To map web form drop-down lists to Creatio fields:

1. Add a hidden field to the landing page html-markup. The id value of this field can be custom:

```
>kprwv"v{rg?$jkffgp$"kf?$hkgnfKf$"1@
```

2. In the "fields" block of the landing page code, set up mapping between the lead field and hidden field:

```
$WutHkgnf$<"$%hkgnfKf$
```

3. Before calling the lead creation function, the value selected in the list must be calculated and passed to the hidden field created earlier. Add an expression that contains this value to the landing code before the fragment that calls the createLead function):

```
xct"hkgnfKf"?"&*$%pcogaqhaftqrfqyp"qrvkqp<ugngevgf$+0vgzv*+=
&*$%hkgnfKf$+0xcn*hkgnfKf+=
```

4. Save the changes.

After modifying these settings, the data entered on the web form via radio button and drop-down lists will be passed to the Creatio lead page.

SEE ALSO

- How to create a landing page on your website
- Adding new records in the [Landing pages and web forms] section
- How to connect your website landing page to Creatio
- Map custom fields between a landing page and Creatio
- How to set up autofill for lead page fields not filled in by the customer
- Landing page setup FAQ

Adding the modified HTML code to the landing page code

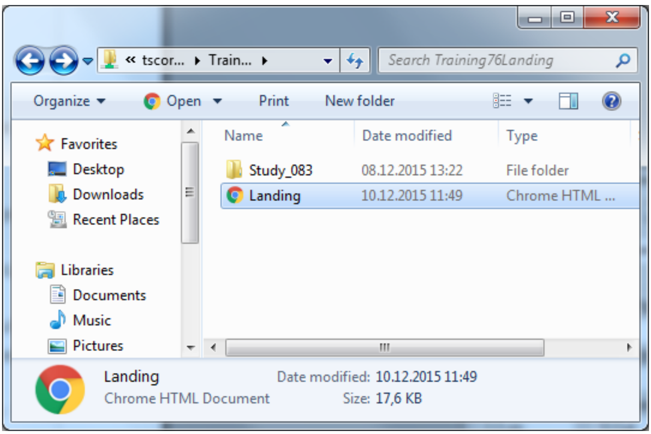
ATTENTION

This article covers the process of editing HTML code for a lead registration form.

After editing the generated HTML code, add it to the code of the landing page on your website. To do this:

1. Copy the entire code that you modified earlier to the clipboard.
2. To place the source code on the landing page:
    a. Open the location of the landing page file on the server (Fig. 9).

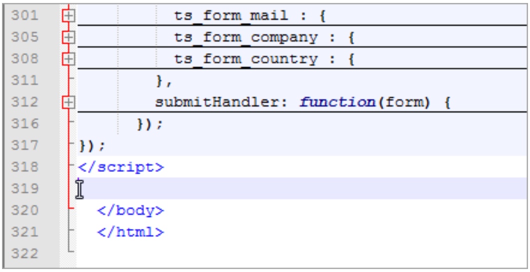
Fig. 9 Location of a landing page on server



b. Open landing page in a text editor.

c. Paste the generated HTML code to the source code of the landing page before the ”</body>” tag (Fig. 10).

Fig. 10 Adding the modified generated HTML code to the source code of the landing page



d. Save the changes.

3. Add event that launches the ”CreateLead()” function to the code of the landing page. To do this, the following code is used: onSubmit=”createLead(); return false”. To place an event in the source code of the landing page:

   a. Go to the “form action” tag in the source code:

```
>urcp"encuu?$tgikuvtcvkqp$@Tgikuvgt>1urcp@
    " "
    " ">hqto"cevkqp?$1ygdkpct/etgcvkq/9/8$"ogvjqf?$rquv$"kf?$vu/hqto/
wpkxgtucn/hqto$"ceegrv/ejctugv?$WVH/:$@
```

   b. In the opening <form> tag, add the following code: OnSubmit=”createLead(); return false”

```
>urcp"encuu?$tgikuvtcvkqp$@Tgikuvgt>1urcp@
>hqto"cevkqp?$1ygdkpct/etgcvkq/9/8$"ogvjqf?$rquv$"kf?$vu/hqto/
wpkxgtucn/hqto$"ceegrv/ejctugv?$WVH/:$"qpUwdokv?ËetgcvgNgcf*+="tgvwtp"
hcnugË@
```

   c. Save the changes.

SEE ALSO

- How to create a landing page on your website
- How to set up autofill for lead page fields not filled in by the customer
- Setting up redirects from landing page forms
- How to set up landing page using Creatio on-site
- Lead source and website activity tracking
- Landing page setup FAQ

How to set up autofill for lead page fields not filled in by the customer

Some fields used in Creatio on lead pages may not be available in the customer web form. You can set up autofill for such fields depending on your landing page specifics and purpose.

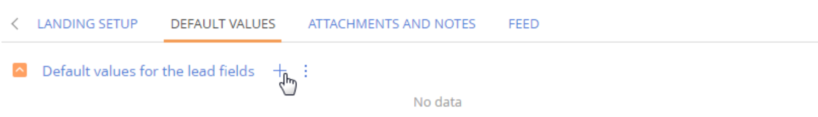
We recommend that you start with setting up the autofill defaults for the [Need type] and [Need maturity] fields.

On the [Default values] tab, you can set up the autofill defaults for the lead page fields. You can set up the autofill feature for any field type including the mapped ones. If you do so, the default value will be filled in the lead page field only if the customer left it blank.

To set up autofill of the lead fields:

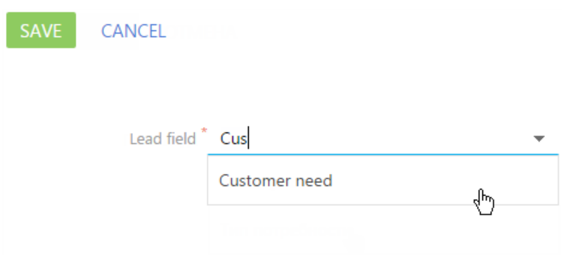
1. Go to the [Default values] tab of the landing page. Click the + button on the [Default values for the lead fields] detail (Fig. 11).

   Fig. 11 Filling out the [Default values for the lead fields] detail

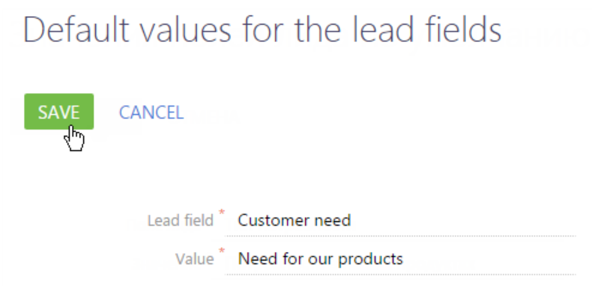
2. Select the [Need type] field (Fig. 12).

   Fig. 12 Selecting a field that must be filled in automatically

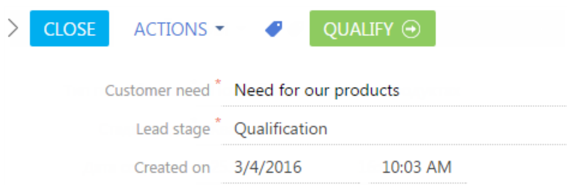
3. In the [Value] field, select the value which will be used to fill in the need type, for example, "Need for our products" .
4. Click the [Save] button to save the new folder (Fig. 13).

Fig. 13 Saving the autofill settings of the fields



After the landing page form is submitted, the [Customer need] field will be filled in automatically.

Fig. 14 Lead page fragment



SEE ALSO

- Setting up redirects from landing page forms
- How to set up landing page using Creatio on-site
- How to create a landing page on your website
- How to edit unique HTML code
- Adding the modified HTML code to the landing page code
- Landing page setup FAQ

Setting up redirects from landing page forms

You can configure Creatio settings so that your site visitor will be automatically redirected to a certain page right after submitting the web form – for example, to the Thank You page. To do that, open the [Landing setup] tab and enter the redirection page URL in the [Redirection address field] – for example, http://mysite.com/submit/thank-you-page. As a result, the HTML code embedded in your landing page will use the specified URL for redirection, for example:

redirectUrl: “http://mysite.com/submit/thank-you-page”

ATTENTION

Redirection page settings must be configured prior to copying the HTML code from Creatio to your website landing page. If the landing page redirection is already set up on your website, then you can leave the [Redirection address] field blank.

SEE ALSO

- How to set up autofill for lead page fields not filled in by the customer

How to set up landing page using Creatio on-site

Customers who have their Creatio application deployed on-site may need to perform additional setup to have the HTML code displayed correctly on the landing page. It is required when according to URL safety rules the URL displayed in the user's browser must be different from the one used for external access to Creatio. More information is available in a separate article.

Landing page setup FAQ

What is the purpose of the [Landing pages and web forms] section in Creatio?

The [Landing pages and web forms] section is used to set up integration between Creatio and web forms on your websites. As a result, each time an integrated web form is submitted, a new record is automatically created in Creatio using data from the submitted form. Landing page integration can be used for generating leads, adding customers to event participants, automatic order registration and more.

The [Landing pages and web forms] section is used for setting up connections between landing pages on your website and Creatio. In the [Landing pages and web forms] section a landing page record must be created that contains basic information about the landing page and a unique HTML code that must be integrated into the HTML code of the landing page.

After performing these settings, the data entered in the web form of the landing page, such as full name, email, phone, will be passed to Creatio, and used to add new record (for example a new lead) in Creatio.

What is the difference between a landing page on the website and a Creatio landing page record?

When setting up a landing page there are two main entities that must be differentiated:

- A landing page on the website.
- A landing page record in the [Landing pages and web forms] section of Creatio. A landing page record contains information on the actual landing page, for example its name, link, etc. These records are used to set up connections between a landing page on a website and Creatio.

An actual landing page and the corresponding landing page record record in the [Landing pages and web forms] section have their own HTML code used to connect the two entities. The unique code of a landing page record is integrated into HTML code of an actual landing page on a website.

What does the landing page code do?

The HTML code of a landing page is required to automatically create a new record in the system if a web form on the landing page is filled in. This code is used for setting up the data transfer between a landing page on a website to Creatio. Initially, the code fragment is set up for a specific landing page and then integrated into the HTML code of the landing page. Working with landing page HTML code is covered in a separate article.

How do I use the [Website domains] field?

Enter the actual landing page URL in the [Website domains] field.

For example, the website name is www.example.com. This website has a landing page available at the following address: www.example.com/landing. This address must be entered in the [Website domains] field on the Creatio landing record page.

> ATTENTION
>
> The address entered in this field must match the address of the landing page where the HTML code was integrated.

> NOTE
>
> In the [Website domains] field, specify all domains used to host the landing page. The domains must be separated with commas.

How do I use the [Redirection URL] field?

The [Redirection URL] field in the landing code determines the page where the user is redirected after filling out the landing page web form. You can specify the address of any page on your website. If your website settings specify a different action after filling out the landing page, leave this field empty.

If you fill in the [Redirection URL] field for a new [Landing pages and web forms] section record, then the unique HTML code of this record will contain the link to the page specified in the [Redirection URL] field in the redirectUrl block.

Thus, for the proper functioning of the landing page, fill out the landing page record fields, including [Redirection URL] and save the record, then connect the landing page record with the landing page. Working with landing page HTML code is covered in a separate article.

How do I set up one landing page record for a page with several web forms?

If your landing page has several web forms, you can use single Creatio landing page record to connect to all of them.

> ATTENTION
>
> The settings below are performed by the website administrator.

In the standard HTML code of the landing page record in Creatio, there is a "config", block where field mapping between web forms and lead fields are set up. To set up mapping between a lead record field and several web forms, create several "config" blocks in the code, one for each actual web form. A separate createLead function must be set up for each "config" block.

For example, your landing page has two web forms. The first form contains "Full name" and "Email" fields, and the other one contains "Full name" and "Mobile phone" fields. To use one landing for the landing page with two web forms, make the following changes to the code:

1. Copy the whole "config" block as many times as the number of web forms that you need to connect to the landing page record in Creatio.
2. Add unique names to the "config" blocks whose parameters are passed to the createLead function. For example: "config1" and "config2".
3. In the "config1" block, set up mapping of the fields from the first web form:

```
Pcog<"$%000$
Gockn<"$%000$
```

4. In the "config2" block, set up mapping of the fields from the second web form:

```
Pcog<"$%000$
Rjqpg<"$%000$
```

5. Set up two createLead functions:

```
hwpevkqp"etgcvgNgcf3*+"}"ncpfkpi0etgcvgNgcfHtqoNcpfkpi*eqphki3+"¡
hwpevkqp"etgcvgNgcf4*+"}"ncpfkpi0etgcvgNgcfHtqoNcpfkpi*eqphki4+"¡
```

6. For each web form, set up calling of a separate createLead function:

```
qpuwdokv?$etgcvgNgcf3*+="tgvwtp"hcnug$
qpuwdokv?$etgcvgNgcf4*+="tgvwtp"hcnug$
```

After this, a lead will be created in Creatio each time a user fills out any of the two web forms.

How do I set up single landing for several pages?

If several web forms with a similar structure are implemented in several pages within one domain, you can use a single landing page record for all of them. To do this, enter all needed URLs in the [Website domains] field, separating them with commas: https://www.creatio.com/trial?product=sales, https://www.creatio.com/trial?product=marketing

As a result, when a web form is filled out on any of the website pages, where this landing page code is integrated, a new record (for example, lead) will be automatically created in Creatio.

Why doesn't Creatio register leads in spite of the properly customized landing page?

After you have created and set up a landing page, new records will be registered in Creatio when the landing page web form is filled in. If it doesn't happen, perhaps one of the landing page fields is required, but it is missing from the web form, or it is still blank.

In this case, you can:

- clear the [Required] checkbox from the lead page fields in Creatio (the procedure for modifying fields on the element pages is described in a separate article);
- set up the filling in of these fields with default values

How to set up the filling in with default values of the fields of a lead registered via a landing page?

The landing page web form can contain all the fields used by Creatio on the lead page. You can set up automatic filling in of individual fields with default values. Detailed information about filling in the lead fields with default values is available in a separate article.

How does Creatio search for contact duplicates while creating leads from landing pages?

As soon as your customer submits a web form on your landing page, Creatio automatically creates a new lead record based on the entered data. After this, the "Lead identification" process starts automatically to check whether the new lead can be linked to an existing contact or if a new contact needs to be created. This helps Creatio to avoid creating contact duplicates when new leads are registered from landing pages.

> NOTE
> The "Lead identification" process starts only if the [Create contact] checkbox is selected for the landing page.

The "Lead identification" process compares the lead registration data to existing contacts based on the customer's full name, email and phone number. If there is a match, Creatio connects the lead to an existing contact. If the registration data does not match any existing records, Creatio creates a new contact. The new contact page will be populated with lead registration data automatically.

You can view or edit the "Lead identification" process in the process library.

How do I set up correct filling in lead creation time?

A situation may occur an incorrect date was set in the [Creation date] when registering a lead via a landing page.

To avoid this, we recommend you to check the time zone set on the server where Creatio is hosted. For the lead creation time to be set correctly, the time zone on the application server has to correspond to your actual time zone.

How do I configure data transferring from one landing page web form to separate lead page fields?

There is the "config" block in the HTML code of the landing page. This block configures the mapping of landing page web form fields and lead fields. To set up the correspondence of one landing page web form field to multiple lead fields, you will need to add a hidden field to the HTML code of the landing page, set up the mapping, and then configure the createLead function .

For example, a single "Name" field is implemented in the web form of your landing page. And Creatio lead page has two separate fields — [Name] and [Surname].

> ATTENTION
> The settings below are performed by the website administrator.

In order for the [Name] and [Surname] lead page fields to be filled in correctly, enetr the following changes to the code:

1. Add two hidden fields to the html markup:

```
>kprwv"v{rg?$jkffgp$"kf?$ugngevgfPcogEcrvkqp$"1@
>kprwv"v{rg?$jkffgp$"kf?$ugngevgfUgeqpfPcogEcrvkqp$"1@
```

2. Set up the hidden fields mapping in the “config” block:

```
$Pcog$<"$%ugngevgfPcogEcrvkqp$
$UgeqpfPcog$<"$%ugngevgfUgeqpfPcogEcrvkqp$
```

3. Before calling the function to create a lead, add a function, which describes the logic the [Name] and [Surname] fields taking the value from the [Name] field.

SEE ALSO

- How to set up autofill for lead page fields not filled in by the customer
- Setting up redirects from landing page forms

Lead source and website activity tracking

The Creatio function for tracking and analysis of customer activities on your website helps you get a complete customer profile, as well as analyze lead channels and origins.

To get complete information on leads, set up:

- Website event tracking
- Lead source tracking

ATTENTION

Website event tracking function is available only in Marketing Creatio.

NOTE

To be able to track lead sources and website events, you need to first set up the connection between your landing pages and Creatio.

As a result, after someone fills out a web form on your website, Creatio displays lead channel and source information.

You can use the charts and aggregated indicators in the [Leads] section dashboards to estimate the lead conversion by channel. Enlarge the audience of potential customers and sales by focusing on the most effective lead generation channels.

CONTENTS

SEE ALSO

- The [Landing pages and web forms] section

VIDEO TUTORIALS

- Lead management

Website event tracking

ATTENTION

Website event tracking function is available only in Marketing Creatio.

Tracking website events enables you to personalize communications with customers based on their interests and preferences. The system automatically enriches the customer's profile with information about their activity on your website. With this information, you can segment your customers via the dynamic folder function in the [Contacts] section, determine your target customer groups and use these groups to add audiences when creating trigger campaigns.

Use the [Website events] detail on the [History] tab of the lead page to view customer activities on your website. If you select the [Create contact] checkbox on the landing page record, then website activities will be recorded for any contact who was created automatically after completing the landing page form.

NOTE

To use the website tracking function, you need to perform the tracking setup first.

CONTENTS

- How to set up website event tracking

How website event tracking works

ATTENTION

Website event tracking function is available only in Marketing Creatio.

To set up website activity tracking, you need to perform a few of preliminary settings in Creatio, then paste the tracking code into the HTML source code of each page on your website. As a result, Creatio will receive information about all redirections of potential customers to your website and their activity.

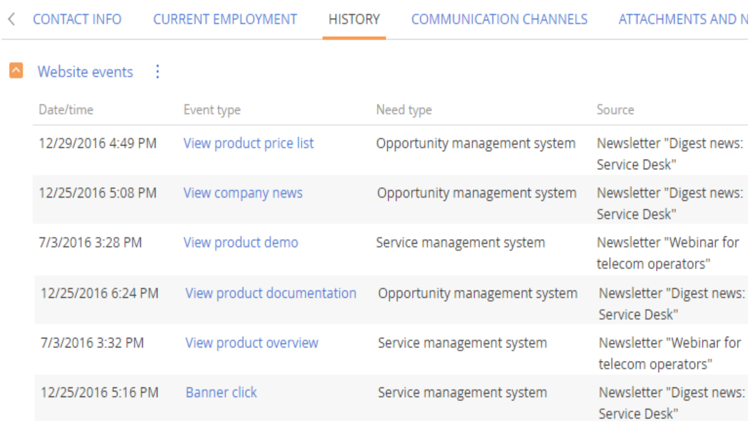
NOTE

Website event tracking uses service hosted on Creatio cloud.

What kind of customer information can be gathered via the tracking code

Tracking code is triggered each time a customer performs a tracked activity on your website. For example, when a customer clicks the "Add to cart" button, clicks a link to a public event page or adds a product to a wish list. In addition, after landing pages are set up, Creatio will record activities (website events) that customers perform before and after filling out the landing page form. The list of website events is saved in the lead and corresponding contact history (Fig. 1).

Fig. 1 Website events on the [History] tab of the contact page



The tracking code enables you to identify the source of each lead generated when someone completes a landing page registration form on your website.

Using cookies to track website events

The tracking code generates "BpmTrackingId" cookie files, which store unique customer session IDs. This enables Creatio to gather information about customer's website events, both before and after actual registration.

Tracking website events while using Content Security Policy

Content Security Policy is a mechanism that uses a policy which determines safe sources of website resources and sets the rules of their usage to protect a website. To enable CSP for a landing, configure the web server to prompt the client to select which resources to download and what source they should be downloaded from. Downloading files from sources that are not whitelisted will be blocked.

In order to efficiently track website events while using Content Security Policy, allow downloading resources from the domain with the deployed Creatio application (including the GeneratedObjectWebFormService.svc service) in the settings of the landing's web server.

SEE ALSO

- How to set up website event tracking
- Lead source tracking

How to set up website event tracking

ATTENTION

Website event tracking function is available only in Marketing Creatio.

To be able to use website event tracking, you need to configure a few settings on your website and in Creatio:

1. Specify the domain names of the tracked websites in Creatio.
2. Enable tracking. The procedure for enabling tracking differs for on-site and cloud deployment options.
3. Set up the list of website events the must be tracked.
4. Embed a unique tracking code in the source code of your website pages.

ATTENTION

Prior to the tracking setup, be sure to set up your landing pages.

CONTENTS

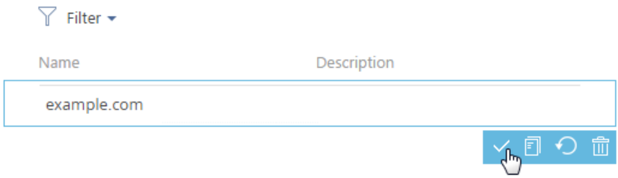
How to create a list of tracked domains

Specify website addresses for tracking in the [Tracking domains] lookup.

To set up:

1. Open the system designer, for example, by clicking the button at the top right corner of the application. In the system designer, click the [Lookups] link.
2. Open the contents of the [Tracking domains] lookup.
3. Click the [Add] button and enter your web site's domain address, i.e., "creatio.com". Apply the changes (Fig. 2).

Fig. 2 Saving a domain to track



Save all domain addresses that must be tracked.

ATTENTION

Domain addresses are added to the lookup without the protocol prefix (http://).

Enable tracking for all the domains specified. The procedure differs for on-site and cloud deployment options.

NOTE

Re-enable tracking each time you add a new domain to be tracked.

SEE ALSO

- How to enable website event tracking for Creatio cloud
- Enabling website event tracking for on-site applications
- How to set up the list of tracked events
- How to embed tracking code in your website

How to enable website event tracking for Creatio cloud

ATTENTION

Website event tracking function is available only in Marketing Creatio.

You can enable tracking for Creatio cloud applications by clicking a single button:

1. Open the System Designer, for example, by clicking the button at the top right corner of the Creatio page. Click the [Website event tracking] in the [Import and integration] block.
2. Click the [Set up tracking] button. A window will open, containing your API key for accessing the tracking cloud.
3. Click the [Set up tracking] button.

The system will start tracking website events for all domains specified in the [Tracking domains] lookup. Set up the list of tracked events and embed the tracking code in the source code of your website pages to complete the setup.

SEE ALSO

- Enabling website event tracking for on-site applications
- How to create a list of tracked domains
- How to set up the list of tracked events
- How to embed tracking code in your website

Enabling website event tracking for on-site applications

ATTENTION

Website event tracking is only available in Marketing Creatio, Financial Services Creatio, sales edition and the CRM bundle.

For on-site applications specify web-service that receives information from the tracking cloud, then obtain and enter API key and tracking authentication key (the "secret key").

NOTE

You can obtain your API key and "secret key" from Creatio support.

To enable bulk email monitoring:

1. Open the system designer, for example, by clicking the button at the top right corner of the application. Open the [System settings] section.

   Open the [App external URL to receive website events] system setting located in the [Website event tracking] folder. Enter URL for the web-service that receives information from the tracking cloud, e.g. "http://marketing-server:01" in the [Default value] field. The URL must look like this: https://website_name/0/ServiceModel/EventTrackingService.svc/SaveEventTrackingData. Save and close the system setting.

   NOTE

   This value will be generated automatically for Creatio cloud applications.

2. Open the [Tracking authentication key (secret)] system setting. Paste your secret key in the [Default value] field.

   Save and close the system setting.

   ATTENTION

   Without the unique secret key you will not be able to use the API-key to access the tracking service cloud. Do not disclose the secret key to third parties.

3. Open the system designer and click the [Website event tracking] link of the [Import and integration] block.
4. Click the [Set up tracking] button. Enter the API key that you received from Creatio support.
5. Click the [Set up tracking] button.

The system will start tracking website events for all domains specified in the [Tracking domains] lookup. Set up the list of tracked events and embed the tracking code in the source code of your website pages to complete the setup.

SEE ALSO

- How to enable website event tracking for Creatio cloud
- How to create a list of tracked domains
- How to set up the list of tracked events
- How to embed tracking code in your website

How to set up the list of tracked events

ATTENTION

Website event tracking function is available only in Marketing Creatio.

To record information on customer's website activity:

1. Determine which website events you need to track.
2. Set up a list of tracked website events in Creatio.

Which website events can be tracked in Creatio

You can track almost any activity on your website. Tracked website events include adding products to cart, successful authentication, viewing a product page, searches and banner clicks. The website activity information stored on the lead and contact pages depends on the list of tracked events. There are two types of events:

- Page link clicks, such as opening a product page.
- Page item clicks, such as clicking the "Add to cart" button. The system identifies the item by its class, unique ID, and jQuery selector.

How to set up tracking of link clicks

You can track clicks to any page of your websites. This enables you to gather information on page views, such as product page views. Enter the address of each page in Creatio to obtain a history of page views:

1. Open the System Designer, for example, by clicking the button at the top right corner of the Creatio page. Click the [Website event tracking] in the [Import and integration] block.
2. Click the [New website event] button.
3. On the opened page:
   a. Enter the website event name.
   b. Select the "Page visit" website event type.
   c. Select the [Active] checkbox to enable tracking of the event.

   NOTE

   Website events that you do not need to track any more (such as events for outdated pages) cannot be deleted because they are referenced in the website event history. Clear the [Active] checkbox to disable tracking for an outdated event.

   d. Enter the URL of the page to track on the [Event tracking setup] tab e.g., https://www.creatio.com or https://www.creatio.com/products.
4. Save the page. Add the remaining pages in the same manner. As a result, the event history for all pages with the [Active] checkbox selected will be saved for leads and corresponding contacts.

   NOTE

   A separate event must be set up for each website page.

How to set up tracking of clicks

You can track clicks on any page item on your websites. Website events for page item clicks usually imply clicking buttons, such as social media sharing options or adding products to cart. You can set up website events for page item clicks in three ways:

- By item class, for tracking the same event for all page items of the same class.

- By unique ID of a page item. In this case, you need to set up separate event tracking for each tracked page item.
- By jQuery-selector. Use this option to track the same event for all page items with the same style. The website developer usually performs this setup.

How to set up tracking page items by unique ID

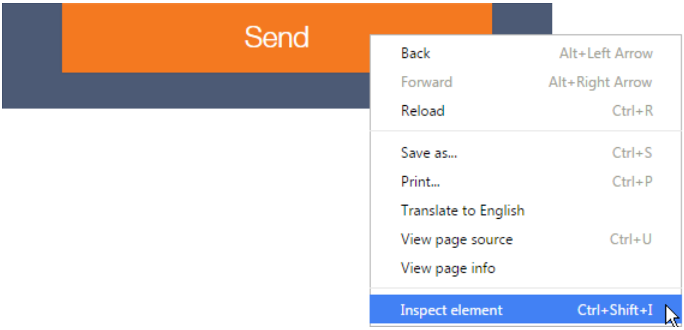
Use the tracking by unique ID option if the website layout uses unique IDs. To do this:

1. Use your web browser function to view the source code of the item that needs to be tracked on your website (Fig. 3).

   NOTE

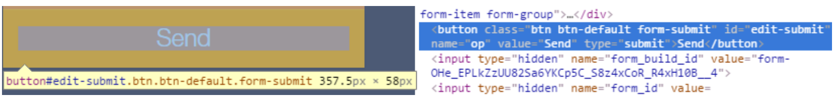
   Below is setup example for the Chrome browser. The procedure for viewing the source code depends on the web browser used.

   Fig. 3 Viewing source code example

2. Select the item's unique ID in the source HTML code and copy it to your clipboard. For example, the item selected on Fig. 4 is the "edit-submit" item.

   Fig. 4 Example of page item ID

3. Open the system designer, for example, by clicking the button at the top right corner of the application. Click the [Website event tracking] in the [Import and integration] block.
4. Click the [New website event] button.
5. On the opened page:
   a. Enter the event name.
   b. Select the "Element click" event type.
   c. Select the [Active] checkbox to enable tracking of the event.

NOTE

Website events that you do not need to track any more (such as events for outdated pages) cannot be deleted, because they are referenced in the website event history. Clear the [Active] checkbox to disable tracking for an outdated event.

  d. Select the "By Id" option in the [How to identify elements] field;

  e. Paste the page item ID from clipboard in the [Element identifier] field.

Save the page. Creatio will start tracking clicks on this page item as a result. You can view tracking results on the [Website events] detail of the corresponding leads and contacts.

How to set up tracking page items by class

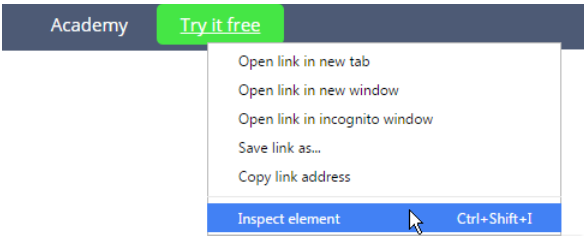
Use tracking by class option if the website layout uses classes. To do this:

1. Use your web browser function to view the source code of the item that needs to be tracked on your website (Fig. 5).

NOTE

Below is setup example for the Chrome browser. The procedure for viewing the source code depends on the web browser used.

Fig. 5 Viewing source code example



2. Select the item's class in the source HTML code and copy it to clipboard. For example, the item selected on Fig. 6 is the "demo-button" class.

Fig. 6 Example of page item class

3. Open the system designer, for example, by clicking the  button at the top right corner of the application. Click the [Website event tracking] in the [Import and integration] block.
4. Click the [New website event] button.
5. On the opened page:

  a. Enter the event name.

  b. Select the "Element click" event type.

c. Select the [Active] checkbox to enable tracking of the event.

NOTE

Website events that you do not need to track any more (such as events for outdated pages) cannot be deleted, because they are referenced in the website event history. Clear the [Active] checkbox to disable tracking for an outdated event.

d. Select the "By class" option in the [How to identify elements] field.

e. Paste the page item class from the clipboard to the [Element identifier] field.

Save the page. This will enable Creatio to save the history of clicks for all buttons of the same class. You can view tracking results on the [Website events] detail of the corresponding leads and contacts.

SEE ALSO

- How to set up website event tracking
- How website event tracking works
- How to embed tracking code in your website

How to embed tracking code in your website

ATTENTION

Website event tracking function is available only in Marketing Creatio.

To be able to use the website activity tracking function, you need to embed the tracking code in the source code of each page on your website.

ATTENTION

Tracking code setup is done by the website administrator. To be able to insert the tracking code, you need access the HTML source code of your website and permission to edit it.

To set up tracking code:

1. Open the system designer, for example, by clicking the button at the top right corner of the application. Click the [Website event tracking] in the [Import and integration] block.
2. Click the [Get tracking code] button. A window will open, containing the tracking code.
3. Copy the tracking code and paste it in the source HTML code of each page on your website. You can paste the code anywhere before the closing tag ("</body>") at the end of the page. If you do not insert the code in all the website pages, Creatio will not be able to collect all the data about the potential customers redirected to your website.

NOTE

The tracking code uses a script located in the Creatio cloud. This means that when somebody visits your website page, their browser will request the current script version from the Creatio server and then use it to create cookies.

After performing individual website event tracking settings, customer activity history will become available in Creatio. The tracking information will become available in the [History] tab of the lead and contact pages (Fig. 1).

SEE ALSO

- How to create a list of tracked domains
- How to enable website event tracking for Creatio cloud

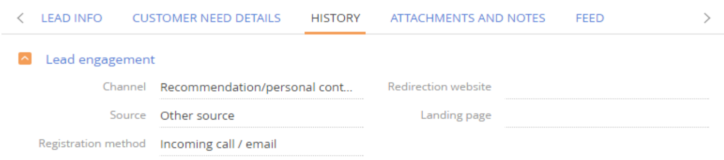
- Enabling website event tracking for on-site applications
- How to set up the list of tracked events
- Lead source tracking

Lead source tracking

You can track and analyze lead sources and generation channels. Analyze the performance of lead channels, choose the most prospective ones for your business and develop them.

Information collected by the tracking code will be displayed on the [Lead engagement] field group on the lead page. The lead source tracking will return the following information about the potential customer (Fig. 7).

Fig. 7 Lead page with channel information and lead engagement origin



- Lead channel. The [Channel] field will display the resource type that delivered the lead: “Social accounts”, “Search-based advertising” or “Direct traffic”.
- Lead source. The [Source] field will display the name of the resource used, for example, “Twitter”.
- Name of the website domain from which the user was redirected. It will be displayed in the [Redirection website] field. For example, “facebook.com”.
- Name of the landing page on which a potential customer filled out the form. It will be displayed in the [Landing] field.

CONTENTS

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- Managing leads

How the lead source tracking works

1. Every time the tracking code redirects a potential customer to your website, two URLs will be written to the cookie files:
    - URL of the website the user was redirected from (referrer)
    - Redirection URL containing tracking parameters (for example, UTM marks).
2. When a potential customer populates the form on your website landing page, the information about the referrer and the redirection URL will be sent to Creatio. The system will analyze the URLs and identify the lead channel and the source website.

3. After the customer completes the landing page form, the URL analysis result will be displayed on the lead page automatically generated in Creatio.

Cookie files are used for lead source tracking.

The lead source tracking creates two cookies containing the following data:

- The [BpmRef] cookie contains the name of the website domain (referrer) from which the user was redirected to your website. Redirection URL will be displayed in the [Redirection address] field of the [History] tab on the lead page.
- The [BpmRef] cookie contains the URL of the website from which the user was redirected to your website. The redirection URL can contain tracking parameters (for example, UTM marks) used by the tracking code to identify the lead channel, for example:

  http://www.creatio.com?utm_source=facebook&utm_medium=social&utm_campaign=c1

  The redirection URL is stored in the system database column [BpmHref] and is not visible in the user interface.

External traffic, internal traffic and direct traffic

Two rules are applied for the redirections from external links to your website and for your website internal redirections. These rules define the way the data is written to the [BpmRef] and [BpmHref] cookie files regardless of the initial values they contain:

- Each external redirection from a new source will result in overwriting the referrer and the redirection URL in the corresponding cookies.
- Your website internal redirections will not result in data overwriting in any of the cookie files.

When a direct link is used to access your website, the direct link to your website page is saved in the [BpmHref] cookie file, while the referrer value remains blank. It does not depend on which website redirection source was previously used.

Thus, Creatio takes into consideration only the last source and user redirection link to your website.

SEE ALSO

- How to set up lead source tracking

How to set up lead source tracking

To use lead source tracking function, perform the following steps:

1. Set up tracking parameters (UTM marks). Use Creatio lookups where tracked website addresses are matched to UTM marks to identify the websites during lead source tracking.
2. Embed the cookie tracking script in the HTML code of all website pages.

CONTENTS

What are UTM marks

In Creatio UTM marks are used for obtaining additional information about lead sources.

The following UTM marks are used to determine lead sources:

- The utm_medium mark determines the lead source channel or the type of resource used to attract the lead, such as search engine, social network, etc.
- The utm_source mark determines the campaign that involved the bulk email, for example, Facebook, Google, etc.

SEE ALSO

- How to set up UTM marks
- How to embed a cookie tracking script on your website
- How the lead source tracking works

How to set up UTM marks

If you are using web analytics tools (for example, Google Analytics), then you probably have your own tracking rules already established for source and channel classification and UTM marks used. In such case, we recommend that you save all your website URLs and UTM values used in Creatio. To do this, use the following lookups:

- [Lead channels] – contains the list of all resource types that provided new leads, for example, "Social accounts", "Search-based advertising" or "Email". The [Lead channel code] field of the lookup page contains the "utm_medium" mark values related to the channel. For example, the "display", "cpm" and "banner" values for the "Media advertising" channel. These values will be used to identify the channel.
- [Lead sources] – includes the list of resource names the user was redirected from, for example, "Twitter", "Google" or "Creatio marketing". The [Lead source code] field of the lookup page contains the "utm_source" mark values related to the source. For example, the "facebook", "facebook.com", "fb" and "fb.com" values for the "Facebook" source. These values will be used to identify the source. Here you can also set up the default channel for the selected source. For example, "Social accounts" channel for "Facebook" and "Search-based advertising" channel for "Google AdWords".
- [Lead source URL] – contains the list of source websites (referrers) identified by Creatio. Here you can also set up the default source for the selected referrer. For example, the lookup contains the following URLs by default: "facebook.com" ("Facebook" source), "twitter.com" ("Twitter" source), "linkedin.com" ("Linkedin" source) etc.

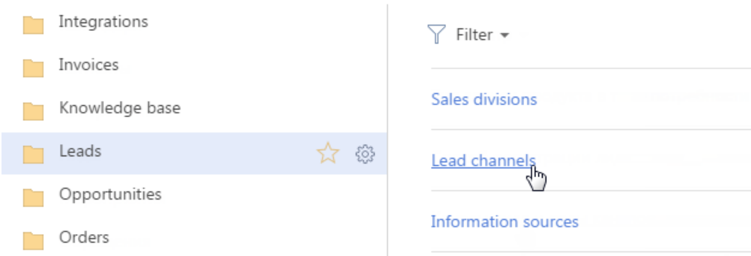
The above lookups contain the most frequently used website URLs and marks pre-configured. You can supplement the lookups with the values used in your company.

CONTENTS

Add a new lead channel

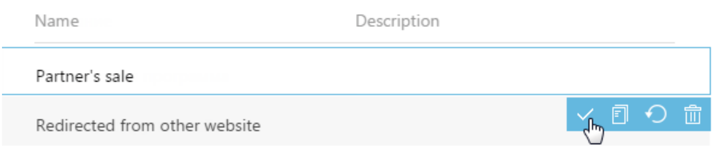
1. Open the system designer by clicking the button at the top right corner of the application window. In the system designer, click the [Lookups] link.
2. In the [Leads] field group, open the [Lead channels] lookup.

Fig. 8 Opening the [Lead channels] lookup



3. Add a new lookup record by clicking the [Add lead channel] button. In the displayed string, enter the channel name, for example "Partner sale" and click the  button on the toolbar (Fig. 9).

Fig. 9 Saving the new channel in the lookup

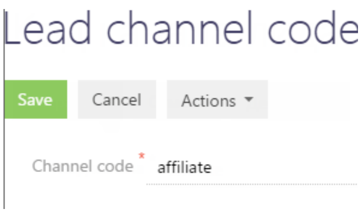


4. Click the  button on the toolbar to open the page of the record that you created.
5. On the [Lead channel code] tab, click the [Add] button. On the opened page, enter the "utm_medium" marks to be used to identify the selected channel, for example, "affiliate" (Fig. 10). Save the page.

NOTE

The rules of defining a lead source and channel are described in a separate article.

Fig. 10 Adding channel code



In the same way, you can add other values for the "utm_medium" marks to be used for the channel identification.

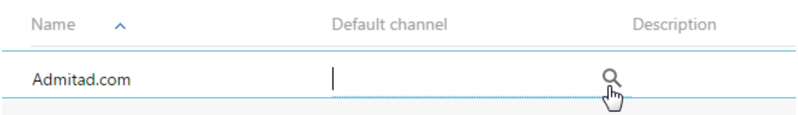
As a result, the channel will be saved in the lookup. It will be used to identify the channel during the lead tracking. In our case, when the "http://site.com/page?utm_medium=affiliate" redirection URL is received, the lead channel will be filled in with the "Partner sale" value.

Add a new lead source

1. Open the system designer by clicking the button at the top right corner of the application window. In the system designer, click the [Lookups] link.
2. Open the [Lead sources] lookup.
3. Add a new lookup record by clicking the [Add lead source] button. In the displayed string:
   a. Specify the source name, for example, "Admitad.com".
   b. Click the button in the [Default channel] field (Fig. 11) and select a channel, for example, "Partner sale". This value will be used to fill in the lead channel if the "utm_medium" mark value is not obtained from the redirection URL while the "utm_source" mark value is.

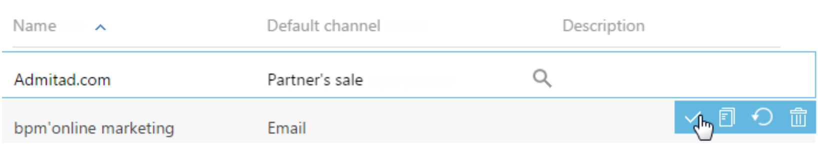
NOTE
The rules of defining a lead source and channel are described in a separate article.

Fig. 11 Selecting a default channel for the lead source



   c. To save the record, click the button on the toolbar (Fig. 12).

Fig. 12 Saving the new source in the lookup



4. Click the button on the toolbar to open the page of the record that you created.
5. On the [Lead source code] tab, click the [Add] button. On the opened page, enter the "utm_medium" marks to be used to identify the selected channel, for example, "admitad". Save the page.

   In the same way, you can add other values for the "utm_source" marks to be used for the source identification.

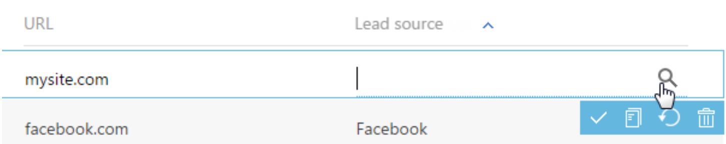
As a result, the source will be saved in the lookup. It will be used to identify the channel and the source during the lead tracking. In our case, when the "http://site.com/page?utm_source=admitad" redirection URL is received, the lead source will be filled in with the "Admitad.com" value and the lead channel – with the "Partner sale" value.

Add a website as a source

1. Open the system designer by clicking the button at the top right corner of the application window. In the system designer, click the [Lookups] link.
2. Open the [Lead sources] lookup.
3. Add the new record to the lookup. In the displayed string:
    a. In the [URL] field, enter the source URL, for example, “mysite.com”.
    b. Click the button in the [Lead channel] field (Fig. 13) and select a source, for example, “Admitad.com”. This value will be used to fill in the lead source, if the UTM marks are not obtained from the redirection URL while the referrer mark value is.

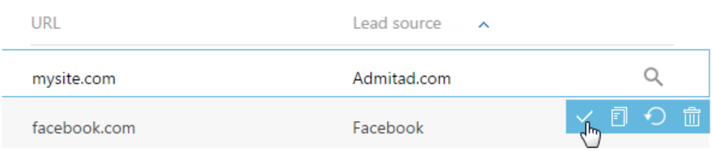
NOTE
The rules of defining a lead source and channel are described in a separate article.

Fig. 13 Selecting a default source for the referrer



    c. To save the record, click the button on the toolbar (Fig. 14).

Fig. 14 Saving the new referrer in the lookup



In the same way, add other referrers that can be identified as lead sources.

As a result, the new referrer will be saved in the lookup. It will be used to identify the channel and the source during the lead tracking. In our case, when the “http://mysite.com/” referrer value is received, the lead source will be filled in with the “Admitad.com” value and the lead channel – with the “Partner sale” value.

SEE ALSO

- How the lead source tracking works
- What are UTM marks
- How to embed a cookie tracking script on your website
- Rules for determining lead sources (with examples)

How to embed a cookie tracking script on your website

To ensure correct lead source tracking, add cookie tracking code in each website page.

ATTENTION

Lead source tracking setup is done by the website administrator. To be able to insert the tracking code, you need access the HTML source code of your website and permission to edit it.

1. Copy the following code fragment:

```
>uetkrv"ute?$jvvru<11ygdvtcemkpi/x230etgcvkq0eqo1LU1vtcem/
eqqmkgu0lu$@>1uetkrv@
```

2. Place the tracking code in the source HTML code of each page on your website. You can paste the code anywhere before the closing tag ("</body>") at the end of the page. If you do not insert the code in all the website pages, Creatio will not be able to collect all the data about the potential customers redirected to your website.

After performing the lead source tracking settings, lead source and channel will become available in Creatio. The tracking information will become available in the [History] tab of the lead page.

Rules for determining lead sources (with examples)

Creatio analyzes your website visits and identifies the lead sources using the tracking code and landing pages. Tracking results can be obtained from the page of the lead sent to Creatio from your landing page. The results are generated using the data contained in the [Channel] and [Source] on the [History] tab. The [Channel] field displays the lead traffic type, for example, "Social accounts", and the [Source] field displays the advertising system used, for example, "Twitter". Use the [Leads] section analytics to obtain the performance indicators for a certain lead channel or source.

Creatio uses the following information to analyze the lead sources:

- UTM marks: "utm_medium" (lead channel) and "utm_source" (lead source);
- Unique identifiers of redirections from Yandex and Google search engines that are added automatically ("gclid" and "yclid"). For example, if you post an advertisement in those search engines.
- Source website (referrer) URL that redirected your customer to your website.

The [Lead channels], [Lead sources] and [Lead source URL] lookup values are used for analysis of the redirection URL and the source website.

NOTE

If your company already has some tracking rules established for channel classification, sources and used marks, we recommend that you supplement the contents of the lookups mentioned.

Below are the rules used by Creatio to identify the lead source and channel.

Lead channel identification rules

The rules are listed by priority. This means that if rule 1 is satisfied, then rules 2 – 5 will not be checked and so on.

Priority	Channel identification rule	Case example
	utm_medium mark	

1	If the redirection URL contains the "utm_medium" mark value, the channel will be populated with the value corresponding to that mark[(1)].	For example, the redirection URL value is "http://site.com/page?utm_medium=social". In this case, the channel will be populated with the "Social accounts" value.
utm_source mark		
2	If the redirection URL contains the "utm_source" mark value, the channel will be populated with the found source default value[(2)].	For example, the redirection URL value is "http://site.com/page?utm_source=creatio", which means the customer clicked the link in the Creatio bulk email. In this case, the channel will be populated with the "Email" value.
Google AdWords/Yandex redirection ID. Direct		
3	If the redirection URL obtains the value from Google ("gclid") or Yandex ("yclid") redirection, then the "Search-based advertising" will be specified as the lead channel.	For example, if the redirection URL is "http://site.com/?gclid=123xyz" or "http://site.com/?yclid=123456".
Referrer		
4	If the redirection URL does not contain UTM mark values, then the source website (referrer) will be analyzed. To do this: a) If the referrer of the found source website is included in the [Lead source URL] lookup (source website sub-domains are also included in the search), then the lead channel will be populated with the site URL value[(4)]; b) If the found referrer is not included in the [Lead source URL] lookup, then the channel will be populated with the "Redirected from other website" value.	For example, the referrer is "mobile.twitter.com". In this case, the source will be populated with the Twitter" value and the channel – with the "Social account".
Direct traffic		
5	If the redirection URL does not contain UTM mark values and the referrer is not identified, then the channel will be populated with the "Direct traffic" value.	

Lead source identification rules

The rules are listed by priority. This means that if rule 1 is satisfied, then rules 2 – 5 will not be checked and so on.

Priority	Source identification rule	Case example
	utm_source mark	
1	If the redirection URL contains the "utm_source" mark value, the lead source will be populated with the value corresponding to that mark[3].	For example, the redirection URL value is "http://site.com/ page?utm_medium=social&utm_source=linkedin". In this case, the source will be populated with the "LinkedIn" value.
	utm_medium mark	
2	If the redirection URL contains the "utm_medium" mark value, the lead source will be populated with the "Other source" value.	For example, if the redirection URL value is "http://site.com/ page?utm_medium=social".
	Google AdWords/Yandex redirection ID. Direct	
3	If the redirection URL obtains the value from Google ("gclid") or Yandex ("yclid") redirection, then the "Google AdWords" or "Yandex. Direct" will be specified as the lead source accordingly.	For example, if the redirection URL value is "site.com/ ?gclid=123xyz", then the source will be populated with the "Google AdWords" value.
	Referrer	
4	If the redirection URL does not contain UTM mark values, then the source website (referrer) will be analyzed. To do this: a) If the referrer of the found source website is included in the [Lead source URL] lookup (source website sub-domains are also included in the search), then the lead source will be populated with the site URL value[4]; b) If the found referrer is not included in the [Lead source URL] lookup, then the lead source will be populated with the "Other website" value.	For example, if the source website value is "mobile.twitter.com", then the lead source will be populated with the "Twitter" value.
	No source	
5	If the redirection URL does not contain UTM mark values and the referrer is not identified, then the lead source will not be specified.	

ACCELERATE

Notes:

(1) – the "utm_medium" mark compliance to the Creatio channel is defined in the [Lead channels] lookup. Possible values of the UTM marks for each channel are displayed on the [Lead channel code] tab of the lookup page.

(2) – the default channel for the lead source is defined in the [Lead sources] lookup.

(3) – the "utm_source" mark compliance to the Creatio source is defined in the [Lead sources] lookup. Possible values of the UTM marks for each source are displayed on the [Lead source code] tab of the lookup page.

(4) – the source compliance to the website URL is defined in the [Lead source URL] lookup.

SEE ALSO

- How the lead source tracking works
- How to set up lead source tracking
- How website event tracking works
- How to set up website event tracking
- The [Leads] section
-

The [Feed] section

The Feed section displays messages posted by you and other users. The section lists all messages posted in objects (such as contacts and activities) as well as in channels that you are following. You can use the Feed section to post messages in any of channels that are available to you.

Views

The section has two views:

- – feed. Displays the feed messages as a list. Read more >>>
- – channels. Displays the list of channels. Read more >>>

CONTENTS

The [Feed] view

The Feed view displays the following messages:

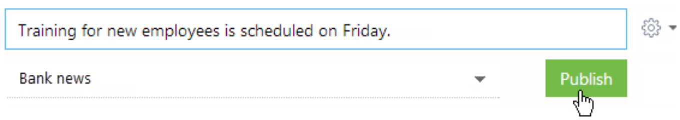
- Messages posted in channels that the current user is following.
- Messages posted in objects that the current user is following.
- Messages posted in the feed of current user's contact.
- Messages posted with a reference to the current user.
- Messages that contain comments posted with a reference to the current user.

Adding messages to the feed

To add a message to the feed, you can use the Feed tab of the Feed section that is available on the channel page, sections record page, as well as the communication panel.

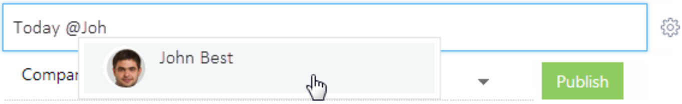
To post a message, enter its text and click the [Publish] button (Fig. 1).

Fig. 1 Adding a post



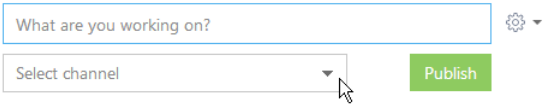
If you would like to mention another user in the message, type "@" symbol and start typing a contact name. The system displays a list of found records from which you can select the desired (Fig. 2). After publishing a message, the mentioned user will receive a notice that appears on the communication panel. Mentioned contact name will be displayed as a link, by clicking which a contact page will be opened.

Fig. 2 Mentioning a user in the feed



When posting a new message in the Feed section or on the Feed tab of the communication panel, you will need to select a message channel. Your message will be displayed in the feed of all users who follow the selected channel. For example, you can post general updates in the "Bank news" channel, while the messages that deal with recruitment can be posted in a custom "HR" channel. You can select the channel in the special field (Fig. 3).

Fig. 3 Selecting a channel when posting



NOTE

When posting messages on the section record pages, the message channel is defined automatically. The channel name corresponds to the section name and the name of the particular record that the message is related to (for example, "Contact John Best").

Displaying messages

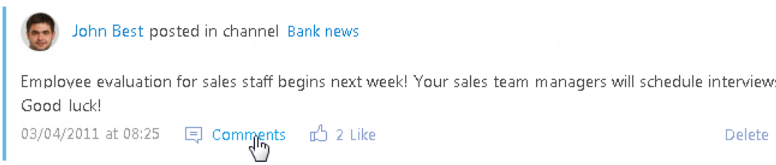
If new messages are added to the feed by other users, a button will be displayed at the top of the feed, showing total number of new messages. Click this button to display the messages.

The color of the vertical line to the left of the message varies depending on the section it is posted in.

The list of messages in the feed can be sorted by date of the message or by date of its last comment (latest messages are displayed at the top of the list). To change the sort order, use the menu.

Comments can be added to the posted messages. To add a comment for a message, click the [Comments] button under the message (Fig. 4), enter the text of the comment and click the [Comment] button. A notice about your comment will be sent to the person who posted a message. The notice will appear on the communication panel.

Fig. 4 Commenting a post



The following buttons are available below the posted message:

[Comments] – show/hide comments for a message. If a message has no comments, then a field for entering a comment will appear when you click the [Comments] button.

[Like]/[Unlike] – mark the message you like. This button displays total number of users who liked the message. To remove the like, click the [Unlike]. You can also give your like to a comment. A notice about your like will be sent to the person who posted a message. The notice will appear on the communication panel.

[Edit]– click this button to edit your message. The button is available for the author of the message or comment.

[Delete] – click this button to delete your message. The button is available for the author of message/comment, system administrators and users who have access to system operation "Permission to delete messages and comments".

NOTE

If a message or comment length exceeds certain limit, only the first part of the message will be displayed. To see the text of the message or comment in full, click the [Read more] button.

Working with the feed in system sections

The section record page (for example, the contact or activity page) contains the Feed tab on which the messages related to the current object are displayed. For example, the legal entity page displays messages connected to this legal entity.

Posting messages in the object feed is done in the same manner as posting messages in the [Feed] section.

The [Actions] button of the record page contains additional actions used to subscribe or unsubscribe a user to messages related to the current section record. Once a user is subscribed, all messages related to this record will be displayed in the user feed.

The [Follow the feed] action is available if the user is not following the current record feed. The [Unfollow the feed] action is available if the user is following the feed messages.

When creating a message in the system object feed (for example, the contact's feed) or when adding a comment to such message, you automatically follow this object's feed.

The [Channels] view

The [Channels] view displays the list of channels added to the system. You can open the [Channels] view by clicking the button in the [Feed] section.

The channels are used to group messages by subject. For example, the "Company news" channel can be created for the messages that contain common information about bank events.

Any posted message belongs to a particular channel. The message channel is assigned automatically (for example, when adding a message on the Feed tab of the section record page) or manually (when posting a message in the Feed section or on the Feed tab of the communication panel).

Users can follow the channels they are interested in. For example, if you are subscribed to the "Bank news" channel, your feed page will display messages posted in this channel.

CONTENTS

Channel page

The channel page consists of the field group containing general data, and several tabs.

Common data

General information about the channel.

Channel name	Name of the channel. This is a required field.
Channel image	The image that is used to visually identify the channel messages in the feed, for example, a channel logo. Click the button to add a new image by using the standard file selection window. Click the button to remove the image.
Description	Additional information about the channel.

The [Follow] button is used to subscribe to the current channel, and the [Unfollow] button is used to unsubscribe from it. The Unfollow button is unavailable if the given user does not have permission to unsubscribe from the channel.

The [Channel properties] tab

Information about the owner of the channel and the access rights that are configured for the channel.

Owner	Employee user who created the channel. This non-editable field is filled in automatically when creating a new channel.
Channel created on	The date when the channel was created. By default, this field is filled in with the current date. This is a non-editable field.
Permission to post entries	[All users can post] – set the option to allow posting messages for any user who has the view permission for this channel.
	[Only users with edit permission for this channel can post] – select this option if you want to allow to post messages only for those users who have the permission to edit the channel. You can set up access rights to the channel by selecting the [Set up access rights] action of the channel page.

Followers

The Followers detail contains the list of users whose feeds display messages of the selected channel.

The toolbar of the Followers detail contains the additional buttons.

[Add] – add a user or user group to the detail by selecting the corresponding menu command.

[Actions] – select the [Enable unfollowing] or [Disable unfollowing] commands to allow the selected users to unsubscribe from the channel or disable this option correspondingly.

The [Feed] tab

The Feed tab on the channel page contains the list of posts of the current channel.

[What are you working on?] – post a message in the channel. Enter the message text in the field and click the [Publish] button. The field is available only for users who have the permission to post messages in the selected channel.

The [Dashboards] section

The Dashboards section displays data from different sections of the system. We recommend you use this section to analyze and plan the work of each employee, each department and the bank as a whole.

The functionality of this section is similar to that of the Analytics view in the system sections, and is described in the "Dashboards" chapter.

The [Sales rep efficiency]

This dashboard displays current results of your sales representative's work, and additional summary information required to make quick yet knowledgeable decisions. The displayed data relates to the current user only

Number of meetings this month	Calculated indicator displaying the number of activities of the "Meeting" type completed in the current month.
Number of successful meetings	Calculated indicator displaying the number of activities of the "Meeting" type completed successfully in the current month.
Number of calls this month	Calculated indicator displaying the number of activities of the "Call" type completed in the current month.
Number of successful calls	Calculated indicator displaying the number of activities of the "Call" type completed successfully in the current month.
Top 10 opportunities to close	List of ten opportunities that are not in the final stage. The data is sorted in descending order of payment amount.
Current month opportunities	List of ten soonest opportunities nearest to being closed in the current month. The data is sorted by closure date, ascending: the soonest opportunity to close will be at the top of the list.
My tasks for today	A list of seven uncompleted activities that start or end today. The data is sorted in ascending order of activity completion time.
Noteworthy events of the customers	A list of the customers' noteworthy events celebrated this week.
Noteworthy events of the contacts	A list of the contacts' noteworthy events celebrated this week.

The [Top performers] tab

This dashboard contains ratings of sales reps, based on work results in the current month

Top 5 sales reps by signed contracts	List of the five sales reps with the largest number of contracts signed during the current month. The data is sorted in descending order.

Top 5 sales reps by opportunity revenues this month	List of the five sales reps with the highest amount opportunity revenues in the current month. The data is sorted in descending order of payment amount.
Top 5 sales reps by number of meetings	List of the five sales reps with the highest number of completed activities of the "Meeting" type in the current month. The data is sorted in descending order of number of meetings.
Top 5 sales reps by number of calls	List of the five sales reps with the highest number of completed activities of the "Call" type in the current month. The data is sorted in descending order of number of calls.

The [Sales pulse] tab

The [Sales pulse] tab contains several analytical summaries that can be used to estimate current sales situation in the bank.

Sales pipeline	A "pipeline" chart helps analyze success of deals and plan new opportunities. The diagram element's height corresponds to the number of opportunities with an up-to-date status. Opportunities with "Closed lost", "Closed won", "Closed rejected" and "Closed rerouted" statuses are not taken into account.
New opportunities by category	Diagram displaying how the opportunity amount changes for opportunities created in the previous and current months. The data is sorted in descending order of opportunity category.
Top 10 opportunities to close	List of ten opportunities with more than a 70% probability rate. Largest budget opportunities are displayed in descending order of budget amount.

SEE ALSO

- Dashboards

VIDEO TUTORIALS

- Analytics in Creatio. Working with dashboards

The [Calls] section

The Calls section contains the history of incoming and outgoing calls performed by Creatio users. Records are automatically added to the section every time you receive or make a call using the communication panel. Use the section tools to view detailed information about each call, as well as to build charts and generate analytical reports.

> ATTENTION!
> By default, the section is not displayed on the side panel but can be added to the workplace. You can find more detailed information about the workplace settings in a separate chapter.

Setting up integration with telephony

To be able to receive and make calls in Creatio, you need to set up integration with telephony. Read more >>>

Views

The section has several views:

- – call list. It displays calls as a list of records. All list columns are described below in the context of the call page.
- – call analytics. It displays charts, indicators and ratings that can be used to analyze calls.

Toolbar

All calls are registered automatically in Creatio, that is why the possibility to add calls manually is not available in the section. Here you can view the information about a call, update it or delete the call.

Also, you can play back a recorded call for the external calls.

[Play] – click to play back a recorded call.

[Stop] – click to stop playing back a recorded call. By default, playback stops automatically when the record is over.

> NOTE
> The playback of calls is available in Creatio for integration with Webitel and Oktell.

NEXT

- Call page
    - Common data
    - The [General information] tab
    - The [Timing details] tab
    - The [Attachments and notes] tab
    - The [Feed] tab
    - Additional columns

SEE ALSO

- Phone integration setup
- Managing calls

Call page

The call page consists of the field group containing general data, and several tabs.

Common data

General information about the call.

From	Phone number from which the call was made. This is a non-editable field.
To	Phone number to which the call was made. This is a non-editable field.
Call direction	Indicates whether the call is incoming or outgoing.
Created by	User who receives an incoming call or makes an outgoing call.

The [General information] tab

The [General information] tab contains information about the date and time of the call, results and information about system objects that the call is connected to.

Start date	Start date and time of the call. This is a non-editable field.
End date	End date and time of the call. This is a non-editable field.
Contact	Individual with which the call is connected. The field is filled in with the name of the contact that has been identified by the system by the phone number. When you fill in the [Contact] field, the [Account] field will automatically be filled in with the name of the account specified on the contact page. This is a non-editable field.
Account	Company that the call is connected to. The field is filled in with the name of the account that has been identified by the system by the phone number. This is a non-editable field.
Redirected from agent	Employee user that transferred the call. This is a non-editable field.

The [Timing details] tab

The [Timing details] tab contains information about duration and other timing details of the call.

Duration	Call duration specified in seconds. This is a non-editable field.
Time to connection	Time taken to answer the phone, in seconds. This is a non-editable field.
Conversation time	Conversation duration excluding connection time, in seconds. This is a non-editable field.
On hold time	Time the call is on hold when transferring, in seconds. This is a non-editable field.

The [Attachments and notes] tab

Additional information about the call.

Attachments

Use this detail to store files and links related to the call. For example, here you can attach a file with the recorded call.

Notes

The [Notes] detail is used to store additional text information about the call. You can edit and organize your lead notes on the detail. If you switch to another tab of the call page, the information on the [Notes] detail will be saved.

The [Feed] tab

The [Feed] tab displays messages related to the invoice.

Additional columns

The section contains additional columns that are not displayed on the article page, but can be displayed in the section.

Caption	Caption for the call. The caption is generated automatically. It consists of the values of the [Call direction] and [Start] fields: For example, "Incoming": 12.02.2014 3:26 PM".
Number	Subscriber telephone number who received or made the call.
Activity	Activity that the call is connected to.
Transferring number	Phone number from which the call was transferred to another number.
Number being transferred	Phone number that the call was transferred to.

System designer

System designer comprises the Creatio configuration tools. It enables you to:

- Create and edit sections, set up section and page properties via the Section Wizard.
- Create and edit details via the Detail Wizard.
- Set up the system appearance by uploading your corporate logo, changing the color of the section panel, setting up workplaces for different types of users.
- Import Excel data.
- Generate your company's organizational structure, add users, set up functional roles and access permissions.
- Set up reports and indicators based on the information from Creatio sections to obtain analytical data.
- Set up custom integrations with third-party REST-services.
- Configure the mobile version of Creatio via the Mobile Application Wizard.
- Access the development tools in the advanced settings area.

To open the System Designer, click in the top right corner of the application or click the [System Designer] link on the Creatio home page.

Processes

Process management tools.

Process library	Opens the [Process library] section where you can edit your existing process diagrams and create new ones. From here, you can access the process designer. To use this section, the user must have permission to the "Access to "Process design" section" system operation.
Process log	Opens the [Process log] section for managing running processes ("process instances ") and viewing statistics on completed processes. To access this section, the user must have permission to the "Access to "Process log" section" system operation.

NOTE

Detailed descriptions of business process management are available in the Creatio business process documentation.

Users and administration

Tools for registering users, distributing access rights and auditing the system operations.

<table>
<tr><td>System users</td><td rowspan="3">Opens the [Users] section where you can set up the structure for your company, register users and sort the employees by role. Read more >>>
To access this section, the user must have permission to the "Manage user list" (CanManageUsers) system operation.</td></tr>
<tr><td>Organizational roles</td></tr>
<tr><td>Functional roles</td></tr>
</table>

Object permissions	Opens the [Object permissions] section where you can set access permissions to system objects, e.g., to sections or lookups, as well as separate columns and records in these objects. For example, you can change the permissions to edit or delete records in the "KnowledgeBase" object. Read more >>> To access this section, the user must have permission to the "Access to "Access rights" workspace" (CanManageAdministration) system operation.
Operations permissions	Opens the [Operations permissions] section where you can set up user rights and roles for different system operations. For example, you can set up your workplaces or Excel import parameters. Read more >>> To access this section, the user must have permission to the "Access to "Access rights" workspace" (CanManageAdministration) system operation.
Audit log	Opens the [Audit log] page containing information about the events that occur in the system, for example, user authorization, modifying the user role structure, modifying access rights to objects. Read more >>> To access this section, the user must have permission to perform the "View "Audit log" section" (CanViewSysOperationAudit) system operation.

Import and integration

Import and data synchronization features.

Data import	Opens the import setup window that you can use to import records from an Excel file to your system. Read more >>> To access the import setup window, the user must have permission to perform the "Excel import" (CanImportFromExcel) system operation.
LDAP integration setup	Opens the LDAP integration page that you can use to register users in Creatio automatically as they sign in to a domain, and to enable domain authorization. Read more >>> To access the integration setup page, the user must have permission to the "Access to "Access rights" workspace" (CanManageAdministration) system operation.
Web services integration setup	Opens the [Web services] section, where you can add and set up new integrations, including the parameters for connecting to the web service and calling its methods. Read more >>> To access this section, the user must have permission to the "Access to "Configuration" section" (CanManageSolution) system operation.
Mailing log (available in Marketing Creatio and CRM-bundle).	Opens the [Mailing log] section that contains information about bulk email preparation and execution steps. Read more >>> All users can access this section by default.

Website events tracking (available in Marketing Creatio, bank sales and CRM-bundle).	Opens the [Website events] section used to track all user actions on your website, and to set up the website events tracking service. Read more >>> To access this section, the user must have permission to the “Website events tracking” (CanManageEventTracking) system operation.

Applications

Extension management.

Installed applications	Opens the [Installed applications] section that enables you to manage installed marketplace applications. Read more >>> To access this section, the user must have permission to the “Access to "Configuration" section” (CanManageSolution) system operation.

System setup

User tools for Creatio configuration setup.

Setup duplicates rules	Opens the list of rules for finding and deleting duplicate records. Read more >>> To access the duplicates search rules page, the user must have permission to the “Access to "Duplicates rules setup” (CanManageDuplicatesRules) system operation.
Languages	Opens the list of available interface languages. Read more >>> To access this section, the user must have permission to the “Access to "Languages" section” (CanManageLanguageSection) system operation.
Translation	Opens the [Translations] section where users can localize the interface and other system elements. Read more >>> To access this section, the user must have permission to the “Access to "Translation" section” (CanManageTranslationSection) system operation.
Set up portal main page	Use to edit the main page of the self-service portal. Read more >>> To access this section, the user must have permission to the “Access to portal main page setup module” (CanManagePortalMainPage) system operation. Please note that the portal functionality is licensed separately.
Lookups	Opens the [Lookups] page that enables you to set up values for different lookups: "Job titles", "Industries", "Activity categories", etc. Read more >>> To access this section, the user must have permission to the “Access to “Lookups" section” (CanManageLookups) system operation.
System settings	Opens the [System settings] section where you can modify global (system-wide) settings. System settings include the base currency, email settings, etc. Read more >>> To access this section, the user must have permission to the “Access to “System settings" section” (CanManageSysSettings) system operation.

Section Wizard	Opens the Section Wizard, where you can create and set up your own sections in Creatio. Read more >>> To access this section, the user must have permission to the “Access to "Configuration" section” (CanManageSolution) system operation.
Detail Wizard	Opens the Detail Wizard that allows you to create and set up new details in Creatio sections. Read more >>> To access this section, the user must have permission to the “Access to "Configuration" section” (CanManageSolution) system operation.
Mobile Application Wizard	Opens the Mobile App Wizard that allows you to configure your Creatio mobile application. Read more >>> To use the Mobile Application Wizard, the user must have permission to the “Mobile app setup” (CanManageMobileApplication) system operation.

Set up view

Additional tools for setting up Creatio interface.

Workplace setup	Opens the page where you can set up the structure of workplaces to be available on the side panel. Read more >>> To access the workplac setup page, the user must have permission to the “Access to workplace setup” (CanManageWorkplaceSettings) system operation.
Logo customization	Opens the page that allows you to change the logos displayed in the application. Read more >>> You can customize the logo only if you have permission to perform the "Logo customization changes" (CanManageLogo) system operation.
Color customization	Opens a separate page that enables you to change the color of the side panel. Read more >>> You can customize the color only if you have the right to perform the "Access to color customization" system operation (CanManageSectionPanelColorSettings).

Admin area

Developer tools for setting up Creatio configuration.

Advanced settings	Opens a separate workplace containing a set of developer tools to configure Creatio. To access this section, the user must have permission to the “Access to "Configuration" section” (CanManageSolution) system operation.

NOTE

Detailed descriptions of the developer configurations can be found in the Creatio platform development documentation (SDK).

NOTE

Operation permissions are granted in the [Operation permissions] section in the System Designer.

CONTENTS

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Calling web services from business processes

Creatio can integrate with custom REST web services. You can set up web service integration, including web service connection parameters and methods in the [Web services] section of the [Studio] workplace. Alternatively, you can open this section by clicking the [Web service integration setup] link of the System designer.

NOTE

The complexity of the setup procedure largely depends on how the web service itself is implemented and documented. Most common web service integrations do not require programmer background.

The general setup procedure is as follows:

1. Studying documentation on REST-services that are necessary for performing a specific business task. You need to fully understand how to call the used web-service.
2. For each of the web services:
   a. Set up web service properties, including its URI in the [Web services] section.
   b. Add HTTP methods that Creatio can call to trigger web service functions and set up their parameters.
3. Implement calling of the integrated web services as part of your BPMN business processes.

EXAMPLE

Set up automatic updates of the currency exchange rates in the [Currencies] lookup using a free web service "Fixer" (http://fixer.io/).

Implementation of this example requires that we set up integration with the Fixer service itself, set up a method for obtaining exchange rates for the needed currency, and finally, set up a business process that would call this method at the required intervals and update the [Currencies] lookup.

The following chapters cover web service integration setup, using the "Fixer" REST service as example.

CONTENTS

Studying Web service documentation

Before you start setting up integration with a REST web service, you need to have a complete understanding of how to call this web service and what kind of response it will return. This information is available in the web service documentation.

For example, to obtain currency exchange rates from http://fixer.io/, you can use one of the two GET method requests:

- https://data.fixer.io/api/latest – to obtain latest exchange rates.
- https://data.fixer.io/api/2000-01-03 – to obtain exchange rates for specific date (in this case, January 3, 2000).

The following parameters can be used in requests:

- access_key – specifies your personal API access key for authentication on http://data.fixer.io/api/. You can obtain this code for free, by registering on http://fixer.io/. Required parameter.
- base – specifies base currency, in relation to which the exchange rates will be obtained. For example, to get exchange rates in relation to US dollar, use the following request: https://data.fixer.io/latest?base=USD. If the "base" parameter is not passed, the rates will be returned in relation to Euro.
- symbols – specifies the currencies, whose exchange rates must be returned. For example, to get exchange rates for US dollar and British pound only, use the following request: https://data.fixer.io/latest?symbols=USD,GBP. If the "symbols" parameter is not passed, the rates will be returned for all currencies that the web service supports.

Regardless of the request method and parameters, the web service returns responses of the same structure:

```
}$uweeguu$<vtwg.$vkoguvcor$<374374956:.$dcug$<$GWT$.$fcvg$<$423:/24/
44$.$tcvgu$<}$CWF$<3078;;.$DIP$<30;77:.000.$\CT$<3605:6¡¡
```

Each response contains 3 parameters:

- success – indicates whether exchange rate query was successful.
- timestamp – object containing a standard UNIX time stamp indicating the time the given exchange rate data was collected.
- base – specifies base currency, for the exchange rates. For example, "base":"EUR" indicates that the rates are returned in relation to Euro.
- date – specifies the date of the exchange rates. For example, "date":"2018-02-22" indicates that the rates are returned for February 22, 2018.
- rates – contains an array of nested parameters, each of which represents exchange rate between the base currency and one of the supported currencies. For example, "rates":{"GBP":0.88343,"USD":1.2276} means that the web service returned exchange rates for British Pound ("GBP":0.88343) and US dollar ("USD":1.2276).

Thus, to integrate with this web service, Creatio must be configured to execute the needed requests with the needed parameters and parse the response obtained from the web service.

SEE ALSO

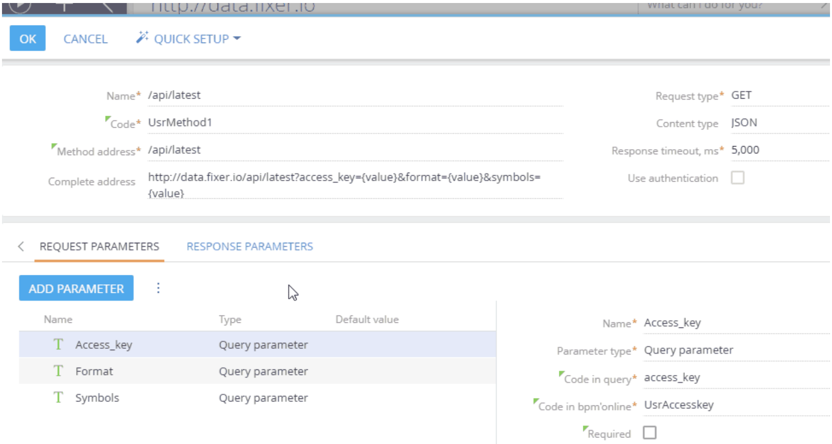
- Setting up general properties of the web service

Setting up general properties of the web service

Although the general integration setup steps are the same, the details largely depend on the web service specifics. To set up integration with a new web service:

1. Go to the [Studio] workplace and open the [Web services] section.
2. Add a new web service integration by clicking the [New web service] button.
3. Enter the web service address in the mini page and click [OK] button (Fig. 1).

Fig. 1 Entering the web service address in the mini page

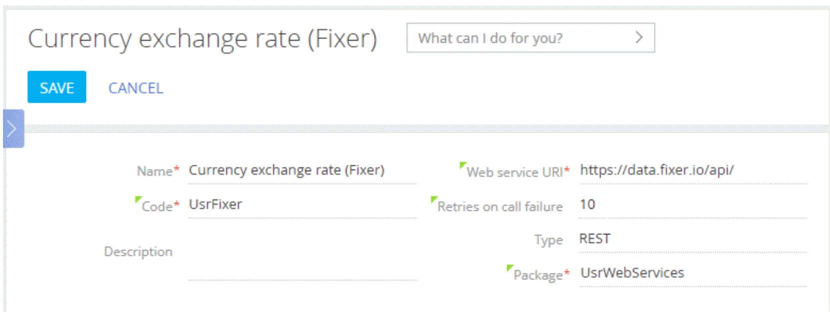


NOTE

If you enter a web service URL with parameters, they will be automatically added as request parameters to the created web service integration.

4. Verify and populate the web service page fields (Fig. 2), if needed:

Fig. 2 Populating general web service properties



FIELD	NOTES	EXAMPLE
Name	Enter the name that will be displayed in the [Which method to call?] field for the [Call web service] business process elements.	Currency exchange rate (Fixer)

FIELD	NOTES	EXAMPLE
Code	Used for interacting with this parameter in Creatio source code. Usually, it consists of the method name and the "Usr" prefix.	UsrFixer
Web service URI	Complete address for calling the web service will consist of this URI and settings specified on the method setup page. Use same protocol (http/https) as your Creatio application protocol. If the web service is located in a package that cannot be modified, its URI can still be edited.	http://data.fixer.io/api/
Retries on call failure	If the web service response returned with an error code or the response time-out expired, the query will be repeated the specified number of times. When populating this field, pay attention to the response time-out that will be specified for web service methods.	10
Package	The package in which this web service integration implementation will be saved. The list contains all packages that can be modified by the current user.	UsrWebServices

NOTE

Web service integrations are saved as configuration items. If a web service configuration item is located in a package that cannot be modified, you will be able to edit only its URI. To make other changes to such web service integrations, copy the corresponding configuration items to custom packages.

CONTENTS

Web service authentication

Depending on the specifics of a each particular web service, it may process any and all requests, or require some form of authentication before the web service can be used. Creatio web service integration supports two types of authentication:

- HTTP Basic authentication involves passing a login and password as part of a web service request to authenticate Creatio to the integrated web service. It is a simpler form of authentication to use, however, it is not secure without SSL/TLS. It is a simpler form of authentication to use, however, it is not secure without SSL/TLS.

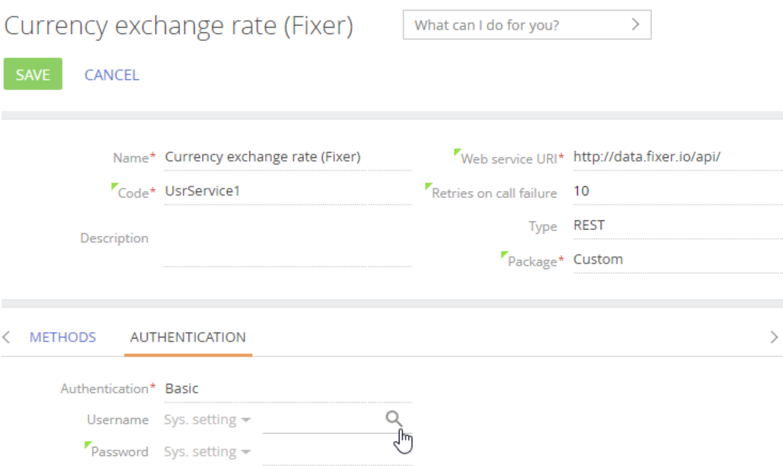
- OAuth 2.0 Authorization is secure authentication mode, supported by most of the popular service providers, including Facebook, Google and Amazon.

Using basic authentication

To enable HTTP basic authentication:

1. Obtain login credentials for basic authentication. The method of obtaining the credentials depends on the web service you integrate.
2. Open the [System designer] go to the [System settings] section and add 2 system settings:
   a. A “string” type system setting for storing a login for the web service.
   b. An “encrypted string” type system setting for storing the password for the web service.
3. Populate the system setting values with the login and password for authentication with the web service.
4. Open the web service page and go to the [Authentication] tab.
5. In the [Authentication] field, select “Basic”.
6. In the [Username] and [Password] fields, select the system settings that contain the login and password for accessing the web service (Fig. 3).

Fig. 3 The [Authentication] tab



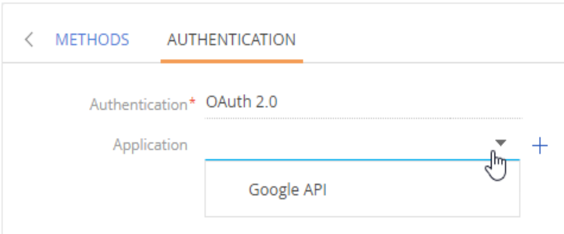
The system settings used in the authentication will be bound to the web service package. The system settings are bound without values, so the password and login values will not be bound to the package. After installing the web service integration package on a new application, make sure that you populate the login and password system settings.

Using OAuth authentication

To use OAuth authentication, provided the application has been set up before (e.g., when installing a package with web service integration):

1. Open the web service page and go to the [Authentication] tab.
2. In the [Authentication] field, select "OAuth 2.0".
3. In the [Application] field, select an existing OAuth application (Fig. 4). Learn more about setting up the new OAuth 2.0 application in a separate article.

Fig. 4 Selecting an existing OAuth application



SEE ALSO

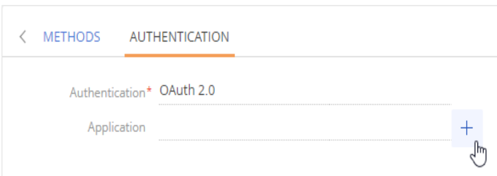
- Setting up an OAuth 2.0 application

Setting up an OAuth 2.0 application

To set up a new OAuth application for authentication with the web service:

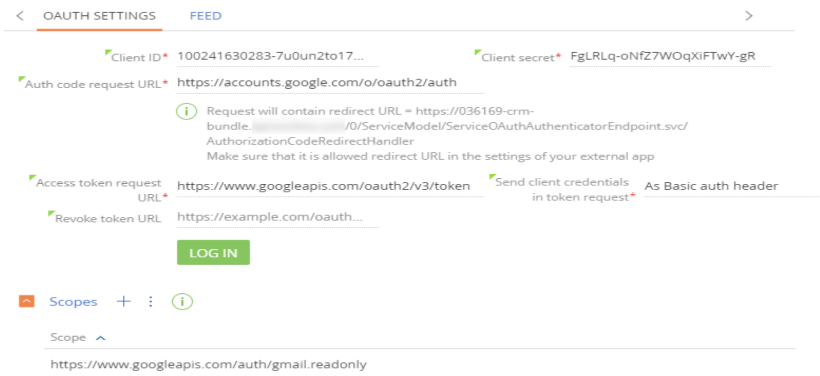
1. Open the web service page and go to the [Authentication] tab.
2. In the [Authentication] field, select "OAuth 2.0".
3. In the [Application] field, click [+] (Fig. 5).

Fig. 5 Adding a new OAuth application



Populate the OAuth application setup page (Fig. 6). The values are usually available in the web service documentation or via API of that service, e.g., access to Google APIs is available through the [Credentials] section of Google developer console, as well as in the API documentation.

Fig. 6 OAuth application setup page



Since different services have different terminology, API and documentation structure, the authentication setup will also be different. Common OAuth setup issues, their causes and cures are available in a separate article.

Below are general recommendations on populating OAuth setup parameters and tips on where to find values to populate these parameters with.

ATTENTION

OAuth authentication setup must be performed both on Creatio side and on the side of the integrated application.

Name

In the [Name] field, enter the name for the new application, which will be displayed in the [Application] field when the users populate it on the [Authentication] tab. You can also select an image to be used as an icon for this OAuth application.

Client ID

In the [Client ID] field, enter the client identifier issued to you by the authorization server of the integrated web service. In the documentation and API of different web services, it may be referred to as:

- Application ID
- Consumer ID
- Public key

This will be the value of the client_id parameter of the request. Read more >>>

CASE

Client ID for Google APIs is available in the “Credentials” section of Google APIs console (https://console.developers.google.com), in the “Client ID” field. Read more >>>

Client secret

In the [Client secret] field, enter the "client secret" issued to you by the authorization server. In the documentation and API of different web services, it may be referred to as:

- Application secret
- Consumer secret
- Secret key

This will be the value of the client_secret parameter of the request. Read more >>>

CASE

Client secret for Google APIs is available in the "Credentials" section of Google APIs console (https://console.developers.google.com), in the "Client secret" field. Read more >>>

Auth code request URL

In the [Auth code request URL] field, specify the URL, which will serve as an endpoint for requesting an access from the user who can grant it. For example, when Google informs you that an application attempts to receive access to certain information, you act as the "user who can grant access".

This is the auth_uri parameter of the request. Read more >>>

CASE

Auth code request URL for Google APIs is "https://accounts.google.com/o/oauth2/auth". You can get if from the documentation, describing the example of an OAuth application for integration with Google. Also, it is available in the json file with settings, which can be downloaded from the "Credentials" section of Google developer console.

Access token request URL

In the [Access token request URL] field, specify the URL, which will serve as an endpoint for requesting an access token to use for subsequent requests to the service. Read more >>>

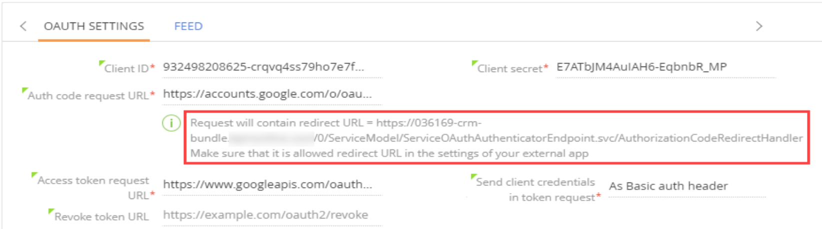
CASE

Access token request URL for Google APIs is "https://www.googleapis.com/oauth2/v3/token". You can get if from the documentation, describing the example of an OAuth application for integration with Google. Also, it is available in the json file with settings, which can be downloaded from the "Credentials" section of Google developer console.

Redirect URL

When setting up OAuth authentication on the web service side, you need to specify URL where the authentication server will redirect users after authentication. This "redirect URL" is displayed on the OAuth application setup page (Fig. 7).

Fig. 7 Redirect URL on the OAuth application setup page in Creatio



Make sure that you specify this URL in the settings of the integrated service as the proper redirect URL.

Send client credentials in token request

Select which part of token request will contain the access token. Auth permits variations as to where the token can be passed. In the [Send client credentials in token request] field, you can select from the following available options: "As Basic auth header, "In the request body", or "In query string as a GET request". The option to choose depends on the specifics of the third-party system and is usually covered in its documentation.

In request body

A lot of popular services, e.g., Google, Linkedin, JIRA, etc. process requests where access token is passed in the request body.

CASE

```
RQUV"1vqmgp"JVVR1303
Jquv<"ugtxgt0gzcorng0eqo
Eqpvgpv/V{rg<"crrnkecvkqp1z/yyy/hqto/wtngpeqfgf

itcpvav{rg?tghtgujavqmgp(tghtgujavqmgp?vI|x5LQmH2ZI7Sz4VnMYKC
(enkgpvakf?u8DjfTmsv5(enkgpvaugetgv?9Hlhr2\Dt3MvFTdphXfoKy
```

As Basic auth header

Some services, such as QuickBooks, Docusign, GoToWebinar require that client id and client secret key are passed in the form of basic authentication and would not accept them in the request body. Read more in the IETF documentation.

CASE

```
ewtn"/Z"RQUV"$jvvru<11crk0igviq0eqo1qcwvj1x41vqmgp$"^
/J"$Cwvjqtk|cvkqp<"Dcuke"}Dcug86"Gpeqfgf"eqpuwogtMg{"cpf"
eqpuwogtUgetgv¡$"^
/J"$Ceegrv<crrnkecvkqp1luqp$"^
/J"$Eqpvgpv/V{rg<"crrnkecvkqp1z/yyy/hqto/wtngpeqfgf$"^
/f"$itcpvav{rg?cwvjqtk|cvkqpaeqfg(eqfg?
}tgurqpugMg{¡(tgfktgevawtk?jvvr'5C'4H'4Heqfg0gzcorng0eqo$
```

In query string as a GET request

Several services may handle authentication differently. For example, instead of POST request with parameters in body and headings, Facebook uses a token GET request with all parameters specified in the request URL.

CASE

```
jvvru<11fgxgnqrgtu0hcegdqqm0eqo1fqeu1hcegdqqm/nqikp1ocpwcnn{/dwknf/c/
nqikp/hnqy1%eqphkto^
IGV"jvvru<11itcrj0hcegdqqm0eqo1x5041qcwvj1ceeguuavqmgpA^
enkgpvakf?}crr/kf¡^
(tgfktgevawtk?}tgfktgev/wtk¡^
(enkgpvaugetgv?}crr/ugetgv¡^
(eqfg?}eqfg/rctcogvgt¡
```

Revoke token URL

In the [Revoke token URL] field, specify the URL, which will serve as an endpoint for revoking the access token to deny subsequent requests to the service.

This is an optional parameter. In a regular scenario, a user who has access to the integrated service can revoke access to specific OAuth applications. For example, you can disable access to specific applications from your Google account settings.

CASE

The URL for making a request to revoke a Google API token is "https://accounts.google.com/o/oauth2/revoke". You can get if from the Google API documentation.

Log in

Click the [Log in] button, log in to the service using the shared user's credentials and approve access for Creatio OAuth application.

Scopes

Scopes (also known as "permissions") are used to grant an application different levels of access to data on behalf of the end user. Scope URLs are usually available in the service documentation. Each API may declare one or more scopes.

CASE

Google API scopes, such as "https://www.googleapis.com/auth/gmail.readonly" (permission to view your email messages and settings) are available in the API documentation.

OAuth application common setup issues

This article contains an overview of several typical issues that you may encounter when setting up integration with a web service using authentication via OAuth 2.0. More information is available in the "Setting up an OAuth 2.0 application" article.

CONTENTS

- Other access limitations have been set up in the integrated service
- The application is awaiting the client ID and client secret in the other part of the query
- "Missing refresh token" on login

Connection settings are invalid or out-of-date

The connection settings are different from those in the integrated application. The error may appear in the Client ID, Client secret, authentication and token URLs and Scopes.

When does the error appear

- The error appears when adding a user on the OAuth application page.
- The error appears when calling the web service (i.e., Creatio attempts to obtain access using invalid settings).

How to fix

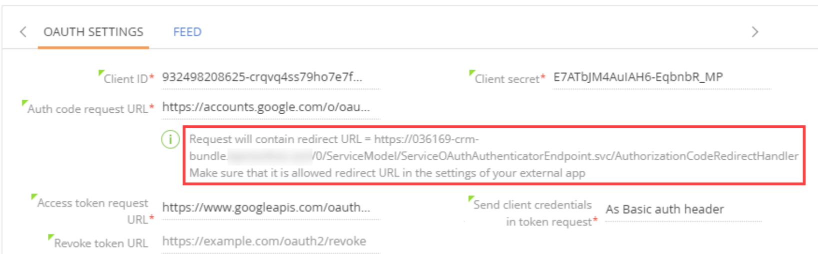
Verify each setting on the OAuth application setup page in Creatio, make sure that they match the corresponding settings in the integrated third-party application. After that, attempt to add a new user again.

Incorrect Redirect URL is specified in the integrated third-party application

OAuth authentication setup must be performed both on Creatio side and on the side of the integrated application. Security requirements often involve specific URL for redirecting after access token is issued by the authentication server. Also, the domain for redirection URL often requires separate verification.

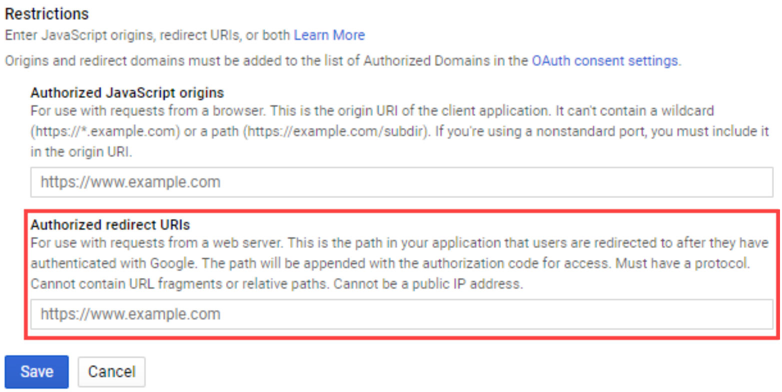
The proper redirect URL is displayed on the OAuth application setup page in Creatio (Fig. 8).

Fig. 8 Redirect URL on the OAuth application setup page in Creatio



This URL must be copied to the corresponding settings of the integrated third-party application (Fig. 9).

Fig. 9 Entering a redirect URI in Google API



If the link specified in the integrated third-party application does not match the one on the OAuth application setup page in Creatio, access token will not be issued.

When does the error appear

The error appears when adding a user on the OAuth application page.

How to fix

Specify correct redirect URL by copying the URL from the OAuth application setup page in Creatio to the corresponding field in the integrated third-party application.

Insufficient permissions (scopes) to perform an operation

In OAuth 2.0, the access token is often issued with specific limited permissions to call functions of the integrated application. For example, applications may have a separate scopes for reading and modifying data. In this case, the list of needed scopes must be specified in Creatio, the integrated service, or upon user login.

The scopes must be specified in Creatio, on the [Scopes] detail of the OAuth application setup page. Creatio will be requesting these scopes when the user logs in to authentication server. If the needed scope has not been added to the [Scopes] detail, it is likely that the user will not be able to log in.

When does the error appear

When attempting to call the integrated web service, for example, to modify its data without sufficient scopes, the integrated application will return an error.

How to fix

1. Add all needed scopes to the [Scopes] detail.
2. Delete the integrated service user from Creatio, so that the previously issued access token is revoked.
3. Revoke access for Creatio application in the integrated service (e.g., you can disable access to specific applications from your Google account settings).
4. Add the user once again.

The scopes must be specified in the integrated application

Sometimes, the scopes must be specified in the integrated application. For example, the extent of permissions can be specified during the application setup in the integrated service. In this case, the scopes specified in Creatio must correspond to those permitted for this application in the integrated service.

When does the error appear

Depending on the architecture of the integrated application, the following scenarios are possible if scopes specified in Creatio exceed those permitted in the integrated service:

- The user will be unable to log in.
- When attempting to call the integrated web service to modify its data, the integrated application will return an error.

How to fix

If the user is unable to log in:

1. Add the needed scope in the integrated application.
2. Attempt to log in again.

If the integrated application returns an error when attempting to call the integrated web service to modify its data:

1. Add the needed scope in the integrated application.
2. Delete the integrated service user from Creatio, so that the previously issued access token is revoked.
3. Revoke access for Creatio application in the integrated service (e.g., you can disable access to specific applications from your Google account settings).
4. Add the user once again.

The scopes requested by Creatio are denied during login

The properly specified scopes in Creatio may be denied during login attempt. In some applications, e.g., Facebook, the list of scopes that are actually issued can be modified by the user of the integrated service during login.

For example, reading and modifying the data (2 records on the [Scopes] detail) are permitted in the application settings by default. On login, the user cleared checkbox for modifying data. In this case, when Creatio requests access to reading and modifying the data, the application will issue the token only with the permission to read data, which will be added to Creatio.

When does the error appear

When attempting to call the integrated web service to modify its data, the integrated application will return an error.

How to fix

1. Delete the integrated service user from Creatio, so that the previously issued access token is revoked.
2. Revoke access for Creatio application in the integrated service (e.g., you can disable access to specific applications from your Google account settings).
3. Add the user to Creatio again, this time selecting all needed scoped during login.

The “Use authentication” checkbox is not selected in the web service method or wrong authentication method selected

This is not an OAuth-specific issue, rather it refers to the entire web service integration setup process. Its symptom is “Web service replies with 403 Unauthorized” error.

When does the error appear

The error appears when calling the web service (i.e., Creatio attempts to connect without passing of an access token).

How to fix

Set proper authentication type on the [Authentication] tab of the web service setup page and/or select the "Use authentication" checkbox in web service methods.

Other access limitations have been set up in the integrated service

Some services may limit access by IP or domains. For example, Facebook may limit access by domains.

When does the error appear

The error appears when adding a user on the OAuth application page.

How to fix

Add and verify your Creatio application IP and/or domain on the integrated service side.

The application is awaiting the client ID and client secret in the other part of the query

When requesting or updating token, Creatio by default includes client id and client secret in the request body.

CASE

```
RQUV"1vqmgp"JVVR1303
Jquv<"ugtxgt0gzcorng0eqo
Eqpvgpv/V{rg<"crrnkecvkqp1z/yyy/hqto/wtngpeqfgf

itcpvav{rg?tghtgujavqmgp(tghtgujavqmgp?vI|x5LQmH2ZI7Sz4VnMYKC
(enkgpvakf?u8DjfTmsv5(enkgpvaugetgv?9Hlhr2\Dt3MvFTdphXfoKy
```

Most services, e.g., Google, Linkedin, JIRA, etc. will process such request.

However, there may be a service, which would not accept client id and client sectet in the request body. OAuth permits variations in this case.

For example, QuickBooks, Docusign, GoToWebinar pass client id and client secret in the form of basic authentication.

CASE

```
ewtn"/Z"RQUV"$jvvru<11crk0igviq0eqo1qcwvj1x41vqmgp$"^
/J"$Cwvjqtk|cvkqp<"Dcuke"}Dcug86"Gpeqfgf"eqpuwogtMg{"cpf"
eqpuwogtUgetgv¡$"^
/J"$Ceegrv<crrnkecvkqp1luqp$"^
/J"$Eqpvgpv/V{rg<"crrnkecvkqp1z/yyy/hqto/wtngpeqfgf$"^
/f"
```

```
$itcpvav{rg?cwvjqtk|cvkqpaeqfg(eqfg?}tgurqpugMg{¡(tgfktgevawtk?jvvr'5
C'4H'4Heqfg0gzcorng0eqo$
```

This method is covered in RFC, as an alternative to the approach supported by Creatio.

Several services may handle authentication differently. For example, instead of POST request with parameters in body and headings, Facebook uses a token GET request with all parameters specified in the request URL.

When does the error appear

When the user attempts to log in to application. In this case, the login fail.

How to fix

Currently, there are no other ways of sending client id and client secret in Creatio.

“Missing refresh token” on login

Refresh token is required to update access token automatically. As a result, integration will be working for as long as the token stays updated, without the need to confirm access. The refresh token is not always used. Depending on the architecture of the integrated application, this may or may not constitute an actual integration error.

There are three typical cases:

- Application token does not expire
- Application was not built to update its access tokens
- Token updating must be enabled in the application settings
- Application issues a refresh token only once per user
- The refresh token has been invalidated in the integrated application, while Creatio still stores the invalidated token

Application token does not expire

The integrated application issues an access token, which does not expire (no need to update it). This is a rare case. Despite the warning, the integration may be operational for long periods of time.

How to fix

Study the documentation of the integrated service. Make sure that it actually does not issue refresh tokens and does issue access tokens that do not expire. In this case, you may disregard the warning and continue working with intergated service.

Application was not built to update its access tokens

The integrated application issues an access token, which will eventually expire, but cannot be updated due to limitations of the integrated application. This is often the case with billing applications which by design should not grand long-term access.

Such applications will not work with shared user, as common user is a means of not having each Creatio user log in separately to the integrated application.

How to fix

Study the documentation of the integrated service. Make sure that it actually does not issue refresh tokens and does issue access tokens that do expire.

Token updating must be enabled in the application settings

The integrated application issues an access token, which will eventually expire. The token cannot be updated due to the integrated application current settings. For example, application may have a separate scope for requesting refresh token.

How to fix

1. Study the documentation of the integrated service. Make sure that it actually does issue refresh tokens.
2. Find out which settings permit issuing refresh tokens and implement them.
3. Revoke the current token.
4. Add a common user in Creatio.

Application issues a refresh token only once per user

External application may issue a refresh token only once. I.e., the corresponding user is already logged in to the application, has already received a refresh token, and is not eligible for a second refresh token.

> CASE
>
> Creatio administrator added a token for the same integrated application.
>
> The administrator has deleted the token from Creatio without revoking it (e.g., delete the the token from the database without populating the [Revoke URL] field).
>
> When the administrator adds a new token in Creatio, the integrated application will not issue a second refresh token, as it has already issued the first token that has not been revoked yet.
>
> Alternatively, the administrator may log in to the same integrated application from a different system, and then attempts to log in from Creatio.

How to fix

Study the documentation of the integrated service. Make sure that it actually does issue refresh tokens. Find out how to revoke access to the web service. Usually, integrated services have some form of UI to manage third-party access. Delete the token of the application that the user adds to Creatio (e.g., remove integration with Creatio).

After this, the integrated application will issue a refresh token upon adding an access token to Creatio.

The refresh token has been invalidated in the integrated application, while Creatio still stores the invalidated token

This may occur if administrator logs in to Creatio and the integrated application, and then deletes access on the token management page of the integrated service. As a result, Creatio will store outdated access token and refresh token.

When does the error appear

The authentication error appears when the web service is called.

How to fix

1. In Creatio, delete the user from the OAuth application setup page.
2. Add the user once again.

SEE ALSO

- Setting up web service methods

Setting up web service methods

For each web service that you integrate with Creatio, you can set up calling of the necessary methods. You can set up several methods per web service. You can add the request and response parameters manually or by importing from request or response example by clicking the [Quick setup] button and selecting a type of example (cURL, RAW or JSON) in the pop-up window. Also you can add request parameters from the "Method address" field

EXAMPLE

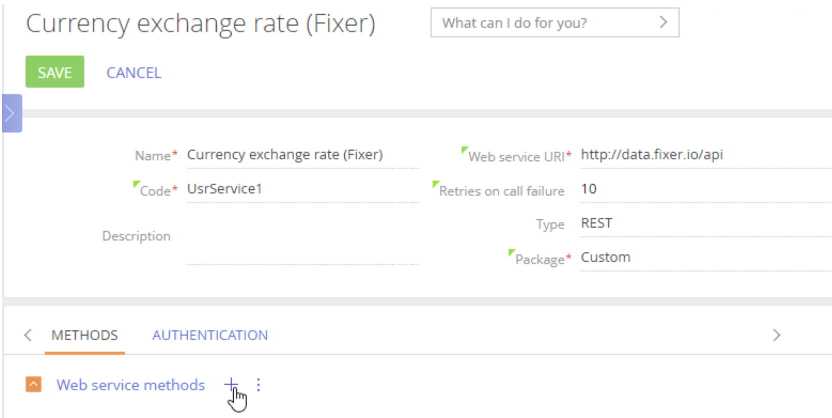
According to the "http://fixer.io/" web service documentation, the latest currency exchange rates can be obtained via a simple GET method request to http(s)://data.fixer.io/api/latest endpoint. To have Creatio obtain the currency rate information, we need to implement this method in the [Methods] detail of the [Web services] section.

NOTE

You can call any number of web service methods within a single process flow by using multiple [Call web service] business process elements and mapping incoming and outgoing parameters between them.

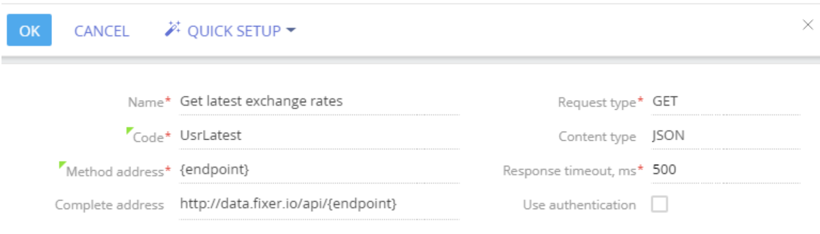
1. Open the setup page of your web service integration and add web service methods by clicking the [+] button on the [Methods] tab (Fig. 10).

Fig. 10 Adding a web service method



2. Populate the method properties (Fig. 11):

Fig. 11 Web service method properties



FIELD	NOTES	EXAMPLE
Name	Enter the name that will be displayed in the [Which method to call?] field for the [Call web service] business process elements.	Get latest exchange rates
Code	Used for interacting with this parameter in Creatio source code. Usually, it consists of the method name and the “Usr” prefix.	UsrLatest
Method address	Use the web service documentation to determine this value. You can specify a static value, or map it to a “method address parameter” of your request. For instance, http://fixer.io/ can process two endpoints: “latest” – to return the latest rates and date in text format (such as “2000-01-03”) to return rates for that date. You can set a specific endpoint, such as “latest”, simply by entering it in this field. If you need flexible integration, pass endpoint as a “method address parameter”, by specifying that parameter name in curly braces. In the current case, we use the “{endpoint}” parameter. You can pass several method address parameters, for example: “{parameter1}/{parameter2}”.	{endpoint}

FIELD	NOTES	EXAMPLE
Request type	Type of HTTP method used by request. Standard HTTP methods are supported. The type of request to use is determined in web service documentation. For example, to retrieve data, such as currency exchange rates use "GET" method.	GET
Content type	Currently, only the JSON content type is supported.	JSON
Response timeout, ms	Time after which Creatio will deem a web service request as timed out. Upon timeout, Creatio will retry the request or return an error, depending on the number of retries available for this service call.	500
Complete address	The method call address is generated automatically. It consists of the web service URI and the method address in the form "?paramCode1=value1&paramCode2=value2". This address is displayed for reference.	http://data.fixer.io/api/{endpoint}

CASE

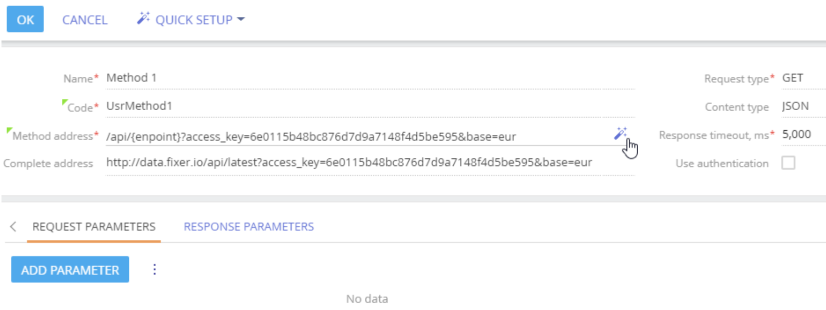
Complete address of the method request has the following structure: "Web service URI" + "Method address" + "?" + "A set of request parameters separated with &". For example: http://data.fixer.io/latest?base=USD&symbols=GBP.

After that, you can add the request parameters manually or by importing from examples.

Adding parameters from the "Method address" field

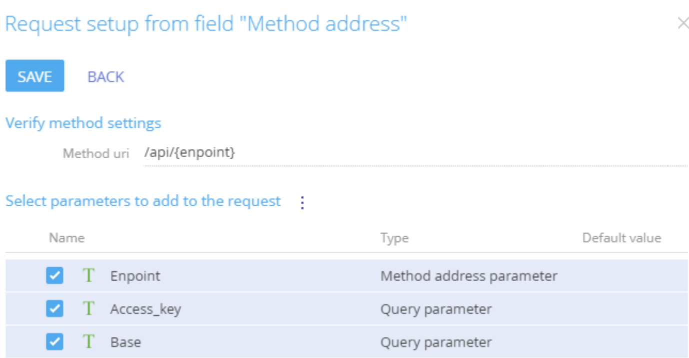
1. Populate the "Method address" field with the web service URL with parameters and click the icon in the field or select the [From field "Method address"] option in the [Quick setup] menu (Fig. 12):

Fig. 12 Adding parameters from the “Method address field”



2. In the opened parameters list, select necessary request parameters and click [Save] (Fig. 13):

Fig. 13 An example of method address parameter set

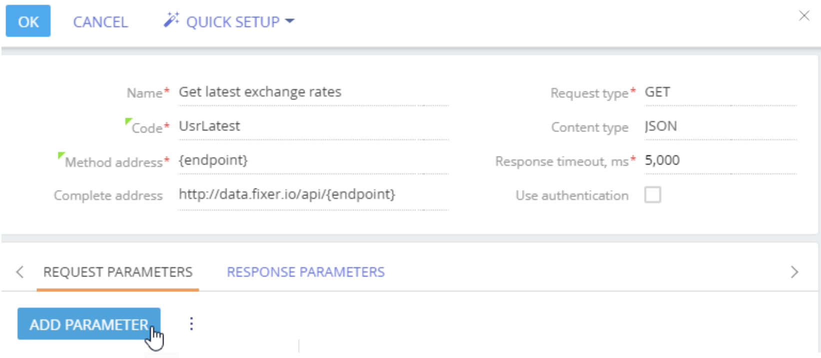


As a result, selected parameters will be added as request parameters. You can modify the settings of parameters (for example, select the “Required” checkbox for the “Access_key”) to adjust them for further using in the [Call web service] business process element.

Adding parameters manually

1. Add request parameters by clicking the [Add parameter] button on the [Request parameters] tab (Fig. 14).

Fig. 14 Setting up request parameters of a web service

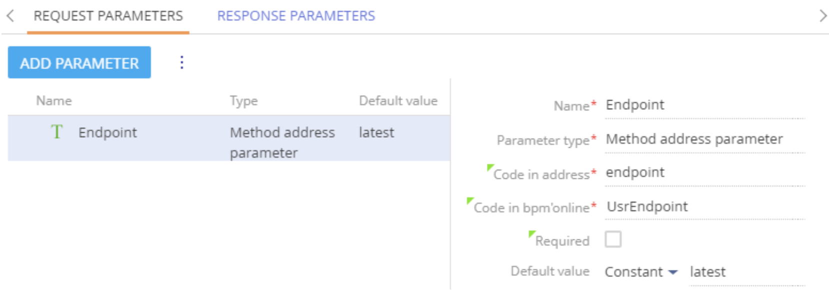


The following types of request parameters are available:

Method address parameter	Use these parameters as variables to generate the request method address. Add names of method address parameters, enclosed in curly braces in the [Method address] field of the method. For instance: {parameterName1}/{parameterName2}, etc. On the actual web service call, these variables will be replaced with actual parameter values of the method address specified for corresponding [Call web service] element in the process designer. For instance: http://web.service.uri/parameterValue1/parameterValue2. If the parameter value is not specified in the element properties, but the [Default value] field if populated, the default value will be used. For this parameter type, the [Required] checkbox is selected and non-editable.
Body parameter	This type of parameter is used for sending a data of any type (including collections) in the body of request. Read more ... The parameter is not available for the GET method
Query parameter	The parameter of this type will be added to the request after method address and the “?” character. Read more ...
Header parameter	This type of parameter is used for generating header section of request. Read more ...
Cookies parameter	Use parameters of this type to pass cookies in your requests. For example, you can pass an authentication cookie, received earlier. Read more ...

2. Populate parameter values. If you have set a variable for method address (e.g. {endpoint}), a corresponding method address parameter must be added (Fig. 15).

Fig. 15 Method address parameter settings



NOTE

The system settings used in method parameters will be bound to the web service package. This will simplify the transfer of the web service to another system.

NOTE

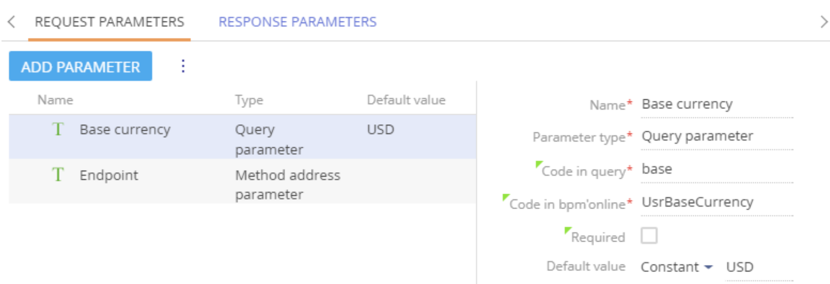
If your request parameter is an array, select the “Body parameter” in the [Parameter type] field and “Object” in the data type field. After this, nested parameters will become available. Read more >>>

3. Add the “Base currency” request parameter of the “Query parameter” type for passing the base currency and populate its values (Fig. 16).

CASE

By default, the web service will return the exchange rates in relation to Euro. According to the web service description, you can obtain rates in relation to a specific base currency by passing this currency in the “base” parameter of your request.

Fig. 16 “Base currency” query parameter settings



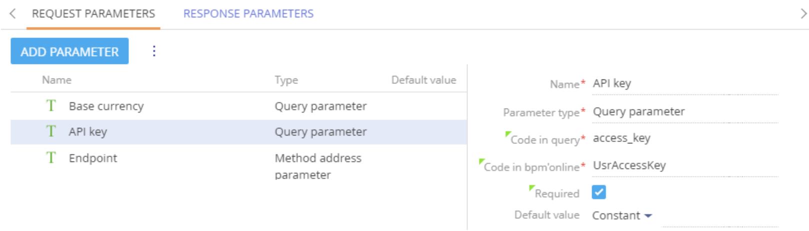
Use parameters of different types in the “Parameter type” field to generate web service requests according to the web service documentation. In this case, we set up a single “Query parameter” for passing base currency. Also, we specify the “USD” as the default value of the parameter in the “Default value” field. The value can be set as constant or selected from the system setting. If the field is populated, the “Required” checkbox is automatically cleared and non-editable.

4. Add the “API key” request parameter of the “Query parameter” type for passing your personal access key. Specify this parameter as required by selecting the “Required” checkbox (Fig. 17).

NOTE

You will need to register on https://fixer.io/ to obtain your API key.

Fig. 17 “API key” query parameter settings

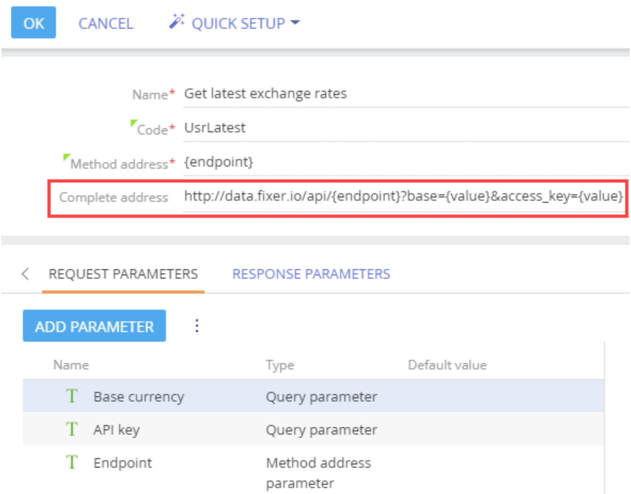


As a result, Creatio will be able to call methods of this web service using the following request template:

```
jvvr<11fcvc0hkzgt0kq1crk1}gpfrqkpv¡Aceeguuamg{?}{qwt"ceeguu"
mg{¡(dcug?}dcug"ewttgpe{¡
```

The full URL address with parameters is generated in the “Complete address” field according to the added request parameters (Fig. 18).

Fig. 18 Complete address of the web service



The values in curly brackets ({endpoint} and {base currency}) will be specified in the [Call web service] business process element, for instance:

```
jvvr<11fcvc0hkzgt0kq1crk1
ncvguvAceeguuamg{?2222222222222222222222222222222(dcug?WUF
```

> **NOTE**
> When creating a new web service you can enter a URL with parameters to the mini page and they will be automatically added as request parameters to the created web service.

SEE ALSO

- Setting up the parsing of the web service response parameters

Setting up the parsing of the web service response parameters

As a result of calling a web service method, a certain response (a JSON object, which is basically a structured text) will be returned. To use data from that response, you need to set up parsing of the web service response parameters, i.e., which part of the returned code represents the data that was the goal of this web service integration.

> **EXAMPLE**
> Calling the “latest” method returns the requested information in a form of code string (open the link in your browser to view the actual response code). To process the web service response, set up how Creatio should parse the received code by configuring the response parameters.

The response comes in the form of values for the following three parameters:

- “base” – base currency, in relation to which the rates are calculated, for example:

  ```
  $dcug$<$GWT$
  ```

- “date” – the date when these exchange rates were valid, for example:

  ```
  $fcvg$<$423:/24/3;$
  ```

- “rates” – exchange rates of a set number of currencies (each represented as a separate nested parameter) in relation to the base currency, for example:

  ```
  $tcvgu$<}$CWF$<307898.$DIP$<30;77:.000$\CT$<360683¡
  ```

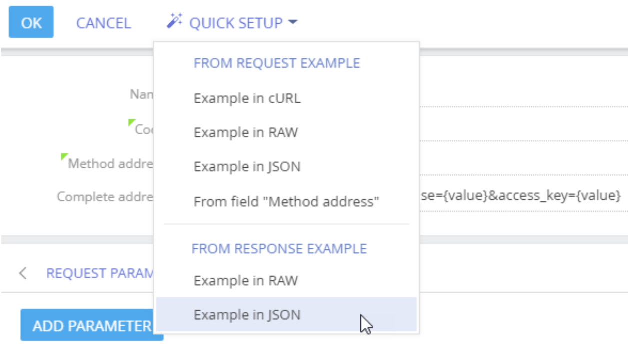
The simplest way to implement this is to parse only exchange rates for the needed currencies. Each exchange rate can be parsed as a separate parameter. In this example we will also parse the “base” and “date” parameters.

How to add the response parameters via Quick setup option

If you have the server response in JSON form, you can add the response parameters automatically by clicking the [Quick setup] button.

1. Click the [Quick setup] button and select the [Example in JSON] option in the “From response example” section (Fig. 19):

Fig. 19 the [Example in JSON] action for the response example

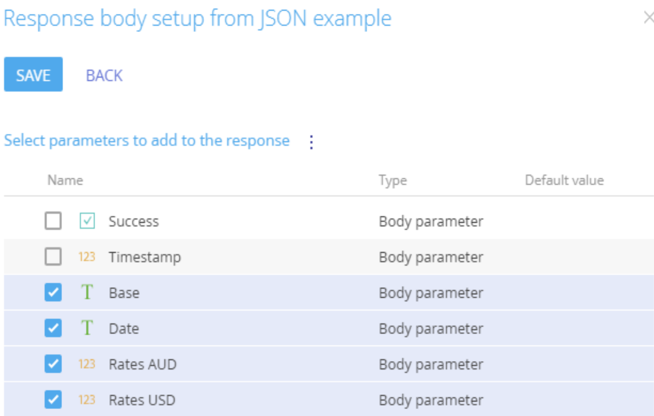


2. In the opened window, paste the JSON code of the server response (it will be displayed in your browser if you try to open a call web service URL) and click the [Next] button (Fig. 20):

Fig. 20 Response in JSON code

3. In the opened parameters list, select necessary parameters to add to the response and click the [Save] button (Fig. 21):

Fig. 21 List of parameters from JSON example



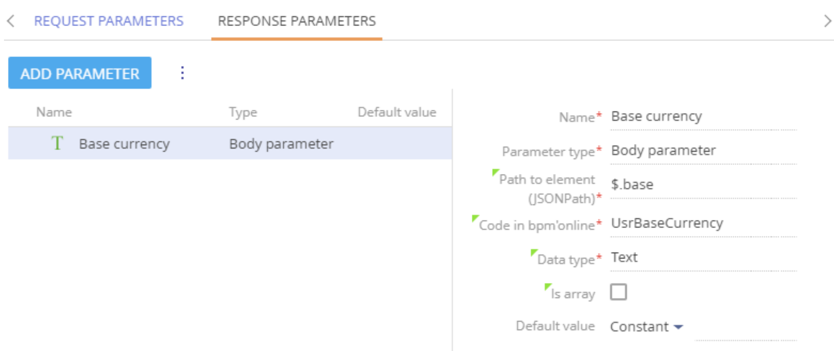
As a result, selected parameters will be added as response parameters. You can modify the settings of parameters (for example, change the data type of the currency rate to "decimal") to adjust them for further using in the [Call web service] business process element.

How to add the response parameters manually

To add response parameters manually, click the [Add parameter] button on the [Response parameters] tab and populate their values.

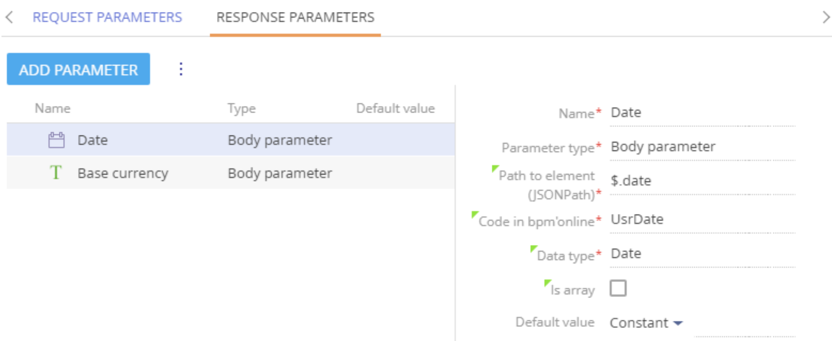
1. Add "Base currency" parameter, which will indicate the base currency for the received exchange rates. Specify the parameter type as the "Body parameter" and the "Text" data type. The "Path to element "JSONPath" should contain the JSON syntax. JSONpath "$.base" gets the value of the "base" parameter (e.g., "base":"EUR") in the web service response, in this case — "EUR". (Fig. 22):

Fig. 22 "Base currency" query parameter settings



2. Add “Date” parameter, which will indicate the validity date for the received exchange rates. Specify the “Date” for the parameter (Fig. 23):

Fig. 23 Date response parameter settings



NOTE

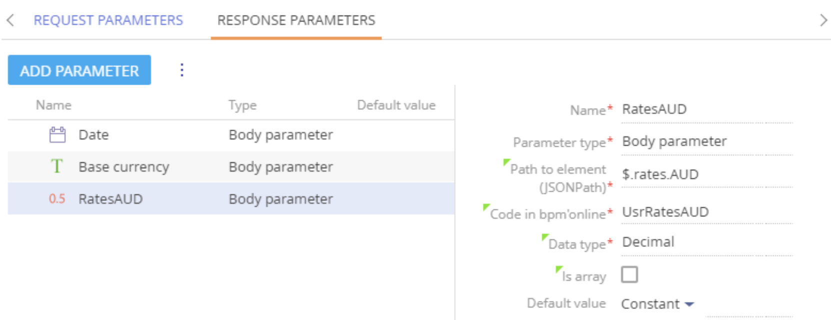
JSONpath “$.date” gets the value of the “date” parameter (e.g., "date":: "2018-02-16") in the service response, which in the current case is “2018-02-16”.

CASE

As part of this case, we will be parsing each exchange rate as a separate parameter. For example, Australian dollar rate will be passed as a value of the “RatesAUD” parameter.

3. Add parameters for parsing the exchange rate values. Specify the “Decimal” data type (Fig. 24):

Fig. 24 RatesAUD response parameter settings

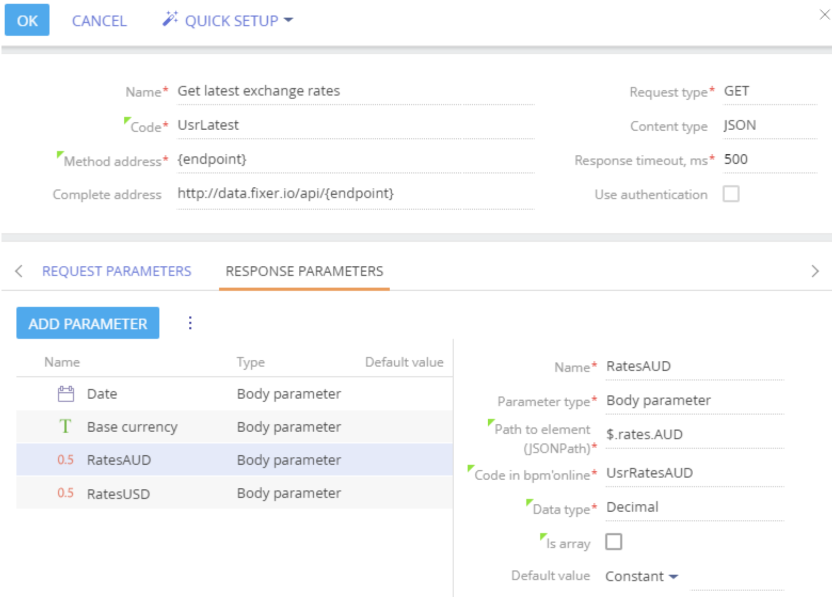


NOTE

JSONpath “$.rates.AUD” gets the value of the “AUD” parameter, which is nested in another parameter, “rates” (i.e.: "rates":{"AUD":1.5676}) in the service response. In this case, the value of the $.rates.AUD is 1.5676.

4. Set up response parameters for parsing all needed currencies (Fig. 25).

Fig. 25 Setting up response parameters of a web service

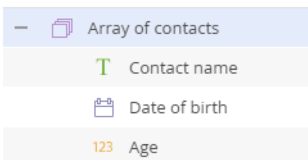


Adding response and request parameters of the collection type

Collection (or array) is a set of items. There are two types of collection parameters:

- Simple collection. Any parameter can be made a collection by selecting the [Is array] checkbox. Simple collections are arrays of values of the same data type, each value being a separate collection item. For example, “1, 2, 3" is a simple array of integer values, “Boston, New York, Chicago” - is a simple array of text values, etc.
- Object collection. To add this type of collection, select “Object” in the [Data type] field of the request or response parameter. Each item in an “Object” collection can have a set of parameters of different type. These collection item parameters are represented as nested parameters of the parent collection parameter. For example, an array of contacts can have nested parameters for contact name, date of birth and age (Fig. 26).

Fig. 26 An example of collection of contacts



An actual collection of such a structure would look like this:

Contact name	Date of birth	Age
Jane Barber	04/12/1991	27
Aaron Shepard	10/24/1985	33
Kate Smith	12/05/1989	29

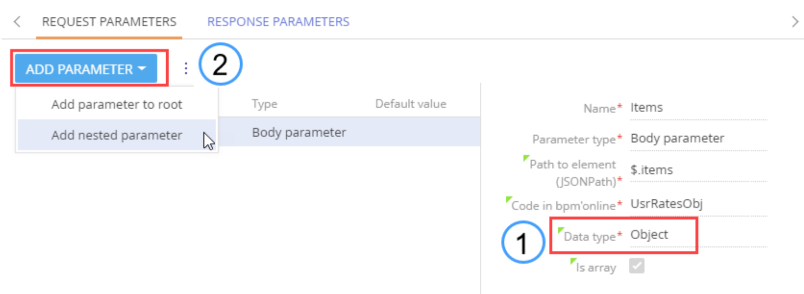
Creatio can pass collections in web service requests and parse web service responses that contain collections. You can set up both request and response "collection" parameters, provided the web service supports receiving and/or sending arrays.

> NOTE
> You can only select the "collection" data type for parameters of the "Body parameter" type. This type of parameters is not available for GET requests. However, it is available for GET responses.

To add a response or request "collection" parameter with nested parameters:

1. Click [Add parameter] on the [Request parameters] or [Response parameters] tab.
2. Select the "Object" value in the [Data type] field.
3. Add nested parameters of the needed type to this collection by clicking the [Add parameter] button and selecting the [Add nested parameter] option (Fig. 27).

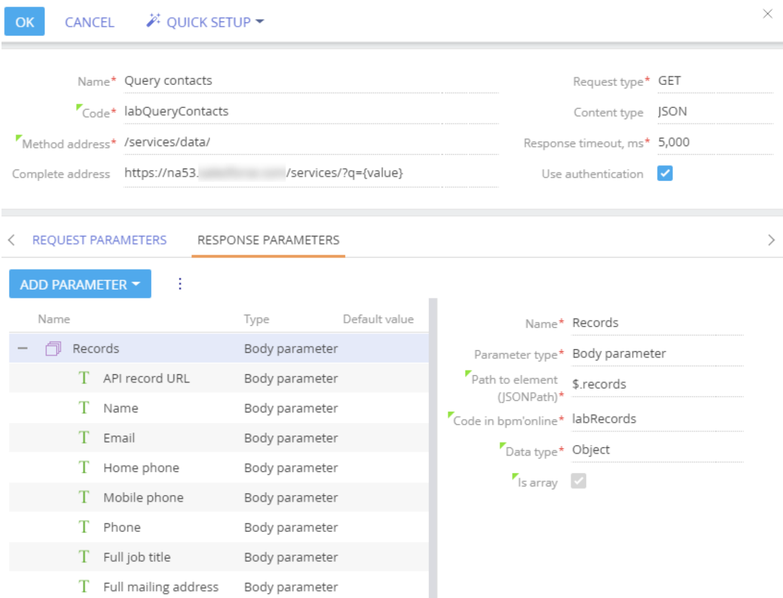
Fig. 27 Adding a nested parameter to a collection



For example, the response collection parameter that gets the contact records from the server will look as follows (Fig. 28):

ACCELERATE

Fig. 28 Nested response parameters



The value of the JSONPath for the nested parameters is specified as suffix of the JSONPath of the root parameter. For example, if the root parameter has the"$.records"value in the JSONPath field and the "$.records.name" value should be specified for the "Name" nested parameter, you need to specify only the "name" value in the "Path to element" field.

Web service response parameters of the collection type can be used as incoming parameters in the "Call web service" business process element. More information about using collections in business processes can be found in the article.

SEE ALSO

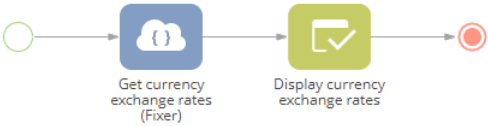
- Testing the web service integration

Testing the web service integration

Since Creatio calls web services as part of a business process, you need to set up a test process that would display the retrieved values of its response parameters. The simplest way of implementing this is to map the response parameters to fields of an auto-generated page or pre-configured page.

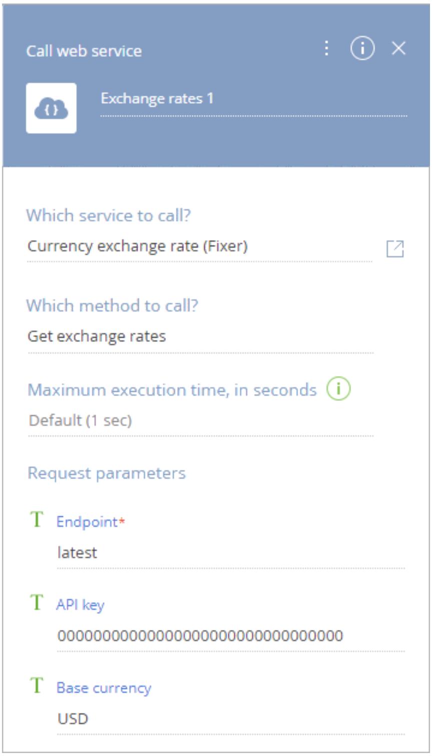
1. Open the Process Designer and design a process with two consecutive elements: a [Call web service] element and a pre-configured page (Fig. 29).

Fig. 29 A process to obtain currency exchange rates using web service



2. Set up the properties of the [Call web service] element as shown on (Fig. 30).

Fig. 30 The [Call web service] element properties area



NOTE

In the [API key] field, enter your actual API key instead of "00000000000000000000000000000000". You will need to register on https://fixer.io/ to obtain your API key.

3. In the pre-configured page designer, set up the pre-configured page element by adding three decimal fields (one for each currency): "Australian dollar", "Euro", "Ruble", text field "Base currency" and date "Date" field. Save the page.
4. In the pre-configured page properties area, map the fields to the corresponding outgoing parameters of the [Call web service] element (Fig. 31, Fig. 32).

Fig. 31 Setting up page parameters on the pre-configured page properties area

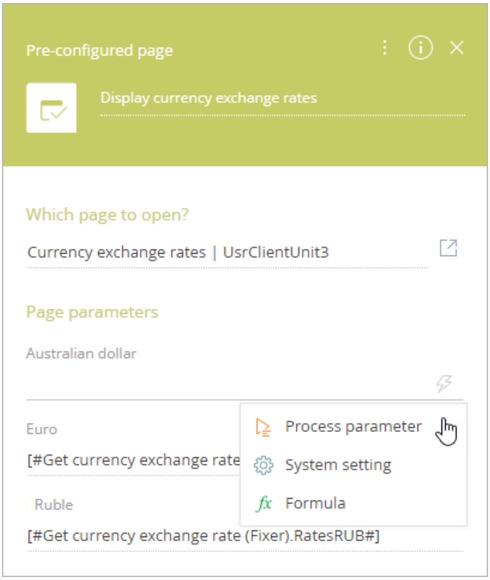
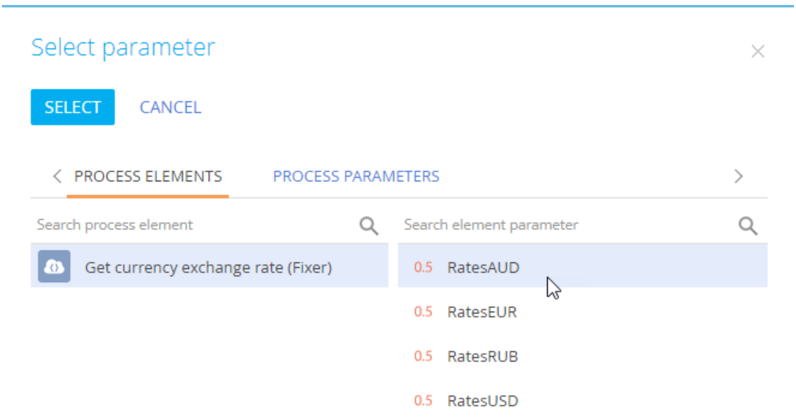


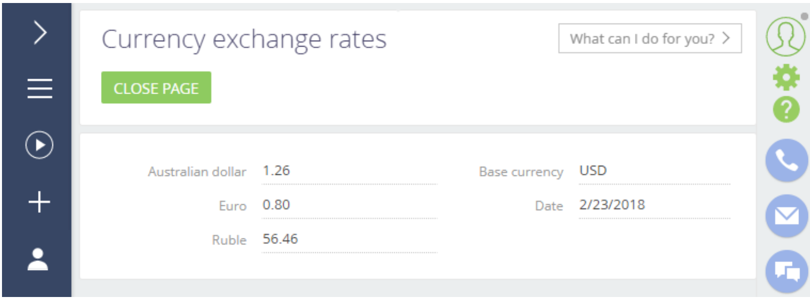
Fig. 32 Mapping parameters of the pre-configured page to the [Call web service] element



5. Save and run the process.

   As a result, a pre-configured page (Fig. 33) will open with the currency exchange rates passed to its fields.

Fig. 33 Currency exchange rates displayed on a pre-configured page



SEE ALSO

- [Call web service] process element
- [Pre-configured page] process element
- Updating currency exchange rates with web service integration

Predictive analysis

This article covers the basics of machine learning implementation in Creatio.

The predictive analysis estimates the likelihood of specific events based on large volumes of historic data and current facts. It increases the speed and accuracy of business decisions, relieves the users from routine tasks, and improves the overall efficiency and performance.

Predictive analysis in Creatio is implemented via a set of algorithms – machine learning models. In the [ML models] section, you can create, train, and use your custom machine learning models to predict values for any business object.

ATTENTION

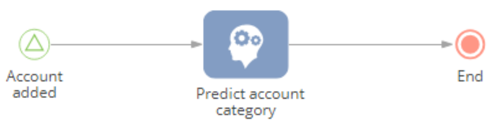
Using predictive analysis in Creatio on-site requires additional preliminary setup. See the "Machine learning service setup" article for more details.

Creatio has four types of machine learning models:

- Lookup value prediction (classification) – enables populating lookup field values based on the analysis of existing data and trends. For example, you can create a model that will predict the most likely category of an account. Read more >>>
- Numeric prediction – enables calculating an estimate of a numeric field. For example, predicting the budget of a lead based on the type of customer need and the customer's company size, country, and industry. Read more >>>
- Predictive scoring – grades Creatio records based on historical and current data. For example, you can create a model that will rate the quality of your leads based on their budget and successful hand-off to sales. Read more >>>
- Recommendation – detects trending dependencies between different types of business objects and generates a list of records of one object that are "recommended" for each record of another object. For example, a recommendation model can generate a list of the products that will most interest each of your customers. This type of machine learning model enables configuring models for recommending any objects to any other objects if a "many-to-many" database connection can be established between them. Read more >>>

Creatio gives you complete control over which records are predicted and when. After creating and training a new prediction model, use the [Predict data] process element to add machine learning to your new or existing business processes (Fig. 1).

Fig. 1 [Predict data] element in a business process



NOTE

Predicting a field value for large volumes of records will impact general performance. We do not recommend running predictive scoring for multiple records simultaneously. The best solution is running the operation for each separate record (e.g., when adding or modifying the record).

SEE ALSO

- Basic predictive analysis glossary

- Lookup value prediction
- Numeric field value prediction
- Predictive scoring
- Recommendation prediction
- Configure a prediction business process
- Machine learning model training

Basic predictive analysis glossary

Predictive analysis – a class of data analysis methods that enables the prediction of object future behavior under given conditions. It uses statistical methods to analyze current and historical data and make a prediction about future events.

Lookup value prediction – one of the tools for predictive data analysis, which enables you to predict the value of the lookup field based on the analysis of existing data in the system. Read more >>>

Predictive scoring – determines scores for Creatio records based on historical and current data. Read more >>>

Numeric value prediction – enables you to predict the value of a numeric field based on the analysis of existing Creatio data. Read more >>>

Machine learning problem – a set of instructions, which describes a problem that must be solved by predictive analysis. The list of problems is available in the [ML problem types] lookup.

Machine learning model – an algorithm that defines the data, which is a basis for the predictive analysis of solving a machine learning problem. The list of machine learning models is available in the [ML models] section.

Machine learning model instance – a set of patterns obtained by the machine learning model as a result of processing the historical data.

Historical data – a collection of data obtained from system records to create a model. The historical model takes into account records that were created and populated with data before starting a new machine learning model instance.

Model training – a process, during which the machine learning model processes historical data to identify patterns that enable it to solve a particular machine learning problem. A new machine learning model instance is created during model training. Use the [ML models] section to specify the model retraining frequency.

Prediction – a list of possible values of a lookup field including their probability. The probability of prediction is indicated in percentage (rounded up to integers) for each lookup value.

Quality metric lower limit – the prediction probability threshold that has to be met to use the prediction service. The instances that do not meet the quality metric lower limit are not used by Creatio and are placed into a queue for retraining. We do not recommend setting up the quality metric lower limit to a value lower than 0.50. You can modify the model quality metric lower limit value in the [ML models] section.

SEE ALSO

- Lookup value prediction
- Numeric field value prediction
- Predictive scoring
- Configure a prediction business process

- Machine learning model training

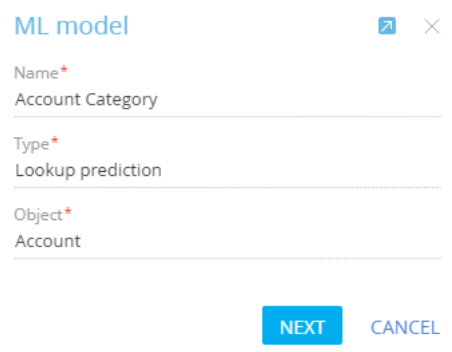
Lookup value prediction

You can set up a machine learning model that will predict the value in a specific lookup field. The prediction will be based on the data available in the record and existing records, where the predicted field has already been populated. For example, you can create a model that will predict the most likely category of a customer account.

To create a lookup value prediction model:

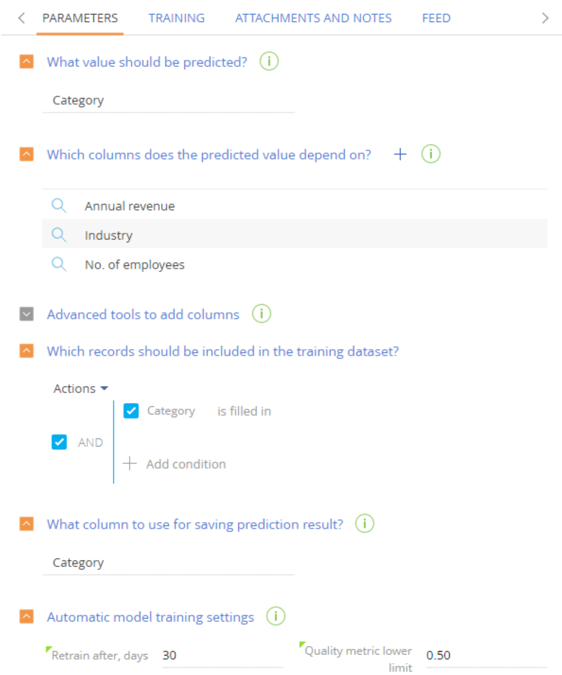
1. Open the [ML models] section from the system designer and click [New model].
2. Populate the mini-page for creating the ML model (Fig. 2):

   Fig. 2 Mini-page for lookup value prediction model

   a. [Name] – enter the name of the prediction model, which will help you easily identify it in the list of the [ML models] section and when selecting a model for the [Data prediction] process element.
   b. [Type] – specify the task to be resolved via the ML model. For example, “Lookup prediction”.
   c. [Object] – the prediction model will be configured for the records of this object (section, detail, or lookup). For example, to predict values for the [Accounts] section, select the “Account” object in this field.
3. Once the initial fields are populated, click [Next] and go to the [Parameters] tab and specify additional model parameters (Fig. 3):

Fig. 3 Additional parameters of the prediction model



a. [What value should be predicted?] – select the field to be predicted. For example, to predict the account category, select the [Category] field from the list. The list contains all lookup fields of the selected object. The result of the prediction will be displayed as one of the [Category] lookup values.

b. [Which columns does the predicted value depend on?] – specify the columns that Creatio will correlate with the value of the predicted field. For example, if you normally determine an account's category based on the number of company employees, revenue, and the industry that the account operates in — add the [No of employees], [Annual revenue], and [Industry] columns here. Creatio will analyze how the [No of employees], [Annual revenue], and [Industry] columns were populated for existing records and how this correlates with the corresponding values in the [Category] column.

c. [Advanced tools to add columns] – if necessary, use queries to add additional training data to the prediction model. This functionality is intended for the developers. More information about creating data queries for machine learning models is available in the Development guide.

d. [Which records should be included in the training dataset?] – specify the filter for selecting records for "model training". Creatio will use these records to determine the correlation between the predicted value and the columns that the prediction is based upon. For example, to train an account category prediction model, we would need to analyze only the records where the [Category] field is populated.

NOTE

You can add columns from the connected objects to the training selection.

e. [What column to use for saving prediction result?] – Usually, the prediction result is saved in the column whose value was predicted. If you prefer that Creatio does not modify the predicted column, select a different column here.

4. Populate automatic model training settings. Creatio will periodically "retrain" by analyzing the updated training dataset.
   a. In the [Retrain after, days] field, specify the interval between model training sessions. After the set number of days, the model will be retrained using records that match the filter. The first model training session starts automatically when the [Prediction enabled] checkbox is selected.
   b. In the [Quality metric lower limit] field, specify the lowest quality metric of the prediction model. When the model is trained for the first time, this threshold will determine the lowest possible quality the model needs to reach before it can be used in Creatio. If the model is being used and the number reaches this threshold, it will be deemed unusable. We recommend setting up the quality metric lower limit to a value no lower than 0.50. The accuracy score of the machine learning model ranges from 0.00 to 1.00 (1.00 being the highest, and 0.00 being the lowest). The accuracy of machine learning models is calculated by dividing the number of successful predictions by the total number of predictions to evaluate the success rate of its learning patterns. Please refer to the following article to learn more about how the prediction accuracy score is calculated.

NOTE

The quality of the prediction model may decrease during subsequent training sessions if, for example, certain columns are no longer being populated on the record page, but are still specified in the [Which columns does the predicted value depend on?] field. To prevent this from happening, make sure that the columns used in the prediction model are relevant before each training session to prevent it from reaching the lowest quality threshold.

5. Click [Save] to save the model.
6. Select the [Prediction enabled] checkbox to activate the prediction model. We recommend configuring the model fully before enabling it.

Once the model is fully configured, click [Train model] to start the training process. The prediction itself will start only when the model is trained up to sufficient quality, specified in the [Quality metric lower limit] field.

As a result, a new ML model will be added in Creatio. When triggered by a business process, the model will predict and populate the values for the needed records.

The account category prediction model will analyze the values in the [No of employees], [Annual revenue], and [Industry] columns of accounts whose [Category] column is populated. The more data it analyzes, the higher quality metric will become.

Once the quality is high enough, the model will predict the value in the [Category] field, based on the values in the [No of employees], [Annual revenue], and [Industry] fields.

NOTE

Use the [Training] tab to view the history of model training, and get the necessary information regarding each model training iteration (e.g., the number of records used for training, quality metric evaluations, etc.).

SEE ALSO

- Basic predictive analysis glossary
- Numeric field value prediction
- Predictive scoring
- Recommendation prediction
- Configure a prediction business process
- Machine learning model training

Numeric field value prediction

You can set up a machine learning model that will predict the value in a numeric field. The prediction will be based on the data available in the record and existing records, where the predicted field has already been populated. For example, you can create a model that will predict the budget of a lead based on the type of customer need and the customer's company size, country, and industry.

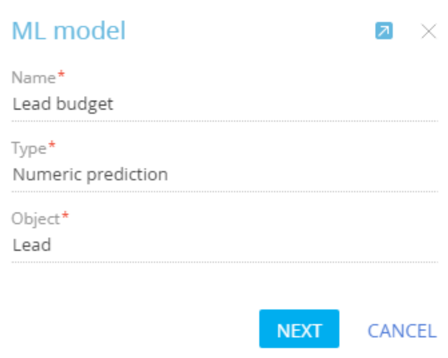
NOTE

The [Leads] section is available in the following Creatio products: Marketing Creatio, Sales Creatio, team edition, Sales Creatio, commerce edition, and Sales Creatio, enterprise edition.

To create a numeric value prediction model:

1. Open the [ML models] section from the system designer and click [New model].
2. Populate the mini-page for creating the ML model (Fig. 4):

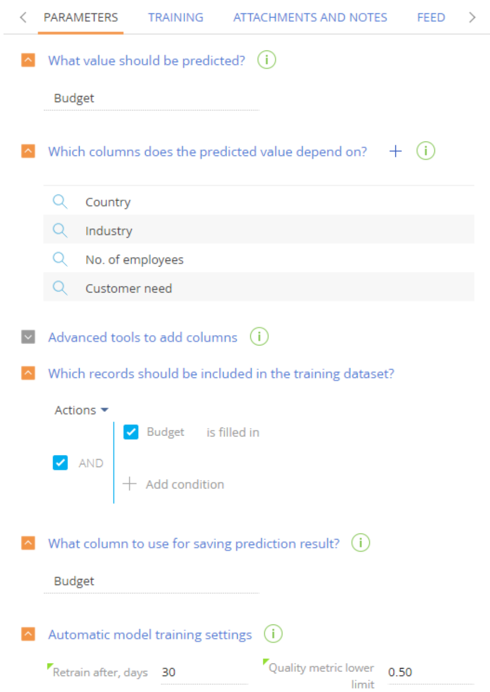
Fig. 4 Mini-page for a numeric value prediction model



   a. [Name] – enter the name of the prediction model, which will help you easily identify it in the list of the [ML models] section and when selecting a model for the [Data prediction] process element.

   b. [Type] – specify the task to be resolved via the ML model. For example, "Numeric prediction."
   c. [Object] – the prediction model will be configured for the records of this object (section, detail, or lookup). For example, to use the model in the [Leads] section, select the "Lead" object here.
3. Once the initial fields are populated, click [Next] and go to the [Parameters] tab and specify additional model parameters (Fig. 5):

Fig. 5 Additional parameters of the prediction model



   a. [What value should be predicted?] – select the field to be predicted. The list contains all numeric fields of the selected object. For example, to predict the lead budget, select the [Budget] field from the list.
   b. [Which columns does the predicted value depend on?] – specify the columns that Creatio will correlate with the value of the predicted field. For example, if a lead budget must depend on the customer's need, the number of employees, country, and industry — add the [Customer need], [No. of employees], [Country], and [Industry] columns here. Creatio will analyze how the [Customer need], [No. of employees], [Country], and [Industry] columns were populated for existing leads and how this correlates with the corresponding values in the [Budget] field.

c. [Advanced tools to add columns] – if necessary, use queries to add additional training data to the prediction model. This functionality is intended for the developers. More information about creating data queries for machine learning models is available in the Development guide.

NOTE

If the [Query for selecting additional training data] and [Query for selecting additional prediction data] values are identical, you can populate only the [Query for selecting additional training data] field.

d. [Which records should be included in the training dataset?] – specify the filter for selecting records for "model training". Creatio will use these records to determine the correlation between the predicted value and the columns that the prediction is based upon. For example, to train a lead budget prediction model, we would need to analyze only the records where the [Budget] numeric field is populated.

NOTE

You can add columns from the connected objects to the training selection.

e. [What column to use for saving prediction result?] – Usually, the prediction result is saved in the column whose value was predicted. If you want the prediction result to be saved in another column, specify it in this field. For example, you can add a [Predictive budget] column to the lead page via the section wizard and save the obtained result therein.

4. Populate automatic model training settings. Creatio will periodically "retrain" by analyzing the updated training dataset.
   a. In the [Retrain after, days] field, specify the interval between model training sessions. After the set number of days, the model will be retrained using records that match the filter. The first model training session starts automatically when the [Prediction enabled] checkbox is selected.
   b. In the [Quality metric lower limit] field, specify the lowest quality metric of the prediction model. When the model is trained for the first time, this threshold will determine the lowest possible quality the model needs to reach before it can be used in Creatio. If the model is being used and the number reaches this threshold, it will be deemed unusable. We recommend setting up the quality metric lower limit to a value no lower than 0.50. The accuracy score of the machine learning model ranges from 0.00 to 1.00 (1.00 being the highest, and 0.00 being the lowest). The accuracy of machine learning models is calculated by dividing the number of successful predictions by the total number of predictions to evaluate the success rate of its learning patterns. Please refer to the following article to learn more about how the prediction accuracy score is calculated.

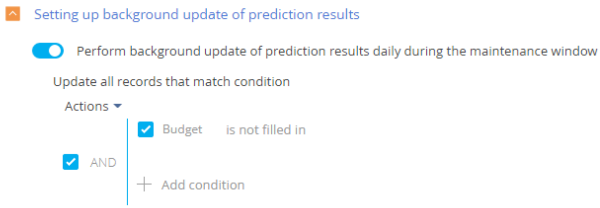
NOTE

The quality of the prediction model may decrease during subsequent training sessions if, for example, certain columns are no longer being populated on the record page, but are still specified in the [Which columns does the predicted value depend on?] field. To prevent this from happening, make sure that the columns used in the prediction model are relevant before each training session to prevent it from reaching the lowest quality threshold.

5. Click [Save] to save the model.

6. If you want Creatio to predict the numeric value for all existing records, enable the [Setting up background update of prediction results] setting and configure the filter (Fig. 6). As a result, the values will be predicted for all existing records that met the filter criteria on the background, in batches. For example, the [Budget] field will be predicted for all leads that meet the filter criteria. The [Setting up background update of prediction results] setting enables predictions for batches of records that meet the specified filter criteria. Numeric prediction models can be triggered either by a business process or by this setting.

Fig. 6 The [Setting up background update of prediction results] setting a filter



NOTE

Batch predicting is performed during the Creatio maintenance windows. You can set up the period when Creatio is least loaded (to run resource-heavy processes) in the [Maintenance periods] lookup.

7. Select the [Prediction enabled] checkbox to activate the prediction model. We recommend configuring the model fully before enabling it. When the model is configured for the first time, selecting this checkbox will trigger the model training process. The prediction itself will start only when the model is trained up to sufficient quality, specified in the [Quality metric lower limit] field.

As a result, a new ML model will be added to Creatio. When triggered by a business process, the model will predict and populate the values for the needed records.

The lead budget prediction model will analyze the values in the [Customer need], [No. of employees], [Country], and [Industry] fields of leads whose [Budget] field is populated. The more data it analyzes, the higher the quality metric will become.

Once the quality is high enough, the model will predict the scores for the lead budget based on the values in the [Customer need], [No. of employees], [Country], and [Industry] columns.

CONTENTS

- Basic predictive analysis glossary
- Lookup value prediction
- Predictive scoring
- Recommendation prediction
- Configure a prediction business process
- Machine learning model training

Predictive scoring

You can set up a machine learning model that will predict the score (quality) of a specific record. The predictive score is calculated according to the scale from 1 to 100 points. You can display the obtained value on the record page as a numeric field or a chart. Read more about adding charts to pages in the Dashboards on a record page article. For example, you can create a model that will rate the quality of your leads based on their budget and successful hand-off to sales. In this case, we will determine the score based on the [Lead stage], [Budget], and [Annual revenue] columns.

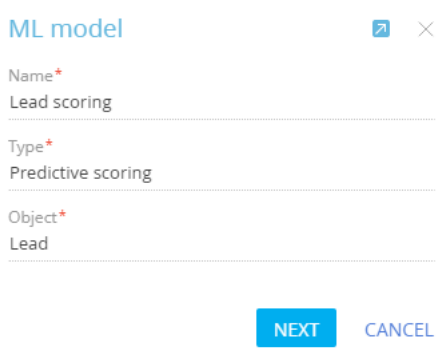
NOTE
The lead score prediction model is set up by default in Creatio. This model is implemented via developer queries and tools. This article demonstrates how this prediction model can be configured without coding.

NOTE
The [Leads] section is available in the following Creatio products: Marketing Creatio, Sales Creatio, team edition, Sales Creatio, commerce edition and Sales Creatio, enterprise edition.

To create a predictive scoring model:

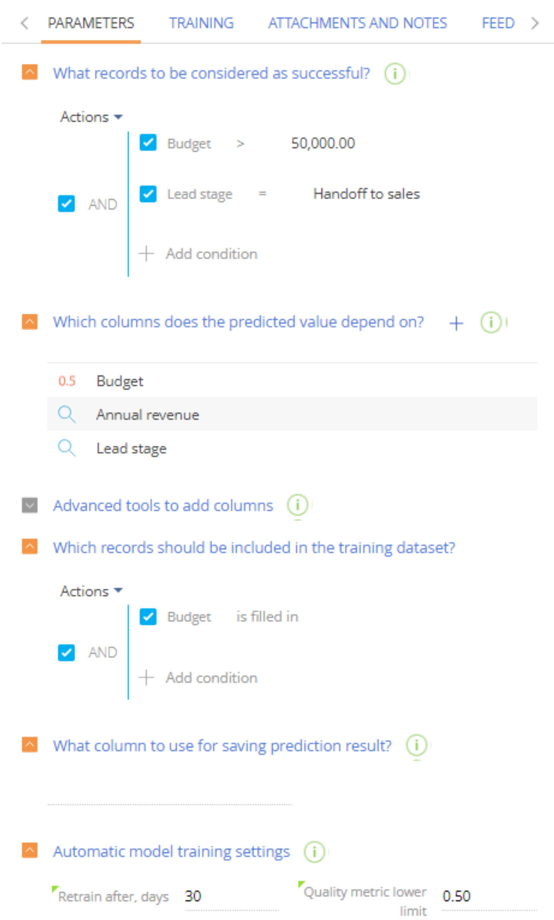
1. Open the [ML models] section from the system designer and click [New model].
2. Populate the mini page for creating the ML model (Fig. 7):

Fig. 7 Mini-page for creating a predictive scoring model



   a. [Name] – enter the name of the prediction model, which will help you easily identify it in the list of the [ML models] section and when selecting a model for the [Data prediction] process element.
   b. [Type] – specify the task to be resolved via the ML model. For example, “Predictive scoring.”
   c. [Object] – the prediction model will be configured for the records of this object (section, detail, or lookup). For example, to use the model in the [Leads] section, select the ‘Lead’ object here.
3. Once the initial fields are populated, click [Next] and go to the [Parameters] tab and specify additional model parameters (Fig. 8):

Fig. 8 Additional parameters of the predictive scoring model



a. [What records to be considered as successful?] – configure a filter based on which Creatio will determine the most "successful" records, i.e. records that can be given the highest rating from the get-go. In our case, a lead is considered successful if its budget is higher than $50,000, and if it was successfully handed off to sales (Fig. 8).

b. [Which columns does the predicted value depend on?] — specify the columns that Creatio will analyze to predict the lead quality. For example, if the quality of a lead is based on the budget, annual revenue, and its stage in the pipeline — add the [Budget], [Annual revenue], and [Lead stage] columns here. Creatio will analyze how these columns were populated for existing leads, compare it to the most successful records, and predict the score.

c. [Advanced tools to add columns] – if necessary, use queries to add additional training data to the prediction model. This functionality is intended for the developers. More information about creating data queries for machine learning models is available in the Development guide.

NOTE

If the [Query for selecting additional training data] and [Query for selecting additional prediction data] values are identical, you can populate only the [Query for selecting additional training data] field.

d. [Which records should be included in the training dataset?] – specify the filter for selecting records for "model training". Creatio will use these records to determine the correlation between the predicted quality of a lead and the columns that the prediction is based upon. For example, to train a lead score prediction model, we would need to analyze only the lead records with the [Budget] field filled in.

NOTE

You can add columns from the connected objects to the training selection.

e. [What column to use for saving prediction result?] – Usually, the prediction result is saved in the column whose value was predicted. If you want the prediction result to be saved in another column, specify it in this field. For example, you can add a [Predictive budget] column to the lead page and save the obtained result therein.

NOTE

You can add a special column that will store the prediction result in the section wizard.

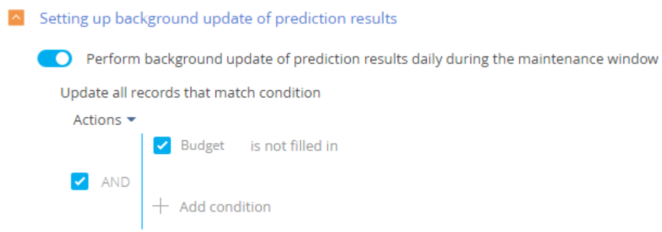
4. Populate automatic model training settings. Creatio will periodically "retrain" by analyzing the updated training dataset.
   a. In the [Retrain after, days] field, specify the interval between model training sessions. After the set number of days, the model will be retrained using records that match the filter. The first model training session starts automatically when the [Prediction enabled] checkbox is selected.
   b. In the [Quality metric lower limit] field, specify the lowest quality metric of the prediction model. When the model is trained for the first time, this threshold will determine the lowest possible quality the model needs to reach before it can be used in Creatio. If the model is being used and the number reaches this threshold, it will be deemed unusable. We recommend setting up the quality metric lower limit to a value no lower than 0.50. The accuracy score of the machine learning model ranges from 0.00 to 1.00 (1.00 being the highest, and 0.00 being the lowest). The accuracy of machine learning models is calculated by dividing the number of successful predictions by the total number of predictions to evaluate the success rate of its learning patterns. Please refer to the following article to learn more about how the prediction accuracy score is calculated.

NOTE

The quality of the prediction model may decrease during subsequent training sessions if, for example, certain columns are no longer being populated on the record page, but are still specified in the [Which columns does the predicted value depend on?] field. To prevent this from happening, make sure that the columns used in the prediction model are relevant before each training session to prevent it from reaching the lowest quality threshold.

5. Click [Save] to save the model.
6. If you want Creatio to predict the score for all existing records, enable the [Setting up background update of prediction results] setting and configure the filter (Fig. 9). As a result, the score will be predicted for all existing records that met the filter criteria on the background, in batches. For example, the score will be predicted for all leads that have not yet been handed off to sales. The [Setting up background update of prediction results] setting enables predictions for batches of records that meet the specified filter criteria. Predictive score models can be triggered either by a business process or in this setting.

   Fig. 9 The [Setting up background update of prediction results] setting a filter



NOTE

Batch predicting is performed during the Creatio maintenance windows. You can set up the period when Creatio is least loaded (to run resource-heavy processes) in the [Maintenance periods] lookup.

7. The [Prediction enabled] checkbox is selected automatically. Clear the checkbox if you want to stop the prediction.
8. Click [Train model] to start the model training. The prediction itself will start only when the model is trained up to sufficient quality, specified in the [Quality metric lower limit] field.

As a result, a new ML model will be added to Creatio. When triggered by a business process, the model will predict the score for the needed records.

The lead score prediction model will analyze the values in the [Budget], [Annual revenue], and [Lead stage] columns of leads whose [Budget] field is populated and compare it to all leads that have been handed off to sales. The more data it analyzes, the higher the quality of the metric.

Once the quality is high enough, the model will predict the scores for leads based on the values in the [Budget], [Annual revenue], and [Lead stage] columns.

SEE ALSO

- Basic predictive analysis glossary
- Lookup value prediction
- Numeric field value prediction
- Recommendation prediction
- Configure a prediction business process
- Machine learning model training

Recommendation prediction

Recommendation ML models create lists of objects (recommendations) that are likely to be linked to the “subject” records (the recipients of recommendation). For example, you can recommend products to your customers based on known purchases of other similar clients or purchases of similar products.

This method of training product recommendation models is called collaborative filtering. The collaborative filtering model uses the subject’s known preferences, as well as data about the preferences of other subjects that are similar to the target subject.

To predict the preferences, Creatio uses an item-based algorithm. Creatio summarizes and ranges the data about the interaction with the recommendation objects and creates recommendation lists.

To implement a recommendation model:

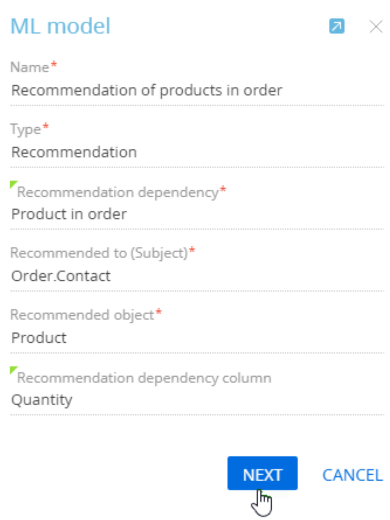
1. Set up and train a new recommendation model.
2. Set up a business process with the [Data prediction] element to implement the recommendation logic.

CASE

Set up a machine learning model that would recommend products that a customer would most probably purchase.
To do this, set up and train a product recommendation model.

To create a product recommendation model, open the [ML models] section in the System Designer, click [New model] and populate the ML model mini page (Fig. 10):

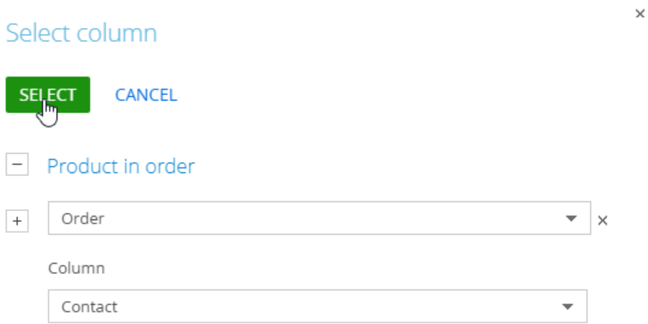
Fig. 10 Mini page of the product recommendation model



1. [Name] – enter the name of the prediction model that will help you easily identify it in the list of the [ML models] section and when selecting the model for the [Data prediction] process element.

2. [Type] – Select "Recommendation". As a result, the [Object] field changes to [Recommendation dependency].
3. [Recommendation dependency] – select the object that maintains a connection between the recommendation subject (in our case, the customer) and the recommendation object (in our case, the product). For example, the connection of the customer to the product is implemented through the "Product in order" object. When you select the connecting object, additional fields appear in the mini page.
4. Recommended to (Subject) – specify the subject of the recommendation. The recommendation subject is a Creatio record, for which the list of recommended objects is generated. In our example, the products will be recommended to the contacts specified in the order. Click "+" and select the [Order] object, then the connected [Contact] object (Fig. 11):

Fig. 11 Selecting the column of the recommendation subject



5. [Recommended object] – select the recommendation object. In our example, it is the [Product] column of the "Product in order" object (Fig. 12):

Fig. 12 Selecting the column of the recommendation object

6. [Recommendation dependency column] – select a numeric column in the section, detail, or lookup specified in the [Recommendation dependency] field. This column will be used to grade the "quality" of dependency between the recommendation subject and the

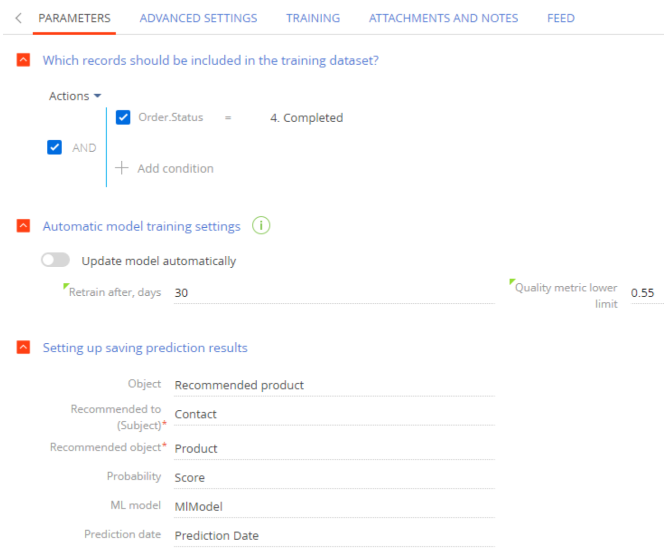
recommended object. For example, the number of products ordered by contact is a quality of dependency between the corresponding contact and different products. Thus, if you select the [Quantity] column, the more products a contact buys, the "stronger" the contact's dependency with the recommended object is, making this a more significant connection that warrants future recommendations.
The field is not required. If you do not populate the field, the connection between the subject and the object will be presented in a binary way: "0" – connection does not exist; "1" – connection exists.

7. Click [Next] to save the mini page and open the product recommendation model setup page.

Product recommendation model parameters

Once you populate the initial fields, click the [Parameters] tab and specify additional model parameters (Fig. 13):

Fig. 13 Product recommendation model parameters



1. [Which records should be included in the training dataset?] – set up a filter that Creatio will use for selecting records to train the model. For example, narrow down the training data range to products from the completed orders only. You can leave the filter conditions unpopulated. This will result in Creatio using all available records for training the model.

NOTE

At this stage, you already can save and train the model by clicking the [Train model] button. You will see the training results in the [Expected accuracy] field. To save the prediction results, populate the [Setting up saving prediction results] detail.

2. [Automatic model training settings] – switch the slider to the right and set the automatic model training parameters based on the updated historical data.

a. In the [Retrain after, days] field, specify the interval between model training sessions. After the specified number of days, the model will be retrained based on historical data using the records that match the filter. The first training of the model starts when you click the [Train model] button. If you do not want to retrain the model, leave the field blank or enter "0."
b. In the [Quality metric lower limit] field, specify the lowest quality metric of the prediction model. When the model is trained for the first time, this threshold will determine the minimum acceptable quality that the model needs to reach before it can be used in Creatio. If the quality of a model drops below the lower limit, the model is deemed unusable. We recommend setting the quality metric lower limit to at least 0.50. The quality metric ranges from 0.00 to 1.00. The accuracy of machine learning models is calculated by dividing the number of successful predictions by the total number of predictions to evaluate the success rate of its learning patterns. You can use the following article to learn more about how the prediction accuracy score is calculated.

3. [Setting up saving prediction results] – specify where the prediction result will be stored in Creatio. You can save the prediction in any Creatio object that contains the required fields. For example, you can add a [Product recommendations] detail to a contact page. Learn more about creating and adding new details to record pages in the "Create new detail" article.
    a. In the [Object] field specify the object that will store the recommendations. It is usually a detail. Note that you can only specify an existing object in Creatio. In our example, you can specify the [Product recommendations] detail that we configured and added earlier. When you select an object, the [Recommended to (Subject)] and [Recommended object] fields become required.

NOTE

Learn more about creating and adding new details to record pages in the "Create new detail" article.

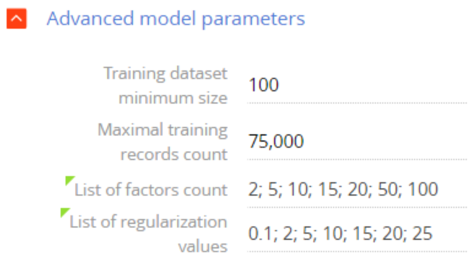
b. The [Recommended to (Subject)] field is populated automatically. You can modify the value, if necessary. For our example, specify [Contact] in this field. The field is required
c. The [Recommended object] field is populated automatically. You can modify the value, if necessary. For our example, specify [Product] in this field. The field is required
d. The [Probability] field is populated automatically. Creatio selects a "Decimal" type column of the prediction detail configured earlier. You can change the value, if necessary, by selecting another decimal column from the drop-down list. The field is used to range the records. In our example, the higher the column value is, the more probable it will be to reach the opportunity success.
e. The [ML model] field is populated automatically. Creatio selects a "Lookup" type column of the prediction detail configured earlier. You can change the value, if necessary, by selecting another column of the appropriate type from the drop-down list. We recommend populating this field if you use several different prediction models.
f. In the [Prediction date] field, specify the date when the prediction took place by selecting a "Date" type column of the prediction detail configured earlier.

Advanced settings of the product recommendation model

Click the [Advanced settings] tab if you want to specify additional prediction model parameters.

1. Use the [Advanced tools to add columns] detail to set up a query for the selection of additional columns that the predicted value depends on. Note that creating queries requires coding. Learn more in the "Creating data queries for the machine learning model" article.
2. The fields in the [Advanced model parameters] detail (Fig. 14) are populated automatically. You can edit them and change their numeric values, if necessary.

Fig. 14 Advanced model parameters



   a. [Training dataset minimum size] – the minimum number of records needed for training a model.
   b. [Maximal training records count] – the maximum number of records needed for training a model.
   c. [List of factors count] – a pre-configured list of metric numbers for each recommendation object and subject used by Creatio to analyze and prepare recommendations.
   d. [List of regularization values] – a pre-configured list of numbers of additional restrictions added by Creatio to minimize errors and avoid model re-trainings.

NOTE

Creatio will train the models based on each of the values from the [List of factors count] and [List of regularization values] fields to define the combinations of numbers for factors and parameters that would provide the most accurate prediction. The values that provide the highest prediction accuracy will be used to train the model.

Click [Save]. To start training a product recommendation model, click [Train model].

You can track the prediction accuracy in the [Expected accuracy] field. The value in this field shows the "quality" of the model training by the NDCG metric and enables comparing different models. Learn more about the NDCG metric in Wikipedia.

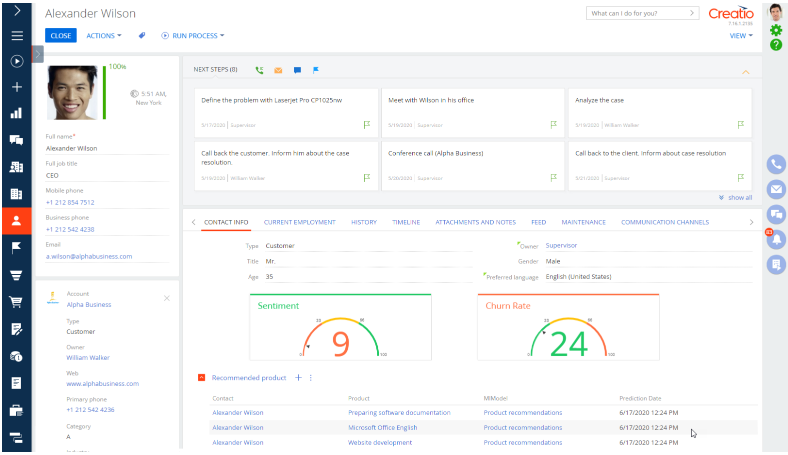
As a result, a new model will be added and you will be able to use it for running processes that predict recommendations for the selected Creatio objects.

Learn more about business processes for predictive analysis in the "Configure a prediction business process" article.

In our example, the product recommendation model will analyze data on the interaction of the recommendation subject as well as other similar subjects with the [Product in order] object and generate a list of corresponding recommendations in the corresponding object, e.g., the object of the custom [Recommended products] detail. The selection of records for training will be restricted by the completed orders. The list of recommendations will be ranged based on the number of purchased products.

As a result, the custom [Recommended products] detail of the selected contacts' pages will display the recommended products (Fig. 15):

Fig. 15 Product recommendation on a contact's page



SEE ALSO

- Basic predictive analysis glossary
- Lookup value prediction
- Numeric field value prediction
- Predictive scoring
- Configure a prediction business process
- Machine learning model training

Configure a prediction business process

Once your prediction model is created, set up the actual predicting as a business process using the [Predict data] process element. This gives you complete control as to what records are predicted and when.

Example of configuring a business process with a lookup field prediction

You can set up a prediction of the account category whenever a new account with an empty [Category] field is saved (Fig. 16).

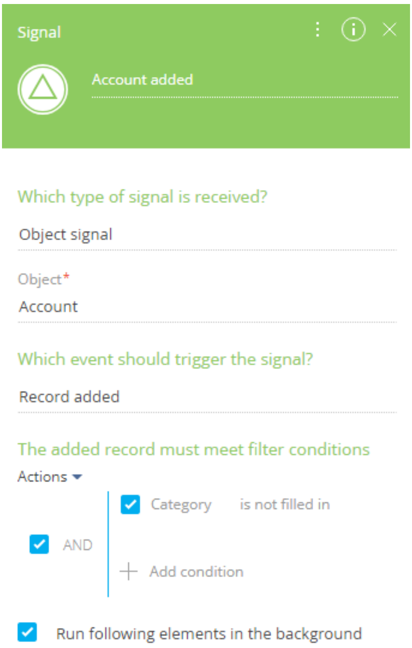
In this example, we will be using the account category prediction model created earlier.

Fig. 16 An example of ML model implementation process

To implement this:

1. Create a new business process fro the process library and add the [Signal] start event on its diagram. The start event should be triggered whenever a new record in the [Accounts] section is added. Signal element parameters (Fig. 17):

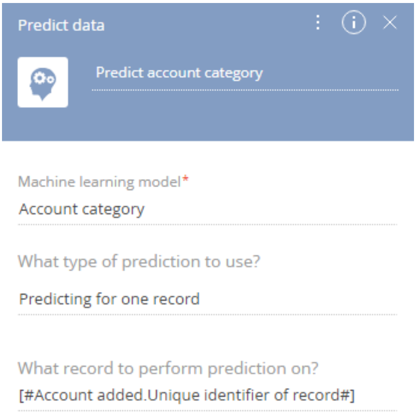
   Fig. 17 Signal element parameters

   a. [Which type of signal is received?] - "Object signal."
   b. [Object] - "Account."
   c. [Which event should trigger the signal?] - "Record added."
   d. [The added record must meet filter conditions] – "Category is not filled in."
   e. [Run following elements in the background] – "true." This way, all preceding system operations of the process will be performed in the background without displaying the loading mask.

2. Add the [Predict data] element on the diagram. Set up the element parameters (Fig. 18):

Fig. 18 [Predict data] element setup area



   a. In the [Machine learning model] field, choose the prediction model to use. For example, to predict the category of the account, select the "Account category" model created earlier. The model setup is described in the "Lookup value prediction" article.

NOTE
Prediction models have to be trained before they can be used in the business process. If the model is not trained, it will not be available for selection in the [Predict data] element.

   b. [What type of prediction to use?] - "Predicting for one record".

   c. In the [What record to perform prediction on?] field, click the button and select [Process parameter]. In the window that appears, go to the [Process elements] tab and select the signal created in the previous step, and then select [Unique identifier of record].

3. Save the process.

As a result, whenever the [Predict data] element is triggered during a business process, it will use the specified ML model to predict the data of the specified record. In our case, the [Category] field value will be predicted and populated each time a new record is saved in the [Accounts] section. The prediction will be based on the values specified by users when populating the [Category] field of historical records.

Example of a business process with recommendation prediction

You can set up running product recommendation predictions for accertain type of product to hold an advertising campaign (Fig. 19). For example, you can manually run a business process to recommend five products of a "Motherboards" type to all contacts of a "Customer" type.

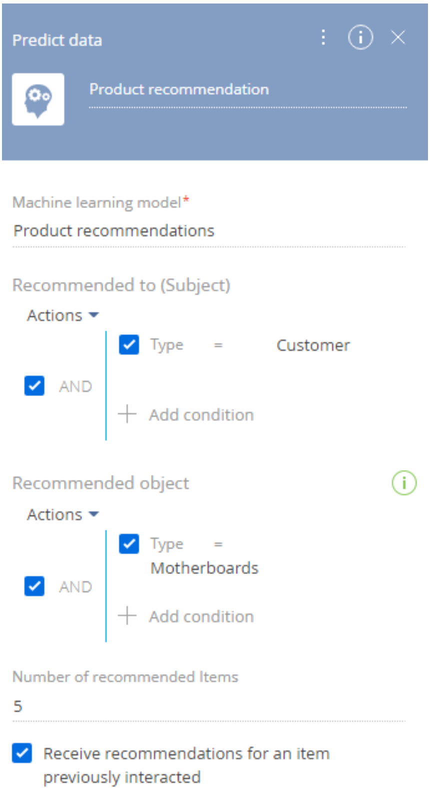
In this example, we will be using the product recommendation model created earlier.

Fig. 19 Example of a business process with recommendation prediction

To implement this:

1. Create a new business process from the process library. Use the [Simple] start event to start the business process manually. The event is added to the diagram by default.
2. Add the [Predict data] element on the diagram. Set up the element parameters (Fig. 20):

   Fig. 20 Setting up parameters of the [Predict data] element

   a. [Machine learning model] – specify the name of the recommendation model.

b. [Recommended to (Subject)] – specify the filter. Select all or specific contacts that will receive recommendations. The filter must be specified to validate the element. For our example, select the contacts of the "Customer" type.

c. Recommended object – specify the filter if you need to restrict the recommendation selection to solve a specific business task. For example, you can only recommend products of a certain type to your customers. In our example, these are motherboards.

d. [Number of recommended items] – specify how many records the recommendation list should contain. For example, you can restrict the number of recommendations to five.

e. [Receive recommendations for an item previously interacted] – select the checkbox to include only the products that involved interaction into the recommendations.

3. Add the terminate event and save the process.

As a result, whenever the [Predict data] element is triggered during a business process, it will use the specified ML model to generate a list of recommendations. In our example, the selection of training records will be restricted by the "Motherboards" product type. The list of recommendations consisting of five records will be generated for all contacts of the "Customer" type.

SEE ALSO

- Basic predictive analysis glossary
- Lookup value prediction
- Numeric field value prediction
- Predictive scoring
- Recommendation prediction
- Configure a prediction business process
- Machine learning model training

Machine learning model training

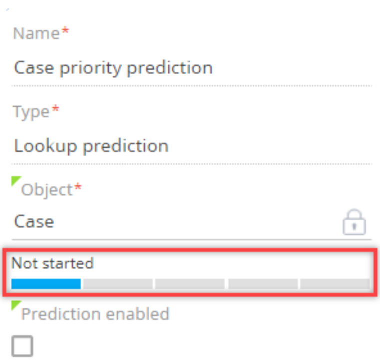
The models are trained in the cloud service. Due to historical data analysis Creatio determines certain patterns that may further be used for predictions. The data used for model training is not saved in the cloud service. Instead, the cloud service is used to store the prediction patterns. Increasing the volume of historical data increases the accuracy of predictions. Therefore, all models must be retrained regularly.

NOTE

Predictive analytics in Creatio enables you to train models on collections containing up to 75,000 historical records. If a collection contains more than 75,000 records, the service will randomly select 75,000 records from the collection to train a machine learning model. To achieve the quality metric lower limit of 50%, it is recommended to use at least 20,000 historical records for training models that perform text data analysis and at least 1,000 historical records for training models that perform numeric data analysis.

The training progress bar on the machine learning model page enables you to track the current training stage of a model (Fig. 21).

Fig. 21 Training progress bar



Once the model is successfully trained, a machine learning model instance is created and activated automatically. Retraining models and saving new instances occurs automatically in the background mode. Retraining frequency is configured in the [ML models] section.

The list of factors that affect the evaluation metric or the quality of a trained ML model (aka "predictors") are displayed on the [Training] tab of the model, at the top of the page (Fig. 22). The numbers show how strongly each factor will affect the prediction result. The factors will be displayed once the model training is complete.

Fig. 22 Factors that influence the predictive score

When setting up prediction models, the analysts can use this data to fine-tune the model parameters.

SEE ALSO

- Basic predictive analysis glossary
- Lookup value prediction
- Numeric field value prediction
- Predictive scoring
- Recommendation prediction

Section Wizard

Despite the general industry-wide similarities, the needs and requirements of each particular business, even within the same industry, are very unique and are rarely a 100% match with a standard-issue out-of-the-box CRM configuration. At one point or another, any business will face some of the more common customization tasks:

- Create new functional modules (sections). Boxed solutions may not always have all needed sections, there may not be an out-of-the-box section for managing information that is specific to your industry of business.
- Customize an existing data structure. Out-of-the-box sections may not account for your specifics: terminology, data structure, etc. and you may need to tweak these sections.
- Customize the UI. You may need to rename or rearrange page fields, tabs and other page elements in a particular way that is common to your industry or business practices.
- Customize business logic. You may have specific requirements as to how the users enter and process data in the system: disable the ability to change the totals for paid invoices; make the users specify additional data in one case, and skip it in the other; have specific requirements for customer categorization, etc.

Creatio-based configurations are expandable by design. System administrators and business analysts can configure the product functionality via an array of no-code drag&drop tools, grouped under an "umbrella" term – Section Wizard.

Section Wizard functions

The Section Wizard enables the users to customize the following aspects of a basic Creatio functional module, commonly referred to as "section":

Section element	Configuration options
General section properties	Add new business objects and corresponding database tables. Set up the section data object, title, icon, enable mini pages, add several section record pages. Read more >>>
Section columns	Customize the section data structure by adding new fields to it, which will update the database tables with the corresponding columns. Read more >>>
Record page	Design section pages by adding or modifying page fields, widgets, and tabs, page element titles, properties, and position. Read more >>>
Mini page	Design the layout of the "mini page" pop-ups, select which section fields they display. Read more >>>
Lists on record pages (details)	Set up details (small lists, displayed on section pages, such as activity participants, account contacts, etc. Read more >>>
Page business logic	Customize the business logic of a section, e.g., make different fields visible, required, editable or filter lookup values based on different conditions. Each page in a section can have separate business rules. Read more >>>

Section element	Configuration options
Workflow bar and action panel (cases)	Set up unstructured non-linear processes for managing the life cycle of section records, e.g. the stages of support incident resolution or lead qualification or nourishment process. Read more >>>
Business processes	Set up BPMN business processes that you can run from the section actions. You can also have section business processes run by a selected section records. Read more >>>

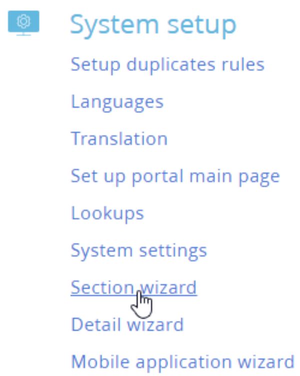
Developers can also use the Section Wizard for quick access to the source code of section pages, where they can edit the section page source code. Read more >>>

How section customization works

To access the Section Wizard, a user requires permission to the [Access to "Configuration" section] system operation. The Wizard is accessed differently, depending on whether you are adding a new section, or customizing an existing section:

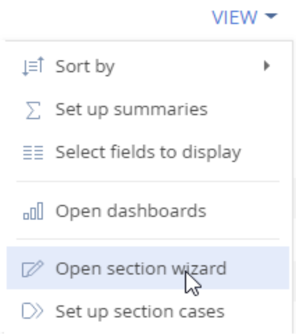
- To add a new section via the wizard, open the System Designer by clicking the button in the top right corner of the application window. Click the [Section Wizard] link in the [System setup] block (Fig. 1).

  Fig. 1 Adding a new section

- To modify an existing section, open it and select the [Open Section Wizard] option from the [View] menu (Fig. 2).

Fig. 2 Editing an existing section



All changes made to the Creatio configuration via the Section Wizard are saved in the package specified in the “Current package” system setting. By default, this is the “Custom” package, which is designed to store any changes to be used locally, without the need to migrate them to different applications.

ATTENTION!

If you intend to distribute your customizations, e.g., post them on the Marketplace, or migrate changes from a development environment to the production environment, make sure you create a new package to store your changes and specify it in the “Current package” system setting. For more information about working with packages, see “Development tools. Packages” article in the Development guide.

If the package is unavailable for the current user or no package is specified in the “Current package” system setting, Creatio will prompt to select another package from the list when you open the Section Wizard.

Use the [Configuration] section to manage packages and the [System settings] section to manage system settings.

Creating new sections vs customizing existing sections

Create new sections to manage business objects that are not readily available. Before you begin creating a brand-new section, make sure that there are no existing sections that already accommodate this business task.

Note that a wide range of add-ons and solutions are available in the Creatio Marketplace, and a lot of them are available for free. For example, before creating a section for managing HR job applications, make sure that the [Applications] section in the Recruitment for Creatio add-on cannot be customized to fit your needs.

Customize an existing section, if it fits the general purpose of your business object and its relationships with other Creatio sections. For instance, Instead of creating a brand-new section for managing live presentations for customers, you may consider customizing the [Activities] section, by adding a “Live presentation” activity type, or the [Events] section available in Marketing Creatio. Both these sections enable scheduling timed events, link them to accounts and contacts, add participants, etc., meaning that you won’t have to design these functions from the ground up.

CONTENTS

- Add mini pages
- Add a BPMN business process to a section
- Section Wizard FAQ

SEE ALSO

- Customize page business logic
- Case Designer
- Process Designer

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Add a new section

Each Creatio application contains a set of out-of-the-box sections. The pre-configured sections depend on the Creatio product and installed Marketplace add-ons. You can add new custom sections to your application.

> CASE
>
> Add a custom [Requests] section to manage employee internal requests in Creatio.

To add a new section:

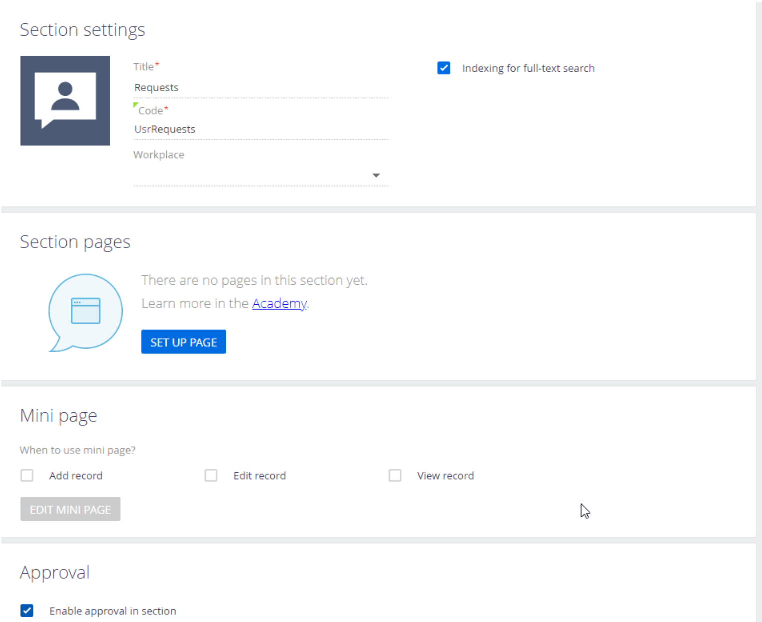
1. Click -> System Designer -> [Section Wizard].

   ATTENTION!

   You can open the Section Wizard only if you have access to the [Access to "Configuration" section] system operation.

2. Populate the primary properties of the new section (Fig. 3).

Fig. 3 Section base properties



a. In the [Title] field, enter the name for the new section, e.g., “Requests.”

b. In the [Code] field, enter the unique name that Creatio will use to generate section objects. For example, for a custom section named [Requests], the section code can be "UsrRequests." The code can only contain integers and Latin characters. After saving or switching to edit mode, the field becomes locked.

NOTE

The section code must contain a prefix, which identifies the author of the configuration changes. The prefix is specified in the “Prefix for object name” system setting. The default prefix is “Usr.”

ATTENTION

Make sure that you DO NOT USE any of the following prefixes or suffixes:

Prefixes: “Base,” “Sys,” “Vw;”

Suffixes: "InFolder," "Lcz," "Settings.”

Otherwise, you will not be able to import the section records from Excel.

c. Select the [Indexing for full-text search] checkbox, if you want to display the section data in the global search results.

3. Replace the default section icon displayed in the application side panel: hover the cursor over it and click  -> Upload a new image.

NOTE

We recommend using a white icon on a transparent background. Image format: PNG or SVG, size: 38x38 px. You can use the Marketplace icon library to search for section icons.

4. In the [Workplace] field, select a workplace from the drop-down list of available workplaces. A section can later be included in other workplaces. One section can belong to several workplaces.

   NOTE

   Detailed information about configuring workplaces is available in the “Workplace setup” article.

5. After you add the new section, customize the primary section page. Read more >>>
6. To use mini pages in the section, select the corresponding checkboxes. You can set up mini pages for adding, editing and viewing section records. Read more >>>
7. Select the [Enable approval in section] checkbox to enable approval functions in the section.

   NOTE

   Learn more about working with approvals in Creatio in the “Approvals” article.

8. Click [Save] to apply the changes.

As a result, the new [Request] section will be created and added to the workplace you specified in step 4. In the back-end, the corresponding objects will be added for the new section automatically:

- <Code> – e.g., UsrRequests – the section object that will contain the section data structure.
- <Code>File – e.g., UsrRequestsFile – the object for storing section attachments.
- <Code>Folder – e.g., UsrRequestsFolder – the object for storing the folder structure of the section.
- <Code>InFolder – e.g., UsrRequestsInFolder – the object for storing information on which section record is placed in which folder.
- <Code>Tag – the object for storing section tags.
- <Code>InTag – the object for storing information on which section record is tagged with which tags.
- <Code>RequestsVisa – the object for storing information on section approvals.

To see the section in the application workplace, update the page and clear the cache. Alternatively, you can log out of the application and log back in, which will make Creatio clear the cache and apply the changes.

SEE ALSO

- Customize pages
- Add mini pages
- Add a BPMN business process to a section

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Customize an existing section

You can customize most of the out-of-the-box standard Creatio sections using the Section Wizard.

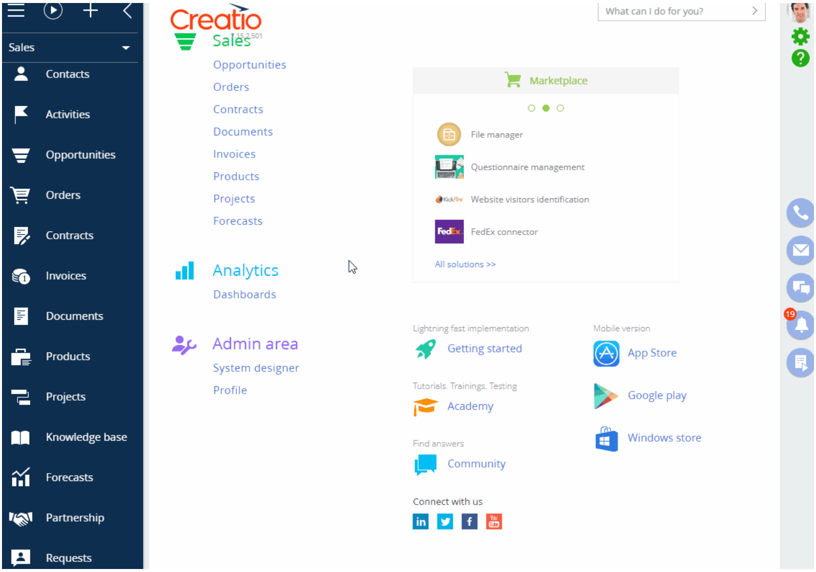
ATTENTION

Some of the sections can only be edited by developer means. The Section Wizard is unavailable in any sections designed for configuring the Creatio application (these are sections that are available in the [Studio] workplace or the System Designer, such as the [Process library], [System settings], [Lookups], etc.); as well as non-standard sections, such as [Agent desktop], [Queues], [Forecases], [Marketing plans], [Dashboards], etc. Non-standard sections, usually, have their specific customization tools.

To customize and existing section:

1. Open the needed section, e.g. the [Requests] section that you created earlier.
2. Click [View] -> [Open section wizard] (Fig. 4).

Fig. 4 Accessing the configuration of an existing section



ATTENTION!

You can open the Section Wizard only if you have access to the [Access to "Configuration" section] system operation.

NOTE

With the [Activities] section, you can only open the Section Wizard if you use the "List" view.

As a result, you will switch to the Section Wizard of the current (e.g., "Requests") section and will be able to configure it as per your business needs.

The following links will assist you in the customization process:

- Customize pages
- Page Designer
- Add record pages
- Add dashboards as page widgets
- Add mini pages

NOTE

In the Section Wizard of the current section, you can configure the section business rules and cases. Read more in the “Setting up the business rules” and “Setting up cases in sections” articles.

Add record pages

You can set up several record pages” for a section, e.g., for different types of section records.

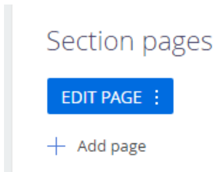
To add multiple edit pages to a section, follow the below steps:

1. Open a section, e.g., [Requests].
2. In the [Section pages] area, click [+ Add page].

NOTE

The [Section pages] area view changes once you save the newly created section in the Section Wizard: the [Set up page] button disappears, the [Edit page] and [Add page] buttons appear instead (Fig. 5).

Fig. 5 The [Section pages] area buttons after saving the new section

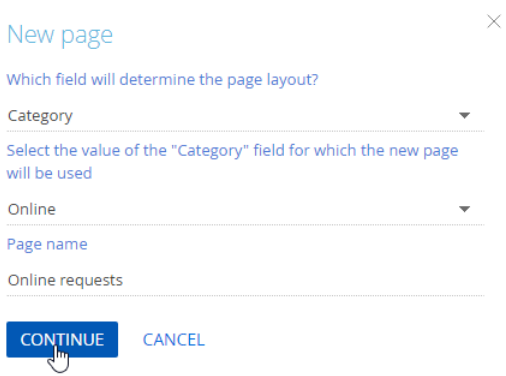


ATTENTION

To add multiple section pages, you need to configure the section main page by clicking [Edit page] first. Read more >>>

3. Populate the fields in the opened window (Fig. 7):

Fig. 6 Adding a new edit page



   a. [Which field will determine the page layout?] – select the field, whose values will determine, which page to use for each record. For example, in the [Requests] section, you can set up different edit pages for different request categories: online requests and offline requests.

NOTE

The corresponding lookup column must be added to the section page, otherwise, it will not be available for selection in the drop-down list of the [Which field will determine the page layout?] field.

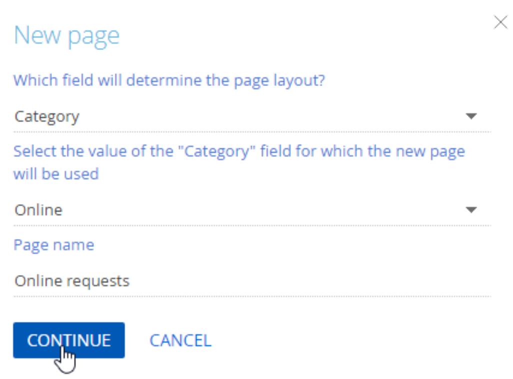
b. Select the value of the "..." field for which the new page will be used – the value of the lookup field selected at the previous step. You can specify which page to use for each value in the lookup.

NOTE

For new sections, populate the corresponding lookup with values in advance, You can also enter a new value directly in the [Select the value of the "..." field for which the new page will be used] field and Creatio will offer to add this lookup value. Read more >>>

c. [Page name] – the name of the new section page. The field is populated with a default value that looks as follows: "Edit page: "Section name" (Name of the corresponding lookup value)." For example, "Edit page: "Requests" (Online)." You can rename the page using any custom name to make it clearer for other users, e.g., "Online requests" (Fig. 7).

Fig. 7 Adding a new edit page



4. Click [Continue].

5. On the Content Designer page that opens, configure the added page.

NOTE

You can set up additional section pages similarly to setting up the first section page.

Multiple pages of the same section can differ from each other: you can apply separate business rules for the page fields and link different section cases to each section page, as well as add different field groups and details that are only relevant for this particular request category

To stop using a page in the section:

1. Delete the value in the [Values of the "..." lookup] column in the [Section pages] area.

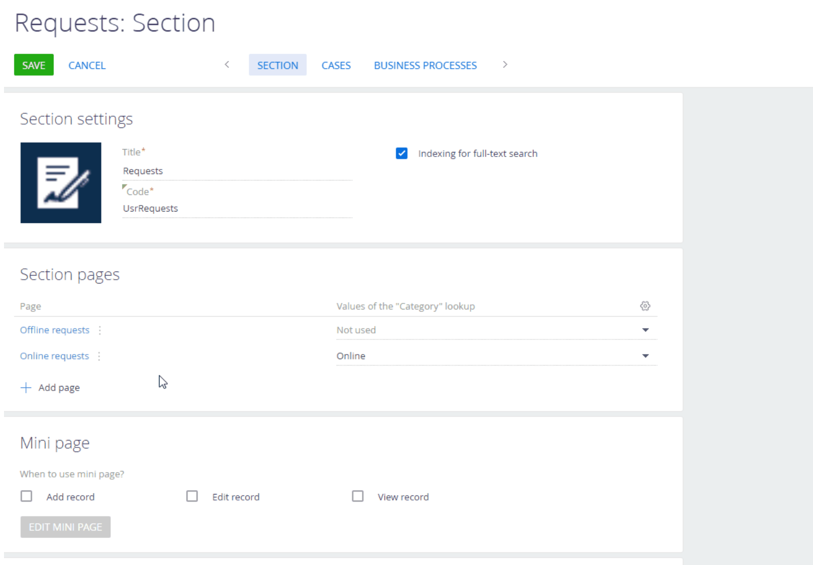
2. After you delete the data, the field will automatically set to “Not used.” The page will be saved, but will not open for users (Fig. 8).
3. Click [Save] to save the changes in the section.

Fig. 8 The section edit page is not used anymore

To delete the configured section page from the list of available section pages completely:

1. In the [Section pages] block of the Section Wizard, click ⋮ next to the name of the section page you want to delete.
2. Select [Remove] from the drop-down menu (Fig. 9).

Fig. 9 Deleting a section page from the section



To modify the column that determines the page view:

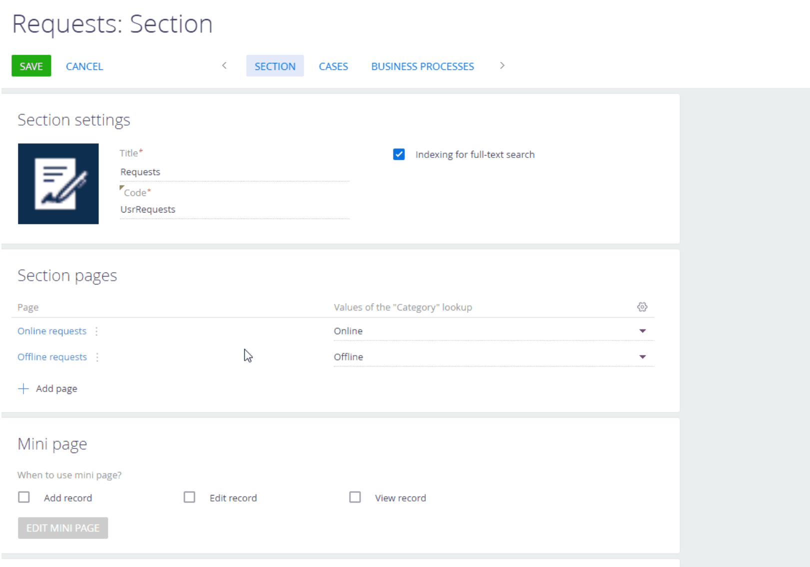
1. In the [Section pages] area, click ⚙ .
2. In the opened window, select the new lookup field, e.g., “Type” instead of “Category.”

NOTE

After you change the column, the [Values of the "..." lookup] field value will be set to "Not used" for all edit pages configured earlier.

3. Specify the selected lookup values that will use the configured edit pages.
4. Rename the pages accordingly if needed (Fig. 10).

Fig. 10 Changing the column that determines the page type



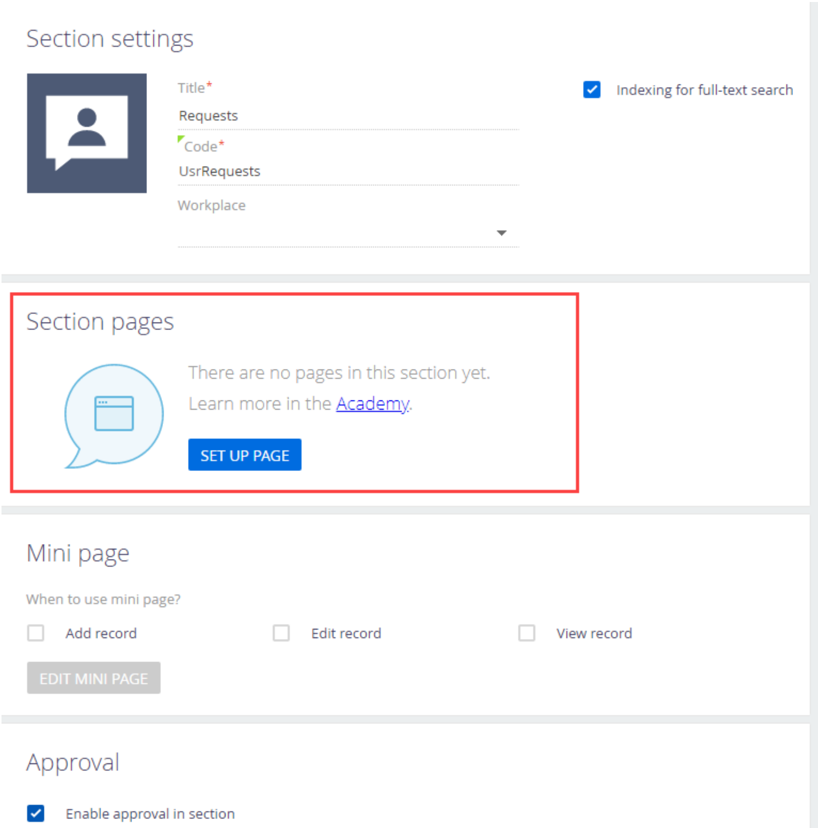
SEE ALSO

- Customize pages
- Add dashboards as page widgets
- Add mini pages
- Page Designer
- Set up page fields
- Set up page tabs
- Set up page field groups

Customize pages

You can access record page customization from the [Section pages] block (Fig. 11) of the Section Wizard.

Fig. 11 Example of the [Section pages] block in the Section Wizard



- For a new section, the block contains a [Set up page] button. If you click it or save the section at this stage, a record edit page will be automatically added and you will be able to proceed with its setup. The button will be automatically renamed into [Edit page].

  NOTE
  The [Set up page] button becomes active when you enter the section code. Before that, the button is grayed-out.

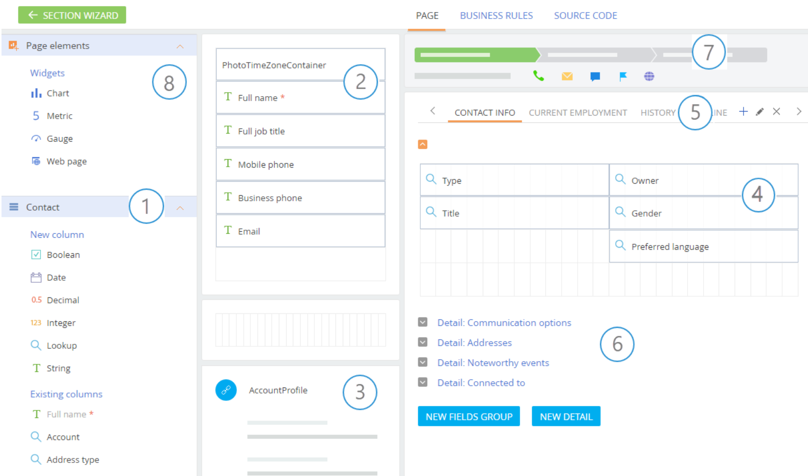
- For existing sections with one edit page, the block displays the [Edit page] button. When you click it, you switch to the Page Designer. Using the page edit options available, you can configure your page layout.
- For existing sections with several edit pages, the block displays the list of configured pages. To switch to editing these pages in the Page Designer, click the corresponding page name.

Page Designer

You can configure the layout of a record page, using the Page Designer. Here you can customize various page elements, including fields or field groups, page tabs, details, and analytics – all with a simple no-code drag&drop tool.

The Page Designer consists of several blocks (Fig. 12).

Fig. 12 Page Designer



(1) – The page elements area contains the elements that you can add to the page: new fields, existing fields, and widgets.

(2) – Record profile setup area.

(3) – Connected record profile setup area (non-customizable).

(4) – Field setup area. Read more >>>

(5) – Tab setup area. Read more >>>

(6) – Setup area for details and field groups.

(7) – Workflow bar and action panel placeholders.

(8) – Tools for adding dashboards on record pages.

NOTE

The workflow bar is displayed on the section page if the corresponding case is set up for the section. Setting up cases is described in the business process setup guide. Read more >>>

By default, the new section page contains an [Attachments and notes] and [Feed] tabs. You will need to add and configure other tabs.

You can customize the following page elements:

- Fields Read more >>>
- Field groups Read more >>>
- Tabs Read more >>>

- Details Read more >>>

After you create the first section page, you will be able to add other pages that will be displayed in the [Add page] menu. Read more >>>

SEE ALSO

- Record pages
- Dashboards on a record page
- Add mini pages
- Section Wizard FAQ

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Set up page fields

In the Page Designer, you can add, modify, hide or delete fields on a record page. You can also manage the structure of the section data (i.e., the list of section columns): adding a new column in the Page Designer, will also add this column to the data structure of the section when you save the changes.

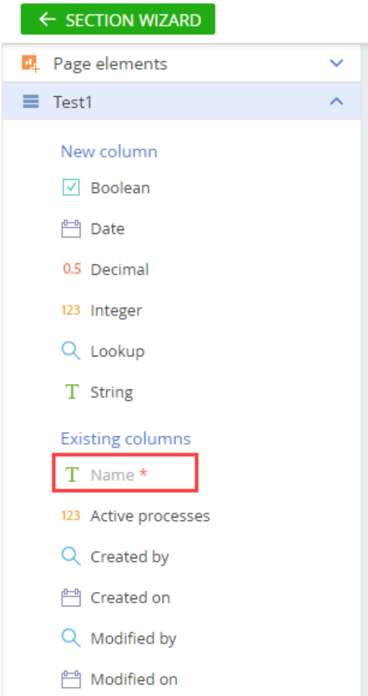
Adding page fields based on existing section columns

The [Existing columns] block of the [Page elements] menu displays columns that are already available in the section. These columns may not be displayed on the record page, but they are used in the Creatio database and cannot be deleted.

Some of the columns may be required on the object level: you cannot create a record in the database if you do not populate the required record columns. The required columns are marked with an "asterisk" (*) character (Fig. 13).

> **ATTENTION**
> All required columns must be added as fields to the record page to ensure that the record page opens correctly.

Fig. 13 A required field in the Page Designer

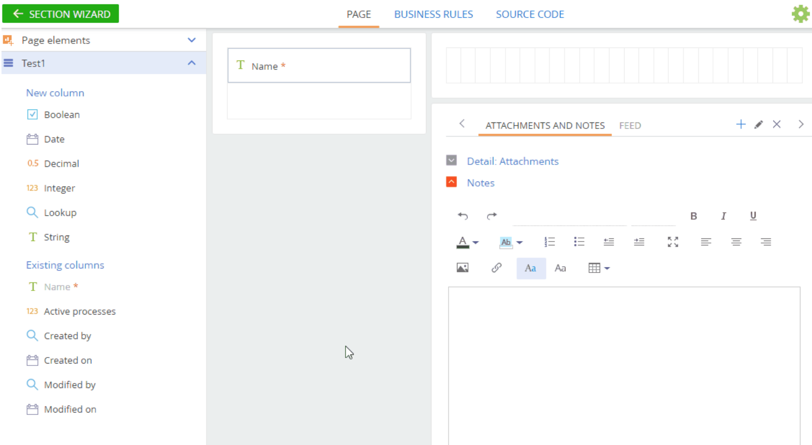


To add existing columns to the page:

1. Open a section, e.g., [Requests].
2. Click [View] -> [Open Section Wizard].
3. In the “Section pages” block of the Section Wizard:
   - if you have only one edit page in your section, click [Edit page];
   - if you have several edit pages in your section, click the link of a corresponding page in the list.
4. Drag existing columns from the [Existing columns] area to the record page.

The areas where you can drop the field are highlighted. The columns that are already added to the page do not disappear from the column selection field, but they become unavailable in the list of existing columns (Fig. 14).

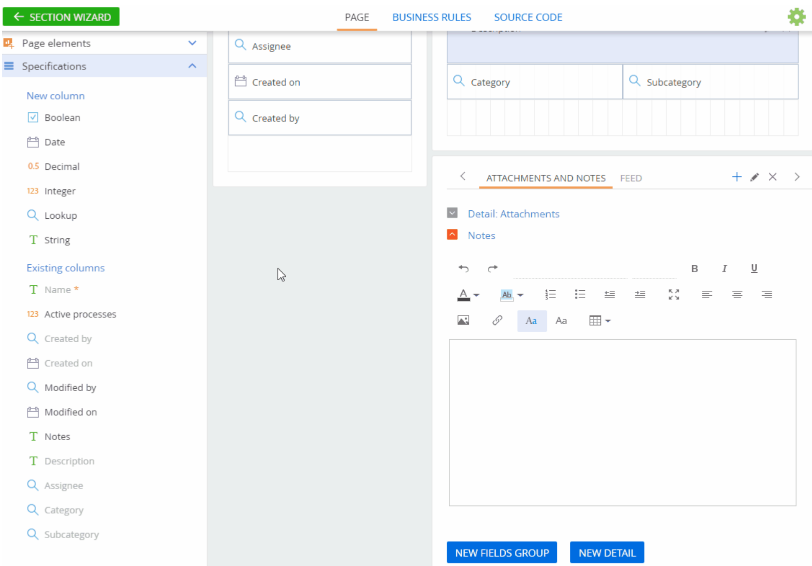
Fig. 14 Adding existing columns to a record page



ATTENTION

When you add a new column to a page in the Page Designer and accidentally drop it on top of other columns, the new column will not appear in the Page Designer working area. It will be added to the list of the existing columns instead (Fig. 15). To display it on the page, drag it from the existing columns to the working area of the Page Designer and do not create a new column with the same name.

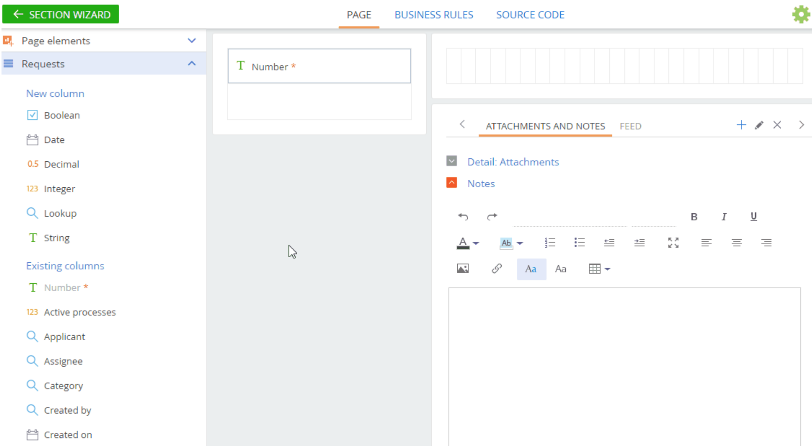
Fig. 15 Dropping columns on top of the displayed columns in the Page Designer



To change the column width, drag the edge of a corresponding field to make it large enough.

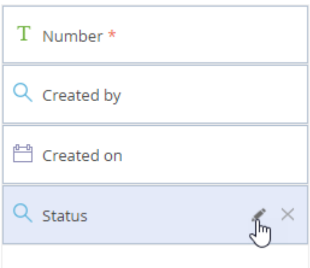
In multiline text fields, you can also change the column height (Fig. 16).

Fig. 16 Changing the size of a multiline column



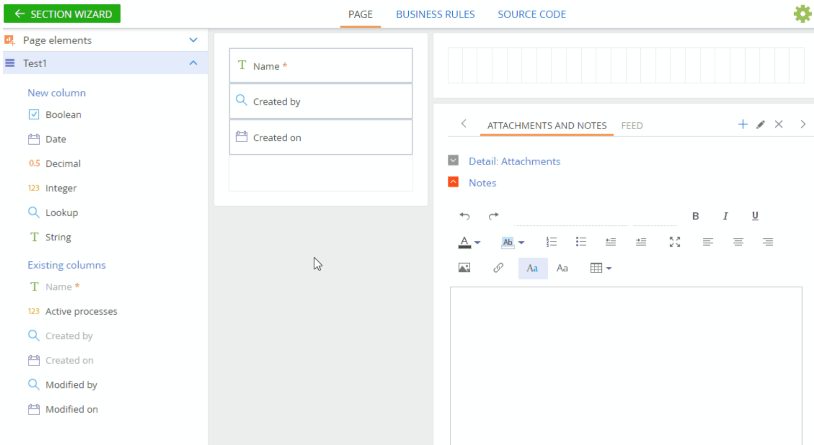
To modify the column properties, highlight it and click (Fig. 17).

Fig. 17 Editing columns in the Page Designer



To delete a field from the page, highlight it and click (Fig. 18).

Fig. 18 Deleting columns from a record page



ATTENTION

Removing a field from the page will not delete the corresponding column from the section object. You can delete an object column through the [Configuration] section only. You can delete only the columns that were created by you and only if they have not been added to any other pages. Base columns, such as "Id," "Created by," etc., cannot be deleted.

Adding new columns to a section

The [New column] block of the Page elements area displays available types of columns that you can add to the section. Below is the list of the types of columns that you can add.

Column type	Type of field on the page	Example
T String	A text field. String fields can contain letters, numbers and other characters. Multiline text fields enable line breaks and can have a variable height. String fields have several additional parameters. Read more >>>	Single line fields: the [Full name] and [Full job title] fields on the contact page. Multiline fields: the [Result details] field on the activity page.
123 Integer	A numeric field that can only contain whole numbers (no fractional numbers). If you use a field of the "Integer" type on the page, the analytical data that are generated based on the values of this field will be displayed rounded up to integers.	The [Duration (minutes)] column in the [Activities] section (does not display on the activity page by default).

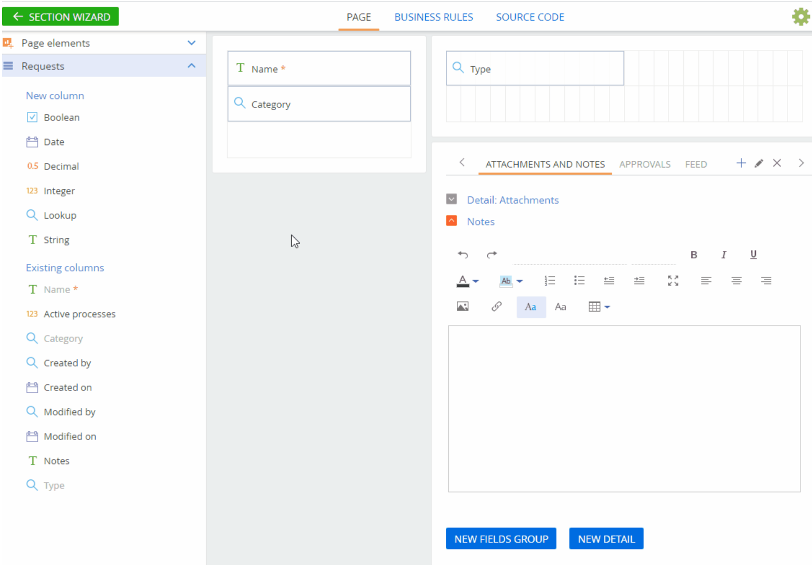
Column type	Type of field on the page	Example
0.5 Decimal	A numeric field that can contain fractional numbers.	The [Payment amount] field on the invoice page.
Date	Date fields are necessary for registering calendar information.	The [Start] and [Due] fields on the activity page.
Lookup	Enables you to select values from a list that was created manually or imported. The values available in the list are stored in the corresponding lookups. Users can populate lookup fields either by selecting a value from a drop-down list or the pop-up lookup window. Lookup fields have several additional parameters. Read more >>>	Drop-down list lookup fields: the [Type] and [Role] fields on the contact page. Pop-up window lookup fields: the [Owner] and [Reporter] fields on the activity page.
Boolean	Can contain one of the two logic values: "Yes/No." A Boolean field cannot be required.	"Checkbox" fields, such as the [Remind owner], [Remind author] fields on the activity page, etc.

To add new columns to the section:

1. Open a section, e.g., [Requests].
2. Click [View] -> [Open Section Wizard].
3. In the "Section pages" block of the Section Wizard:
   - if you have only one edit page in your section, click [Edit page];
   - if you have several edit pages in your section, click the link of a corresponding page in the list.
4. Select the needed type of column in the [New column] area and drag it to the page similarly to working with the existing columns (Fig. 19).

Dragging and dropping a new column to the section page will add a new field of the corresponding type and a new corresponding column to the database.

Fig. 19 Adding new columns to a record page

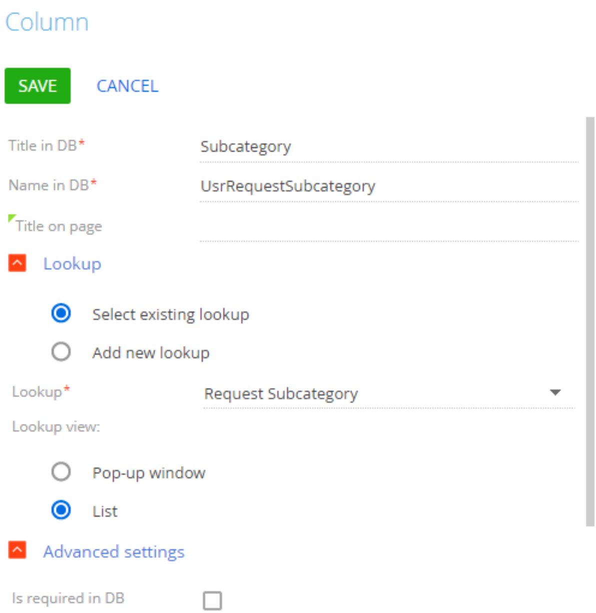


ATTENTION!

When you add a new field to a page, the corresponding column is added to the section object, once you save the changes in the Section Wizard.

Specify the parameters of the new column and the page field used to populate it. The set of available parameters (Fig. 20) may differ depending on the field type.

Fig. 20 Example of the [Subcategory] field parameters on a request page



Common parameters for all columns

Parameter	Description
Title in DB	The field caption that will display in the section list and on the record page (provided that the [Title on page] field is unpopulated. The field title remains in the database and is displayed on all section record pages.
Name in DB	The unique name for the column in the Creatio database. The column name cannot contain non-Latin characters and spaces. Creatio will warn you if a column with the same name already exists. Names of custom columns must contain a prefix. The prefix is specified in the "Prefix for object name" (SchemaNamePrefix) system setting. By default, the prefix is "Usr."
Title on page	Used to make a field title on the record page different from the field title in the list. If the [Title on page] field is not populated, Creatio will use [Title in DB] parameter as the field's page and list captions.
Is required in DB	Select this checkbox if the new field must be populated before a user can save a new record. This checkbox is not available for fields of the "Boolean," "Integer" and "Decimal" types.
Read-only	Select this checkbox if the new field must be grayed out when the page opens.
Hide caption	Select this checkbox if you need to hide the field title on the record page.
Make copy	Select this checkbox if you need to copy the value of this field when you copy the entire record. If a column contains values that must be unique for each record (such as invoice number, for example), do not select this checkbox for this column.

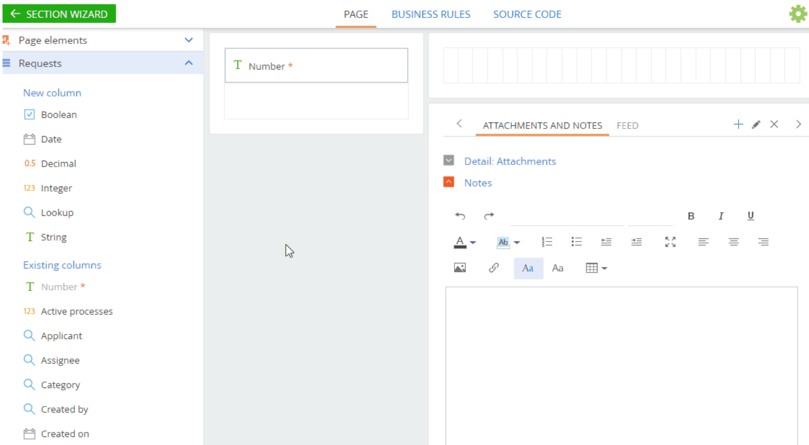
Parameters for the "String" columns

The [Multiline text] checkbox is unique to "String" fields. Multiline text fields have variable height and are designed for entering larger volumes of text that might take several paragraphs, such as the [Description] field. If you select the [Multiline text] checkbox, you will be able to modify the field height in the Page Designer by simply dragging it to the size you need (Fig. 21).

Leave the [Multiline text] checkbox cleared to add a single-line text field.

> NOTE
>
> By default, all string fields can contain 250 characters. You can change the length of a string field in the object designer, using the [Advanced settings] section.

Fig. 21 Changing the size of a multiline column



Parameters for the “Lookup” columns

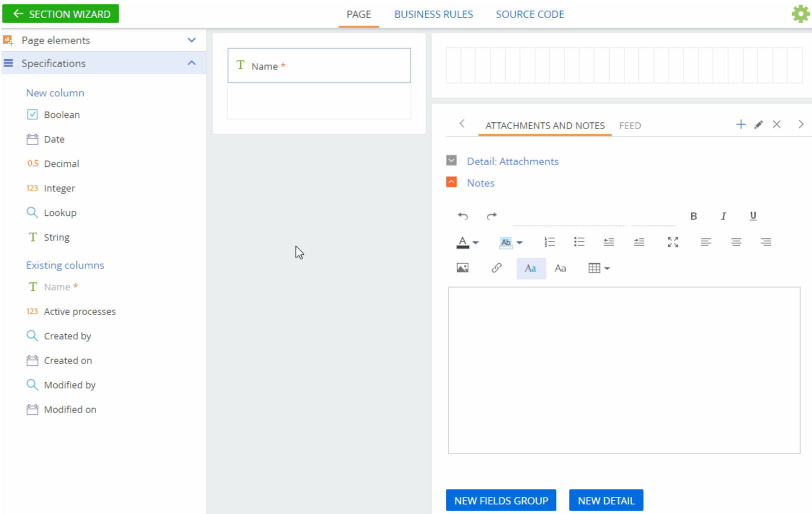
A lookup column is populated by selecting a value from a list. For a lookup column, you need to specify the object to use as the lookup, the lookup view and the type of connection between the records in the current object tan the lookup object.

Lookup object

The list of lookup values is based on the records of an object (the “lookup object”). You can use any object as a lookup object. Depending on whether the needed object already exists, select the [Select existing lookup] or [Add new lookup] option.

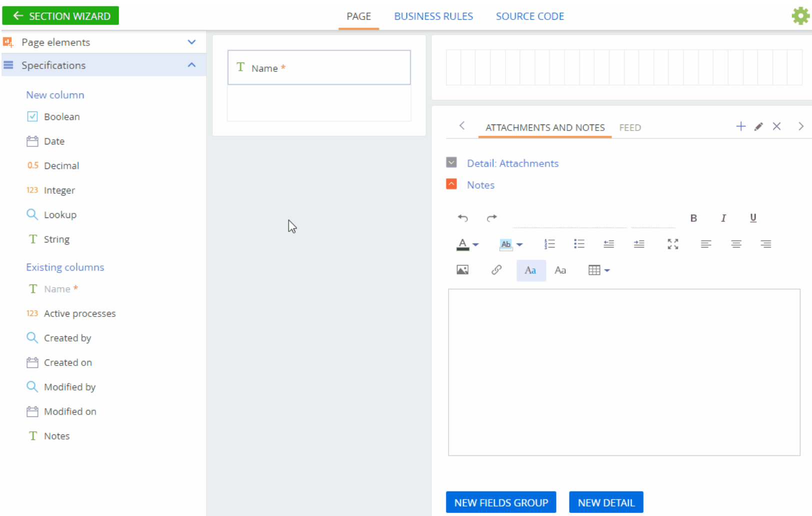
If you are adding a lookup field for an existing lookup, select the lookup object in the [Lookup] field. For example, select the “Contact” object as a lookup for the [Owner] field (Fig. 22).

Fig. 22 Selecting an existing lookup



Selecting [Add new lookup] will add a new object to Creatio. You need to specify the name and title for the new lookup object (Fig. 23):

Fig. 23 Adding a new lookup field



a. [Title] – a title that will distinguish your lookup object from other objects.

b. [Name] – a code for the new lookup object in the database. The object name must contain a prefix. You can specify the prefix in the "Prefix for object name" (SchemaNamePrefix) system setting. By default, the "Usr" value is used.

NOTE

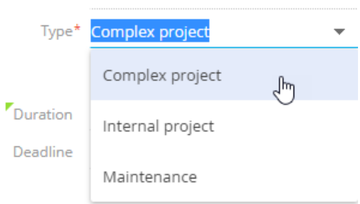
After you save the changes in the Section Wizard, a new lookup will automatically be registered in Creatio and bound to the package where the wizard saves changes. The lookup name will match the one that you indicate in the [Title] field. You can view and modify the lookup content via the [Lookups section].

Lookup view

The lookup view determines the type of field that will represent a lookup column on a page:

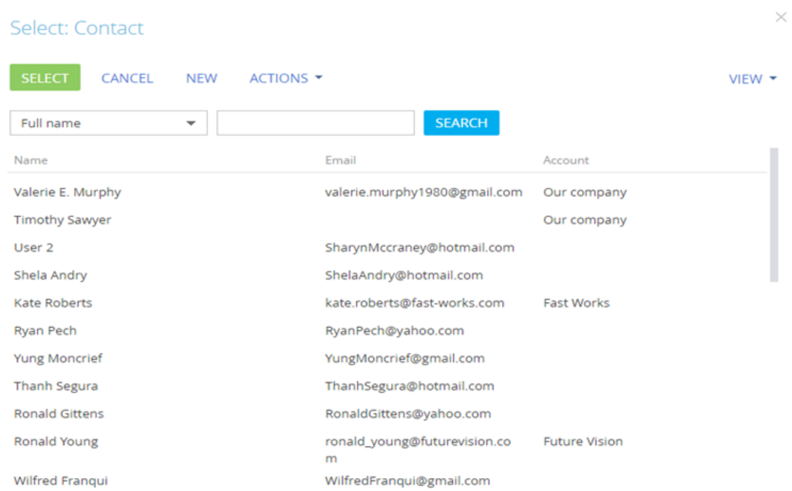
- Select the [List] display method to make the lookup field a drop-down list (Fig. 24).

Fig. 24 Example of a drop-down list view of a lookup field



- Select the [Pop-up window] display method to open a separate lookup window (Fig. 25) for selecting the value. In the pop-up window, you will be able to filter, edit or delete existing lookup records, as well as add new ones. This display method is a good option if you use an object of another section, e.g., the [Contacts] section, as a lookup.

Fig. 25 Lookup value selection window



Cascade connection

Select the [Cascade connection] checkbox in the [Advanced settings] area if you need to establish a connection between the records of the current section object and the object specified in the [Lookup] field. As a result, whenever a record is deleted from the lookup object, any linked records of the current object will be deleted as well.

The [Cascade connection] checkbox is usually selected for the lookup fields in detail objects – the fields that link the detail object to the section object. For example, the "Contact address" object has the [Contact] lookup column designed to link each address record to a specific contact. Whenever you delete a contact from the [Contacts] section, all addresses of that contact must be deleted as well. Therefore, the [Cascade connection] checkbox must be selected for the [Contact] column in the "Contact address" object.

SEE ALSO

- Set up page tabs
- Set up page field groups

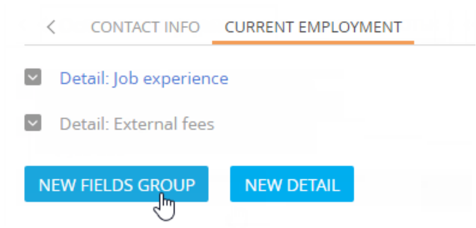
Set up page field groups

You can combine page fields into groups. For example, a record of the [Accounts] section can contain a [Categorization] field group used to categorize companies by various parameters.

To add a new field group:

1. Open a section, e.g., [Contacts].
2. Click [View] -> [Open Section Wizard].
3. In the "Section pages" block of the Section Wizard:
    - if you have only one edit page in your section, click [Edit page];
    - if you have several edit pages in your section, click the link of a corresponding page in the list.
4. Open where the new field group should be located, and click [New fields group] (Fig. 26).

Fig. 26 Adding a field group on a tab



5. In the opened window, enter the field group title and click [Save].

As a result, an empty 24-cell grid area for setting up fields will be added on the tab (Fig. 27).

Fig. 27 Adding a new field group

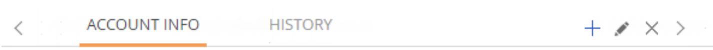
You can add the needed fields to the newly created field group.

You can rename, delete and move the added field groups similarly to working with tabs.

Set up page tabs

By default, each new page contains [Attachments and notes] and [Feed] tabs. You can add new tabs, edit the existing ones, as well as manage the order in which they are displayed on the page (Fig. 28).

Fig. 28 Page tab setup area



- To add a new tab on the page:

1. Open a section, e.g., [Accounts].
2. Click [View] -> [Open Section Wizard].
3. In the "Section pages" block of the Section Wizard:
    - if you have only one edit page in your section, click [Edit page];
    - if you have several edit pages in your section, click the link of a corresponding page in the list.
4. Click + in the right part of the tab setup area.
5. In the opened window, enter a caption for the new tab and click [Save].

   As a result, a new empty tab will be added. On a tab, you can add field groups, fields, and details.

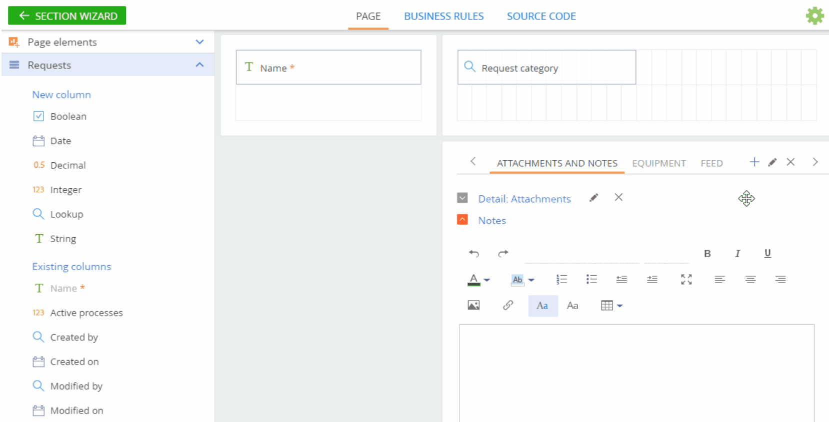
- To rename the currently open tab, click .
- To modify the tab content, add a field group and drag the required fields from the [New column] and [Existing columns] areas. You can add details on the tab in a similar way.
- To change the tab position, hover the cursor over the tab title, click and drag it to the required place.
- To delete a tab, select it and click × in the right part of the tab setup area.

  If you accidentally delete one of the default tabs, you can only restore it by discarding the current changes in the Section Wizard. There are two ways you can do it when you delete the tab:

a. exit the Section Wizard by closing the window and open it again. You will see the accidentally deleted tab reappear in the tab setup area.

b. refresh the page by pressing F5 as soon as you delete the tab (Fig. 29).

Fig. 29 Restoring the deleted default tab in the Section Wizard



ATTENTION

If you delete the default [Feed] tab in your section and save the changes in the Section Wizard, you will only be able to restore it using the developer means.

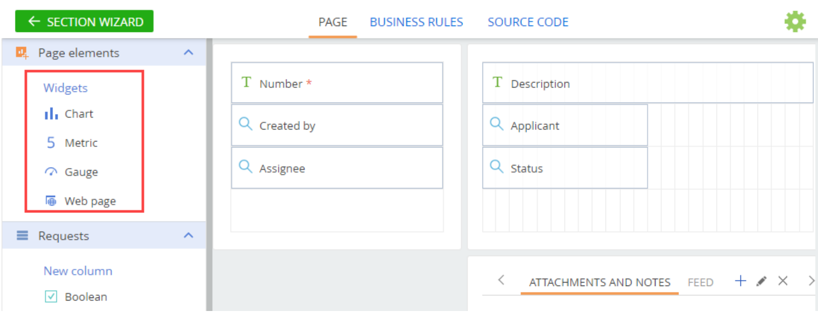
SEE ALSO

- Set up page fields
- Set up page field groups

Add dashboards as page widgets

You can add dashboards on a record page tab or in the record profile. For this, use the "Widgets" page elements (Fig. 30) available on the left-side panel of the Page Designer.

Fig. 30 Widget area in the Page Designer



You can add the following types of dashboards on a record page:

- Chart
- Metric
- Gauge
- Web page

NOTE

More information about setting up different types of dashboards is available in the "Dashboards" article.

CASE

Create a chart that would display the dynamics of communication with a customer on the [History] tab of the contact page.

To add a chart on the contact page:

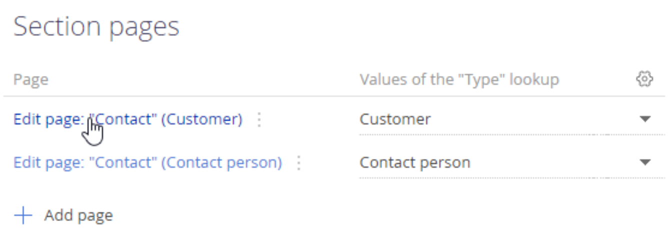
1. Open the [Contacts] section.
2. Click [View] -> [Open Section Wizard].

NOTE

If you need to add dashboards on a detail page, use the Detail Wizard instead of the Section Wizard.

3. In the "Section pages" block of the Section Wizard:
    - if you have only one edit page in your section, click [Edit page];
    - if you have several edit pages in your section, click the link of a corresponding page in the list (Fig. 31).

Fig. 31 Selecting a section edit page from the list



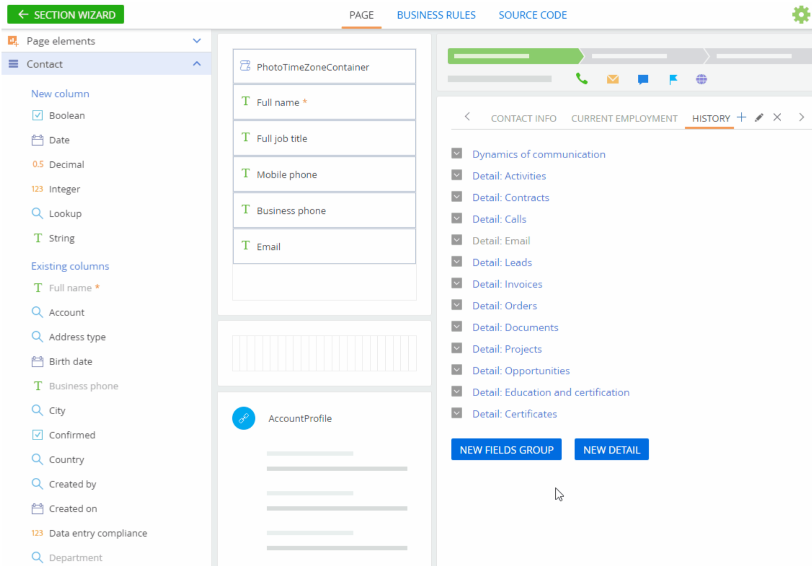
4. In the Page Designer that opens, click the [History] tab (Fig. 32). This tab will display your diagram.

Fig. 32 Switching to the [History] tab

5. Add a new "Dynamics of communication" field group. Place the field group at the top of the [History] tab page. This field group will contain the newly created diagram.

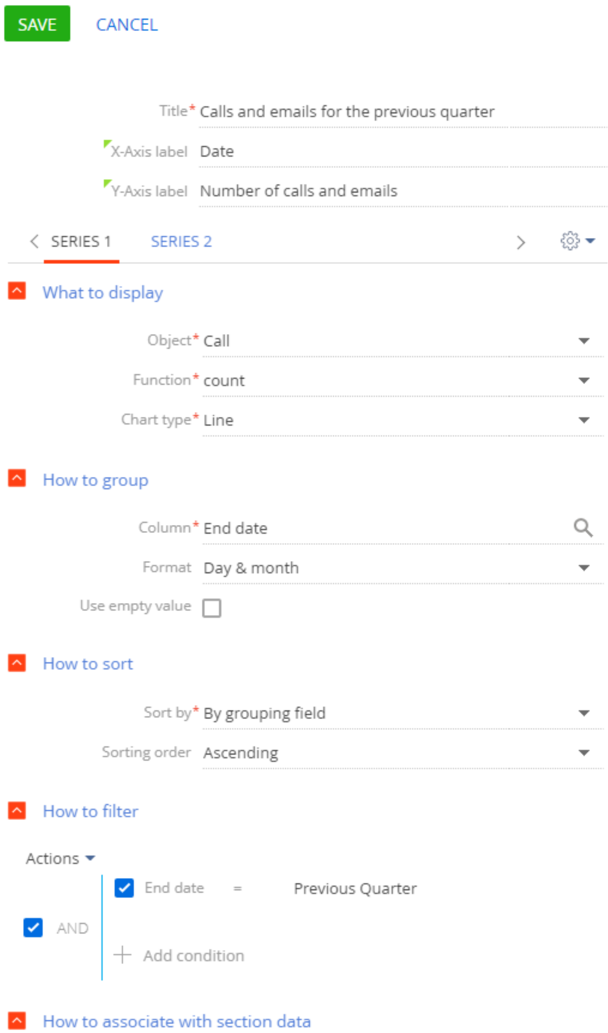
6. Expand the [Page elements] block and drag the needed widget on the page. For example, drag-and-drop the [Chart] widget to the new [Dynamics of communication] field group. Areas, where you can place the chart, will be highlighted in blue (Fig. 33).

Fig. 33 Adding a chart on the contact page



7. On the opened chart setup page, populate the first series of the chart that would display the number of calls of the contact for the needed period, e.g., the previous quarter. Set the parameters as follows:

Fig. 34 Setting up the “Calls and emails for the previous quarter” chart



a. [Title] – “Calls and emails for the previous quarter”

b. [X-Axis label] – “Date”

c. [Y-Axis label] – “Number of calls and emails”

d. [Object] – “Call”

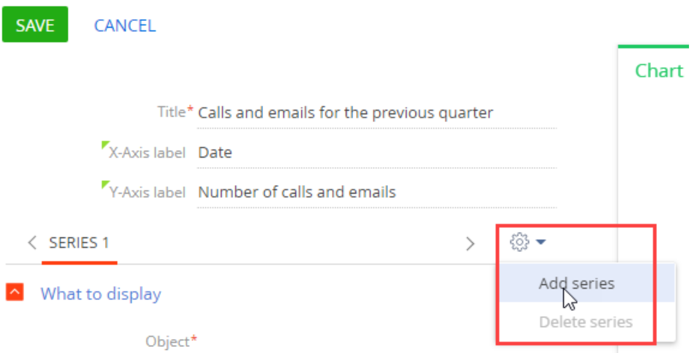
e. [Function] – “Count”

f. [Chart type] – “Line”

   g. [How to group] – set grouping by the “End date” column for calls.
   h. [Format] – “Day & month”
   i. [How to filter] – Specify the “End date = Previous quarter” for calls.
   j. [How to associate with section data] – Specify “Id” to display the data for the selected contact only.

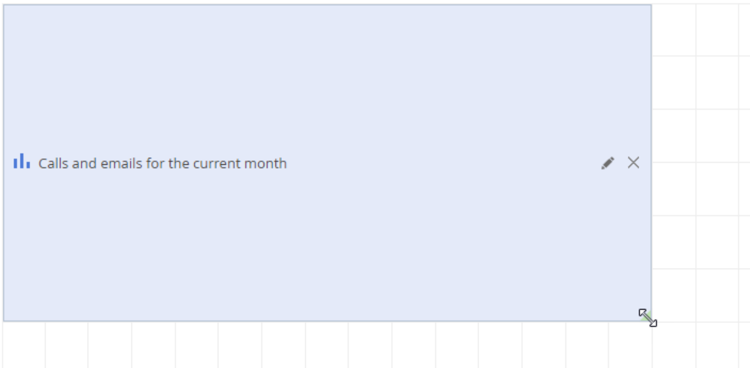
8. Add another series to your chart widget by clicking and selecting the “Add series” option (Fig. 35).

Fig. 35 Adding series to a chart widget



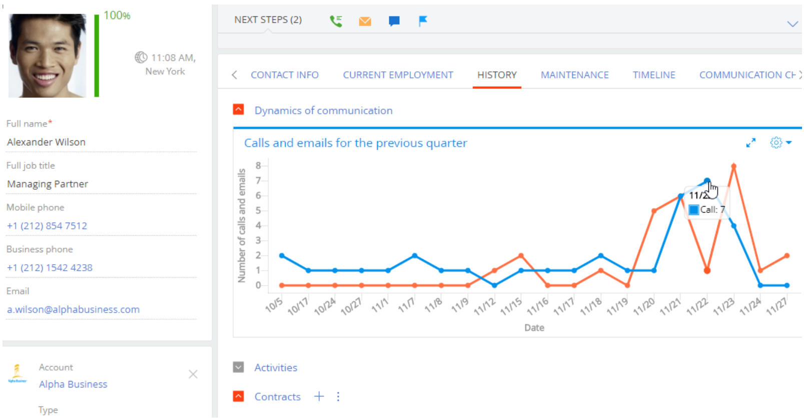
9. Populate the properties of the second series:
   a. [Object] – “Activity”
   b. [Function] – “Count”
   c. [Chart type] – “Line”
   d. [How to group] – set grouping by the “Due” column for activities.
   e. [Format] – “Day & month”
   f. [How to filter] – Specify two conditions for activities: “Type = Email” and “Due = Previous quarter.”
   g. [How to associate with section data] – Specify “Id” to display the data for the selected contact only.
10. Click [Save].
11. For the correct displaying of data, adjust the size of the chart (Fig. 36).

Fig. 36 Resizing the chart



As a result, the chart showing the dynamics of communication with the contact for the previous quarter will be displayed on the contact page (Fig. 37).

Fig. 37 Record page with a configured chart widget



NOTE

Learn more about configuring charts in the "Chart" dashboard tile" article.

SEE ALSO

- "Chart" dashboard tile
- "Metric" dashboard tile
- "Gauge" dashboard tile
- "Web page" dashboard tile

VIDEO TUTORIALS

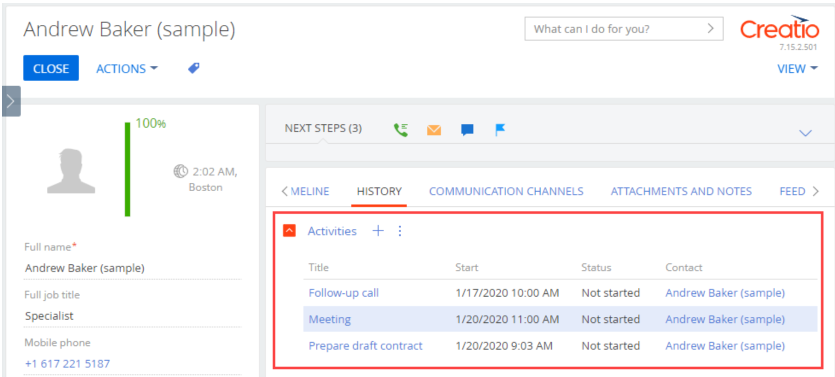
- Analytics in Creatio. Working with dashboards

Create new detail

A "detail" is an element of a page that displays records of a specific object that are linked to the current record. The detail records are filtered by their relation to the record, usually, a lookup column that uses the page record's object (e.g., the section object) as a lookup.

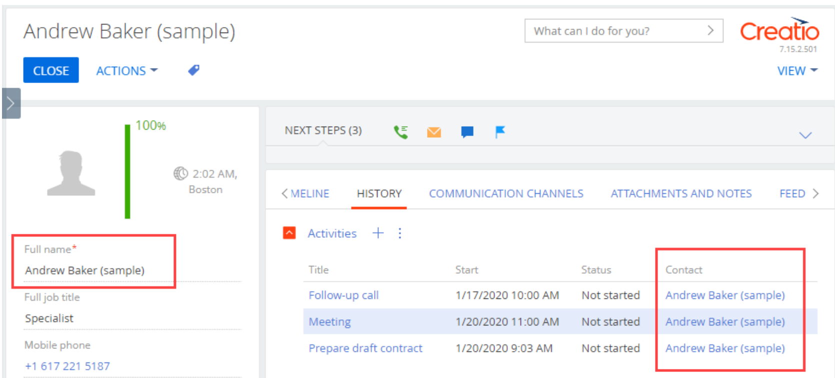
For example, the [Activity participants] detail shows the list of participants of the current activity, the [Activities] detail (Fig. 38) shows the list of activities linked to the current account, contact, etc.

Fig. 38 The [Activities] detail on the contact page



The detail records are filtered by their relation to the record where they are displayed. For example, the list of activity participants is filtered by the current activity, the [Activities] detail on the contact page is filtered by the currently opened contact (Fig. 39), etc.

Fig. 39 Record filtering on the [Activities] detail



You can create new custom details via the [Detail wizard], based on a configuration object. If there are no suitable objects available for your detail, you will need to create such an object.

CASE

Create a new custom detail for managing equipment related to internal requests in the custom [Requests] section.

Creating a new detail involves the following general steps:

1. Create a detail configuration object (if the needed object does not yet exist)
2. Register a new detail in the Detail Wizard
3. Add an existing detail on a record page

There are several recommended and optional steps that are similar to those for customizing section pages:

1. Add record pages for your detail
2. Customize pages
3. Add dashboards as page widgets (optional)
4. Add mini pages (optional)
5. Customize page business logic (optional)

Create a detail configuration object

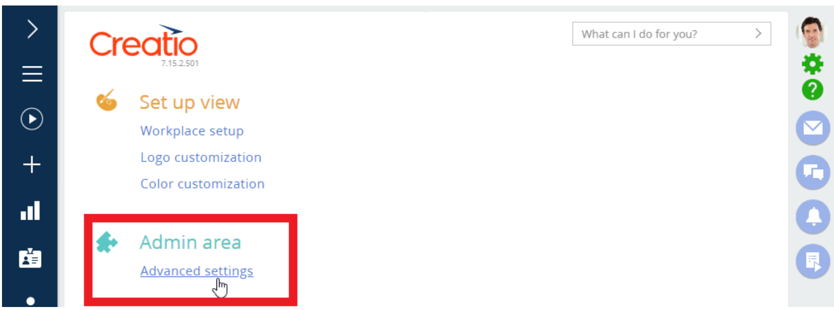
You can create a detail based on any available object. For example, use an existing "Activity" object to add the [Activities] detail in a custom section. If there is no suitable configuration object to build your detail from, you need to create a new configuration object.

There are several ways of adding configuration objects in Creatio, including using the Section Wizard. This article covers creating a new detail object in the [Object designer].

To create a new object:

1. Click –>[System designer].
2. In the [Admin area] block, click [Advanced settings] (Fig. 40). The [Tools] window will open in a new browser tab.

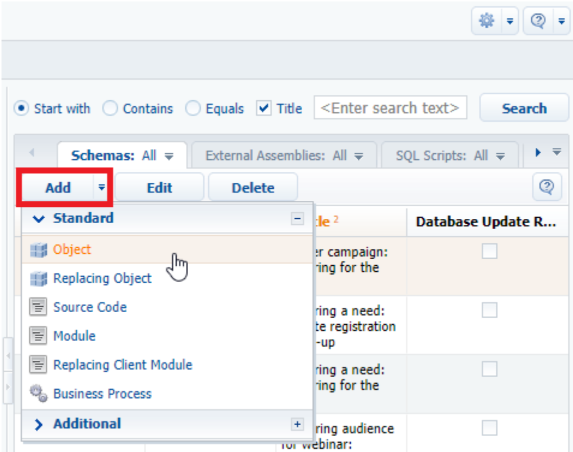
Fig. 40 Accessing advanced settings



3. In the [Packages] area of the [Tools] window, select the package, specified in the [Current package] system setting. By default, this is the "Custom" package.

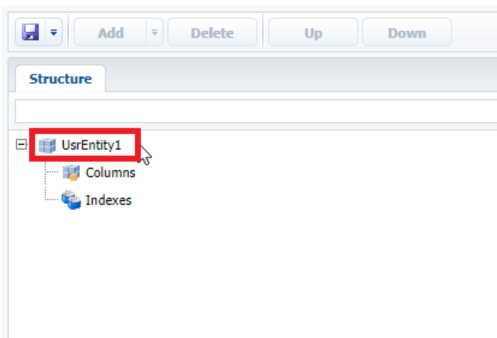
4. On the [Schemas] tab in the workspace area on the right, click [Add] –> [Object] (Fig. 41). An [Object designer] window will open in a new browser tab.

Fig. 41 Accessing object properties



5. In the [Structure] area on the left, click the root node (the topmost element) of your detail object (Fig. 42) to edit its properties.

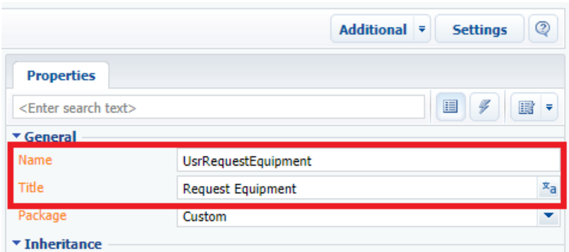
Fig. 42 The root element of the object



6. In the [Properties] area on the right, populate the [Name] and [Title] fields in the [General] group.

   For example, specify “UsrRequestEquipment” and “Request Equipment” in the [Name] and [Title] fields respectively (Fig. 43).

Fig. 43 Specifying the [Name] and [Title] fields

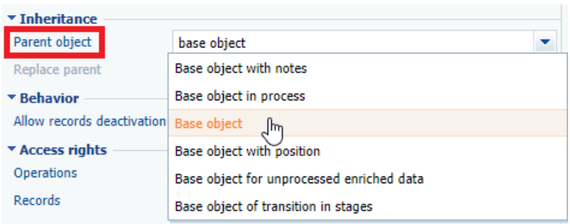


ATTENTION

The object name must contain a prefix, which identifies the author of the configuration changes. The prefix is specified in the “Prefix for object name” system setting. By default, the “Usr” prefix is used.

7. In the [Parent object] field, select “Base object” (Fig. 44).

Fig. 44 Selecting the parent object



8. Click .

As a result, a new object will be added to the configuration.

After creating the detail object, you can register the detail based on this object using the [Detail wizard]. To find your object in the [Object] lookup, use the title that you specified in the [Title] field.

Register a new detail in the Detail Wizard

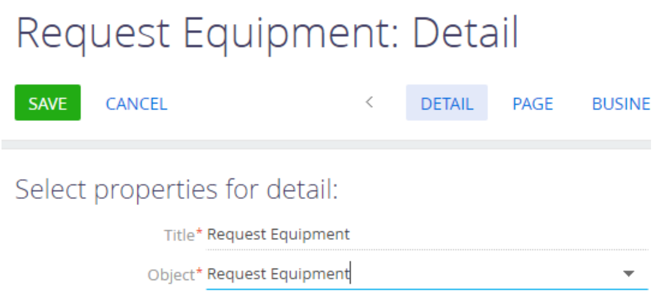
To register a new detail based on an existing object, you need to register it in the [Detail wizard]:

1. Click –> [System designer].
2. In the [System setup] block, click [Detail wizard].
3. In the [Title] field on the [Detail] tab, specify the name of the detail.
4. Select the detail object in the [Object] field.

   The field lets you select from existing objects. Start typing the name of the needed object to filter the drop-down list. If there is no readily available object for your detail, you will need to create a new detail object.

   For example, select the custom “Request Equipment” object created earlier (Fig. 45).

Fig. 45 Main properties of the detail



5. Click [Save]. Do not close the page.

   As a result, the detail will be registered. However, if you are adding a new custom detail, or if you need to add a detail to a new custom section, the detail object may not have the columns that link it to the target section.

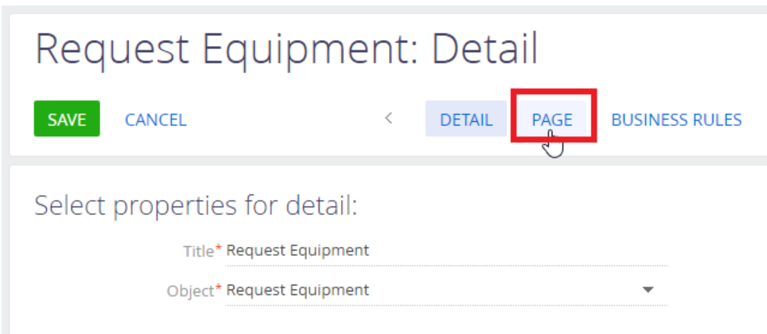
Link the detail object to the section object

To link a detail to a section, a detail object must have a lookup column that uses the needed section object as a lookup. For example, the object for the [Activity participant] detail has the [Activity] column that uses the [Activity] object as its lookup. Likewise, the new custom [Request equipment] detail needs to have a [Request] column to link its records to different requests.

To link a detail to a section:

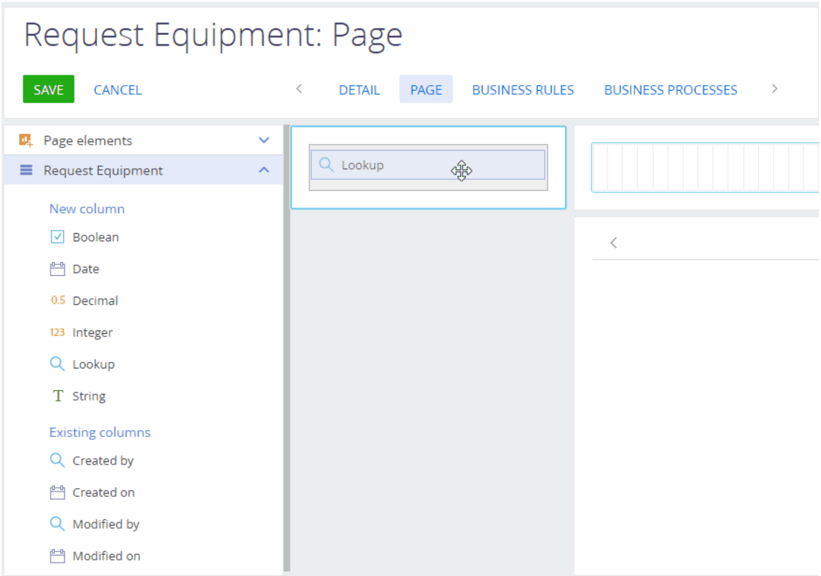
1. While you are still in the [Detail wizard], click the [Page] tab (Fig. 46).

   Fig. 46 Navigating to editing the page



2. Drag the [Lookup] field from the [New column] list on the left to the workspace area on the right (Fig. 47). A [New column] popup box will appear.

Fig. 47 Creating a lookup field



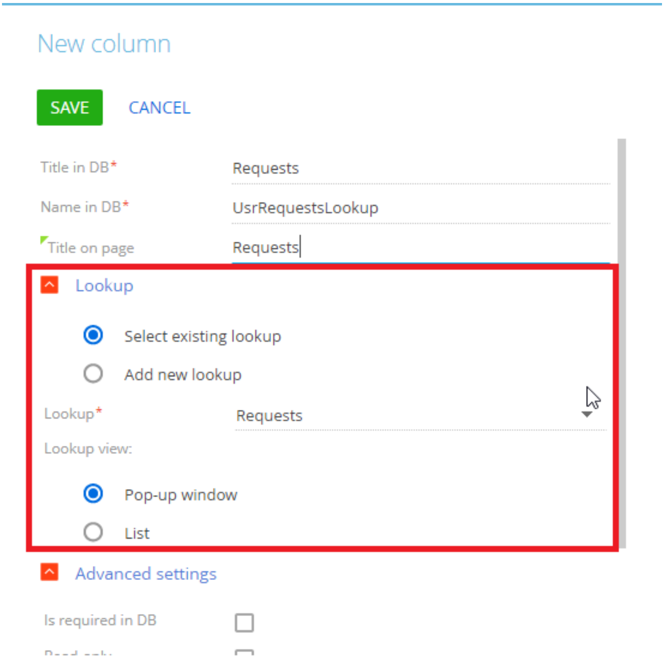
3. Populate the properties in the [New column] pop-up:
    a. In the [Title in DB] field, specify the displayed name of the new field, e.g., “Request;”
    b. In the [Name in DB] field, specify the unique name for the field in the database, preceded by a prefix, e.g., “UsrRequestsLookup;”

ATTENTION

The [Name in DB] field must contain a prefix that identifies the author of the configuration changes. The prefix is specified in the “Prefix for object name” system setting. By default, the “Usr” prefix is used.

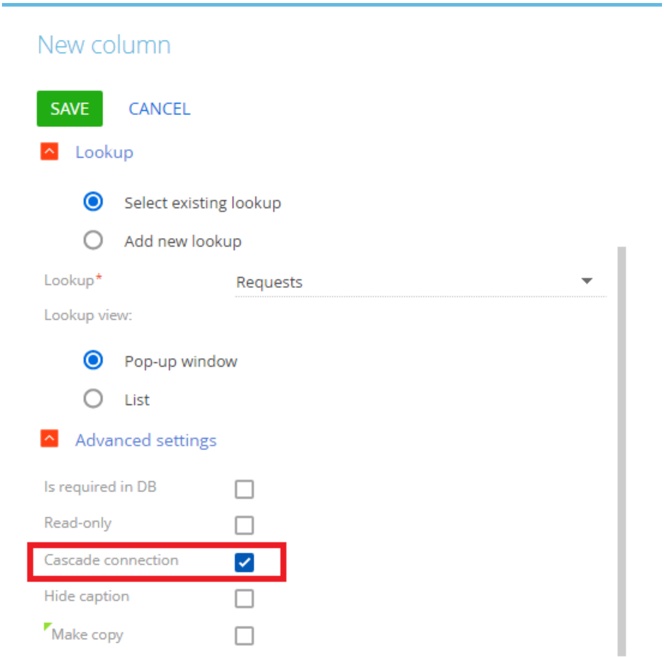
    c. In the [Lookup] block, click [Select existing lookup] (Fig. 48).
    d. In the [Lookup] field, select the object of the section, to which the detail should be linked. For example, to link the detail to the records of the custom [Requests] section, select the “Requests” object as the lookup.

Fig. 48 The settings of a lookup column that links a detail to a section



e. If you want the detail records to be deleted along with the section record that they are linked to, select the [Cascade connection] checkbox (Fig. 49).

Fig. 49 Cascade connection



4. Click [Save] in the [New column] popup box to save the lookup column.
5. Click [Save] on the [Page] tab to save the detail.

As a result, a new detail will become available for adding in the section. For example, a custom [Request equipment] detail will become available for adding in the custom [Requests] section.

Once the setup of the new detail is complete, you will need to add the detail to the section page.

SEE ALSO

- Add an existing detail on a record page
- Customize pages
- Customize page business logic

Add an existing detail on a record page

You can add an existing detail as an element on a record page. An “existing detail” is a detail, registered in the Detail Wizard.

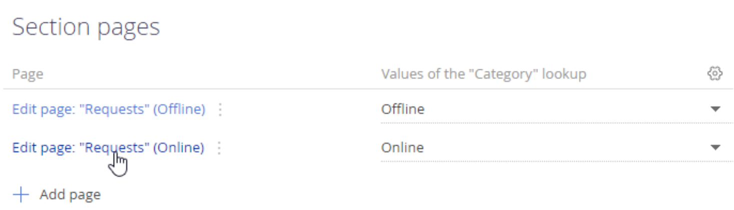
CASE

Display a previously created custom “Request for Equipment” detail on the record page of the custom [Requests] section.

To add a detail on a section record page:

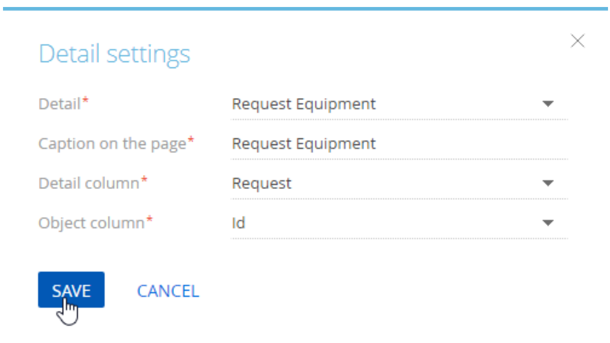
1. Open the needed section, e.g., the [Requests] section.
2. Click [View] -> [Open Section Wizard].
3. In the [Section pages] block of the Section Wizard:
   - if you have only one edit page in your section, click [Edit page]
   - if you have several edit pages in your section, click the link of a corresponding page in the list (Fig. 50).

Fig. 50 Selecting a section edit page from the list



4. Open the tab where the detail should be located, e.g., the [Equipment] tab.
5. Click [New detail].
6. Populate the detail settings window (Fig. 51):

Fig. 51 Detail settings window



   a. In the [Detail] field, select the detail you want to add to the page from the drop-down list.
   b. In the [Caption on the page] field, enter the detail name that you want to display on the record page.
   c. In the [Detail column] field, select a detail object column by which the detail records will be filtered. This is a lookup column that uses the current section object as a lookup. Usually, the name of this detail column corresponds to the section object name. For

example, to connect the [Request Equipment] detail to the [Requests] section, in the [Detail column], select [Request].

NOTE

If the detail object can be connected to the section object by one field only, the [Detail column] field will be populated automatically.

   d. In the [Object column] field, select the column of the section object, whose value will be used to filter the detail records. Usually, this is the [Id] column. This way, the detail will display only records, whose value in the [Request] column will match the value in the [Id] column of the current section record. In other words, only the equipment linked to the current request will display in the detail.

7. Click [Save] -> [Section Wizard] in the top left corner -> [Save] on the Section page in the Section Wizard.

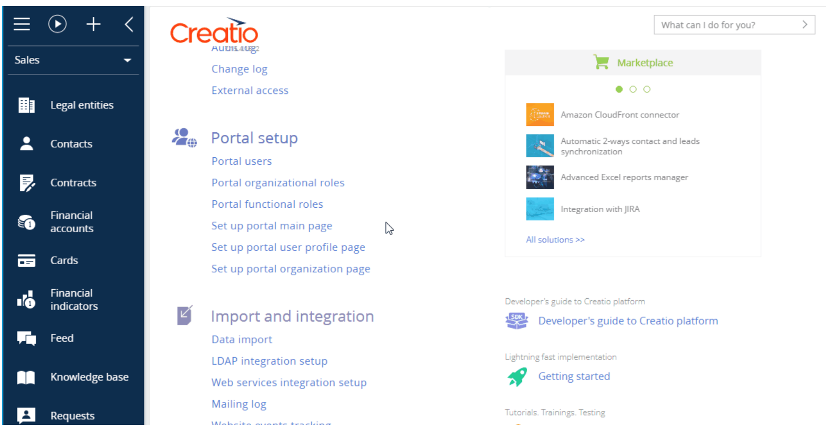
As a result, a new [Request Equipment] detail will be added on the request page.

Modifying a detail

To change the settings of a detail or to edit the detail name displayed on the record page:

1. Open the needed section, e.g., the [Requests] section.
2. Click [View] -> [Open Section Wizard].
3. In the [Section pages] block of the Section Wizard, open the page that contains the detail for editing:
   - if you have only one edit page in your section, click [Edit page]
   - if you have several edit pages in your section, click the link of a corresponding page in the list (Fig. 50).
4. Click the tab that contains the detail you need to edit, e.g., [Equipment].
5. Select the needed detail and click (Fig. 52).

Fig. 52 Modifying a detail displayed on the record page

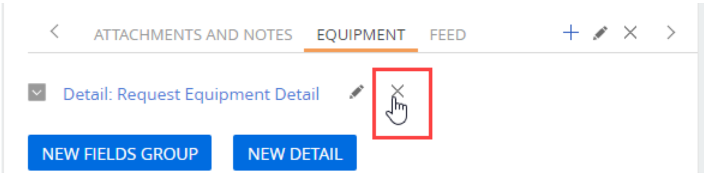


NOTE

Modifying a detail title on a page via the [Caption on the page] field will affect only the current section.

To delete a detail, repeat steps 1-4 described above and click ✕ (Fig. 53).

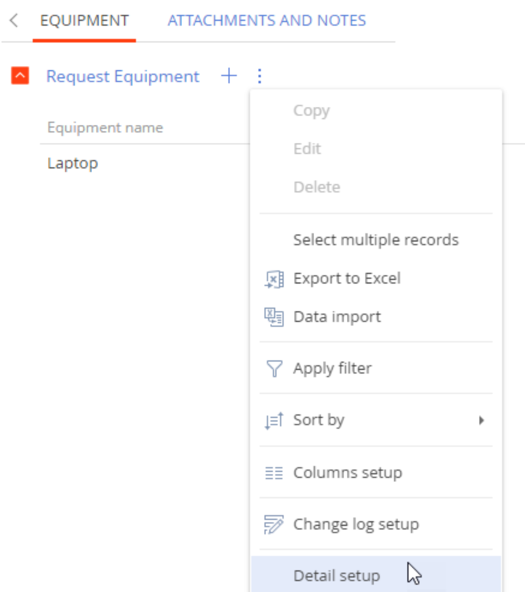
Fig. 53 Deleting a detail displayed on the record page



To set up the detail page:

1. Open the needed section, e.g., the [Requests] section
2. Select any record from the section list and click [Open].
3. Open the tab that contains the detail you need to set up.
4. Click ⋮ next to the detail title and select [Detail setup] to open the Detail Wizard (Fig. 54):

Fig. 54 Opening the Detail Wizard for an existing detail



5. On the detail setup page that opens, click the [Page] tab to set up the detail page columns.
6. Click [Save] to apply the changes for the detail page.

As a result, the detail page will change and the updated detail page view will display for all records in the section.

SEE ALSO

- Create new detail
- Set up page fields
- Set up page tabs
- Add mini pages
- Add a BPMN business process to a section

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Add mini pages

Mini pages in Creatio are "light" versions of regular record edit pages. They show a limited number of fields from regular record pages and provide better control over the UX of your users who work with the section records.

Mini pages enable your users to perform the following operations with fewer clicks:

- preview section records without having to open standard record pages;
- quickly add and edit section records;
- run certain actions right from a record mini page (e.g., making a call or sending an email message);
- open the linked records displayed on the mini page in one click, etc.

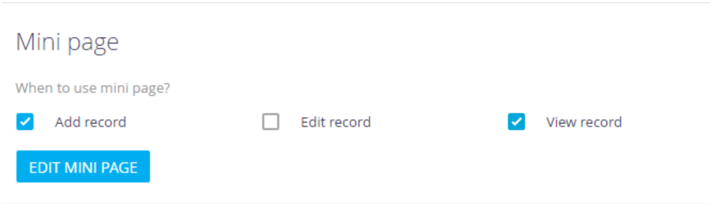
> NOTE
> Learn more about working with mini pages of different records in the "Mini pages" article.

After you set up your regular section pages in the Section Wizard, you can start configuring mini pages.

To configure a mini page in Creatio:

1. Open the section, where you need to set up mini pages.
2. In the section, click [View] –> [Open Section Wizard].
3. In the [Mini page] area, select the functions for the mini pages in this section (Fig. 55):
   - [Add record] – the mini page will open when a user clicks [Add] in the section. The user can then open the complete record page by clicking on the mini page.
   - [Edit record] – this will enable the users to edit existing records via the mini page. This option adds an "edit" button to the mini page. The user can click in the top right corner of the mini page to edit the record.
   - [View record] – this will enable the users to preview the record data without opening the standard record edit page. The mini page will pop up when the user hovers their cursor over the record link shown in a list.

Fig. 55 Enabling mini pages for adding and viewing section records

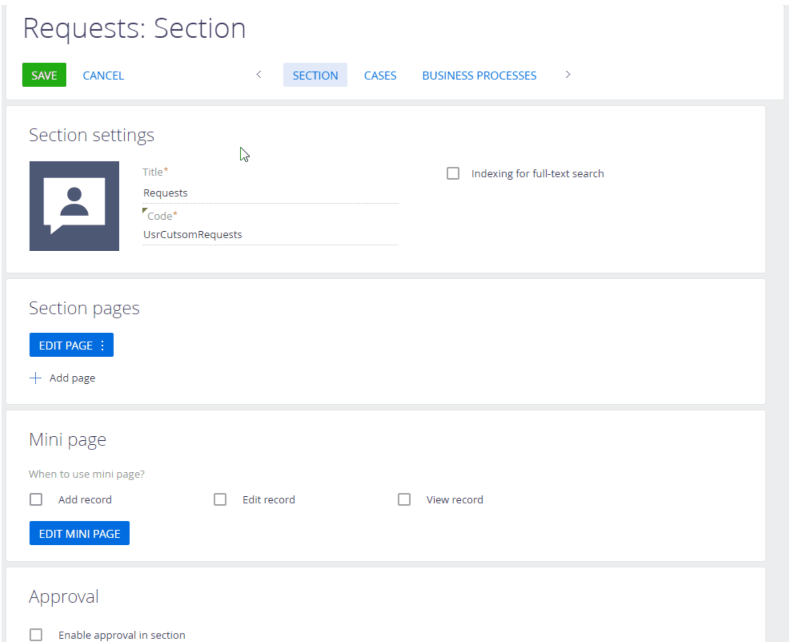


4. Click [Edit mini page] to switch to Mini Page Designer.
5. In the Mini Page Designer, select the mini page mode ([Add mode]/[Edit mode]/[View mode]) for the function(s) selected on step 3.

NOTE
The "HeaderContainer" element at the top of the field setup area of the Mini Page Designer is non-editable. It is used to display the mini page caption correctly.

6. Set up the layout of the corresponding mini pages:
   a. Drag the necessary columns from the [Page elements] area to the field setup area (Fig. 56).
   b. Click to modify column properties (Fig. 57)

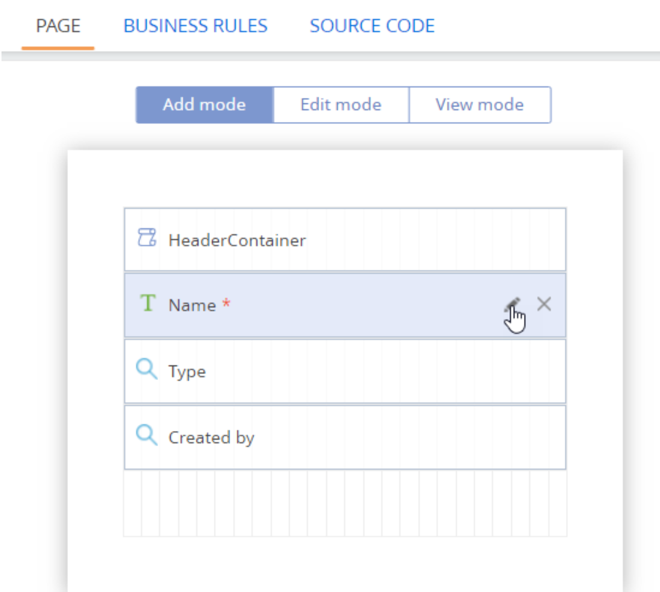
Fig. 56 Setting up the layout of a mini page



NOTE

Working with column properties on mini pages is similar to that of the regular section page. Read more >>>

Fig. 57 Editing the mini page columns



7. To configure the behavior of the fields on the mini page, you can use business rules.

NOTE

Working with business rules for mini page fields is similar to that of the regular section page fields. Read more >>>

NOTE

You can use the [Source code] tab to edit the source code of the mini page and customize it even further. The tab displays the source code of the page view module that was generated based on the changes you ma de during the previous steps. Learn more about working with the source code of Creatio modules in the "Module designer" article.

8. Click ← SECTION WIZARD to return to the Section Wizard.
9. Save the changes.

As a result, mini pages will become available in the section for selected functions. For example, if you enabled and set up the "Add mode" - a mini page will open when a user clicks [New...] in the section (Fig. 58). If you enabled and set up the "View mode" - the preview mini page will pop up when a cursor hovers over the section record link in any list that shows this section's records (Fig. 59).

Fig. 58 Example of a mini page for adding a section record

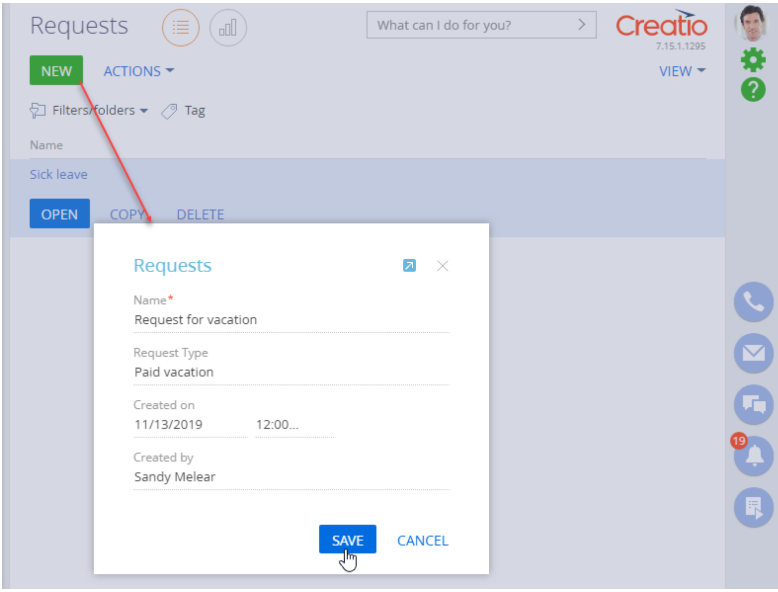
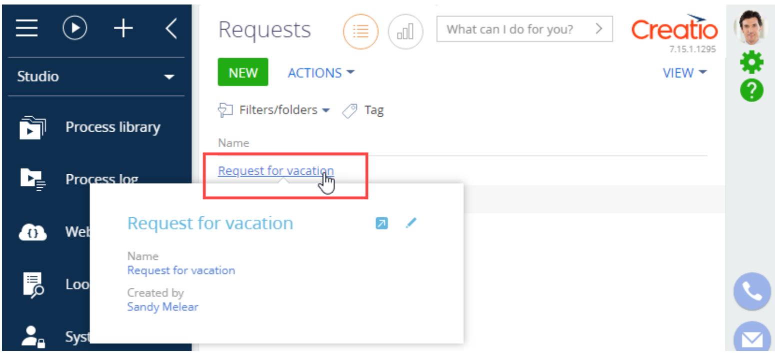


Fig. 59 Example of a mini page for previewing a section record



SEE ALSO

- Add a new section
- Customize pages
- Add a BPMN business process to a section
- Section Wizard FAQ

VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

Customize page business logic

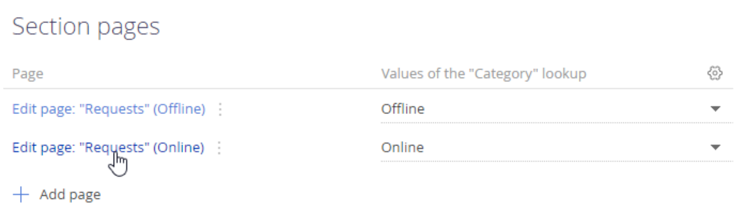
You can configure the basic business logic of the record pages by adding or modifying business rules. Business rules affect the behavior of fields of the page, particularly:

- Show/hide field on page.
- Make a page field editable or locked.
- Make a page field required or optional.
- Filter values in a lookup field.

To access business rule configuration in a section page:

1. Open the section where you want to customize the business logic.
2. In the section, click [View] –> [Open Section Wizard].
3. In the “Section pages” block of the Section Wizard:
    - if you have only one edit page in your section, click [Edit page];
    - if you have several edit pages in your section, click the link of a corresponding page in the list (Fig. 60)

Fig. 60 Selecting a section edit page from the list



4. Go to the [Business rules] tab. As a result, the list of business rules for the current page (Fig. 61) will open.

    NOTE
    Business rules are available for all section pages, detail pages, as well as custom pages designed as part of business processes.

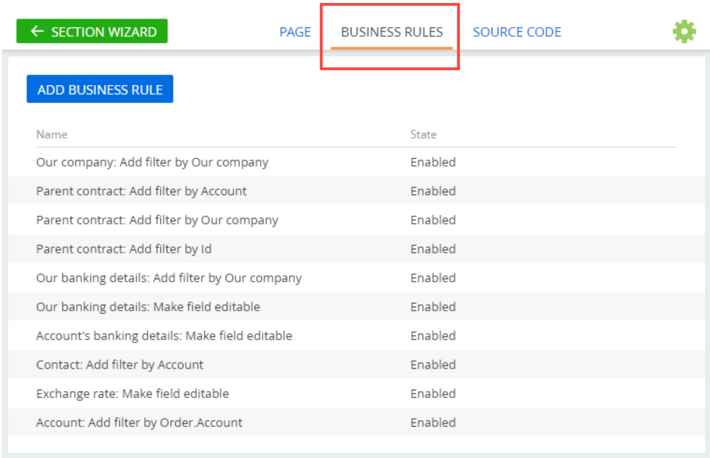
5. To add a new business rule, click [Add business rule]. The business rule setup page will open.

    NOTE
    You can find examples of setting up business rules in the following articles:
    “Show/hide field on page”,
    “Make a page field editable or locked”,
    “Make a page field required or optional”,
    “Filter values in a lookup field”.

List of page business rules

You can set up several business rules for a page. All business rules display on the [Business rules] tab of the Page Designer (Fig. 61).

Fig. 61 The [Business rules] tab of the Page Designer



- Click [Add business rule] to create a new business rule.
- Select a rule in the list and click [Disable]/[Enable] to deactivate or activate it.

NOTE

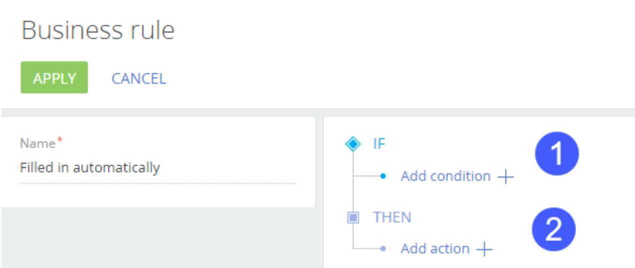
Your Creatio configuration may have a “legacy” hard-coded business rules. Creatio will attempt to convert them to the regular rules, but it may not always be possible due to the implementation of the “legacy” rules. If a hard-coded business rule was not recognized by the section wizard, then the name of this business rule will contain the message "(Incorrect rule)." The rule will be executed, but it cannot be opened or disabled in the section wizard. You only will be able to delete this rule with custom tools.

Business rule setup page

A business rule (Fig. 62) consists of two elements:

- Condition (1) – a set of conditions that trigger the specific behavior of the page fields.
- Action (2) – the page field behavior that is triggered.

Fig. 62 Business rule setup page



Creatio generates a business rule name and populates the [Name] field automatically, based on its condition and action.

Business rule conditions

Conditions in business rules are similar to advanced filters: they match a set if actual (current) values against the target values. If the values match, the condition is deemed fulfilled. On the business rule edit page, the conditions are grouped under the [IF] node.

The table below lists the types of elements that can be matched against each other in a business rule condition:

Type of value	Notes
Field	A column in an object that is the data source of the current page. For example, the data source of the [Accounts] section record page is the "Account" object. You can select columns of the linked objects (e.g., use the data of the account's primary contact).
System setting	A system setting, that in this context is treated as a field with a certain value. Be sure to specify the system setting code (as opposed to its localizable title). You will need to specify the system setting code manually. The list of system settings is available in a separate article. Business rules work only with system settings that have [Cached] checkbox selected.
System variable	A system variable that in this context is treated as a field with a certain value that changes dynamically. For example, the "Current Date" variable is a "Date" type field that always contains the current date. Available system variables: • "Current Time" • "Current Date" • "Current Time and Date" • "Current user" (the current user account, stored in the SysAdminUnit object) • "Current user contact" (the contact specified on the current user's page in the [System users] section) • "Current user account"
Attribute	The attribute value (for example, a virtual column). This option is intended for developer customization and requires development tools.
Constant	A static value of the following types: text, integer, decimal, date and time, date, time, lookup, Boolean. Use constants to match field values, system settings, system variables and attributes against a static value. A constant can be of any of the field data types supported in the section.

The conditions for execution of business rules are combined using common logical operators: "AND" / "OR." A business rule can have only one logical operator, which applies to all conditions of the business rule. The logical "AND" operator is used if the rule must be executed only if all conditions are met. Apply the "OR" logical operator if the rule must match at least one of the conditions.

A condition for executing a business rule usually consists of three parts: the left side, the type of comparison and the right side of the condition. More information about conditions in the business rules can be found in the specific chapter.

The actions of the business rule designer

Actions apply "on the fly," whenever a business rule conditions are satisfied. Business rules can apply actions that implement the following behavior of the page fields:

Type of action	Notes
Show field on the page	Show and hide a page field. An active business rule with this action shows the specified field on the page if the conditions of the rule are fulfilled. Otherwise, the field will be hidden.
Make field required	Make a page field required or optional. An active business rule will make the specified field required, as long as the conditions of the rule are fulfilled.
Make field editable	Lock and unlock a page field (make it grayed-out or editable). An active business rule will make the field editable, as long as the conditions of the rule are fulfilled. If the conditions of the rule are not met, the field will become grayed-out.
Add field values filter	Filter the options in drop-down lists of lookup fields. An active business rule will apply the filter to the values available in the drop-down list of the lookup field. This type of action does not require a condition and will always apply to the page, as long as the corresponding business rule is enabled.

CONTENTS

SEE ALSO

- Show/hide field on page
- Make a page field editable or locked
- Make a page field required or optional
- Filter values in a lookup field

Show/hide field on page

You can set up a business rule that will make certain fields visible or hidden on a record page under specific conditions.

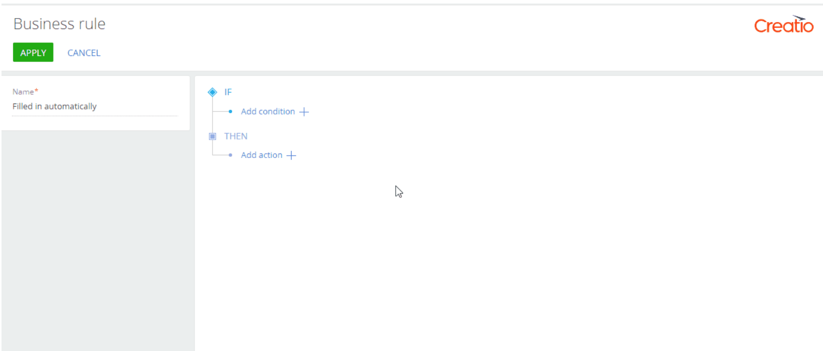
CASE

Show the [Assignee] field on a request page for all requests that are in progress.

To implement this, you need to make the [Assignee] field visible only if the value in the request [Status] field is "In progress." To do this:

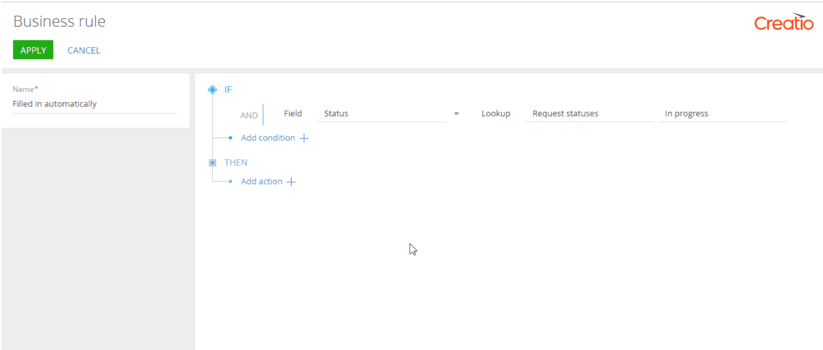
1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "IF" block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the "In progress" status (Fig. 63):
   a. Click [Add condition].
   b. In the field that appears, select the "Status" column as the lookup value.
   c. Leave the "=" (equal) sign as it is.
   d. Click the <?> icon and select the "Lookup" field type in the drop-down list. A set of fields for specifying lookup values will appear to the right. Select "In progress" as the lookup value from the drop-down list.

Fig. 63 Show/hide field - configuring the "IF" condition of the business rule



3. In the "THEN" block of the business rule, set up the action that would implement the needed business logic (Fig. 64).
   a. Click [Add action] -> "Show field on the page."
   b. In the [Which field will be shown] field, select the field to display on the page, e.g., [Assignee].
   c. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 64 Show/hide field: configuring the "THEN" condition of the business rule



As a result, the [Assignee] field will display only for requests where the [Status] field contains "In progress." If the [Status] field contains any other value, the [Assignee] field will be hidden.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Make a page field editable or locked

You can set up a business rule that will make certain fields locked or editable on a record page under specific conditions.

CASE

In the [Requests] section, the users must not be able to change the applicant of completed requests. The users must still be able to change the applicants of requests that are in any other status.

To implement the logic of the case, you need to make the [Applicant] field editable only for those requests where the value in the [Status] field is "New," "Under evaluation," "In progress," "Canceled" or "Denied." This will automatically lock the [Applicant] field for any requests where the value in the [Status] field is "Completed." To set up this business rule:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "IF" block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the "Completed" status (Fig. 65):
   a. Click [Add condition].
   b. In the field that appears, select the "Status" column as the lookup value.
   c. Hover your cursor over the "=" (equal) sign and click the arrow that appears next to it to open the drop-down menu. Select the "≠" (not equal) option from the drop-down menu.

NOTE

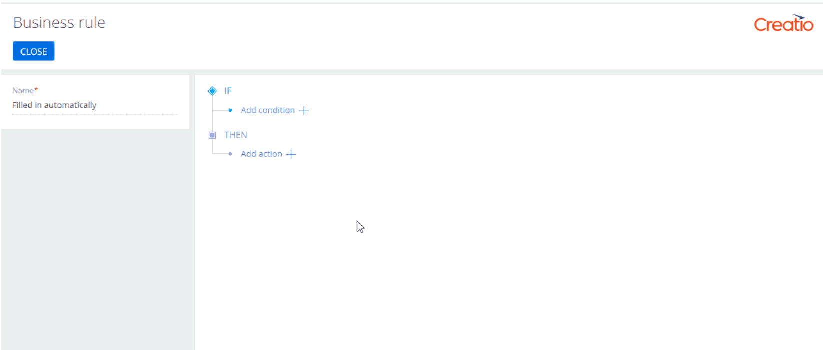
You can use the "Make field editable" business rule to both lock and unlock fields. Whenever the IF condition of the rule is fulfilled, the field will be editable. Otherwise, the field will be locked.

   d. Click the <?> icon and select the "Lookup" field type in the drop-down list.

A set of fields for specifying lookup values will appear to the right.

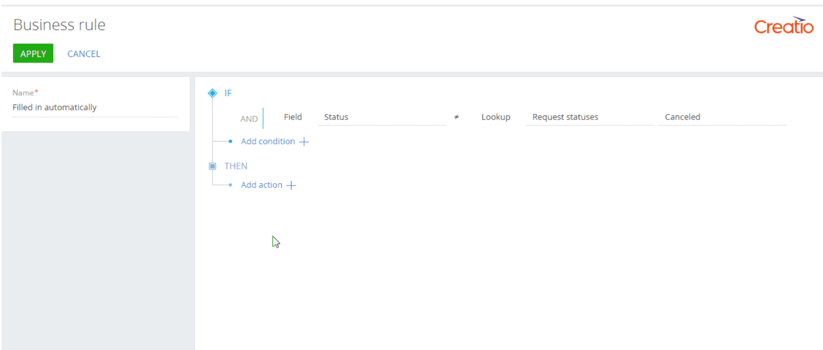
   e. Select "Completed" as the lookup value from the drop-down list.

Fig. 65 Make field editable/locked - configuring the "IF" condition of the business rule



3. In the "THEN" block of the business rule, set up the action that would implement the needed business logic (Fig. 66):
   a. Click [Add action] -> "Make field editable."
   b. In the [Which field will be editable] field, select the field to lock/unlock, e.g., [Applicant]
   c. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 66 Make field editable/locked - configuring the "THEN" condition of the business rule



As a result, the [Applicant] field will be editable if the request status is not equal to "Completed" – i.e., "New," "Under evaluation," "In progress," "Canceled" or "Denied." If the request status is "Completed," the [Applicant] field will be locked.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Make a page field required or optional

You can set up a business rule that will disable saving records if certain fields are not populated.

CASE

Make the [Description] field mandatory for all new records in the custom [Requests] section.

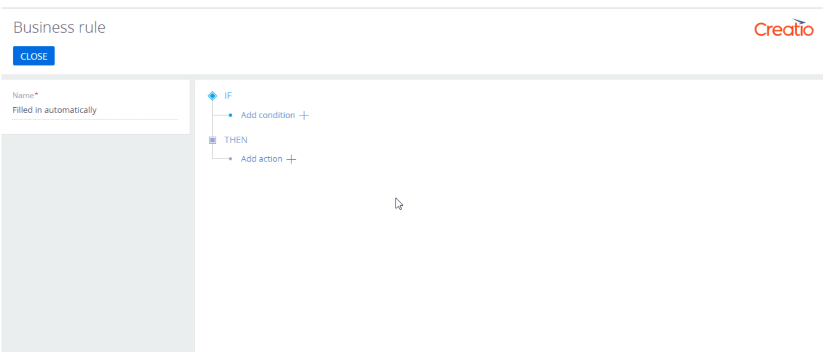
To implement the logic of the case, you need to make the [Description] field required if the value in the [Status] field is "New." To do this, add a separate business rule and set up its conditions:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "IF" block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the "New" status (Fig. 67):
   a. Click [Add condition].
   b. In the field that appears, select the "Status" column as the lookup value.
   c. Leave the "=" (equal) sign as it is.
   d. Click the <?> icon and select the "Lookup" field type in the drop-down list.

   A set of fields for specifying lookup values will appear to the right.

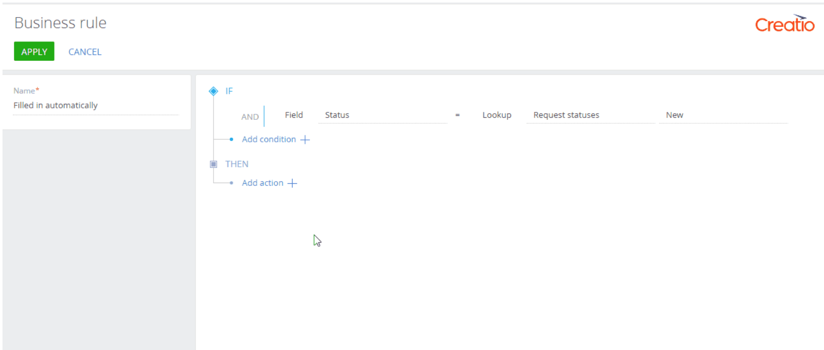
   e. Select "New" as the lookup value from the drop-down list.

Fig. 67 Make field required - configuring the "IF" condition of the business rule



3. In the "THEN" block of the business rule, set up the action that would implement the needed business logic (Fig. 68):
    a. Click [Add action]. In the drop-down menu of possible actions, select "Make field required."
    b. In the [Which field will be required] field, select the field that should be made mandatory, e.g., [Description]
    c. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 68 Making a page field required/optional: configuring the "THEN" condition of the business rule



As a result, the [Description] field will be required if the request status is "New." Creatio will not let you save a record unless you populate the [Description] field.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Filter values in a lookup field

You can set up a business rule that will apply filter to the list of values in the lookup field. This will make the list shorter.

CASE

Implement the following logic in the custom [Requests] section: only contacts with the "Employee" type are available in the [Owner] field.

To implement the logic of the case, add a business rule that would filter the values in the [Owner] lookup field. To do this:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "THEN" block of the business rule, set up the action that would implement the needed business logic (Fig. 69):

a. Click [Add action].

b. In the drop-down menu of possible actions, select “Add field values filter.”

NOTE

The “Add field values filter” business rule action is unconditional. When you select this action, the “IF” block of the business rule becomes grayed out and cannot be edited.

c. In the [Which field to filter and which connection in this field’s lookup to use for filtering?] field, click .

d. In the opened window, click + next to “Requests” -> select [Owner] as the connected object field.

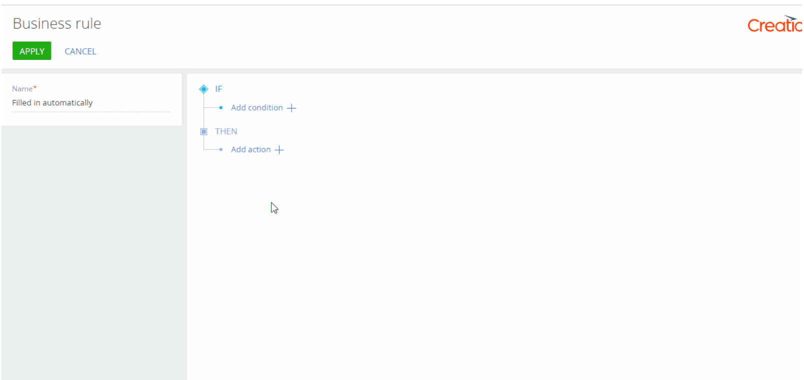
e. In the [Column] field, select [Type] from the drop-down list -> click [Select].

f. Click the icon and select the “Lookup” in the drop-down list. A set of fields for specifying lookup values will appear to the right.

g. In the [Which field to filter by] filed to the right, select “Employee”.

3. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 69 Filter lookup values - configuring the “THEN” condition of the business rule



As a result, only the contacts of the “Employee” type will be available for selection in the [Owner] field of the request page.

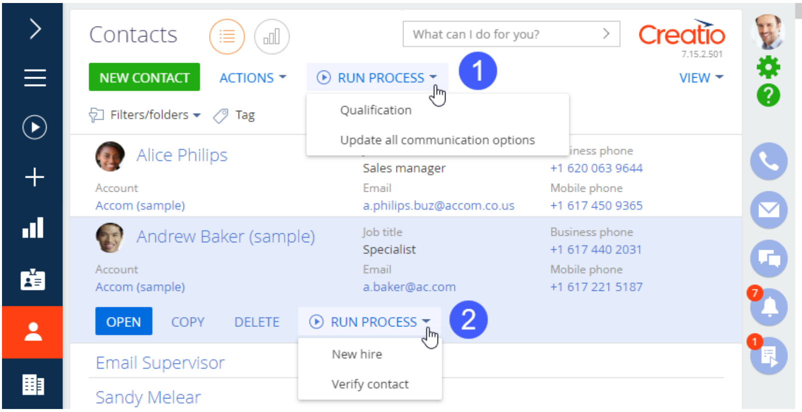
SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Add a BPMN business process to a section

You can integrate your business processes with standard sections. As a result, the section users will be able to run integrated business processes in two modes (Fig. 70):

Fig. 70 Running a process integrated into a section



- Regardless of section records (1). You can add any business process to the [Run process] menu of any standard section.
- For a specific record (2), using the record's data in the process flow.

NOTE

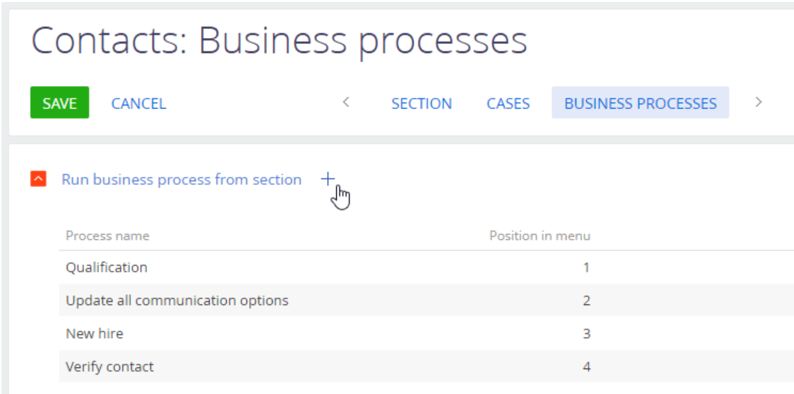
To be able to run a business process, a user must have access to the [Can run business processes] (CanRunBusinessProcesses) system operation.

To add a business process that runs by a specific record, you need to modify the process by adding a parameter that would receive the unique identifier of the section record by which the process is run. The instructions on how to do this are available in the "Run business processes for section records" article of the Business process management guide.

To integrate a business process in a section:

1. Open the needed section.
2. Click [View] > [Open section wizard].
3. Click [Business process].
4. Unser [Run business process from section], click + (Fig. 71).

Fig. 71 Adding a business process to a section

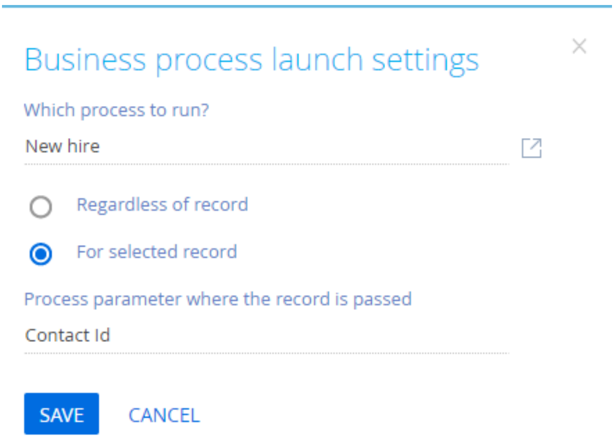


5. Select the necessary process in the [Which process to run] field (Fig. 72).
6. In the opened pop-up, select how the process should run:
    a. To run the process regardless of section record, select [Regardless of record].
    b. To run the process for separate section records, select the [For selected record].
7. If you chose [For selected record], select the parameter where Creatio should pass the unique Id of the selected section record in the [Process parameter where the record is passed] field.

NOTE

If the process already has a lookup parameter that uses the section object as a lookup, it will be selected automatically. If there are two or more parameters, you will need to select the correct one.

Fig. 72 Configuring the launch of a business process



8. Save all changes in the Section Wizard and clear the cache to apply changes in Creatio.

As a result, the process will become available in the [Run process] menu of the section next time you log in.

SEE ALSO

- Record pages
- Add a new section
- Section Wizard FAQ

Section Wizard FAQ

What is the maximum number of custom sections that one can add to a Creatio application?

There are no restrictions on the maximum number of custom sections. However, we strongly recommend that you weigh the need of adding a new section carefully since too many sections might affect the Creatio performance.

NOTE

The list of available sections in the Creatio portal is limited and depends on the portal configuration. Read more >>>

How do I connect a detail to a section?

You can connect existing details to your section using the Section Wizard. Learn more in the “Add an existing detail on a record page” article.

How do I set up section cases?

Open the section, click [View] -> [Set up section cases]. You can also access cases by clicking [Cases] in Section Wizard. More information about case management is available in a separate article.

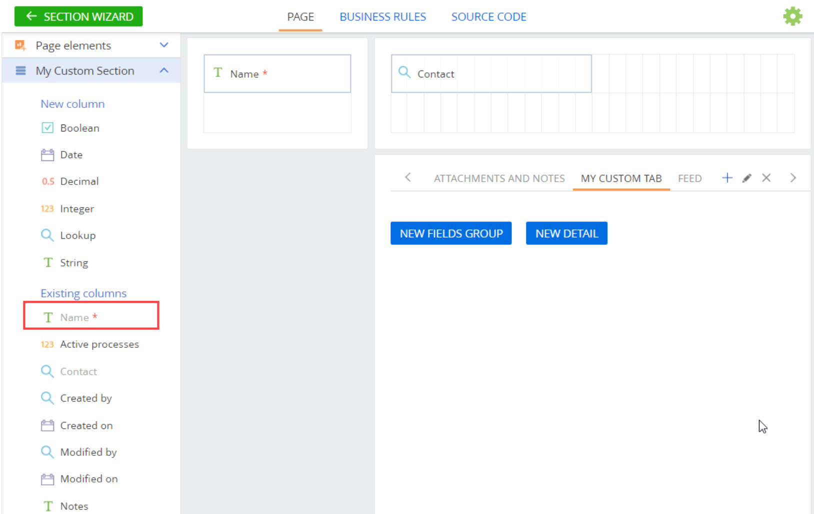
NOTE

When working with a new custom section, you will need to configure the section primary properties before you start configuring cases.

Why do I get the “Field ”...”: Enter a value’ error when saving new records in my custom section?

You might receive such an error if a required field was not populated before saving a new record. Make sure you add fields for all required columns to your section page or mini page in Section Wizard. The required fields are marked with an asterisk (*) character in the list of available columns (Fig. 73).

Fig. 73 A required column in the list of available columns of the Page Designer



Section Wizard or Page Designer would not open or load. Why?

You may not be able to open the Section Wizard due to the errors in the package dependencies in the Configuration.

If you change the value of the [Current package] system setting, the dependencies between the packages in the configuration may become incorrect. This leads to issues with the Section Wizard operation.

To fix the package dependency errors, open the [System Designer] -> [System Settings] -> [Current package] and change its value to 'Custom'. Then you will be able to access the Section Wizard.

However, if you need to change the current package value for some other package, e.g., your development package, make sure you set the dependencies correctly as described in the "Package [Custom]" article.

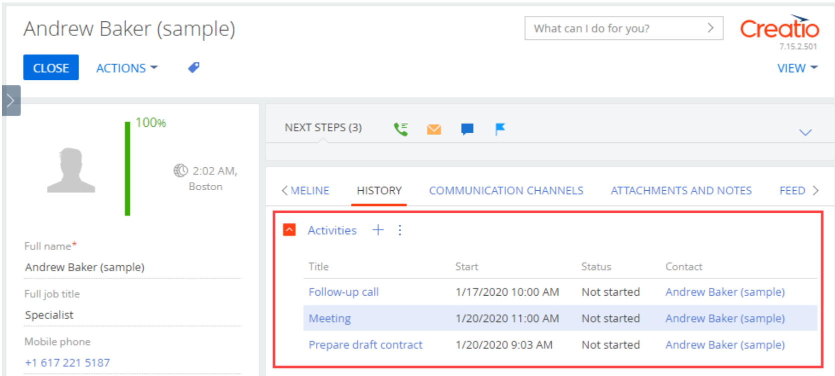
VIDEO TUTORIALS

- Creatio interface setup. Section wizard. Detail wizard

A "detail" is an element of a page that displays records of a specific object that are linked to the current record. The detail records are filtered by their relation to the record, usually, a lookup column that uses the page record's object (e.g., the section object) as a lookup.

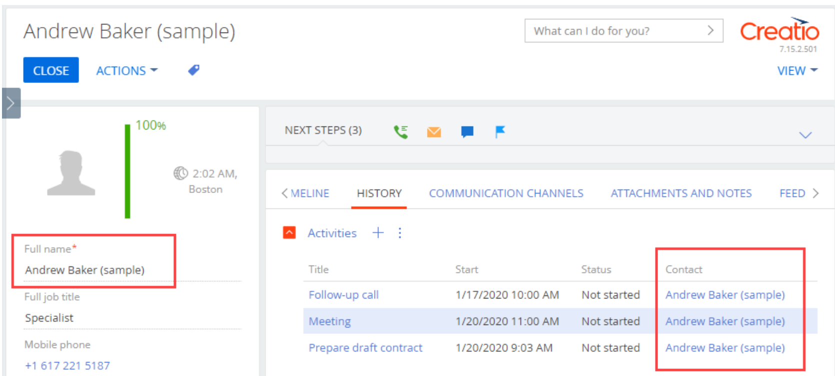
For example, the [Activity participants] detail shows the list of participants of the current activity, the [Activities] detail (Fig. 1) shows the list of activities linked to the current account, contact, etc.

Fig. 1 The [Activities] detail on the contact page



The detail records are filtered by their relation to the record where they are displayed. For example, the list of activity participants is filtered by the current activity, the [Activities] detail on the contact page is filtered by the currently opened contact (Fig. 2), etc.

Fig. 2 Record filtering on the [Activities] detail



You can create new custom details via the [Detail wizard], based on a configuration object. If there are no suitable objects available for your detail, you will need to create such an object.

CASE

Create a new custom detail for managing equipment related to internal requests in the custom [Requests] section.

Creating a new detail involves the following general steps:

1. Create a detail configuration object (if the needed object does not yet exist)
2. Register a new detail in the Detail Wizard
3. Add an existing detail on a record page

There are several recommended and optional steps that are similar to those for customizing section pages:

1. Add record pages for your detail
2. Customize pages
3. Add dashboards as page widgets (optional)
4. Add mini pages (optional)
5. Customize page business logic (optional)

Create a detail configuration object

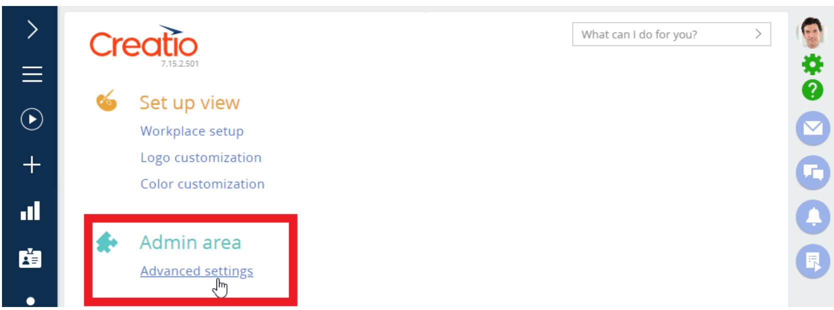
You can create a detail based on any available object. For example, use an existing "Activity" object to add the [Activities] detail in a custom section. If there is no suitable configuration object to build your detail from, you need to create a new configuration object.

There are several ways of adding configuration objects in Creatio, including using the Section Wizard. This article covers creating a new detail object in the [Object designer].

To create a new object:

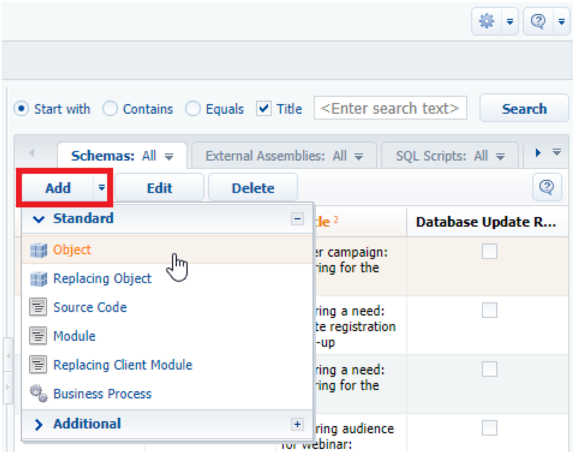
1. Click –>[System designer].
2. In the [Admin area] block, click [Advanced settings] (Fig. 3). The [Tools] window will open in a new browser tab.

Fig. 3 Accessing advanced settings



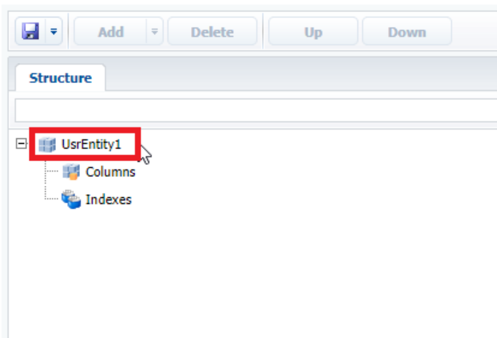
3. In the [Packages] area of the [Tools] window, select the package, specified in the [Current package] system setting. By default, this is the "Custom" package.
4. On the [Schemas] tab in the workspace area on the right, click [Add] –> [Object] (Fig. 4). An [Object designer] window will open in a new browser tab.

Fig. 4 Accessing object properties



5. In the [Structure] area on the left, click the root node (the topmost element) of your detail object (Fig. 5) to edit its properties.

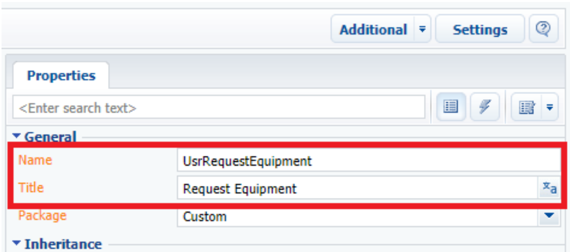
Fig. 5 The root element of the object



6. In the [Properties] area on the right, populate the [Name] and [Title] fields in the [General] group.

   For example, specify "UsrRequestEquipment" and "Request Equipment" in the [Name] and [Title] fields respectively (Fig. 6).

Fig. 6 Specifying the [Name] and [Title] fields

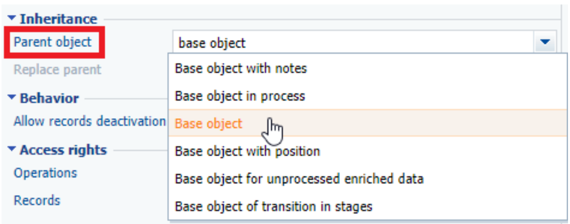


ATTENTION

The object name must contain a prefix, which identifies the author of the configuration changes. The prefix is specified in the “Prefix for object name” system setting. By default, the “Usr” prefix is used.

7. In the [Parent object] field, select “Base object” (Fig. 7).

Fig. 7 Selecting the parent object



8. Click .

As a result, a new object will be added to the configuration.

After creating the detail object, you can register the detail based on this object using the [Detail wizard]. To find your object in the [Object] lookup, use the title that you specified in the [Title] field.

Register a new detail in the Detail Wizard

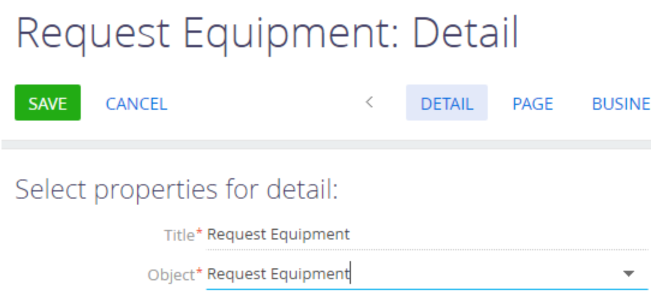
To register a new detail based on an existing object, you need to register it in the [Detail wizard]:

1. Click –> [System designer].
2. In the [System setup] block, click [Detail wizard].
3. In the [Title] field on the [Detail] tab, specify the name of the detail.
4. Select the detail object in the [Object] field.

   The field lets you select from existing objects. Start typing the name of the needed object to filter the drop-down list. If there is no readily available object for your detail, you will need to create a new detail object.

   For example, select the custom “Request Equipment” object created earlier (Fig. 8).

Fig. 8 Main properties of the detail



5. Click [Save]. Do not close the page.

   As a result, the detail will be registered. However, if you are adding a new custom detail, or if you need to add a detail to a new custom section, the detail object may not have the columns that link it to the target section.

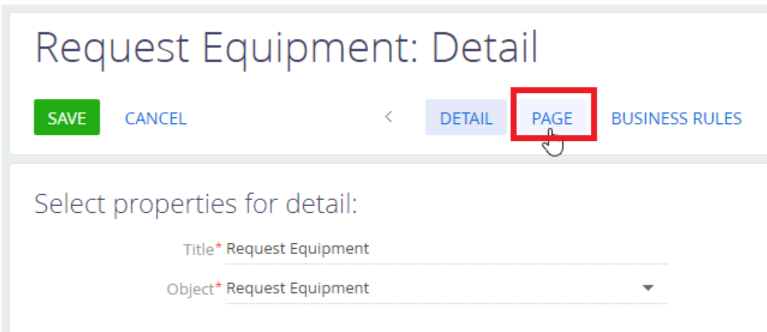
Link the detail object to the section object

To link a detail to a section, a detail object must have a lookup column that uses the needed section object as a lookup. For example, the object for the [Activity participant] detail has the [Activity] column that uses the [Activity] object as its lookup. Likewise, the new custom [Request equipment] detail needs to have a [Request] column to link its records to different requests.

To link a detail to a section:

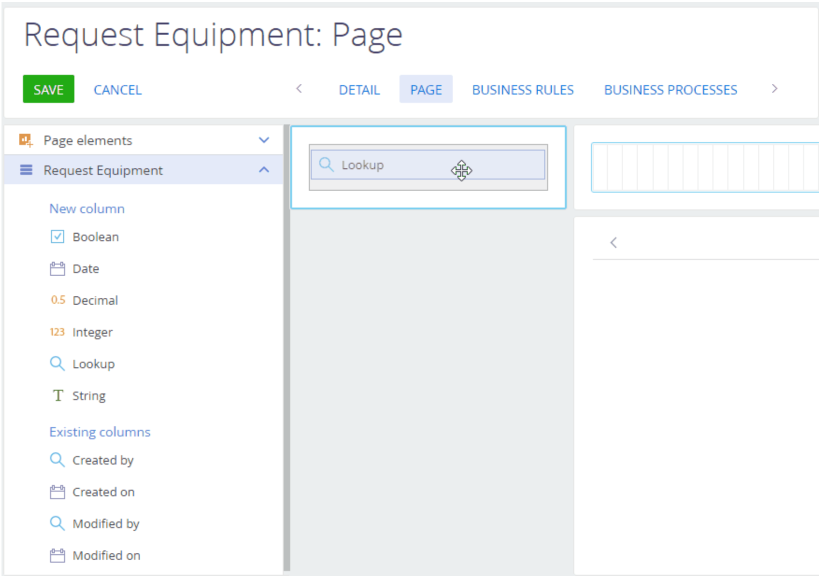
1. While you are still in the [Detail wizard], click the [Page] tab (Fig. 9).

   Fig. 9 Navigating to editing the page



2. Drag the [Lookup] field from the [New column] list on the left to the workspace area on the right (Fig. 10). A [New column] popup box will appear.

Fig. 10 Creating a lookup field



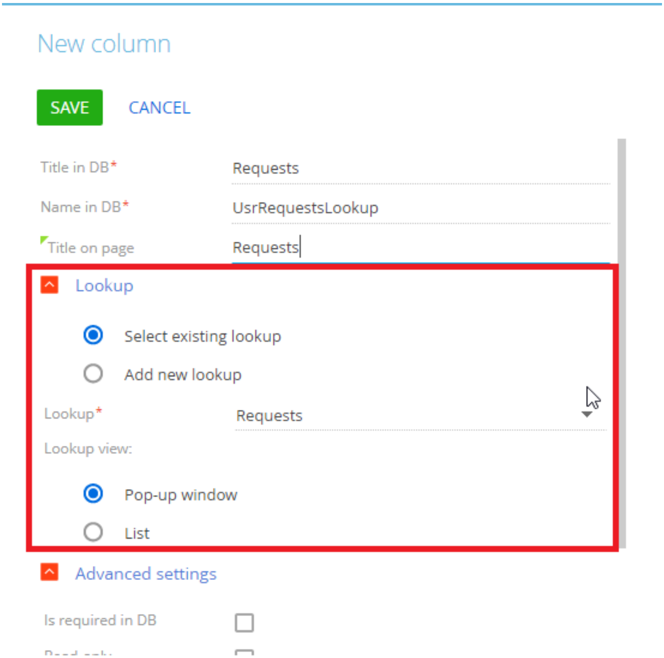
3. Populate the properties in the [New column] pop-up:
   a. In the [Title in DB] field, specify the displayed name of the new field, e.g., "Request;"
   b. In the [Name in DB] field, specify the unique name for the field in the database, preceded by a prefix, e.g., "UsrRequestsLookup;"

ATTENTION

The [Name in DB] field must contain a prefix that identifies the author of the configuration changes. The prefix is specified in the "Prefix for object name" system setting. By default, the "Usr" prefix is used.

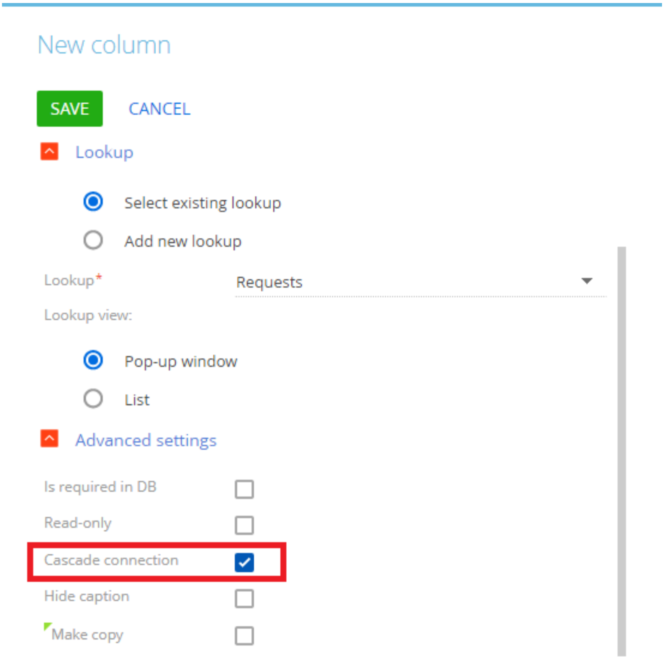
   c. In the [Lookup] block, click [Select existing lookup] (Fig. 11).
   d. In the [Lookup] field, select the object of the section, to which the detail should be linked. For example, to link the detail to the records of the custom [Requests] section, select the "Requests" object as the lookup.

Fig. 11 The settings of a lookup column that links a detail to a section



e. If you want the detail records to be deleted along with the section record that they are linked to, select the [Cascade connection] checkbox (Fig. 12).

Fig. 12 Cascade connection



4. Click [Save] in the [New column] popup box to save the lookup column.
5. Click [Save] on the [Page] tab to save the detail.

As a result, a new detail will become available for adding in the section. For example, a custom [Request equipment] detail will become available for adding in the custom [Requests] section.

Once the setup of the new detail is complete, you will need to add the detail to the section page.

SEE ALSO

- Add an existing detail on a record page
- Customize pages
- Customize page business logic

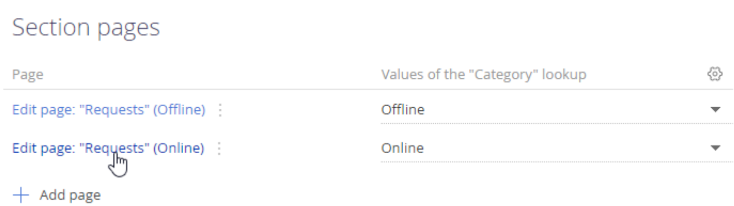
You can configure the basic business logic of the record pages by adding or modifying business rules. Business rules affect the behavior of fields of the page, particularly:

- Show/hide field on page.
- Make a page field editable or locked.
- Make a page field required or optional.
- Filter values in a lookup field.

To access business rule configuration in a section page:

1. Open the section where you want to customize the business logic.
2. In the section, click [View] –> [Open Section Wizard].
3. In the "Section pages" block of the Section Wizard:
   - if you have only one edit page in your section, click [Edit page];
   - if you have several edit pages in your section, click the link of a corresponding page in the list (Fig. 1)

Fig. 1 Selecting a section edit page from the list



4. Go to the [Business rules] tab. As a result, the list of business rules for the current page (Fig. 2) will open.

   NOTE
   Business rules are available for all section pages, detail pages, as well as custom pages designed as part of business processes.

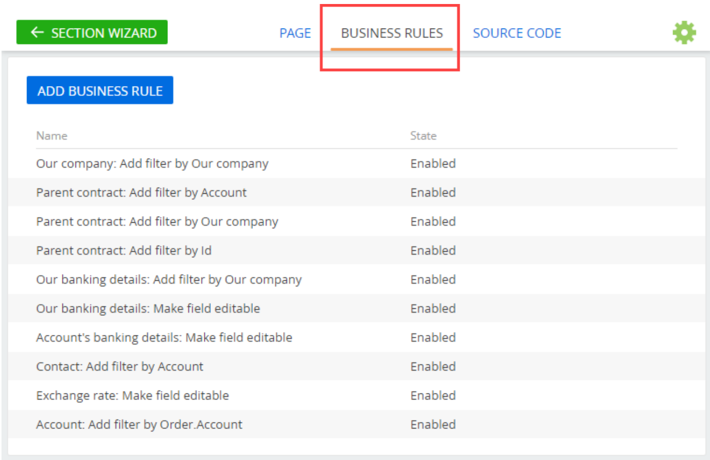
5. To add a new business rule, click [Add business rule]. The business rule setup page will open.

   NOTE
   You can find examples of setting up business rules in the following articles:
   "Show/hide field on page",
   "Make a page field editable or locked",
   "Make a page field required or optional",
   "Filter values in a lookup field".

List of page business rules

You can set up several business rules for a page. All business rules display on the [Business rules] tab of the Page Designer (Fig. 2).

Fig. 2 The [Business rules] tab of the Page Designer



- Click [Add business rule] to create a new business rule.
- Select a rule in the list and click [Disable]/[Enable] to deactivate or activate it.

NOTE

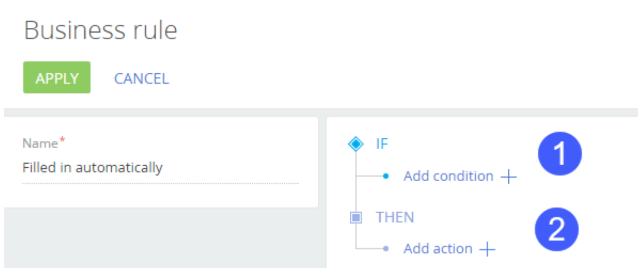
Your Creatio configuration may have a “legacy” hard-coded business rules. Creatio will attempt to convert them to the regular rules, but it may not always be possible due to the implementation of the “legacy” rules. If a hard-coded business rule was not recognized by the section wizard, then the name of this business rule will contain the message "(Incorrect rule)." The rule will be executed, but it cannot be opened or disabled in the section wizard. You only will be able to delete this rule with custom tools.

Business rule setup page

A business rule (Fig. 3) consists of two elements:

- Condition (1) – a set of conditions that trigger the specific behavior of the page fields.
- Action (2) – the page field behavior that is triggered.

Fig. 3 Business rule setup page



Creatio generates a business rule name and populates the [Name] field automatically, based on its condition and action.

Business rule conditions

Conditions in business rules are similar to advanced filters: they match a set if actual (current) values against the target values. If the values match, the condition is deemed fulfilled. On the business rule edit page, the conditions are grouped under the [IF] node.

The table below lists the types of elements that can be matched against each other in a business rule condition:

Type of value	Notes
Field	A column in an object that is the data source of the current page. For example, the data source of the [Accounts] section record page is the "Account" object. You can select columns of the linked objects (e.g., use the data of the account's primary contact).
System setting	A system setting, that in this context is treated as a field with a certain value. Be sure to specify the system setting code (as opposed to its localizable title). You will need to specify the system setting code manually. The list of system settings is available in a separate article. Business rules work only with system settings that have [Cached] checkbox selected.
System variable	A system variable that in this context is treated as a field with a certain value that changes dynamically. For example, the "Current Date" variable is a "Date" type field that always contains the current date. Available system variables: • "Current Time" • "Current Date" • "Current Time and Date" • "Current user" (the current user account, stored in the SysAdminUnit object) • "Current user contact" (the contact specified on the current user's page in the [System users] section) • "Current user account"
Attribute	The attribute value (for example, a virtual column). This option is intended for developer customization and requires development tools.
Constant	A static value of the following types: text, integer, decimal, date and time, date, time, lookup, Boolean. Use constants to match field values, system settings, system variables and attributes against a static value. A constant can be of any of the field data types supported in the section.

The conditions for execution of business rules are combined using common logical operators: "AND" / "OR." A business rule can have only one logical operator, which applies to all conditions of the business rule. The logical "AND" operator is used if the rule must be executed only if all conditions are met. Apply the "OR" logical operator if the rule must match at least one of the conditions.

A condition for executing a business rule usually consists of three parts: the left side, the type of comparison and the right side of the condition. More information about conditions in the business rules can be found in the specific chapter.

The actions of the business rule designer

Actions apply "on the fly," whenever a business rule conditions are satisfied. Business rules can apply actions that implement the following behavior of the page fields:

Type of action	Notes
Show field on the page	Show and hide a page field. An active business rule with this action shows the specified field on the page if the conditions of the rule are fulfilled. Otherwise, the field will be hidden.
Make field required	Make a page field required or optional. An active business rule will make the specified field required, as long as the conditions of the rule are fulfilled.
Make field editable	Lock and unlock a page field (make it grayed-out or editable). An active business rule will make the field editable, as long as the conditions of the rule are fulfilled. If the conditions of the rule are not met, the field will become grayed-out.
Add field values filter	Filter the options in drop-down lists of lookup fields. An active business rule will apply the filter to the values available in the drop-down list of the lookup field. This type of action does not require a condition and will always apply to the page, as long as the corresponding business rule is enabled.

CONTENTS

SEE ALSO

- Show/hide field on page
- Make a page field editable or locked
- Make a page field required or optional
- Filter values in a lookup field

Show/hide field on page

You can set up a business rule that will make certain fields visible or hidden on a record page under specific conditions.

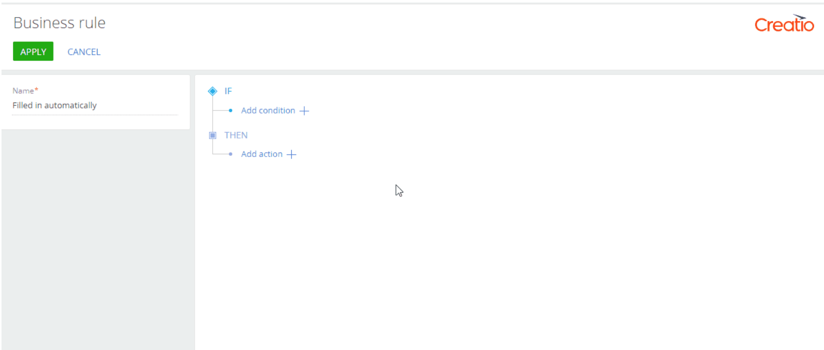
CASE

Show the [Assignee] field on a request page for all requests that are in progress.

To implement this, you need to make the [Assignee] field visible only if the value in the request [Status] field is "In progress." To do this:

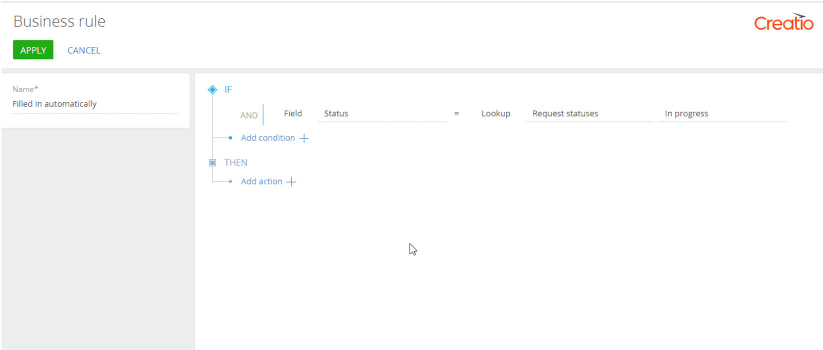
1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "IF" block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the "In progress" status (Fig. 4):
    a. Click [Add condition].
    b. In the field that appears, select the "Status" column as the lookup value.
    c. Leave the "=" (equal) sign as it is.
    d. Click the <?> icon and select the "Lookup" field type in the drop-down list. A set of fields for specifying lookup values will appear to the right. Select "In progress" as the lookup value from the drop-down list.

Fig. 4 Show/hide field - configuring the "IF" condition of the business rule



3. In the "THEN" block of the business rule, set up the action that would implement the needed business logic (Fig. 5).
    a. Click [Add action] -> "Show field on the page."
    b. In the [Which field will be shown] field, select the field to display on the page, e.g., [Assignee].
    c. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 5 Show/hide field: configuring the "THEN" condition of the business rule



As a result, the [Assignee] field will display only for requests where the [Status] field contains "In progress." If the [Status] field contains any other value, the [Assignee] field will be hidden.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Make a page field editable or locked

You can set up a business rule that will make certain fields locked or editable on a record page under specific conditions.

CASE

In the [Requests] section, the users must not be able to change the applicant of completed requests. The users must still be able to change the applicants of requests that are in any other status.

To implement the logic of the case, you need to make the [Applicant] field editable only for those requests where the value in the [Status] field is "New," "Under evaluation," "In progress," "Canceled" or "Denied." This will automatically lock the [Applicant] field for any requests where the value in the [Status] field is "Completed." To set up this business rule:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the "Customize page business logic" article.
2. In the "IF" block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the "Completed" status (Fig. 6):
    a. Click [Add condition].
    b. In the field that appears, select the "Status" column as the lookup value.
    c. Hover your cursor over the "=" (equal) sign and click the arrow that appears next to it to open the drop-down menu. Select the "≠" (not equal) option from the drop-down menu.

NOTE

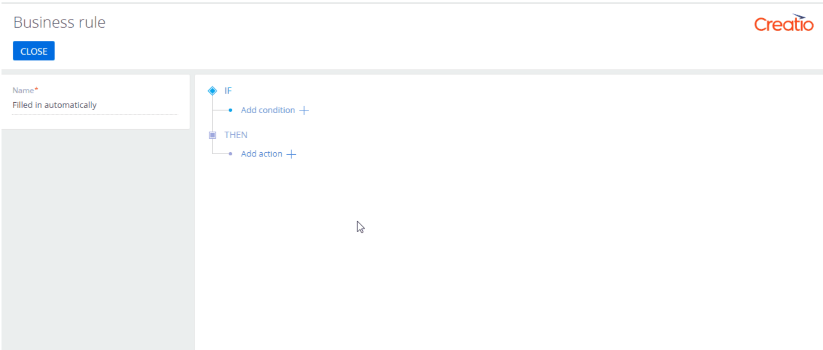
You can use the “Make field editable” business rule to both lock and unlock fields. Whenever the IF condition of the rule is fulfilled, the field will be editable. Otherwise, the field will be locked.

d. Click the <?> ▾ icon and select the “Lookup” field type in the drop-down list.

A set of fields for specifying lookup values will appear to the right.

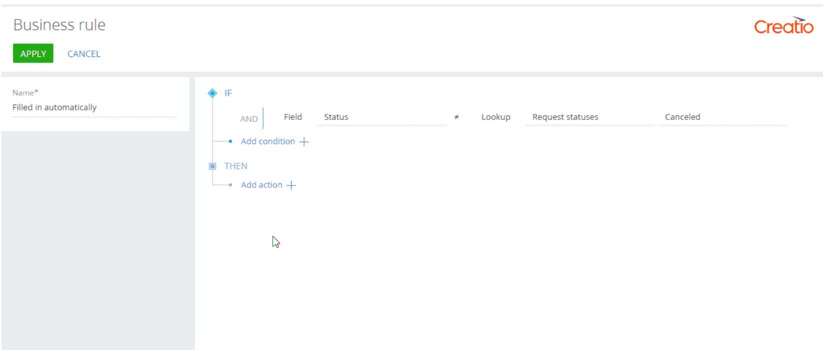
e. Select “Completed” as the lookup value from the drop-down list.

Fig. 6 Make field editable/locked - configuring the “IF” condition of the business rule



3. In the “THEN” block of the business rule, set up the action that would implement the needed business logic (Fig. 7):
   - **a.** Click [Add action] -> “Make field editable.”
   - **b.** In the [Which field will be editable] field, select the field to lock/unlock, e.g., [Applicant]
   - **c.** Click [Apply] -> [Section Wizard] -> [Save].

Fig. 7 Make field editable/locked - configuring the “THEN” condition of the business rule



As a result, the [Applicant] field will be editable if the request status is not equal to “Completed” – i.e., “New,” “Under evaluation,” “In progress,” “Canceled” or “Denied.” If the request status is “Completed,” the [Applicant] field will be locked.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Make a page field required or optional

You can set up a business rule that will disable saving records if certain fields are not populated.

CASE

Make the [Description] field mandatory for all new records in the custom [Requests] section.

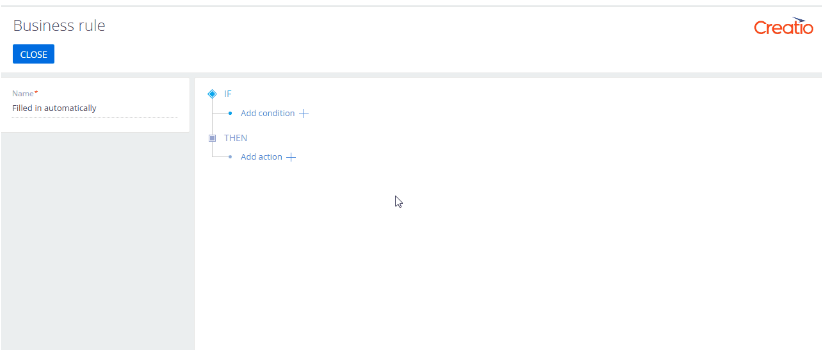
To implement the logic of the case, you need to make the [Description] field required if the value in the [Status] field is “New.” To do this, add a separate business rule and set up its conditions:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the “Customize page business logic” article.
2. In the “IF” block of the business rule, set the filter to define the conditions for triggering the business rule. For example, to apply a rule to the requests with the “New” status (Fig. 8):
   a. Click [Add condition].
   b. In the field that appears, select the “Status” column as the lookup value.
   c. Leave the “=” (equal) sign as it is.
   d. Click the <?> icon and select the “Lookup” field type in the drop-down list.

   A set of fields for specifying lookup values will appear to the right.

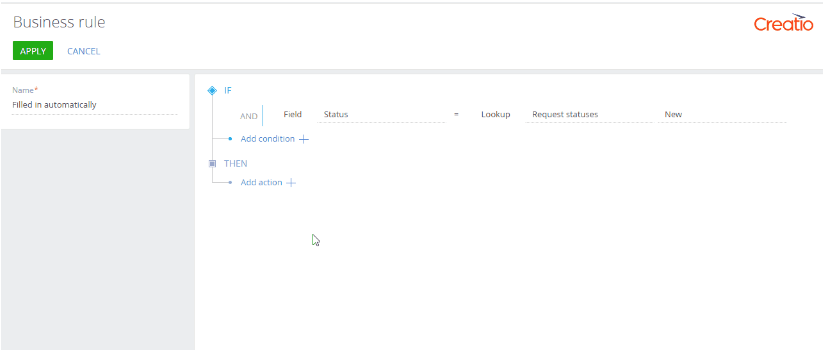
   e. Select “New” as the lookup value from the drop-down list.

Fig. 8 Make field required - configuring the “IF” condition of the business rule



3. In the “THEN” block of the business rule, set up the action that would implement the needed business logic (Fig. 9):
    a. Click [Add action]. In the drop-down menu of possible actions, select “Make field required.”
    b. In the [Which field will be required] field, select the field that should be made mandatory, e.g., [Description]
    c. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 9 Making a page field required/optional: configuring the “THEN” condition of the business rule



As a result, the [Description] field will be required if the request status is “New.” Creatio will not let you save a record unless you populate the [Description] field.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Filter values in a lookup field

You can set up a business rule that will apply filter to the list of values in the lookup field. This will make the list shorter.

CASE

Implement the following logic in the custom [Requests] section: only contacts with the “Employee” type are available in the [Owner] field.

To implement the logic of the case, add a business rule that would filter the values in the [Owner] lookup field. To do this:

1. Open the needed section (e.g., the [Requests] custom section) and add a new business rule.. You can learn more about adding and setting up a new business rule in the “Customize page business logic” article.
2. In the “THEN” block of the business rule, set up the action that would implement the needed business logic (Fig. 10):

a. Click [Add action].

b. In the drop-down menu of possible actions, select "Add field values filter."

NOTE

The "Add field values filter" business rule action is unconditional. When you select this action, the "IF" block of the business rule becomes grayed out and cannot be edited.

c. In the [Which field to filter and which connection in this field's lookup to use for filtering?] field, click .

d. In the opened window, click + next to "Requests" -> select [Owner] as the connected object field.

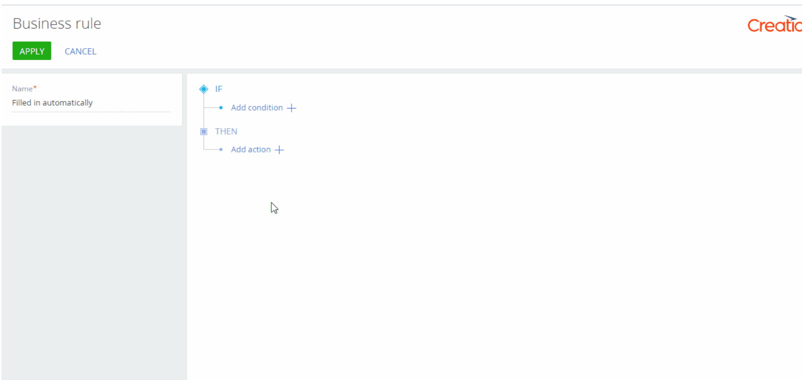
e. In the [Column] field, select [Type] from the drop-down list -> click [Select].

f. Click the icon and select the "Lookup" in the drop-down list. A set of fields for specifying lookup values will appear to the right.

g. In the [Which field to filter by] filed to the right, select "Employee".

3. Click [Apply] -> [Section Wizard] -> [Save].

Fig. 10 Filter lookup values - configuring the "THEN" condition of the business rule



As a result, only the contacts of the "Employee" type will be available for selection in the [Owner] field of the request page.

SEE ALSO

- Business rule setup page
- Business rule conditions
- The actions of the business rule designer

Email templates

You can add contents to Creatio emails manually or use customizable email templates. Templates are especially useful when sending emails as part of business processes or when configuring automatic notifications.

There are two types of email templates in Creatio:

- Common email templates, including email notification templates. These templates are used in business processes, cases, approvals and common correspondence. Common email templates can be localized – Creatio will send the message in the user's preferred language if the corresponding translation is available for the corresponding template. Common email templates are stored in the [Email templates] lookup. In this article, we will cover how to create common templates.
- Marketing email templates are used in Creatio marketing. Unlike common templates, marketing email templates support dynamic content, which enables you to personalize your emails for different segments of your bulk email audience. All bulk email information is stored in the [Email] section. Read more on how to work with the marketing emails in the Creatio marketing documentation.

Email templates are created in the Content Designer. It is a WYSIWYG HTML editor that can create content with texts or images, as well as other elements supported by email clients. These elements are grouped in "content blocks" that you can add and arrange on a template page using drag&drop. For example, a content block can consist of a piece of text, a button or a table with contact data. These blocks are stored in the [Content block library] lookup.

There are several ways you can open the Content Designer:

- From the [Email] section page (available in Creatio marketing products). To do this, go to the [Email] section, open an email with the "Planned" status and click [Open Designer] on the [Template] tab.
- From the email template page. To do this, find the [Email templates] lookup in the [Lookups] section of the System Designer, open any of its records and click [Edit] on the [Email template] detail.
- From the [Send email] element in the Process Designer. The Content Designer opens when you click either or , depending on how you create the email body: using custom means or ready-made templates.

CONTENTS

SEE ALSO

- Content Designer

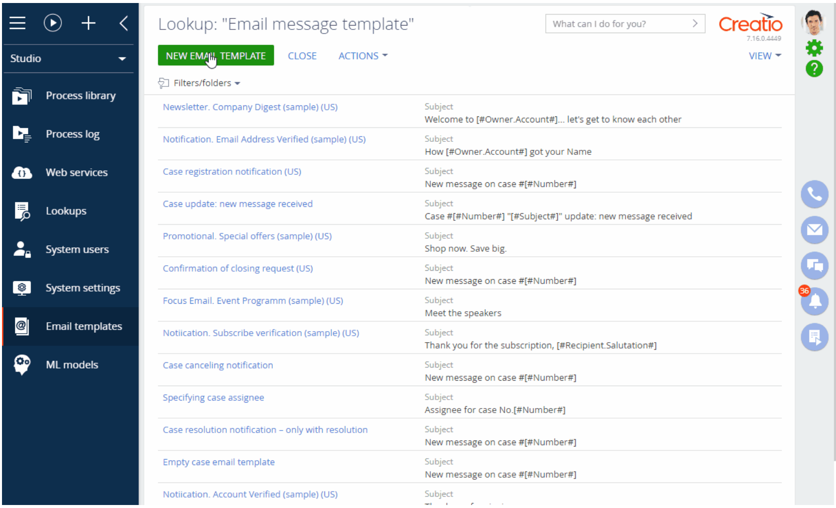
Create a simple template

Employees often send emails that are similar in content. These could be introductory emails, standard replies to frequently asked questions, etc. You can create custom templates to save time on each individual email.

I. Add a new template in the [Email templates] lookup:

1. Go to the [Studio] workplace and select [Email templates] (Fig. 1).

Fig. 1 Adding a new template



2. Click the [New email template] button.
3. On the opened page, specify the template name, e.g., "Introduction email."
4. Click the [Edit] button next to the [Emil template] block to open the Content Designer.

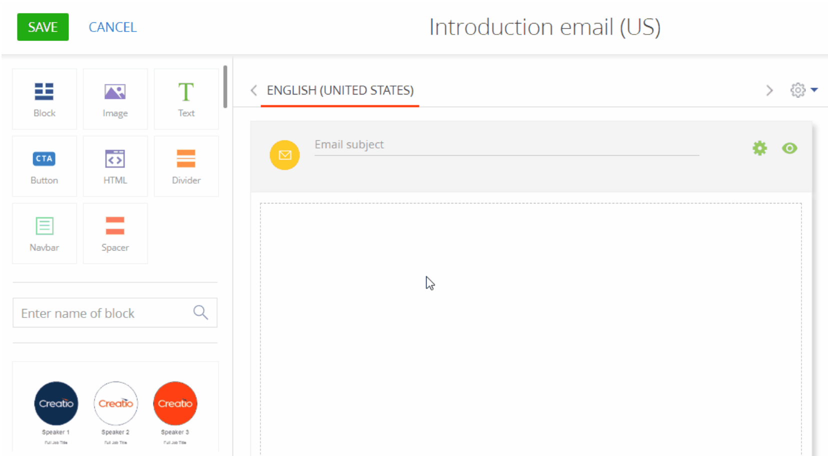
II. Design your template in the Content Designer

This short guide covers creating simple text-only templates for regular mailing. The guide for creating robust templates (with images, buttons, navigation menus, etc.) is available in a Contents.

CASE

Design a simple template for a standard introductory email, with name and job title of the sender employee.

Fig. 2 Designing a simple email template



1. Populate the [Email subject] field.
2. Add the [Block] element to the working area.
3. Add the [Text] element to the [Block] element.
4. Enter the email text into the [Text] element, replace its default "lorem ipsum" text.
5. Optionally – add macros, to personalize your email with information that is specific to the email sender or recipient:
    a. Place your cursor in the text where macro must be added.
    b. Click > [Basic macro].
    c. Select the needed macro from the pop-up and click [Select].

    NOTE
    More about working with email template macros is available in the "Personalize email templates with macros" article.

6. Save the template.

    NOTE
    Custom macros, as well as links to Creatio objects, are designed for email templates used in business processes. They require a "Macro source" object, specified in the corresponding field. For more on sending emails via business processes, see the "How to use email templates in business processes" article.

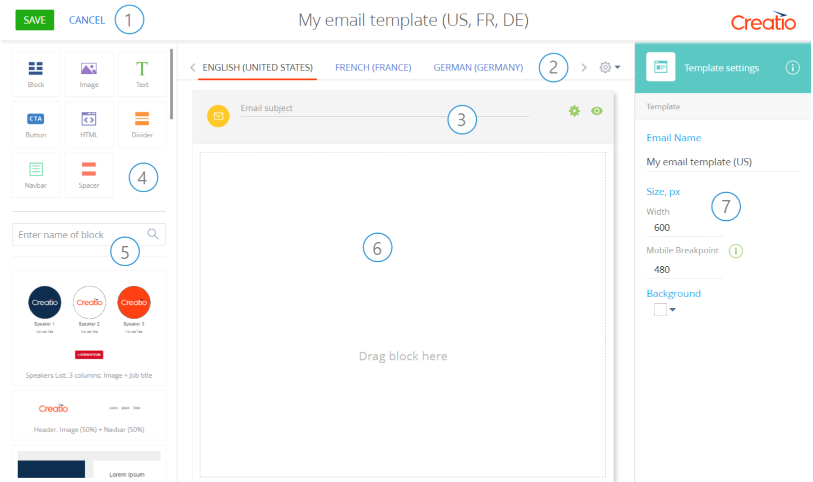
SEE ALSO

- Drag-and-drop template editor
- Configuring an email template
- How to use email templates in business processes

Drag-and-drop template editor

The Content Designer (Fig. 3) is a visual drag&drop editor that enables creating email templates that look great on desktop and mobile devices.

Fig. 3 The Content Designer



Action panel (1)

[Save] – save template.

[Cancel] – close the Content Designer. Closes the browser tab where the template is opened.

Template localization tabs (2)

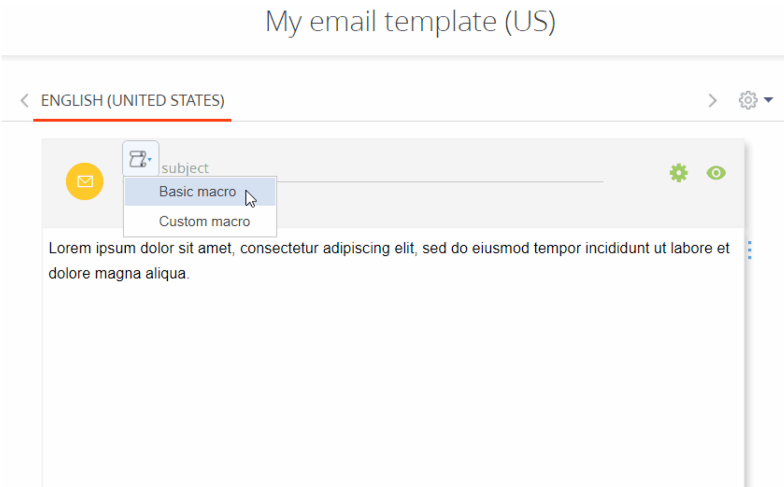
This area contains a tap per each language of the template. By default, all templates are created in the default language (English). Read more >>>

Email subject and preview area (3)

Use this area to specify the subject of the email. This field will be used to populate the [Subject] field of the email sent according to the template.

Place the cursor in the [Email subject] field to access the  menu and add macros to the email subject (Fig. 4).

Fig. 4 Adding a macro to a template subject



NOTE

More information on working with email template macros is available in the "Personalize email templates with macros" article.

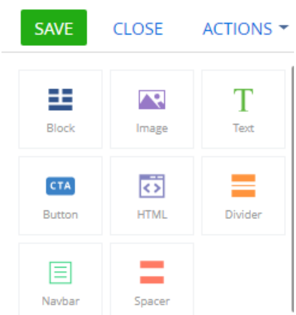
Click to open template settings in the setup area to the right. Read more >>>

Click to preview an email generated according to the template. Here you can see how your emails will display on desktop or mobile email clients.

Template element area (4)

The template element area (Fig. 5) includes a list of elements for constructing the email template layout.

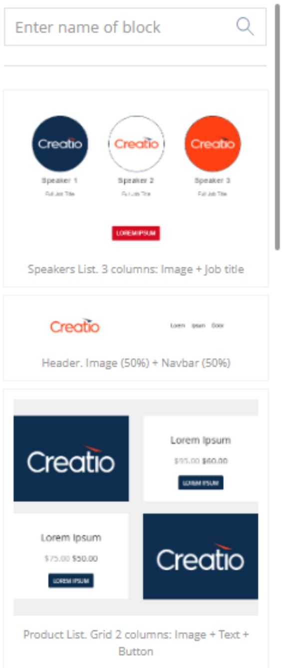
Fig. 5 The template element area



Block library (5)

The block library displays a list of pre-configured content blocks that you can use in your template. Each content block is a combination of several template elements, such as images, text elements, buttons and separators.

Fig. 6 The block library area



The content blocks are stored in the [Content blocks library] lookup. Learn more about how to work with content blocks in the "Reusable content blocks" article.

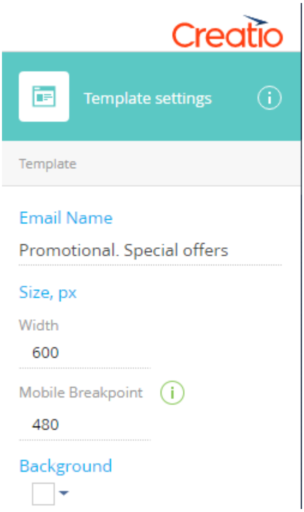
Working area (6)

The working area is where you create your marketing email content. To design a template, drag&drop template elements and content blocks directly to this area. Read more >>>

Setup area (7)

The setup area displays template settings (Fig. 7) or settings of the currently selected element in the working area: content blocks and their elements, such as images and buttons.

Fig. 7 The template setting area



Here you can specify properties of the template and its elements, e.g., build the structure of block sections, specify the dimensions of section columns and the background color, add images and banners to your block, etc. To open the settings of a particular element, click it in the template working area.

Template settings

Each template has a few general settings. Click in the email subject preview area to configure template settings.

Email name	The template name, displayed in the [Email templates] lookup.
Width	Maximum width of the template in pixels.
Mobile breakpoint	The width, at which the template switches to mobile layout.
Background	Template-wide background color.

SEE ALSO

- Content Designer element reference
- Configuring an email template

Content Designer element reference

Below is the list of all basic template elements available in Creatio.

Template element	Notes
Block	Arranges the layout of other template elements. Read more...
Image	Adds images to the template. Read more...
Text	Adds text to the template. Read more...
Button	Adds buttons that open URLs to the template. Read more...
HTML	Adds custom HTML elements and imports HTML files designed in third-party HTML editors. Read more...
Divider	Separates adjacent elements with horizontal lines or margins. Read more...
Navbar	Adds a navigation menu to the template. Read more...
Spacer	Separates adjacent elements with an invisible horizontal line. Read more...

CONTENTS

- Button
- Text
- HTML (Smartblock)
- Divider
- Navbar
- Spacer

Block

Content block elements arrange other elements of a template. You need at least one block in your template to be able to add non-block elements. Blocks cannot contain other blocks.

Fig. 8 Sample template layout

Sections and banners

A block has a table-like layout. Blocks can hold two types of "rows":

- Sections are multi-column rows. A section can have up to 6 columns. Use sections to arrange most types of content. They are also preferable in general because of their flexibility.
- Banners are single-column rows. Use banners to insert images that will fill all available space and fit inside the element regardless of the image size. You can align the background image of a banner vertically and horizontally.

  NOTE

  As an alternative to using banners, you can specify a background image of an entire block. However, this background image will not stretch or shrink to fit the borders of the block.

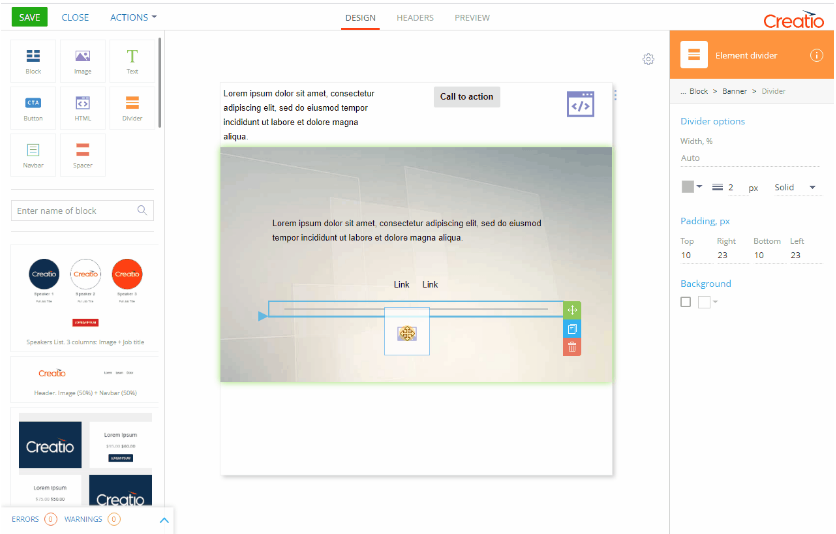
By default, a block has one section and no banners. A block must have at least one section or banner. It is not possible to delete the only section or banner of a block.

You can add multiple sections to a single block or add multiple blocks. A template, consisting of a single block with multiple sections will look the same as a template that consists of multiple blocks. We recommend adding any reusable content as separate blocks and saving them to the Block Library for later.

Adding a block

To add a block to a template, drag&drop the [Block] ( ) element from the element grid onto the working area (Fig. 9).

Fig. 9 Using the content designer



Unlike other elements, blocks may be tricky to select, since clicking on a block may select one of the elements rather than the block itself. There are two ways to select a block:

- Click on the right border of the block (Fig. 10).
- Click any element inside the section or banner, then press [Esc] to go up the navigation tree until the [Block] element is selected.
- Click any element inside the section or banner, then click “Block” in the breadcrumb navigation in the setup area. Click the leftmost element if “Block” is not yet visible. (Fig. 11).

Fig. 10 Selecting the block by clicking on the right border

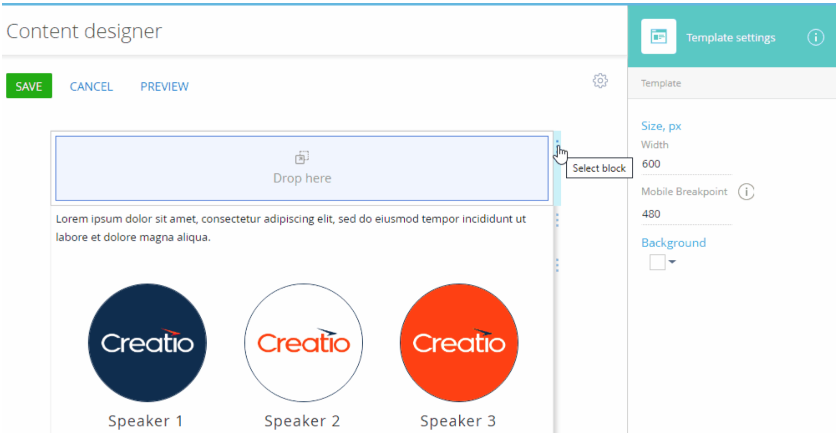
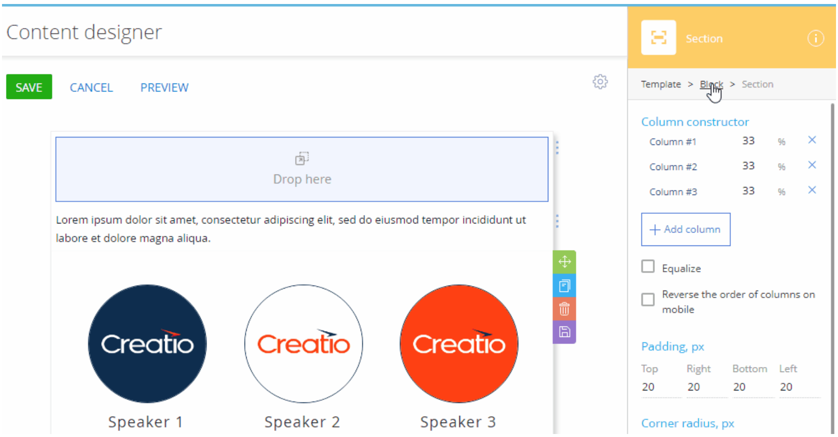


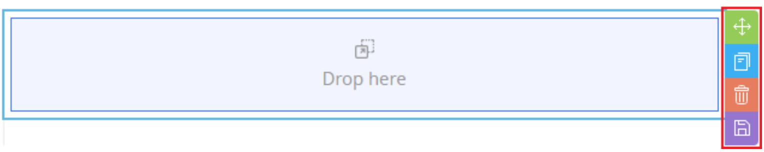
Fig. 11 Selecting the block by using the setup area



Block context menu

When a block element is selected, its context menu appears on the right (Fig. 12).

Fig. 12 Block context menu



- - Drag the block up or down to reorder the blocks in the template.
- - Copy the block. A copy block will appear directly under the original block.
- - Remove the block from the template. All changes made to the block will be lost if the block was not saved in the block library.
- - Save the block in the Block Library. Creatio will prompt you to enter the name under which the block will be saved.

Block setup area

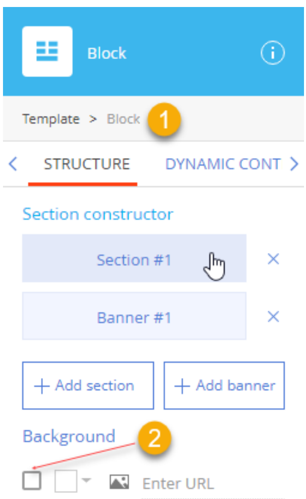
Use the setup area on the right to configure the [Block] element.

The setup area comprises of three tabs:

- [Structure] – the default tab available in the Campaign Designer and Process Designer. It is the only tab available when you open the Content Designer from the Process Designer.
- [Dynamic Content] – this tab is only available in the marketing Content Designer for Marketing Creatio. Use it to set up different variations of a block for different conditions, configured on the [Rules] tab.
- [Rules] – this tab is only available in the marketing Content Designer for Marketing Creatio. Use it to set up rules that can be used for defining dynamic content.

The [Structure] tab (Fig. 13) includes the following properties:

Fig. 13 Block setup area



NOTE

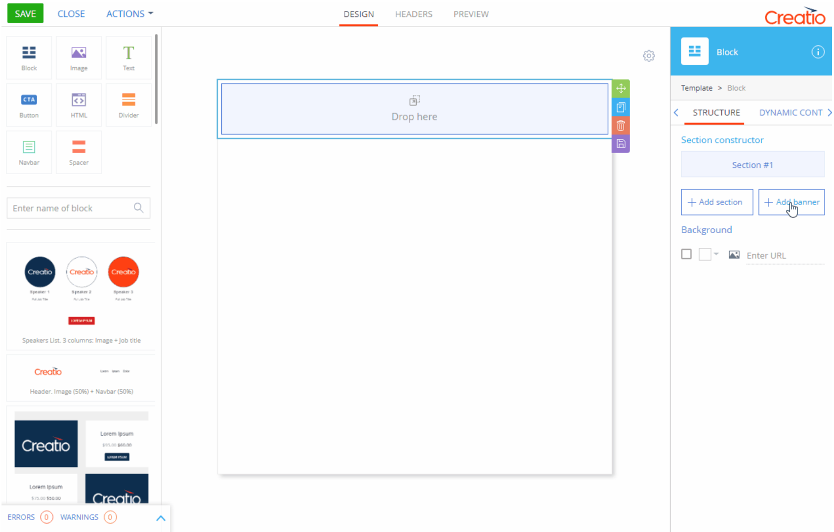
Tabs other than the [Structure] tabs are only available in Creatio Marketing and Creatio CRM bundle.

Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (template) element
Section constructor	Add, remove, and move the sections and banners of the block. To access the setup area of a section or banner, click the corresponding item in the section list. Click [Add section] or [Add banner] to add sections and banners. Click × to remove a section or banner (last section or banner cannot be removed).
Background	Set background image and/or color for the entire block. Note that sections and banners can have their own background settings that may cover the background of the block. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current block. Click to open the color picker and select the background color. Click and enter the URL of the image to display on the background. NOTE If the recipient’s email client fails to load the image, the recipient will see the background color instead.

Banners

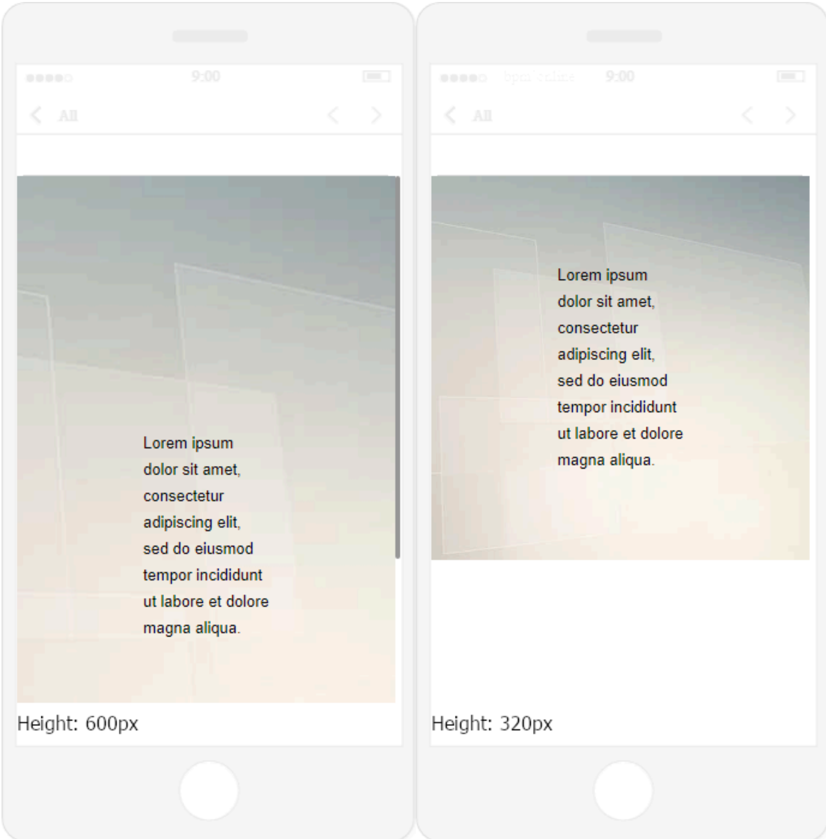
A banner is a single-column block “row”. The main purpose of the banner element is to display a background image and some content over it (Fig. 14). Unlike the [Block] element, you can align the banner background image.

Fig. 14 Adding a banner



A banner has a fixed height. If it is set to a value that is too large, the banner may not fit the display vertically (Fig. 15).

Fig. 15 600px vs. 320 px banner



The [Banner] setup area comprises of the following setup groups: [Size, px], [Vertical align], [Padding, px], and [Background] (Fig. 16).

Fig. 16 Banner setup area

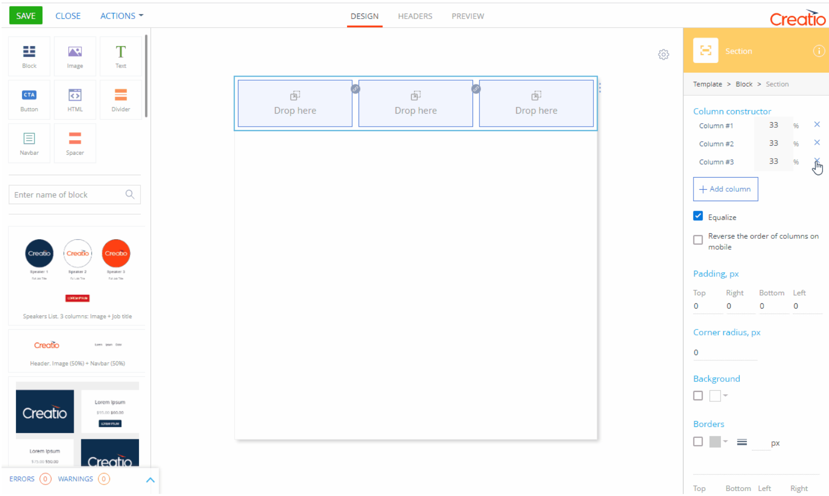
Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” to navigate the parent (block and template) elements.
Size, px	Configure the height of the banner by specifying the [Height] field value. This value is used to set up the minimum height. If the height of the content of the banner exceeds this value, the banner will stretch vertically.
Vertical align	Align the contents of the banner vertically (top , middle , or bottom).
Padding, px	Specify the distance (in pixels) between the content of the banner and each of its borders. Padding is specified separately for each side.

Property	Function
Background	Set background image and/or color for the entire banner. Note that elements dropped onto the banner can have their own background settings that may cover the background of the banner. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current banner. Click to open the color picker and select the background color. Click Enter URL to enter the URL of the image to display on the background. NOTE If the recipient's email client fails to load the image, the recipient will see the background color instead. The image will stretch or shrink to fit the banner. We recommend using large or vector images as a background. Align the background image of the banner vertically (top , middle , or bottom) or horizontally (left , center , or right). NOTE Alignment may produce no visible effect depending on the ratio of the image and the current ratio of the banner.

Sections

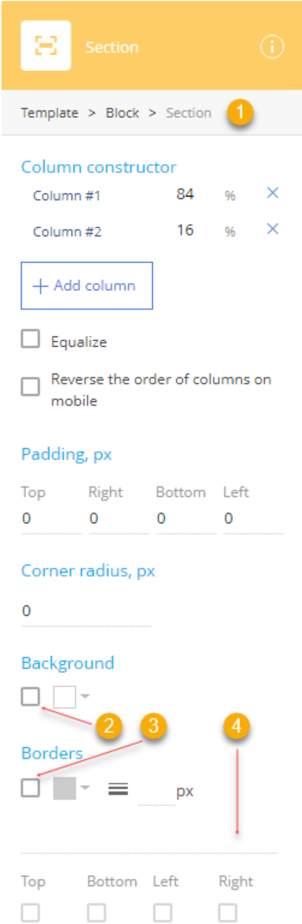
A section (Fig. 17) is a multi-column block "row." This is the default subordinate element of the [Block] element. A section does not have its own background image.

Fig. 17 Adding a section



The [Section] setup area consists of several groups of settings: [Column constructor], [Padding, px], [Corner radius, px], [Background] and [Borders].

Fig. 18 Section setup area



Property	Function
Breadcrumb navigation (1)	Use "breadcrumbs" at the top of the setup area to navigate the parent (block and template) elements.

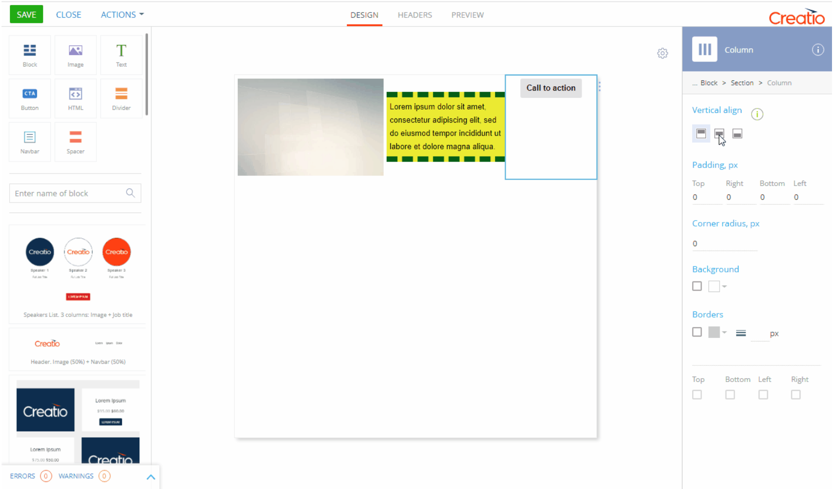
Property	Function
Column constructor	Add and delete columns, specify their widths, or equalize them and reverse the order of the columns on mobile devices. To access the setup area of a column, click the corresponding item in the column list. Click the "%" field and specify a new value to change the width of a column. The width of the next adjacent column will be adjusted. NOTE The minimal column width is 5%. Click [Add column] to add a column. Click × to remove a column (the last column cannot be removed). Select the [Equalize] checkbox to ensure that all of the columns have equivalent width. If you add or remove a column when this checkbox is selected, the widths of all columns will be adjusted to match each other. Select the [Reverse the order of columns on mobile] checkbox to reverse the order of ungrouped columns and column groups on mobile devices. Read more in the "Column layout on desktop and mobile" article. As a result, the last column or column group will be at the top, and the first column or column group at the bottom. NOTE This does not affect columns displayed side-by-side on mobile, i.e., columns inside column groups.
Padding, px	Specify the distance (in pixels) between the content of the section and each of its borders. Padding is specified separately for each side.
Corner radius, px	Specify the circular radius of the corners of the section. Leave this property empty for sharp corners. This defines the circular radius of all 4 corners of an element. NOTE Use the [HTML] element with inline or embedded CSS styles to specify elliptical corners and other exotic effects.
Background	Set background color for the entire section. Note that elements dropped onto the section can have their own background settings that may cover the background of the section. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current section. Click to open the color picker and select the background color.

Property	Function
Borders	Configure the borders of the section. Border style settings are disabled by default. Select the checkbox (3) to enable them. Click to open the color picker and select the border color. Update the px field to specify the border width. To hide the border, select the “Hidden” border style. Use the drop-down menu (4) to select the border style. When the border settings are enabled, the “Solid” style is selected by default. The following styles are available: • – Hidden NOTE The border is defined but invisible. The border width effectively equals 0. • – Dotted • – Dashed • – Solid • – Double • – Groove • – Ridge • – Inset • – Outset Select or clear [Top], [Bottom], [Left] and [Right] checkboxes to enable or disable the border style settings for the corresponding border.

Columns

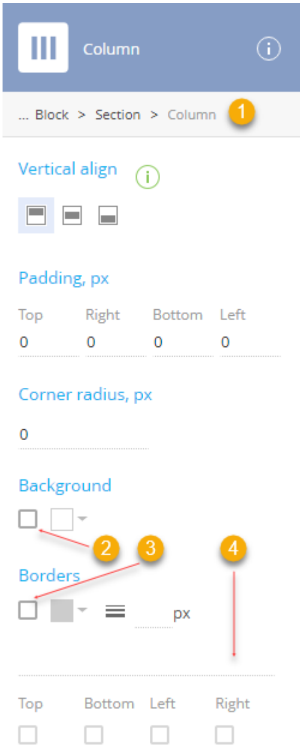
A column is a structural element used to arrange other elements in a section. To add a column, click the [Add column] button the [Section] element setup area.

Fig. 19 Working with columns



The [Column] setup area comprises of the following setup groups: [Vertical align], [Padding, px], [Corner radius, px], [Background] and [Borders].

Fig. 20 Column setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (section, block, and template) elements
Vertical align	Align the contents of the column vertically (top, middle, or bottom). ATTENTION Vertical align for a column on mobile may not work in case when the vertical alignment of the highest column in the section is not set to middle.
Padding, px	Specify the distance (in pixels) between the content of the column and each of its borders. Padding is specified separately for each side.

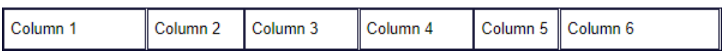
Property	Function
Corner radius, px	Specify the circular radius of the corners of the column. Leave this property empty for sharp corners. This defines the circular radius of all 4 corners of an element. NOTE Use the [HTML] element with inline or embedded CSS styles to specify elliptical corners and other exotic effects.
Background	Set background color for the entire column. Note that elements dropped onto the column can have their own background settings that may cover the background of the column. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current column. Click to open the color picker and select the background color.

Property	Function
Borders	Configure the borders of the column. Border style settings are disabled by default. Select the checkbox (3) to enable them. Click to open the color picker and select the border color. Update the px field to specify the border width. To hide the border, select the "Hidden" border style. Use the dropdown menu (4) to select the border style. When the border settings are enabled, the "Solid" style is selected by default. The following styles are available: • – Hidden NOTE The border is defined but invisible. The border width effectively equals 0. • – Dotted • – Dashed • – Solid • – Double • – Groove • – Ridge • – Inset • – Outset Select or clear [Top], [Bottom], [Left] and [Right] checkboxes to enable or disable the border style settings for the corresponding border.

Column layout on desktop and mobile

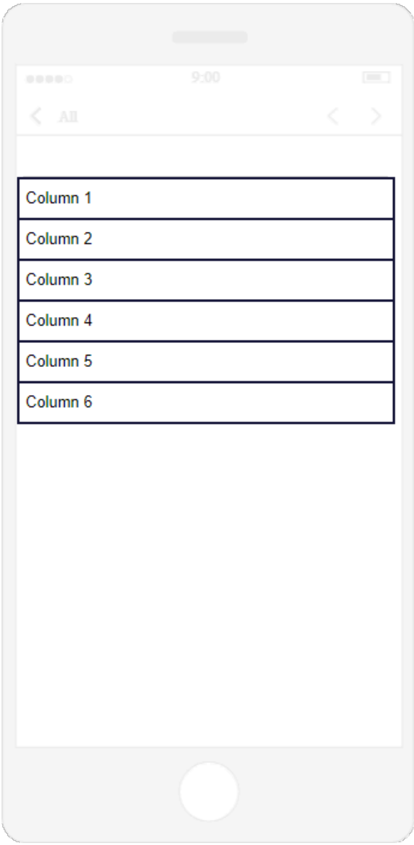
On the desktop, the columns will be arranged exactly how they are displayed in the Content Designer (Fig. 21).

Fig. 21 The standard layout of a section with 6 columns



On mobile devices, columns are normally not displayed side by side. Instead, they are re-arranged vertically (Fig. 22).

Fig. 22 The mobile layout of a section with 6 columns

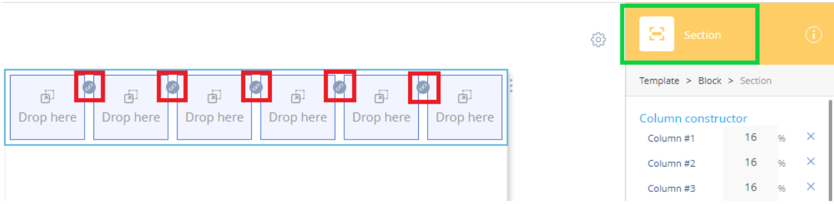


You can force columns to display side by side on mobile by grouping them. A column group is a sequence of columns displayed side-by-side on mobile.

To group two adjacent columns:

1. Select the [Section] element using the [Section constructor] of a [Block] element or the breadcrumbs navigation of a column or its child elements. buttons will appear between columns (Fig. 23).

Fig. 23 Linking columns



2. Click the button between the columns that you want to group. (Fig. 23)

   If one of the columns is already a part of a column group, the ungrouped column will become part of the column group. If both columns are parts of their respective column groups, both column groups will become one column group.

On mobile, grouped columns display side by side. Use the [Preview] tab at the top of the page to view how your email template displays on mobile.

You can also reverse the order of columns on mobile so that the last column is displayed at the top of the section and the first at the bottom. For example, if you have a two-column header with a logo on the right and a title on the left, a mobile device will normally display the title first and the logo second. However, if the order of columns is reversed, the logo will display on top.

To reverse the order of ungrouped columns and column groups on mobile devices, select the [Reverse the order of columns on mobile] checkbox (Fig. 24).

Fig. 24 Reverse on mobile

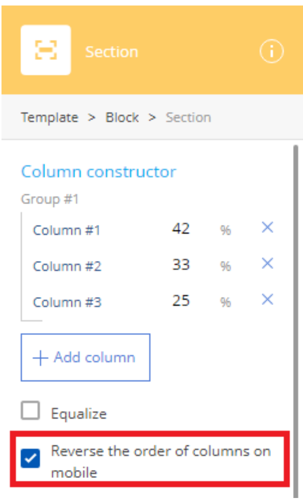
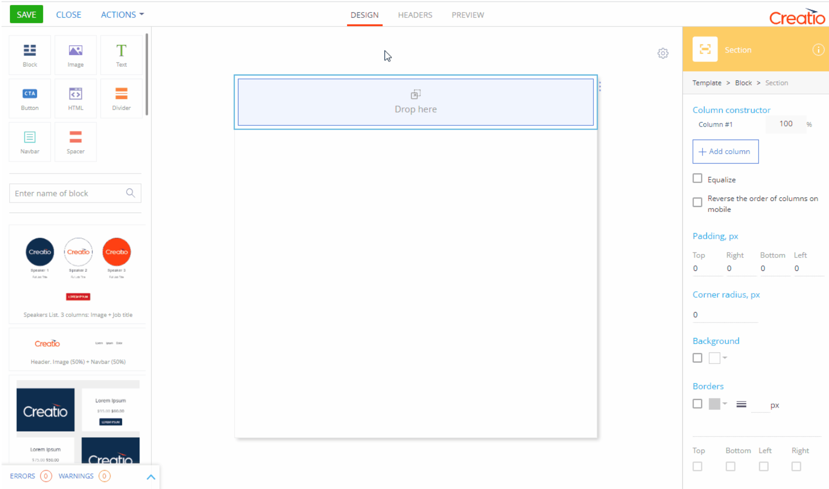
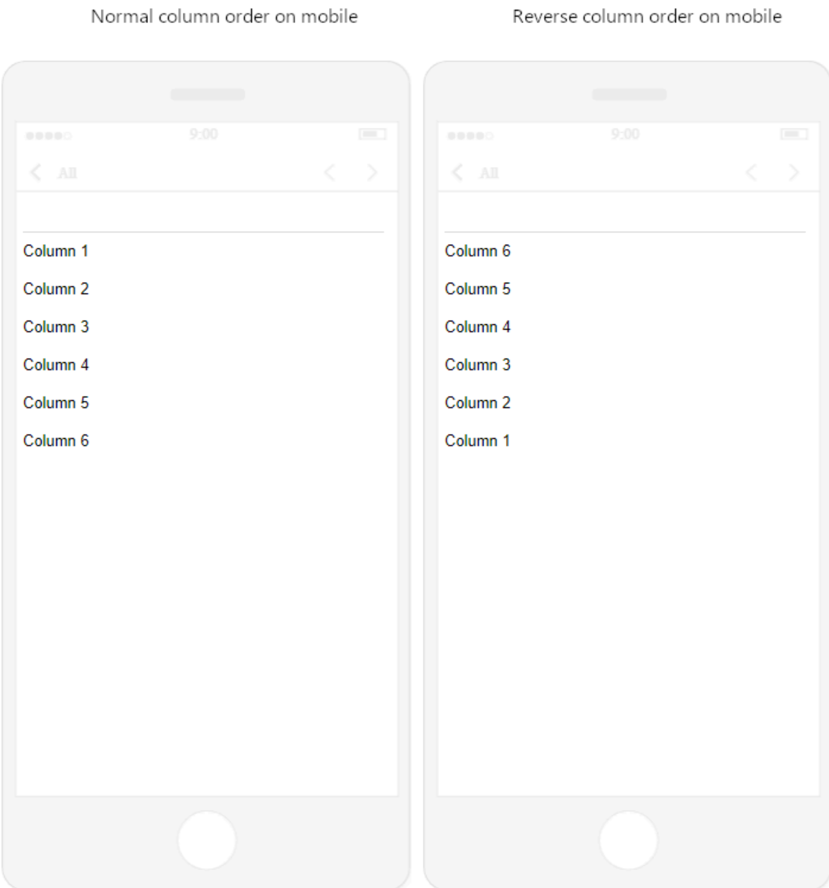


Fig. 25 Working with columns



As a result, the last column or column group will be at the top of the section, and the first column or column group at the bottom.

Fig. 26 Normal column order vs. reverse column order



NOTE

This does not affect columns displayed side-by-side on mobile, i.e., columns inside column groups.

SEE ALSO

- Image

Image

The [Image] element (Fig. 27) displays images. This element consists of two parts: the image itself, and the image container.

Fig. 27 Adding an image

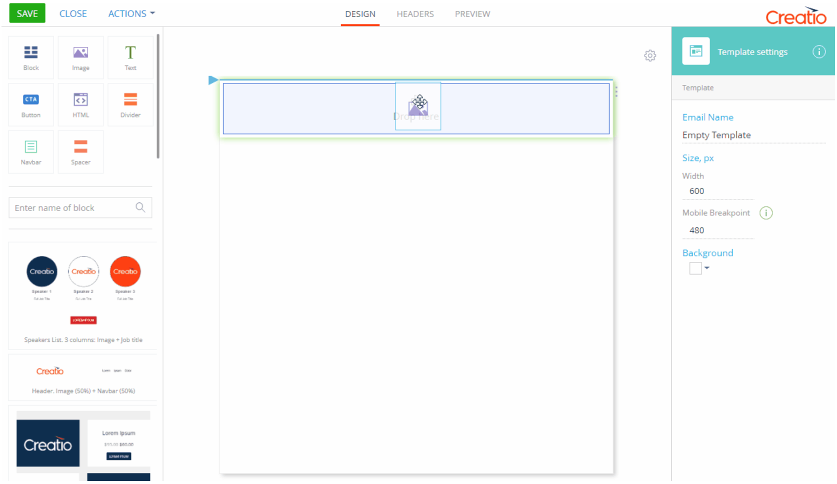
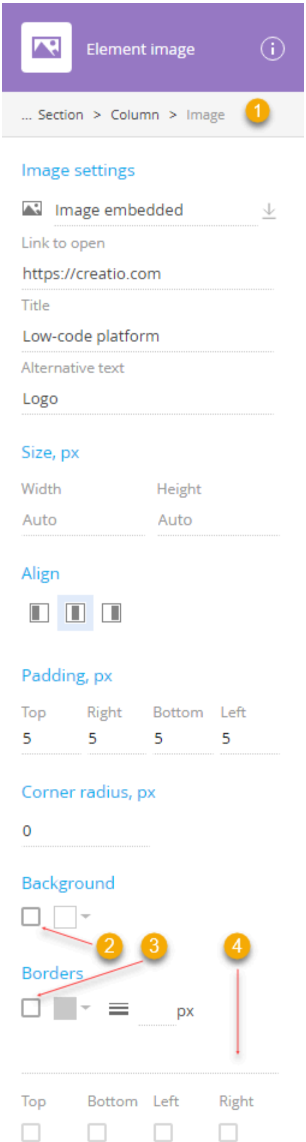


Image setup area

Use the setup area on the right to configure the image and the image container.

Fig. 28 Image setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block, and template) elements.

Property	Function
Image settings	Use the field to upload an image from your computer or insert the URI of an image. NOTE The [Image] element supports Data URIs. You can insert a base64-encoded image instead of a URL. Base64-encoded images are part of the HTML code of the message and are not normally filtered by email clients that prevent external images from loading by default. [Link to open] – specify a URL to use the image as a hyperlink. [Title] – specify the text to display when the user hovers the mouse pointer over the image. NOTE The title text is often used to describe things unclear at first glance. [Alternative text] – specify the alternative text. Alternative text is displayed in place of the image when the latter is not available and is supported by some screen readers.
Size, px	Specify the width and height of the image. By default, both [Width] and [Height] parameters have the "Auto" value. If you leave this parameter unchanged, the image will either stretch or shrink to fit the container. Change one of the values to resize the image and keep the ratio. Change both values to force resize the image to the specified height and width disregarding the ratio.
Align	Align the image horizontally (left , center , or right). NOTE Alignment may produce no visible effect depending on the ratio of the image and the current ratio of the parent container.
Padding, px	Specify the distance (in pixels) between the image and each of the borders of the container. Padding is specified separately for each side.
Corner radius	Specify the circular radius of the corners of the image. Leave this property empty for sharp corners. This defines the circular radius of all 4 corners of the image. NOTE Use the [HTML] element with inline or embedded CSS styles to specify elliptical corners and other exotic effects.

Property	Function
Background	Set background color for the entire image. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current image. Click to open the color picker and select the background color. NOTE The background fills the entire container, i.e. if the padding setting values are not set to 0, the background color should be visible around the image. If the image has transparent areas, the background color will be visible through them.
Borders	Configure the borders of the image. Border style settings are disabled by default. Select the checkbox (3) to enable them. Click to open the color picker and select the border color. Update the px field to specify the border width. To hide the border, select the “Hidden” border style. Use the dropdown menu (4) to select the border style. When the border settings are enabled, the “Solid” style is selected by default. The following styles are available: • – Hidden NOTE The border is defined but invisible. The border width effectively equals 0. • – Dotted • – Dashed • – Solid • – Double • – Groove • – Ridge • – Inset • – Outset Select or clear [Top], [Bottom], [Left] and [Right] checkboxes to enable or disable the border style settings for the corresponding border.

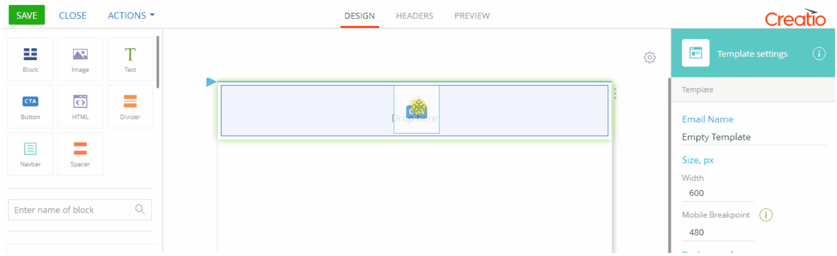
SEE ALSO

- Button

Button

The [Button] element (Fig. 29) is designed for making clickable call-to-action buttons. [Button] elements are also referred to as a “call to action” (CTA) and are basically links presented as visually identifiable buttons.

Fig. 29 Adding a CTA button



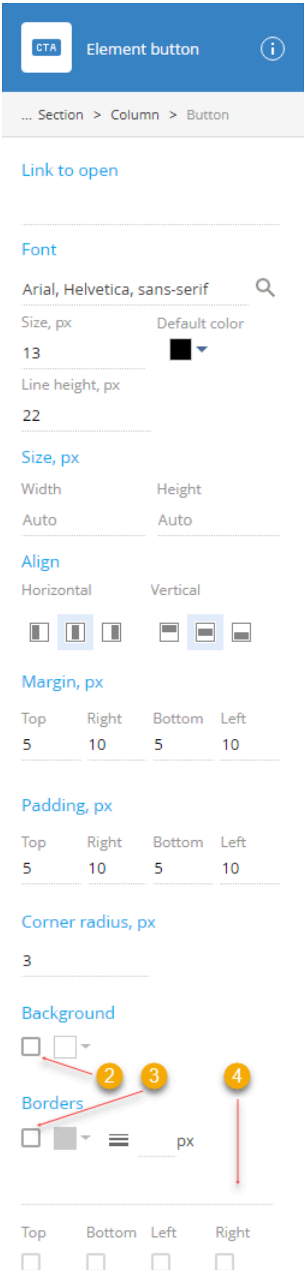
NOTE

There is a difference between [Button] element and the HTML <button> element.
To insert the HTML <button> element, please use the [HTML] element.

Button setup area

Use the setup area on the right to configure the button text, background, and shape.

Fig. 30 Button setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block, and template) elements.
Link to open	The URL specified in the [Link to open] area opens when a recipient clicks the button.
Font	Use this settings group to configure the font settings of the CTA button caption. [Content builder font set] – select the font family of the button from the list of registered font families. To modify the list of fonts used in your template, update the “Content builder font set” lookup. Read more in the “Updating available Content Designer fonts” article. [Size, px] – specify the width and height of the font in pixels. Click to open the color picker and select the font color. [Line height, px] – specify the spacing between the lines and the borders of the button. The maximum height is 250px; the minimum line height cannot be less than the size of the font. [Letter spacing, px] – specify the spacing between the characters in pixels.
Size, px	Specify the width and height of the button in pixels.
Align	Align the CTA button horizontally (left , center , or right). Vertical alignment (top , middle , or bottom) aligns the text of the button. NOTE Selecting various vertical alignment settings is likely to produce no visible effect when trying them with the default sample CTA button because of the insufficient height.
Margin, px	Specify the distance (in pixels) between the borders of the CTA button and the adjacent borders of parent and sister elements. In the Content Designer, you must specify the margin setting for each side individually.
Padding, px	Specify the distance (in pixels) between the CTA text and each of the borders of the container. Padding is specified separately for each side.

Property	Function
Corner radius	Specify the circular radius of the corners of the button. Leave this property empty for sharp corners. This defines the circular radius of all 4 corners of the button. **NOTE** Use the [HTML] element with inline or embedded CSS styles to specify elliptical corners and other exotic effects.
Background	Set the button background color. Background style settings are enabled by default. Clear the checkbox (2) to enable them. Select this checkbox to enable all background settings of the current button. Click to open the color picker and select the background color.
Borders	Configure the borders of the button. Border style settings are disabled by default. Select the checkbox (3) to enable them. Click to open the color picker and select the border color. Update the px field to specify the border width. To hide the border, select the “Hidden” border style. Use the dropdown menu (4) to select the border style. When the border settings are enabled, the “Solid” style is selected by default. The following styles are available: • – Hidden **NOTE** The border is defined but invisible. The border width effectively equals 0. • – Dotted • – Dashed • – Solid • – Double • – Groove • – Ridge • – Inset • – Outset Select or clear [Top], [Bottom], [Left] and [Right] checkboxes to enable or disable the border style settings for the corresponding border.

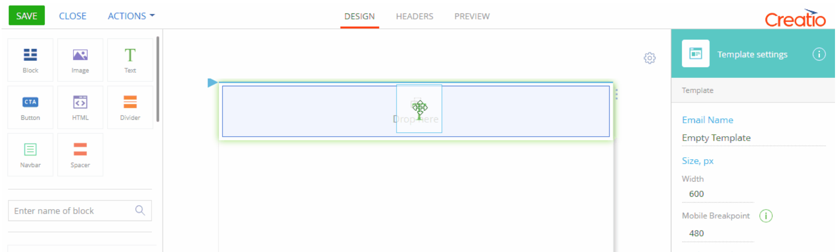
SEE ALSO

- Text

Text

The [Text] element (Fig. 31) is used to add message text. This element has two configuration areas: the setup area and the rich text toolbar on the [Text] element itself.

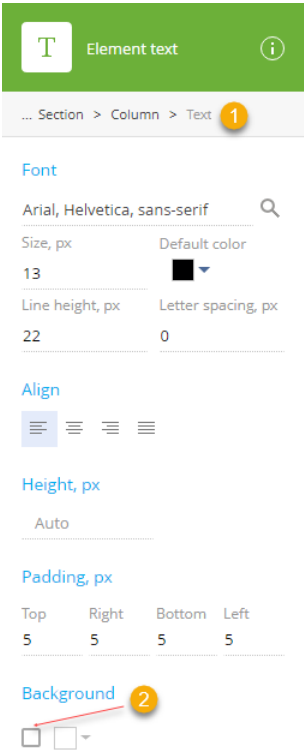
Fig. 31 Adding the [Text] element



Text setup area

In the setup area, you can configure the baseline font settings and the style settings of the [Text] element.

Fig. 32 Text setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block and template) elements.

Property	Function
Font	Use this settings group to configure the baseline font settings of the [Text] element. [Content builder font set] – select the font family of the text from the list of registered font families. To modify the list of fonts used in your template, update the "Content builder font set" lookup. Read more in the "Updating available Content Designer fonts" article. [Size, px] – specify the width and height of the font in pixels. Click to open the color picker and select the font color. [Line height, px] – specify the spacing between the lines and the borders of the button. The maximum line height is 250px; the minimum line height cannot be less than the size of the font. [Letter spacing, px] – specify the spacing between the characters in pixels.
Size, px	[Size, px] – specify the width and height of the button in pixels.
Align	Align the baseline text horizontally (left , center , right or justify).
Height, px	Specify the height of the text container (in pixels). This field is used to specify the fixed height of the text container. It will not stretch or shrink to fit the text inside.
Padding, px	Specify the distance (in pixels) between the text and each of the borders of the container. Padding is specified separately for each side.
Background	Set background color for the text. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings. Click to open the color picker and select the background color.

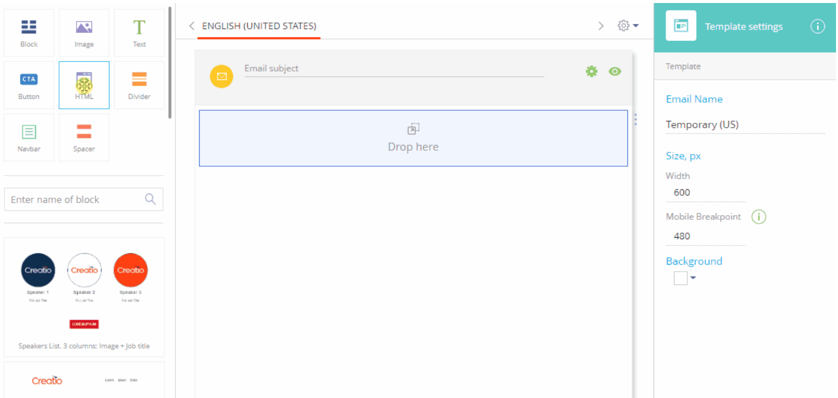
SEE ALSO

- HTML (Smartblock)

HTML (Smartblock)

The [HTML], aka "Smart block", element (Fig. 33) enables implementing custom HTML code into your template and enriching it with reusable user-defined macros.

Fig. 33 Adding an [HTML] element to a template



Use the [HTML] element to configure custom styles, such as elliptical corners, non-uniform borders, multi-image backgrounds and more. You can also use the [HTML] element to import your custom templates designed outside Creatio, by adding their entire HTML code to an [HTML] element.

NOTE

The [HTML] element is intended for use by HTML-savvy users who are familiar with web design and can code their custom designs in HTML.
Your custom code will be directly added to the template (without any filtering, debugging, validation, etc.) When using the [HTML] element block, please make sure that you test results outside the content designer preview, for example, by sending a test email.

HTML macros

You can add custom macros to the HTML code of the [HTML] element. When sending an email, Creatio replaces the user-defined macros with the corresponding values specified in the [HTML] setup area.

When the user creates a macro, the Content Designer generates a corresponding field and maps the value of the field to the macro. If the macro is reused in the same [HTML] element, the value of the field will be mapped to every instance of the macro.

The following types of macros are available:

- New String – a single-line macro. Read more >>>
- New Text – a multiline macro. Read more >>>
- New Picture – an image source macro. Read more >>>
- New Color – a color picker macro. Read more >>>

Adding a macro

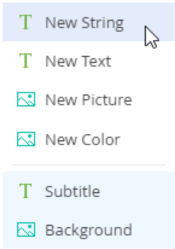
1. Select an [HTML] element on the template and click [Edit HTML].
2. Select the part of the code that you want to replace with a macro.
3. Right-click the selected code. A macro context menu will appear.

NOTE

Right-clicking when nothing is selected in the editor does not produce a macro context menu.

4. Select the type of macro in the menu (Fig. 34). You can create a new macro or add a new instance of an earlier created macro.

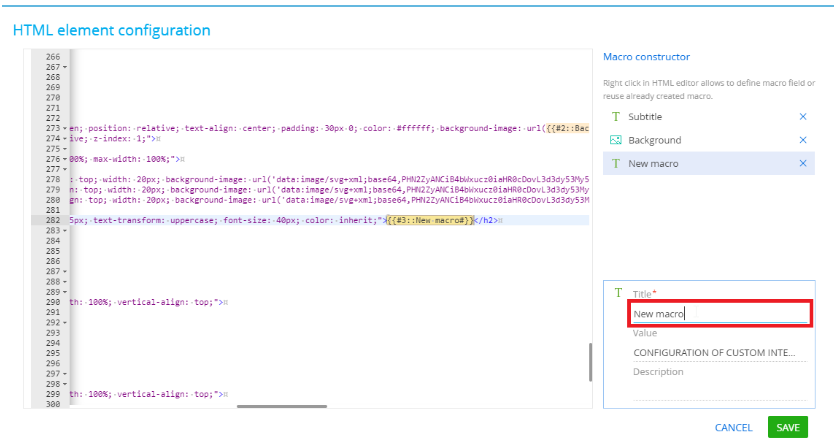
Fig. 34 Selecting the type of macro



   a. Select [New string], [New text], [New picture], or [New color] to create a corresponding new macro.
   b. If the opened HTML element already has macros, they will be available in the menu as well.

5. Specify the title of the currently selected macro in the [Macro constructor] area on the right (Fig. 35), so that you can identify this macro later.

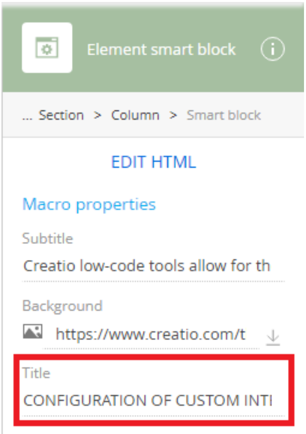
Fig. 35 Editing the title of a macro



6. Click [Save] to apply changes.

As a result, a new field will be available in the [HTML] setup area on the right (Fig. 36). Changing the value of the field will immediately update all macro instances throughout your [HTML] element.

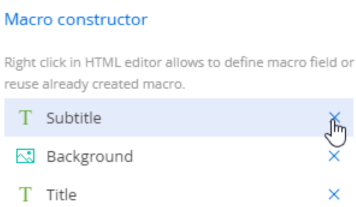
Fig. 36 New macro field



Deleting a macro

1. Select an [HTML] element where you need to delete a macro and click [Edit HTML].
2. In the [Macro constructor] area on the right, click × next to the macro that you want to delete (Fig. 37).

Fig. 37 Deleting a macro field



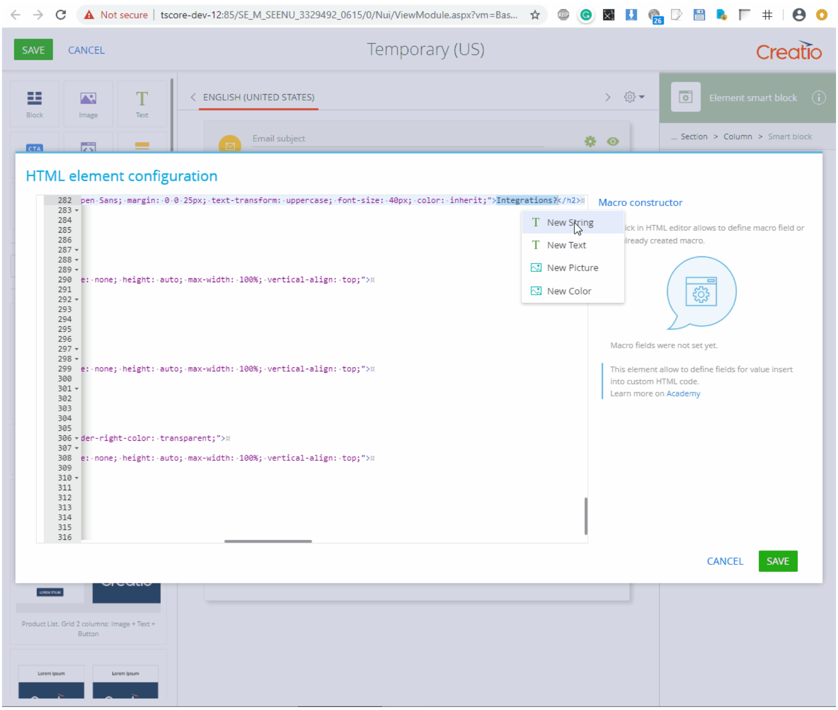
3. Click [Save] to apply changes.

As a result, all instances of the macro will be replaced with the current value of the macro. The macro will be no longer available in the setup area of the [HTML] element.

String macros

Use this macro type to insert a short single-line text that is not white space pre-formatted (Fig. 38).

Fig. 38 Configuring “New String” macros



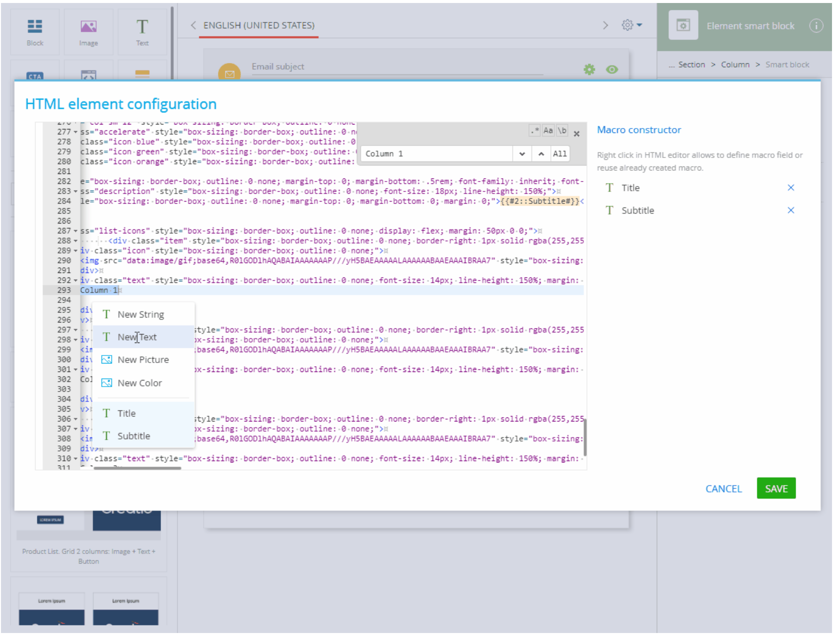
Any white space characters in the macro value will be inserted as-is. This means that some breakable white space characters (particularly, character tabulations and new lines) or a sequence of such characters will display as a single space character. Additionally, pressing the Enter key when editing the field does not produce a new character.

As a result, the text will display as a single line unless user-defined CSS rules forbid such behavior.

Text macros

Use this macro type to insert long multiline white space pre-formatted texts (Fig. 39).

Fig. 39 Configuring “New Text” macros



When the user populates a “New Text” macro field with a string, new lines will be converted to line breaks, multiple space characters will be replaced with unbreakable space characters, and character tabulations will be replaced with a sequence of four unbreakable space characters. Additionally, pressing the Enter key when editing the field will produce a new line character.

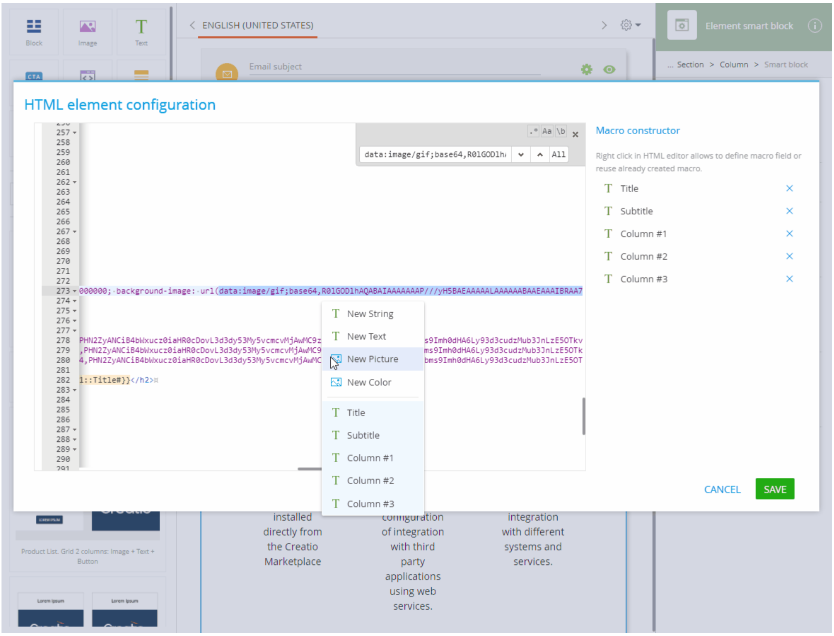
As a result, the displayed text preserves white space pre-formatting of the source text in the source macro field.

Picture macros

Use this macro type to replace or provide the value of the “src” attribute of an <img> container or the value of a “url” CSS property.

When the macro is created, the Content Designer generates an image source field ( ) mapped to the macro. Using the field, the user can upload an image from the computer or insert the URI of an image (Fig. 40).

Fig. 40 Adding “New Picture” macros



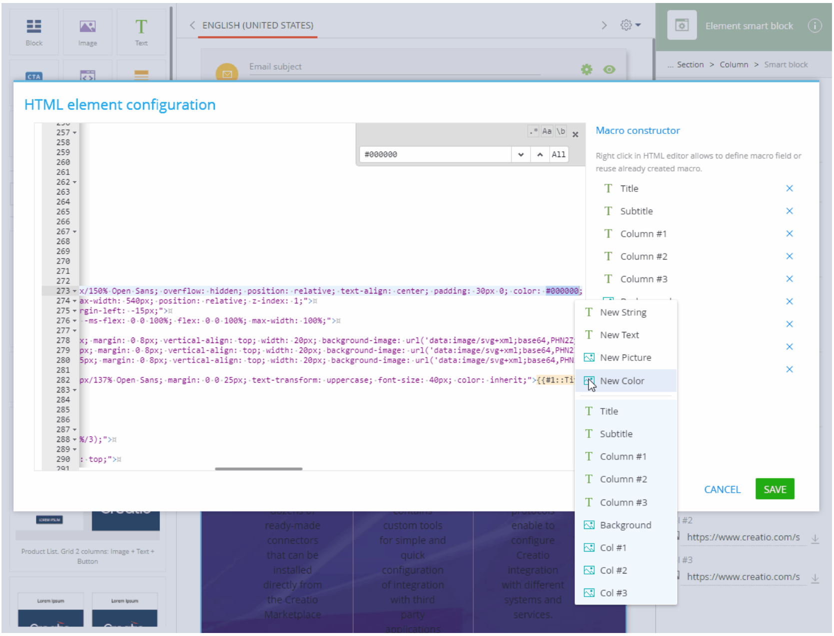
NOTE

The field supports Data URIs. You can insert a base64-encoded image instead of a URL.
Base64-encoded images are part of the HTML code of the message and are not normally filtered by email clients that prevent external images from loading by default.

Color macros

Use this macro type to replace or provide color definitions for embedded style sheets and in-line element styles (Fig. 41).

Fig. 41 Configuring “New Color” macro



When a new “Color” macro is created, the Content Designer generates a color picker field mapped to the macro. Use the field to pick a color for your macro. The macro will generate a hexadecimal RGB color code, preceded with the “#” sign, e.g. “#0d2e4e”.

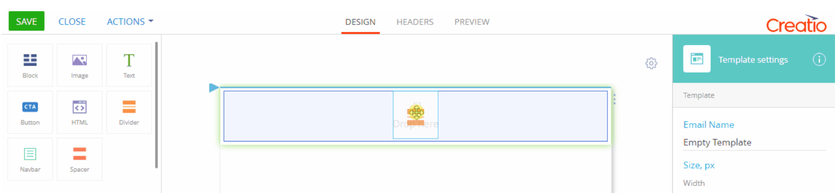
SEE ALSO

- Content Designer element reference
- Create a simple template
- Configuring an email template

Divider

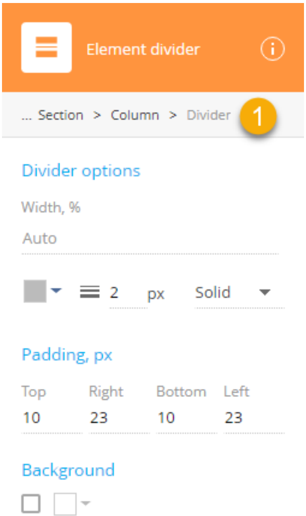
The [Divider] element (Fig. 42) is used for separating adjacent elements with horizontal lines or margins.

Fig. 42 Adding a divider



You can use the setup area to configure the height of the divider and the color and width of the horizontal line.

Fig. 43 Divider setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block and template) elements.
Divider options	Use this settings group to configure the width of the horizontal line, its color, width, and style.
Padding, px	Specify the distance (in pixels) between the horizontal line and each of the borders of the divider. Padding is specified separately for each side.
Background	Use this settings group to toggle background options on and off, and to select the background color.

SEE ALSO

- Navbar

Navbar

The [Navbar] element (Fig. 44) is a navigation bar containing a list of menu links. The navbar element can be configured differently for mobiles.

Fig. 44 Adding a [Navbar]

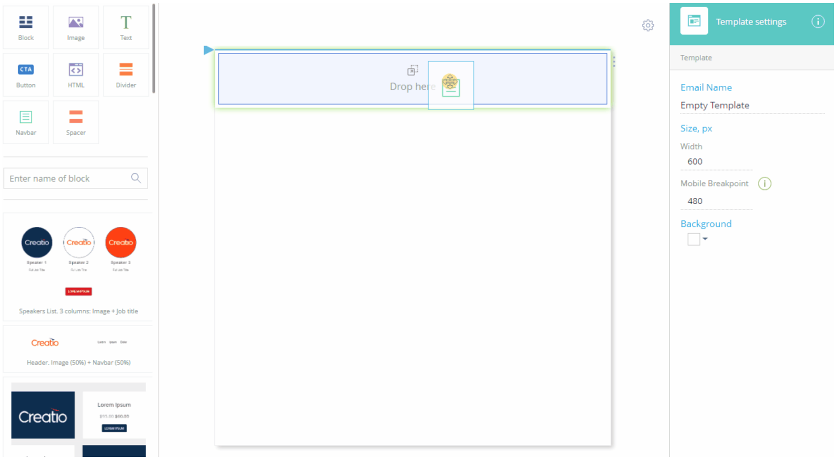
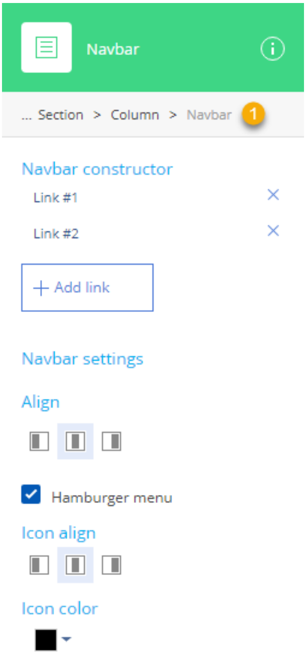


Fig. 45 Navbar setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block and template) elements.
Navbar constructor	Add, remove, and move the navigation links. To access the setup area of a navlink, click the corresponding item in the navlink list. Click [Add link] to add a link Click × to remove a link (last link cannot be removed).
Align	Align the navlinks in the navbar.
Hamburger menu	Enable “hamburger” menu on mobile devices, displaying menu links one over another.
Icon align	Align the hamburger menu icon horizontally (left , center or right). This property is only available if the hamburger menu is enabled.

Property	Function
Icon color	Click to update the hamburger menu icon color. This property is only available if the hamburger menu is enabled.

Navlink

The [Navlink] element (Fig. 46) is a navigation link for the parent navigation bar containing a list of navigation links.

Fig. 46 Adding navlink

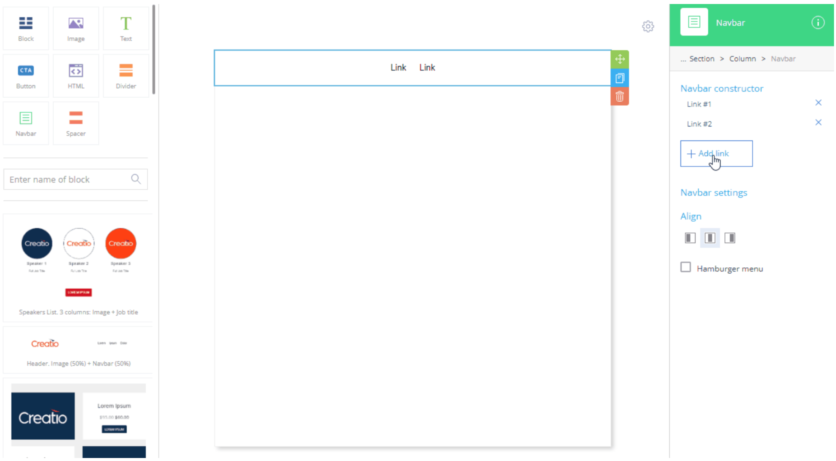
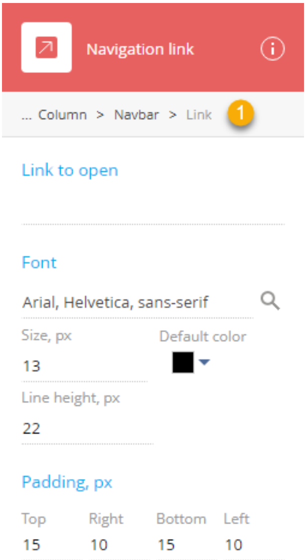


Fig. 47 Navlink setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block and template) elements.
Link to open	Provide the URL to the desired destination in the [Link to open] area.
Font	Use this settings group to configure the font settings of the link. [Content builder font set] – select the font family of the menu link from the list of registered font families. To modify the list of fonts used in your template, update the “Content builder font set” lookup. Read more in the “Updating available Content Designer fonts” article. [Size, px] – specify the width and height of the font in pixels. Click to open the color picker and select the font color. [Line height, px] – specify the spacing between the lines and the borders of the button. The maximum line height is 250px; the minimum line height cannot be less than the size of the font.
Padding, px	Specify the distance (in pixels) between the text and each of the borders of the container. Padding is specified separately for each side.

SEE ALSO

- Spacer

Spacer

The [Spacer] element (Fig. 48) is used for separating adjacent elements with empty spacer (an invisible horizontal line).

Fig. 48 Adding the [Spacer] element

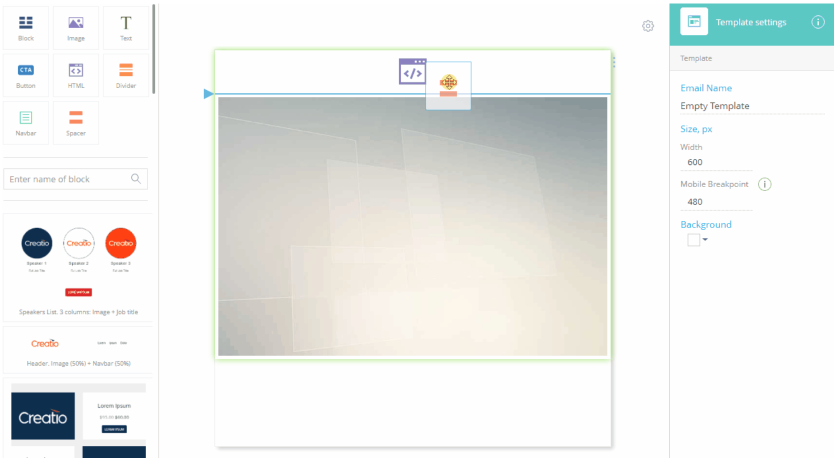
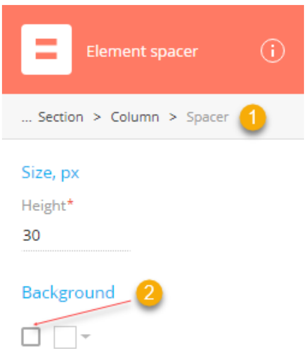


Fig. 49 [Spacer] setup area



Property	Function
Breadcrumb navigation (1)	Use “breadcrumbs” at the top of the setup area to navigate the parent (column, section, banner, block and template) elements.
Size, px	Update the [Height] field to specify the thickness of the spacer.

Property	Function
Background	Set background color for the spacer. Background style settings are disabled by default. Select the checkbox (2) to enable them. Clear this checkbox to disable all background settings of the current spacer. Click to open the color picker and select the background color.

SEE ALSO

- Content Designer element reference
- Updating available Content Designer fonts
- Configuring an email template

Updating available Content Designer fonts

You can expand the list of fonts used in your email templates. When using rare fonts you can have your messages displayed in these fonts for your customers, even if they initially do not have these fonts. This article covers adding and embedding custom fonts in Creatio Content Designer, as well as customizing other font settings.

- Adding a custom font enables you to select it in the [Font] property in the setup area of [Text], [Button], and [Navlink] elements. Read more >>>
- Embedding a custom font enables the recipient's email client application to request the font via the specified URL and display the message in that font, as opposed to switching to "fallback" fonts. Read more >>>
- Modifying a font in the Content Designer to rename a font family or add, change, delete, and rearrange the fonts in the font-family. Read more >>>

Adding a custom font

Use the "Content builder font set" lookup to manage the list of fonts. To add a custom font (e.g., "Parchment"):

1. Click in the main Creatio application. The System Designer will open.
2. Click [Lookups] in the [System setup] block in the System designer.
3. Click [Filters/folders] –> [Add filter].
4. Fill in the [Name] field with the "Content builder font set" value.
5. Press the [Enter] key or click .
6. Click [Open content].
7. Click [New].
8. Specify the font family name in the [Name] column on the left. For example, specify "Parchment."
9. Specify the font family value in the [Fonts] column on the right. The font family value is a prioritized comma-separated list of the primary font and fallback fonts, from most preferable

to least preferable. We recommend adding at least one generic font family as a fallback font. For example, specify "Parchment, cursive."

10. Click .

As a result, a new font family will be available in the [Font] property in the setup area of [Text], [Button], and [Navlink] elements as soon as the new item is saved.

Note that adding a custom font and then using it means that the email clients will be instructed to apply the font whether it is available in the client application or not. If the email client fails to apply a font, it will use the next fallback font in the font family list. If the email client exhausts the list of fallback fonts, it will apply a default font.

If you expect that your custom font will not be available in most client applications, make it an embedded font.

Embedding a custom font

Use the "Content builder customer fonts" lookup to manage embedded fonts. To embed a font (e.g., "Montserrat"):

1. Click in the main Creatio application. The System Designer will open.
2. Click [Lookups] in the [System setup] block in the System designer.
3. Click [Filters/folders] –> [Add filter].
4. Fill in the [Name] field with the "Content builder customer fonts" value.
5. Press the [Enter] key or click .
6. Click [Open content].
7. Click [New].
8. Specify the font family in the [Name] column on the left. For example, specify "Montserrat."
9. Specify the font URL in the [URL] column on the right. For example, specify https://fonts.googleapis.com/css2?family=Montserrat:wght@200&display=swap

   NOTE
   The value of the [URL] column is not restricted to the API URLs of Google Fonts. The [URL] field can be populated with the link to any font available online, including a self-hosted font.

10. Click .
11. Log out of the application and log back in to apply changes.

    ATTENTION
    We do not recommend relying too much on embedding custom fonts. Some email client applications lack the feature to import custom fonts and will always use a fallback or default font.

Editing a Content builder font

Use the "Content builder font set" lookup to manage font properties. To edit a font (e.g., "Parchment"):

1. Click in the main Creatio application. The System Designer will open.
2. Click [Lookups] in the [System setup] block in the System designer.

3. Click [Filters/folders] –> [Add filter].
4. Fill in the [Name] field with the “Content builder font set” value.
5. Press the [Enter] key or click .
6. Click [Open content].
7. Click the entry to edit. For example, click the [Parchment] entry.
8. Redefine the font family name in the [Name] column on the left. For example, change it to “MyCursives.”
9. Redefine the font family value in the [Fonts] column on the right. For example, add Pristina as the first fallback font: “Parchment, Pristina, cursive.”
10. Click .

As a result, if the Parchment font is not available in the email client application, the application will now attempt to apply Pristina before defaulting to the “cursive” generic font.

SEE ALSO

- Content Designer element reference
- Configuring an email template

Configuring an email template

The Content Designer is a visual drag&drop editor that enables creating email templates that look great on desktop and mobile devices.

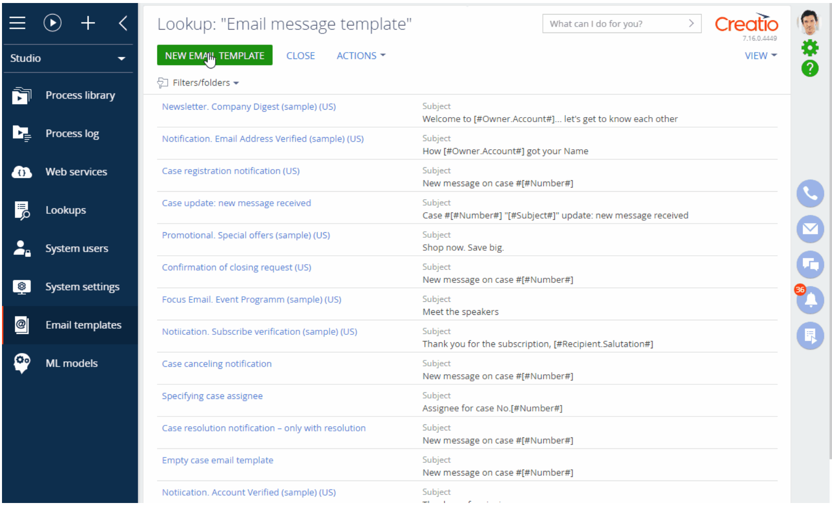
You can use the Content Designer to design templates with complex layouts, such as marketing emails, newsletters, greeting cards, etc. Working in the Content Designer does not require an in-depth understanding of HTML: Creatio generates the code automatically based on the layout that you design in the visual editor.

> CASE
>
> Configure a mobile-optimized company news digest email template. The template should have a header with navigation bar, a banner, top 3 features or products and a “call to action” button.

I. Add a new template in the [Email templates] lookup

1. Go to the [Studio] workplace and select [Email templates] (Fig. 1).

Fig. 50 Adding a new template

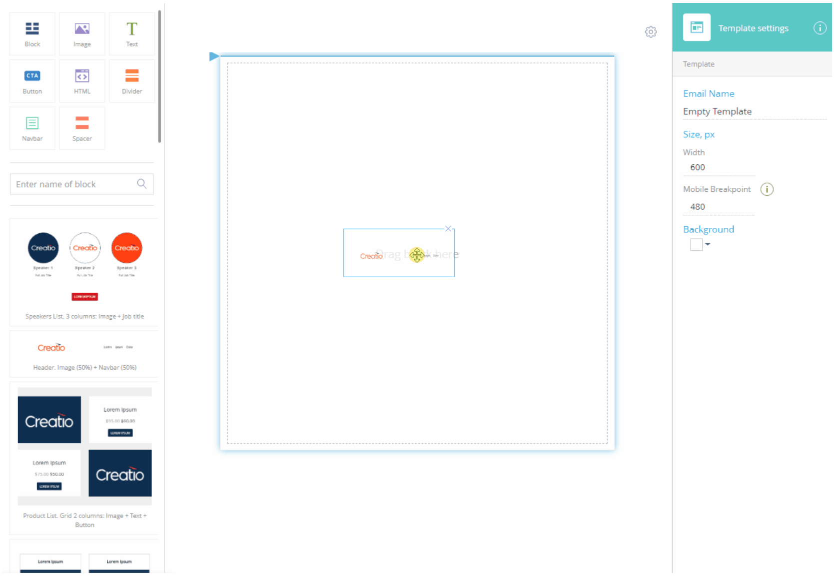


2. Click the [New email template] button.
3. On the opened page, specify the template name, e.g., “Introduction email.”
4. Click the [Edit] button next to the [Emil template] block to open the Content Designer.

II. Design your template in the Content Designer

1. Set up the template header (Fig. 51):

Fig. 51 Adding a header



a. Drag&drop the “Header. Image (50%) + Navbar (50%)” element from the block library into the working area.

b. Click the navlinks to edit their captions.

c. Specify the destination of each link in the setup area on the right. Remove the “#” prefix to treat the value as a URL. Leave the prefix to treat the value as a local anchor.

d. Click [Navbar] –> to remove extra navlinks. Alternatively, you can add more navlinks by clicking [Add link].

e. Select the [Hamburger menu] checkbox to display the navigation menu as a collapsible hamburger menu on mobile clients.

f. Click to make the navigation menu float on the right.

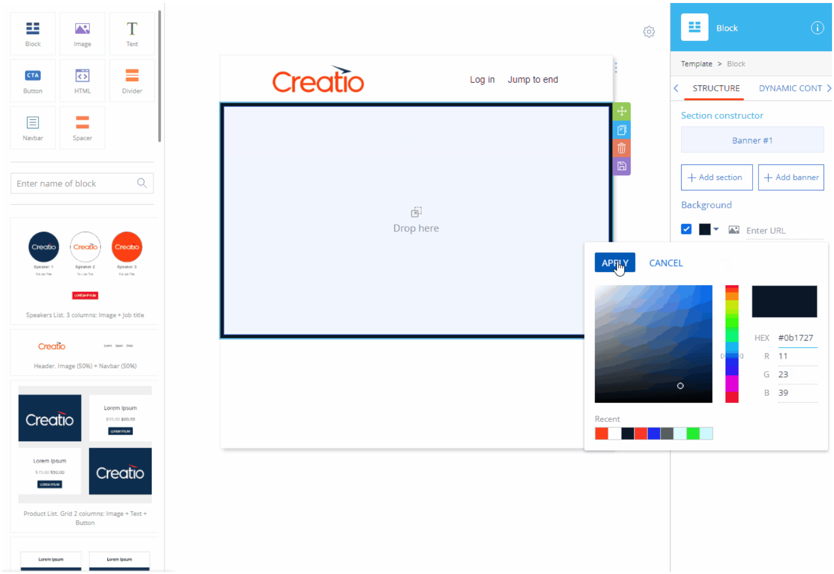
g. Click [Section] and select the [Reverse the order of columns on mobile] checkbox to push the logo under the navigation on mobile clients ().

NOTE

If the [Reverse the order of columns on mobile] checkbox remains cleared, the image in the left column will display above the navigation menu on mobile devices.

2. Set up a banner (Fig. 52):

Fig. 52 Adding a banner



a. Drag&drop the [Block] element from the element toolbar into the working area.

b. Click [Add banner] in the setup area on the right.

c. Click × to the right of the [Section #1] to remove the section.

d. Select the background settings checkbox at the bottom of the setup area.

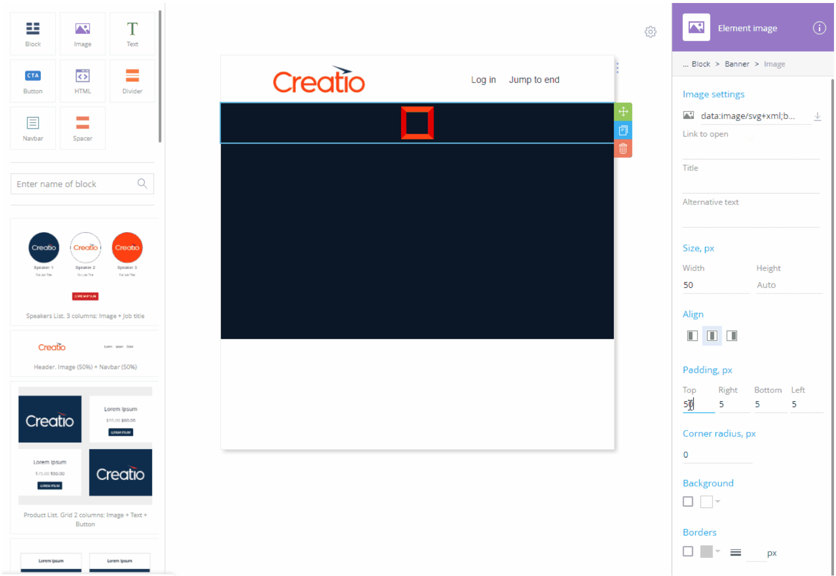
e. Click under [Background], select the background color of the block and click [Apply].

NOTE

We recommend setting up a background image of the banner after all banner elements are added and configured. There are two reasons for that: the background image is practically indistinguishable when not a single banner element has been added and the contents of the banner may affect the height of the banner and, consequently, the background image layout.

3. Add an image on top of the banner (Fig. 53):

Fig. 53 Adding an image



a. Drag&drop the [Image] element.

b. Click to clear the field in the setup area on the right.

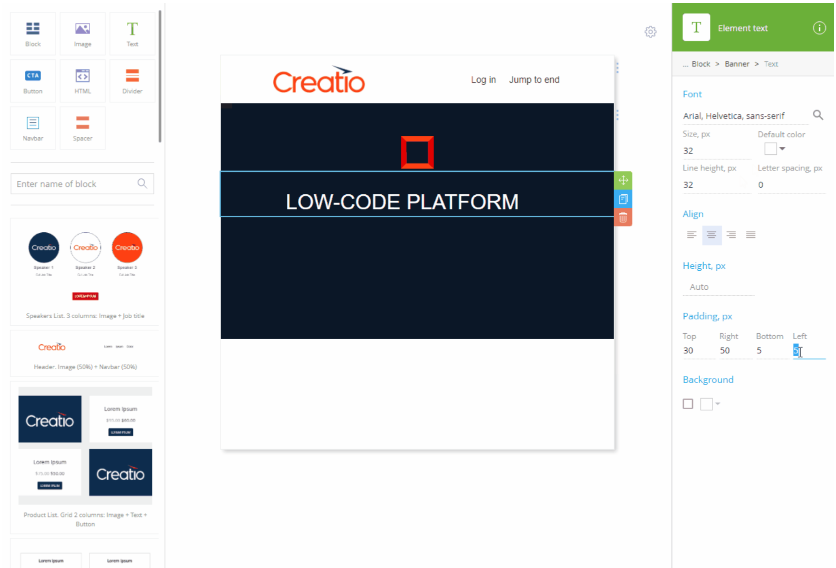
c. Upload the image from your computer or provide the URL of the image or a data URI containing the image.

d. Specify the desired width of the image in the [Size, px] property.

e. Specify the desired padding settings.

4. Add a title to the banner (Fig. 54):

Fig. 54 Adding a title



a. Drag&drop the [Text] element.

b. Click ▾ in the [Font] property in the setup area to open the font color picker. Select the font color and click [Apply].

c. Replace the placeholder text with the title text.

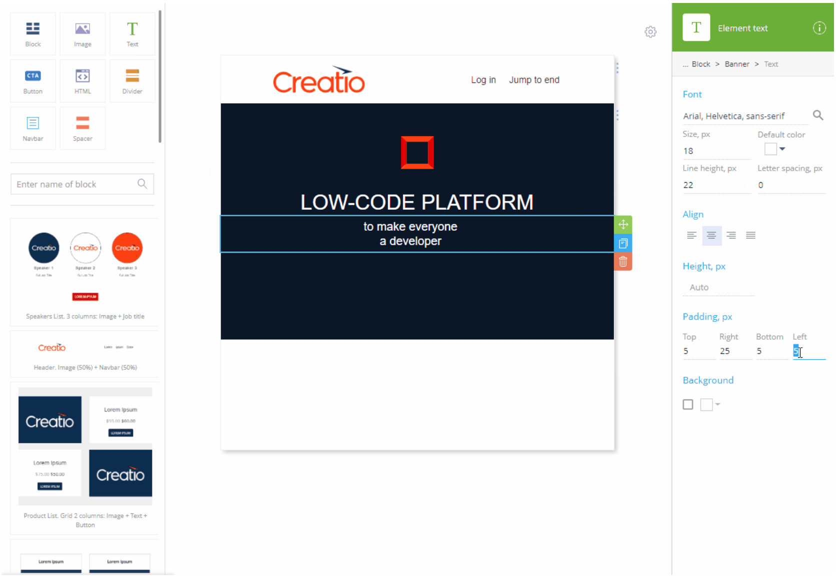
d. Specify the font size using the [Size, px] field.

e. Click to align the text.

f. Specify the desired padding settings.

5. Add a subtitle to the banner (Fig. 55):

Fig. 55 Adding a subtitle

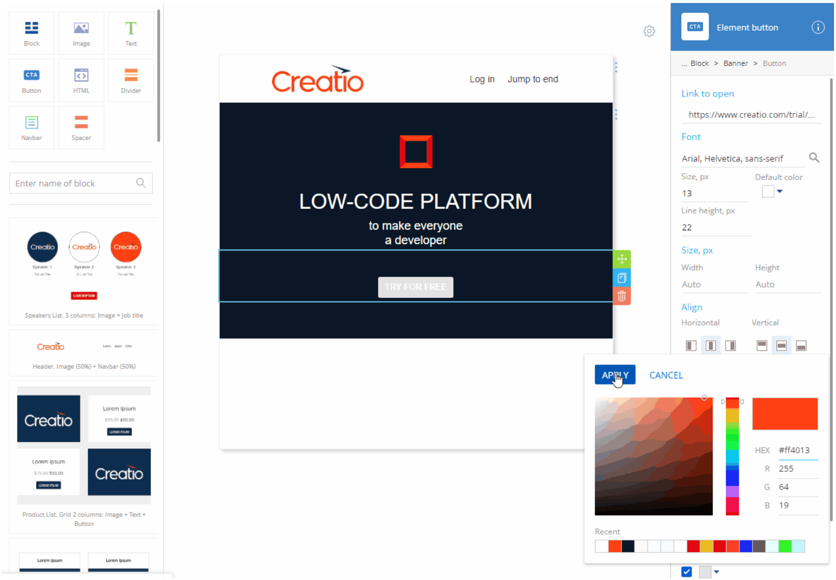


a. Drag&drop the [Text] element.

b. Repeat steps (b) through (f) from the title instruction, using a different value for the font size.

6. Add a button to the banner (Fig. 56):

Fig. 56 Adding a CTA button



a. Drag&drop the [Button] element.

b. Replace the default text with your text.

c. Specify the link to open in the [Link] field.

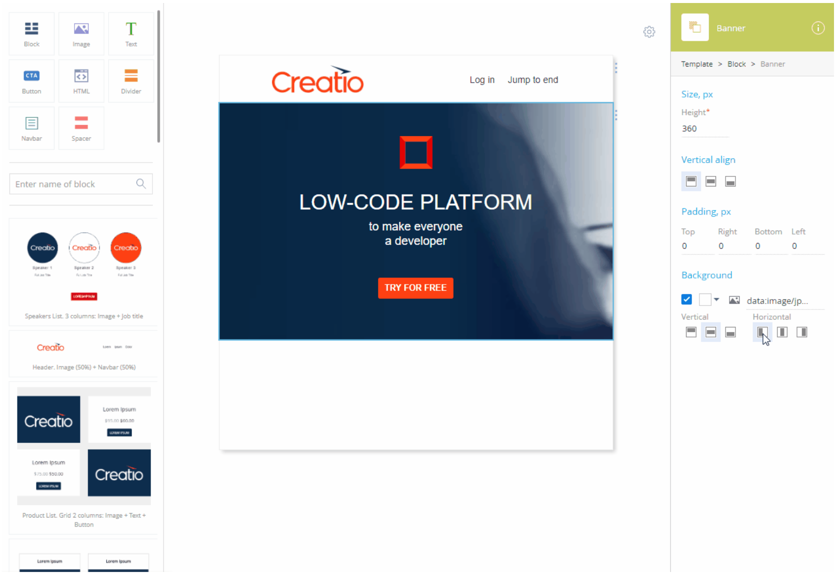
d. Click in the [Font] property in the setup area to open the font color picker. Select the font color and click [Apply].

e. Use the [Margin, px] property to specify the margin of the button.

f. Click at the bottom to open the color picker. Select the background color of the CTA button and click [Apply].

7. Add the background image to the banner (Fig. 57):

Fig. 57 Adding a banner background image



a. Select the banner using the “breadcrumbs” navigation.

b. Click × to clear the field in the [Background] property.

c. Upload the image from your computer or provide the URL of the image or a data URI containing the image.

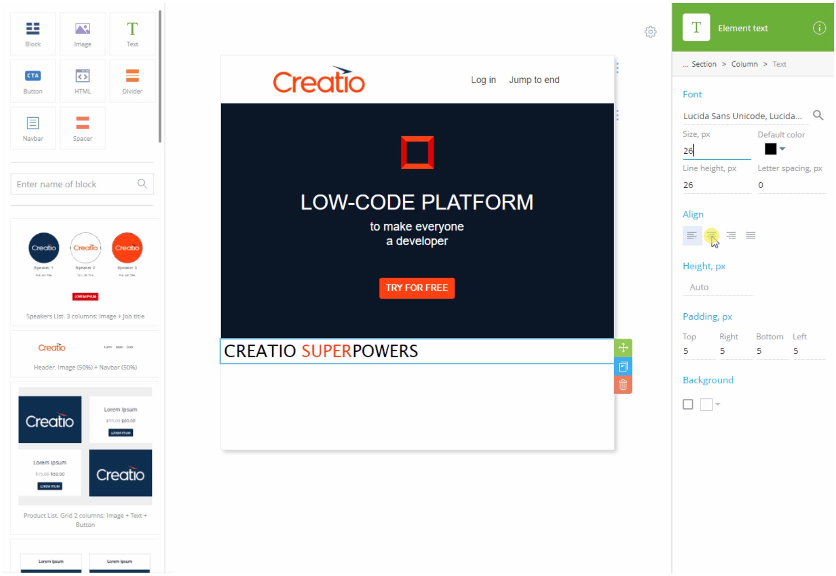
d. Use the , , and buttons to align the image vertically and the , , and buttons to align the image horizontally.

NOTE

The background image will keep the aspect ratio but will otherwise stretch or shrink to fill the banner. Depending on the ratio of the image or the banner, you can align the image either horizontally or vertically, not both.

8. Add a subtitle (Fig. 58):

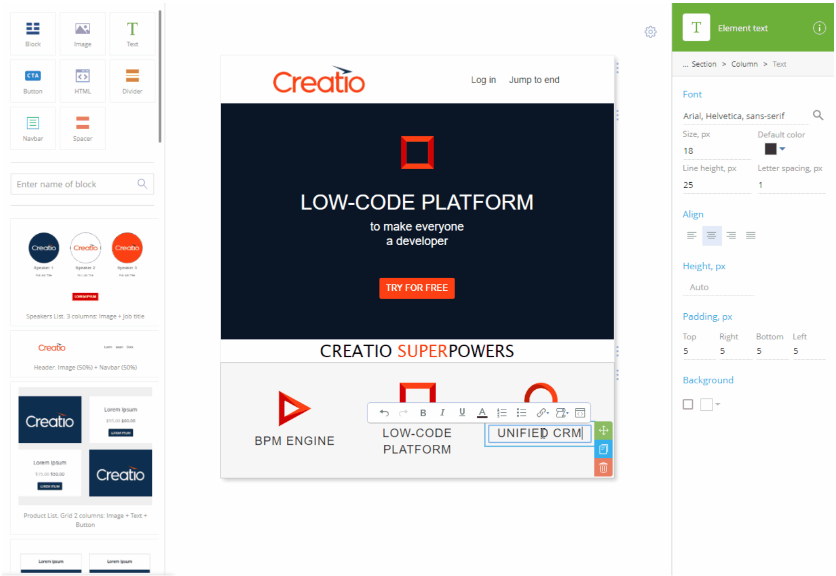
Fig. 58 Adding a feature subtitle



a. Drag&drop the [Block] element.
b. Drag&drop the [Text] element on the new empty [Block] element.
c. Replace the default text with your text.
d. Specify the font family of your text using the lookup in the [Font] property.
e. Specify the font size using the [Size, px] field.
f. Click to align the text by center.

9. Add a feature block (Fig. 59)

Fig. 59 Adding a feature block



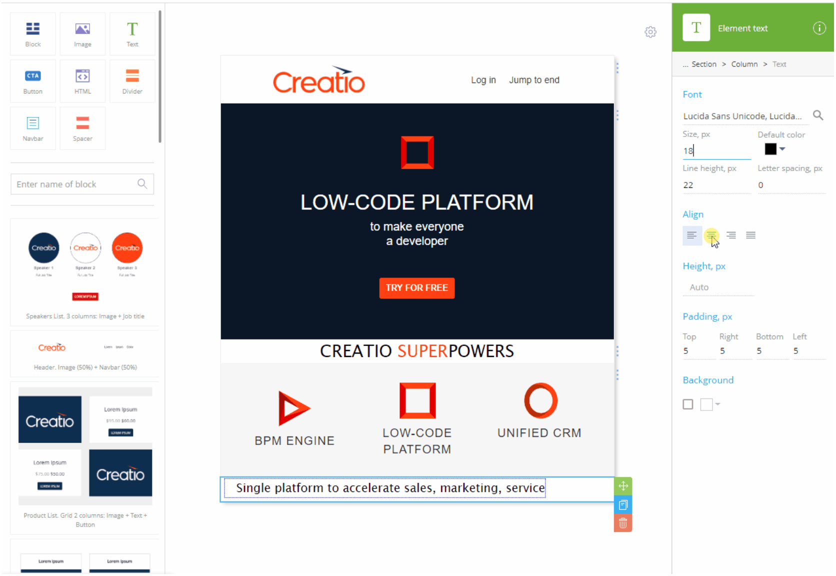
a. Drag&drop the "Product list. 3 columns: Image + Text + Button" block from the Content Library.

b. Delete unneeded elements.

c. Replace the default text in the columns with your text.

10. Add a summary text (Fig. 60) the same way you added the subtitle after the banner on step 9.

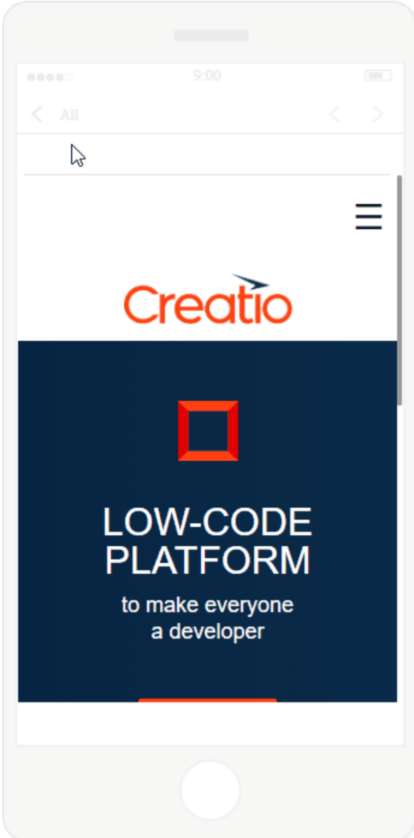
Fig. 60 Adding summary text



11. Click [Save].

    As a result, a new template will be created. It will be already optimized for Desktop and mobile (Fig. 61).

Fig. 61 Template on mobile and desktop:



SEE ALSO

- Block
- Sections
- Navbar
- Image
- Text
- Button
- Personalize email templates with macros

Personalize email templates with macros

Add macros to personalize templates with personal data, e.g. the name of the recipient, their job title, etc. When sending an email, Creatio replaces the macros with the corresponding values that are specific to the email recipient or sender.

How email template macros work

Macros add data from the creation database columns to the email text. The following data is available:

- Basic macros. Field values from the recipient's and sender's contact profile as an email template macro. For example, name, salutation, job title, etc.
- Custom macros. Data from the records that are linked to the recipient's or sender's contact records.

  For example, you can add values from the account profile, specified in the [Account] field in the recipient's contact profile.

Add a basic email template macro

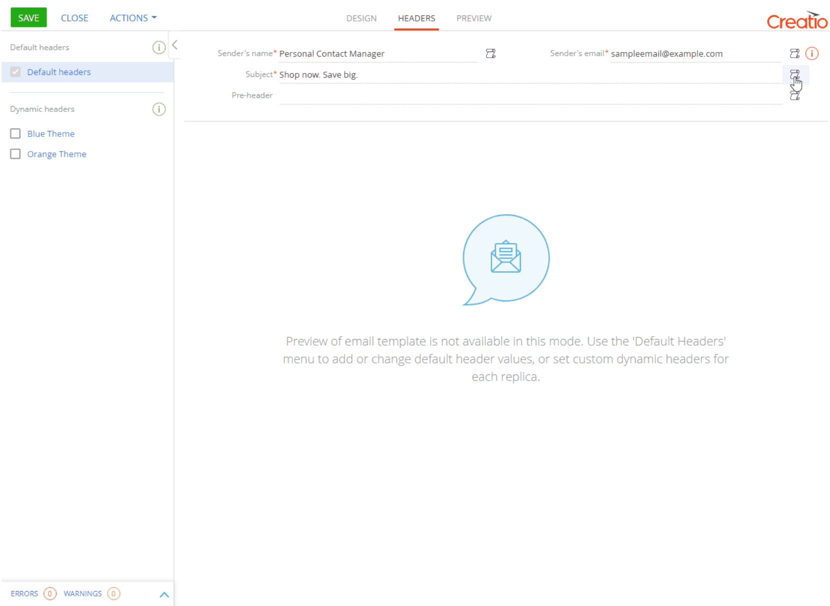
You can personalize the subject text of bulk and trigger emails using macros.

CASE

Add the recipient's salutation to email text.

To do this (Fig. 62):

Fig. 62 Adding macros to the email subject



1. Open the email template in the Content Designer.
2. Click the macro button –> [Basic macro] in the toolbar at the top of the [Text] element.
3. Click –> [Basic macro] in the toolbar at the top of the [Text] element.
4. In the "Recipient" group, select the "Salutation" macro and click the [Select] button.
5. Save the template.

ACCELERATE

6. As a result, the [#Recipient.Salutation#] macro will be added to the selected email area. In the actually sent emails, the macro will be replaced with the value of the [Recipient's name] field.

Add a custom email template macro

Custom email macros are covered in the BPMS documentation.

Common email template macros

MACRO	DEFINITION
	Unsubscribe macros
[#Unsubscribe.URL#]	Adds the unsubscribe function as a direct link to the unsubscribe page.
	Recipient information macros
[#Recipient.Contact name#]	First and last name of the recipient.
[#Recipient.Title#]	Honorific of the recipient, for example, "Mr" or "Mrs".
[#Recipient.Salutation#]	The way you refer to the recipient, e.g., by their first name or by title.
	Email owner information macros
[#Owner.Contact name#]	Last name, first name and honorific (if available) of the employee who is responsible for the email.
[#Owner.Salutation#]	The way you refer to the employee, e.g., by their first name or by title.
[#Owner.Business phone#]	Communication option of the employee who is responsible for the email.
[#Owner.Mobile phone#]	
[#Owner.Skype#]	
[#Owner.Email#]	
[#Owner.Job name#]	Job title of the employee who is responsible for the email.
[#Owner.Job title#]	Job title of the Creatio user responsible for the email. For example, "VIP customer manager".
[#Owner.Department#]	Company division where the user responsible for the email works.
[#Owner.Account#]	Your company name.
[#Owner.Account address#]	Your company address.
[#Owner.Account primary phone#]	The primary phone number for your company.
[#Owner.Account fax#]	Your company fax.
[#Owner.Account web address#]	Your company website.
	Contact owner information macros

MACRO	DEFINITION
[#Contact.Owner.Name#]	Name of the manager of an email participant – the user specified in the [Owner] field of the recipient's contact. This macro is available only in the [Sender's name] field of the template header to send emails on behalf of the employee responsible for each email participant
[#Contact.Owner.Email#]	The email address of the manager of an email participant – the primary email address of the user specified in the [Owner] field of the recipient's contact. This macro is available only in the [Sender's email] field of the template header to send emails from the email addresses of the employees responsible for email participants.

NOTE

If you want to specify additional contact information in your emails, e.g., the total amount of an order paid by a recipient, install a free "Detail macros in the content designer" marketplace application.

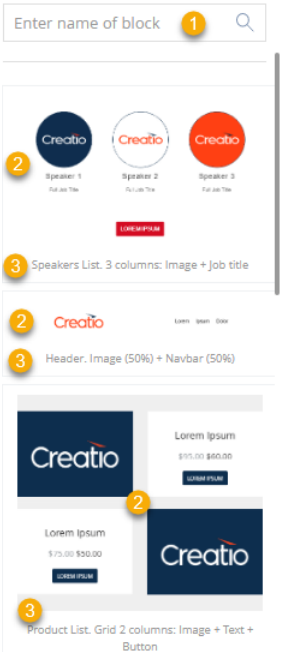
SEE ALSO

- Create a simple template
- How to use email templates in business processes

Reusable content blocks

Once you add a [Block] element to a template and populate its sections and columns with other content designer elements, you can save this block in the Content block library for future use. The list of blocks from the content block library is displayed on the left side of the Content Designer. Drag&drop ready-made blocks from the library to the working area to add them to your email or edit them.

Fig. 63 Content block library



(1) – search field. Use it to filter blocks by name.

(2) – content blocks. The thumbnail of each content block displays the entire layout of the block and not just a portion of it.

(3) – block names. The names of the default blocks describe their purpose and structure.

Every content block in the library is a saved [Block] element, populated with other elements:

- Sections
- Columns
- Banners
- Text
- Images
- Buttons
- Dividers
- Spacers
- HTML
- Navbars
- Navlinks

Saving new content block

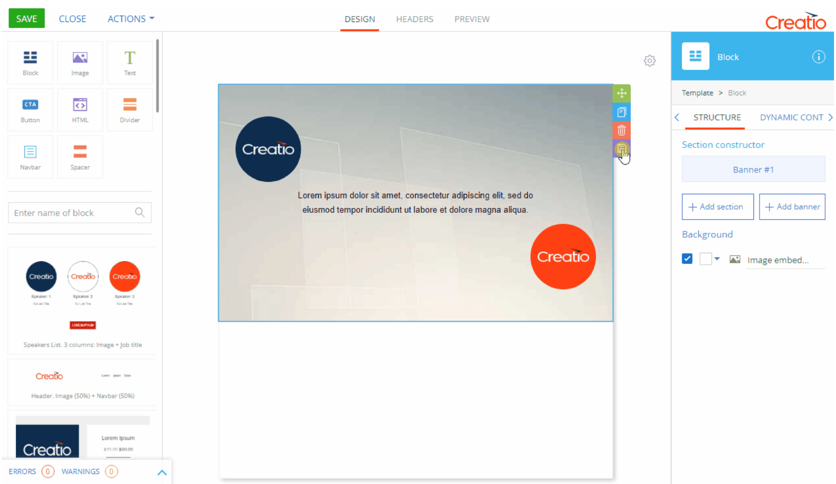
1. Open the template that contains the needed block in the Content Designer.
2. If necessary, modify an existing block or create a new one.
3. Make sure that the desired [Block] element is selected.
4. Click in the context menu on the right. A prompt box will pop up.
5. Populate the [Block name] field. This name will display under this content block in the block library.

NOTE

We recommend naming the blocks in a way that would describe their contents and purpose of the content block. Such an approach helps find the content block when you work with templates in the Content Designer.

6. Click [Save].

Fig. 64 Saving a new block



The new block will appear in the library of the Content Designer.

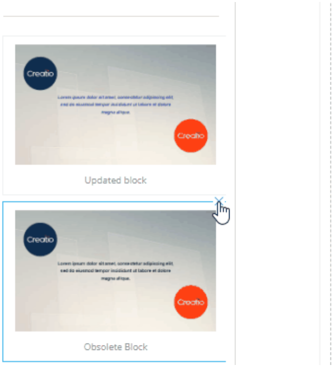
Editing an existing block from the Content Library

To edit a block, drag&drop it into the working area. Edit and save the block. Delete the old versions of the block if no longer needed.

Deleting a content block from the content library

To delete a block from the library, hover the mouse pointer over the block you want to delete. A frame will appear around the element. Click × in the top right corner (Fig. 65).

Fig. 65 Deleting a content block



SEE ALSO

- Content Designer
- Marketing Content Designer
- Configuring an email template

Localizing email templates

You can add translations of email templates to ensure that your recipients receive notifications in their preferred language. The translations are stored on separate Content Designer tabs.

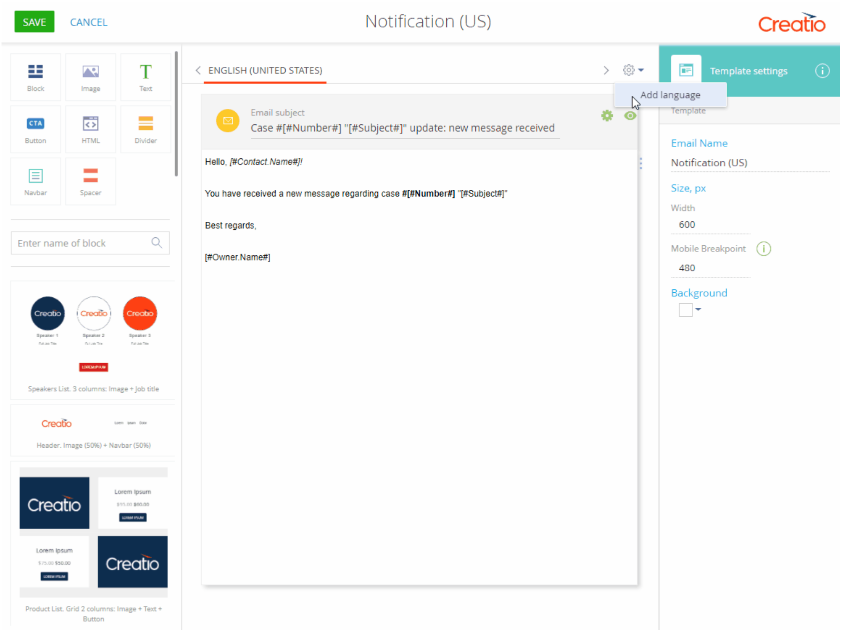
When sending automated notifications using a localized template, Creatio will use the translation that corresponds to the language specified in the [Preferred language] field on the contact page. If this field is not populated, Creatio will send notifications in the language specified in the "Default language for messages" (DefaultMessageLanguage) system setting.

NOTE

Learn more about specifying the language when sending email notifications in the "Setting up sending localized emails" article.

To add localizations to a template (Fig. 66):

Fig. 66 Adding localization to an email template



1. Open a template in the Content Designer: go to [Studio] > [Email templates], open the needed template, then click [Edit].
2. Click –> [Add language]. A menu with a list of languages will open. Select a template language you want to add.

   ## NOTE

   The list of email template languages is stored in the [Customer languages] lookup. The menu displays active languages only (the ones, where the [Is used] checkbox is selected in the lookup). If there are no active languages in Creatio yet or you want to add a tab with the language that has not been activated, select the [Add language] menu option and select a new language from the lookup. The [Is used] checkbox for this language will be selected automatically.

3. After you select a language, Creatio will prompt you to copy the content of an existing template to the new tab. Copying an existing template will help you save time on creating the layout of the localized template.

   Repeat steps 1 and 2 for each additional language. As a result, several tabs for creating emails in the selected languages will be displayed on the template page.
4. Use the Content Designer to set up localized content on each new tab.
5. To preview how your email will look for the recipients, use the preview mode. To do this, open the template in the Content Designer, click the tab with the localization you want to preview and click in the right top corner of the working area.

NOTE

The preview mode displays the template in the language of the currently selected tab. To preview another language, select the necessary tab before opening the preview mode.

6. Save the changes.

NOTE

When you copy a localized template, all its translations will be copied as well.

NOTE

In emails with localized templates, macros take the recipient's preferred language into account. For example, if a contact's preferred language is English, such contact will receive an English version of the template. All data displayed in the text via macros will also be in English, regardless of which language was originally used to specify this data in Creatio.

SEE ALSO

- Setting up sending localized emails
- The [Email templates] lookup
- Content Designer

Set up MS Word reports

Use the MS Word reports to generate print-ready documents based on the section records. For example:

- Use reports of the [Contracts] section to print contracts.
- Use reports of the [Contacts] section to print contact summaries.
- Use reports of the [Activities] section to print out emails, minutes of meetings, etc.

NOTE

You can export reports as *.DOCX files. Use Microsoft guides to protect the exported report files from editing.

Adding a new MS Word report in Creatio involves the following general steps:

1. Add a new report record in Creatio. Select the section where the report will be available. Set up a list of Creatio database columns whose data will be pulled to your report. Learn more about creating reports in the "Add a new MS Word report in Creatio" article.
2. Use Creatio MS Word plug-in to design the report layout. You can customize the report page layout, styles, formatting, design the report tables, etc. For more on report layout customization, see "Design report layout via the Creatio MS Word plug-in".

ATTENTION

You will need to install the Creatio plug-in for MS Word to edit MS word reports.

CONTENTS

VIDEO TUTORIALS

- Reports

Installing Creatio plug-in for MS Word

Select Creatio plugin for MS Word depending on whether your MS Word application is 32 or 64 bit.

32-Bit MS Word installed on the 64-bit Windows:

- Download Creatio plug-in for 32-bit MS Word

64-Bit MS Word installed on the 64-bit Windows:

- Download Creatio plug-in for 64-bit MS Word

NOTE

You can determine whether your system is 32 or 64 bit using the Microsoft instructions.

ATTENTION

For proper installation of the plugin unpack the archive with installation files. If the installation is started directly from the archive, the archiver application can cause failures in the work of the installer.

Before installing the Creatio plug-in for MS Word, make sure that your computer runtime environment meets the plug-in software requirements.

Runtime environment requirements

Operating system (32-bit and 64-bit editions are supported):

- Windows 7 or higher

ATTENTION

The installation wizard will check whether the .NET Framework is installed, which is necessary for the plug-in to work. You can download .NET Framework free from the Microsoft website.

The plug-in supports:

- MS Word 2010
- MS Word 2013
- MS Word 2016
- MS Word 2019

ATTENTION

MS Word 2003 and MS Word 2007 are not supported.

Creatio MS Word plug-in Installation procedure

1. Make sure that the MS Word application installed on your computer is closed.
2. Launch the Creatio MS Word Report Designer.exe.

You can also install all necessary applications separately. To do so:

1. Install the following applications required for running the plug-in:
    - Primary Interop Assemblies Redistributable (setup file: PIARedist.exe);
    - WCF Data Services (setup file: WcfDataServices.exe);
    - Visual Studio Tools for Office Runtime Redistributable (setup file: vstor_redist.exe).

   These files are supplied along with Creatio. You can also download them from the Microsoft website.
2. Install the Creatio plug-in for MS Word (setup file: Creatio MS Word Report Designer.msi) supplied along with Creatio.

VIDEO TUTORIALS

- Reports

Add a new MS Word report in Creatio

Adding a new report involves the following general steps:

1. Add a new report record. Read more >>>
2. Set up the report data fields and tables. Read more >>>
3. If necessary, you can add Boolean fields, such as the [Do not use phone] checkbox, to your report. Use special macros to set up how Boolean fields display in the report. See the following articles for more information: “Basic macros in the MS Word reports” and “How to create macros for a custom report in Word”.

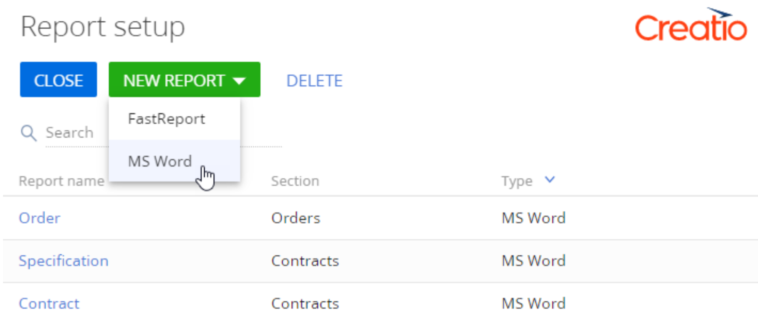
CASE

Let's have a look at setting up a "Meeting minutes" report in the [Activities] section.

Add a new MS Word report record in Creatio

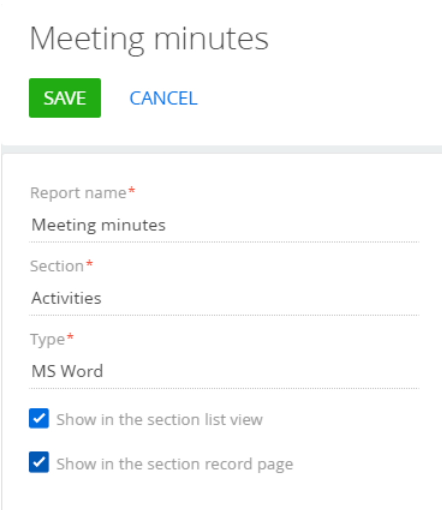
1. Log in to Creatio as an administrator and open the System Designer, e.g., by clicking .
2. Go to the [System setup] block and click [Report setup]. The [Report setup] section opens.
3. Click [New report] -> [MS Word] (Fig. 1).

Fig. 1 Adding an MS word report



4. Enter the new report name.
5. In the [Section] field, select a section where the report should be available. For example, to add a report in the [Activities] section, specify "Activities" in the [Section] field.
6. Select the [Show in the section list view] and [Show in the section record page] checkboxes, depending on where exactly the report should be available (Fig. 2).

Fig. 2 Adding a “Meeting minutes” report



Proceed to configure the report data fields and tables.

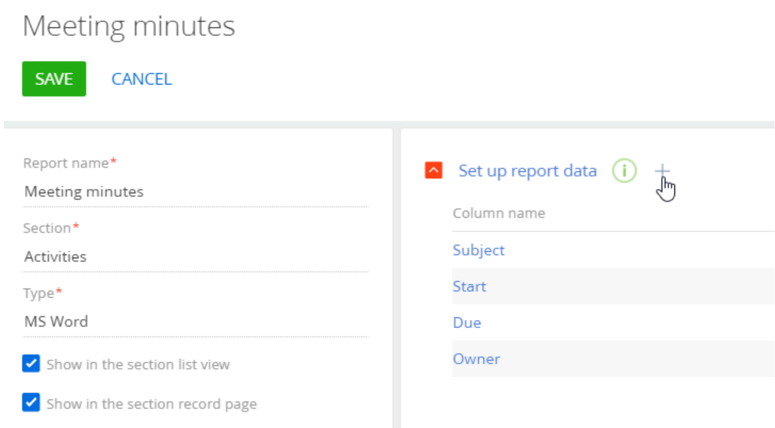
Set up the report data fields and tables

You can add simple data, such as a contact name or activity date, as well as table data, such as a list of tasks for a specific contact.

Set up the report fields

1. Open an MS Word report record in the [Report setup] section. For example, open the “Meeting minutes” report created earlier.
2. On the report page, under [Set up report data], click + .
3. A column selection window opens. Select all columns that hold the data required for the report (Fig. 3). For example, select the [Subject] column to be able to display the activity (i.e., the meeting) name in the report. To display the activity time frame, add the [Start] and [Due] columns.

Fig. 3 Setting up page fields



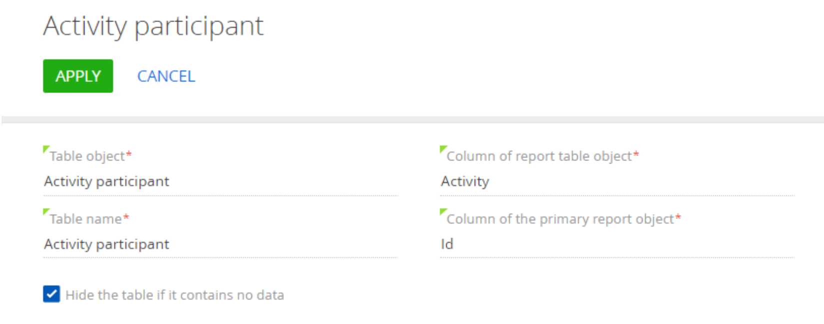
As a result, the columns will become available in the Creatio MS Word plug-in.

Set up the report tables

Tables display several records that are linked to the primary report record. For example, the primary record of the “Meeting minutes” report is an activity. Using tables, you can add a list of activity participants (records from the “Activity participant” object that are linked to the corresponding activity:

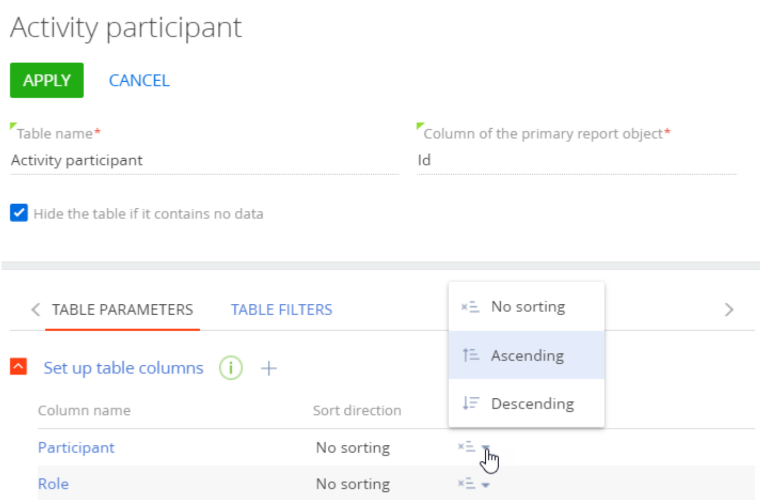
1. Open an MS Word report record in the [Report setup] section. For example, open the “Meeting minutes” report in the [Activities] section, created earlier.
2. On the report page, under [Set up report tables], click + .
3. Populate the fields on the report table page (Fig. 4):
   a. In the [Table object] field, select an object whose data will be used to create a table. For example, select the “Activity participant” object to add a table containing the list of the meeting participants.
   b. In the [Table name] field, specify the table title that will display in the Creatio MS Word plug-in.
   c. In the [Column of report table object] field, specify the column that will link the records in the table object to the primary report’s record. Creatio will apply a filter to the table records by this column.
   d. In the [Column of the primary report object] field, specify the column of the report section, whose value will be used to filter the table records. Usually, the [Column of report table object] matches the name of the report object (e.g., “Activity”), and the [Column of the primary report object] is the “Id” column. These fields determine which Creatio records will provide data for the report table rows.
   e. Select the [Hide the table if it contains no data] checkbox to avoid displaying empty tables in the report.

Fig. 4 General report table settings



4. On the [Table parameters] tab, set up the list of report table columns. Click + and select the column to add it to the list. For example, to create a list of activity participants with their names and roles, add the [Participant] and [Role] columns.
5. Set the sorting order of the table records. Click next to a column and select [Ascending] or [Descending] in the menu to sort the table records based on the values in that column. For example, set the [Ascending] sorting order for the [Participant] column to sort the list of participants alphabetically, by name (Fig. 5).

Fig. 5 Sorting the report table records



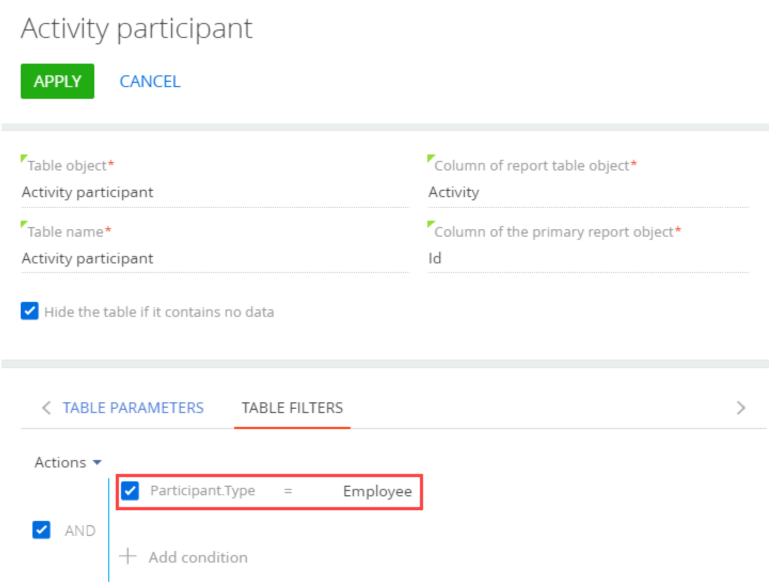
NOTE

To sort the table rows in the report by multiple columns, make sure that your MS Word template includes all the report table columns that are involved in the sorting rules. For more on adding report tables to the report templates, please see the "Design report layout via the Creatio MS Word plug-in" article.

You can sort table records by several columns. In this case, the column that is higher in the [Set up table columns] list will have a higher sorting priority.

6. Go to the [Table filter] tab and set up an additional filter whose conditions will define which records should be included appear in the report table. For example, you can display only those participants who are the company employees with the following filter: "Participant.Type = Employee" (Fig. 6).

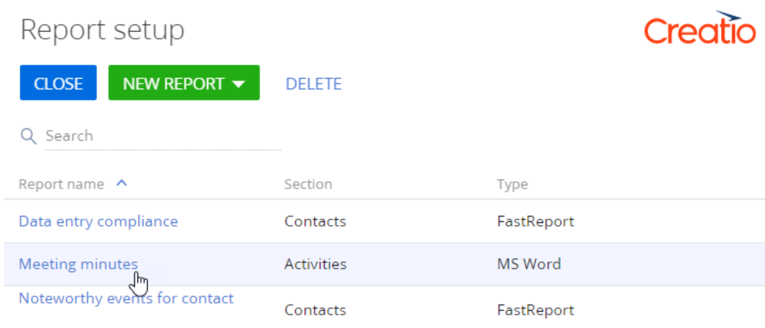
Fig. 6 Filtering records in a report table



7. Click [Apply] to save the report table settings. Click [Save] on the report setup page.

As a result, a new report will appear in the [Report setup] section (Fig. 7).

Fig. 7 Custom “Meeting minutes” report in the [Report setup] section



SEE ALSO

- Design report layout via the Creatio MS Word plug-in

VIDEO TUTORIALS

- Reports

Design report layout via the Creatio MS Word plug-in

You can customize the visual appearance of an MS Word report by editing its MS Word template and uploading the updated file to Creatio.

The Creatio report designer plug-in for MS Word must be installed to work with the report templates. You can learn more about the plug-in setup “Installing Creatio plug-in for MS Word” article.

MS Word report template setup includes the following general steps:

1. Download and edit the template in the Creatio MS Word plug-in. Read more >>>
2. Upload the updated template file to Creatio. Read more >>>

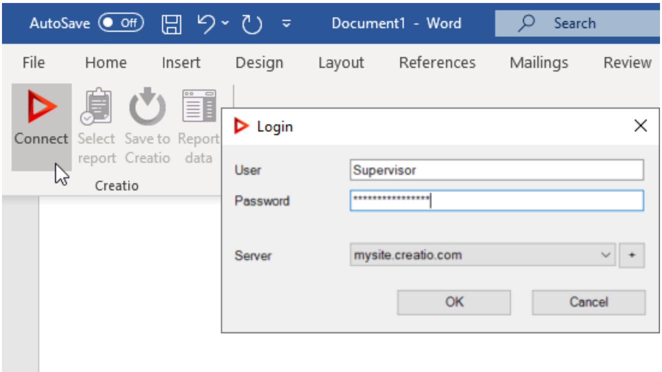
Use Creatio MS Word plug-in to edit any of the existing MS Word reports. Read more >>>

> **NOTE**
> You can use macros to set up reports. Base macros are covered in the “Basic macros in the MS Word reports” article. For more information about custom macros and adding them to the MS Word reports, please see the “How to create macros for a custom report in Word” article.

Download and edit the template in the Creatio MS Word plug-in

1. Open the report file in MS Word.
2. Click [Connect] on the Creatio plug-in toolbar (Fig. 8).
3. Log in to the system with your Creatio credentials.

Fig. 8 Connecting the MS Word report plug-in to Creatio



As a result, a list of columns for the selected report will be displayed in the right part of the MS Word window.

Adding fields to the template

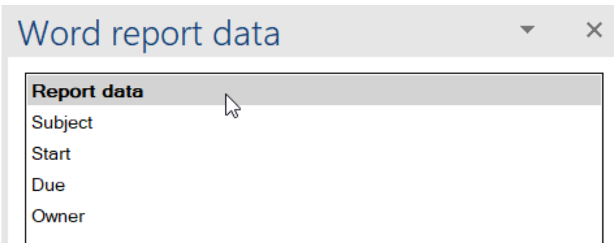
Before adding fields to a template, create a list of fields of the report in the [Report setup] section in Creatio. This procedure is covered in the "Set up the report data fields and tables" article. You can add fields to a report at any time.

In the template, the report fields are represented as the MS Word fields. When the report is generated, the field will contain data from the corresponding Creatio record. The list of available fields is displayed in the [Word report data] window (Fig. 9).

Adding all fields to a template

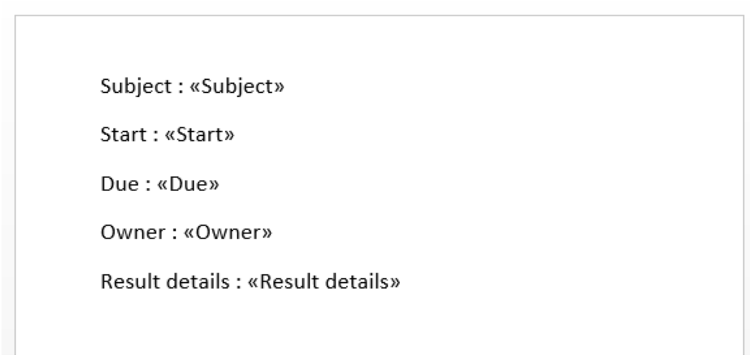
To add all fields to a template, drag a group of fields to the template page (Fig. 9).

Fig. 9 Adding a field group to a template



As a result, all fields and names of the corresponding Creatio columns will be added to the template in the following format: "Column name: Field" (Fig. 10).

Fig. 10 A report template with a field group

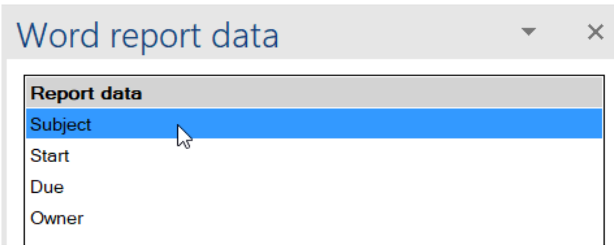


You can use standard MS Word tools to customize the added fields.

Adding individual fields to a template

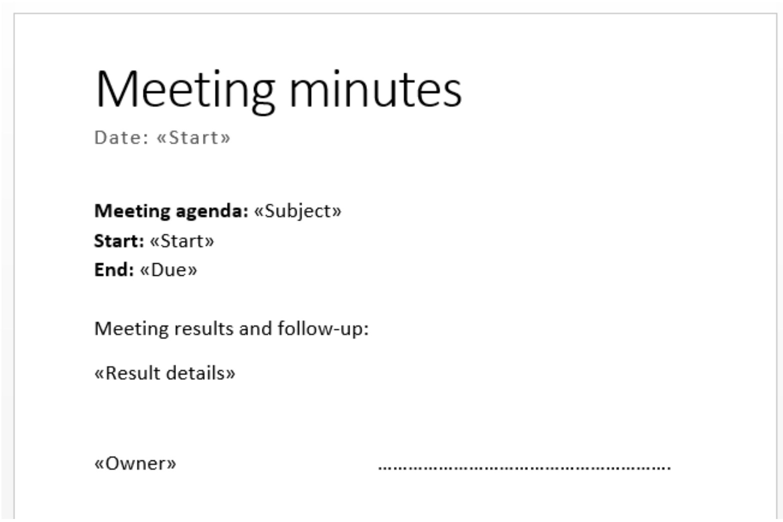
1. To add data to the template, drag the corresponding field on the page (Fig. 11).

   Fig. 11 Adding a field to the report template

2. As a result, a field will be added on the page. When the report is generated, the field will contain data from the corresponding system record in Creatio.
3. Add all other necessary fields as well as the text in the report (Fig. 12).

Fig. 12 A report with the added fields and static text



4. Save the report template.

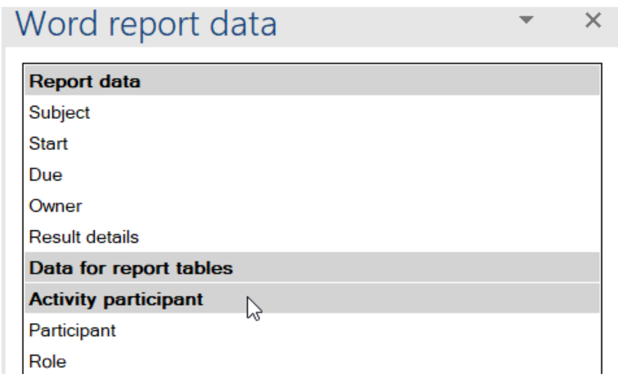
Adding table data to a template

Before adding tables to an MS Word template, set up the report tables in the [Report setup] section.

Quick adding of a table to a template

To add all table columns to a template, drag a group of table fields to the template page (Fig. 13).

Fig. 13 Adding all table columns to the template



As a result, the template will contain the table with all columns from the selected group. Titles of table columns will correspond to the titles of columns in Creatio.

Fig. 14 A report template with a table

Participant	Role
«Activity participant.Participant»	«Activity participant.Role»

You can use standard MS Word tools to customize the added table. The text in titles of the table columns can be edited. Fields placed in table cells determine the data that will be displayed in the column.

Add individual columns

1. Add a simple table with the required number of columns on the template page. Each column must comprise a title and one row (Fig. 15).

   Fig. 15 Adding a table to the template manually

2. Enter the text of the column titles (Fig. 16).

   Fig. 16 A table with static titles of columns

Participant	**Role**

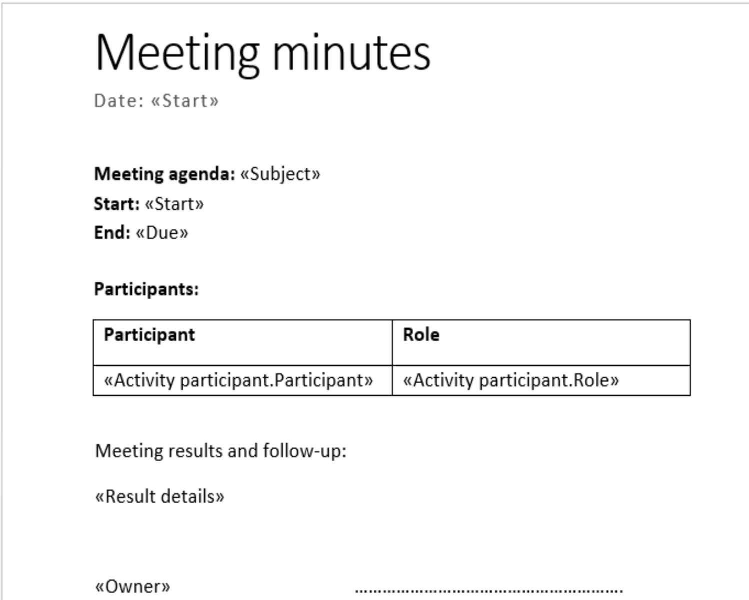
3. Drag a column title to an empty cell of the table which should display the data from this column (Fig. 17).

   Fig. 17 A table with fields added

Participant	**Role**
«Activity participant.Participant»	«Activity participant.Role»

4. Set up the template visual appearance by placing the table in the right part of the file (Fig. 18).

Fig. 18 Setting up a template visual appearance



Meeting minutes

Date: «Start»

Meeting agenda: «Subject»
Start: «Start»
End: «Due»

Participants:

Participant	**Role**
«Activity participant.Participant»	«Activity participant.Role»

Meeting results and follow-up:

«Result details»

«Owner» ....

5. Save the report template.

   In the generated report, the fields of the table will contain data from Creatio. The number of rows in the table will correspond to the number of records.

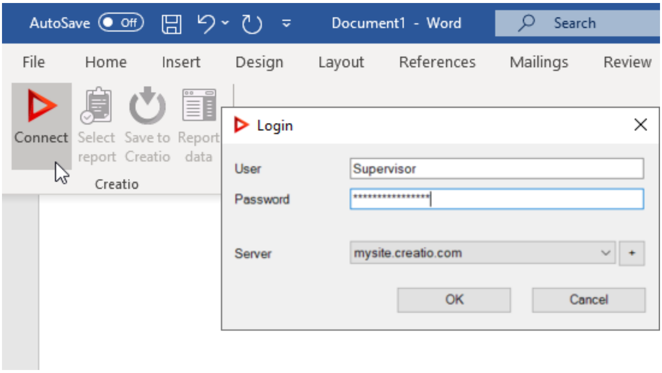
Editing an existing template using Creatio MS Word plug-in

You can modify the layout of any MS Word report in Creatio at any time.

To do so:

1. Open MS Word and click [Connect] on the Creatio plug-in toolbar (Fig. 8).
2. Enter your Creatio login and password.

Fig. 19 Connecting the MS Word report plug-in to Creatio



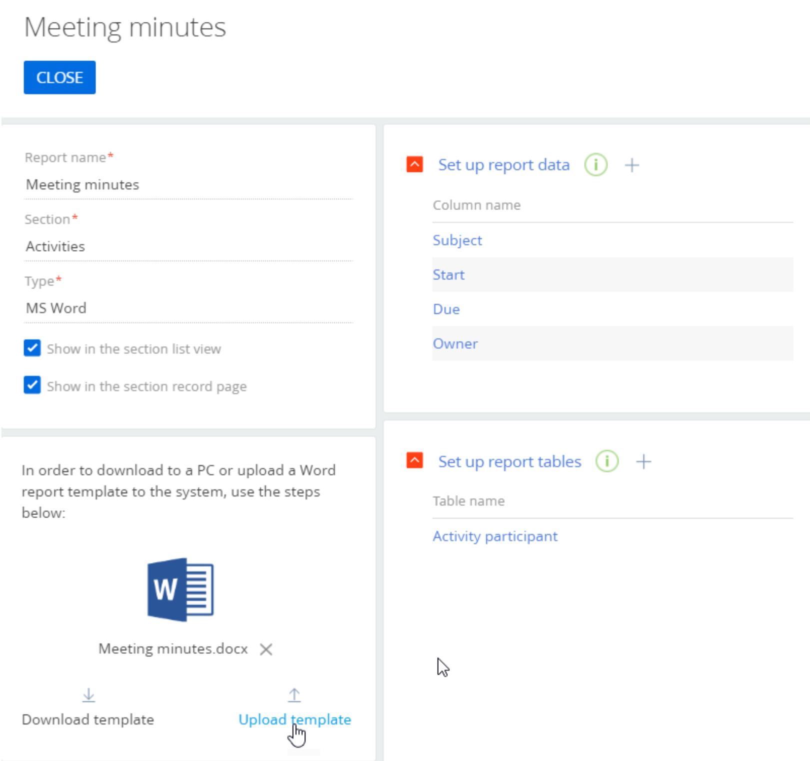
3. On the [Creatio] tab of the MS Word ribbon, click [Select report]. As a result, a list of available MS Word reports will open.
4. Select a report to configure and click [OK]. As a result, the current report template will open.
5. Click [OK] in the pop-up window.
6. Make the necessary changes to the template layout.
7. Click [Save to Creatio] on the [Creatio] tab of the MS Word ribbon.

   As a result, the plug-in will upload your report template to Creatio.

Uploading an updated template to Creatio

1. Log in to Creatio as an administrator and open the System Designer, e.g., by clicking .
2. Go to the [System setup] block and click [Report setup].
3. Open the needed report record.
4. Click [Upload template] in the record profile (Fig. 20).

Fig. 20 Uploading an MS Word report template



If the report template file has not been uploaded to Creatio, you can upload a DOCX file by dragging it to the report page.

5. Select the previously saved MS Word template. Click [Save].

   As a result, a new template will be used the next time this report is generated.

SEE ALSO

- Add a new MS Word report in Creatio

report FAQ

- Which file formats are supported by Creatio reports?
- I have installed the Creatio plug-in for MS Word. What is next?

Which file formats are supported by Creatio reports?

The reports are saved as *.DOCX files. Use Microsoft guides to protect the exported report files from editing.

I have installed the Creatio plug-in for MS Word. What is next?

Use the Creatio plug-in for MS Word to edit report template layouts. Before you can design a report template layout, create an MS Word report record in the Report setup section. Open MS Word go to [Creatio] tab and click [Connect]. You will see the list of available reports. Double-click a report to open it for editing in MS Word.

VIDEO TUTORIALS

- Reports

Workplaces setup

The sets of sections displayed on the Creatio side panel for different user groups (roles) are called workplaces. You can set up any workplace by creating a list of sections that are necessary for the users in their everyday work. The sections that are not included in it will be hidden from the main application menu.

The list of available workplaces may vary depending on the user group. For example, a [Communications] workplace may include [Activities], [Calls] and [Feed] sections to be available for all system users, and a [Supervisor] workplace may include administration sections for users and roles that should be available for the system administrators group only.

Access to the workplaces does not affect the access to the system. The full set of Creatio sections, including the sections not included in any workplace, will still be available on the application home page.

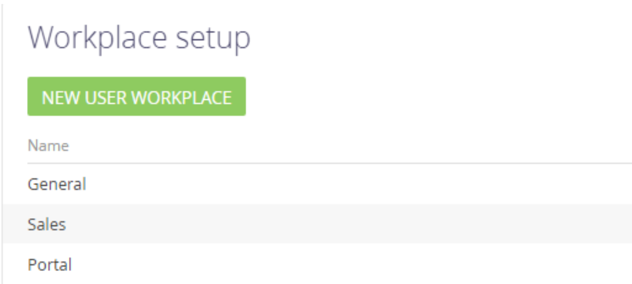
To access the workplaces setup

1. Open the System Designer, e.g., by clicking .
2. Click the [Workplace setup] link in the [Set up view] navigation block.

On the opened page (Fig. 1):

- view the list of available workplaces
- add or modify workplaces
- configure workplace settings
- Provide access permissions to the workplace for different functional and organizational user rioles.

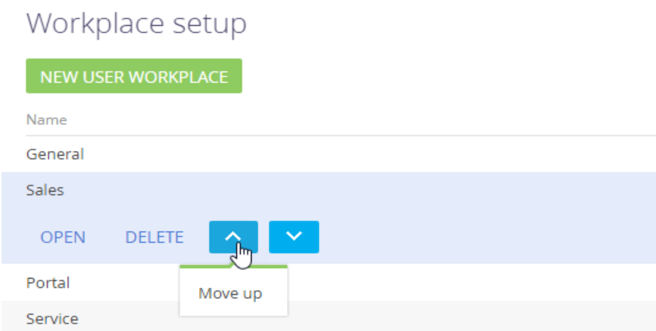
Fig. 1 The workplace list



How to Set up the workplace list

To set up a sequence of workplaces, select the required record and move it up or down by clicking the or buttons (Fig. 2).

Fig. 2 Changing the workplace position in the list



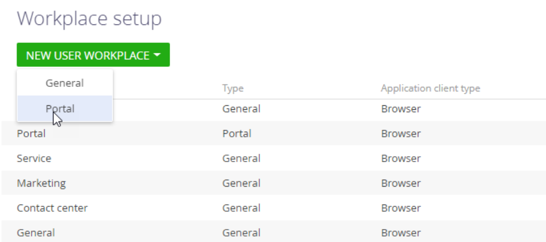
How to set up workplace

Workplace setup page is used to add a new workplace or edit an existing one.

To add a new workplace, use the [New user workplace] button and select the workplace type (Fig. 3):

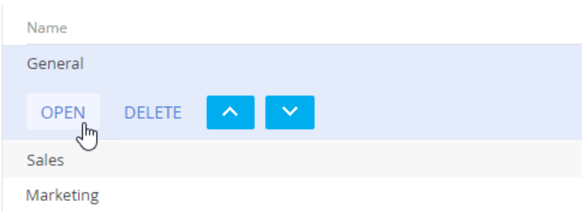
- General, if you want to set up the list of sections for the main application;
- Portal, if you want to set up the list of sections for the portal users.

Fig. 3 Adding a new workplace



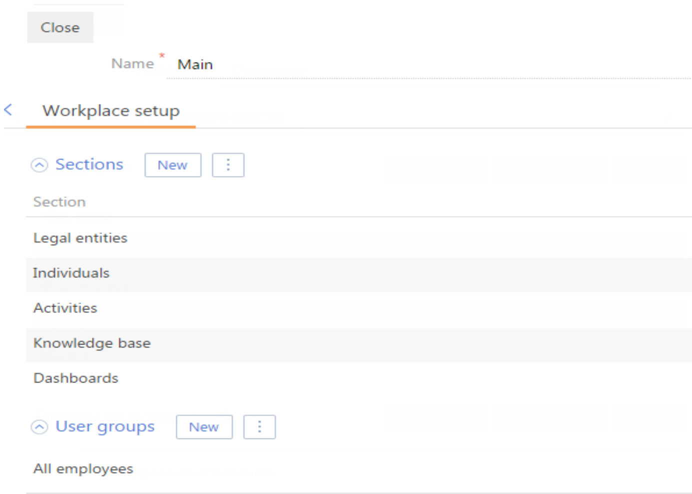
To edit an existing workplace, select it in the workplace list and click [Open] (Fig. 4).

Fig. 4 Editing a workplace



The workplace setup page (Fig. 5) will open.

Fig. 5 The workplace setup page

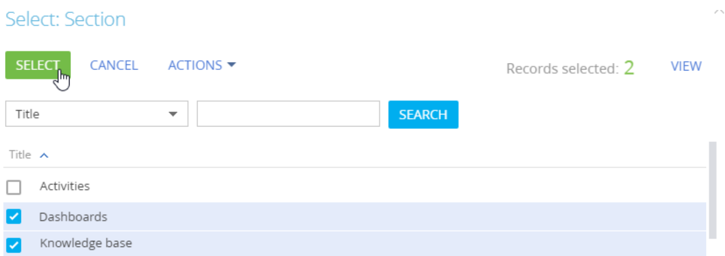


The [Name] field contains the name of the workplace, for example, "General".

How to set up sections in the workplace

You can set up a list of sections for the workplace using the toolbar on the [Sections] detail. Click the + button on the detail toolbar to open the window (Fig. 6) that is used to add sections to workplace.

Fig. 6 Adding sections to a workplace



You can only select from sections that belong to a specific workplace type.

NOTE

The list of sections displayed on the portal is configured in the [Portal] workplace in the main Creatio application. Learn more about adding custom sections on the portal in the "Set up portal sections" article.

Select the sections you need and click [Select].

To remove a section from a workplace, select the required record in the block and click [Delete] in the ⋮ button menu.

The sequence of the records in the [Sections] detail is the sequence in which the sections will be displayed in the side panel of the application. To move the required detail record up or down, select it and click the or buttons.

NOTE

Sections configuration is preformed in the section wizard

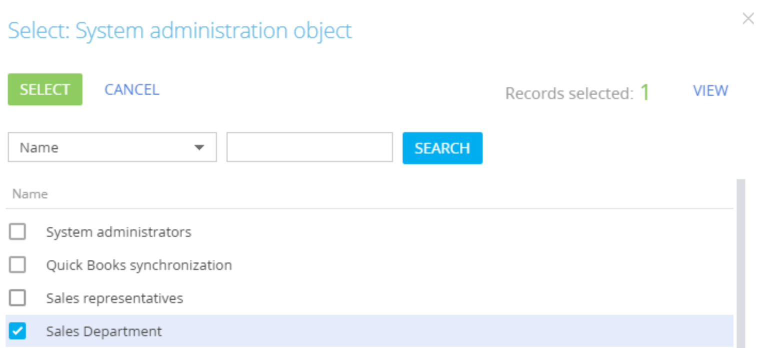
How to set up user roles that need to access the workplace

Organizational and functional user roles that need to access the workplace are displayed on the [User groups] detail.

To set up access to the workplace:

1. Go to the [User groups] detail toolbar and click the + button. A window with functional and organizational user roles will be opened (Fig. 7).

Fig. 7 To set up access for user groups to the workplace:



NOTE

You can configure a list of functional and organizational roles, as well as a list of users, in the "Users and administration" block of the System Designer. Learn more in the "Users and permissions" article.

2. Select the roles you need and click the [Select] button. Selected roles will be added to the User groups] detail of the workplace.

As a result. All users of the selected roles will have access to the workplace.

NOTE

The changes will be applied after the user logs in the next time.

SEE ALSO

- Creatio interface

Logo customization

You can replace the default Creatio logo on the login page and at the top of the application pages with a custom logo.

You can customize:

- Logos:
    - Login page logo. This image also appears on the loading screen and the Excel import page.
    - Main page logo (Fig. 1).

Fig. 1 Custom logo on the main page

-
    - Upper panel logo.
- Browser tab:
    - Application name.
    - Favicon (a thumbnail image in the browser tab).

ATTENTION

The logo settings apply to all Creatio users.

Changing the logo

To change the default logos:

1. Click to open the System Designer.
2. In the [Set up view] block, click [Logo customization].

ATTENTION

You can customize the logo only if you have permission to perform the "Logo customization changes" (CanManageLogo) system operation. Learn more about operation permissions in the "System operation permissions" article.

3. The page displays current logos:

Login page logo	This logo displays on the main page, the login page and the Excel import page. Recommended image size: 61x310 pixels. The image is stored in the "Logo" (LogoImage) system setting.
Main page logo	This logo is displayed on the main page and the System Designer page. Recommended image size: 37x274 pixels. The image is stored in the "Logo in main menu" (MenuLogoImage) system setting.
Upper panel logo	This logo displays in the top right corner of section pages. Recommended image size: 27x127 pixels. The image is stored in the "Upper panel logo" (HeaderLogoImage) system setting.

4. Click to upload images. PNG is the recommended image format. You can use other standard image formats supported in modern browsers. If you use SVG files, you need to specify the *width='...' height='...'* parameters, otherwise some browsers may fail to render the image properly. If you upload a larger image, it will be scaled down to match the required dimensions.
5. Save the changes.

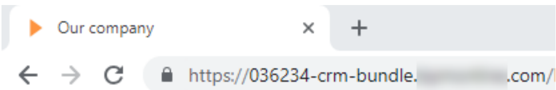
NOTE
Refresh the page to see the changes.

Changing the application name in the browser tab

You can change the default application name in the browser tab. To do this:

1. Click to open the System Designer.
2. Open the [System settings] section.
3. Open the "Product name" system setting and
4. change the default value. For example, specify "Our company" instead of "Creatio". Specify any special characters in the name as an HTML code.
5. Save the changes. As a result, the name of the application in the browser tab will be changed (Fig. 2).

Fig. 2 The new application name in the browser tab



NOTE
Re-login to the application to see the changes.

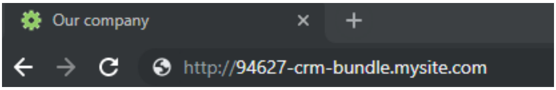
Changing the favicon

You can change the default favicon in the browser tab. To do this:

1. Click to open the System Designer.
2. Open the [System settings] section.
3. Open the "UseFaviconFromSysSettings" system setting. Click [Clear value]. Click [Select file] and choose the image. Save the changes.
4. Open the "UseFaviconFromSysSettings" system setting. Select the Default value checkbox to use the favicon uploaded in the previous step.

As a result, the new favicon will be displayed in the browser tab (Fig. 3).

Fig. 3 The new favicon in the browser tab



NOTE

Re-login to the application to see the changes.

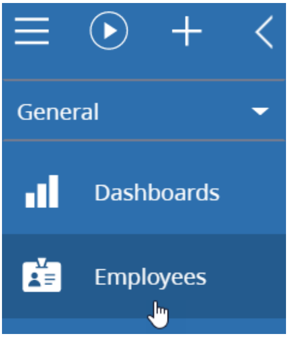
SEE ALSO

- Workplaces setup

Color customization

On the color customization page, change the color of the side panel in Creatio (Fig. 1).

Fig. 1 Example of side panel color scheme



To upload a custom logo, open the system designer by clicking the button in the top right corner of the application window. Then click the [Color customization] link in the [Set up view] block.

ATTENTION

You can customize the color only if you have the right to perform the "Access to color customization" system operation (CanManageSectionPanelColorSettings).

Section panel background	Main background color of the section panel. The value is saved in the "Section panel background" system setting (SectionPanelBackgroundColor).
Text in section panel	Main color of all section headings in the section panel. The value is saved in the "Text in section panel" system setting (SectionPanelFontColor).
Selected section background	Color of the selected section area in the section panel. The value is saved in the "Selected section background" system setting (SectionPanelSelectedBackgroundColor).
Text in selected section	Heading color of the selected section in the section panel. The value is saved in the "Text in selected section" system setting (SectionPanelSelectedFontColor).

The system also saves the default color settings. If necessary, you can restore them by clicking the corresponding button.

ATTENTION

The color settings are applied to all users of the system.

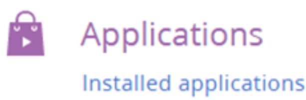
SEE ALSO

- Logo customization

The [Installed applications] section

Use the [Installed applications] section to manage Creatio marketplace applications. The section is available in the system designer (Fig. 1).

Fig. 1 The [Installed applications] section in system designer



In this section, you can:

- Install new applications
- Try out trial versions.
- View installed applications.
- Purchase licenses.
- Distribute licenses.
- Uninstall applications.

To view a list of installed applications, open the [Installed applications] section in system designer. The list contains following information about installed applications:

Name	Name of the installed application
Maintainer	Name of the company that developed an application
Date last updated	The date of the last upload of updated packages.
Install date	Date of installation of the application in the system.
Support email	An email address for contacting the application support service.
Marketplace link	URL of the application page on the marketplace with additional information about the application.

CONTENTS

SEE ALSO

- System designer

Installing applications from the marketplace

Use the [Installed applications] section in the system designer to install marketplace applications and other Creatio packages. You can install an application directly from marketplace.creatio.com, or from a local file (Creatio marketplace applications have an option to download them as zip archives).

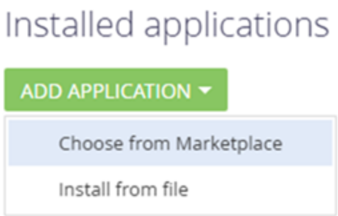
NOTE

Create a Creatio marketplace account to be able to download and install applications directly from marketplace.creatio.com.

To install a new Creatio application directly from the marketplace:

1. Open the system designer by clicking the button in the top right corner of the application window.
2. Click the [Installed applications] link.
3. Click the [Add application] button and select the [Choose from Marketplace] option from the displayed menu (Fig. 2).

Fig. 2 Selecting the installation method



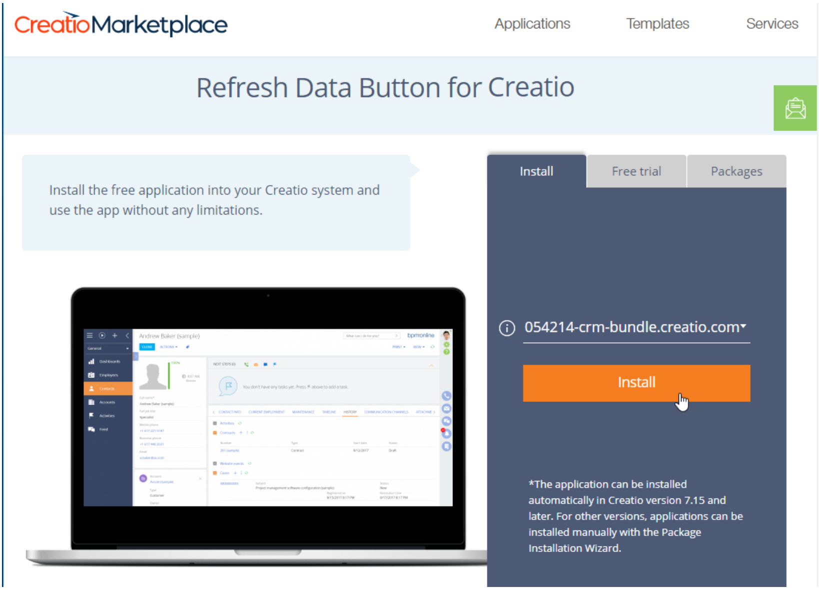
4. Select the application you want to install on the marketplace page.
5. Be sure to read the application information, including its features, requirements and support conditions. If the application requirements match your Creatio configuration, click [Install].

ATTENTION

Do not install an application if your Creatio configuration is not in the list of compatible products.

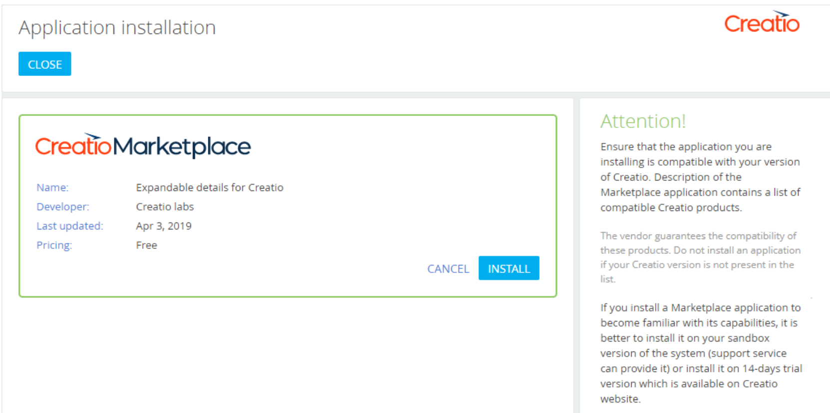
6. You will need to log in to your marketplace account before the application can be installed.
7. On the marketplace installation page, enter the address of your Creatio site and click [Install] (Fig. 3). You will be redirected to the application installation wizard in Creatio.

Fig. 3 Creatio marketplace installation page



8. Click [Install] on the Creatio application installation wizard page (Fig. 4).

Fig. 4 Creatio application installation wizard



NOTE

The installation may take several minutes to finish. Wait for the process to complete before taking any further action.

Once the setup is complete, the new application will appear in the [Installed applications] section. You may need to add new sections in workplaces before you start working with the application.

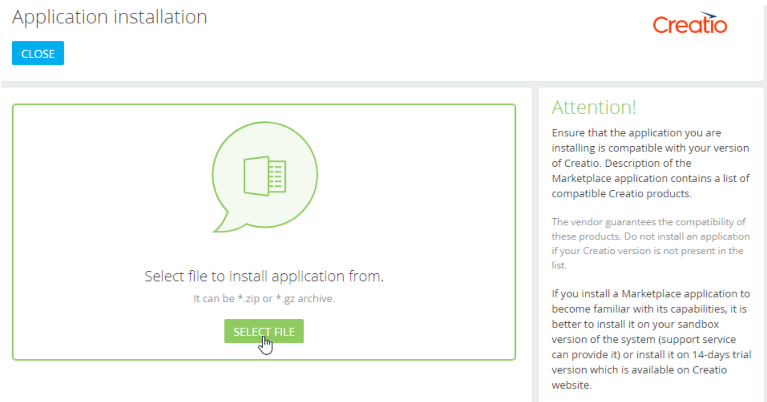
NOTE

If you installed a trial version of an application and want to continue using it, contact your support manager to purchase licenses.

You can also install an application from file that you can download from the marketplace. This option is recommended for Creatio on-site. To do this:

1. Log in to your marketplace account.
2. Select the needed application, verify its compatibility with your Creatio configuration and click [Install].
3. On the opened page, click the [Packages] tab, then click “Download the application packages”. An application with a .zip extension will be downloaded.
4. Log in to Creatio. Open system designer and click [Installed applications].
5. Click [Add application] –> [Install from file].
6. On the application installation page, click the [Select file] button and select the downloaded application archive (Fig. 5).

Fig. 5 Selecting file on marketplace application installation wizard



7. Once you select the file, the installation will be run automatically.

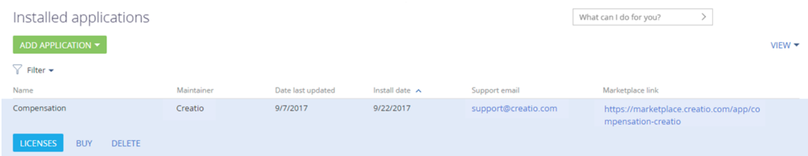
SEE ALSO

- Managing applications
- The [Installed applications] section

Managing applications

Use the [Installed applications] section to manage installed marketplace applications. The following actions are available (Fig. 6):

Fig. 6 Actions in the [Installed applications] section.



- Distribute licenses. After you click the [Licenses] button, the license manager window will open. Licensing of marketplace applications is similar to the general Creatio licensing.
- Purchase licenses. If you have installed a trial version of the application, you can purchase a license by clicking the [Buy] button.
- Uninstall application. Click the [Delete] button and wait for the uninstallation process to complete.

SEE ALSO

- Installing applications from the marketplace
- The [Installed applications] section

The [Lookups] section

The [Lookups] section is designed to manage Creatio lookups. For example, in this section, add cities, edit account types, activity categories and other lists that are used in the system. You can also edit existing lookups and register the new ones in this section.

To access the section, open the system designer by clicking the button in the top right corner of the application. In the [System setup] block, click the [Lookups] link.

ATTENTION!

You can set up access rights to this action using the [Access to "Lookups" section] system operation.

Section toolbar

When a lookup is selected in the section, on the top of the standard options, some additional options are available:

- [Open content] – opens a page for editing the content of a lookup.
- [Open settings] – opens a page for editing the lookup settings specified when registering a lookup.

ATTENTION

When you edit the content of lookups, do not delete basic content, as this can lead to incorrect operation of pre-configured business processes.

CONTENTS

VIDEO TUTORIALS

- System settings and lookups

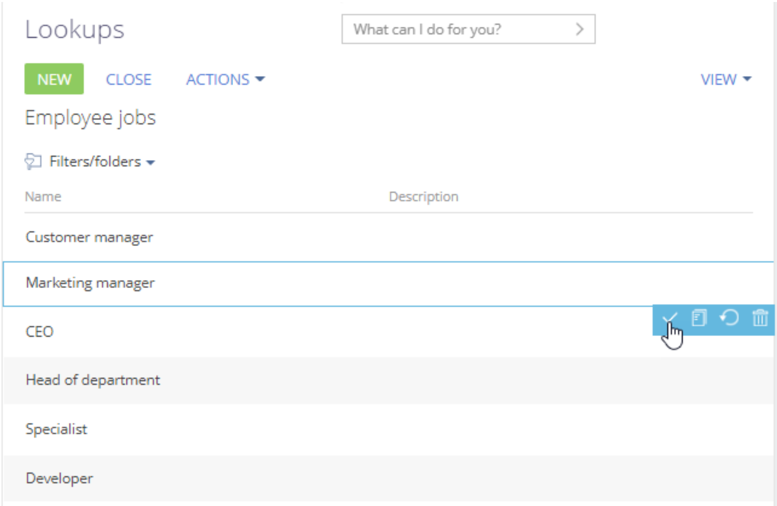
Lookup content page

A special window is used to view and edit lookup records. To open this page, select a lookup in the list and click the [Open content] button.

Most system lookups are standard and contain only the [Name] and [Description] fields. Certain custom lookups have record edit pages.

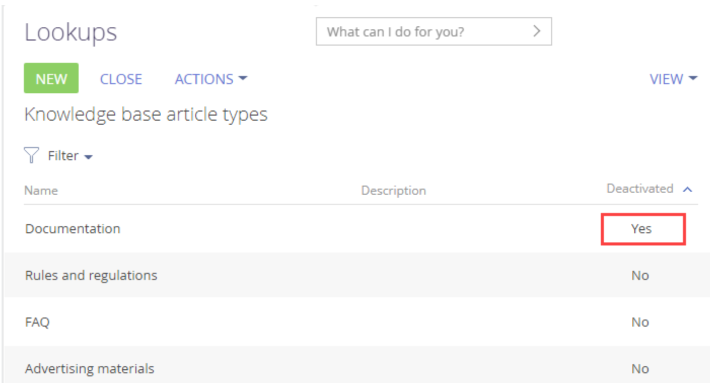
You can modify the content in the most lookups in the editable list(Fig. 1).

Fig. 1 Saving changes in a lookup list of records



You can deactivate lookup values to prevent the users from selecting these values in the future (Fig. 2). Deactivated values will not be available for selection in the corresponding lookup fields. All existing records where an inactive lookup value had been previously set will remain unchanged. Lookup record deactivation is disabled by default. You can enable it for specific objects in the [Configuration] section. More information about enabling lookup record deactivation can be found in the "Record deactivation" article of the Development guide.

Fig. 2 Example of a deactivated lookup value



SEE ALSO

- Creating and registering lookups
- Lookup settings page

- Description of lookups

VIDEO TUTORIALS

- System settings and lookups

Lookup settings page

Use the lookup settings page to add or change settings of existing lookups. To open this page, select a lookup in the list and click the [Open settings] button.

Name	Lookup name
Object	Object that contains the structure of lookup content. For example, in the registration card of the [Cities] lookup, the “City” object is specified in this field. The lookup of this field contains items of the “Object” type.
List page	Page schema used for editing the content of the lookup. If this field is not populated, the standard lookup content page will be used.
Description	Description of the lookup, e.g., its purpose and function.

SEE ALSO

- Lookup content page
- Creating and registering lookups
- Description of lookups

VIDEO TUTORIALS

- System settings and lookups

Description of lookups

This chapter describes the non-standard lookups used in Creatio.

CONTENTS

- The [Currencies] lookup
- The [Accounts in external resources] Lookup
- The [Calendars] lookup
- The [Email templates] lookup

VIDEO TUTORIALS

- System settings and lookups

The [Currencies] lookup

The lookup is available in Creatio marketing, sales enterprise, sales commerce, sales team, sales team, bank sales, bank customer journey, lending and CRM bundles.

This lookup contains a list of currencies used in mutual payments with customers, partners, suppliers, and the like.

Name	[Name] – indicate the name of the currency, for example, “US Dollar” or “Euro”.
Code	Specify a banking code that is used for a specific currency, for example, US dollar code is 840.
Short name	Shortened currency name, such as “USD” or “EUR”.
Symbol	Currency symbol, such as “$” or “€”.
Ratio	Specify the currency amount for which the exchange rate will be calculated (for example, 1, 10, 100).
Description	Additional information about the currency.
Show currency sign	Choose the appropriate option from the drop-down list. Choose [on the left] or [on the right] options to display the sign before or after the amount.

[Exchange rate] detail

Information about exchange rates is stored on the [Exchange rate] detail.

Start	The starting date for the exchange rate. The start date of a new exchange rate is considered the end date of the previous exchange rate.
Exchange rate	Value of the base currency in relation to that of the conversion currency. Enter a value according to the currency ratio, specified in the currency card. The value for the base currency in the exchange rate card must be set to “1”.
End	The ending date for the exchange rate. Filled automatically with the starting date of new exchange rate. This is a non-editable field.

NOTE

The base currency is used to calculate the financial performance indicators, for example, it can be “US Dollar”. Use the “Base currency” system setting to select a certain base currency.

SEE ALSO

- Working with currencies

The [Accounts in external resources] Lookup

This lookup contains a list of accounts that are used to collect information in external web-resources, such as social networks.

Name	Used for identification in the list of user accounts.
User	Select a system user from lookup. If you add a corporate account, you can leave this field empty.

Type	Select a social network or email service for the user account.
User login	User account name in external resource.
Public	Select this checkbox to grant access to this account to other users. This is relevant for corporate user accounts.
Description	Additional information about the user account.

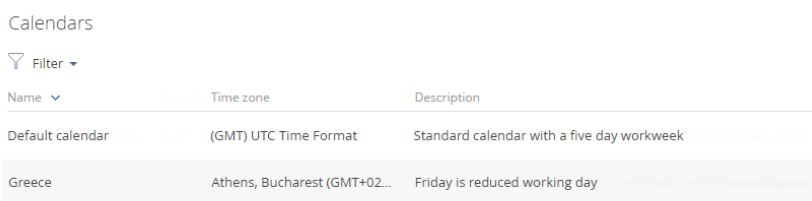
The [Calendars] lookup

The lookup is available in Creatio sales enterprise, service enterprise, customer center, bank customer journey and CRM-bundles. The [Calendars] lookup is not bound to organizational and functional roles of Creatio users.

Use the [Calendars] lookup (Fig. 3) to set up different calendar types used by helpdesk as per customer service agreements in Creatio service enterprise, customer center and bank customer journey products. If your customers and helpdesk staff are scattered across different timezones, using a proper calendar will help streamline case processing. The lookup is used for populating the service page in Creatio customer center and bank customer journey, while in Creatio service enterprise it is used to populate the service agreement page.

In Creatio sales enterprise, you can use the [Calendars] lookup to set up different types of calendars for planning sales reps' visits to customers. The lookup is used by the Field force and Pharma applications (they are available in Creatio marketplace) when populating the contact (doctor) page.

Fig. 3 The [Calendars] lookup



By default, the lookup contains default UTC calendar with a five day working week.

When you create a new calendar the working week settings are inherited from a default calendar. Also you can copy one of previously configured calendars. In this case, all settings, except the data on the [Days off] tab will be inherited in the new calendar.

To add a new blank calendar, click the [Add] button. Fill the fields in the added list string:

- Specify the calendar name. This is a required field.
- Select a time zone from the lookup. This is a required field. The time zones are selected from the corresponding system lookup that is connected to Windows regional settings.

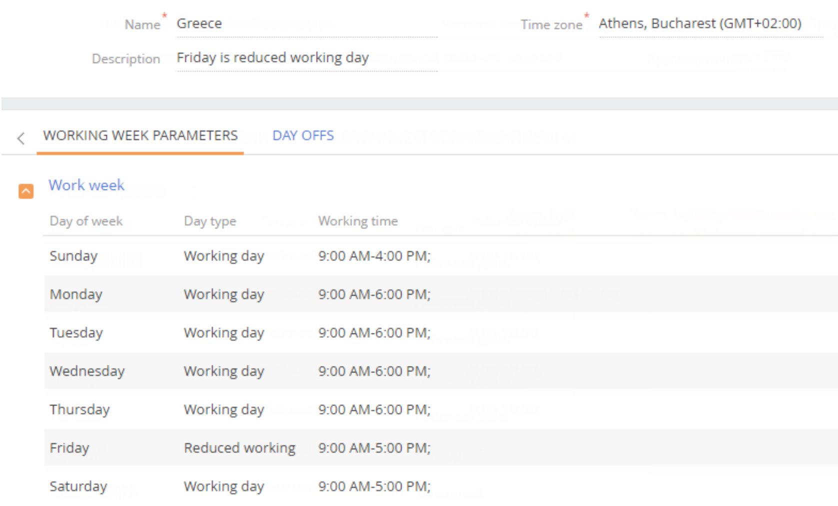
  ATTENTION

  It is not recommended to add and to delete records in [Time zones} lookup.

- [Description] – specify any additional information about the calendar.

To configure the calendar press the . button. The calendar page will open (Fig. 4).

Fig. 4 Calendar page



Specify work days, work time and days off on the [Work week parameters] and [Day offs] tabs.

To edit an existing calendar, select it and click the button.

The [Work week parameters] tab

On the [Work week parameters] tab, you can:

- Set the first and last days of the work week
- Specify the type of each of week days (work day or day off)
- Set work hours

The weekday names and order cannot be edited. You can specify the work hours for each work day separately.

Work time

Specify working hours for each work day. By default, the work hours are copied from the base calendar. Working hours intervals are set up only for working days. You can specify multiple intervals, for example, “09:00 – 13:00” and “14:00 – 18:00”. To add the working interval click the button. All intervals will be sorted chronologically after adding.

> **NOTE**
> When you change the day type from “Working day” to “Day off” the working time will be hidden but not deleted. If you change the day type back from “Day off” to “Working day”, the working time will become available in the field again.

> **NOTE**
> To specify round-the-clock work set the interval from 0:00 AM till 11:59 PM.

After specifying an interval, click the button to confirm it.

The [Days off] tab

You can specify all holidays on the [Days off] tab.

Click the + to add a day off. Set the day parameters: [Date], [Day type] and [Working time] for reduced working day. Use the calendar control in [Date] field to specify a date. Click the ✓ button.

NOTE

Passed holidays or reduced working days cannot be added or deleted.

The [Email templates] lookup

The [Email templates] lookup is used to create email templates for business processes and customer communications. You can use these templates for bulk emails in Creatio marketing and CRM-bundles.

Template name	The title of a template. The field is required. In localized templates, the template name is followed by abbreviations of the used languages.
Macro source	Creatio object (section or detail), whose fields will be used in the template as macros. For example, specify the “Contact” object as a macro source for using the sender’s full name and job title in the text.

Template area

The template displays the template text If the template is localized, different tabs are used to display its text in different languages.

The button in the top right area of the template enables adding new language tabs.

Each tab contains:

- the [Edit] button, which is used for opening the content designer;
- the [Subject] field. This field value is automatically populated in the [Subject] field of the message page, when you select a bulk email (in Creatio marketing) or a lookup template.

SEE ALSO

- Configuring email templates
- Setting up sending localized emails

VIDEO TUTORIALS

- System settings and lookups

Creating and registering lookups

You can create and register your own lookups in Creatio and populate the fields of a new or existing section with necessary data.

The lookup creation and registration process depends on whether Creatio already contains an object which needs to be linked to the lookup or not.

- If Creatio does not contain the necessary object when you add a new lookup field to the page, the lookup will be created and registered automatically upon saving section wizard. The lookup object will also be created.

NOTE

Lookup registration means adding a new lookup to the [Lookups] section, where it can be populated with values.

- If Creatio does not contain the object, you need to create it and afterwards register its lookup. You can create objects manually via built-in developer tools.
- If Creatio contains the object, you need to register a corresponding new lookup in the [Lookups] section.

Creating lookups via section wizard

A lookup is created automatically upon selecting the [Add new lookup] option when you add a new lookup field in section wizard.

CASE

The [Requests] custom section has been configured in Creatio. Add a field displaying the request type to the request page. The field will be populated from a lookup.

To implement the case:

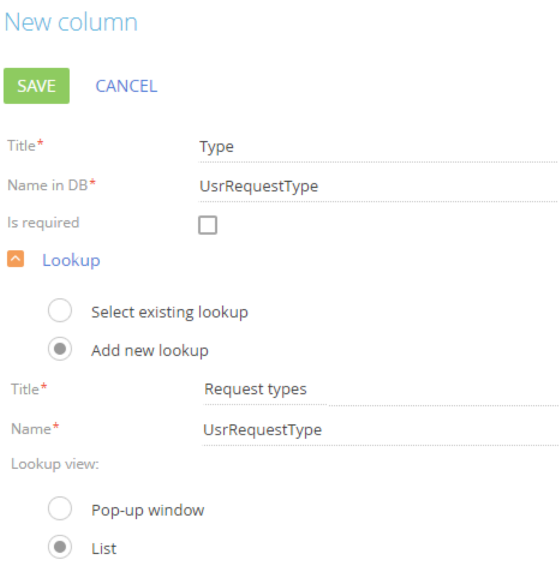
1. In the [Requests] section, open a record and click the [View] —> [Open section wizard].
2. Set up the necessary field in page designer:
    a. On the left side of the page, select the [Lookup] column in the [New column] selection area and drag it to the record page.
    b. In the opened window, populate the required fields. If you want your lookup field to be required, select the [Is required] checkbox.

NOTE

Detailed information about “Lookup” column parameters is available in a separate article. Read more >>>

    c. In the [Lookup] field group, select the [Add new lookup] option and specify the title and name of the lookup you want to create (Fig. 5). The [Title] field corresponds to the lookup title in Creatio and the object title, while the [Name] field corresponds to the object name and table name in the database.

Fig. 5 Creating a new lookup



   d. Click the [Save] button.

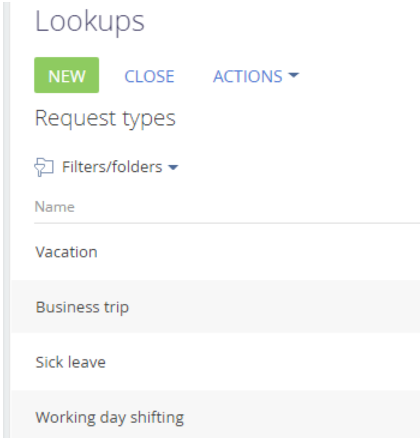
3. Save the changes in the section wizard.

As a result, after you save the changes in section wizard, the created lookup will automatically be registered in Creatio and bound to the package where the wizard saves changes.

After that, you need to populate the lookup and specify the request types. To do this:

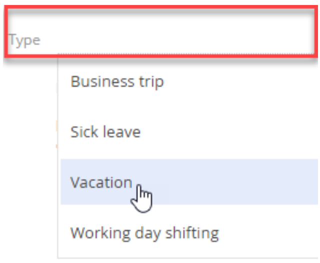
1. Open system designer by clicking the button in the left top corner of the application and select the [Lookups] link in the [System setup] block.
2. Find the created [Request types] lookup via the quick filter by title and open its content.
3. To create the request types in the lookup, click the [New] button (Fig. 6).

Fig. 6 The [Request types] lookup population



As a result, you will be able to use the lookup information from the created [Request types] lookup when populating the [Type] field on the request page (Fig. 7).

Fig. 7 The [Type] lookup field



Registering a lookup if there is no object in Creatio

If you want to register a lookup for the object which does not exist in Creatio yet, you will have to create this object first. Custom object (entity) schema creation is covered in a separate development guide article. Read more >>>

NOTE

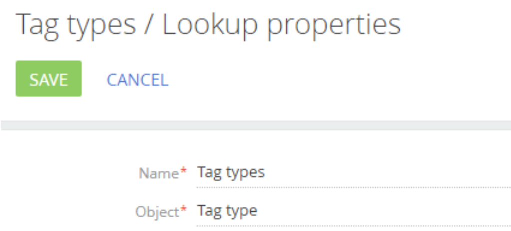
If you need a lookup to populate a new field, the section wizard will create a new object and register a lookup automatically upon adding the field. If you select the "Add new lookup" option, the lookup and its object will be created automatically, and the lookup will be registered in Creatio.Read more >>>

Registering a lookup if Creatio contains the object

If you want to register a lookup for an existing object in Creatio, do the following:

1. Open system designer by clicking the button in the left top corner of the application and select [Lookups] in the [System setup] block.
2. Click the [New lookup] button and specify the lookup name and the object containing the lookup data structure (Fig. 8).

Fig. 8 – Registering a lookup for the existing object



NOTE

Detailed information about the lookup properties is available in a separate article. Read more >>>

As a result, the lookup will be registered and populated with the data in correspondence with the object structure.

SEE ALSO

- Lookup content page
- Lookup settings page
- Customize pages

ACCELERATE

The [System settings] section

The [System settings] section is designed for managing global Creatio settings. For example, here you can assign a color for the section panels, select the base currency for calculating the Creatio financial indicators, specify parameters for sending emails, etc.

With the help of system settings, you can also specify default values for various fields when new records are created, like a default activity status, for example.

To access the section, open the system designer by clicking the button in the top right corner of the application. Click the [System settings] link in the [System setup] block.

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- System settings and lookups

The system setting page

To register a system setting, use the system setting page.

Name	The [Name] field shows the title of the system setting that will display to users..
Type	System setting field type. The type of field defines the method of filling in the value of system setting. This field is editable while adding a new system setting and is non-editable for the previously registered records. The list of available field types is provided below.
Default value:	Use the this field to set the value for the system setting. For example, you can set the “Not Started” value for the activity default status, or “5 minutes” value as an interval for notification check. The method of filling in the [Value] field depends on the type of system setting. For example, activity default status can be selected from the [Activity statuses] lookup, while the interval for notification check is specified as an integer number.
Code	The code is used for the unique designation of the system setting to identify it in the system. The field value can consist of Latin letters and numbers only and must not contain spaces.
Cached	Select the [Cached] checkbox if the value of the system setting changes relatively rarely and thus must be calculated only once per user session. Examples of cached system settings could be the main menu logo or login page color of overdue activitiesor base currency settings. Examples of non-cached system settings could be the date of last duplicate search the number of knowledge base article, because it must be updated each time a new article is created.
Personal	Select this checkbox to have the system setting be configured for the current user individually. For example, the date of last synchronization with Google Contacts.

Allow for portal user	Select this checkbox to make the system setting available for the portal users.

NOTE

If a cached system setting is changed, its new value will be used only after the next user logs in to the system.

Field types

List of possible values for the [Type] field on the system setting page.

String (50 characters)	Text, up to 50 characters.
String (250 characters)	Text, up to 250 characters.
String (500 characters)	Text, up to 500 characters.
Unlimited length string	Unlimited length text.
Encrypted string	Text data that must be stored encrypted in the database.
Date/time	Date and time.
Date	Date only
Integer	Numeric data with no decimals.
Decimal	Numeric data with two digits after the dot.
Money	
Boolean	System setting can have one of the two values: "On" (checkbox is selected) or "Off" (checkbox is cleared).
Lookup	Data that is selected from a predefined list of values. The source of values for this type of field is a separate object that has been created earlier. After you select this option, select the object to be used as a source of values for this system setting.
BLOB	This system setting allows you to upload an image.

VIDEO TUTORIALS

- System settings and lookups

Description of system settings

Provided below is the list of system settings available in Creatio.

Common

[Base personal calendar] (BaseUserCalendar) – sets the default calendar.

- This system setting is used in Service Creatio, customer center edition and Financial Services Creatio, customer journey edition if another calendar is not specified on the service page.

- This system setting is used in Service Creatio, enterprise edition if another calendar is not specified on the service page in the service agreement or on the service agreement page.

Type: lookup Default value: Default calendar.

[Configuration version] (ConfigurationVersion) – current workspace version. Type: text (50 characters).

[Caption for communication options block on login page] (LoginPageCommunicationBlockCaption) – contains the caption for the login page block that contains the communication options. Type: text (50 characters).

[Caption for useful links block on login page] (LoginPageLinksBlockCaption) – contains the caption for the login page block that contains the links. Type: text (50 characters).

[Notification monitor] (RemindingsCheckInterval) – sets the frequency of checking for new notifications. The value of this system setting is specified in milliseconds (ms). Type: integer Default value: Default value: 300000 ms (5 minutes).

[Number of records in Excel export batch] (ExcelExportBatchSize) – changing this value affects the speed of exporting large numbers of records to Excel and the amount of memory used.

[Logo] (LogoImage) – contains the logo displayed on the login page. Creatio logo is displayed by default, but you can upload a different image. PNG is the recommended image format. Type: image.

[Upper panel logo] (HeaderLogoImage) – contains the image displayed at the top of Creatio pages. Creatio logo is displayed by default, but you can upload a different image. PNG is the recommended image format. Type: image.

[Logo in main menu] (MenuLogoImage) – contains the image that will be displayed at the top of the page of the Creatio main menu (opens by default upon first login). Creatio logo is displayed by default, but you can upload a different image. PNG is the recommended image format. Type: image.

[Product name] (ProductName) - sets the header of the browser tab with the opened Creatio application. Type: text (250 characters). Default value: Creatio.

[Case email body maximum length] (EmailBodyForCaseMaxLength) – sets the maximum number of characters from email, that will be displayed in the [Description] field of the case, created automatically from that email. Type: integer. Default value: 600 characters.

[Maximum number of records to import from Excel] (MaxImportExcelRecordCount) – limits the maximum number of records that can be imported from an Excel file. Type: integer. Default value: 2000.

[Maximum number of process item repetitions] (MaxProcessLoopCount) – limits the maximum number of times the same process item can be run during a process. Type: integer. Default value: 100.

[Attachment max size] (MaxFileSize) – sets the maximum size of a file that can be added to the [Attachments] detail in system sections. The value of this system setting is specified in megabytes (MB). Type: integer. Default value: Default value: 10 MB.

[Minimum characters necessary to filter list] (StringColumnSearchMinCharCount) – determines the minimum number of characters that will be sufficient to filter records in the drop-down list of the lookup field. When you type the needed value directly in the lookup field (without opening the lookup), a drop-down list opens, containing the values that match the characters entered. The minimum number of characters sufficient to display the drop-down list is defined by this system setting. Type: integer. Default value: 3.

[Display pop-up window message] (ShowBrowserPopupWindowToolbars) – enables or disables browser toolbars in the Creatio pop-up windows. In Creatio, pop-up windows are used in system setup window to open designers, pages, lookup windows, etc. Type: Boolean. Default value: “False”.

[String columns filter] (StringColumnSearchComparisonType) – type of search operator that is used to filter the records of the "lookup" field. Type: integer. Default value: 1. The setting can have one of two values:

0 – searched record must begin with the specified string.

1 – searched record must contain the specified string.

Updating contact ages

Use the settings below to manage the contact age calculation in Creatio. You can learn more about using this functionality in the "Contact age calculation" article.

[Enable updating contact ages] (ActualizeAge) – manages the functionality of automatic update of contact ages. Disabling this system setting will disable all functionality for automatic contact age calculation. The functionality includes: automatic updating of contact ages on saving a contact record, a regular scheduled update of contact ages on their birthdays, contact age update triggered by the [Update the values in the 'Age' column] action in the [Contacts] section. Type: Boolean. Default value: "True".

[Enable automatic daily update of the contact ages] (RunAgeActualizationDaily) – manages the daily operation of updating the contact ages. If you enable this system setting, Creatio will run a daily check for contacts who have their birthday today and update their age. If you disable this system setting, Creatio will still use the general age calculation functionality, but without the automatic daily updates. Type: Boolean. Default value: "True".

[Time of automatic daily update of the contact ages] (AutomaticAgeActualizationTime) – determines the time of performing the age updates for the contacts whose birthday falls on the current day. Users can set the value manually or by running the [Schedule daily update of the "Age" column] action in the [Contacts] section.

NOTE

We recommend scheduling the daily update of contact ages on the non-business hours.

By default, the system setting value is set in the "UTC" format. However, if a user runs the [Schedule daily update of the "Age" column] action in the [Contacts] section and does not change the run time, the system setting value will be updated automatically – the time will be recalculated based on the user's time zone. For example, a user in the UTC+1 time zone runs the [Schedule daily update of the "Age" column] action but does not change the value in the system setting. In this case, Creatio will display the default time as "02:30 AM" instead of 01:30 AM and change the displayed time zone from "UTC" to "UTC+1." Type: time. Default value: 01:30 (UTC).

NOTE

Note that if you change the time using the system setting and not via the action in the [Contacts] section, the new value will only apply after the next already scheduled age update, i.e., in 24 hours after modifying the system setting value. For example, if you change the system setting value from 01:30 AM to 04:30 AM on Monday at 3 PM, the nearest age update will occur at 01:30 AM on Tuesday and then – at 04.30 AM on Wednesday. If you change the time using the action in the [Contacts] section, the modifications will apply during the next age update.

[Date of the last update of the contact ages] (LastAgeActualizationDate) – use this setting to view the date of the last age update (performed as per schedule or by running the section action).

Business processes

Creatio can use custom business processes in place of the out-of-the-box business processes. The following system settings that determine whether custom or OOTB processes run in different circumstances.

[Process of adding invoice based on order] (CreateInvoiceFromOrderProcess) – process that starts when selecting the "Add invoice based on order" command on the order page. Type: lookup Default status: Default value: Adding invoices based on order The setting is available in all Creatio products containing the [Invoices] and [Orders] sections.

[Process of adding order based on opportunity] (CreateOrderFromOpportunityProcess) – process that starts when selecting the "Add order based on opportunity" command on the opportunity page. Type: lookup Default status: Default value: Add order based on opportunity. The setting is available in Sales Creatio, enterprise edition, sales commerce and CRM-bundles.

[Corporate sale process] (OpportunityManagementProcess) – process that starts when selecting the "Run corporate sales process" command on the opportunity page. Type: lookup Default status: Default value: Corporate sale. Available in all Creatio products containing the [Opportunity] section.

Process log

Use the system settings listed below to manage the Process Log operations in Creatio. You can learn more about working with the Process log in the "Process log" article. These system settings are grouped in a separate [Process log] folder in the [System settings] section.

[Allowed time for process instances in the "Error" state (days)] (AllowedTimeForProcessInErrorState) – specifies the number of days during which the process instances in the "Error" state stay active in Creatio. After the specified time expires, these process instances will be canceled automatically. Default value: 20. If you set the value to "0", the process instances in the "Error" state will not be canceled at all (the system setting will be disabled).

> NOTE
>
> The [Allowed time for process instances in the "Error" state (days)] system settings lets Creatio clear the process log from the outdated process instances in the "Error" state.

[SysProcessLog archiving records count] (ProcessLogArchivingRecordsCount) – specifies the number of records of the [Process log] section that will be archived at a time according to the frequency of archiving the log records, which is specified in the [Frequency of running operations for process log maintenance (minutes)] system setting. Type: integer. Default value: 500.

[Archive data expiration term (days)] (ArchiveDataExpirationTerm) – all archived process instances that are older than the specified term will be deleted automatically. Default value: 20. If you set the value to "0", the archived process instances will not be deleted at all (the system setting will be disabled).

> NOTE
>
> In applications that update to version 7.15.3, the default values for the [Allowed time for process instances in the "Error" state (days)] and the [Archive data expiration term (days)] system settings will be set to "0" (the settings are disabled). You can enable the system settings by specifying the needed values. For newly deployed applications, the values will be as specified in the description of the corresponding system settings.

[Process log archiving period (days)] (ProcessLogArchivingPeriod) – specifies the number of days after which a new process record is archived. Type: integer. Default value: Default value: 30 days.

[Maximum time for the process log maintenance execution (minutes)] (ProcessMaintenanceJobTimeout) – specifies the time limit for process log maintenance. If the log data cannot be processed within the specified time, the operation will be paused and renewed as soon as the maintenance process runs again.

[Frequency of running operations for process log maintenance (minutes)] (ProcessMaintenanceJobFrequencyMinutes) – specifies the archiving frequency in minutes. Type: integer. Default value: Default value: 5 minutes.

Sending emails

The following settings are available in Service Creatio enterprise, Service Creatio customer center, Financial Services Creatio customer journey and CRM-bundles.

[Customer service email] (SupportServiceEmail) – contains the email address that receives automatic notifications of new cases created on the self-service portal. It is also used to send notifications to customers about the status of their case. Type: text (250 characters).

[Website URL] (SiteUrl) – web page URL that automatically opens to the user upon providing service quality feedback on the case. Type: text (250 characters).

[SMTP server login] (SmtpUserName) – full email address used to send customer notifications about case statuses. Type: Unlimited length string. Type: Unlimited length string.

[SSP registration mail box] (SSPRegistrationMailbox) – email address used to send notifications about self-service portal registration. Type: lookup

[SMTP server password] (SmtpUserPassword) – password of the email specified in the [SMTP server login] system setting. Type: Unlimited length string.

[SMTP server name or IP] (SmtpHost) – SMTP server coordinates used to send the outgoing emails. To populate this setting, please see your mail provider's documentation. Type: Unlimited length string.

[SMTP server port] (SmtpPort) – SMTP server port used to send emails. To populate this setting, please see your mail provider's documentation. Type: integer.

[Use SSL] (SmtpEnableSsl) – used for the support of the Secure Sockets Layer protocol. The possibility of SSL protocol usage please see in your mail provider's documentation. Type: Boolean.

[Logo - Feedback value not found] (ImageRaitingNotFound) – sets the logo on the web page that opens after a user evaluates the quality of service The logo is displayed if the settings of the rating range are incorrect. Standard logo is displayed by default, but you can upload a custom one. PNG is the recommended image format. Type: image.

[Logo - Case not found] (ImageCaseNotFound) – sets the logo on the web page that opens after a user evaluates the quality of service. Displayed in case of invalid case number or if this case was deleted in the system. Standard logo is displayed by default, but you can upload a custom one. PNG is the recommended image format. Type: image.

[Logo - Feedback has been already received] (ImageRaitingAlredyExist) – sets the logo on the web page that opens after a user evaluates the quality of service. Displayed if the case is closed or if the case [Rating] field is already populated. Standard logo is displayed by default, but you can upload a custom one. PNG is the recommended image format. Type: image.

[Logo - Thank you for your feedback] (ImageThanksForRaiting) – sets the logo on the web page that opens after a user evaluates the quality of service Standard logo is displayed by default, but you can upload a custom one. PNG is the recommended image format. Type: image.

Bulk email

The following settings are available in Marketing Creatio.

[Turn on logging for webhooks] (EnableWebHooksLogging) – specifies whether to log recipient responses in Creatio. The log4net tool is used for logging. The log can be used by developers for debugging. Type: Boolean. Default value: “False”.

[App external URL that is used to receive webhooks] (WebhooksApplicationUrl) – URL for receiving responses from the bulk email recipients (must be accessible from the Internet). The value of the system setting is specified, if during the system installation, the traffic routing has been configured using the firewall. Type: text (500 characters).

[App external URL used for bulk email unsubscribe queries] (UnsubscribeApplicationUrl) – URL for receiving requests to unsubscribe from bulk emails (must be accessible from the Internet). When unsubscribing, a parameter with the key value that is used to unsubscribe is added to this address. For example, if the value of the system setting is “http://www.site.com/unsubscribe” then the actual unsubscribe link is “http://www.site.com/unsubscribe?key=0123456789”. The system setting value is specified, if during the system installation, the traffic routing has been configured using the firewall. Type: text (500 characters).

[Interval for stats collection in bulk email, hrs] (BulkEmailHourlyStatisticPeriod) – period displayed in the Opens/clicks chart of the [Email totals] tab on the bulk email page. Specified in hours. Type: integer. Default value: 48.

[Test email recipient] (TestSendingBulkEmailContact) – contact, whose data will be substituted in the test emails as values for macros when running the [Send test email] action of the [Email] section. Type: lookup Default status:

[Unsubscribe user from all bulk email] (UnsubscribeFromAllMailings) – specifies whether to select the [Do not use Email] checkbox automatically for the contacts, who have unsubscribed from bulk email. Type: Boolean. Default value: “True”.

[Time period (days) to update bulk emails statistics] (MandrillStatisticUpdatePeriodDays) – determines the period, during which the final response is recorded for each contact, who participated in a bulk email. Any responses received from the contacts after the period is over will not affect the bulk email statistics. The value is specified in days. Field type: integer Default value: Default value: 30.

[Website to redirect unsubscribed] (RedirectUnsuscribersTo) – URL, where users are redirected automatically, after they unsubscribe from a bulk email. Type: text (500 characters).

[Check interval for bulk email with "In progress" status, min] (MandrillShedulerTimeStep) – determines how often Creatio checks whether all due bulk emails have been launched. The value of the system setting is specified in minutes. Field type: integer Default value: Default value: 1.

["Domain list" field default name in Email] (GoogleAnalyticsTrackingDomains) – a list of URLs, whose statistics will be tracked with Google Analytics. The values are entered separated by commas. Type: text (250 characters).

[Enable option "System email”] (SystemEmailIgnoreUnsubscribeFromAllMailings) – used to show/hide the [System email] checkbox on the [Parameters] tab of the bulk email page. This checkbox enables using the [Email] section for sending “system emails” – non-marketing notifications. System emails ignore the “Do not use email” checkbox value on the contact's [Communication channels] tab. Field type: Boolean. Default value: “true”.

[Prevent to send duplicated emails to recipients with the same address] (PreventDuplicatesSending) – if enabled, Creatio will identify duplicate email addresses in bulk email audiences and will send only one email per unique address. The contact for whom the email will be personalized is selected randomly among those with duplicate email addresses. Type: Boolean. Default value: “False”.

Approving procedure

[Send email message if approval is required] (SendVisaEmail) – used to manage automatic sending of emails to approvers. If the checkbox is selected, the approvers will receive an email message in addition to the standard notification (the [Approvals] tab of the communication panel) when a document is sent for approval. Type: Boolean. Default value: "False".

[Mailbox for sending email with information on approval] (VisaMailboxSettings) – email account used to send the notifications about approvals. You can select any email account registered in the system. Type: lookup.

[Invoice approval process] (InvoiceVisaProcess) – the business process that is launched when an invoice is sent for approval. Type: lookup Default status: Default value: "Invoice approving". Available in Creatio products that have the [Invoices] section.

[Order approval process] (OrderVisaProcess) – business process that launches when an order is sent for approval. Type: lookup Default status: Default value: "Order approving". Available in Creatio products that have the [Orders] section.

[Contract approval process] (ContractVisaProcess) – business process that launches when a contract is sent for approval. Type: lookup Default status: Default value: "Contract approval". The setting is available in Creatio products that have the [Contracts] section.

[Email template for sending invoice approval information] (InvoiceVisaEmailTemplate) – template for the email that is automatically sent to the approver user or user group when an invoice is submitted for approval. To add and edit templates, use the "Email message templates" lookup. Type: lookup Default status: Default value: "Template of new invoice approval notification". Available in Creatio products that have the [Invoices] section.

[Email template for sending information about order approval] (OrderVisaEmailTemplate) – template for the email that is automatically sent to the approver user or user group when an order is submitted for approval. To add and edit templates, use the "Email message templates" lookup. Type: lookup Default status: Default value: "Template of new order approval notification". Available in Creatio products that have the [Orders] section.

[Email template for sending contract approval information] (ContractVisaEmailTemplate) – template for an email that is automatically sent to the approver user or user group when a contract is submitted for approval. To add and edit templates, use the "Email message templates" lookup. Type: lookup Default status: Default value: "Template of new contract approval notification". The setting is available in Creatio products that have the [Contracts] section.

Auto numbering of records

The following settings are available in Creatio products that have the corresponding sections.

System settings of this group facilitate automatic numbering of records, for example, invoice codes or account numbers. There are two types of settings: one specifies the static text (mask) of a number, and another one is used for saving the last generated number. For example, to generate a knowledge base article code like "Article-23", where 23 is the current number of the invoice, enter the following mask: Knowledge base article-{0}.

Auto numbering is enabled for the following objects:

- "Document" – via the [Document number mask] (DocumentCodeMask) and [Current number of document] (DocumentLastNumber) system settings.
- "Contract" – [Contract number mask] (ContractCodeMask) and [Current contract] (ContractLastNumber) settings;

- "Account" – via the [Account code mask] (AccountCodeMask) and [Current number of account] (AccountLastNumber) system settings.
- "Knowledge base article" – via the [Knowledge base article number mask] (KnowledgeBaseCodeMask) and [Current number of knowledge base article] (KnowledgeBaseLastNumber) system settings.
- "Invoice" – via the [Invoice number mask] (InvoiceCodeMask) and [Current number of invoice] (InvoiceLastNumber) system settings.
- "Case" – via the [Case number mask] (CaseCodeMask) and [Current number of case] (CaseLastNumber) system settings.
- "Service contract" – [Service agreement number mask] (ServicePactCodeMask) and [Current number of service agreement] (ServicePactLastNumber) settings.
- "Operation" – via the [Cash flow number mask] (CashflowCodeMask) and [Current number of operation] (CashflowLastNumber) system settings.
- "Problem" – via the [Problem number mask] (ProblemCodeMask) and [Current number of problem] (ProblemLastNumber) system settings.
- "Change" – via the [Change number mask] (ChangeCodeMask) and [Current number of change] (ChangeLastNumber) system settings.
- "Release" – via the [Release number mask] (ReleaseCodeMask) and [Current number of release] (ReleaseLastNumber) system settings.
- "Order" – via the [Order number mask] (OrderCodeMask) and [Current number of order] (OrderLastNumber) system settings.

The [Mask number...] system setting is used during the process of generating the number or code of record when it is created. With the help of this setting you can specify a static text (mask) preceding or following the numeric value of number or code. Type: text (500 characters).

The [Current number of...] system setting is used for generating the number or code of record when it is created. Stores the numeric component of the last created record. Type: integer.

Administration

[Licensing company Id] (CustomerId) – stores the unique identifier of your company used for licensing purposes. Company Id is provided when purchasing licenses. Type: text (500 characters).

[Joined objects administering] (QueryJoinRightLevel) – manages access to viewing information from one of the joined objects. For example, when viewing information about primary contact (like job responsibility or birth date) from the [Accounts] section. Type: integer. Default value: 0. This system setting can have one of the following values:

0 – show data only from those records in the joined object for which the current user has access.

1 – show data only from those records in the joined object for which the current user has access. In case the user does not have access to a record, show data from the primary displayed column.

2 – show data from all records of joined object, regardless of whether or not the user has access to them.

ATTENTION

If the current user doesn't have the access to the "Read" operation for the object that contains the connected record, then the data of the connected object will not be displayed regardless of the value of the [Joined objects administering] system setting.

Managing passwords

[Show message about locking account during logging in] (DisplayAccountLockoutMessageAtLogin), [Show message about incorrect password during logging in] (DisplayIncorrectPasswordMessageAtLogin) – the settings manage the message displayed if a user enters an incorrect username or password. The displayed value depends on both settings. Type: Boolean. Default value: “False”.

If the “off” value is set for both settings, then when entering an incorrect password or username, the standard message is displayed: “Either invalid username or password specified, or your user account is inactive”.

If the “on” value is set for both settings:

- If a user enters an incorrect username, the message will be “You have entered incorrect username”.
- If a user enters an incorrect password, the message will be “You have entered incorrect password”.
- If a locked user tries to authorize to the system, the message will be “Your user account is locked”.

If only the [Show message about locking account during logging in] setting is on:

- If a user enters an incorrect username or password, the message will be “You have entered incorrect username or password”.
- If a locked user tries to authorize to the system, the message will be “Your user account is locked”.

If only the [Show message about incorrect password during logging in] system setting is on:

- If a user enters an incorrect username, the message will be “You have entered incorrect username or your user account is locked”.
- If a user enters an incorrect password, the message will be “You have entered incorrect password”.
- If a locked user tries to authorize to the system, the message will be “You have entered incorrect username or your user account is locked”.

[Quantity of login attempts for warning message] (LoginAttemptBeforeWarningCount) – number of failed attempts to enter the password before displaying the message about the number of remaining attempts before the user account is locked. If the “0” value is set for the system setting, the message is not displayed. Type: integer. Default value: 0.

[Number of login attempts] (LoginAttemptCount) – number of unsuccessful attempts to enter the correct password. If the number of login attempts exceeds specified threshold, the user account will be locked for the period specified in the [User locking time] (UserLockoutDuration) system setting. If the “0” value is set for the system setting, the number of attempts is unlimited. Type: integer. Default value: 0.

[Password validity term, days] (MaxPasswordAge) – number of days since the password was created or edited after which the user must change the password. The password is changed when logging in to the system. If the “0” value is set for the system setting, the password never expires. Type: integer. Default value: 0.

[Reminder about password change, days] (PasswordChangeReminding) –number of days before the password expires, upon next login attempt Creatio displays the message about the number of days left until the password must be changed and offers to open the password change page. If the “0” value is set for the system setting, the message is not displayed. Type: integer. Default value: 0.

[Quantity of analyzed passwords] (PasswordHistoryRecordCount) – the number of previous user passwords. Note that the new password must not match any of the previous passwords. When you enter a password that matches one of the previous passwords, the system will display the message containing the number of previous passwords that must not match the new password. Once the password is changed, the previous password will be saved in the system. If the "0" value is set for the system setting, the new password can be identical to the previous one. Type: integer. Default value: 0.

[User locking time] (UserLockoutDuration) – time period (in minutes) during which the user will not be allowed to log in to the system once the number of failed attempts to enter the password exceeds the set threshold. If the "0" value is set for the system setting, the user will not be locked. Type: integer. Default value: 0.

Password strength settings set the requirements that must be met by new passwords. The following settings define these requirements:

- [Password complexity: Minimum length] (MinPasswordLength) – minimum number of characters in the password. Type: integer. Default value: 0.
- [Password complexity: Minimum quantity of lower case characters] (MinPasswordLowercaseCharCount) – minimum number of lowercase letters in the password. Type: integer. Default value: 0.
- [Password complexity: Minimum quantity of upper case characters] (MinPasswordUppercaseCharCount) – minimum number of uppercase letters in the password. Type: integer. Default value: 0.
- [Password complexity: Minimum quantity of digits] (MinPasswordNumericCharCount) – minimum number of digits in the password. Type: integer. Default value: 0.
- [Password complexity: Minimum quantity of special characters] (MinPasswordSpecialCharCount) – minimum number of special symbols that are not letters or digits (#, %, &, !, ?, etc.) Type: integer. Default value: 0.

Values by default

The following settings are available in Creatio products that have the corresponding sections.

[Attachments and notes default icon] (FileDetailDefaultIcon) – icon used in the tile view on the [Attachments] detail for the files, whose type is not specified in the [File resolutions] lookup. Type: lookup Default status: Default value: default.

[Document status by default] (DocumentStatusDef) – specifies a default status for new documents. Type: lookup Default status: Default value: Planned.

[Invoice payment status by default] (InvoicePaymentStatusDef) – specifies a default payment status for new invoices. Type: lookup Default status: Default value: Not issued.

[Order delivery status] (OrderDeliveryStatusDef) – specifies a default status for a new order delivery. Type: lookup Default status: Default value: Planned.

[Order payment status] (OrderPaymentStatusDef) – specifies a default payment status for new orders. Type: lookup Default status: Default value: Planned.

[Order status] (OrderStatusDef) – specifies a default status for new orders. Type: lookup Default status: Default value: 1. Planned.

[Default unit of measure] (DefaultUnit) – specifies a default unit of measure for a new product. Type: lookup Default status: Default value: number.

[Default change source] (ChangeSourceDef) – specifies a default source for new changes. Type: lookup Default status: Default value: Project

[Default change category] (ChangeCategoryDef) – specifies a default category for new changes. Type: lookup Default status: Default value: Normal.

[Case closure code by default] (CaseClosureCodeDef) – specifies a default code for closed cases. Type: lookup Default status: Default value: Full solution provided.

[Default change priority] (ChangePriorityDef) – specifies a default priority for new changes. Type: lookup Default status: Default value: Average.

[Case default priority] (CasePriorityDef) – specifies a default priority for new cases. Type: lookup Default status: Default value: Average.

[Default release priority] (ReleasePriorityDef) – specifies a default priority for new releases. Type: lookup Default status: Default value: Average.

[Default case source] (CaseOriginDef) – specifies a default status for new cases. Type: lookup Default value: Default value: Call (in Creatio customer center, service enterprise and CRM-bundles) or Personal visit (in Creatio bank customer journey and CRM-bundles).

[Default service agreement] (DefaultServicePact) – base service agreement used for the calculation of response and resolution time, if the case SLA cannot be determined by the case contact or account. Type: lookup Default status: Default value: Service contract by default.

[Default change status] (ChangeStatusDef) – specifies default status for new changes. Type: lookup Default status: Default value: New.

[CI default status] (ConfigurationItemStatusDef) – specifies default status for new configuration units. Type: lookup Default status: Default value: In use.

[Case default status] (CaseStatusDef) – specifies default status for new cases. Type: lookup Default status: Default value: New.

[Default problem status] (ProblemStatusDef) – specifies default status for new problems. Type: lookup Default status: Default value: New.

[Default release status] (ReleaseStatusDef) – specifies a default status for new releases. Type: lookup Default value: Planned.

[Default service status] (ServiceItemStatusDef) – specifies a default status for new statuses. Type: lookup Default status: Default value: Provided.

[Default service agreement status] (ServicePactStatusDef) – specifies a default payment status for new service contracts. Type: lookup Default status: Default status: Active.

[Time for case overdue check, minutes] (CaseOverduesCheckTerm) – determines the frequency with which Creatio checks if cases are overdue. Overdue case has the date of planned reaction or planned resolution less than the current date and the date of actual reaction or the actual resolution is not specified. As a check result, the checkbox is selected in the [Reaction overdue] or [Resolution overdue] column on the case page. The setting value is set in minutes. Type: integer. Default value: 2.

[Default release type] (ReleaseTypeDef) – specifies default type for new releases. Type: lookup Default status: Default value: Low.

[Default service agreement type] (ServicePactTypeDef) – specifies default type for new service contracts. Type: lookup Default status: Default value: SLA.

[Default support line for case] (CaseServiceLevelDef) – specifies default support level for new cases. Type: lookup Default status: Default value: 1st line.

[Default change goal] (ChangePurposeDef) – specifies default purpose for new changes. Type: lookup Default status: Default value: Standard changes.

[Base price list] (BasePriceList) – specifies a price list that determines the product price. Type: lookup Default status: Default value: Base.

Configuration

[Repository URI by default] (DefRepositoryUri) – contains the path to the package repository that is used in the system by default. The default path is used if the path to the package repository hasn't been specified. Type: text (500 characters).

[Base card page - Aggregate column] (StructureExplorerAggColumnEditPageSchemaUId) – page for aggregate columns used in the column setup window. Type: lookup Default status: Default value: Aggregate column setup.

[Base column card page] (StructureExplorerColumnEditPageSchemaUId) – page for standard columns used in the column setup window. Type: lookup Default status: Default value: Aggregate column setup.

[Base lookup card page] (DefLookupEditPageSchemaUId) – used in lookup registration. This system setting determines the page to be used as a base page for cards of standard lookups. Type: lookup. Default value: Base lookup card page.

[Base lookup page] (DefLookupGridPageSchemaUId) – used in lookup registration. Using this system setting you can specify the base page for displaying lists of records in standard lookups, as well as when opening a window for any lookup in the system. Type: lookup Default status: Default value: Lookup page.

> NOTE
>
> Lookups are registered in the [Lookups] section.

[Current package] (CurrentPackageId) – the package that contains all changes made via the Section Wizard. These can be, for example, changes associated with adding columns to the section object or adding a new section to the system. Type: lookup. The "Custom" package is set as the current package by default. To migrate configuration settings made in the Section Wizard to another application, be sure to change the value of this system setting. Select the package to save your configuration changes in the [Value by Default] field (this package can later be exported and installed on a new application).

[Mobile application manifest] (MobileApplicationManifest) – contains the name of the XML file that contains the configuration of the mobile application. If multiple manifests are specified, their names are separated with the ";" symbol. Type: text (50 characters).

[Calendar start date] (SchedulerTimingStart) – sets the start date for the period in the user calendar. Type: integer. Default value: 0.

[Calendar end date] (SchedulerTimingEnd) – sets the end date for the time period in the user calendar. Type: integer. Default value: 24.

[Configuration items can be saved without locking] (AllowSaveUnlockedSchema) – use this system setting to enable or disable saving changes in an unlocked solution item. You can enable this system setting when, for example, only one developer handles all the workspace. Type: Boolean. Default value: "False".

[Package repository path] (UpdateRepositoryUri) – path to a repository folder that contains updated base packages. Use this system setting to update the application version. The value of this system setting is provided by the support service. Type: text (500 characters).

[Display C# compiler warnings when publishing configuration] (CodeCompilerWarningLevel) – level of C# compiler warnings that will be displayed when compiling workspace files. Type: integer. Default value: 2.

[Publisher] (Maintainer) – identifies a party that makes changes to the configuration. The publisher name is assigned to each package separately. You can edit only packages that have been published by your company. The setting is used for developing user workspaces for the third parties. Type: text (250 characters).

[Maximum quantity of data strings to be bound to package] (MaxPackageSchemaDataRowsCount) – if the number of the bound records reaches the system setting value when binding the data to the package, the corresponding message will be displayed and the data binding should be confirmed. Type: integer. Default value: 100.

NOTE

Binding large volumes of records to a package can take a long time.

Finances

[Base currency] (PrimaryCurrency) – sets a base currency used for financial calculations in the system. Type: lookup Default status: Default value: Euro.

[Tax by default] (DefaultTax) – specifies default tax to use when adding a product. Type: lookup Default status: Default value: Default value: VAT. Found in Sales Creatio enterprise, Sales Creatio commerce, Sales Creatio team products.

[Price includes tax] (PriceWithTaxes) – this system setting determines the taxation method used when calculating product cost. Type: Boolean. Default value: "True". The setting is available in Sales Creatio enterprise, Sales Creatio commerce, Sales Creatio team and CRM-bundles.

Global Search

[Global search default entity weight] (GlobalSearchDefaultEntityWeight) – enables increasing the display priority of the search results that display records of the section where the search was performed. For example, if you enter a search query from the [Contacts] section, the records of this section will appear first in the list.

[Global search default primary column weight] (GlobalSearchDefaultPrimaryColumnWeight) – enables increasing the display priority of the specific search results. It applies to records, whose primary column value matches the search query (for example, [Full name] is a primary column for the contact and [Name] is a primary column for the account). If the search query matches the value in the primary column of the record, this record will be displayed at the top of the list of search results.

[Display search results with partial match] (UseInexactGlobalSearch) – enables displaying search results taking morphology, typos and fuzzy matches into account. Type: Boolean. Default value: "False".

[Match threshold for displaying in search results (percent)] (GlobalSearchShouldMatchPercent) – enables managing the amount of displayed search results with partial match. For this system setting, you can set an integer value from 0 to 100. The lower the value is – the more results with partial match are displayed. This will increase the chances of finding the needed data for inaccurate search requests.

Duplicate search

[Date of last duplicate search by contacts] (LastContactDuplicatesSearch) – date and time of the last search for duplicate records in the [Contacts] section. Type: date/time.

[Date of last duplicate search by accounts] (LastAccountDuplicatesSearch) – date and time of the last search for duplicate records in the [Accounts] section. Type: date/time.

LDAP synchronization

The settings in this group are used to synchronize users with the LDAP server.

ATTENTION

We recommend that you use the LDAP synchronization setup window for LDAP synchronization setup.

LDAP connection settings

[LDAP server name or IP] (LDAPServer) – address used to connect to the LDAP server. Type: text (50 characters).

[LDAP authentication type] (LDAPAuthType) – authentication type that is used when authorizing the LDAP users. For example, Ntlm, Anonymous, Basic, etc. Type: lookup.

[LDAP server user login] (LDAPServerLogin) – user login for connecting to the LDAP server. For example, it could be the system administrator domain name. Type: text (50 characters).

[LDAP server user password] (LDAPServerPassword) – user password for connecting to the LDAP server. For example, the system administrator's domain password. The password data is encrypted. Type: encrypted string.

User synchronization settings

[Name of attribute containing LDAP user full name] (LDAPUserFullNameAttribute) – attribute of entry in the LDAP directory that contains the full name of a user. For example, this can be the “name” attribute. Type: text (50 characters).

[Name of attribute containing LDAP user login] (LDAPUserLoginAttribute)– attribute of entry in the LDAP directory that contains the domain login of a user. For example, “AccountName”. Type: text (50 characters).

[Name of attribute to identify LDAP user] (LDAPUserIdentityAttribute) – any attribute of entry in the LDAP directory, whose value is unique for each entry. The value of this attribute is used as a unique identifier of records, when synchronizing users. For example, in Active Directory it could be “objectSid”. Type: text (50 characters).

[LDAP entry, which contains list of LDAP users] (LDAPUsersEntry) – unique name (distinguishedName, DN) of an entry in the LDAP directory organization structure (folders, groups, etc) that contains user-type entries. For example, “CN=Users,DC=example,DC=com”. If the directory contains a number of such entries, specify the unique name of their mutual parent entry. Type: text (50 characters).

[Condition to form list of LDAP users] (LDAPUsersFilter) – filter used to select LDAP entries for user synchronization. For example, for Active Directory this filter expression can be as follows:

> “(&(objectClass=user)(objectClass=person)(!objectClass=computer)(!userAccountControl:1.2.840.113556.1.4.803:=2))”.

Type: text (50 characters).

[Name of attribute containing LDAP current employment] (LDAPUserCompanyAttribute) – attribute of entry in the LDAP directory that contains the place of work of the user. Used when importing users from LDAP to automatically fill in the [Account] field in the contact page. Type: text (250 characters).

[Name of attribute containing LDAP user email] (LDAPUserEmailAttribute) – attribute of entry in the LDAP directory that contains the email of the user. Used when importing users from LDAP directory to automatically fill in the [Email] field in the contact page. Type: text (250 characters).

[Name of attribute containing LDAP user phone number] (LDAPUserPhoneAttribute) – attribute of entry in the LDAP directory that contains the phone number of the user. Used when importing users from LDAP directory to automatically fill in the [Business phone] field in the contact page. Type: text (250 characters).

[Name of attribute containing LDAP user job title] (LDAPUserJobTitleAttribute) – attribute of entry in the LDAP directory that contains the job title of the user. Used when importing users from LDAP directory to automatically fill in the [Job title] field in the contact page. Type: text (250 characters).

Folder synchronization settings

[Name of attribute containing LDAP group name] (LDAPGroupNameAttribute) – attribute of entry in the LDAP directory that contains the name of the user group. For example, the "cn" attribute in Active Directory. Type: text (50 characters).

[Name of attribute to identify LDAP group] (LDAPGroupIdentityAttribute) – attribute of entry in the LDAP directory whose value is unique for all entries. The value of this attribute is used as a unique identifier of records, when synchronizing groups. For example, in Active Directory it could be "objectSid". Type: text (50 characters).

[LDAP entry containing list of LDAP groups] (LDAPGroupsEntry) – unique name (distinguishedName, DN) of an organization structure item in the LDAP directory containing user group entries. For example, "CN=Groups,DC=example,DC=com". If the directory contains a number of such entries, specify the unique name of their mutual parent entry. Type: text (50 characters).

[Condition to form list of LDAP groups] (LDAPGroupsFilter) – filter used to select LDAP entries for group synchronization. For example, for Active Directory this filter expression can be as follows:

"(&(objectClass=group)(!userAccountControl:1.2.840.113556.1.4.803:=2))"

Type: text (50 characters).

[Condition to form list of LDAP users in group] (LDAPUsersInGroupFilter) – search filter that determines what users belong to which groups. For example: (memberOf=[#LDAPGroupDN#]). Use the following variables to specify filter parameters:

- [#LDAPGroupDN#] – unique name (Distinguished Name) of the group being searched;
- [#LDAPGroupName#] – name of the group. This variable will contain the value specified in the [Group name] field in the synchronization setup window;
- [#LDAPGroupIdentity#] – unique id of the searched folder. The variable will contain the value of the attribute specified in the [Unique identifier of group] field of the LDAP synchronization setup window.

Type: text (50 characters).

Additional LDAP synchronization settings

[Name of attribute containing LDAP entry modification date] (LDAPEntryModifiedOnAttribute) – attribute of entry in the LDAP directory, which contains the date and time of the last modification of the entry in the "generalized time" format. Used for identifying new users in the LDAP group during the synchronization. Type: text (50 characters). Default value: "whenChanged."

[LDAP synchronization interval, hours] (LDAPSynchInterval) – time between LDAP synchronization sessions, specified in hours. Type: integer. Default value: 1.

[Date of last synchronization with LDAP] – date and time of the last synchronization session. The value of this system setting is updated automatically. It is not recommended to edit it manually. This system setting is used for the automatic LDAP synchronization. Type: date/time.

Integration with external resources

The [Integration with external resources] system setting is used to register the application in the social networks and Google. Three system settings are used for each registration: [Application registration page] (FacebookRegistrationPage, GoogleRegistrationPage, TwitterRegistrationPage), [Access key]

(FacebookConsumerKey, FacebookConsumerSecret, GoogleConsumerKey, GoogleConsumerSecret, etc.), and [Secret access key] (FacebookConsumerSecret, GoogleConsumerSecret, TwitterConsumerSecret). The "Application registration page" contains the address of an external resource that is used for registration, for example, "https://code.google.com/apis/console/".

The procedure of obtaining values for the "Access Key" and "Secret Access Key" system settings of this folder is explained when describing the procedure of signing up the application to social networks and Google.

Integration with message services

[Default message exchange library] (SysMsgLib) – sets the telephony integration library that is used by default. Type: lookup Default status:

Cases

The following settings are available in Service Creatio enterprise, Service Creatio customer center, Financial Services Creatio customer journey and CRM-bundles.

[1st-line support] (FirstSupportLine) – sets a user group that corresponds to the "1st-line support" value of the "Roles in the service team" lookup. Used in the incident management process in case of incident escalation. Type: lookup. Default value: "1st line of support".

[2nd-line support] (SecondSupportLine) – sets a user group that corresponds to the "2nd line of support" value of the "Roles in the service team" lookup. Used in the incident management process in case of incident escalation. Type: lookup. Default value: "2nd line of support".

[3rd-line support] (TrirdSupportLine) – sets a user group that corresponds to the "3rd line of support" value of the "Roles in the service team" lookup. Used in the incident management process in case of incident escalation. Type: lookup. Default value: "3rd line of support".

[Create cases by junk emails] (CreateCasesFromJunkEmails) – determines whether to create cases by emails from the addresses and domains specified in the [Blacklist of email addresses and domains for case registration] lookup. Type: Boolean. Default value: "Switched of" (flag removed).

[Junk case default status] (JunkCaseDefaultStatus) – sets the default status for cases registered by emails and domains specified in the [Blacklist of email addresses and domains for case registration] lookup. Type: lookup Default status: Default value: "Canceled".

[Automatically create new contacts for unknown email addresses] (CreateNewContactsForUnknownEmailAddresses) – determines whether to create a new contact when registering a case from an unknown email. Type: Boolean. Default value: "True" (checkbox is checked).

[Number of waiting days to reevaluate resolved case] (FirstReevaluationWaitingDays) – after a case is resolved and case evaluation email is sent, Creatio will wait for case evaluation from the case client for the specified number of days before sending a second reminder. Type: integer. Default value: 1.

[Number of waiting days after second reminder of resolved case] (SecondReevaluationWaitingDays) – after sending a case evaluation email for the second time, Creatio will wait for the specified number of days before closing the case. Type: integer. Default value: 1.

Applications

Settings are available in Creatio lending and CRM bundle for bank products.

[Main participant role in application] (MainParticipantRole) – sets the role of a transaction participant specified in the [Client] field. Type: lookup Default status: Default value: Borrower.

[Main registration document type] (MainRegDocumentType) – sets the primary identity document for a contact. Type: lookup Default status: Default value: "National passport".

mobile

Settings are available in Creatio enterprise and CRM-bundles.

[Check-in verification range] (CheckInRadius) – sets a distance that is the allowable discrepancy (in meters) between the coordinates of the employee and the actual coordinates of the check-in. Specified distance will be used for check-in verification.

[Use last known location of user] (UseMobileLastKnownLocation) – a system setting enabling a mobile device to use the latest cached employee's location and save it as check-in location if the actual check-in coordinates are unknown. Type: Boolean. Default value: "True".

VIDEO TUTORIALS

- System settings and lookups

Users and permissions

You can grant permissions to access Creatio data and functionality for individual users and user groups (referred to as "roles").

Users

You need to create and license a user account for each Creatio user. Each user record must be linked to a specific contact. Enterprise organizations with an extensive infrastructure of IT services can benefit from a number of features for centralized user management and authentication.

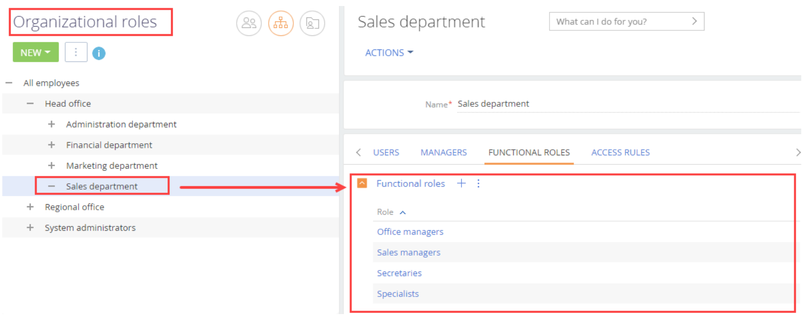
Synchronization with the LDAP catalog will automatically create Creatio users with all necessary details from your LDAP directory, such as name, job title, communication options, addresses, roles, etc. In addition, users will be able to use their domain credentials to log in to Creatio. You can learn more about how to set up LDAP synchronization in the "LDAP integration and user authentication in Creatio" article.

Single Sign-On (SSO) technology enables using a single user account to log in to multiple services. Once a user authenticates in one of the services, they become authenticated in all services that use single sign-on. Learn more about SSO features in the "Single Sign-On in Creatio" and "Single Sign-On setup" articles.

Roles

Configuring the structure of user roles (Fig. 1) is the important first step in Creatio permission management. After this, you can easily set access permissions by assigning new users to the needed roles.

Fig. 1 Example of the role structure



There are two types of user roles: organizational and functional. All users assigned to a role inherit the access permissions of that role. An actual access level of a Creatio user is a combination of access permissions of all of the user's roles.

Organizational roles represent the structure of access levels. You assign access permissions to organizational roles. Examples of organizational roles are different company branches (e.g., the head office and a regional office), as well as company departments, e.g., "System administrators", "Sales", "Administrative department".

Functional roles are designed to represent the structure of your actual job titles. You assign permissions to functional roles by linking them with organizational roles. Examples of functional roles are usually “Sales manager”, “Office manager”, “Secretary”. For example, if you need to grant the same permissions to secretaries of different offices, set up access permissions for the “Secretaries” functional role.

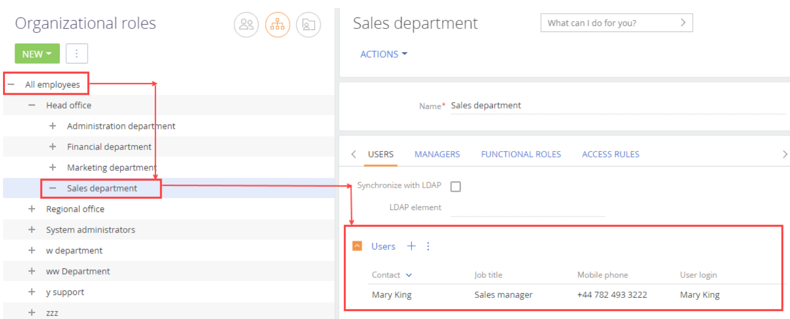
> **NOTE**
> The data of Creatio users, organizational and functional roles are stored in the “SysAdminUnit” database table.

Permission inheritance between organizational roles

Subordinate roles inherit all access permissions that have been set up for their parent role. As a result, in addition to any permissions that you assign individually for a user, the user will also obtain any permissions of their role, as well as any permissions inherited by that role from other roles.

For example, the “All employees” organizational role grants minimum access permissions necessary for any employee. If you add a user to any of its subordinate roles, e.g., “Sales department”, such user will inherit all permissions set up for both, the “Sales department” and “All employees” roles. Users with a role that is subordinate to the “Sales department” role will inherit the access permissions from that role, permissions from its parent “Sales department” role and permissions from the “All employees” role, which is a parent role for the “Sales department” role (Fig. 2).

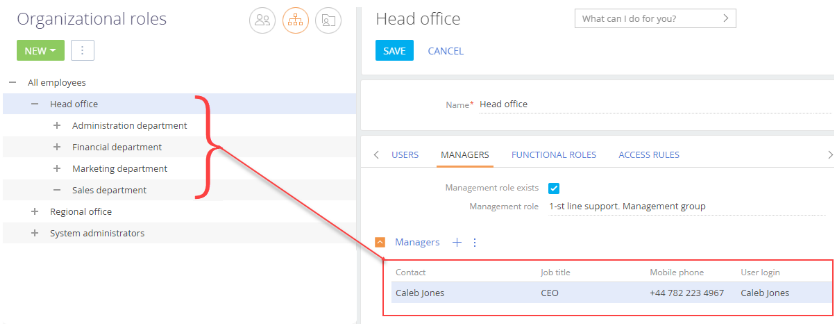
Fig. 2 Example of inheriting parent roles by a user



As a result, in addition to any permissions that you assign individually for a user, the user will also obtain any permissions of their role, as well as any permissions inherited by that role from other roles.

For any organizational role, you can assign a manager role. A manager role automatically obtains all permissions from all of its subordinate employees. The main defining feature of the manager role (Fig. 3) is that it automatically obtains all the permissions of the corresponding organizational role and its subordinate roles. For example, the “All employees” organizational role includes a “Head office’ subordinate role, which in its turn includes a “Sales department” subordinate role. If you assign a manager role to the “Head office” role, the managers of the head office will obtain all permissions granted to the “Head office” and “Sales department” roles.

Fig. 3 Example of a manager role for the "Sales department' organizational role



Each Creatio configuration has a "System administrators" organizational role. By default, this role has maximum possible permissions and can create, read, update and delete any data.

A user can have several roles. For example, you can assign an employee the "Sales managers" and "Account managers" roles. Permissions for each of these roles may conflict with each other. In this case, you need to set up the permission priority. Read more about permission priorities in the "How to configure access to operations in section objects" article.

Types of access permissions

In Creatio, you can grant access to business data (e.g., to the [Accounts] section records or dashboards), as well as to the Creatio functions, such as the ability to export records to Excel, design business processes, configure sections, etc.

Access to business data grants permission to perform CRUD (creating, reading, updating and deleting) operations with data. To provide access to business data, you need to configure access permissions to corresponding Creatio objects. Creatio objects are roughly equivalent to database tables and correspond to sections, details, lookups, etc.

You can manage access to business data on several levels:

- Ability to perform CRUD operations with any data in an object. Learn more about setting up access to object data in the "Managing object operation permissions" article.
- Ability to view, edit or delete separate records. Learn more about record permissions in the "Managing record permissions" article.
- Ability to view, edit or delete values in separate object columns. Learn more about column permissions in the "Managing column permissions" article.

Access to functions can be granted through system operations. System operation permissions (access to Creatio functions) should not be confused with object operation permissions (which imply access to CRUD operations in objects). System operations enable you to manage access to a broad list of Creatio functions, including user registration, configuring workplaces, managing lookups, system configuration, etc.

> **NOTE**
> A user (as a rule, it is the system administrator) who has access to the "View any data", "Add any data", "Edit any data" and "Delete any data" system operations, can create, read, update or delete data in any object, regardless of settings in the [Object permissions] section.

Learn more about system operations in the "System operation permissions" article.

User activity logging and audit

Native tools for logging user activities in Creatio include Audit log and Change log.

Audit log automatically registers all events related to a modification of user roles, distribution of access permissions, changes in the values of system settings and users' authorization in the system. You can learn more about using the audit log in the “Audit log” article.

Change log enables tracking the history of changes in the database tables of Creatio. You can set up a list of objects that will be used for tracking changes in the change log. Learn more about using the log in the “Change log” article.

SEE ALSO

- Object permissions
- Managing object operation permissions
- Managing record permissions
- Managing column permissions
- Inherited access permissions
- Selecting an object to set up access permissions

User authentication

Creatio offers additional options for managing user accounts for enterprises with high user count or additional security requirements. The following options will ensure consistency between user accounts in Creatio and other enterprise's systems and services, as well as enable the users to use a single set of login credentials throughout those services:

- Single Sign-On (SSO)

  With single sign-on, users need to log in only once to authorize in multiple services that they are supposed to access. User authentication is processed by a secure third-party identity provider, with no need to manage passwords for every single user in Creatio. During the first login attempt, if the user account has not been created previously, just-in-time provisioning mechanism will automatically create the corresponding Creatio user account with proper data from the identity provider, such as user group, employee name, contact information, etc.

  Creatio can integrate with any identity provider that supports the SAML 2.0 protocol. This guide contains instructions on how to set up SSO with two popular identity providers: ADFS and OneLogin.

- LDAP (Lightweight Directory Access Protocol)

  An LDAP directory service can act as a single, authoritative user registry for thousands of users. Integrating with LDAP enables you to:

  - Pick up user roles and structure directly from your corporate Active Directory (AD).
  - Enable users to log in to Creatio with their domain credentials - LDAP compares them with the username and the password details stored in the Active Directory.

- Windows authentication

  Windows authentication lets authorized Windows domain users to log in to Creatio without having to enter login and password. A user's identity is verified by comparing the current user's domain credentials with the credentials of the corresponding Creatio or LDAP user.

CONTENTS

Single Sign-On in Creatio

The Single Sign-On technology in Creatio enables the use of a single user account to log in to multiple services. After signing in once via an identity provider, users can access their applications and services without the need to enter their login credentials. When the user signs out in any of the applications, sessions of all other connected applications end as well.

Single Sign-On advantages:

- Better security with less passwords for users to memorize.
- Faster authentication in multiple services.
- Easier administration of user accounts.
- Easier implementation process for security technologies due to the use of a single identity provider throughout all operating systems and devices.

  NOTE

  Creatio supports the SAML 2.0 protocol, therefore any identity provider that uses this protocol is compatible.

NOTE

Single Sign-On identification is supported by mobile devices running iOS and Android.

Essential Single Sign-On terminology

Single Sign-On, SSO – access control technology based on using a single resource for user authentication. This technology includes Single Sign-On, Single Sign-Off (Single Log Out) and Just-In-Time Provisioning methods.

Single Sign-Off (Single Log Out) – a reverse method that restricts user's access to services after a single log out operation on any of them.

Just-In-Time Provisioning – an automatic registration of user accounts in an application if no accounts exist for an authorized user.

Identity provider – a service that verifies user authenticity based on a contact directory or a response from a specific service. Creatio supports the SAML 2.0 protocol, therefore any identity provider that uses this protocol is compatible.

Service Provider – a service or a system accessed by the user.

Resource – the information that the user requests from the service provider.

User Agent – a user environment, browser or any other client application on the user's device.

Authentication – the process of verifying user's identity.

Authorization – the process of verifying permissions to perform an action or an operation.

Federated SSO – an authentication system where the service provider redirects users to the identity provider without receiving any user data.

Benefits of the Single Sign-On Technology

The following examples demonstrate the benefits of using the Single Sign-On technology:

Automatically creating a user account on first login

If a user has an account within the corporate domain, there is no need to create a new account for each resource used in the company. The user only needs to enter their universal account credentials and:

- If there is a user with the same login in the domain, Creatio will create a contact and an account for the new user.
- Contact data will be filled according to the [SAML field name converters to contact field name] lookup settings. The created record can be viewed in the [Contacts] section.
- A new account will obtain organizational and functional roles that are similar to its domain roles. The created record can be viewed in the users and roles management section.

NOTE

Automatic user creation is configured after the Single Sign-On setup and can be disabled.

Logging in on several resources

When you authenticate in one of the identity provider resources, the authentication to other provider resources will be automatic. The user does not need to enter their login and password to sign in to other applications.

Logging out from all resources

All resources and applications will receive a request to end your current session after you exit one of the resources. All resources and applications will log out the corresponding user.

Single Sign-On setup

To set up Single Sign-On:

1. Set up the identity provider by adding Creatio to trusted websites.
2. Set up the trusted identify provider in Creatio. Optionally, select the default identity provider.

Prerequisites:

1. A Creatio website, available by https and administrator privileges on the website.

   NOTE

   A Creatio setup for https protocol is described in the corresponding article.

2. Administrator privileges on the identity provider.
3. Users in the corporate domain.

Creatio can integrate with any identity provider that supports the SAML 2.0 protocol. This guide contains instructions on how to set up SSO with two popular identity providers: ADFS and OneLogin.

CONTENTS

Setting up Single Sign-On via ADFS

You can integrate your Active Directory Federation Services (ADFS) instance to help manage seamless single sign-on for your members. For this, you need to configure a number of settings both in ADFS and Creatio.

Settings on the Creatio side require access to the configuration files on the application server. Cloud customers will need to contact Creatio support with a request to perform the settings. The instructions for settings on the Creatio side in this guide are intended for on-site customers. We strongly advise on-site customers to perform setup under the guidance of a Creatio support specialist.

ATTENTION

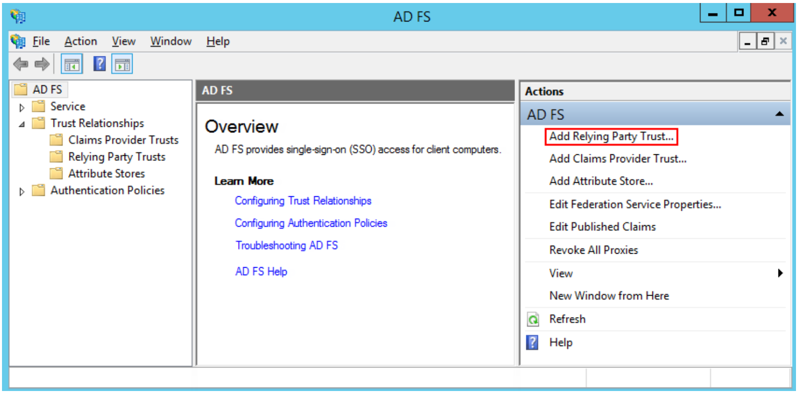
In the setup example below, https://site01.creatio.com/Demo_161215/ is the Creatio website and http://adfs01.mysite.com/adfs/ is the ADFS site. Please be sure to replace these addresses with the corresponding addresses of your sites when you perform the actual setup.

Settings on the ADFS side

Begin this procedure by launching an ADFS instance.

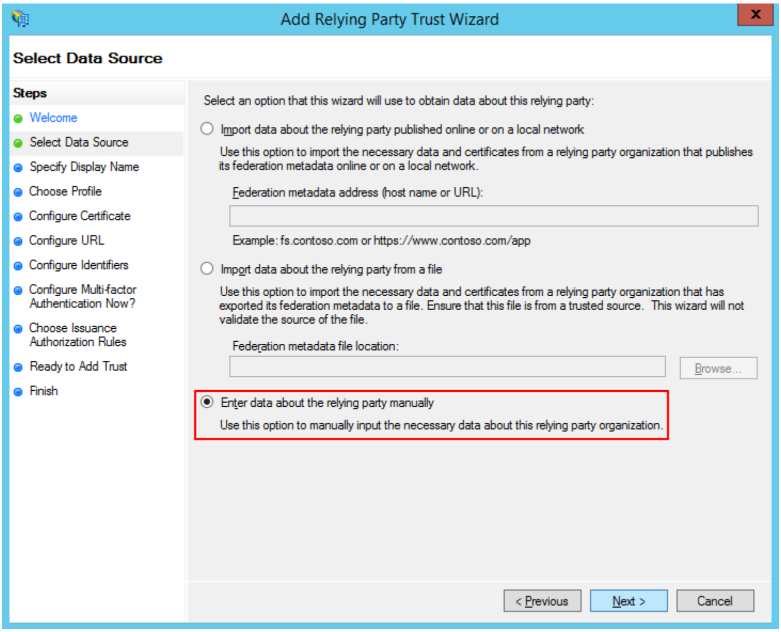
1. Add a new Trusted Relaying Party (Fig. 1).

Fig. 1 Adding a new Trusted Relaying Party



2. Select the "Enter data about the relying party manually" option (Fig. 2).

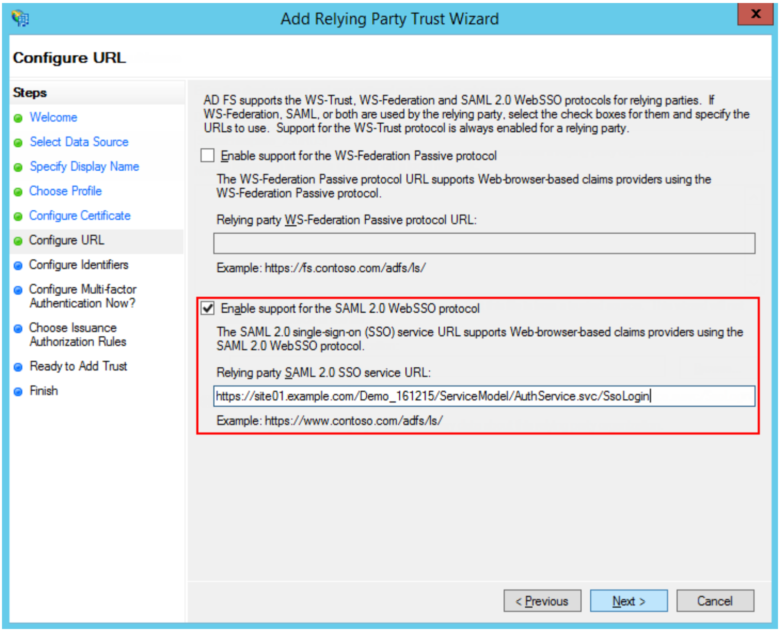
Fig. 2 Selecting the "Enter data about the relying party manually" option



3. Enter the relaying party name in the [Display name] field. This name is needed for a comprehensive list of trusted applications in ADFS and does not affect actual setup.
4. Keep the default ADFS profile. Click "Next".
5. Click "Next" on the certificate selection step.

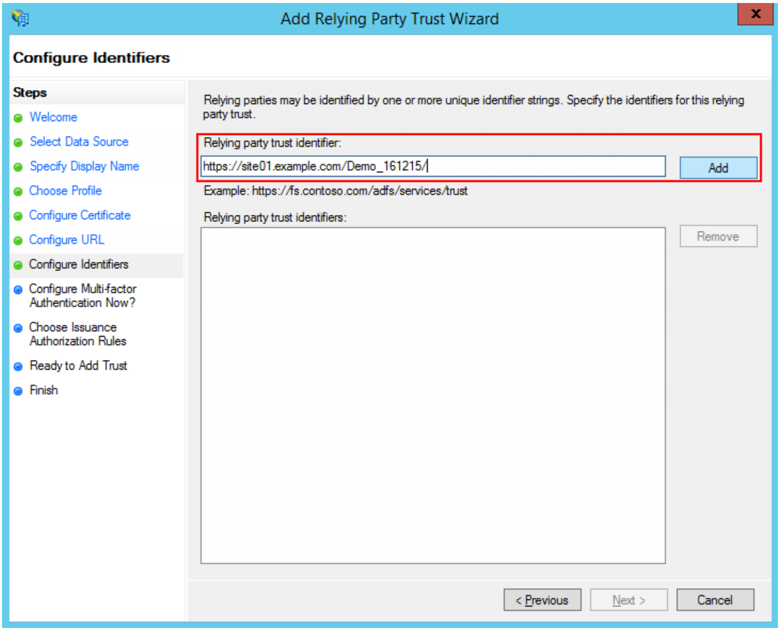
6. Enable SAML 2.0 protocol support. Specify the site address and add "/ServiceModel/AuthService.svc/SsoLogin" to it (Fig. 3).

Fig. 3 Enabling SAML 2.0 protocol support



7. Specify the website root as the identifier and click "Add" (Fig. 4).

Fig. 4 Specifying identifier

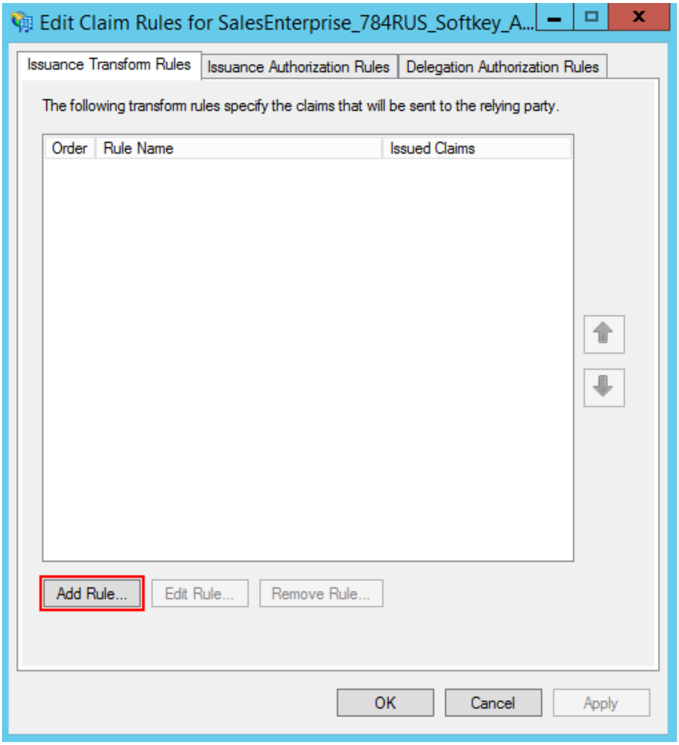


ATTENTION

The identifier is used when verifying the authenticity of a source that requests authentication. The URL must completely match, including the "/" in the end.

8. Set up the rest of the parameters according to your security requirements. You can leave default values for test purposes.
9. Click "Finish". In the opened window, click the "Add Rule" button and add a new SAML Assertion to SAML Response rule (Fig. 5).

Fig. 5 Adding a rule

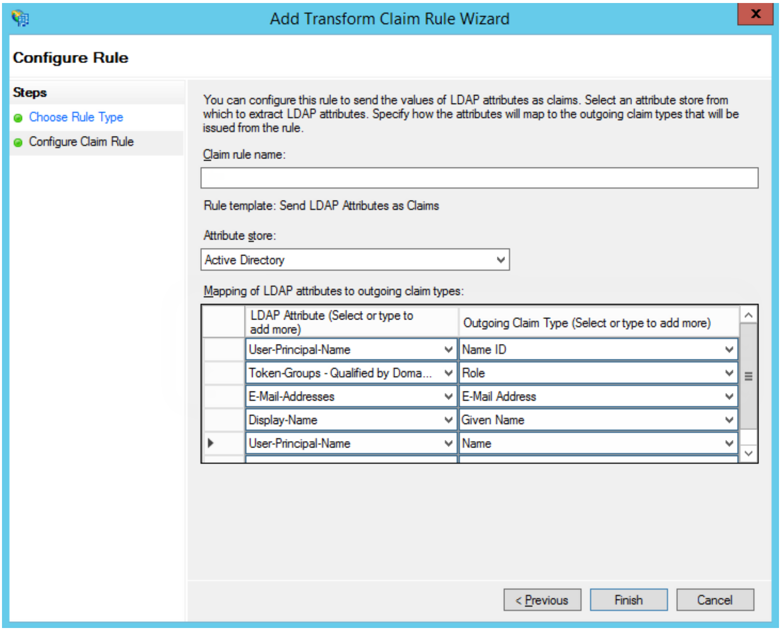


NOTE

The data generated according to the new rule will be used by Creatio to search for users and update their roles.

10. Keep default settings and click "Next" on the first step of the wizard. Set up a set of parameters that will be received from the user's data (Fig. 6). In the current example, the user's Name and a list of domain groups will be passed to SAML Assertion.

Fig. 6 Setting up rule parameters



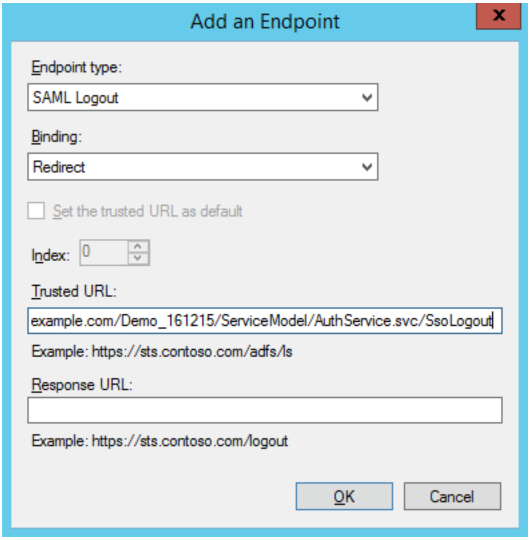
11. Click “Save”.
12. Open the Trusted Relay settings and specify SHA-1 encryption according to the website certificate algorithm.
13. Add Logout endpoint on the Endpoints tab and set its parameters (Fig. 7).

    Endpoint type: SAML Logout

    Binding: Redirect

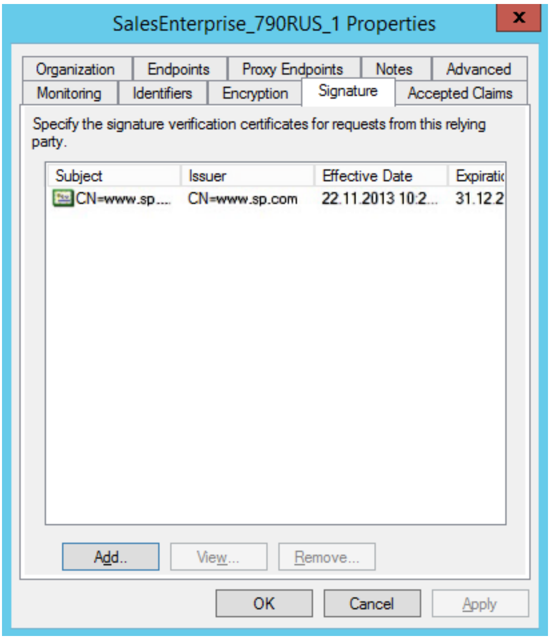
    Trusted URL: https://site01.creatio.com/Demo_161215/ServiceModel/AuthService.svc/SsoLogout

Fig. 7 Setting up endpoint parameters



14. On the Signature tab, add a certificate for signing Logout Request (Fig. 8).

Fig. 8 Adding a certificate



ATTENTION

Single Sign-Out will not work without a certificate.

Settings on the Creatio side (cloud)

If you use a cloud-based version of Creatio, contact our support and have our team configure Single Sign-On on your site via a remote connection.

Settings on the Creatio side (on-site)

If you use an on-site version of Creatio, perform the following settings in Creatio configuration files:

ATTENTION

On-site customers are strongly advised to perform these settings under the guidance of Creatio support.

1. Specify identity provider information in the saml.config. In the Name parameter, specify your website's FQDN.

   ATTENTION

   The value of the ServiceProvider Name parameter must be identical to the Identifier value specified on the ADFS identity provider's side. This is how it verifies that the SAML Assertion was issued specifically for your application. We recommend using the FQDN of your website.

2. In the Partner Identity Provider section, specify IdP settings. You can view these settings in the metadata file.

   WantAssertionSigned="false" – if an encryption certificate will not be used during SAML Assertion data exchange.

   SingleSignOnServiceUrl – URL of the identity provider's single sign-on. Usually for ADFS this is: https://site01.creatio.com/Demo_161215/adfs/ls.

   SingleLogoutServiceUrl – URL of the identity provider's single sign-off. Usually for ADFS this is: https://site01.creatio.com/Demo_161215/adfs/ls.

   PartnerCertificateFile – path to the security certificate in the file system on the Creatio application server. Specify this parameter if WantAssertionSigned="true".
   SignLogoutRequest="true" – specify for ADFS, since signing of LogoutRequest is required.

   SignLogoutResponse="true" – specify for ADFS, since signing of LogoutResponse is required.

   OverridePendingAuthnRequest="true" — this option helps in case of errors in IdP initiated login.

   An example of the saml.config for test ADFS:

```
>Azon"xgtukqp?$302$A@
>UCONEqphkiwtcvkqp"zonpu?$wtp<eqorqpgpvurceg<UCON<402<eqphkiwtcvkqp$@
"""">UgtxkegRtqxkfgt"Pcog?$jvvru<11ukvg230etgcvkq0eqo1Fgoqa3834371$
""""""""""""""
""""""""""""""""Fguetkrvkqp?$Gzcorng"Etgcvkq"Ugtxkeg"Rtqxkfgt$
""""""""""""""""CuugtvkqpEqpuwogtUgtxkegWtn?$¢1UgtxkegOqfgn1
CwvjUgtxkeg0uxe1UuqNqikp$
""""""""""""""""NqecnEgtvkhkecvgHkng?$ur0rhz$
""""""""""""""""NqecnEgtvkhkecvgRcuuyqtf?$rcuuyqtf$
"""""""""""""1@
"""">RctvpgtKfgpvkv{Rtqxkfgtu@
""""""""""
```


ACCELERATE

```
>#//"CFHU"Etgcvkq"//@
"""""""">RctvpgtKfgpvkv{Rtqxkfgt"Pcog?$jvvr<11cfhu230o{ukvg0eqo1cfhu1
ugtxkegu1vtwuv$
"""""""""""""""""""""""""""QxgttkfgRgpfkpiCwvjpTgswguv?$vtwg$
"""""""""""""""""""""""""""""""""Fguetkrvkqp?$OXE"Gzcorng"Kfgpvkv{"
Rtqxkfgt$
"""""""""""""""""""""""""""""""""UkipCwvjpTgswguv?$hcnug$
"""""""""""""""""""""""""""""""""UkipNqiqwvTgswguv?$vtwg$
"""""""""""""""""""""""""""""""""UkipNqiqwvTgurqpug?$vtwg$
"""""""""""""""""""""""""""""""""YcpvUCONTgurqpugUkipgf?$hcnug$
"""""""""""""""""""""""""""""""""YcpvCuugtvkqpUkipgf?$hcnug$
"""""""""""""""""""""""""""""""""YcpvCuugtvkqpGpet{rvgf?$hcnug$
"""""""""""""""""""""""""""""""""UkpingUkipQpUgtxkegWtn?$jvvru<11
cfhu230o{ukvg0eqo1cfhu1nu$
"""""""""""""""""""""""""""""""""UkpingNqiqwvUgtxkegWtn?$jvvru<11
cfhu230o{ukvg0eqo1cfhu1nu$
"""""""""""""""""""""""""""""""""
RctvpgtEgtvkhkecvgHkng?$Egtvkhkecvgu^kfr0egt$1@
"""">1RctvpgtKfgpvkv{Rtqxkfgtu@
>1UCONEqphkiwtcvkqp@
```

3. Specify the certificate that will be signing the SAML Assertion. Make sure that the certificate file is available in the Terrasoft.WebApp folder in the website root.

```
NqecnEgtvkhkecvgHkng?$ur0rhz$
NqecnEgtvkhkecvgRcuuyqtf?$rcuuyqtf$
```

4. Modify the web.config in the website root folder:

    a. Enable using SSO AuthProvider:

        SsoAuthProvider – identity provider for the primary application.

        SSPSsoAuthProvider – identity provider for the customer portal.

        You can enable one or both of the providers.

```
>vgttcuqhv@
>cwvj"
rtqxkfgtPcogu?$KpvgtpcnWugtRcuuyqtf.UURWugtRcuuyqtf.UuqCwvjRtqxkfgt.U
URUuqCwvjRtqxkfgt$"cwvqNqikpRtqxkfgtPcogu?$$"fghNcpiwcig?$gp/WU$"
fghYqtmurcegPcog?$Fghcwnv$"wugKRTguvtkevkqp?$hcnug$"
nqikpVkogqwv?$52222$@
>rtqxkfgtu@
```

    b. Specify which identity providers in the saml.config need to be used. In the web.config App Loader, specify the PartnerIdP parameter value from the Issuer URL string in saml.config, such as:

```
>crrUgvvkpiu@"000">cff"mg{?$RctvpgtKfR$"xcnwg?$jvvr<11
cfhu230o{ukvg0eqo1cfhu1ugtxkegu1vtwuv$1@"000">1crrUgvvkpiu@
```

    c. Enable using SSO by default. Edit the App Loader web.config: NuiLogin.aspx?use_sso=true

NOTE

A direct login link will be created: https://site01.creatio.com/NuiLogin.aspx
Use the following link to test the SSO operation before it is enabled by default: https://site01.creatio.com/NuiLogin.aspx?use_sso=true

Enable redirection to the identity provider when going to the website root:

```
>fghcwnvFqewogpv@">hkngu@">cff"xcnwg?$PwkNqikp0curzAwugauuq?vtwg$"1@"
>1hkngu@">1fghcwnvFqewogpv@
```

Enable redirection to the identity provider if no user session is available:

```
>cwvjgpvkecvkqp"oqfg?$Hqtou$@
>hqtou"nqikpWtn?$¢1PwkNqikp0curzAwugauuq?vtwg$"rtqvgevkqp?$Cnn$"
vkogqwv?$82$"pcog?$0CURZCWVJ$"rcvj?$1$"tgswktgUUN?$hcnug$"
unkfkpiGzrktcvkqp?$vtwg$"fghcwnvWtn?$XkgyRcig0curzAKf?6g564f7g/df:;/
6d9;/;:g4/44g655344625$"eqqmkgnguu?$WugFgxkegRtqhkng$"
gpcdngEtquuCrrTgfktgevu?$vtwg$"1@
>1cwvjgpvkecvkqp@
```

5. Enable Single Log Out in the web.config in the Terrasoft.WebApp folder:

```
1Vgttcuqhv0YgdCrr1ygd0eqphki
>cff"mg{?$WugUnq$"xcnwg?$vtwg$"1@
```

6. Enable Just-In-Time User Provisioning in the web.config in the application root:

```
>cff"pcog?$WugLkv$"xcnwg?$vtwg$"1@
```

7. Set up mapping between SAML Assertion fields and Creatio columns using the [SAML field name converter to contact field name] lookup. You need this to populate contact fields correctly when the system will create new users via Just-In-Time User Provisioning. If the field is empty or disabled in the identity provider data, it can be filled with the value specified in the [default value] field of the lookup. Next time you log in, the contact fields specified in the lookup will be populated with the values received from the provider or with actual default values.

NOTE

If the lookup is missing in the lookup list, it needs to be registered.

8. To use the Single Sign-On in a mobile application, please set the [default value] attribute in the [SSO in mobile application] system setting.

SEE ALSO

- Setting up Single Sign-On via OneLogin
- Setting up Just-In-Time User Provisioning

Setting up Single Sign-On via OneLogin

You can use OneLogin SSO portal as a single sign-on point for all your services, including Creatio. For this, you need to configure a number of settings both on the OneLogin and Creatio side.

Settings on the Creatio side require access to the configuration files on the application server. Cloud customers will need to contact Creatio support with a request to perform the settings. The instructions for settings on the Creatio side in this guide are intended for on-site customers. We strongly advise on-site customers to perform setup under the guidance of a Creatio support specialist.

ATTENTION

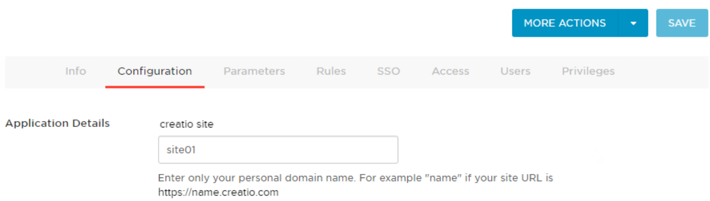
In the setup case below, we use https://site01.creatio.com/ as Creatio site address and “appid” as application id on the OneLogin. During the actual setup process, please be sure to replace these values with your site address and the id of corresponding application on OneLogin.

Settings on the OneLogin side

Start the procedure by logging in to OneLogin using an administrator account.

1. Click “Apps” and select “Add Apps”. Enter “Creatio” in the search string and select the Creatio application.
2. Change the value in the “Display name” field, if needed, modify application icons or clear the [Visible in portal] checkbox. These settings affect the website display on the OneLogin site.
3. Click “Save”.
4. Go to the “Configuration” tab and enter your website domain name in the “Creatio site” field (Fig. 9).

Fig. 9 Website configuration page



Settings on the Creatio side (cloud)

If you use a cloud-based version of Creatio, contact our support and have our team configure Single Sign-On on your site via a remote connection.

Settings on the Creatio side (on-site)

If you use an on-site version of Creatio, perform the following settings in Creatio configuration files:

ATTENTION

On-site customers are strongly advised to perform these settings under the guidance of Creatio support.

1. Specify identity provider information in the saml.config. In the Name parameter, specify your website’s FQDN, such as https://site01.creatio.com/.

ATTENTION

The value of the ServiceProvider Name parameter must be identical to the Audience value specified on the identity provider’s side. This is how it verifies that the SAML Assertion was issued specifically for your application. We recommend using the FQDN of your website.

2. In the Partner Identity Provider section, specify identity provider settings. You can view these settings in the metadata file.

WantAssertionSigned="false" – if an encryption certificate will not be used during SAML Assertion data exchange.

SingleSignOnServiceUrl – URL of the identity provider's single sign-on. Can be taken from the SAML 2.0 Endpoint (HTTP) on a trusted application page.

SingleLogoutServiceUrl – URL of the identity provider's single sign-off. Can be taken from the SLO Endpoint (HTTP) on a trusted application page.

An example of the saml.config for a test OneLogin:

```
>Azon"xgtukqp?$302$A@
>UCONEqphkiwtcvkqp"zonpu?$wtp<eqorqpgpvurceg<UCON<402<eqphkiwtcvkqp$@
"""">UgtxkegRtqxkfgt"Pcog?$jvvru<11ukvg230etgcvkq0eqo1$
"""""""""""""
""""""""""""""""Fguetkrvkqp?$Gzcorng"Etgcvkq"Ugtxkeg"Rtqxkfgt$
""""""""""""""""CuugtvkqpEqpuwogtUgtxkegWtn?$¢1UgtxkegOqfgn1
CwvjUgtxkeg0uxe1UuqNqikp$
""""""""""""1@
"""">RctvpgtKfgpvkv{Rtqxkfgtu@
"""""""""
""">#//QpgNqikp"Etgcvkq"//@
"""""""">RctvpgtKfgpvkv{Rtqxkfgt"Pcog?$jvvr<11cfhu230o{ukvg0eqo1cfhu1
ugtxkegu1vtwuv$
"""""""""""""""""""""""""""""""""Fguetkrvkqp?$QpgNqikp$
"""""""""""""""""""""""""""""""""YcpvCuugtvkqpUkipgf?$hcnug$
"""""""""""""""""""""""""""""""""UkpingUkipQpUgtxkegWtn?$jvvru<11vu/
fgx0qpgnqikp0eqo1vtwuv1ucon41jvvr/rquv1uuq1crrkf$
"""""""""""""""""""""""""""""""""UkpingNqiqwvUgtxkegWtn?$jvvru<11vu/
fgx0qpgnqikp0eqo1vtwuv1ucon41jvvr/tgfktgev1unq1crrkf$
"""""""""""""""""""""""""""""""""
RctvpgtEgtvkhkecvgHkng?$Egtvkhkecvgu^qpgnqikp0egt$1@
"
"""">1RctvpgtKfgpvkv{Rtqxkfgtu@
>1UCONEqphkiwtcvkqp@
```

3. Modify the web.config file in the website root folder:

   a. Enable using SSO AuthProvider:

      SsoAuthProvider – identity provider for the primary application.

      SSPSsoAuthProvider – identity provider for the customer portal.

      You can enable one or both of the providers.

```
>vgttcuqhv@
>cwvj"
rtqxkfgtPcogu?$KpvgtpcnWugtRcuuyqtf.UURWugtRcuuyqtf.UuqCwvjRtqxkfgt.U
URUuqCwvjRtqxkfgt$"cwvqNqikpRtqxkfgtPcogu?$$"fghNcpiwcig?$gp/WU$"
fghYqtmurcegPcog?$Fghcwnv$"wugKRTguvtkevkqp?$hcnug$"
nqikpVkogqwv?$52222$@
>rtqxkfgtu@
```

   b. Specify which IdP (of those specified in the saml.config) to use. In the web.config App Loader, specify the PartnerIdP parameter value from the Issuer URL string in saml.config, such as: "https://app.onelogin.com/saml/metadata/appid"

```
>crrUgvvkpiu@"000">cff"mg{?$RctvpgtKfR$"xcnwg?$jvvru<11
crr0qpgnqikp0eqo1ucon1ogvcfcvc1crrkf$1@"000">1crrUgvvkpiu@
```

   c. Enable using SSO by default. Edit the App Loader web.config: NuiLogin.aspx?use_sso=true

NOTE

A direct login link will be created: https://site01.creatio.com/NuiLogin.aspx
Use the following link to test the SSO operation before it is enabled by default: https://site01.creatio.com/NuiLogin.aspx?use_sso=true

Enable redirection to the identity provider when going to the website root:

```
>fghcwnvFqewogpv@">hkngu@">cff"xcnwg?$PwkNqikp0curzAwugauuq?vtwg$"1@"
>1hkngu@">1fghcwnvFqewogpv@
```

Enable redirection to the identity provider if no user session is available:

```
>cwvjgpvkecvkqp"oqfg?$Hqtou$@
>hqtou"nqikpWtn?$¢1PwkNqikp0curzAwugauuq?vtwg$"rtqvgevkqp?$Cnn$"
vkogqwv?$82$"pcog?$0CURZCWVJ$"rcvj?$1$"tgswktgUUN?$hcnug$"
unkfkpiGzrktcvkqp?$vtwg$"fghcwnvWtn?$XkgyRcig0curzAKf?6g564f7g/df:;/
6d9;/;:g4/44g655344625$"eqqmkgnguu?$WugFgxkegRtqhkng$"
gpcdngEtquuCrrTgfktgevu?$vtwg$"1@
>1cwvjgpvkecvkqp@
```

4. Enable Single Log Out in the web.config in the Terrasoft.WebApp folder:

```
>cff"mg{?$WugUnq$"xcnwg?$vtwg$"1@
```

5. Enable Just-In-Time User Provisioning in the web.config in the website root folder:

```
>cff"pcog?$WugLkv$"xcnwg?$vtwg$"1@
```

6. Set up mapping between SAML Assertion fields and Creatio columns using the [SAML field name converter to contact field name] lookup. You need this to populate contact fields correctly when the system will create new users via Just-In-Time User Provisioning. If the field is empty or disabled in the identity provider data, it can be filled with the value specified in the [default value] field of the lookup. Next time you log in, the contact fields specified in the lookup will be populated with the values received from the provider or with actual default values.

NOTE

If the lookup is missing in the lookup list, it needs to be registered.

7. To use the Single Sign-On in a mobile application, please set the [default value] attribute in the [SSO in mobile application] system setting.

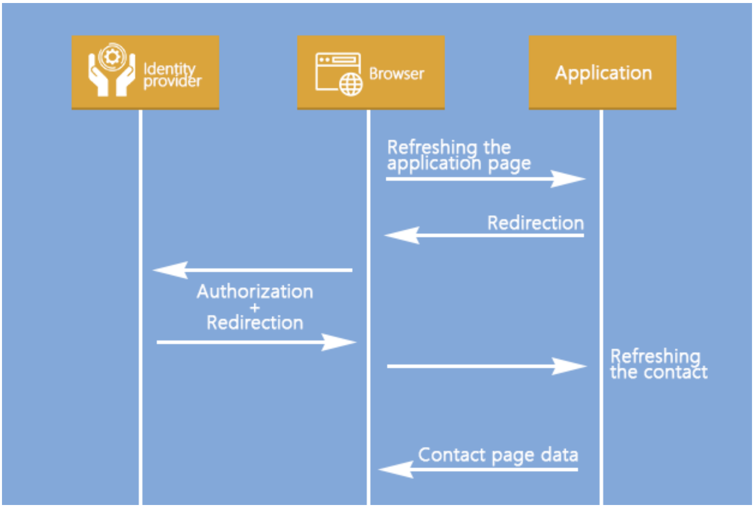
SEE ALSO

- Setting up Single Sign-On via ADFS
- Setting up Just-In-Time User Provisioning

Setting up Just-In-Time User Provisioning

Use Just-In-Time User Provisioning (JIT UP) function to avoid creating accounts for each separate service and to keep user database up-to-date. JIT UP extends the Single Sign-On (SSO) technology and helps to reduce the number of operations for administrating accounts and personal data in contact records. Each time a user logs on using SSO, the data on the contact page are updated with the data obtained from the identity provider (Fig. 10). If a user has no account in Creatio, it can be created when the user logs in for the first time.

Fig. 10 Updating data via Just-in-Time User Provisioning



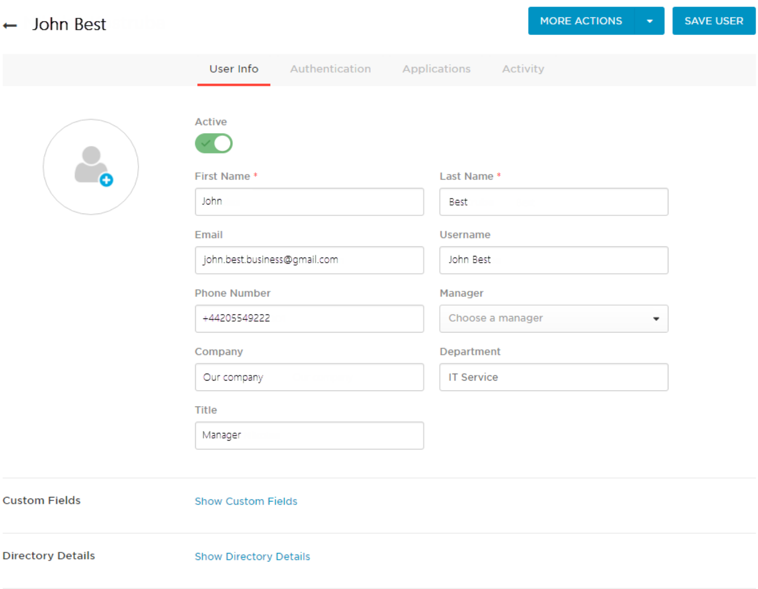
NOTE

Updating a contact with data from an identity provider includes updating the data on the record page and contact’s connections to user groups.

To specify contact fields that should be populated with data from the identity provider, configure the mapping of the SAML Assertion fields with Creatio columns. This is done in the SAML Assertion of the identity provider and in the [SAML field name converters to contact field name] lookup.

To set up mapping, you will need a configured account in the identity provider (Fig. 11) with the data required for Creatio.

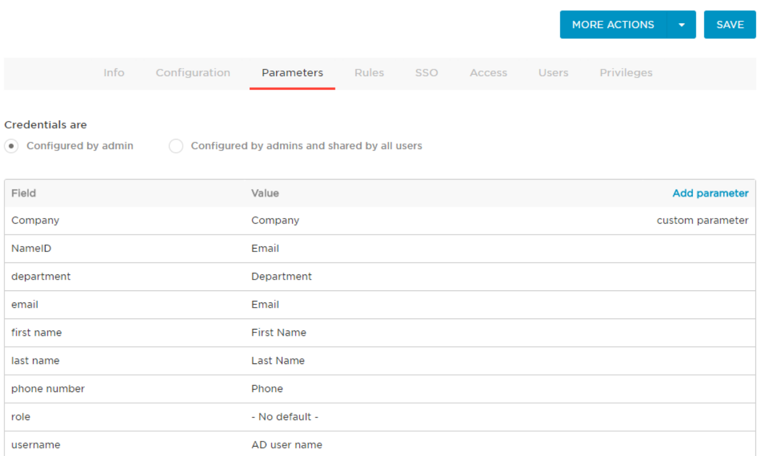
Fig. 11 Account fields in the OneLogin identity provider



To set up field population parameters:

1. Ensure that all required field values are transferred to Creatio. For example, to fill the profile of John Best with data from the [Company], [Department], [Email], [First Name], [Last Name] and [Phone] fields (Fig. 12).

Fig. 12 Application parameters in the OneLogin identity provider



NOTE

To verify the parameters, use the SAML Decoder extension in the Google Chrome browser.

2. Verify that correct rules to receive values and update the columns for each required field are specified on the Creatio side. Rules are configured in the [SAML field name converters to contact field name] lookup. Specify a column in the Creatio for each field received from the identity provider. For example, to fill the [Department], [Account], [Phone], [Email], [Given name] and [Surname] columns in Creatio, specify them next to the corresponding SAML attributes (Fig. 13).

NOTE

Specify column names in the Creatio database as contact columns.

Fig. 13 Configuration of the [SAML field name converters to contact field name] lookup

SAML field name converters to contact field name

Filter

SAML field attribute	Contact field name	Column default value
type	Type	Employee
mail	Email	
Full Name	Name	
Business phone	Phone	
Mobile Phone	MobilePhone	
email	Email	
E-Mail	Email	
emailaddress	Email	
Job Title	JobTitle	

3. A field that is missing in the identity provider data can be populated with the value specified in the [Column default value] field of the [SAML field name converters to contact field name] lookup. For example, the OneLogin identity provider does not contain the [Type] field and does not pass it when the user logs on. To populate this field in Creatio, create a rule in the lookup and specify the "Employee" value as default (Fig. 13). In this case, all created contacts will have the "Employee" value in the [Type] field.
4. You can add custom parameters to the OneLogin identity provider and specify macros for them. Working with macros is covered in a separate article.

SEE ALSO

- Setting up Single Sign-On via ADFS
- Setting up Single Sign-On via OneLogin
- Single Sign-On in Creatio

Synchronizing user accounts and roles with LDAP

Synchronization with an LDAP directory can be used to automate the user account administration in Creatio. Users, whose accounts have been synchronized with LDAP, can log in with their domain user name and password.

Creatio supports synchronization with Active Directory and OpenLDAP.

The synchronization procedure consists of three stages:

1. Performed once, unless LDAP directory structure changes. The setup is needed to enable the synchronization functionality in the system. Also, you will need to set up Active Directory user filtering. Learn more in the "Setting up Active Directory user filters" article.
2. Connecting Creatio items (i.e. users and organizational structure elements) to the respective items in the LDAP directory. This step is performed when adding new users or organizational roles. You can connect existing Creatio user accounts or import users from LDAP directory by creating connected records in Creatio automatically.
3. Synchronization of Creatio users and organizational structure elements with the connected LDAP directory elements. This step is required to update data in Creatio in order to reflect changes that occurred in the LDAP directory since the last synchronization. The regular synchronization is performed either automatically, or when initiated by the [Synchronize with LDAP] action in the [Organizational roles] section.

NOTE

Each organizational role is an element in a tree-like structure of roles, where each element is an organization or a department.

CONTENTS

Setting up LDAP integration

Integration setup is the process of setting up parameters for connecting LDAP directory elements to Creatio users and roles. Basic knowledge about the structure of the needed LDAP directory is required to set up LDAP integration.

This article contains examples of LDAP setup for Active Directory and OpenLDAP.

ATTENTION

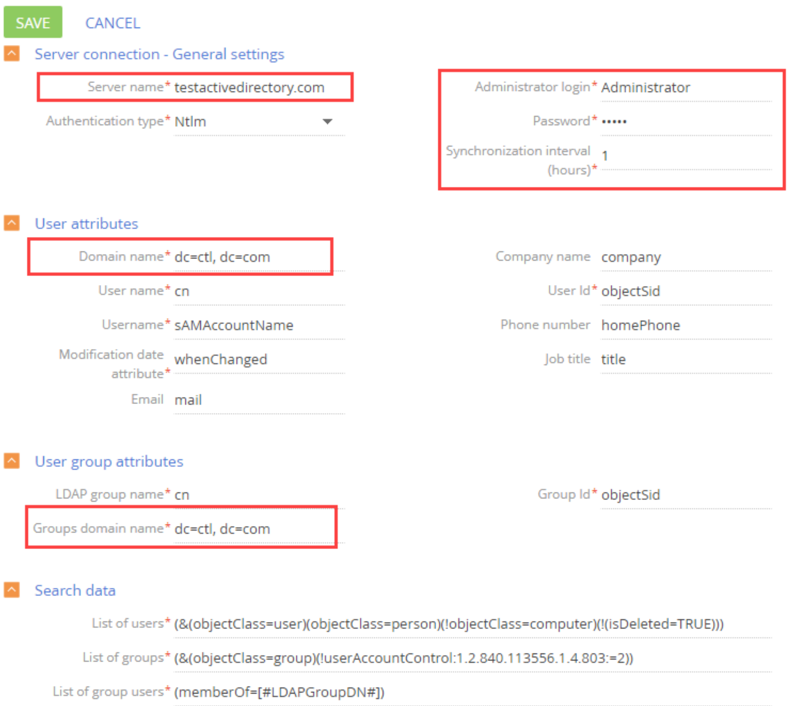
Depending on the structure of each LDAP directory, LDAP element attributes in your directory may be different from the attributes specified as examples.

1. Running integration setup

To begin the setup, open the System Designer and click the [LDAP integration setup] link of the [Import and integration] block. The setup page will open. Make sure you populate the highlighted fields. Default values may be used for other fields.

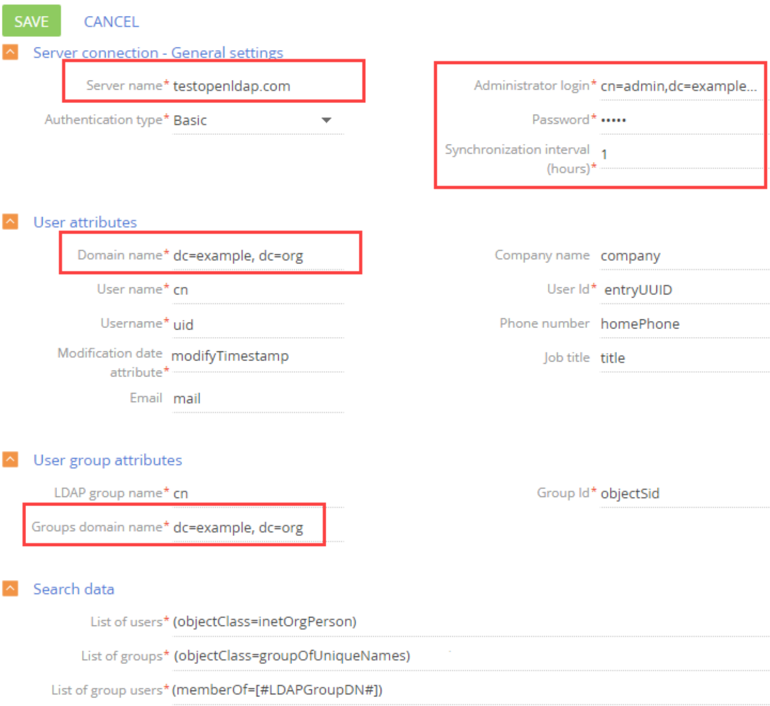
Active Directory settings

Fig. 1 LDAP integration setup page for Active Directory



OpenLDAP settings

Fig. 2 LDAP integration setup page for OpenLDAP



The below settings are required for LDAP integration.

2. LDAP server connection setup

Specify general server connection settings for Active Directory (Fig. 3) or for OpenLDAP (Fig. 4).

Fig. 3 Server connection settings for Active Directory

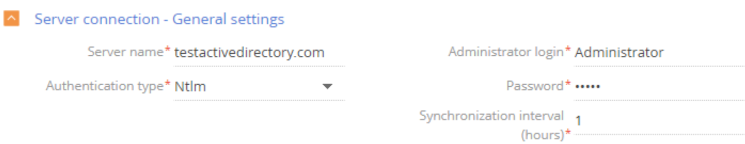
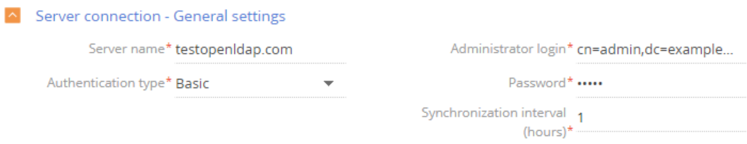


Fig. 4 Server connection settings for OpenLDAP



- [Server name] - name or IP address of the LDAP server.
- [Authentication type] - select the protocol for connection to the LDAP server.

NOTE

The authentication type is determined by the used LDAP server, as well as by the authentication security requirements. For example, select the “Ntlm” type to authenticate “NT LanManager” that is supported by Windows.

- [Administrator login], [Password] – administrator credentials.
- [Synchronization interval (hours)] - the interval for automatic user synchronization. Learn more in the “Running LDAP synchronization” article.

3. User synchronization setup

To set up the user synchronization, specify the attributes of LDAP directory elements that contain the user data to be imported (Fig. 5, Fig. 6).

Fig. 5 User attribute settings for Active Directory

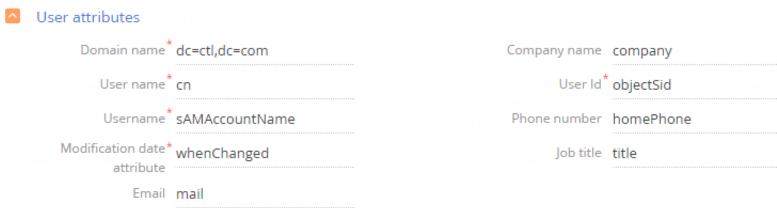


Fig. 6 User attribute settings for OpenLDAP

Required attributes

- [Domain name] – the unique name of the LDAP organizational structure element that comprises the synchronized users. All users that are subordinate to the specified LDAP element, directly or through other elements, will be available for synchronization. For example, if you specify root element of the LDAP directory, all users in the directory will be available for synchronization.

- [User name] – LDAP attribute that contains the full name of an LDAP user. The value of this attribute is used to populate the [Full name] field in the contact page when importing users. For example, the first and last name can be contained in such attributes as “name” or “cn” (Common name).
- [Username] – the attribute that contains the LDAP user name that is used to log in to the system. The user, whose account was synchronized with LDAP, will be logging in to the system using that name. For example, the “sAMAccountName” attribute can contain user login.
- [User Id] – the attribute to use as a unique user Id. The value of this attribute must be unique for each user.
- [Modification date attribute] – the name of the attribute that stores the time and date of the last LDAP element modification, for example, “WhenChanged”.

ATTENTION

If any of these attributes is missing, LDAP synchronization will result in an error.

Additional attributes

You can also specify additional attributes containing the information that can be used to fill out the user registration page automatically:

- [Company name] – the attribute that contains the name of the user’s employer. The value of the specified attribute will be used for populating the [Account] field on the contact page. If an account name matches the value of the specified attribute, the user’s contact will be linked to this account.
- [Job title] – the attribute that contains user's job title. The value of the specified attribute will be used for populating the [Job title] field on the contact page. If an existing job title matches the value of the specified attribute, this job title will be selected for the user during synchronization.

NOTE

If the value of the corresponding attribute does not match any existing accounts and job titles, Creatio will not be adding new accounts and job titles during the synchronization and leave the corresponding fields empty on the user’s contact page.

- [Phone number] – the attribute that contains phone number of the user. The value of the specified attribute will be used to populate the [Business phone] field on the contact page.
- [Email] – the attribute that contains the email address of the user. The value of the specified attribute will be used to populate the [Email] field on the contact page.

ATTENTION

If you leave any additional attribute fields empty, the corresponding fields on the contact page will not be populated automatically upon importing users from an LDAP directory.

4. Setting up the synchronization between the LDAP user groups and Creatio roles

Group synchronization settings enable linking groups in the LDAP directory to elements of Creatio organizational structure. To set up the user group synchronization, specify the attributes of LDAP directory elements that contain data about Active Directory (Fig. 7) or OpenLDAP (Fig. 8) groups to be imported.

Fig. 7 User group settings for Active Directory

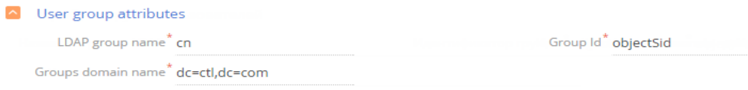


Fig. 8 User group settings for OpenLDAP

- [LDAP group name] – the attribute that contains the name of the user group in LDAP. For example, you can specify attribute "cn" ("common name").
- [Group Id] – the attribute that must be used as a unique group Id. The value of this attribute must be unique for each group. The "objectSid" attribute is a good choice for unique group Id.
- [Groups domain name] – the unique name of the LDAP element that contains all user groups that are synchronized. All user groups that are subordinate to the specified LDAP element, directly or through other elements, will be available for synchronization. For example, if you specify the root element of the LDAP directory, all user groups in the directory will be available for synchronization.

NOTE

Creatio verifies users included into synchronization groups during the synchronization process. If the date stored in the modification date attribute of an LDAP user is later that that of the last synchronization, user entry in Creatio organizational structure will be updated.

ATTENTION

If any of these attributes are missing, LDAP synchronization will result in an error.

5. Setting up filter conditions

Filter conditions determine which LDAP element criteria will be included in the list of the groups and users that are synchronized. Specify general server connection settings for Active Directory (Fig. 9) or for OpenLDAP (Fig. 10).

Fig. 9 Filter conditions for Active Directory

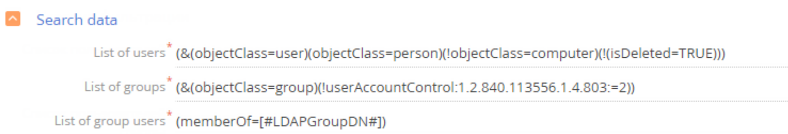


Fig. 10 Filter conditions for OpenLDAP

- Use the [List of users] filter to select the needed LDAP elements from the general catalog that will be synchronized with the Creatio users. The search filter must select active elements only.
- Use the [List of groups] filter to select the needed LDAP elements that will be synchronized with the Creatio organizational roles (user groups). The search filter must select active elements only.
- Use the [List of group users] filter to receive the list of users that are included in the LDAP group. One or more attributes will determine whether a user is a member of a group. For example, most directories use such attribute as "memberOf". The (memberOf=[#LDAPGroupDN#]) filter contains a Creatio macro and will filter out all objects (users) who are in the [#LDAPGroupDN#] group.

SEE ALSO

- Description of system settings

Setting up Active Directory user filters

Active Directory (AD) is Microsoft directory service for Windows domain networks that can be synchronized with Creatio to automate user and user group management. Synchronization is recommended if all or most Creatio users are also part of a Windows domain network.

Active Directory filters

An AD filter consists of the following attributes:

```
*>qrgtcvqt@>hknvgt3@>hknvgt4@+
```

Where <filter1>:

```
*>cvvtkdwvg@>qrgtcvqt@>xcnwg@+
```

NOTE

Attributes represent properties or characteristics of AD objects (ObjectClass, cn, streetAddress, etc.)

The filter comparison operators are as follows:

= – equal to;

~= – approximately equal to;

<= – less than or equal to;

>= – greater than or equal to;

& – all conditions must be met (AND);

| – any of the conditions must be met (OR);

! The clause must evaluate to False (NOT).

Values represent actual values of AD attributes. Values are not case sensitive and should not be included in quotes. The wildcard character "*" is supported, unless the <attribute> is a DN attribute (distinguishedName, manager, memberOf, etc.). For example, the following filter will select all objects where objectClass is filled in:

(objectClass=*).

Standard user filter

The standard filter for obtaining all active users is as follows:

(&(objectClass=user)(objectClass=person)(!objectClass=computer)(!(isDeleted=TRUE)))

In this filter:

& – the "AND" operator, indicating that all filter conditions must be met.

objectClass=user – the clause to select all objects of the "user" objectClass.

objectClass=person – the clause to select all objects of the "person" objectClass.

!objectClass=computer – the clause to exclude all objects of the "computer" objectClass.

!(isDeleted=TRUE) – the clause to exclude all deleted objects.

Standard user group filter

To synchronize Active Directory users with Creatio organizational structure, set up a filter to obtain user groups. The standard user group filter for all active users is as follows:

(&(objectClass=group)(!userAccountControl:1.2.840.113556.1.4.803:=2))

In this filter:

& – the "AND" operator, indicating that all filter conditions must be met.

objectClass=group – the clause to select all objects of the "group" objectClass.

userAccountControl – user access control flags attribute in the bitwise comparison filter clause.

:1.2.840.113556.1.4.803: – the LDAP_MATCHING_RULE_BIT_AND rule.

2 – decimal value of the ACCOUNTDISABLE flag.

The (!userAccountControl:1.2.840.113556.1.4.803:=2) bitwise comparison filter excludes disabled (inactive) user accounts. For more information, please see the following support.microsoft.com article.

Standard filter for Active directory group users

In addition to user and user group filters, LDAP synchronization requires a filter to select all users that belong to each of the synchronized LDAP groups. The standard filter for getting a list of users in an LDAP group is as follows:

(memberOf=[#LDAPGroupDN#])

In this filter:

memberOf – standard attribute that determines the group of an AD object.

[#LDAPGroupDN#] – a Creatio macro for obtaining a list of users for a group with a unique DN (Distinguished Name) attribute value.

The macros above can be used to set up LDAP synchronization only in Creatio, as this is not a standard LDAP attribute. The following additional macros can be used in the filters for AD group users:

[#LDAPGroupName#] – the name of the group in the [LDAP group name] field on the LDAP synchronization setup page in Creatio System Designer.

[#LDAPGroupIdentity#] – unique group Id specified in the [Group Id] on the LDAP synchronization setup page in Creatio System Designer.

Filter setup

When setting up LDAP synchronization, you can use standard filters or create your own filters for users and groups.

CASE

Set up a filter that would differentiate employees with identical first and last names during synchronization with Active Directory.

You will need to make changes to the user synchronization filter. By default, the CN (Common Name) attribute is used for selecting objects. This attribute is required since it is specified the [User name] field in the [User attributes] group on the LDAP integration setup page. For the purpose of this case, the "displayName" attribute (which will be unique for each user) can be used. To differentiate users with identical first and last names, synchronize only users with the "displayName" attribute. To do this:

1. Open the System Designer and click [LDAP integration setup].
2. Add the "(displayName=*)" condition that requires the "displayName" attribute to be filled in to the default filter in the [List of users] field. The filter will look like this:

   (displayName=*)(&(objectClass=user)(objectClass=person)(!objectClass=computer)(!(isDeleted=TRUE)))
3. Add the logical AND operator that will make both filter conditions required:

   (&(displayName=*)(&(objectClass=user)(objectClass=person)(!objectClass=computer)(!(isDeleted=TRUE))))
4. Replace the standard filter in the [List of users] field with the new filter.
5. Save the LDAP synchronization settings and run the synchronization.

SEE ALSO

- Setting up LDAP integration
- Link LDAP elements to Creatio users and roles
- Running LDAP synchronization
- Setting up user authentication through LDAP on Windows
- Setting up user authentication through LDAP on Linux
- LDAP FAQ

Link LDAP elements to Creatio users and roles

In Creatio, you can synchronize the organizational and functional user roles with the Active Directory groups.

Synchronization with LDAP enables transferring the company organizational structure and role settings from the Active Directory to Creatio. Read more is available in the "Synchronizing user accounts and roles with LDAP" article.

CONTENTS

- Set up the synchronization of organizational roles between Creatio and the Active Directory
- Set up the synchronization of functional roles between Creatio and the Active Directory

- Connect Creatio user accounts with LDAP users

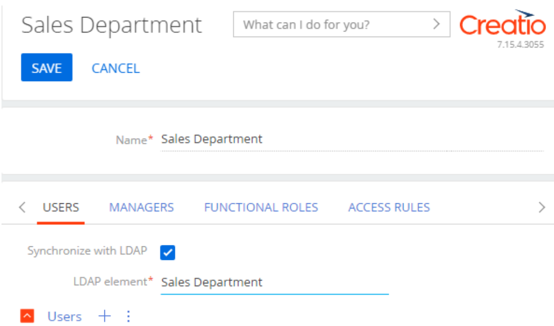
Set up the synchronization of organizational roles between Creatio and the Active Directory

1. Click to open the System Designer.
2. Click [Organizational roles] in the [Users and administration] block.
3. On the page that opens, select the role from the organizational tree to set up the synchronization (Fig. 11), or add a new role by clicking [New].

Fig. 11 Selecting an organizational role for setting up the synchronization

4. On the [Users] tab, select the [Synchronize with LDAP] checkbox. In the [LDAP element] field, select the Active Directory group that corresponds to this organizational role in Creatio (Fig. 12).

Fig. 12 Selecting the Active Directory group for setting up the synchronization



5. You can add users to the [Users] detail by clicking +.

   To synchronize large numbers of users who have not yet been registered in Creatio, import these users from the LDAP directory. Read more >>>

   NOTE

   To synchronize existing Creatio users with LDAP, connect their records with existing LDAP users manually. Read more >>>

6. Click [Save].

As a result, the selected organizational role will be synchronized during the next synchronization session.

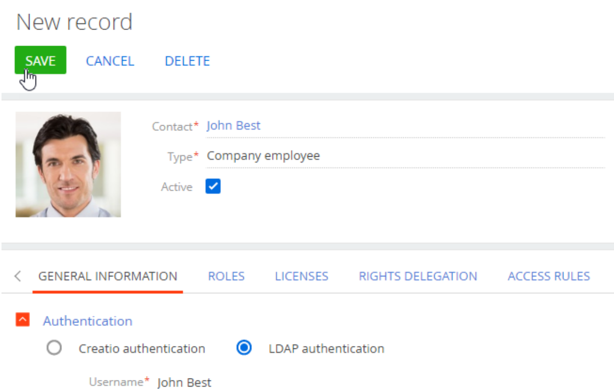
Set up the synchronization of functional roles between Creatio and the Active Directory

1. Click to open the System Designer.
2. Click [Functional roles] in the [Users and administration] block.
3. The further settings are similar to steps 3–5 of setting up the synchronization of organizational roles between Creatio and the Active Directory, described above.

Connect Creatio user accounts with LDAP users

1. Click to open the System Designer.
2. In the [Users and administration] block, click “Organizational roles” or “Functional roles” depending on what user groups you want to synchronize.
3. On the page that opens, select the role that the user belongs to.
4. Open the [Users] tab, select the user and double click it to open the record.
5. On the [General information] tab, select the [LDAP authentication] option.
6. In the [Login] field, select the needed LDAP user.
7. Click [Save] (Fig. 13).

Fig. 13 Connecting the user



As a result, the selected Creatio user will be connected with the LDAP user and will be able to log in to Creatio, using the login and password stored in the LDAP directory (i.e. domain login and password).

SEE ALSO

- Setting up LDAP integration
- Running LDAP synchronization

- Setting up user authentication through LDAP on Windows
- Setting up user authentication through LDAP on Linux
- LDAP FAQ

Importing new users from LDAP

1. Click to open the System Designer.
2. In the [Users and administration] block, click "Organizational roles" or "Functional roles" depending on what user groups you want to import users to.
3. In the organizational structure area, select the element that will contain the imported LDAP users.
4. On the [Users] tab, select the [Synchronize with LDAP] checkbox. In the [LDAP element] field, select the Active Directory group that corresponds to this organizational or functional role in Creatio.
5. Click [Save].
6. Run the [Synchronize with LDAP] action in the section menu. Once the synchronization is complete, all users from the LDAP server group will be imported to the selected organizational or functional group of Creatio.

As a result, the contacts will be created for the selected LDAP users and linked to corresponding Creatio users. New user accounts will be automatically added to the selected organizational structure element. At the same time, the fields in the contact page will be filled in with values of different attributes, specified during the synchronization setup.

ATTENTION

The list of LDAP user displays all the users, regardless of whether they are included in the LDAP element that is connected to the organizational structure or not.
When synchronizing with LDAP, only those users who are included in the LDAP element that is connected to the organizational structure will be synchronized.

NOTE

When the LDAP user is connected to a Creatio user account, the corresponding user will be automatically licensed.

SEE ALSO

- Setting up LDAP integration
- Running LDAP synchronization
- Setting up user authentication through LDAP on Windows
- Setting up user authentication through LDAP on Linux
- LDAP FAQ

Running LDAP synchronization

During the synchronization session, all changes made to users and groups in the LDAP directory are applied to the corresponding connected Creatio organizational structure elements.

ATTENTION

LDAP synchronization can only be run for Creatio applications deployed on Windows.

CONTENTS

Set up automatic synchronization

To set up automatic synchronization:

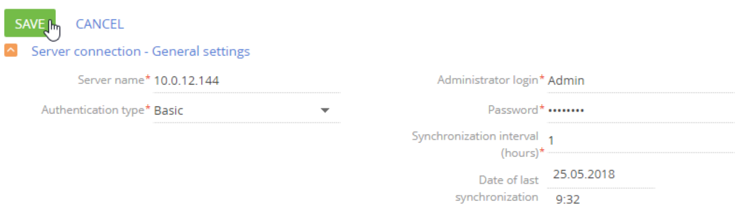
1. Open the System Designer by clicking in the top right corner of the application window.
2. Click the [LDAP integration setup] link in the [Import and integration] block.
3. Populate the [Synchronization interval (hours)] field. Automatic synchronization of users with LDAP will run with the specified intervals.

   NOTE

   Populating other fields of the [LDAP integration setup] page is described in a separate article. Read more >>>

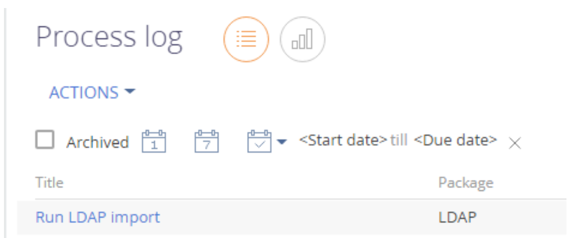
4. Click the [Save] button to save the new folder (Fig. 14).

   Fig. 14 Saving of the populated LDAP integration setup page



After you save the LDAP integration setup page, the synchronization will run automatically. The “Run LDAP import” process (Fig. 15) manages the synchronization actions.

Fig. 15 – The “Run LDAP import” process



Run synchronization manually

To run the manual synchronization:

1. Open the System Designer by clicking  in the top right corner of the application window.
2. Click the [Organizational roles] link in the [Users and administration] block.
3. Select the [Synchronize with LDAP] option in the section menu (Fig. 16). The "Run LDAP synchronization" process will be run, which in turn calls the "Synchronize user data with LDAP" process (Fig. 17).

Fig. 16 – the [Synchronize with LDAP] action

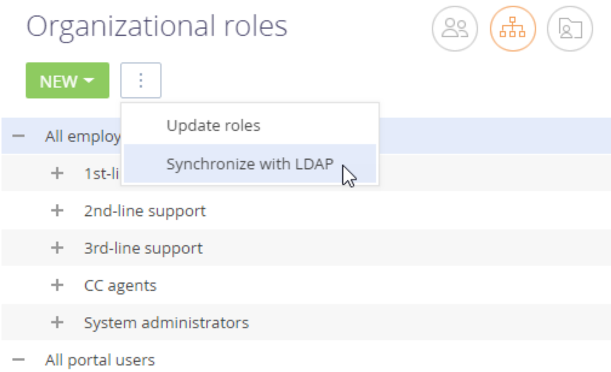
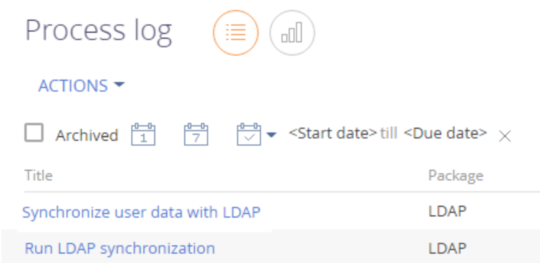


Fig. 17 – The " Synchronize user data with LDAP" and "Run LDAP synchronization" processes



Creatio will notify you when the synchronization is complete.

NOTE

If the number of synchronized users exceeds the number of active licenses, system administrators will be notified via the communication panel and email.

Synchronization results

- If an LDAP user is no longer among the active users, the [Active] checkbox will be cleared on the page of the corresponding Creatio user and such user will not be able to log in.
- If a previously inactive LDAP user has been activated, then the [Active] checkbox will be selected on the page of the synchronized Creatio user.

- If an LDAP user or group of users has been renamed, then the synchronized Creatio users and roles will be renamed as well.
- If an LDAP user has been excluded from an LDAP group that was synchronized with a Creatio organizational structure element, then the corresponding Creatio user will be excluded from the corresponding Creatio organizational structure element.
- If a synchronized LDAP user has been added to a synchronized LDAP group, then the corresponding Creatio user will be added to the corresponding Creatio organizational structure element.
- If new unsynchronized LDAP users have been added to a synchronized LDAP element, the users will be imported to Creatio.
- If there are Creatio users (not imported from LDAP) whose names match LDAP user names, their synchronization will not be performed.
- If a synchronized LDAP user was deleted from a group connected with Creatio organizational structure element, such user will remain active in Creatio but will not be able to log in.

SEE ALSO

- Managing users
- Link LDAP elements to Creatio users and roles
- Setting up user authentication through LDAP on Windows
- LDAP FAQ

Setting up user authentication through LDAP on Windows

To enable user authentication through LDAP, modify the Web.config file in the application root folder.

Please note that Active Directory and OpenLDAP settings are different.

1. Specify “Ldap” and “SspLdapProvider” in the list of available authentication providers. This step is the same for Active Directory and OpenLDAP.

```
>vgttcuqhv@
>cwvj"rtqxkfgtPcogu?$KpvgtpcnWugtRcuuyqtf.Ldap,SSPLdapProvider$"
cwvqNqikpRtqxkfgtPcogu?$$"fghNcpiwcig?$gp/WU$"
fghYqtmurcegPcog?$Fghcwnv$"wugKRTguvtkevkqp?$hcnug$"
nqikpVkogqwv?$52222$@
>rtqxkfgtu@
```

ATTENTION

Upper/lowercase characters must be as in the example. The provider names should be separated by commas with no blank spaces.

2. Specify server IP or URL, as well as user domain parameters in the “Ldap” section. Please note that Active Directory and OpenLDAP parameters are different.

Active Directory parameters

```
>rtqxkfgt"pcog?$Nfcr$"
v{rg?$Vgttcuqhv0YgdCrr0Nqcfgt0Cwvjgpvkecvkqp0Nfcr0NfcrRtqxkfgt."
Vgttcuqhv0YgdCrr0Nqcfgt$@
>rctcogvgtu@
000
""""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$testactivedirectory.com$"1@
""""""""""""">cff"pcog?$CwvjV{rg$"xcnwg?$Pvno$"1
```

```
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$"xcnwg?$dc=tscrm,dc=com$"1@
"""""""""""">cff"pcog?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$false$"1@
"""""""">#//>cff"pcog?$UgctejRcvvgtp$
""""""""""""xcnwg?$*(cor=*qdlgevEcvgiqt{?rgtuqp+*qdlgevEncuu?wugt+
""""""""""""*#*wugtCeeqwpvEqpvtqn<3040:62033577803060:25<?4++
""""""""""""ogodgtQh?EP?UXPWugtu.QW?itqwru.QW?Vgttcuqhv.FE?vueto.
""""""""""""FE?eqo++$"1@//@
"""""""""""">cff"pcog?$UgctejRcvvgtp$
""""""""""""xcnwg?$*(cor=*uCOCeeqwpvPcog?}2¡+*qdlgevEncuu?rgtuqp++$"1@
"""""""""""">cff"pcog?$Mg{FkuvtkdwvkqpEgpvgt$"xcnwg?$$"1@
>1rctcogvgtu@
```

OpenLDAP parameters

```
>rtqxkfgt"pcog?$Nfcr$"
v{rg?$Vgttcuqhv0YgdCrr0Nqcfgt0Cwvjgpvkecvkqp0Nfcr0NfcrRtqxkfgt."
Vgttcuqhv0YgdCrr0Nqcfgt$@
>rctcogvgtu@
000
"""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$testopenldap.com$"1@
"""""""""""">cff"pcog?$CwvjV{rg$"xcnwg?$Dcuke$"1@
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$"xcnwg?$dc=example,dc=org$"1@
"""""""""""">cff"pcog?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$true$"1@
"""""""""""">cff"pcog?$UgctejRcvvgtp$
"""""""""""""xcnwg?$*(cor=*wkf?}2¡+*qdlgevEncuu?kpgvQtiRgtuqp++$"1@
"""""""""""">cff"pcog?$Mg{FkuvtkdwvkqpEgpvgt$"xcnwg?$$"1@
>1rctcogvgtu@
```

3. Specify server IP or URL, as well as portal user domain parameters in the SspLdapProvider section. The step is the same for Active Directory and OpenLDAP.

```
>rtqxkfgt"pcog?$UURNfcrRtqxkfgt$"
v{rg?$Vgttcuqhv0YgdCrr0Nqcfgt0Cwvjgpvkecvkqp0UURWugtRcuuyqtf0UURNfcrR
tqxkfgt."Vgttcuqhv0YgdCrr0Nqcfgt$@
>rctcogvgtu@
000
"""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$nfcrugtxgt0fqockp0eqo$"1@
000
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$"xcnwg?$fe?fqockp."fe?eqo$"1@
000
>1rctcogvgtu@
```

4. Save the changes in the Web.config file.
5. Additional step for OpenLDAP: before you synchronize with OpenLDAP-server, specify the “true” value for UseLoginUserLDAPEntryDN in the Web.config file of Terrasoft.WebApp.

```
>crrUgvvkpiu@
000
              >cff"mg{?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$true$"1@
```

If you disregard this setting, the users will be synchronized with the empty LDAPEntryDN field of the SysAdminUnit table, which will result in having authorization issues.

SEE ALSO

- Setting up user authentication through LDAP on Linux

Setting up user authentication through LDAP on Linux

To enable user authentication through LDAP, modify the Web.config file in the application root folder.

1. Specify “Ldap” and “SspLdapProvider” in the list of available authentication providers.

```
>vgttcuqhv@
>cwvj"
rtqxkfgtPcogu?$KpvgtpcnWugtRcuuyqtf.LdapProvider,SSPLdapProvider.UURW
ugtRcuuyqtf.UuqCwvjRtqxkfgt.UURUuqCwvjRtqxkfgt$"
cwvqNqikpRtqxkfgtPcogu?$$"fghNcpiwcig?$gp/WU$"
fghYqtmurcegPcog?$Fghcwnv$"wugKRTguvtkevkqp?$hcnug$"
nqikpVkogqwv?$52222$@
>rtqxkfgtu@
```

ATTENTION

Upper/lowercase characters must be as in the example. The provider names should be separated by commas with no blank spaces.

2. Specify server IP or URL, as well as user domain parameters in the “Ldap” section. Use Active Directory or OpenLDAP domains.

NOTE

Please note that Active Directory cannot be run on a Linux server. Deploy a Windows node to run Active Directory synchronization.

Active Directory parameters

```
>rtqxkfgt"pcog?$NfcrRtqxkfgt$"
v{rg?$Vgttcuqhv0Cwvjgpvkecvkqp0Eqtg0Nfcr0PgvUvcpfctfNfcrRtqxkfgt."
Vgttcuqhv0Cwvjgpvkecvkqp$@
>rctcogvgtu@
000
"""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$testactivedirectory.com$"1@
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$
""""""""""""xcnwg?$dc=testactivedirectory,dc=com$"1@
"""""""""""">cff"pcog?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$false$"1@
"""""""">#//>cff"pcog?$UgctejRcvvgtp$
""""""""""""xcnwg?$*(cor=*qdlgevEcvgiqt{?rgtuqp+*qdlgevEncuu?wugt+
""""""""""""*#*wugtCeeqwpvEqpvtqn<3040:62033577803060:25<?4++
""""""""""""ogodgtQh?EP?UXPWugtu.QW?itqwru.QW?Vgttcuqhv.FE?vueto.
""""""""""""FE?eqo++$"1@//@
"""""""""""">cff"pcog?$UgctejRcvvgtp$
""""""""""""xcnwg?$*(cor=*uCOCeeqwpvPcog?}2¡+*qdlgevEncuu?rgtuqp++$"1@
"""""""""""">cff"pcog?$Mg{FkuvtkdwvkqpEgpvgt$
""""""""""""xcnwg?$testactivedirectory.com$"1@
"""""""""""">cff"pcog?$UgewtgUqemgvNc{gt$"xcnwg?$false$"1@
"""""""""""">cff"pcog?$EgtvkhkecvgHkngPcog$
""""""""""""xcnwg?$ldap_certificate_example.cer$"1@
>1rctcogvgtu@
>1rtqxkfgt@
```

OpenLDAP parameters

```
>rtqxkfgt"pcog?$NfcrRtqxkfgt$"
v{rg?$Vgttcuqhv0Cwvjgpvkecvkqp0Eqtg0Nfcr0PgvUvcpfctfNfcrRtqxkfgt."
```

```
Vgttcuqhv0Cwvjgpvkecvkqp$@
>rctcogvgtu@
000
"""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$testopenldap.com$"1@
"""""""""""">cff"pcog?$CwvjV{rg$"xcnwg?$Dcuke$"1@
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$"xcnwg?$dc=example,dc=org$"1@
"""""""""""">cff"pcog?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$true$"1@
"""""""""""">cff"pcog?$UgctejRcvvgtp$
"""""""""""""xcnwg?$*(cor=*wkf?}2¡+*qdlgevEncuu?kpgvQtiRgtuqp++$"1@
"""""""""""">cff"pcog?$Mg{FkuvtkdwvkqpEgpvgt$"xcnwg?$$"1@
>1rctcogvgtu@
```

3. Specify server IP or URL, as well as portal user domain parameters in the SspLdapProvider section. The step is the same for Active Directory and OpenLDAP.

```
>rtqxkfgt"pcog?$UURNfcrRtqxkfgt$"
v{rg?$Vgttcuqhv0YgdCrr0Nqcfgt0Cwvjgpvkecvkqp0UURWugtRcuuyqtf0UURNfcrR
tqxkfgt."Vgttcuqhv0YgdCrr0Nqcfgt$@
>rctcogvgtu@
000
"""""""""""">cff"pcog?$UgtxgtRcvj$"xcnwg?$nfcrugtxgt0fqockp0eqo$"1@
000
"""""""""""">cff"pcog?$FkuvkpiwkujgfPcog$"xcnwg?$fe?fqockp."fe?eqo$"1@
000
>1rctcogvgtu@
```

4. Save the changes in the Web.config file.
5. Additional step for OpenLDAP: before you synchronize with OpenLDAP-server, specify the “true” value for UseLoginUserLDAPEntryDN in the Web.config file of Terrasoft.WebApp.

```
>crrUgvvkpiu@
000
              >cff"mg{?$WugNqikpWugtNFCRGpvt{FP$"xcnwg?$true$"1@
```

If you disregard this setting, the users will be synchronized with the empty LDAPEntryDN field of the SysAdminUnit table, which will result in having authorization issues.

SEE ALSO

- Description of system settings

LDAP FAQ

- Why not all Active Directory users were imported to Creatio after synchronization?
- Why a user cannot log in under domain account after setting up LDAP?

Why not all Active Directory users were imported to Creatio after synchronization?

By default, during the LDAP synchronization, all Active Directory users are imported to Creatio. If all users were not imported, try the following options:

- Check filter conditions. There may be syntax errors in the settings or not all groups specified.
- Active Directory roles or groups may have changed for some users. These users are not treated as new. Try modifying filtering conditions or import these users manually.

- These users also may have been previously imported, but removed from roles/groups, or simply deleted. Since the users are not recognized as new, they will not be displayed in the synchronization filter.

Why a user cannot log in under domain account after setting up LDAP?

If Creatio is deployed on-site, you need to edit the Web.config file in the website root directory. Specify authentication providers as values of the auth providerNames parameter:

```
cwvj"rtqxkfgtPcogu"?"$KpvgtpcnWugtRcuuyqtf.Nfcr.UURNfcrRtqxkfgt$
```

After making changes, restart the LDAP synchronization.

SEE ALSO

- Setting up LDAP integration
- Running LDAP synchronization

Windows authentication

Windows authentication via the NTLM protocol verifies the user’s identity upon login by comparing the current user’s domain credentials with the credentials of the corresponding Creatio or LDAP user. Thus, the user who is authenticated becomes authorized within the domain and will be able to log in to the Creatio application without entering the username or the password of the account.

Benefits:

- Log in to the system as the authenticated domain user using the [Log in as domain user] link of the login page.
- Log in at once, skipping the login page. In this case, the user is forwarded to the main page of the application at once.

The NTLM authentication is available for the following types of users:

- Only for the users whose application is deployed on-site.
- Users of the primary Creatio application and portal users.
- LDAP and Creatio users.

CONTENTS

How Windows authentication works

Windows (NTLM) authentication can be used concurrently with LDAP authentication. Windows authentication requires entering login credentials in the browser. During LDAP authentication, user’s password is checked on the Active Directory server. Both Windows (NTLM) and LDAP authentications trigger when the user clicks the “Log in as domain user” link (provided that the user account is synchronized with LDAP). Read more >>>

If the user attempts to log in to the system using the domain credentials, the following authentication algorithm is performed:

1. A user authentication check within the domain is performed.

2. If the domain username and the password are stored in a cookie, they will be retrieved from this cookie. Otherwise, a browser window will be displayed to enter the user credential.

   Further steps depend on the user synchronization with the LDAP directory.

   a. If the user is not synchronized with LDAP:

      - User authentication check is performed through the comparison of the username and the password from the cookie and the corresponding credentials of the Creatio account. Thus, it is required to specify the same username and password that are used in the domain to enable Windows authentication for the users who are not synchronized with LDAP.
      - Based on the check results, if the data matches and the user account is licensed, the user authorization will be performed.

   b. If the user is synchronized with LDAP:

      - The browser sends a request to the Active Directory service to authenticate the user.
      - The query returns the credentials of the current domain user that are compared with the username and the password details stored in the cookie.
      - If the data matches and the user account is licensed, the user authorization will be performed.

NOTE

User authentication is performed either for the users of the main application or for the self-service portal users. You can set the check order in the Web.config file of the loader application. Read more >>>

SEE ALSO

- Windows authentication
- Set up Windows authentication
- Logging in via Windows authentication

Set up Windows authentication

To use Windows authentication via the NTLM protocol, first add system users (manually or by importing from LDAP) and license them. Users will need to allow writing local data to cookie files in their browsers to be able to store the data locally.

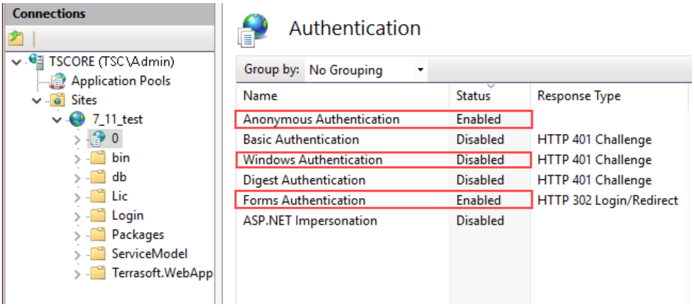
The authentication setup is performed on the application server and consists of two steps:

- IIS server setup that activates authentication using the NTLM protocol. Read more >>>
- Web.config file setup of the loader application that defines authentication providers and users availability check order among those registered in Creatio. Read more >>>

IIS server setup

1. Enable anonymous authentication and form authentication for both the web application and loader application (Fig. 18).

Fig. 18 Authentication settings for the loader application in IIS

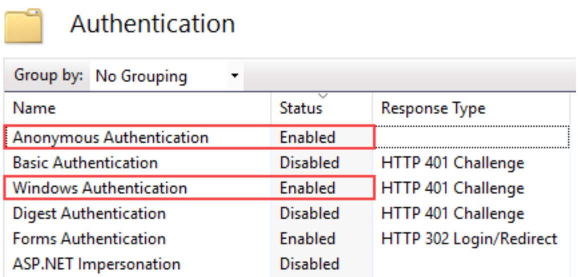


NOTE

Make sure you disable the "Windows Authentication" setting that is enabled in IIS by default.

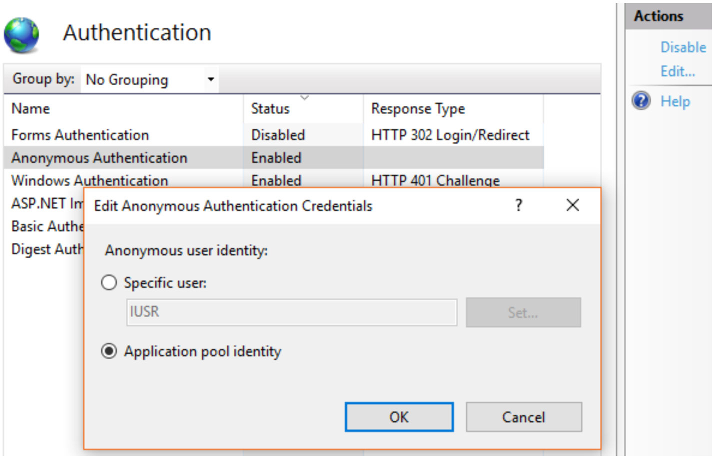
2. Disable the form authentication; enable anonymous authentication and Windows authentication for the "Login" directory within the loader application (Fig. 19).

Fig. 19 Login directory settings



Please note that anonymous authentication of the loader application and working applications must be conducted under application pool identity. To enable this, edit anonymous authentication credentials by clicking the [Edit] button in the [Actions] area of the IIS manager and select [Application pool identity] (Fig. 20).

Fig. 20 Entering credentials for anonymous authentication in IIS



NOTE

Read more about Windows Authentication in Microsoft documentation.

Setting up Web.config file of the loader application

1. Open the Web.config file of the loader application to be edited.
2. In this file, specify the Windows Authentication providers:

```
cwvj"rtqxkfgtPcogu?$KpvgtpcnWugtRcuuyqtf.UURNfcrRtqxkfgt.Nfcr$
cwvqNqikpRtqxkfgtPcogu?$PvnoWugt.UURPvnoWugt$
```

[InternalUserPassword] – provider that is specified in the Web.config file by default. If you want to provide NTLM authentication only for the users who are not synchronized with LDAP, do not specify an additional value for the providerNames parameter.

[Ldap] – add this provider to the [providerNames] parameter values. As a result, the users who are synchronized with LDAP will be able to perform NTLM authentication.

[SSPLdapProvider] – add this parameter to the [providerNames] parameter value for the users of the self-service portal who are synchronized with LDAP to be able to perform NTLM authentication.

[NtlmUser] – add this provider to the [autoLoginProviderNames] parameter value. As a result, the users will able to perform NTLM authentication regardless of their synchronization with LDAP and the authentication type configured for these Creatio users.

[SSPNtlmUser] – add this parameter to the [autoLoginProviderNames] parameter value for the users of the self-service portal to be able to perform NTLM authentication regardless of their synchronization with LDAP and the authentication type configured for these Creatio users.

The record order of the [autoLoginProviderNames] parameter defines the order, in which Creatio checks if the system users are available in the list of application users (NtlmUser) or in the list of the self-service portal users (SSPNtlmUser). For example, if you want the check to be performed among the main application users primarily, place the [NtlmUser] provider at the top of the list of the values of the [autoLoginProviderNames] parameter.

ATTENTION

You can specify the [SSPNtlmUser] provider as an [autoLoginProviderNames] parameter value only if the [NtlmUser] provider is specified additionally. You can use the [NtlmUser] provider separately.

3. If you want to authenticate in Creatio at once, specify the “true” value for the [UsePathThroughAuthentication] parameter of the <appSettings> element:

```
>crrUgvvkpiu@
>cff"mg{?$WugRcvjVjtqwijCwvjgpvkecvkqp$"xcnwg?$vtwg$"1@
000
>1crrUgvvkpiu@
```

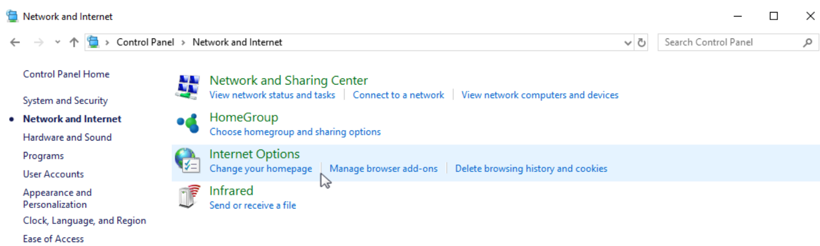
If you want the login page to be displayed with the available [Log in as domain user] link, specify the “false” value for the [UsePathThroughAuthentication] parameter. The end-to-end authentication will be performed only when accessing application main page. Add “/Login/NuiLogin.aspx” to Creatio website address.

As a result, users will be able to log in to Creatio as domain users. They may still be required to enter their credentials in a domain authentication window, which will pop up on login attempt ().

To prevent displaying of the domain authentication window:

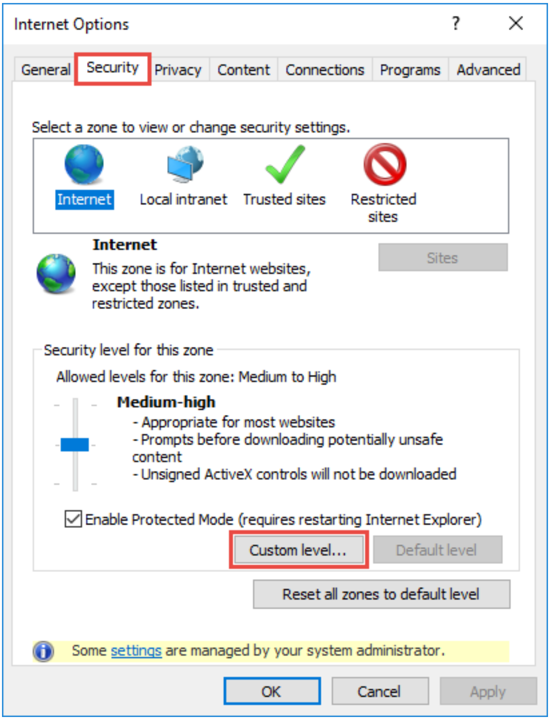
a. Click “Start” –> “Settings” –> “Control Panel” –> “Network and Internet” menu and select “Internet options” (Fig. 21).

Fig. 21 Accessing Internet options of Windows Explorer



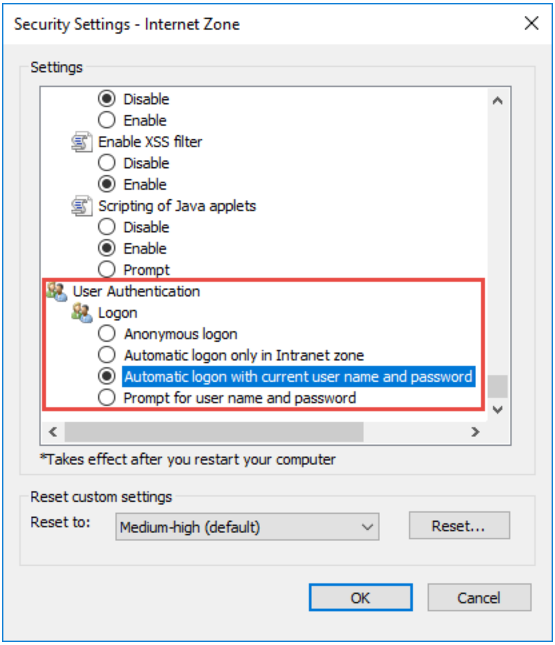
b. In the opened window, select the “Security” tab and click the “Custom level” button to go to security settings (Fig. 22).

Fig. 22 Security settings



c. In the “User authentication” group of settings, select the “Automatic logon with current user name and password” authentication method (Fig. 23).

Fig. 23 Selecting user authentication method



d. Click “OK”.

As a result, the domain authentication window will not pop up and the users will not have to re-enter their domain credentials each time they access Creatio.

SEE ALSO

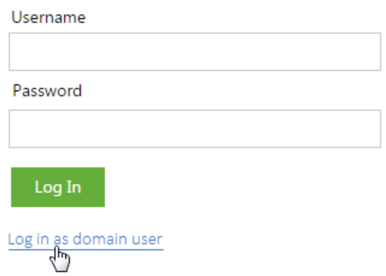
- Windows authentication
- How Windows authentication works
- Logging in via Windows authentication

Logging in via Windows authentication

As a result of NTLM protocol configuration, the user can authorize in Creatio using the domain credentials with no need to enter the username or the password of the Creatio user account.

1. A browser window with the user credentials where the domain username and the password must be specified will be displayed in the application at the first log in to the system.
2. If you activate the “authentication at once” function during setting up the Web.config file of the loader application, the user will be forwarded to the main page of the application skipping the login page.
3. If you deactivate the “authentication at once” function, the login page will be displayed by clicking the Creatio link where the [Log in as domain user] button will be available (Fig. 24).

Fig. 24 Login page



Click the [Log in as domain user] button to authorize in the system.

SEE ALSO

- How Windows authentication works
- Set up Windows authentication
- Setting up LDAP integration
- Running LDAP synchronization

Managing users

Each Creatio user has a unique name and password to log in to the system. A user account is linked to a corresponding contact record and each contact record can only be linked to one user account.

To manage users in Creatio, use the [System users] section. User settings determine what operations users can perform, what data they can see and how they can work with these data.

> NOTE
>
> By default, only system administrators have access to the [System users] section.

To access the [System users] section, click -> [System users] (Fig. 1).

Fig. 1 Accessing user management

The section has a usual structure, where each record corresponds to a Creatio user. One notable exception is that views in the section are used to switch between managing different types of administration units:

[System users]

[Organizational roles]

[Functional roles]

Common data

Information on a user page is presented in the table below.

Contact	The field contains the name of the contact that this user will represent in the system. It is editable only when adding a new record.
Type	You specify the system user type (company employee or portal user) when you add a new user record. The [Type] field on the user page is populated with the selected value automatically and remains grayed-out until you save the record. After you save the record and reopen the new user page, you will be able to edit the type.
Home page	Select the section that will open by default when a user logs in.

Active	Select the checkbox to activate the user account. If the [Active] checkbox is cleared, then this user account cannot be used to log in to the system. The [Active] checkbox will be selected automatically if the [LDAP Authentication] option is selected. Learn more in the "Setting up LDAP integration" article.
Culture	The language of the user interface.

The [General information] tab

The tab contains data for user authentication.

Select the [Creatio authentication] option if the current user should not be synchronized with LDAP. The [Username] and [Password] fields will become editable.

Username	The user's login for authenticating in Creatio.
Password, Password confirmation	Specify the password for authenticating in Creatio. The password entry is encrypted.
Password expiration date	The password expiration date is set automatically when a user changes the password. The date is calculated based on the "Password validity term, days" system setting by adding the specified number of days to the date when the password was last changed.
Reset password	Select the checkbox to force the resetting of a user's password. If the checkbox is selected, when logging in to the system for the next time, the user will be notified that the password is expired and must be changed. Once the password is changed, the checkbox will be automatically cleared.

Select the [LDAP authentication] option to synchronize the current user with an LDAP user. When this option is selected, only the [Username] field becomes editable. In this field, you need to select a value from the LDAP lookup containing the users that have not yet been synchronized with Creatio.

The [Roles] tab

The tab contains the list of functional roles that have been added manually and the list of organizational roles that the current user is included in. Read more in the "Organizational roles" and "Functional roles" articles.

The [Licenses] tab

The tab displays the list of Creatio licenses as well as the licenses available for users. Read more is available in the "License a user" article.

The [Rights delegation] tab

The tab contains the list of users, organizational structure elements and functional roles whose access permissions are delegated to the user.

Delegating access permissions can be used when you need to temporarily grant a user or a role the access permissions of some other user or role. For example, before going on vacation, a department manager can delegate their access permissions to one of the employees. To do this, open the required employee's page and add the user account or the role of the department manager to the [Rights delegation] detail.

More information is available in the “Delegate permissions” article.

The [Access rules] tab

The tab contains the range of IP addresses the user is allowed to use to access Creatio and the list of user sessions. On this tab, you can also set a session timeout for a specific user.

NOTE

The tab settings are also available for organizational and functional roles.

Use the list of sessions to analyze the summary information about the number of hours spent in Creatio. You can also force the end of an active user session by clicking the [Finish session] button.

NOTE

In Creatio, a session is a period of time between the login and logout events. Information on the detail cannot be edited and is based on the data about the exact time the users started and ended their sessions.

Session start	Shows the date and time when the user logged in to Creatio.
Session end	Displays the date and time when the session ended. A user can log out from Creatio by clicking the [Exit] button or by closing the browser window. When you click the [Exit] button, the current user session will terminate, and you will be redirected to the login page. When you close the browser window or when the Internet connection is lost, your session will terminate automatically (by default, the session timeout is 20 minutes).
User session timeout, min	Use this field to set up the individual timeout for a specific user if the user activities require a longer work session than it is specified by the general system timeout.

ATTENTION

Setting up IP-based access rules involves editing the web.config file and activating the useIPRestriction parameter: useIPRestriction="true". Creatio cloud users need to contact technical support to make these changes.

In the [Operation permissions] section of the System Designer, open the [Ignore access check by IP address] operation and add users or user groups to the [Operation permission] detail. Clear the [Access level] checkbox for all users and user groups who are required to use IP-based access rules.

CONTENTS

SEE ALSO

- Organizational roles
- Functional roles

VIDEO TUTORIALS

- User and role management, access permissions

Add a system administrator user

By default, Creatio has a “System administrators” organizational role whose members have full access to all data in Creatio. This is achieved through access to the following system operations:

- Add any data (CanInsertEverything)
- Delete any data (CanDeleteEverything)
- Edit any data (CanUpdateEverything)
- View any data (CanSelectEverything)

To add a new system administrator user in Creatio:

1. In the [Contacts] section, create a contact for the new user (or make sure that the corresponding contact already exists). Read more in the “Add a regular employee user” article.
2. In the [System users] section, create a new user, specifying the contact in the user profile. Read more in the “Add a regular employee user” article.
3. Grant system administrator privileges to the new user.

   ATTENTION

   Access to these operations overrides any object permissions a user may have. For example, a user with permission to the “View any data” system operation can view all records in objects, even if you try to deny the “Read” permission for that user in the object permissions UI.

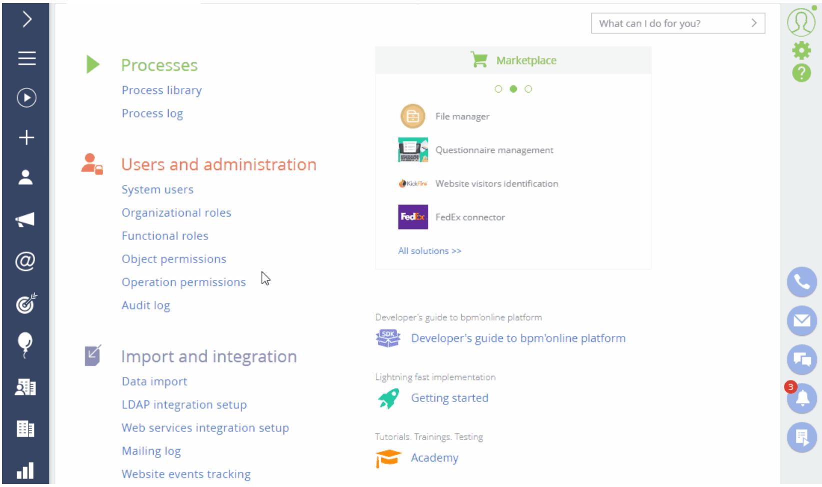
There are two ways you can assign a system administrator role to a user:

- From the user page.
- From the role page.

Method 1. Assign a system administrator role to a user from the user’s page

1. Click  -> System Designer -> [System users].
2. Open the user page ->the [Roles] tab.
3. In the [Organizational roles] detail, click + and specify the “System administrators” role (Fig. 2).

Fig. 2 Assigning a system administrator role to a user from the user's page

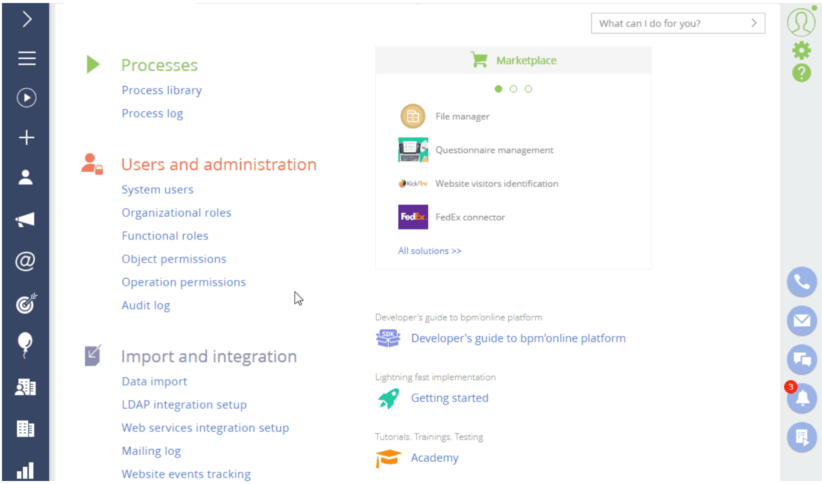


As a result, the user will be added to the "System administrators" role and will receive full access to all data in Creatio.

Method 2. Assign a system administrator role to a user from the role page

1. Click -> [Organizational roles].
2. In the list of organizational roles represented in the form of a folder tree, select the "System administrators" role. The area to the right of the roles tree will show the page of the selected role.
3. On the [Users] tab:
   - Click + and select [Add existing] to add an existing user. In the pop-up window, select the corresponding user (Fig. 3).
   - Click + and select [Add new] to add a new user assigned to this role (you will need to populate the new user page).

Fig. 3 Adding a system administrator role for a user via the [Organizational roles] section



As a result, the user will be added to the "System administrators" role and will receive full access to all data in Creatio.

Add a regular employee user

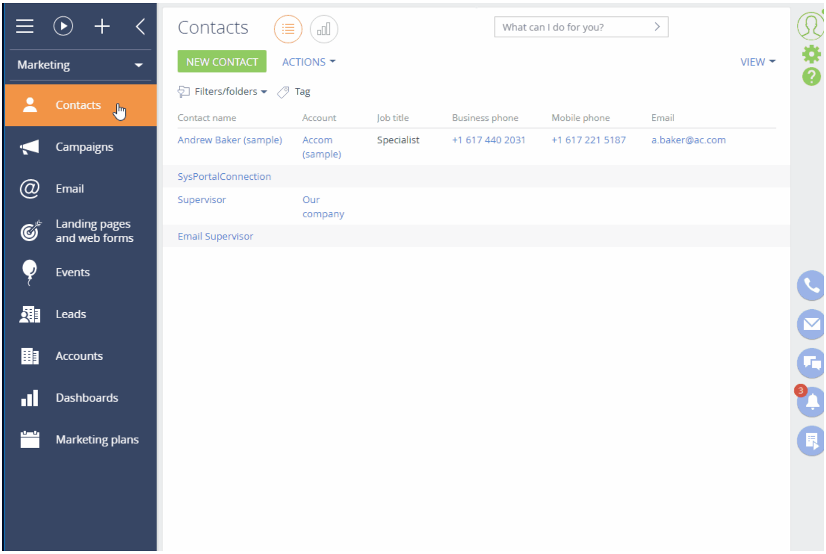
To create a new user account for a regular employee:

1. In the [Contacts] section, create a contact for the new user (or make sure that the corresponding contact already exists). Learn more in the "Add a new contact" article.
2. In the [System users] section, create a new user, specifying the contact in the user profile. Read more in the "Create a user" article.
3. Assign the user a role, if applicable. Read more in the "Assign a user role" article.
4. Distribute licenses to the user. Read more in the "License a user" article.

Add a new contact

1. The [Contacts] section –> [Create contact].
2. Populate the required fields on the contact mini-page and click [Save] (Fig. 4).

Fig. 4 Adding a new contact



As a result, a new contact will be added in Creatio and you will be able to create a user for this contact.

NOTE

You can also add a new contact directly from the contact lookup page when populating the [Contact] field on the user page. Click in the [Contact] field, then click [New] in the lookup window that pops up. Populate the contact page that opens. After you save the contact page, you will return to the new user page, with the [Contact] field populated with the newly created contact

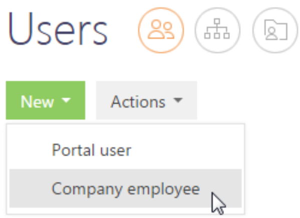
Create a user

1. Click -> [System users] (Fig. 5).

Fig. 5 Switching to the user management section

2. Click [New] -> [Company employee] (Fig. 6).

Fig. 6 Selecting a user type



NOTE

You can change the type of user ("Company employee" or "Portal user") after saving the new user record and reopening the user page.

3. Populate the fields on the [General information] tab of the user page:

   [Contact] – select the user's contact in the [Contacts] section.

   [Type] – Creatio populates the field automatically when you select the user type at step 2. The possible field values are "Portal user" or "Company employee" (Fig. 6).

   [Active] – a status checkbox selected automatically for active users. You can clear the checkbox to disable a user.

   [Culture] – select interface language for the current user. The user will be able to change the interface language in the user's profile.

NOTE

The [Culture] field shows active languages. To select other languages, activate them in the [Languages] section of the System Designer. Learn more about Creatio cultures in the "Localization" article.

   [Home page] – select a section that will open by default when the user logs in to Creatio. If you leave the field empty, the user will be redirected to the Main Menu, and upon subsequent logins – to the last opened page during the previous session.

   [Date and time format] – specify the format that will be used to display dates for the user. You can leave the field blank and the user will be able to specify the format later in the user profile.

   The [Authentication] detail contains the following fields:

   [Username] – enter the login that will be used to authenticate the user in Creatio.

   [Password], [Password confirmation] – specify the password that will be used to authenticate the user in Creatio;

   [Password expiration date] – the field is non-editable and displays the date when the password expires. The date is calculated based on the [Default value] field of the "Password validity term, days" (MaxPasswordAge) system setting. The value is set to "0" by default, in which case the password has no expiration date. The [Password expiration date] field on the user's page remains blank and locked.

   [Reset password] – select this checkbox if you want to force the user to change their password when logging in for the next time. If the checkbox is selected on the user's page, Creatio will notify the user that their password has expired and request changing it at the next login attempt.

NOTE

If you use the LDAP authentication, select the [LDAP authentication] checkbox and specify the username from the LDAP lookup in the [Username] field. The lookup in this field contains the list of LDAP users that have not yet been synchronized with Creatio. Learn more in the "Setting up LDAP integration" article.

4. Save the page.

As a result, a new user will be added in Creatio.

SEE ALSO

- Assign a user role
- License a user

Import users from Excel

You can quickly add multiple users to Creatio by importing them from Excel. Learn more in the "Excel data import" article.

You need to import data into the "System administration object" that corresponds to the "SysAdminUnit" table in the database. This object contains the company's organizational structure: users, organizational and functional roles.

To import users from Excel:

1. Prepare the file for import and populate all the needed columns. Read more below – "Prepare an Excel file for importing users".
2. Download the file and import users to the system. Read more below – "Run the import process".
3. Set up user records: assign roles, specify passwords and available licenses. Read more below – "Post-import procedures".

Prepare an Excel file for importing users

Create an *.xlsx document. The document should contain the "Name" and "Type" fields, where you specify the login and type values. You can optionally populate the rest of the columns.

Column name	Column value in the imported Excel file
Name	User's login name. This column is required.
Type	Specify "4" to import records as users. This column determines the type of administration unit that is imported – either a role or a user. These types are stored in the "Object Permission Types (SysAdminUnitType)" object. You can find the possible values of this table below. This column is required.
Contact	Specify the name of the user's contact. The names that you specify in the "Contact" column of your user import file must match the names of corresponding contacts in Creatio, otherwise Creatio will create new contacts. This column is optional. If you do not populate it, Creatio create new contacts using username as the contact's name.

Column name	Column value in the imported Excel file
Active	The following values can be used: • "0" - for disabled users • "1" - for active users This column is optional. By default, all users are active.
Culture	Specify the user language code (e.g., the "en-US" for English UI). Learn more about Creatio cultures in the "Localization" article. This column is optional. By default, the users will use English localization.
Connection type	The connection type determines the access permissions inherited by the user. • "0" - used for company employees • "1" - used for portal users This column is optional. By default, all users are imported as employees.

Different values of "Object Permission Types (SysAdminUnitType)" are available in the table below.

System administration unit type	The actual value in the Type column
Organization	0.
Organizational unit	1.
Manager	2.
User	4.
Portal user	5.
Functional role	6.

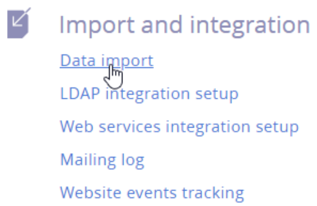
Learn more about general requirements for the imported Excel file in the "How to prepare an Excel file for import" article.

Run the import process

To import users from Excel:

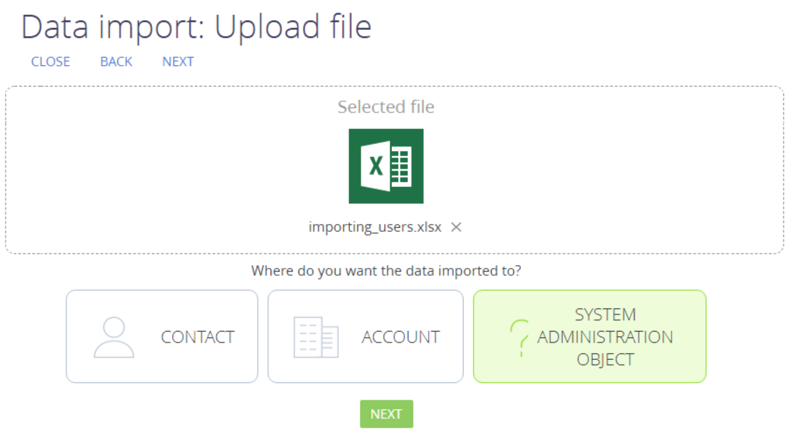
1. Click System Designer -> [Data import] (Fig. 7).

Fig. 7 Link to the [Data import] functionality of the “Import and integration” block



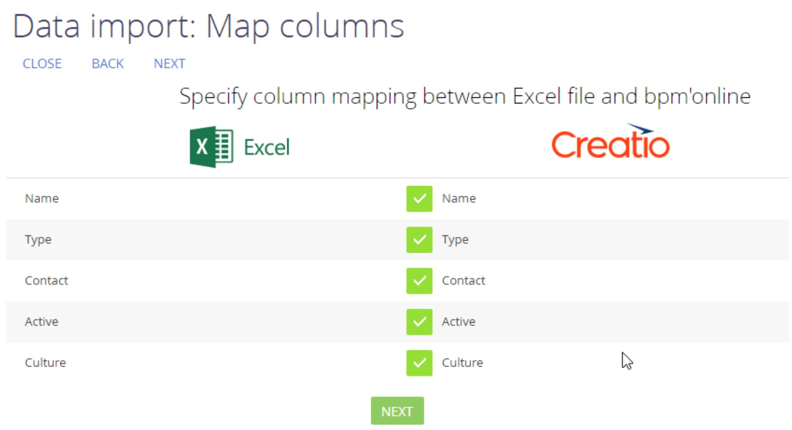
2. Add your user import Excel file: drag and drop it on the Data Import page that opens, or click [Select file] and locate your Excel file.
3. Click [Other] and select “System administration object” as the object for importing file records (Fig. 8). Click [Next].

Fig. 8 Selecting an object for the import on the Data Import page



4. Specify the column mapping by connecting the columns from the Excel file to the fields in the Creatio import object (Fig. 9). Click [Next].

Fig. 9 Mapping columns

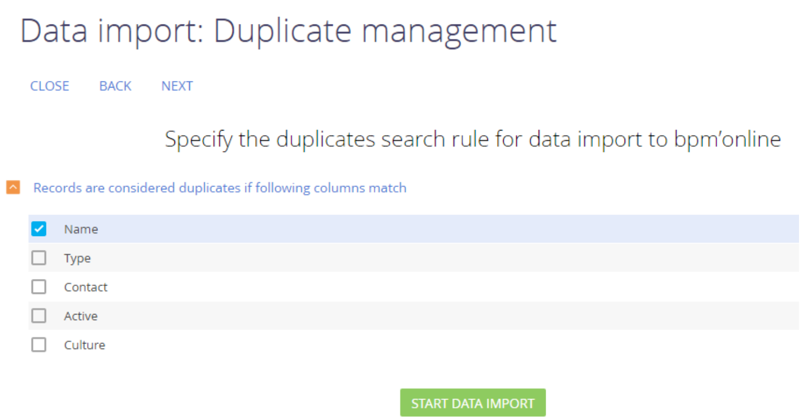


5. Specify the conditions for identifying duplicate records. The data of these columns must be unique for each of the imported records (Fig. 10).

   If the value of a column in the imported file coincides with the database value, Creatio will update the existing record. If the value is not available in the database, Creatio will create a new record.

   For example, when importing users, use the "Contact" column to determine whether the imported record already exists. If contact with such a name does not exist, Creatio creates a new record.

Fig. 10 Managing duplicates



6. Click [Start data import].

NOTE

The process of setting up columns and duplicate parameters is covered in more detail in the "How to import customer database" article.

When the import process completes, Creatio will inform you accordingly.

As a result, the imported records will be displayed in Creatio user record list. Note that the imported users will not have roles, licenses or passwords. You will need to assign those manually.

Post-import procedures

After you complete the import, you need to perform the following steps manually for each imported user:

1. On the [General information] tab of the user page, set a password to enable the user to log in to Creatio.

   NOTE

   Users can change their password when logging in to Creatio for the first time. Read more in the "Add a regular employee user" article.

2. Select the necessary role (e.g., "All employees") on the [Roles] tab. Learn more in the "Assign a user role" article.
3. Distribute licenses on the [Licenses] tab. Learn more in the "License a user" article.

SEE ALSO

- How to prepare an Excel file for import
- How to import customer database

Import users and roles from LDAP

If you use the Active Directory service, you can import the users from your directories to Creatio via LDAP synchronization. This will let you copy users and roles from your corporate Active Directory to Creatio.

Before you start adding users via LDAP synchronization:

- Prepare your directory for integration: make sure that the users are assigned to the AD user groups that will be synchronized with Creatio.

  NOTE

  Active Directory (AD) users that do not belong to any AD user group will not be imported. Creatio only imports the organizational structure represented by the AD user groups.

- Set up LDAP integration. Read more >>> After you click [Save] on the LDAP integration setup page, Creatio will notify you about the "Run LDAP import" business process running in the background. As a result, the Active Directory user groups will be copied to Creatio database.

When your Creatio is integrated with LDAP, you can synchronize with your AD and add the AD users to Creatio.

Adding users via LDAP synchronization

LDAP synchronization enables importing AD users of specific AD user groups to Creatio specific organizational roles by linking the Creatio roles to the AD user groups.

To add users to a Creatio organizational role:

1. Click -> [Organizational roles].
2. Select the role, where you want to add LDAP users from the corresponding AD user group via LDAP synchronization. You can also create a new role for the AD user group in your Creatio organizational structure. To do this:
    a. Select a parent role (e.g. "All employees" for adding regular users or "All portal users" for adding portal users) -> [New] -> [Organization].
    b. Specify the name for your new role. The name can be the same as in your Active Directory user group or it can be different.
3. On the [Users] tab, select the [Synchronize with LDAP] checkbox.
4. In the [LDAP element] field, select the corresponding user group from the list to connect the LDAP element with the Creatio organizational role -> [Save].
5. Click -> [Synchronize with LDAP]. Creatio will notify you that the LDAP synchronization is complete.

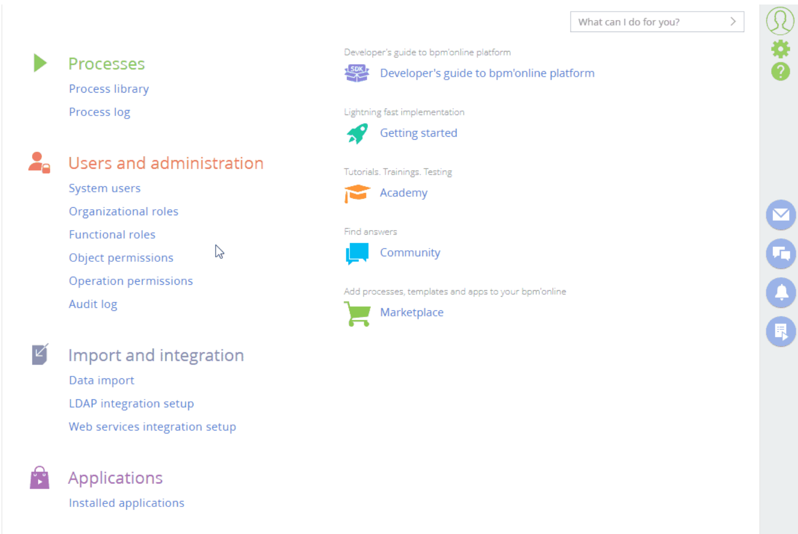
    NOTE

    If LDAP synchronization resulted in an error, you can check the details by checking the instances of the [Run LDAP synchronization] business process in the [Process log] section.

6. Update the [Organizational roles] page.

As a result, the [Users] detail of the corresponding role will display the LDAP users of the corresponding user group in your Active Directory. The new organizational role will display on the [Organizational roles] detail of the user's page. You can verify this by opening the corresponding user record and check its [Roles] tab (Fig. 11).

Fig. 11 Adding users via LDAP synchronization from the role page



ACCELERATE

- Synchronizing user accounts and roles with LDAP
- Setting up LDAP integration
- Link LDAP elements to Creatio users and roles
- Running LDAP synchronization

Assign a user role

User groups in Creatio are called “roles”. You can assign organizational and functional roles to users in Creatio. Read more in “Managing users”.

The assigned roles provide users with access to corresponding Creatio data objects and general system-wide functions. You can specify several roles for a user.

> NOTE
> By default, Creatio assigns the “All employees” organizational role to the newly added users of the “Employee” type.

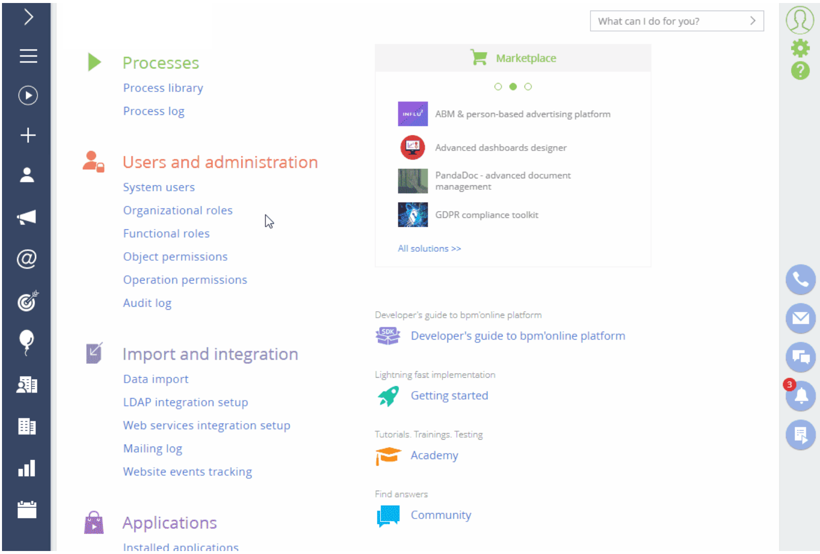
There are two ways you can assign roles to a user:

- From the user page
- From the role page

Method 1. Assign roles to a user from the user page

1. Click -> System Designer -> [System users].
2. Open the user page -> the [Roles] tab.
3. On the [Organizational roles] detail, click + and specify the roles from the company's organizational structure.
4. On the [Functional roles] detail, click + and specify the user’s functional role. Functional roles are usually based on the user’s job title (Fig. 12).

Fig. 12 Assigning roles to a user from the user page

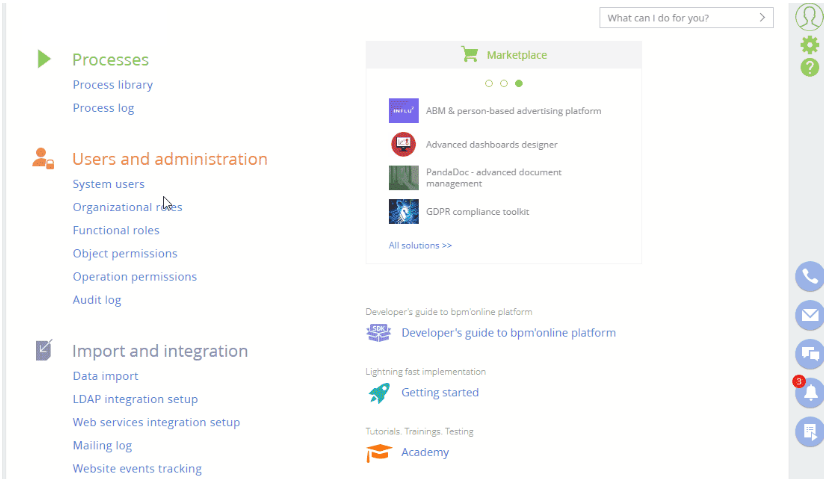


As a result, the user will be granted all permissions relevant to the assigned roles.

Method 2. Assign roles to a user from the role page

1. Click -> [Organizational roles].
2. In the list of organizational roles (represented in the form of a folder tree), select the corresponding organization and/or division. This will bring up the selected role page to the right.
3. On the [Users] tab:
   - Click + and select [Add existing] to add an existing user. In the pop-up window, select the corresponding user (Fig. 13).
   - Click + and select [Add new] to add a new user assigned to this role (you will need to populate the new user page).
4. To assign a functional role to the user, switch to the [Functional roles] view by clicking , then select the corresponding functional role.
5. Repeat step 4 (Fig. 13).

Fig. 13 Assigning roles to a user from pages of the corresponding roles



As a result, the user will be added to the corresponding roles and granted relevant permissions.

License a user

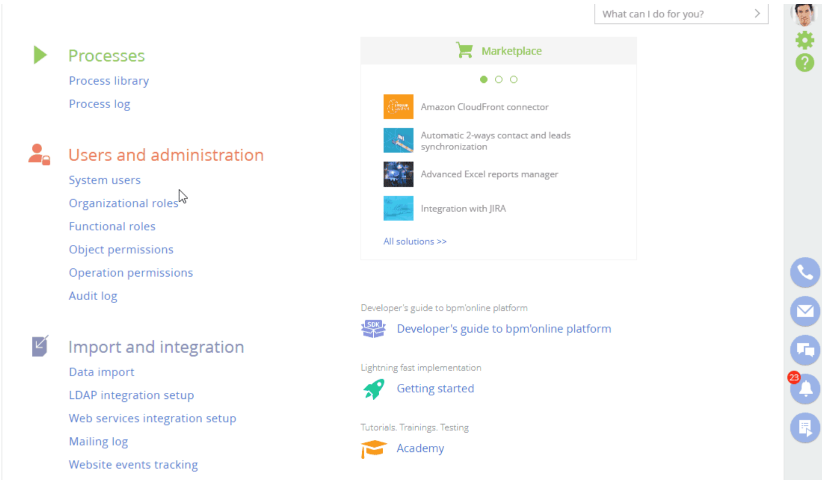
You need to issue licenses to each new Creatio user. Only licensed users can log in to Creatio application and access the corresponding functionality. For example, users who have not been issued a “Creatio marketing” license, will not be able to use functions that are specific to Creatio marketing, such as the [Email] and the [Campaigns] sections. By default, Creatio system administrators have permission to distribute licenses to user accounts.

> ATTENTION
> To enable licensing a user account, Creatio must have available licenses that have not been distributed among other users.

To license a user:

1. Click -> [System users].
2. Open the user page -> the [Licenses] tab.
3. In the license list, select the licenses to be distributed for the user account (Fig. 14).

Fig. 14 Distributing licenses to a user



As a result, the user will be granted licenses for the selected products and functionalities.

NOTE

If your application does not have available licenses, request them from support and upload them. Read more in the "Software licensing" article.

SEE ALSO

- Functional roles
- Creatio licensing

VIDEO TUTORIALS

- User and role management, access permissions

Delegate permissions

The functionality of delegating permissions enables granting all access permissions of a user to another user for a limited time. This is useful when, for example, an employee is out of the office or otherwise unavailable and someone should take over their duties. You can delegate permissions of individual users or roles to any number of other users or roles.

To delegate permissions, a user must have access to the "Manage user list" (CanManageUsers) and "Change delegated permissions" (CanChangeAdminUnitGrantedRight) system operations.

Delegate permissions of a user to other users and roles

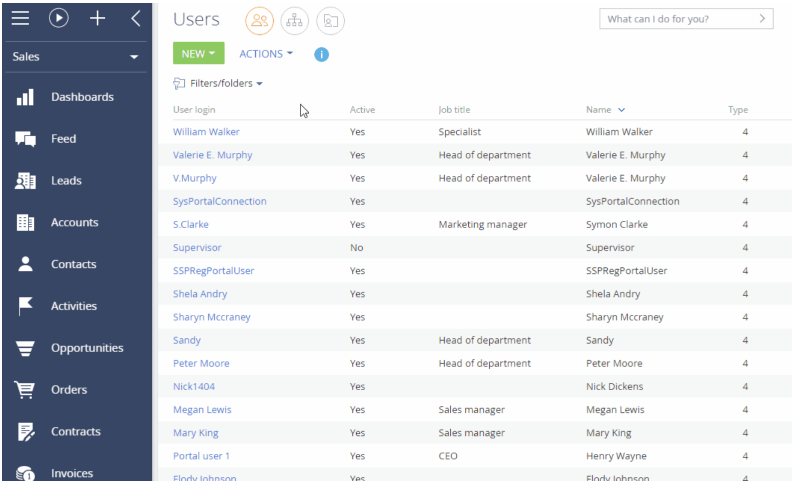
To delegate user permissions to another employee or employee group:

1. Click  -> [System users].
2. Open the user page, whose permissions you want to delegate.
3. Click [Rights delegation] -> [Delegate permissions].

4. In the opened window, select the user or employee group that will receive the delegated permissions, e.g., the "Accounting department" organizational role.
5. Click [Select]. Click [Close] on the user page.
6. Click [Actions] -> [Update roles] to apply the changes.

As a result, the users and roles who received the permissions will be displayed in the [Who receives permissions] column, and the user/role, whose permissions were delegated, will be displayed in the [Who grants permissions] column on the [Access rights delegation] detail (Fig. 15).

Fig. 15 Delegating permissions of a user to another user/employee group



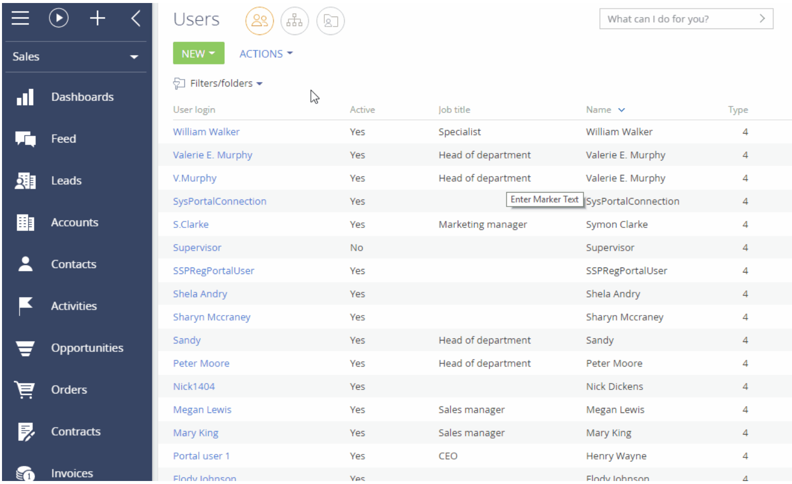
Delegate permissions of other users and roles to a user:

To delegate permissions of other users and roles to a user:

1. Click -> [System users].
2. Open the page of a user, who will receive the delegated permissions.
3. Click [Rights delegation] -> [Get permissions].
4. In the opened window, select the user or role whose permissions must be delegated to the current user, e.g., the "Accounting department" organizational role.
5. Click [Select]. Click [Close] on the user page.
6. Click [Actions] -> [Update roles] to apply the changes.

As a result, the user who received the permissions will be displayed in the [Who receives permissions] column, and the user/role, whose permissions were delegated, will be displayed in the [Who grants permissions] column on the [Access rights delegation] detail (Fig. 16).

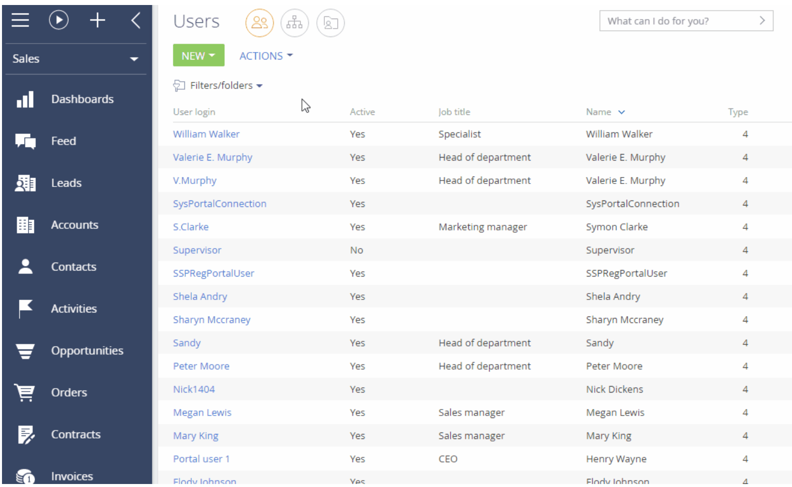
Fig. 16 Delegating permissions of an alternative user/employee group to the current user



Remove the delegated user permissions

1. Click -> [System users].
2. Open the page of the user, whose delegated permissions you want to remove.
3. Open the [Rights delegation] tab, click the record you want to delete.
4. Click ⁝ -> “Delete” (Fig. 17). Close the user page.
5. Click [Actions] -> [Update roles] to apply the changes.

Fig. 17 Removing the delegated permissions



As a result, the delegated permissions will be deleted. The user will only have the initially assigned permissions.

SEE ALSO

- License a user
- System user (Supervisor)

System user (Supervisor)

A dedicated user account called "System user" is required for the correct operation of Creatio. The system user must have the following permissions:

- System administrator (full access) permissions.
- Full license package.
- The user must be specified in the [System operations user] system setting.

By default, each configuration of Creatio has the "Supervisor" user account that is set as the system user.

> **NOTE**
> If you do not have a "Supervisor" user in the system, make sure that the user specified in the [System operations user] system setting has a full license package and all access permissions.

Unlike system administrators, there can be only one system user in Creatio.

> **ATTENTION**
> You can rename or change the system user, but you can not delete the system user account altogether – this may lead to degradation of system performance.

A system user account is needed for both system administration/configuration and to ensure the correct operation of the entire system. For example, a system user account is used to index global search data, save changes in section and detail wizards, sending newsletters. Creatio may not function properly if a system user is deleted or their access rights or licenses have been removed.

Change the system user

1. Transfer the maximum number of licenses from the previous user to the new one.
2. Assign the role with maximum access permissions to the new system user, e.g. "System administrators".
3. Specify the new system user in the [System operations user] system setting.

SEE ALSO

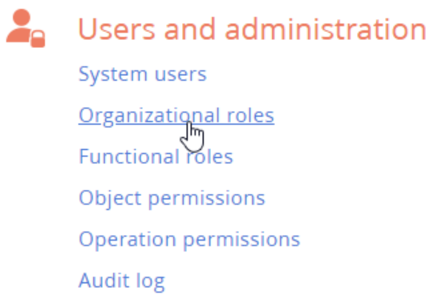
- Functional roles
- Add a regular employee user

Organizational roles

Organizational roles are user groups that represent company units, departments or subdivisions in the organizational structure, for example, the “Boston Office Sales Department” or the “Washington Office HR Department”. Each organizational role can be assigned access permissions that apply to all of its users. Organizational roles also automatically inherit access permissions from their parent organizational roles.

To manage organizational roles, click -> [Organizational roles] (Fig. 18).

Fig. 18 Accessing the organizational roles



The [Organizational roles] section contains the company’s organizational structure (represented in the form of a folder tree) and the information about individual organizational roles.

NOTE

By default, only system administrators have access to this section. Users need to have permission to the “Manage user list” (CanManageUsers) system operation to work with this section.

Add an organizational role

1. Click -> [Organizational roles].
2. In the list of organizational roles, select the corresponding parent role. For example, an organizational role for the regional office.
3. Click [Add] and select the role type - “Organization” or “Division”. For example, create a “Marketing department” division for the regional office.
4. Enter the name of the role. The name of each organizational role must be unique.
5. Open the [Functional roles] tab and add functional roles e.g., “Marketing Manager”, “Copywriter”, etc. All users in these functional roles will obtain all permissions of the organizational role.

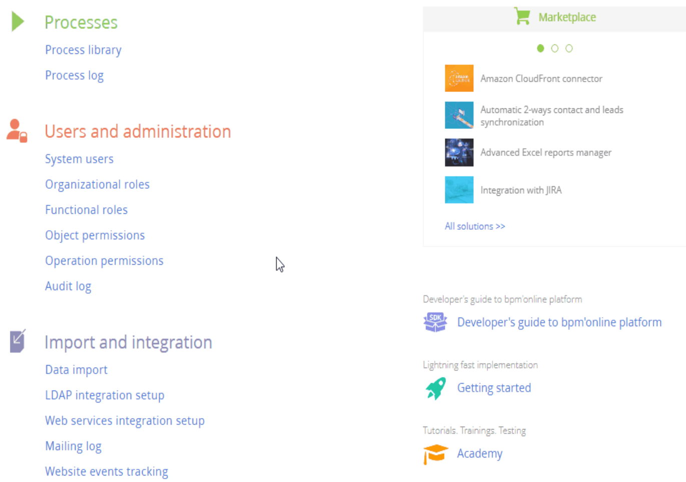
   This step is optional.

NOTE

Alternatively, you can connect a functional role to an organizational role on the functional role page. Read more in the “Connect functional and organizational roles” article.

6. Click ⋮ -> [Update roles] for changes to take effect (Fig. 19).

Fig. 19 Adding an organizational role



As a result, a new organizational role will be added to Creatio. It will automatically obtain the same access permissions as its parent organizational role.

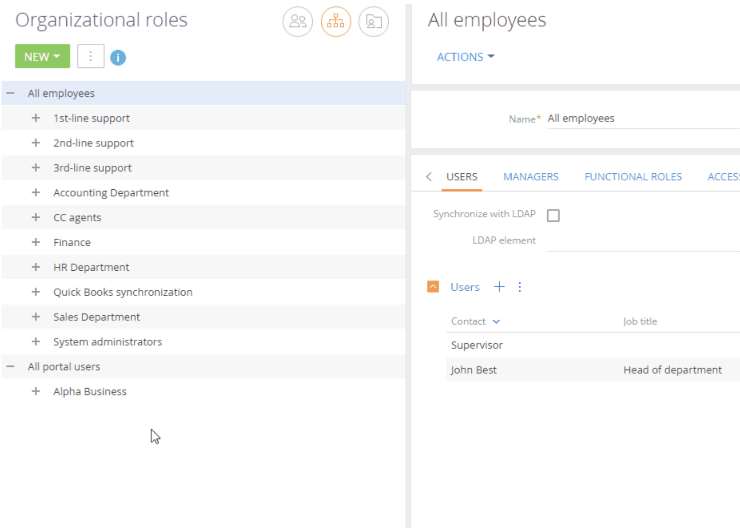
Add a manager role

In Creatio, you can assign permissions for management staff automatically, by adding a “manager role” to an organizational role. The manager role automatically obtains all permissions of the corresponding organizational role and all its subordinate roles.

While the manager role exists as a standalone organizational role in Creatio (and can be used to set up its access permissions), it is not visible in the list of organizational roles.

1. Click ⚙ -> [Organizational roles].
2. In the list of organizational roles, select the corresponding organization and/or division to assign a manager role to. For example, to assign a manager to the HR Department, select the “HR Department” role.
3. On the [Managers] tab, select the [Management role exists] checkbox.
4. In the [Management role] field, specify the name of the manager role (Fig. 20).

Fig. 20 Creating a manager role for the "HR Department" organizational role

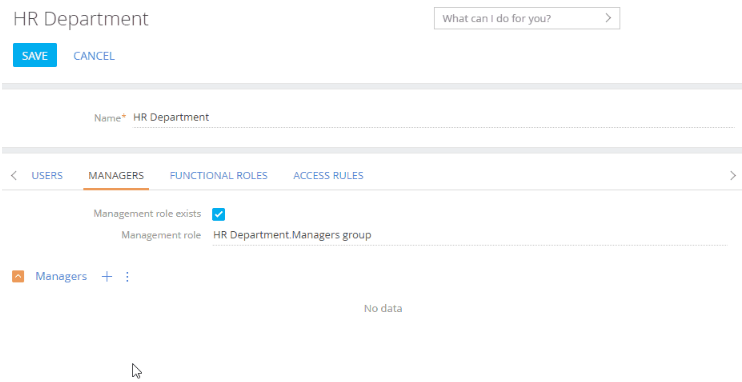


As a result, a new management role will be added to the organizational role. It will automatically obtain all access permissions from the organizational role (e.g., "HR Department") and all of its subordinate elements.

5. On the [Managers] tab:

- Click + and select [Add existing] to add an existing user. Select the corresponding user in the pop-up window (Fig. 21).
- Click + and select [Add new] to add a new user assigned to this role (you will need to populate the new user page).

Fig. 21 Adding users to the “HR Department” manager role



As a result, the users will automatically obtain all access permissions of the manager role, which will automatically include all permissions from its parent organizational role (e.g., “HR Department”) and its subordinate roles.

NOTE

Learn more about access permissions in the “Object permissions” and “System operation permissions” articles.

Add users to an organizational role

You can create a list of users in an organizational role in any of the following ways:

- add an existing user (selecting a user from the list)
- add a new user via a new user page
- import LDAP users Read more >>>

ATTENTION

You can import LDAP users only if the LDAP user integration has been set up. Learn more in the “Setting up LDAP integration” article.

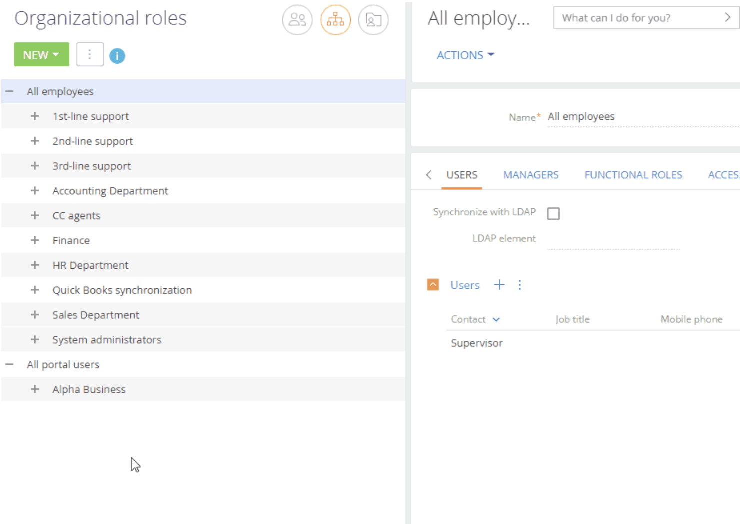
All users added to the organizational role will inherit any access permissions configured for it.

To add users to an organizational role:

1. Click -> [Organizational roles].
2. In the list of functional roles (represented in the form of a folder tree), select the corresponding organization and/or division.
3. On the [Users] tab:

- Click + and select [Add existing] to add an existing user. Select the corresponding user in the pop-up window (Fig. 22).
- Click + and select [Add new] to add a new user assigned to this role (you will need to populate the new user page).

Fig. 22 Adding existing users to an organizational role



As a result, selected users will be added to the organizational role. The users will inherit any access permissions configured for the organizational role.

NOTE

Learn more about access permissions in the "Object permissions" and "System operation permissions" articles.

SEE ALSO

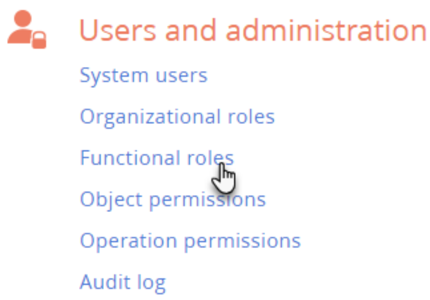
- Functional roles
- Object permissions
- System operation permissions

Functional roles

Functional roles reflect employee job titles, e.g., “Sales Managers”.

To manage functional roles, click -> [Functional roles] (Fig. 23).

Fig. 23 The [Functional roles] section



The [Functional roles] section contains the structure of functional roles (represented in the form of a folder tree) and the information about each functional role.

NOTE

By default, only system administrators have access to this section. Users need to have permission to the “Manage user list” (CanManageUsers) system operation to work with this section.

Use functional roles to set up identical access permissions for all employees with certain job positions, regardless of the company division. For example, you can create a functional role for managers in both main and regional offices. To do this:

1. Create a functional role. Learn more in the “Add a functional role” article.
2. Add organizational roles to a functional role. Learn more in the “Connect functional and organizational roles” article.
3. Configure access permissions for a functional role. Learn more about object permissions in the “Object permissions” article.

Add a functional role

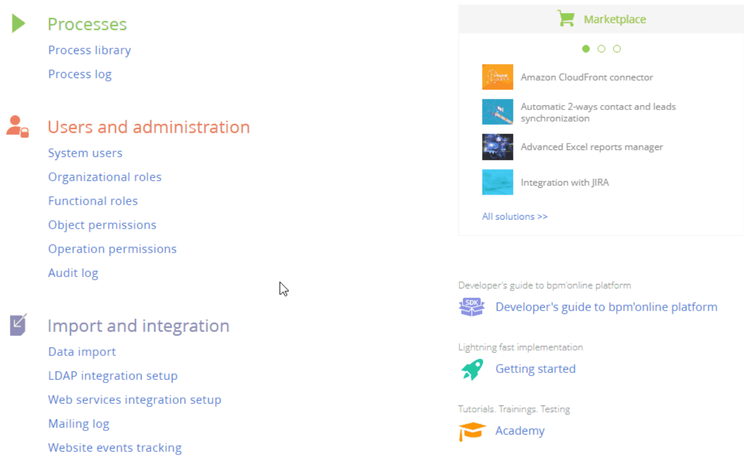
1. Click -> [Functional roles].
2. Click [Add]. Specify the name of the role in the opened window.

   NOTE

   The name of a functional role must be unique.

3. Click [Save].
4. Click ⋮ -> [Update roles] for changes to take effect (Fig. 24).

Fig. 24 Adding a functional role



As a result, a new functional role will be added.

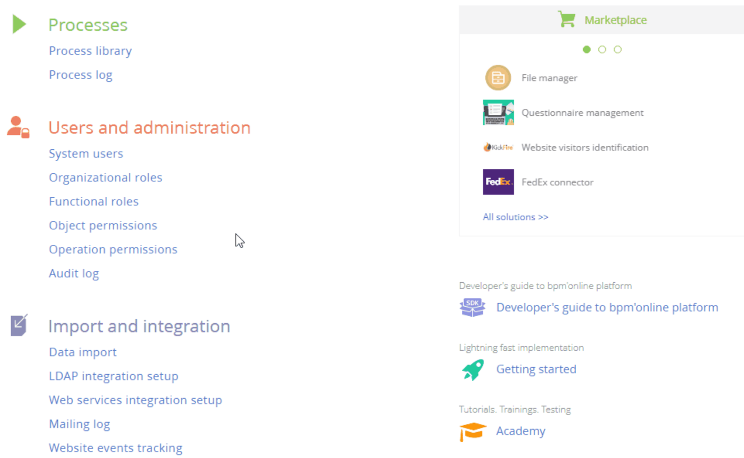
Connect functional and organizational roles

A functional role can be linked to one or more organizational roles. For example, you can link the “Managers” functional role with the “Main office. Managers group” and “Regional office. Managers group” organizational roles.

To connect a functional role to an organizational role:

1. Click -> [Functional roles].
2. In the list of functional roles, select the corresponding functional role. The functional role page will open on the right-hand side.
3. On the [Organizational roles] tab, click + and add organizational roles to a functional role. For example, add the “Main office. Managers group” and “Regional office. Managers group” organizational roles to the “Managers” functional role.
4. Click ⋮ -> [Update roles] for changes to take effect (Fig. 25).

Fig. 25 Connecting functional and organizational roles



As a result, the "Managers" functional role will be linked to the "Main office. Managers group" and "Regional office. Managers group" organizational roles. This will grant all permissions from the linked organizational roles to the users with the "Managers" functional role.

Add users to a functional role

You can add users to the functional role in any of the following ways:

- add an existing user (selecting a user from the list)
- add a new user via a new user page
- import LDAP users Read more >>>

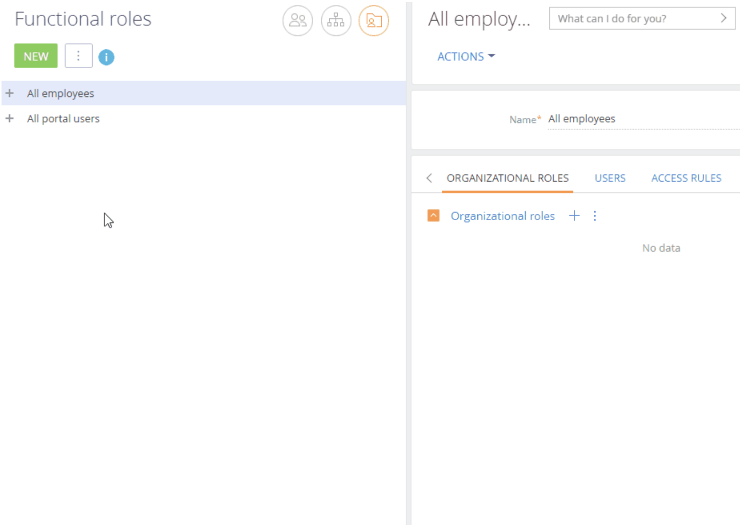
ATTENTION

You can import LDAP users only if the LDAP user integration has been set up. Learn more in the "Setting up LDAP integration" article.

To add users to a functional role:

1. Click -> [Functional roles].
2. In the list of functional roles, select the corresponding organization and/or division.
3. On the [Users] tab:
   - Click + and select [Add existing] to add an existing user. Select the corresponding user in the pop-up window (Fig. 26).
   - Click + and select [Add new] to add a new user assigned to this role (you will need to populate the new user page).

Fig. 26 Adding existing users to a functional role



As a result, new or existing users will be added to a functional role. Additionally, they will inherit any access permissions configured for this role.

NOTE

Learn more about access permissions in the “Object permissions” and “System operation permissions” articles.

SEE ALSO

- Managing users
- Organizational roles
- Object permissions
- System operation permissions

VIDEO TUTORIALS

- User and role management, access permissions

Object permissions

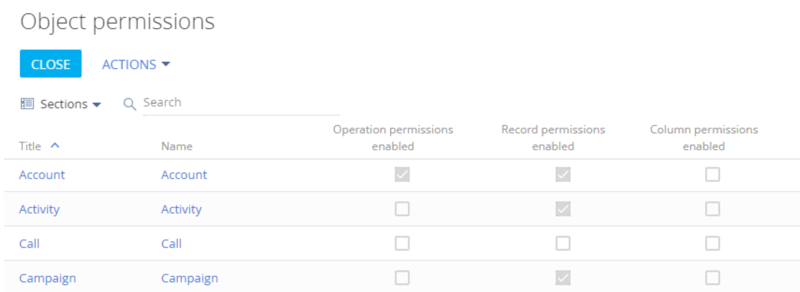
Business data in Creatio is stored in "objects". Each section, detail, or lookup is passed on a corresponding object, which, in turn, roughly corresponds to a database table.

> **NOTE**
> For more about technical aspects of Creatio objects, please refer to the "Creating the entity schema" article of the development guide.

In Creatio, working with access to data involves managing object permissions. The Object permissions section of the System Designer is designed for this purpose.

You can manage objects on three levels: operation permissions, record permissions and column permissions. In the object permissions management section (Fig. 1) you can see whether permissions in each object are managed by operations, records and columns.

Fig. 1 Section objects and their access levels



Access to operations with the object

Operation permissions enable you to grant or limit the ability to create, read, update or delete object data (CRUD operations) for individual users or roles.

> **NOTE**
> Object operations should not be confused with "system operations", which you can manage in the [Operations permissions] section. Learn more about system operations in the "System operation reference" article.

- If the [Operation permissions enabled] checkbox is cleared, all users can create, read, update or delete all records in the object.
- If the [Operation permissions enabled] checkbox is selected, the ability to perform CRUD-operations in the object is only available to those users and roles who were granted these permissions specifically. All other users (apart from system administrators) do not have access to the object. For example, only individual users can add new records. Users and roles that do not have operation permissions to this object will not be able to create, read, update or delete data in it.

Learn more about setting up access to operations with objects in the "Managing object operation permissions" article.

Access to object records

This option enables you to manage the permissions to read, update or delete specific records in an object, as well as to delegate these permissions. By default, a new record is only accessible to its owner and the system administrator. Record owners configure access permissions to their record individually (learn more in the “Access rights” article). A system administrator can configure a set of rules for automatically granting access to a new record to certain users or roles, based on the record author.

- If the [Record permissions enabled] checkbox is cleared, all users can create, read, update or delete all records in the object (provided that they have corresponding operation permissions to the object).
- If the [Record permissions enabled] checkbox is selected, individual users or groups can perform separate CRUD-operations with individual object records (provided that they have corresponding operation permissions to the object). For example, only certain users or roles can view and edit specific accounts or contacts.

Learn more about setting up access to object records in the “Managing record permissions” article.

Access to object columns

This option enables you to configure access permissions to specific fields in sections, details and lookups. A field is a visual representation of a database column.

- If the [Column permissions enabled] checkbox is cleared, all users can access values in all object columns, provided that they have access permissions to object operations and access to corresponding records.
- If the [Column permissions enabled] checkbox is selected, only specific users and roles can access values in object columns, provided that they have access permissions to object operations and access to corresponding records. For example, only individual users can view the annual revenue of accounts or change a contact type.

Learn more about setting up object column access in the “Managing column permissions” article.

The [Operation permissions enabled], [Record permissions enabled] and [Column permissions enabled] checkboxes in the list are view-only. They change automatically, based on the permissions that you set up for each object. If all checkboxes are disabled for an object, then all users have full access to the object and have permission to create, read, update or delete its data in all records and all columns. Learn more about different access permission options in the “Managing object operation permissions”, “Managing record permissions” and “Managing column permissions” articles.

Selecting an object to set up access permissions

In Creatio, you manage access to sections, details, and lookups through their respective objects. To restrict access to data of a particular section, detail, or lookup, you need to set up access permissions to the object where those records are stored. The objects are available in the [Object permissions] section of the System Designer.

The same object can act as a data source for a section, several details and lookup fields. That is why identifying which object you need is paramount.

Use filters to view the list of “section”, or “lookup” objects only. By default, the list in the [Object permissions] section shows only section objects (including objects used in custom sections). Select the “Lookups” filter to display only objects that correspond to registered lookups.

> **NOTE**
> If you select a filter and search for a particular object, Creatio will only search for objects that correspond to the selected filter. For example, if the “Sections” filter is selected in the list, and you are looking for a lookup, the necessary object will not be found since the list displays exclusively section objects.

Use the search string in conjunction with the filter to find the object you need.

Configuring access to a section

To set up access to a section, select the "Sections" filter and start typing section name in the search box. The name of the object usually corresponds to the name of the section in the singular. For example, the [Contacts] section object is called "Contact", the [Documents] section object is called "Document", etc. (note that custom sections and objects may not follow this rule).

Below are a few examples of section names and their corresponding object names.

Section name	Object title	Database object name
Contacts	Contact	Contact
Accounts	Account	Account
Activities	Activity	Activity
Opportunities	Opportunity	Opportunity
Landing pages and web forms	Landing page (web form)	GeneratedWebForm

Click on the object's name to begin configuring its access permissions. Note that only object names and titles are clickable in the list. Learn more about setting up different types of object permissions in the "Managing object operation permissions", "Managing record permissions" and "Managing column permissions" articles.

Configuring access to a lookup

To configure access to a lookup, select the "Lookups" filter and specify the object name in the search box. A lookup object name is usually identical to the lookup name or corresponds to the name of the lookup in the singular. For example, the [Currency] lookup object is named "Currency".

Below are a few examples of lookup names and their corresponding object names.

Lookup name	Object title	Database object name
States/provinces	States/provinces	Region
List of objects available to portal users	List of objects available to portal users (view)	VwSysSSPEntitySchemaAccessList
Email templates	Email template	EmailTemplate
Noteworthy event types	Noteworthy event types	AnniversaryType
Opportunity categories	Opportunity categories	OpportunityCategory

Click on the object name to begin configuring its access permissions. Note that only object names and titles are clickable in the list. Learn more about setting up different types of object permissions in the "Managing object operation permissions", "Managing record permissions" and "Managing column permissions" articles.

Configuring access to a detail

A detail is a record page element that displays a list of records that are connected to the current record. Most details display section records, e.g., the [Contacts] detail on the account page. Several details use their own dedicated objects as data sources, e.g., the [Addresses] and [Noteworthy events] details. To configure access permissions to a detail, first determine which object serves as the data source for the detail. If the detail displays section data (e.g., the [Contacts] detail on the account page displays data from the [Contacts] section), set up permissions to the corresponding section object. If the detail displays lookup data, the access is configured for an object, which corresponds to that particular lookup. If the detail has its own object, the access is configured for that particular object.

> **NOTE**
> You can look up the name of the detail object in the Section Wizard. Locate where the detail is used, and find the [Detail] field in the edit mode.

Make sure you select the “All objects” filter before searching for a dedicated detail object in the [Object permissions] section. If the detail displays the data of a particular section, the name of the detail object corresponds to the section name. For example, the name of the [Contacts] detail object in the [Accounts] section is “Contact”.

If the detail displays lookup data, in most cases the name of the object corresponds to the name of the lookup.

The name of a dedicated detail object usually combines the name of the detail and the section in which it is used (singular). For example, the [Attachments] detail object in the [Contacts] section is named “Contact attachment”.

Below are a few examples of detail names and corresponding object names.

Section name	Detail name	Object title	Database object name
Contacts	Communication options	Contact communication options	ContactCommunication
Accounts	Communication options	Account communication options	AccountCommunication
Contacts	Addresses	Contact address	ContactAddress
Accounts	Addresses	Account address	AccountAddress
Contacts	Job experience	Contact job experience	ContactCareer
Accounts	Banking details	Payment details of the account	AccountBillingInfo
Contacts	Attachments and notes	Contact attachments and notes	ContactFile
Any	Activities	Activity	Activity

Click on an object name to begin configuring its access permissions. Learn more about setting up different types of object permissions in the "Managing object operation permissions", "Managing record permissions" and "Managing column permissions" articles.

Configuring access to feed messages

Access permissions to feed are inherited from access permissions of the object where the feed message is posted. For example, if a user has permissions to read or create records in the [Accounts] section, they can view and create messages in the account's feed. However, they can only edit and delete their own messages. To grant access permissions to feed messages in a specific section, grant access permissions to that section object. Learn about finding the needed objects in the "Configuring access to a section" article.

To begin configuring operation, record and column permissions, select an object of the necessary section by clicking on its name or title. Learn more about setting up different types of object permissions in the "Managing object operation permissions", "Managing record permissions" and "Managing column permissions" articles.

Configuring access to tags

There is a separate object for storing tags for each section with each object record being a separate tag. The object title looks like this: "<section name> section tag". For example, "Feed section tag", "Activity section tag", etc.

> NOTE
> Before searching for the tag objects, in the [Objects permissions] section, make sure you select "All objects" filter.

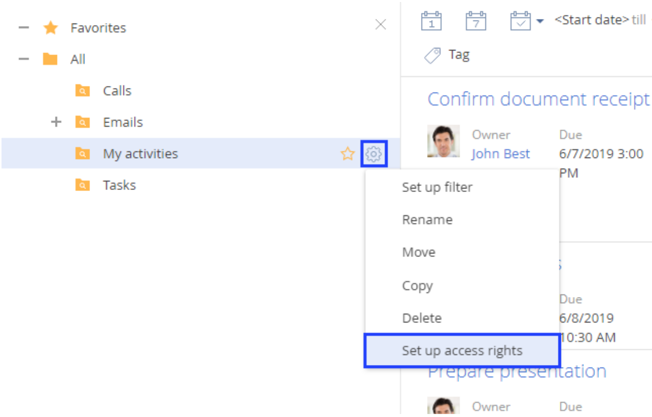
Click on an object name to begin configuring its access permissions. Note that only object names and titles are clickable in the list. Learn more about setting up different types of object permissions in the "Managing object operation permissions", "Managing record permissions" and "Managing column permissions" articles.

Configuring access to a section folders

There is a separate object for storing folders of each section, with each object record being a separate folder. The object title looks like this: "Section folder - <section name>". For example, the title of the object that stores the folders of the [Contracts] section is "Section folder - "Contracts"". The object title also may consist of the word "folder" and the section name in singular. For example, the folder object title for the [Contacts] section is "Contact folder".

All folder objects are managed by records, i.e., by default, a folder is visible only to the user who created it, with the ability to share the folder with other users via the [Set up access rights] button (Fig. 2).

Fig. 2 Access permissions to the “My activities” folder in the [Activities] section

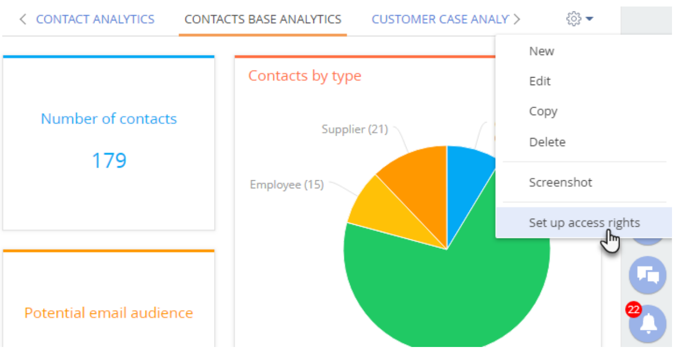


Configuring access to dashboards

Creatio section analytics, as well as the analytics available in the [Dashboards] section are stored in a separate “Dashboard” (SysDashboard) object.

If the “Dashboard” object is not managed by records, all users have full access to all dashboards. If the object is managed by records, access permissions to individual dashboards are configured via the [Set up access permissions] button in the analytics view (Fig. 3).

Fig. 3 Configuring access permissions to the “Dashboards” view in the [Contacts] section



Inherited access permissions

Subordinate objects, such as details, can inherit access permissions from parent objects (e.g., corresponding sections). For example, account communication options can inherit access permissions of the parent account. In this case, any user who has no permission to edit the primary record (e.g., account) cannot edit the subordinate records (e.g., communication options of that account) either.

This functionality is disabled by default. You can enable it for separate objects in the Object Designer, available in the [Configuration] section of Creatio advanced settings page.

NOTE

More information about working with the Object Designer and the [Configuration] section is available in the "The [Configuration] section" article of the Development Guide. The "Workspace of the Object Designer" article provides a description of the Object Designer.

Open the Object Designer; display all object properties (Fig. 4); in the [Object to inherit access permissions from] field, select the parent object, whose access permissions will be inherited by the current object (Fig. 5).

Fig. 4 Switching the object properties area to the "advanced" mode

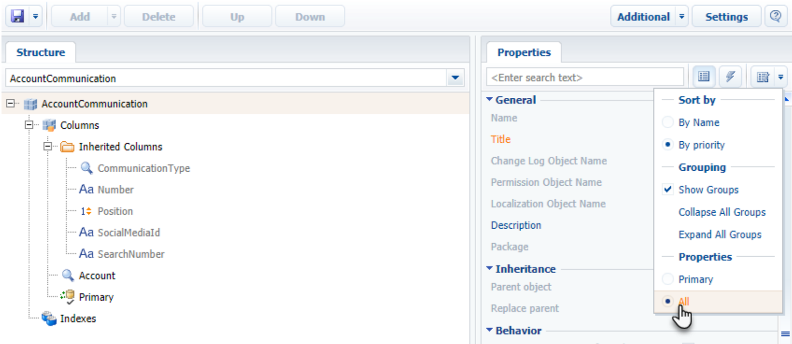
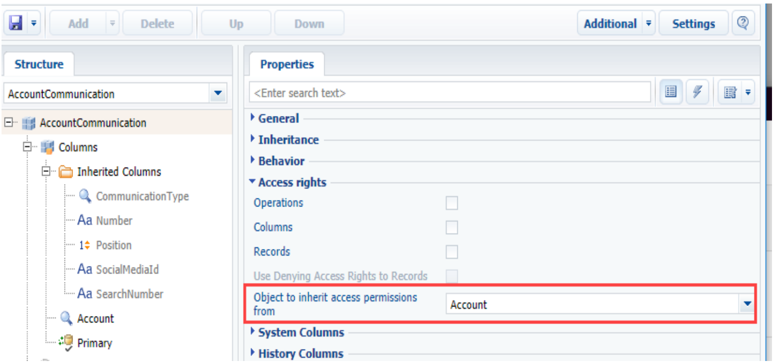


Fig. 5 Inheriting access permissions from the parent object



SEE ALSO

- Managing object operation permissions
- Managing record permissions
- Managing column permissions

ACCELERATE

Managing object operation permissions

Managing access to object operations enables you to assign permissions to create, read, update or and delete (CRUD) operations for all data in an object. Let's have a look at several typical cases of managing operation permissions.

NOTE

Object operations should not be confused with "system operations", which you can manage in the [Operation permissions] section. There are 4 system operations that override any settings in the [Operation permissions] section. Any user who has access to the "View any data", "Add any data", "Edit any data" and "Delete any data" system operations, can create, read, update or delete data in any object, regardless of settings made in the [Object permissions] section. Learn more about system operations in the "The [Operation permissions] section" article.

- Configure access to operations in section objects
- Configure access to operations in detail objects

Configure access to operations in section objects

CASE

Set up the following permissions to the [Opportunities] section:

Sales managers should have permission to read, create and update the [Opportunities] section records with no ability to delete them.

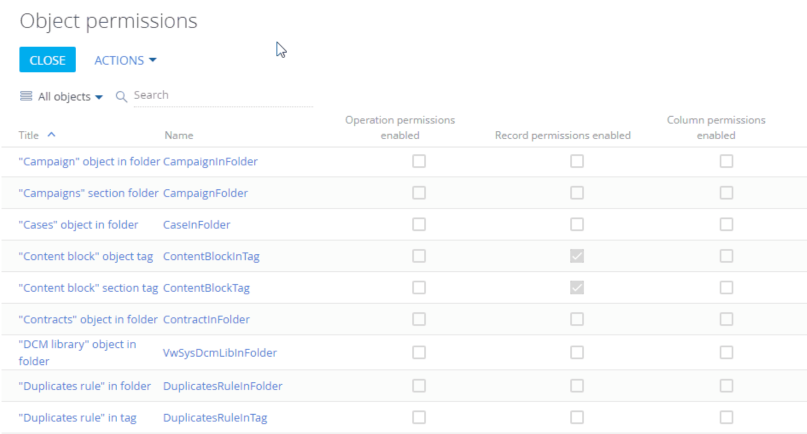
Sales managers should have full access to all opportunities, including permission to delete them.

The secretaries should not have access to the [Opportunities] section.

One of the employees in the "Secretaries" role, as well as all the company's employees, should have permission to view opportunities in the section.

1. Go to the System Designer (button) and open the [Object permissions] section.
2. Select the necessary object in the list or use the search box. For example, to configure access permissions to the [Opportunities] section, select the "Sections" filter and choose the "Opportunity" object. Click the name (or title) of the object to open the object permission settings window (Fig. 6).

Fig. 6 Choosing the section object and opening the permissions settings window

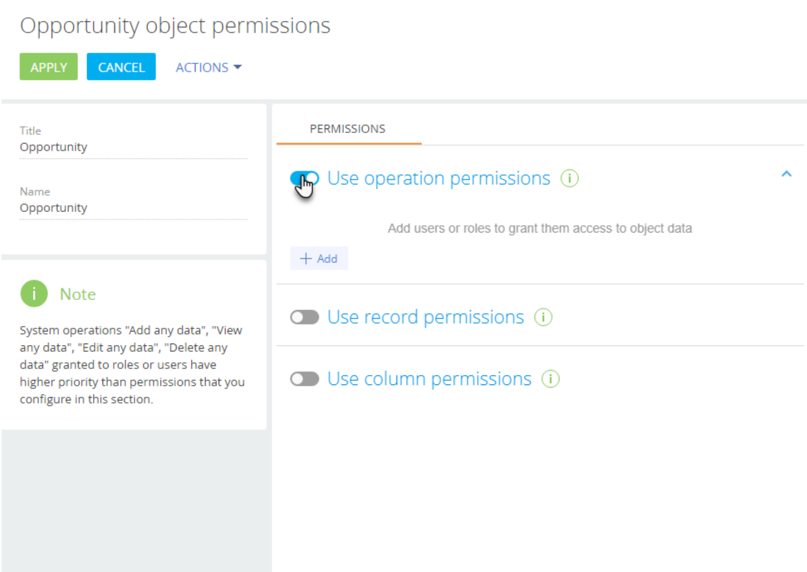


NOTE

Learn more about finding the object in the list in the "Selecting an object to set up access permissions" article.

3. Enable the "Use operation permissions" switch (Fig. 7).

Fig. 7 Enabling operation permissions



NOTE

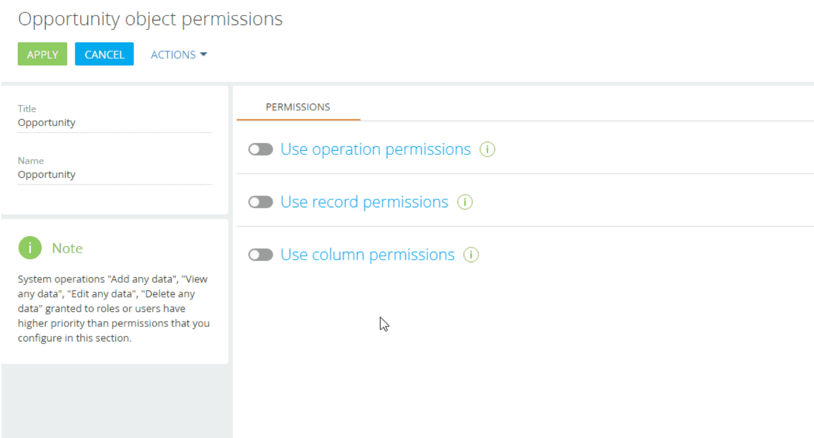
By default, all employees (the “All employees” organizational role) have the ability to read, create, update and delete all object records. Users in the “All employees” role will have permissions to perform these operations, even if operations permissions are not used and the switch is disabled.

ATTENTION

If you remove the “All employees” role from the settings area, and then disable the “Use operation permissions” switch and apply the changes, users will not be able to see the object records.

4. Click [Add] and select the necessary users and roles. You can use the search box or the [Organizational roles], [Functional roles] and [Users] tabs to quickly find users and roles. In this case:
    - The “All employees” role (added automatically).
    - The “Sales managers” organizational role.
    - The “Sales managers. Managers group” organizational role.
    - The “Secretaries” organizational role.
    - An individual user from the “Secretaries” organizational role (Fig. 8), e.g., V. Murphy.

Fig. 8 Adding users and roles to grant access permissions to the section



5. By default, each user or role that you add is granted access to read, create, update and delete object data. Edit these permissions according to your requirements, for example:
    - Leave the [Read] checkbox selected and clear the [Create], [Edit] and [Delete] checkboxes for the “All employees” role. As a result, all company employees can read section records but cannot create, edit or delete them.
    - Leave the [Read], [Create], [Edit] checkboxes selected and clear the [Delete] checkbox for the “Sales managers” role. As a result, sales managers will be able to read, create and edit section records without the ability to delete them.
    - Leave the [Read], [Create], [Edit] and [Delete] checkboxes selected for the “Sales managers. Managers group” role. As a result, sales department managers will have permission to read, create, edit or delete records in the [Opportunities] section.

- Clear the [Read], [Create], [Edit] and [Delete] checkboxes for the “Secretaries” role. As a result, the [Opportunities] section will be hidden from the company’s secretaries.
- Leave the [Read] checkbox selected for the specific user in the “Secretaries” role. As a result, the user can read records in the [Opportunities] section.

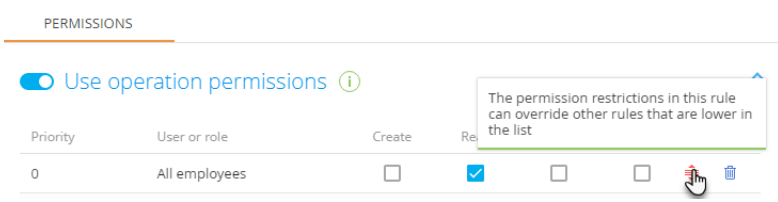
icon may appear next to some permissions. This means that some settings contradict each other, and it is necessary to adjust their priorities.

Hierarchy of object operation permissions

Sometimes the access permissions that apply to the same user or role may contradict each other, since a user may be included in several roles. Also, organizational roles may inherit permissions from one another, for example, the “Sales managers”, “Sales managers. Managers group” and “Secretaries” roles are a part of the “All employees” role. Additionally, permissions granted to an individual user may conflict with permissions that the user may have as a member of their role. These conflicts are indicated by the icon next to the conflicting access permission.

In case of a conflict, the permission that is the highest in the list will have a higher priority. The priority is shown in the [Priority] column and the highest possible priority is “0”. An icon next to an access permission rule indicates such a “conflict”. You can drag a rule to change its position in the list (Fig. 9).

Fig. 9 The need to adjust priorities in the list of permission rules



Please take the following into account while configuring access permission priorities:

- A user who is a part of several roles will get the access permissions of the highest role in the list.

  For example, all users should not access the [Opportunities] section records, but sales managers (who also belong to the “All users” role) should be given all permissions except those that enable them to delete records. To do this, place the “Sales managers” role higher than “All employees” in the list.
- To deny access permissions to an operation for a role while permitting the operation for some of its users, place this role lower in the list than the users who need to be granted access.

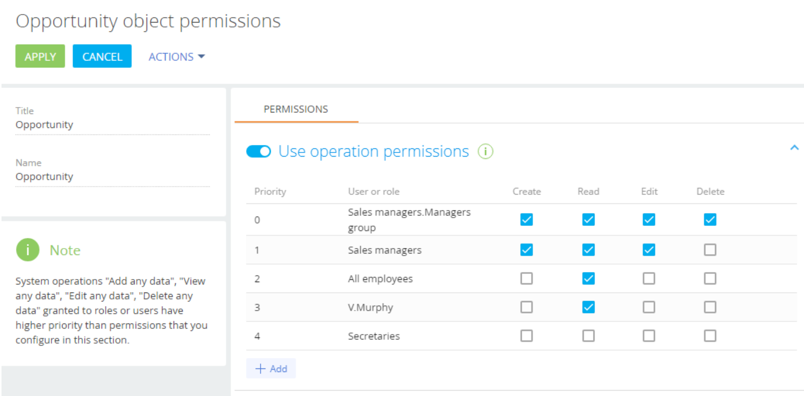
  Thus, if you deny access to the [Opportunities] section for the “Secretaries” role, but grant permission to read data to one of the secretaries, make sure that you move the “Secretaries” below the secretary employee who is supposed to access to the section.
- Users or roles that are not added to the object operations settings area do not get access to operations and are not included in priority settings.

Configure access permission priorities. To change the rule display order, drag&drop the rule to the necessary position in the list (Fig. 10).

1. Place the organizational role with the highest level of permissions (in our case, “Sales managers. Managers group”) at the top of the list.

2. Place the "Sales managers" role directly below.
3. The "All employees" role and the "V. Murphy" user (who belongs to the "Secretaries" role) have the same access permissions. Thus, you can place them directly below the "Sales managers" role in any order.
4. The "Secretaries" role should be placed at the very bottom of the list, since they do not have access to the [Opportunities] section.
5. Save the changes by clicking "Apply" in the upper left corner of the page.

Fig. 10 Setting up access permission priorities



As a result:

- Users in the "Sales managers" role have access to the [Opportunities] section with the ability to create and edit section records. Sales managers do not have the ability to delete records.
- Their managers should have full access to these records, including the permissions to delete them.
- All company employees can read section records but cannot create, edit or delete them.
- All secretaries, apart from V. Murphy, cannot view the [Opportunities] section records.
- V. Murphy can read the records in the section.

SEE ALSO

- Configure access to operations in detail objects

Configure access to operations in detail objects

CASE

Configure access permissions to the [Attachments] detail in the [Contracts] section. Users in the "Sales managers" organizational role should have full access to detail records.

All other users can only view the files in the detail and cannot edit or delete them.

1. Go to the system designer (button) and open the [Object permissions] section.
2. Select the "All objects" filter.

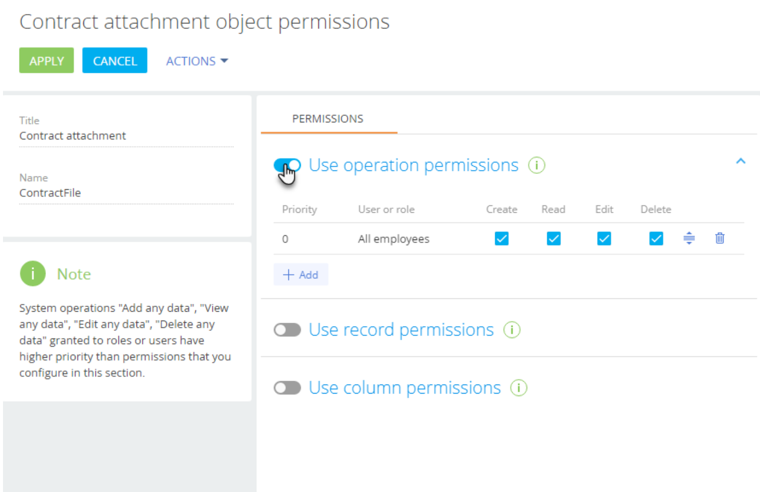
3. Find the "Attachments" object via the search box.

NOTE

Learn more about finding the object in the list in the "Selecting an object to set up access permissions" article.

4. Click the name or the title of the object to open the access permissions configuration window.
5. Enable the "Use operation permissions" switch (Fig. 11).

Fig. 11 Enabling the "Use operation permissions" switch



6. Click [Add] and select the necessary users and roles. Use the search box to quickly find the necessary users and roles. In this case:
   - The "All employees" role (added automatically).
   - The "Sales managers" role.
7. By default, each user or role in the list is granted access to read, create, update and delete object data. Edit these permissions to fit the example requirements:
   - Leave the [Read], [Create], [Edit] and [Delete] checkboxes selected for the "Sales managers" role. As a result, sales managers can read, create, edit and delete data in the [Attachments] detail.
   - Leave the [Read] checkbox selected and clear the [Create], [Edit] and [Delete] checkboxes for the "All employees" role. As a result, all employee users can view the data on the [Attachments] detail without the ability to add, edit or delete anything.
8. If necessary, configure access priorities for the selected roles. Adjustments may be necessary if access levels conflict with each other (roles may overlap). For example, the "Sales Managers" role is included in the "All Employees" role. The need to adjust priorities is indicated by the icon next to the conflicting access permission. Detailed information about priorities is provided in the "Hierarchy of object operation permissions" chapter.

As a result:

- Users in the "Sales managers" role have full access to the [Attachments] detail.
- All company's employees can view the data on the [Attachments] detail without the ability to create, edit or delete anything.

SEE ALSO

- Managing record permissions
- Managing column permissions

Managing record permissions

This option enables you to manage the permissions to read, update or delete individual object records, as well as to delegate these permissions.

The distribution of access rights depends on the record's authorship. By default, maximum access permissions are given to the following users:

- system administrators with permissions to the "View any data", "Add any data", "Edit any data" and "Delete any data" system operations, which have higher priority than settings in the [Object permissions] section.
- record author, who has full access to the record and also can delegate rights to other users.. Learn more about setting up access permissions to individual records in the "Sharing records" article.

The system administrator can configure permissions that will be distributed to users when creating a new record based on the author of that record. If an object is not managed by records, all users who have access to operations in the object will have access to all of its records. All users who have access to operations in the object will have record permissions if this configuration is not performed.

Configure access permissions to records in the [Opportunities] section

CASE

In the following example, we will configure access rights to the [Opportunities] section.

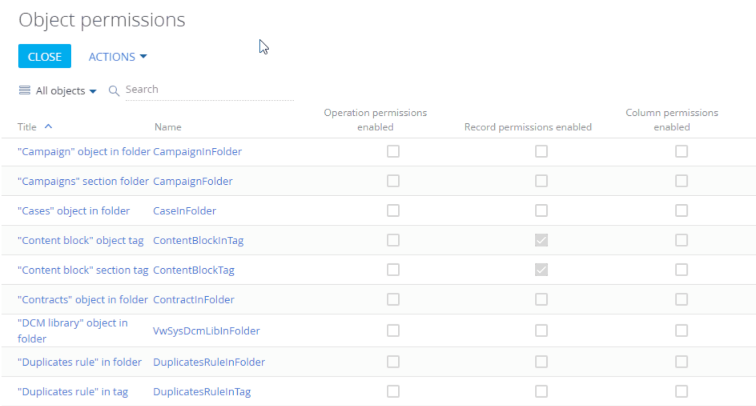
If the record is created by a sales manager, all employees that are part of this organizational role should have permission to view the record (with the ability to delegate these permissions), edit it, but not delete it.

If the record is created by a supervisor, the managers should have permission to view and edit the record without the ability to delegate access permissions.

The managers should have full access to these records, including the permission to delete them.

1. Go to the System Designer (button) and open the [Object permissions] section.
2. For example, to configure access permissions to the [Opportunities] section, select the "Sections" filter and choose the "Opportunity" object. Click the name (or title) of the object to open the object permissions settings window (Fig. 12).

Fig. 12 Choosing the section object and opening the permissions settings window

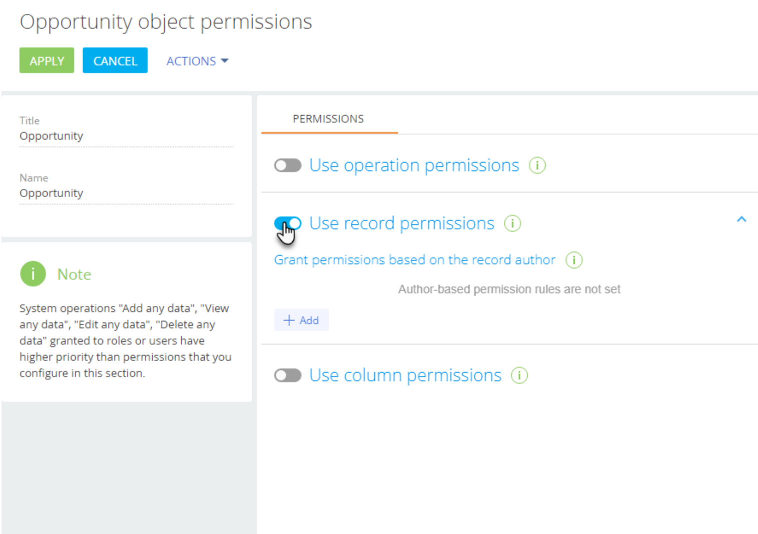


NOTE

Learn more about locating the object in the list and selecting it for access permissions configuration in the "Selecting an object to set up access permissions" article.

3. Enable the "Use operation permissions" switch (Fig. 13).

Fig. 13 Enabling the "Use operation permissions" switch

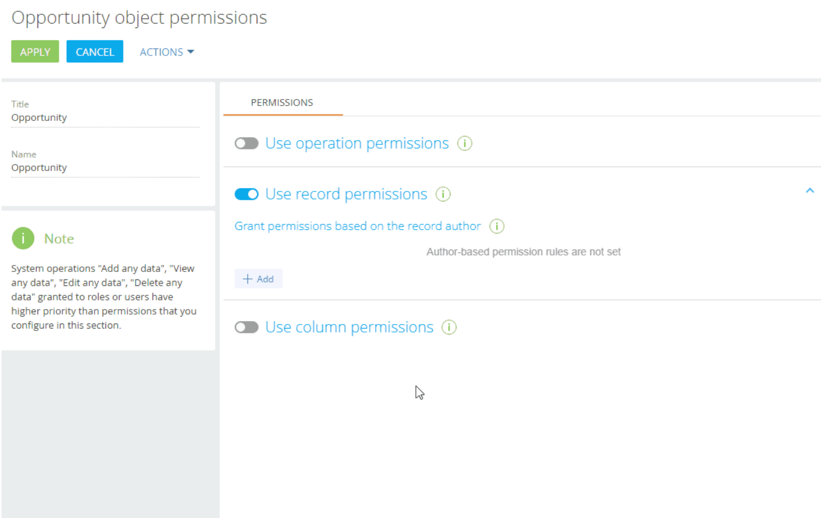


NOTE

If the object record permissions are enabled in the section, and the access permissions are not configured, the record will only be available to authors and system administrators.

4. Clicking the [Add] button opens a window in which you can specify a user (or role) who created the record, and a user (or role) who will receive permissions to work with this record. Use the search box to quickly find the necessary users and roles.

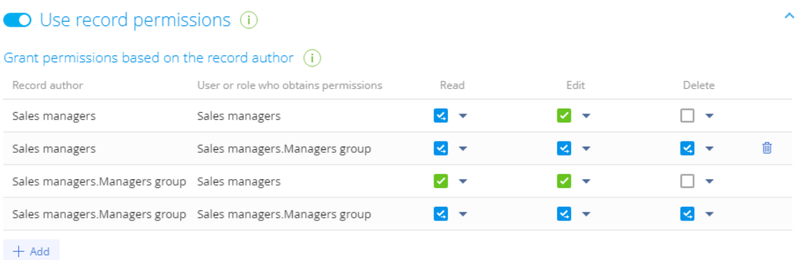
Fig. 14 An example of adding roles to configure access permission



In our case, the record owners and the users who receive permissions to work with the record are the members of the "Sales managers" and "Sales managers. Managers group" organizational roles to the "Managers" functional role.

5. By default, access permissions are not specified. Click the button and select "Granted" or "Granted with right to delegate" options in the column which corresponds to specific permissions (read, edit or delete) for each user to determine access levels. In our case, the following permissions are granted (Fig. 15):

Fig. 15 An example of configuring record access permissions



- To enable sales managers to view records created by their colleagues, delegate this permission to other users, as well as edit the records while being unable to delete them, select the “Granted with right to delegate” checkbox for the “Sales managers” role in the [Read] column, and the “Granted” checkbox in the [Edit] column.

- To enable sales managers to view records created by their managers, as well as edit these records with no ability to delete them, select the “Granted” checkbox in the [Edit] and [Read] columns for the “Sales managers” role.
- To enable their managers to view, edit and delete records in the [Opportunities] section, as well as to grant them an ability to delegate these permissions, select the “Granted with right to delegate” checkbox for the “Sales managers. Managers group” role in the [Read], [Edit] and [Delete] columns of the records authored by the “Sales managers” and “Sales managers. Supervisors” roles. Managers group” organizational roles to the “Managers” functional role.

NOTE

Unlike access permissions to object operations, the priority is not affected by the order in which permissions are displayed in the list.

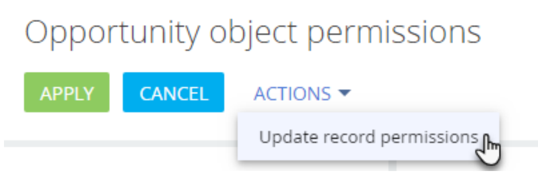
6. Click the [Apply] button to save changes.

ATTENTION

If access permissions are configured in a section, which already has records, you will need to update all record permissions. Otherwise, the permissions will only apply to new section records.

The process of updating record permissions may take some time. Depending on the number of section records, as well as the number of users and roles, the update process may take 3 minutes or more and affect system performance. To avoid this, we do not recommend updating record permissions during peak system load. To apply new access permissions to existing section records, open the access permissions setup page and select “Update record permissions” in the [Actions] menu (Fig. 16).

Fig. 16 Launching the record permissions update process



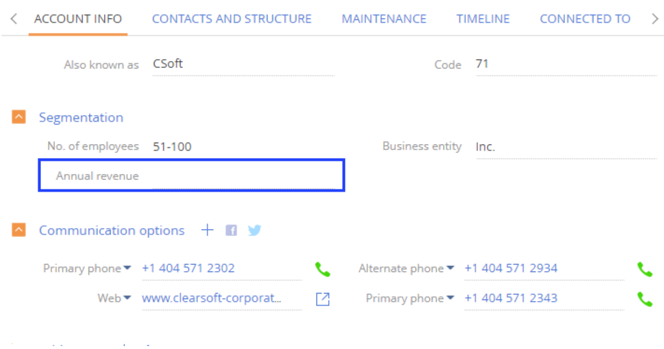
SEE ALSO

- Managing object operation permissions
- Managing column permissions

Managing column permissions

Object columns are displayed in the form of fields on pages and in section/detail lists. Column permissions enable you to limit access to read or edit individual object fields for users or roles. For example, you can limit permissions to read data in the [Annual revenue] field for the “Secretaries” organizational role, and enable all other employees to read the data in that field. The users who do not have permission to read data in the [Annual revenue] field will see the field itself, but its value will not be displayed (Fig. 17).

Fig. 17 The [Annual revenue] field with limited access permissions



Object operation and record permissions override column permissions. For example, if the user does not have permission to read an object data, the object will not be displayed for that user at all, and any column permissions will be irrelevant.

ATTENTION

Before setting up object column permissions, make sure that the user or role has access to the corresponding object operations and records. Note that if an object is not managed by operations and records, all users and roles have full access to all operations and all records. Learn more about limiting access permissions to create, edit, read or delete object data in the "Managing object operation permissions" article.

In this article, we are going to look at the process of granting or limiting access permissions to read and edit data in separate fields.

CASE

Set up permissions to the [Annual revenue] field on the account page. All company's employees, apart from its secretaries, should have access permissions to read the data in the [Annual revenue] field, while the sales managers should be able to read and edit data in that field.

The field value is hidden for the company's secretaries.

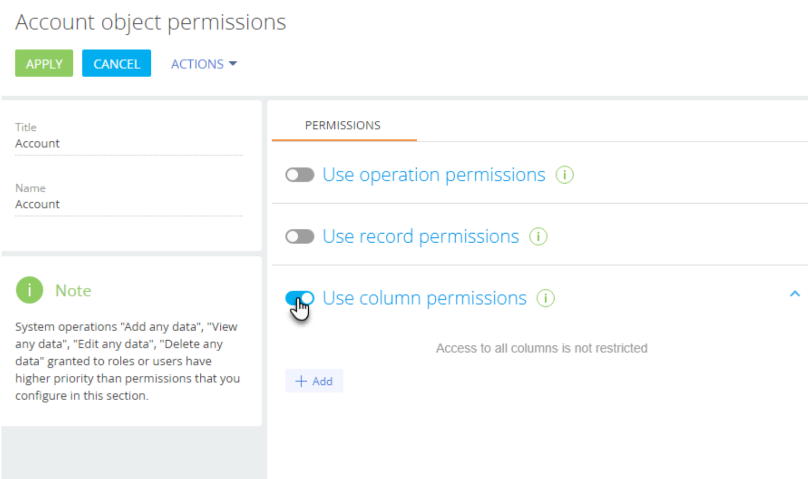
1. Go to the System Designer (button) and open the [Object permissions] section.
2. Select the necessary object in the list or use the search box. For example, to configure access permissions to the [Annual revenue] field, select the "Sections" filter and choose the "Account" object. Click the name (or title) of the object to open the object permissions settings window.

NOTE

Learn more about locating the object in the list and selecting it for access permissions configuration in the "Selecting an object to set up access permissions" article.

3. Make sure that the necessary users or roles already have access to object operations (or that the object is not administered by operations).
4. Enable the "Use column permissions" switch (Fig. 18).

Fig. 18 Enabling column permissions

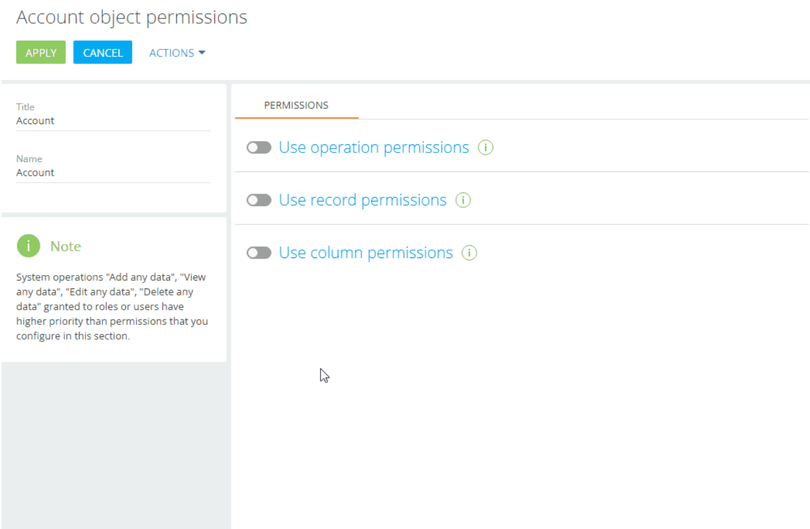


NOTE

If a new column is added to the object, and this object uses column permissions, then the users, except for system administrators, will not be able to access that column by default. You need to set up permissions for each custom column that you add after enabling column permissions in an object.

5. Click [Add] and select the necessary column. For example, to limit access to the [Annual revenue] field, type “Annual revenue” in the search box and click [Select]. The selected column will be displayed in the list on the left. The list on the right enables you to select users and roles to configure access permissions (Fig. 19). You can add other columns, if necessary. Select a column in the list to configure its access permissions.
6. Click [Add] in the list on the right, then select users and roles. You can use the search box or the [Organizational roles], [Functional roles] and [Users] tabs to quickly find users and roles in the selection window (Fig. 19). In this case:
    - The “All employees” role (added automatically).
    - The “Sales managers” organizational role.
    - The “Secretaries” organizational role.

Fig. 19 Selecting the [Annual revenue] column and adding users and roles to configure access permissions



By default, each user or role added to the list is granted access to read, update and delete the column value. Modify permissions to restrict access. For example, to implement the case above:

- Change access permissions for the “All employees” role to “Permit reading”. As a result, all company’s employees will be able to see the [Annual revenue] field value on the account page, without the ability to edit it.
- Select the “Permit reading and editing” access permission level for the ”Sales managers” role. As a result, the sales managers will be able to read and edit the value of the [Annual revenue] field.
- Select the “Deny reading and editing” access permissions level for the “Secretaries” role. As a result, the company’s secretaries will not be able to see the [Annual revenue] field.

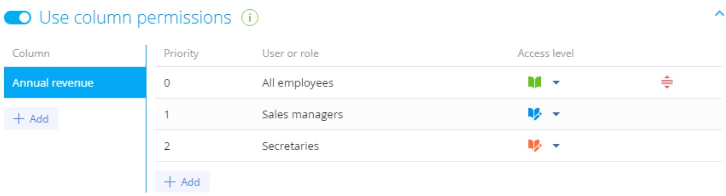
The icon may appear next to some permissions. That means these permissions are in “conflict”, and it is necessary to change their priority so that the settings can be applied correctly.

Hierarchy of column permissions

Sometimes different access permissions applied to the same user or role may contradict each other.

For example, the “Sales Managers” and the “Secretaries” roles are included in the “All Employees” role. Sales managers have more permissions than regular employees (Fig. 20).

Fig. 20 Example of access levels contradicting each other



In the case of a conflict, the permission that is the highest in the list will have a higher priority. The priority is shown in the [Priority] column and the highest possible priority is "0". An icon next to some of the rules indicates that they overlap and need to be lowered or raised in the list in order for other rules to work correctly.

Follow these rules while configuring access permission priorities:

- Object operation permissions and record permissions have higher priority.
- A user who has several roles will get the access permissions of the highest role in the list.

  For example, you can deny editing access for all employees, and grant sales managers the permissions to read and edit this field. To do this, place the "Sales managers" role higher than "All employees" in the list.
- If you deny access to a column for a user, place this role higher in the list than any roles who have permission to access the column.

  For example, to deny access to read and edit column data for all secretaries, the "Secretaries" role should be placed higher than the "All employees" role (which has permissions to read the column data) in the list. In this case, the icon will be displayed next to the "Secretaries" role.

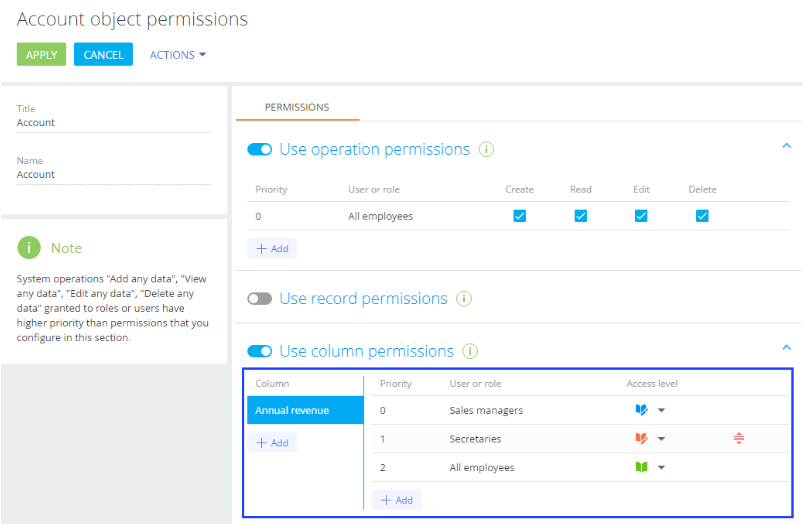
  NOTE

  In this case, there is no need to change the priority, since the secretaries are not supposed to view the column value, according to our example.
- The access permissions for users or roles that have not been added to the column permissions settings area correspond to the objects operation permissions that are configured for them.

Configure access permission priorities for the example above. To change the rule display order, drag&drop the rule to the necessary position in the list (Fig. 21).

1. Place the organizational role with the highest level of permissions (in our case, "Sales managers") at the top of the list.
2. Place the "Secretaries" role directly below the "Sales managers" role.
3. Place the "All employees" role at the very bottom of the list.
4. Save the changes by clicking "Apply" in the upper left corner of the page.

Fig. 21 An example of configuring access permission priority



As a result:

- Users that are part of the “Sales managers” role will have the ability to read and edit the [Annual revenue] field value.
- All secretaries will not be able to see the field on the account page.
- All company’s employees will be able to see the [Annual revenue] field value on the account page, without the ability to edit it.

SEE ALSO

- Managing object operation permissions
- Managing record permissions

System operation permissions

Access to a number of Creatio functions cannot be managed via permissions to add, view, edit and delete data in objects. Examples of such functions are import and export operations, creating business processes, configuring workplaces, system configuration, etc. Use system operations to manage access to these functions. A system operation can have one of the two access levels: a user or role either have access to perform the operation, or they do not. For example, if you grant the "All employees" role permission to perform the "Export list records" system operation, all users will be able to export section list data as Excel files.

The Operation permissions section of the System Designer is designed for managing access to system operations. Although standard folders are not available in the list of system operations, you can use either a standard or an advanced filter to find the needed operation.

Please note that system operation permissions work in conjunction with other access permissions. For example, users can only export data, which they can access according to object permissions.

CONTENTS

SEE ALSO

- Object permissions
- Managing users

VIDEO TUTORIALS

- User and role management, access permissions

Granting access permissions to system operations

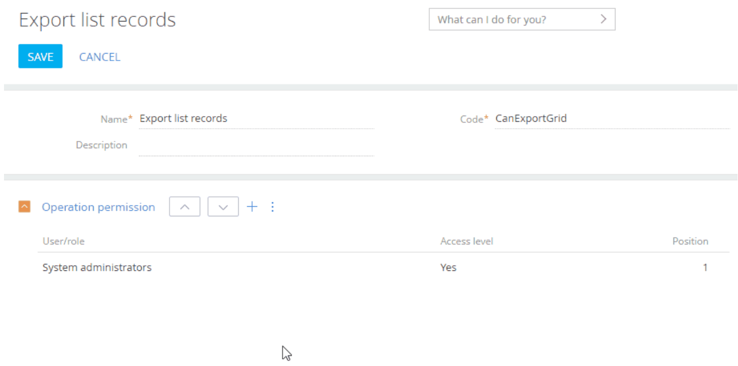
By default, only system administrators have access to key system operations. You can configure access permissions to system operations for individual users or user groups.

CASE

Set up access to the [Export to Excel] system operation for the sales supervisors.

1. Click  -> System Designer -> [Operation permissions]
2. Apply the "Name = Export list records" (or "Code = CanExportGrid") filter. Click the name of the operation to open it.
3. Click + and specify the necessary user/role on the [Operation permission] detail. For example the "Sales managers. Managers group" organizational role. The user/role will show up on the [Operation permission] detail with the "Yes" value in the "Access level" column. As a result, the "Sales managers.Managers group" role will be able to export section data to Excel (Fig. 1).

Fig. 1 Granting access permissions to a system operation



NOTE

To deny access permissions, click a record on the [Operation permission] detail and change the value in the "Access level" column to "No". To do this, select the user or role in the list. The "Access level" column value will be displayed as a checkbox. Clear it to deny access permissions for the selected user/role. Please do not forget to save.

Sometimes a user may be assigned conflicting permissions to system operations. This may happen if the user is a member of several roles, some of which have permission to a system operation, and some are denied that permission. In order for access permissions to work correctly, make sure you properly configure their priority. Use or on the [Operation permissions] detail to change the priority of assigned operation permissions. The role that is the highest in the list will determine the actual access permissions of a user. For example, if you need to deny permission to export list records for all users except sales managers, place the "All Employees" role lower than the "Sales managers" role in the list.

NOTE

Users or roles that were not added to the [Operation permission] detail will not have access to perform the corresponding system operation. In addition, they will not affect the permission priorities.

SEE ALSO

- System operation reference

System operation reference

System operations to which you can manage access are described below.

User and role administration

System operation name and code	Description
Manage user list CanManageUsers	Permissions to add, modify and delete user accounts in the [Users and administration] section.
Manage user licenses CanManageLicUsers	Access to the license manager. The users that have permission to manage licenses can log into Creatio and redistribute the licenses even if Creatio has been locked due to exceeding the number of distributed licenses.
Change delegated permissions CanChangeAdminUnitGrantedRight	The ability to delegate the access rights of some users to others using the [Delegate access permissions] detail on the user page.

Managing portal users

System operation name and code	Description
Manage portal users CanAdministratePortalUsers	Permissions to add, modify and delete portal user accounts in the [Users and administration] section.
Access to portal main page setup module CanManagePortalMainPage	Permission to set up the portal main page.

General access

General access operations refer to all records in all objects. General access is usually provided to system administrators.

ATTENTION

Access to these operations overrides object permissions (object operations, records and columns). For example, if a user has access to the [View any data] operation, this user will be able to view records of all objects, even those in which the read operation is restricted.

System operation name and code	Description
View any data CanSelectEverything	Permission to view any data in any object.
Add any data CanInsertEverything	Permission to add records to any object.
Edit any data CanUpdateEverything	Permissions to edit any data in any object.
Delete any data CanDeleteEverything	Permission to delete any records in any object.

Columns, system operations and default permissions

System operation name and code	Description
Change system operations permissions CanChangeAdminOperationGrantee	Ability to manage access permissions to system operations. The scope of rights granted by this operation includes the right to register additional system operations.

Access to special sections

System operation name and code	Description
Access to "Access rights" workspace CanManageAdministration	Access to the [Object permissions] and [Operation permissions] sections. Access to specific administering operations is granted separately.
Access to "Process design" section CanManageProcessDesign	Access to the [Process design] section, and the ability to add and modify business processes.
Access to "Change log" section CanManageChangeLog	Access to the [Change log] section.
Access to "System settings" section CanManageSysSettings	Access to the [System settings] section.
Access to “Lookups” section CanManageLookups	Access to the [Lookups] section.
Access to “Configuration” section CanManageSolution	Access to the [Configuration] section (System Designer -> Advanced Settings).
View “Audit log” section CanViewSysOperationAudit	Access to view the contents of the [Audit log] section.
Manage "Audit log" section CanManageSysOperationAudit	Permission to view the contents of the “System operations audit log” section and to archive the log.

Access to duplicates search

System operation name and code	Description
Duplicates search CanSearchDuplicates	Permission to search for duplicates in sections with active duplicate search rules.
Duplicates processing CanMergeDuplicates	Permission to merge duplicate records on the duplicate search results page. Additionally, permission to merge records manually in all accessible sections and lookups.

System operation name and code	Description
Access to "Duplicates rules setup" CanManageDuplicatesRules	Permission to add and edit duplicate search rules.

Access to integration settings

System operation name and code	Description
Access to message exchange services CanUseMsgService	Permission to configure phone integration.

General actions

System operation name and code	Description
Email providers list setup CanManageMailServers	Permission to create a list of email servers used to send and receive emails.
Shared mailbox synchronization setup CanManageSharedMailboxes	Permission to manage shared mailboxes (mailboxes with the [Allow shared access] checkbox enabled).
Change access rights to record CanChangeEntitySchemaRecordRight	Enables the users to share records in sections with other users. The [Use operation permissions] checkbox must be selected in the corresponding section object.
Ignore access check by IP address SuppressIPRestriction	When a user who has access to this operation logs in to the system, the IP address restrictions will be ignored.
Export list records CanExportGrid	Permission to export list data in a *.xlsx file. If a user does not have permission for this operation, the [Export to Excel] action in sections and the “List” dashboard tile menu is disabled.
Permission to run business processes. CanRunBusinessProcesses	Permission to run business processes in Creatio. All users have permission to perform this operation by default.
Cancel running processes CanCancelProcess	Permission to cancel a running business process in the process log.
Access to workplace setup CanManageWorkplaceSettings	Permission to create and set up workplaces, i.e., managing the section list available in the side panel.
Access to comments CanEditOrDeleteComment	Permission to edit and delete comments on the feed messages.
Permission to delete messages and comments CanDeleteAllMessageComment	Permission to delete messages and comments left by other users in the [Feed] section, on the [Feed] tab of the Notification Panel, and on the [Feed] tab of the view and edit pages of system sections. Users can edit and delete their own messages and comments even if they do not have access permissions to this system operation.

SEE ALSO

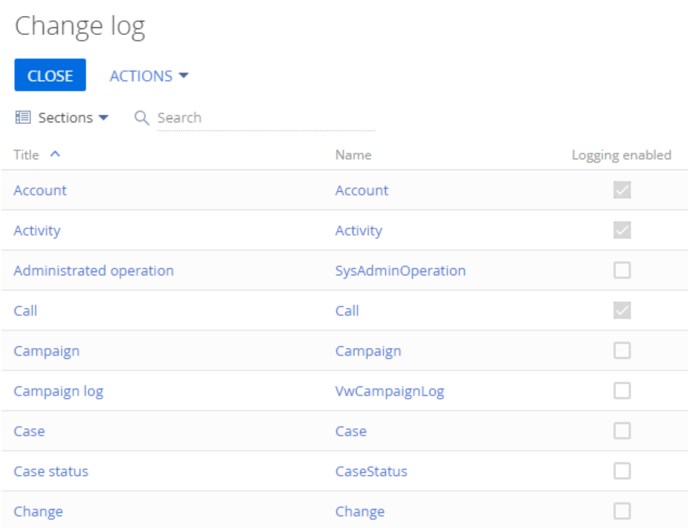
- Granting access permissions to system operations

The [Change log] section

When working with Creatio, you may need to view the changes made to your data, as well as who made these changes and when. For example, you can check who and when deleted support cases or changed a contract sum.

The data change history is available in the [Change log] section (Fig. 1).

Fig. 1 The [Change log] section view



The change log contains information about adding, modifying, and deleting records (entries) in the database tables for Creatio objects. This includes sections, details, lookups, as well as other objects. Creatio can log changes on two levels:

- Record level – adding, modifying, or deleting Creatio records (e.g., adding specific accounts or contacts).
- Column level – adding, modifying, or deleting values in the fields of record pages (e.g., edit a contact name or change the type of an account).

CONTENTS

Set up the [Change Log] section

You can open the [Change log] section:

- From the System Designer by clicking [Change log] under [Users and administration].
- From the section, lookup, or detail by clicking [Actions] -> [Change log setup] in the section, lookup, or detail list..

CASE

Set up logging of changes in contacts' phone numbers and emails.

Emails, mobile and work phones are available in the contact profile, so logging must be enabled in the [Contacts] section on the column level.

Method 1. Set up logging in the [Change log] section

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [Change log].

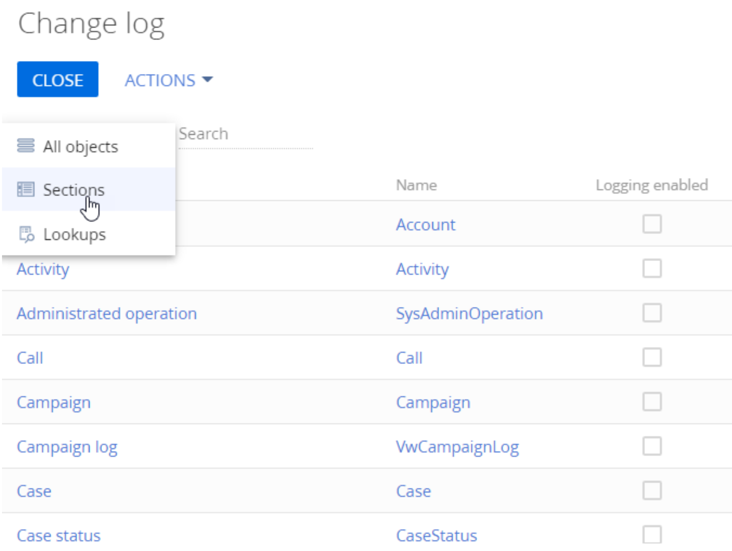
NOTE

To work with the [Change Log] section, the users require permission to the following system operation: [Access to "Change log" section] (CanManageChangeLog).

Learn more about using system operations in the "System operation permissions" article.

3. In the list of objects, find the needed object of the section, detail, or lookup. For example, set the "Sections" filter to display only section objects (Fig. 2).

Fig. 2 Setting the filter to select the object for logging

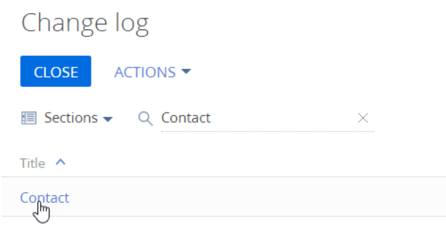


NOTE

If you need to log the detail data, select the "All objects" filter.

4. Select the section from the list or find it using the search bar (Fig. 3). Click the title of the needed object. In this case, it is the "Contact" object.

Fig. 3 Searching for a section to set up logging



5. On the page that opens, enable logging via the corresponding switch.

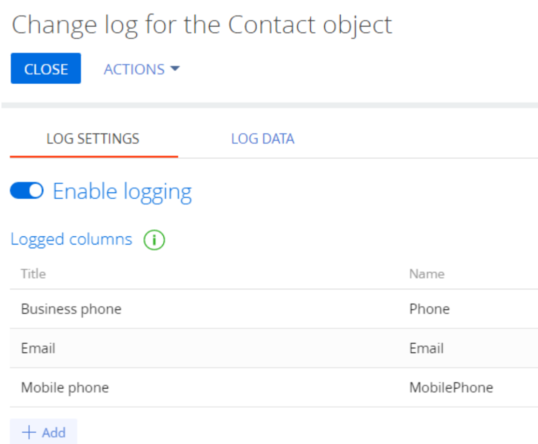
   NOTE

   If you click [Apply], Creatio will start logging according to the current settings, i.e., it will record the events of creating, modifying, and deleting records.

6. Set up the list of columns for logging when a record is changed. For example, use the [Email], [Mobile phone] and [Business phone] columns (Fig. 4).

   Click [Add] to add a new column. To delete an added column, hover the cursor over the column title and click .

   Fig. 4 Setting up column logging



   NOTE

   We recommend setting up the logging only for columns, whose values you need to track. With big databases, the logging of multiple objects and columns might affect Creatio performance.

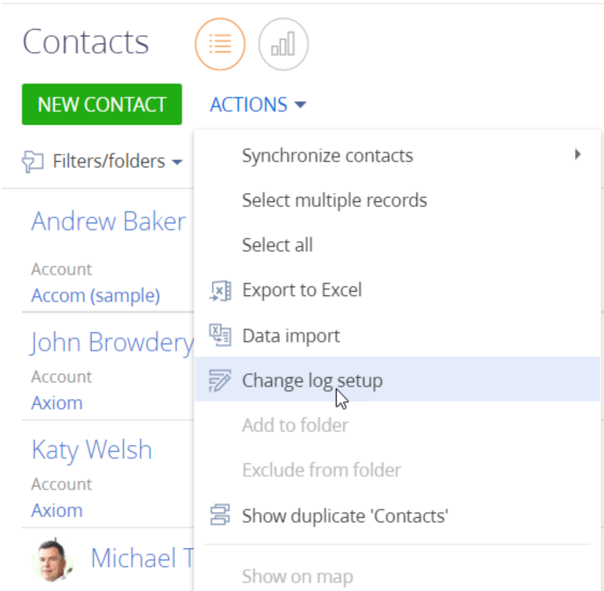
7. Save the settings by clicking [Apply].

After you save the settings, Creatio will start monitoring the changes and recording them in the [Change log] section.

Method 2. Set up logging in a section, lookup or detail

1. Open the needed section, lookup or detail. In our example, we use the [Contacts] section.
2. Click [Actions] -> [Change log setup] (Fig. 5).

Fig. 5 Setting up the change log from a section



NOTE

If you cannot see [Change log setup] in the action list, make sure you have permission to the [Access to "Change log" section] (CanManageChangeLog) system operation.
Learn more about using system operations in the "System operation permissions" article.

If you click the [Change log setup] action, the "Change log for the Contact object" page will open. To complete the setup, perform steps 5–7, described above in Method 1.

View the change log

There are two ways you can open a change log for viewing its records:

- Open the change log of a specific record directly from the record page.
- Open the [Change log] section from the System Designer and select an object to view its logs.

Method 1. Viewing the record changes from the change log

CASE

View the contact records that were changed last month.

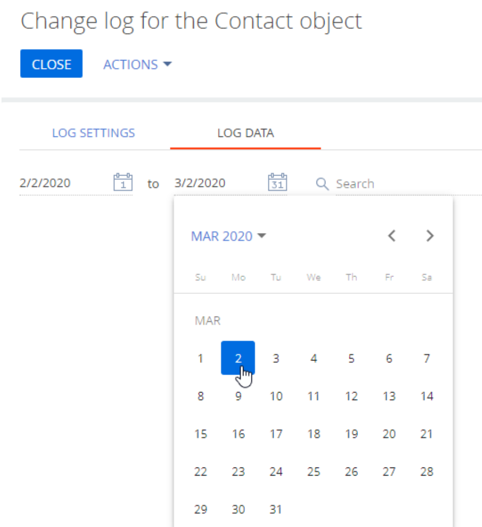
1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [Change log].

NOTE

To view the changes, make sure you have the [Access to "Change log" section] (CanManageChangeLog) system operation permission.
Learn more about using system operations in the "System operation permissions" article.

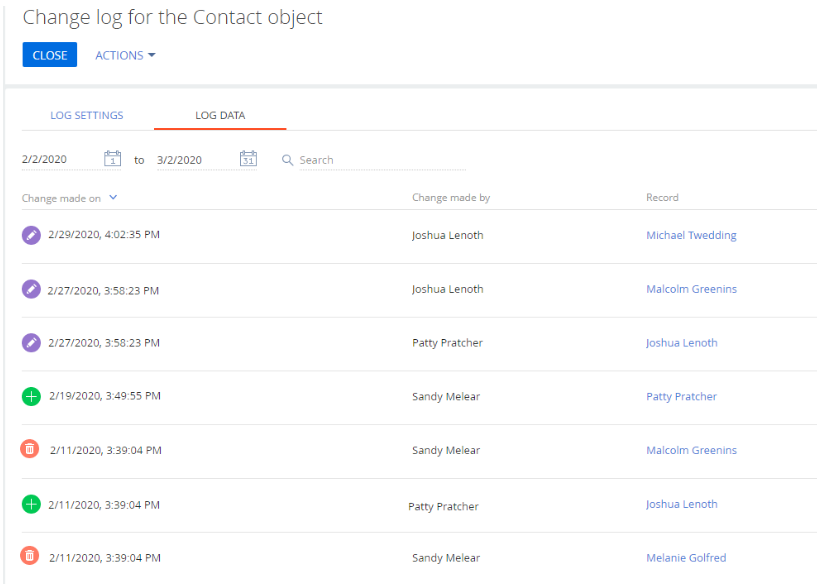
3. Set the filter - for our example, select "Sections".
4. Find the needed object using the search bar or manually. In our example, we use the "Contact" object. Click the object title to open the change log page.
5. Click the [Log data] tab and set the date filter (Fig. 6). In our example, it is the time period from February 2nd to March 2nd, 2020.

Fig. 6 Filtering changes by date for the "Contact" object



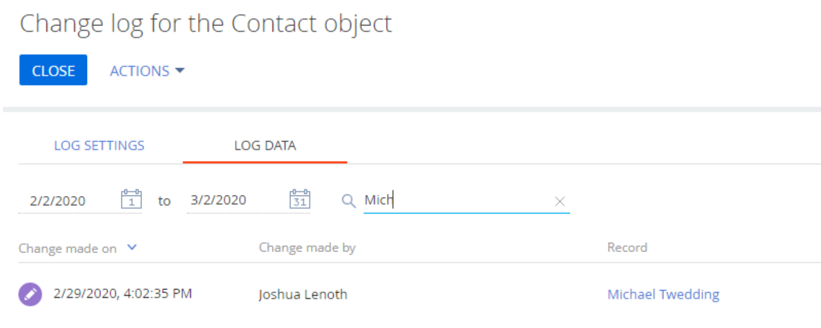
As a result, the list of records that were changed within the specified period will be displayed (Fig. 7). The icons next to dates display the type of the performed operations: deleting, adding or editing.

Fig. 7 Viewing the change log



6. Use the search bar to quickly find the needed record by title. In our case - by the contact's full name (Fig. 8). To learn the details of the performed changes, click the name in the [Record] column.

Fig. 8 Quick search by record name



Method 2. View logs of a specific record directly from the record page

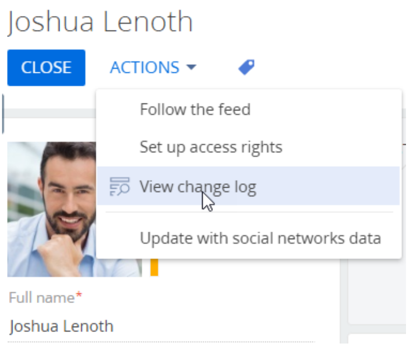
CASE

See the change log of the field values on the page of a specific contact for the last month.

1. Open the page of the needed record.

2. Click [Actions] -> [View change log] (Fig. 9).

Fig. 9 The [View change log] action

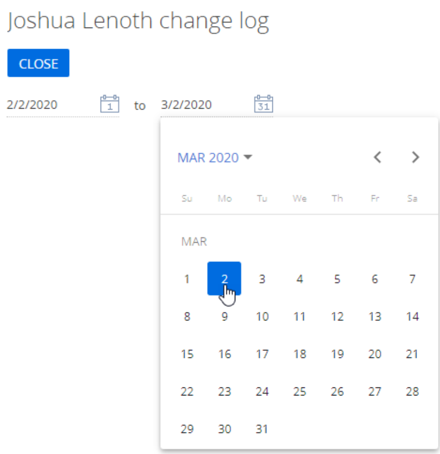


NOTE

If you cannot see the [View change log] command in the [Actions] menu, make sure you have permission to the [View change log] (CanViewChangeLog) system operation.
Learn more about using system operations in the "System operation permissions" article.

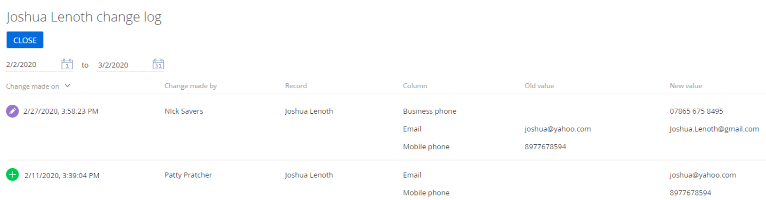
3. The page that opens will display information about the selected record:
    - dates of the changes
    - authors of the changes
    - record name
    - list of the changed columns
    - values before the change
    - values after the change
4. Set the date filter to display only the changes for the last month. (Fig. 10). In our example, it is the time period from February 2nd to March 2nd, 2020.

Fig. 10 Filtering changes by date for the log of a specific record



As a result, you will see the changes that were made in the logged fields within the specified period (Fig. 11).

Fig. 11 Record logs



Clear the change log

We recommend clearing the change log regularly to avoid storing outdated records in Creatio.

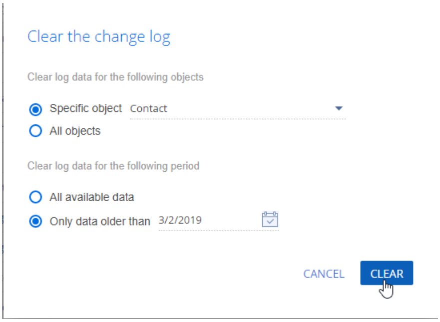
1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [Change log].
3. Click [Actions] –> [Clear log].

   NOTE

   Deleting records in the change log requires permission to the [Can clear change log] (CanClearChangeLog) system operation permission.
   Learn more about using system operations in the "System operation permissions" article.

4. Select the objects whose log records must be cleared and specify the period for which to clear the record. Click [Clear] (Fig. 12) to delete the specified log records.

Fig. 12 Clearing record in the change log



As a result, the selected records will be deleted.

SEE ALSO

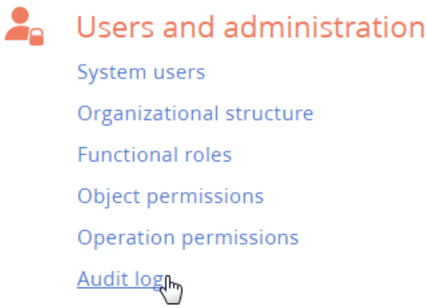
- The [Audit log] section

The [Audit log] section

The system operations audit log automatically registers events related to user roles modification, access rights distribution, system settings value change and users' authorization in the system.

To view the change log, open the system designer by clicking the button at the top right corner of the application. Click the [Audit log] link in the [Users and administration] block (Fig. 1).

Fig. 1 Opening the system operations audit log



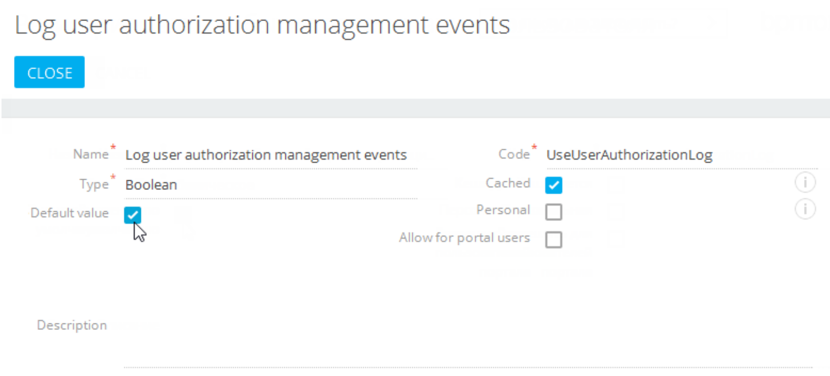
To be able to view the system operations audit log, you will need to have access to the [View "Audit log" section] system operation, and to be able to view and archive records, you will need to get access to the [Manage "Audit log" section] system operation.

Audit log setup

You can enable and configure the audit log using system settings or by editing configuration files (cloud users will need to contact Creatio support for this). To enable the audit log using system settings:

1. Open the system designer by clicking the button at the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block.
3. Select the [Audit log] folder (subordinate to the [Access rights] folder). This folder contains all system settings that control the audit log. Each type of logged event has a dedicated system setting that enables or disables it.
4. To enable the setting, open it and select the [Default value] checkbox. For example, to enable logging of login/logoff events, select the checkbox in the [Log user authorization management events] system setting (Fig. 2).

Fig. 2 Selecting the [Dafault value] checkbox



NOTE

After disabling an audit log system setting, you may need to restart the Redis session server for the changes to take effect.

NOTE

If the audit log is enabled on the system configuration file level, the corresponding system setting values will be ignored.

Types of logged events

The following event types are registered:

- Managing users – adding, modifying, and removing system users.
- Managing organization structure – adding, modifying, and removing organization structure items (user “roles”).
- Managing user roles – adding users to organization structure items, excluding users from roles.
- Managing administrated objects – managing types of permissions that can be applied to object.
- Managing object access rights – modifying access rights to read, modify, and delete operations in an object.
- Managing access rights to objects for external resources – modifying access rights to objects used for integration between Creatio and various external services via the OData protocol.
- Managing access rights to columns – modifying access rights to the object columns.
- Managing access rights to records – modifying access rights that are assigned to object records. You can enable logging of this event using the [Log entity schema records access rights management events] system setting.
- Managing access rights to records by default – modifying access rights that are assigned by default to object records.
- Managing access rights to operations – modifying access rights to the system operations.
- Managing ranges of IP addresses – modifying or removing ranges of valid IP addresses.
- Managing system settings – modifying system setting values.
- User authorization – user authorization attempts (successful or not).

- Managing audit log – archiving records of system operations audit log.
- User session – ending user sessions.

Views

The [Audit log] section contains the following views:

- [Audit log] – the list of the last registered events.
- [Log archive] – the list of events for which the [Archive log] action was performed. The archived events are stored in a separate table.

Log list

[Event type] – the list of system event types is included in the [Event types] lookup, for example, "User authorization", "User session".

[Event date] – date and time of the event start.

[Result] – the list of results of the system events is included in the [Event results] lookup. For example, the attempt of authorization can end with the "Authorization" result, or with the "Authorization denied" result if it fails.

[IP address] – the IP address of the user who performed the operation that resulted in the system event. For example, the IP address of the user who attempted to log in to the system.

[Owner] – the user that performed the operation that resulted in the system event. For example, the name of the employee who attempted to be authorized in the system.

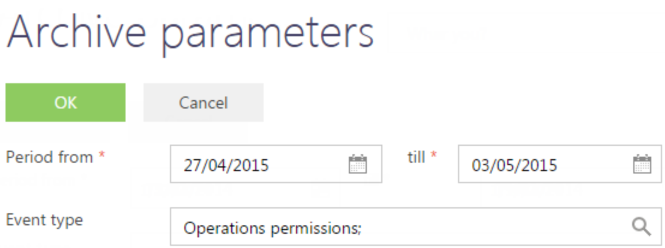
[Description] – the detailed description of the event, for example, "User authorization John Best. IP: 192.168.0.7". The event description is generated automatically.

Actions

The system operation audit log contains the [Archive log] action that copies the log records to a separate archive table.

Performing the action opens the [Archive parameters] page (Fig. 3) where you can set up parameters for archiving.

Fig. 3 The [Archive parameters] window



[Period from], [till] – the time period that includes the records to be archived. Only those events whose date falls in the specified range will be archived.

[Event type] – select types of events to be archived. Only those events whose types match the selected ones will be archived. You can select multiple types.

Performing the archiving action is logged as “Access rights audit log”. Once the operation is complete, the system shows the number of the archived records in a message.

SEE ALSO

- Managing users
- Object permissions
- System operation permissions
- Setting up remote support sessions

Setting up remote support sessions

Creatio cloud users can set up secure remote access for Creatio technical support specialists to troubleshoot and resolve cases faster. Remote access sessions will not compromise your personal and commercial data security since you do not have to share your login credentials with support.

NOTE

Remote support sessions use the following system settings: "Default external access client id" (DefaultExternalAccessClientId), "Identity server client secret" (IdentityServerClientSecret), Identity server Url (IdentityServerUrl), "Identity server client id" (IdentityServerClientId). The values in these system settings are populated automatically.

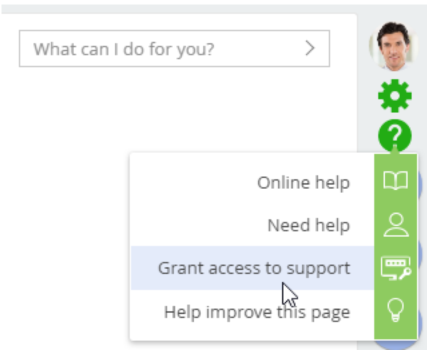
- To hide section record data from the technical support specialists, use the data isolation mode.
- To restrict technical support specialists from modifying configuration settings, use the configuration restriction mode. The support specialists will still have permission to read configuration settings needed to resolve the customer's case.

To enable remote support access, a user must have system administrator privileges (have the "System administrators" role). Technical support specialists can connect remotely under the administrator account or the account of any other application user. All remote support session data are logged and can be retrieved later. Logged connection data include the time of the connection and information on which data were modified during the session.

Setting up remote sessions

1. Click –> "Grant access to support" in the upper right corner of the application window. (Fig. 4)

   Fig. 4 Locating remote sessions set up in the help menu

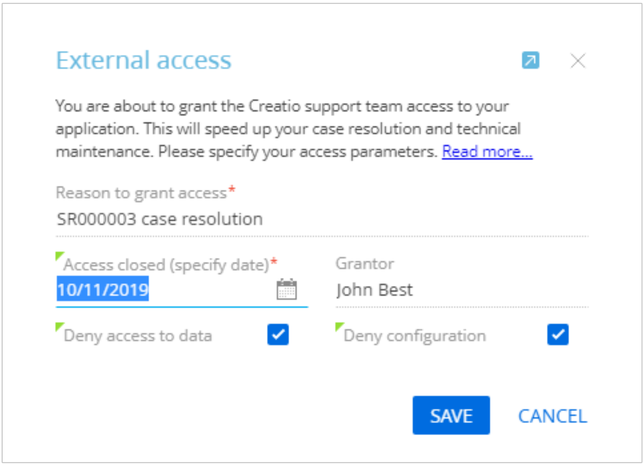
   

   NOTE

   To grant access to support, you need permissions to read and add records in the "External access" object. Users with the "System administrators" role have these permissions by default. Learn more about object operation permissions in the "Managing object operation permissions" article.

2. Fill out the displayed mini page (Fig. 5):

Fig. 5 Remote session parameters



a. In the [Reason to grant access] field, specify what problem requires granting access to support, the request number, or the list of services a technical support specialist has to provide.

b. In the [Access close date] field, specify the date when the granted access expires. Granted access will expire at 11:59 PM on the specified date.

c. In the [Grantor] field, the user who is granting access is specified by default. You can specify a different user account to use by technical support specialists for accessing your application.

d. Select or clear the [Deny access to data] and [Deny configuration] checkboxes to enable or disable the data isolation mode and configuration restriction mode respectively. By default, both checkboxes are selected. This means that a technical support specialist will not be able to see your section record data or configure the system.

- If you need the technical support specialist to have the same permissions as the user under whose account remote access is granted, clear both of the checkboxes.
- If you need the technical support specialist to modify the current configuration without being able to see your records, only clear the [Deny configuration] checkbox. The technical support specialist will also be able to access the System designer functions required for updating configuration (for instance, the [Lookups], [Advanced settings], [Process library] sections and more). The record data in the main sections will remain unavailable to the Creatio support.
- If you need the technical support specialist to be able to access your records without being able to modify the configuration of the system, you should only

clear the [Deny access to data] checkbox. In this case, Creatio support will be able to access the system configuration in the read-only mode.

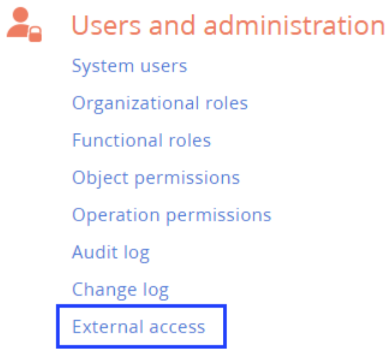
3. Save the record.

As a result, a new record will be added in the [External access] section. Technical support specialists will be able to log in under the user account specified as the [Grantor]. Support specialists will not need login credentials. The specialists will have access to the corresponding permissions not otherwise restricted in the sessions settings. The remote access session will expire on the specified date at 11:59 PM.

View remote access logs

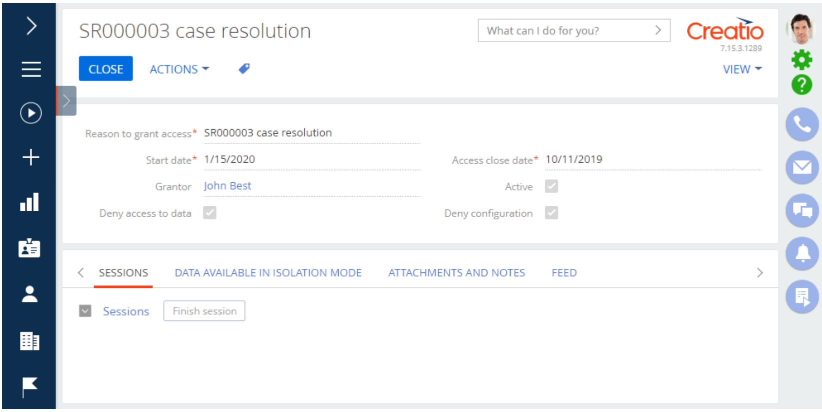
1. Open the System designer and click [External access] (Fig. 6).

Fig. 6 The [External access] section



2. Open the required record in the section list. On the record page, you can view all access parameters (Fig. 7). After the support session is over, the [Sessions] tab will display the session data.

Fig. 7 An example record with remote access parameters in the [External access] section



SEE ALSO

- Logo customization

Integrations

CONTENTS

Integration with email services by the IMAP/SMTP protocol

In Creatio, you can receive emails from email service providers that support the IMAP/SMTP protocol.

After you configure the list of email providers, users will be able to send and receive email messages directly from Creatio UI. The list of providers is used when setting up individual mailboxes.

Read more about setting up personal mailboxes in the “Configuring email accounts in Creatio” and “Email account individual settings” articles.

> NOTE
>
> To set up connection parameters for email providers, a user must have the permission to run the [Access to “Access rights” workspace] (CanManageAdministration) system operation.
> Learn more about using system operations in the “System operation permissions” article.

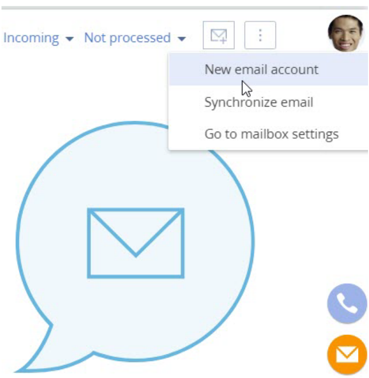
Setting up the IMAP/SMTP email service provider

You can add an IMAP/SMTP email service provider using several methods.

Method 1. Adding the IMAP/SMTP provider from the [Email] tab of the communication panel

1. In the communication panel, click to open the [Email] tab.
2. Click and select the [New email account] action (Fig. 1).

Fig. 1 Adding a new email account



> NOTE
>
> You can also add a new email account by selecting the [Go to mailbox settings actions] under and clicking [New] on the page that opens.

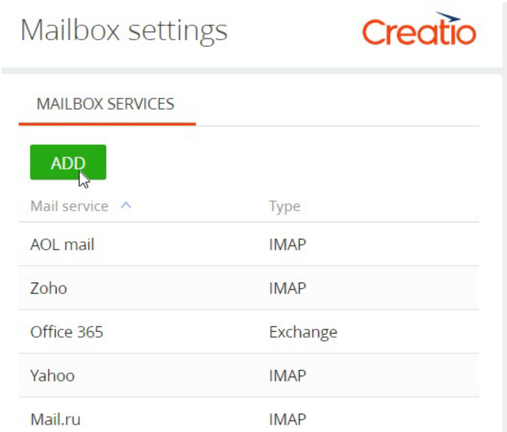
3. In the [New email account] widow that pops up, enter the email address, and click [Next].
4. Select the email service provider from the list. If the needed provider is not available on the list, click [Add new server].

NOTE

Add the domains of a new provider to the [Email providers domains] lookup to have Creatio automatically identify this email provider in the future. As a result, users will not have to specify the mail provider manually when setting up an email account.

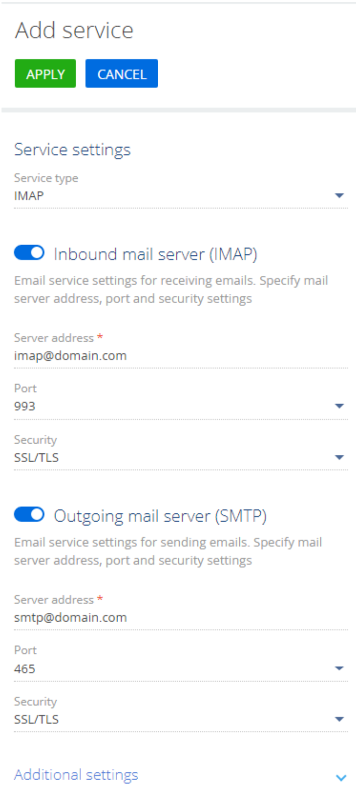
5. On the opened page, click [Add] (Fig. 2).

Fig. 2 Adding a new email provider



6. On the page that opens, select “IMAP” in the [Service type] field.
7. Enter two required parameters: the “Inbound mail server (IMAP)” in the “imap@domain.com” format and the “Outgoing mail server (SMTP)” in the smtp@domain.com format (Fig. 3).

Fig. 3 Setting up the IMAP/SMTP email service provider



8. The rest of the IMAP/SMTP server settings will be populated automatically. You can change them by selecting the needed option from the drop-down list to configure the mail server port and the security parameters.

   Set the inbound mail server port:

   - Select “143” to use the port without encryption.
   - Select “993” to use the port for a secure connection.

   Set the security parameters of the inbound mail server:

   - Select “SSL/TLS” to use the standard data security protocol.
   - Select “STARTTLS” to use the common protocol extension.
   - Select “None” to disable the inbound mail data security.

   Set the outgoing mail server port:

   - Select “587” to use the port without encryption.
   - Select “455” to use the port for a secure connection.

Set the security parameters of the outgoing mail server:

- Select “SSL/TLS” to use the standard data security protocol.
- Select “None” to disable the outgoing mail data security.

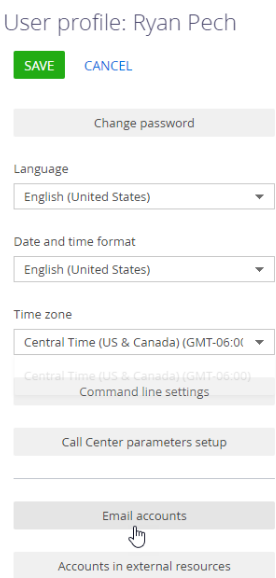
9. Populate the additional settings to set the username format:
   - Select the [Use manual entry] option, if users enter their email address and username manually.
   - Select the [Use email address] option, if the full email address is used as a username (for instance, “example@google.com”).
   - Select the [Use mailbox name] option, if the part of the email address before “@” is used as a username. For example, the “test” will be a login for the “test@google.com” email address.
10. Save the settings by clicking [Apply].

As a result, system users will be able to use the mailboxes of this provider to send and receive email messages.

Method 2. Adding the IMAP/SMTP provider from the user profile

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click [Email accounts] (Fig. 4).

Fig. 4 Opening the email accounts



3. Click [New] in the opened window.
4. To complete the setup, perform steps 3–10, described above in Method 1.

NOTE

To delete a mail server, delete its connected mailboxes first.

SEE ALSO

- Working with emails
- How to set up a personal mailbox

Integration with the MS Exchange service

You can integrate Creatio with the MS Exchange 2010 and up.

This integration enables Creatio to work with MS Exchange emails, contacts, and calendar. Once the setup is complete, users will be able to configure MS Exchange mailboxes.

Configuring MS Exchange accounts in Creatio

Read more about setting up primary email account parameters in the "Configuring email accounts in Creatio" and "Email account individual settings" articles.

You can also set up the synchronization of Creatio contacts and activities with MS Exchange contacts and calendar.

CONTENTS

SEE ALSO

- Configuring email accounts in Creatio

Setting up the MS Exchange email service provider

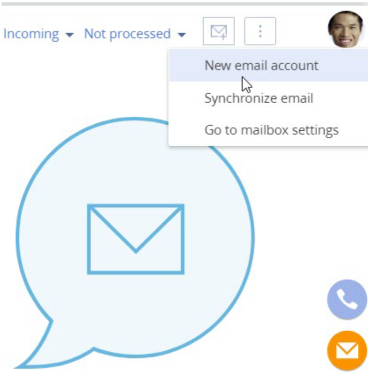
You can add a Microsoft Exchange email service provider using several methods.

> NOTE
> To set up connection parameters for email providers, a user must have the permission to run the [Access to "Access rights" workspace] (CanManageAdministration) system operation.
> Learn more about using system operations in the "System operation permissions" article.

Method 1. Adding the Microsoft Exchange provider from the [Email] tab of the communication panel

1. In the communication panel, click ✉ to open the [Email] tab.
2. Click ⋮ and select the [New email account] action (Fig. 1).

Fig. 1 Adding a new email account



NOTE

To add a new email account, you can also select the [Go to mailbox settings actions] under and click [New] on the page that opens.

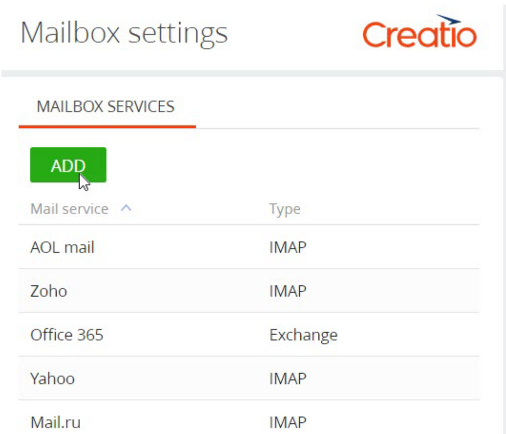
3. In the [New email account] widow that pops up, enter the email address and click [Next].
4. Select the email service provider from the list. If the needed provider is not available on the list, click [Add new server].

NOTE

Add the domains of a new provider to the [Email providers domains] lookup for automatic recognition of the email provider. As a result, users will not have to specify the mail provider manually when setting up an email account.

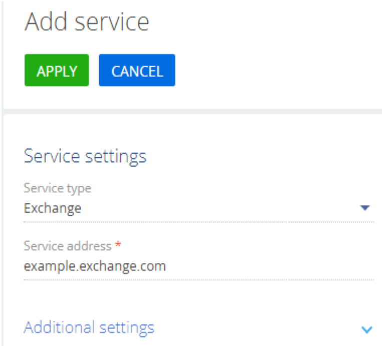
5. On the opened page, click [Add] (Fig. 2).

Fig. 2 Adding a new email provider



6. On the page that opens, select "Exchange" in the [Service type] field.
7. Populate the [Service address] field in the "example.exchange.com" format (Fig. 3).

Fig. 3 Specifying the mail service address



8. You can also populate the additional settings to set up receiving and sending emails, specify the login format, service name and the authentication method.

   Enable receiving and sending emails:

   - Select the [Receive emails] and/or [Send emails] option.

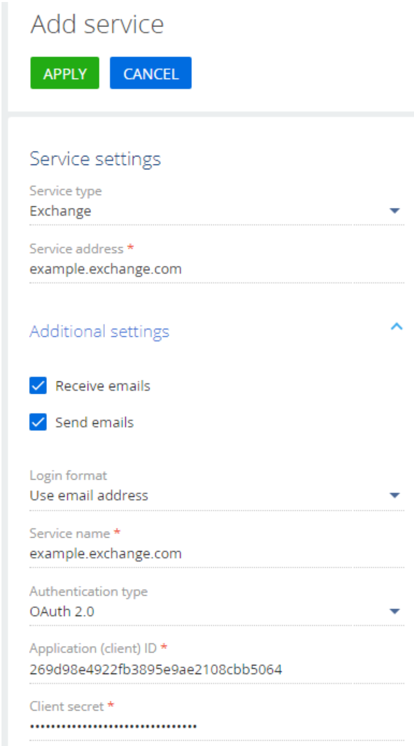
   Set up the mailbox login format:

   - Select the [Use manual entry] option if users enter their email address and login.
   - Select the [Use email address] option if the full email address is used as a login (for instance, "example@google.com").
   - Select the [Use mailbox name] option if the part of the email address before "@" is used as a login. For instance, the "example" will be a login for "example@google.com" email address.

   Set up the authentication method:

   - Select "Basic" for the basic authentication using the user name and password with Base64 encryption.
   - Select "OAuth 2.0" to restrict the service access to protected user resources without the need to pass the login and password. Read more about the OAuth 2.0 authentication method in the "Setting up OAuth authentication" article.
     Populate the [Application (client) ID] and [Client secret] required fields (Fig. 4).
     - [Application (client) ID] is generated by the authentication server of the integrated web service. The application identifier can also be called "Application (ID)", "Consumer ID" or "Public key" in the documentation and web service API.
     - [Client secret] – a secret key generated by the authentication server. The secret key can also be called "Application secret", "Consumer secret" or "Secret key" in the documentation and web service API.

Fig. 4 Additional settings of the mail service



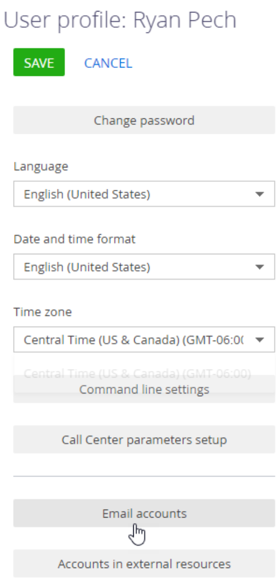
9. Save the settings by clicking [Apply].

As a result, Creatio users will be able to receive and send emails via the MS Exchange server. In addition, they will be able to synchronize contacts and activities between Exchange and Creatio.

Method 2. Adding the Microsoft Exchange provider from the user profile

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click [Email accounts] (Fig. 5).

Fig. 5 Opening the email accounts



3. Click [New] in the opened window.

To complete the setup, perform steps 3–9, described above in Method 1.

NOTE

To delete a mail server, delete all its mailboxes (email accounts) first.

SEE ALSO

- Working with emails
- Configuring email accounts in Creatio

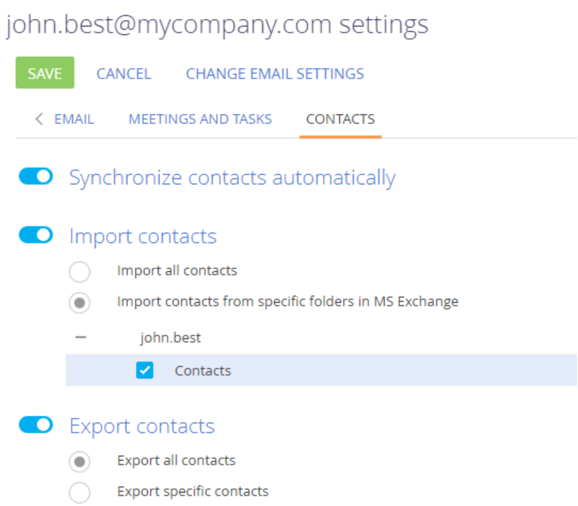
Synchronizing Creatio contacts with MS Exchange contacts

Use the mailbox synchronization setup page to set up synchronization of Creatio contacts with the MS Exchange contacts (Fig. 6). You can access the page from the communication panel by clicking ⋮ –>{Edit email accounts] or from the [Contacts] section by selecting [Actions] —> [Synchronize contacts] —>[Set up...].

NOTE

This command contains the name of the account (for example, [John.best@mycompany.com settings]).

Fig. 6 Example of synchronizing Creatio contacts with the MSExchange



Setting up the import of Exchange contacts to Creatio

To set up import of MS Exchange contacts to Creatio:

1. Select the [Import contacts] checkbox on the [Contacts] tab of the mailbox synchronization setup page.
2. Select the [Import all contacts] option to import all records from the mailbox folders of the "Contacts" type.

   To import contacts from specific MS Exchange folders only, select the [Import contacts from specific folders in MS Exchange] option. Click + and select the checkboxes next to the needed folders.
3. Click [Save].

   NOTE

   Creatio automatically links imported contacts to Creatio accounts. If more than one account with the same name is found in Creatio, the contact will be imported without connection to the account. If the user who performs the import has access to one of these accounts, then the contact will be imported with the connection to this account.

Setting up the export of Creatio contacts to Exchange

To set up the export of Creatio contacts to MS Exchange:

1. Select the [Export contacts] checkbox on the [Contacts] tab of the mailbox synchronization setup page.
2. Select the [Export all contacts] option to export all contacts to which you have access.

   If you only want to export contacts of certain types or folders, select the [Export specific contacts] option.

a. Select the [Employees] and/or [Customers] checkbox to export all contacts of the corresponding types during synchronization (only those contact will be exported to which you do have the access).

b. Select the [From folders] checkbox to export contacts included in particular folders, for example, "Employees". Open the list of folders and select the folders for synchronization.

3. Click [Save].

NOTE

Adding folders is described in a separate article.

Synchronizing contacts with MS Exchange

Contacts can be synchronized between Creatio and the Exchange server automatically. To enable automatic synchronization, select the [Synchronize contacts automatically] checkbox on the synchronization setup page. To perform the synchronization, open the [Contacts] section, click the [Actions] button and select the [Synchronize contacts] –> [Synchronize now] action.

SEE ALSO

- How to synchronize Creatio with Google contacts
- Fields that can be synchronized with MS Exchange
- Synchronizing contacts with MS Exchange (development guide)

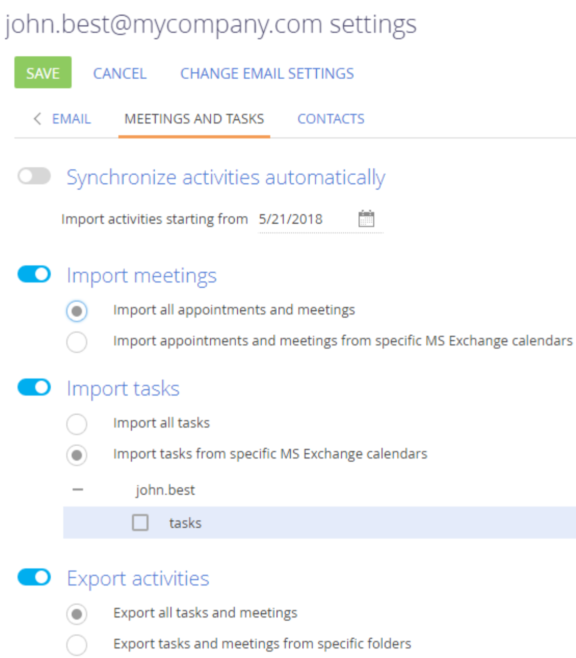
Synchronizing the Creatio calendar with the MS Exchange calendar

Use the mailbox synchronization setup page to set up the synchronization of the Creatio activities with the MS Exchange tasks and meetings (Fig. 7). You can access the page from the communication panel by clicking ⋮ –> {Edit email accounts] or from the [Contacts] section by selecting [Actions] –> [Synchronize contacts] –> [Set up...].

NOTE

This command contains the name of the account (for example, [Set up test@google.com]).

Fig. 7 Example of synchronizing Creatio activities with the MS Exchange calendar.



Setting up the import of Exchange activities to Creatio

To set up the import of the MS Exchange meetings into Creatio:

1. On the [Meetings and tasks] tab, select the [Import meetings] checkbox.
2. Select the [Import all appointments and meetings] option to import all records from MS Exchange calendars.

   If you only want to import records from the selected MS Exchange calendars, select the [Import appointments and meetings from specific MS Exchange calendars] option. Open the list of calendars and select the calendars you wish to import.
3. Select the [Import tasks] checkbox and if necessary, select folders whose tasks must be imported.
4. Click [Save] on the mailbox synchronization setup page.

As a result, MS Exchange appointments and meetings will be imported to Creatio as the activities of the “Meeting” category.

When importing the MS Exchange activities of the “Task” type, records will be added in Creatio as the activities of the “To do” category. In this case, only those tasks whose owner is the current user of Creatio will be imported. Setting up the import of tasks is similar to that of the meetings.

Setting up the export of Creatio activities to Exchange

To set up the export of the Creatio activities to MS Exchange:

1. On the [Meetings and tasks] tab, select the [Export activities] checkbox.
2. Select the [Export all tasks and meetings] option to export all activities to which you have access.

   If you only want to export activities from specific folders, select the [Export tasks and meetings from specific folders] option. A list of folders corresponds to the folders configured in the [Activities] section
3. Click the [Save] button on the mailbox synchronization setup page.

As a result, the activities of the "Appointment" type will be created in MS Exchange when exporting tasks with the [Display in calendar] checkbox checked. When exporting tasks with the [Display in calendar] checkbox unchecked, the activities of the "Task" type will be created in MS Exchange.

Synchronizing activities with MS Exchange

Activities can be synchronized between Creatio and the Exchange server automatically. To enable automatic synchronization, select the [Synchronize activities automatically] checkbox and select the date in the [Import activities starting from] field. To perform the synchronization, open the [Activities] section, click the [Actions] button and select the [Synchronize contacts] –> [Synchronize now].

SEE ALSO

- How to synchronize Creatio activities with Google calendar
- Fields that can be synchronized with MS Exchange
- Synchronizing tasks with MS Exchange (development guide)
- Synchronizing appointments with MS Exchange (development guide)

Fields that can be synchronized with MS Exchange

During the synchronizing process, the field values of contacts, tasks, meetings and emails are passed from Creatio to MS Exchange and vice versa. Mapping of these fields is described in the development guide:

- Synchronizing tasks with MS Exchange >>>
- Synchronizing email with MS Exchange >>>
- Synchronizing contacts with MS Exchange >>>
- Synchronizing appointments with MS Exchange >>>

ATTENTION

It is not recommended to modify the structure of Creatio fields that correspond to Exchange fields as it may lead to synchronization errors.

Configuring email accounts in Creatio

Keep the entire history of electronic communications with customers in Creatio. After a simple preliminary setup, Creatio users will be able to send and receive email messages directly from the system.

- Add one or more email accounts. Read more >>>
- Configure email settings for each email account. Read more >>>
- Set up sending emails to customers from shared email accounts (for example company newsletter). Read more >>>

Exchange and IMAP/SMTP settings are similar.

CONTENTS

SEE ALSO

- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service

How to set up a personal mailbox

Each Creatio user can set up integration with one or more mailboxes and use them for sending and receiving email messages. Creatio can link emails to existing records (accounts, contacts, etc.), use emails to create new records and use emails to enrich contact profiles.

Creatio uses OAuth protocol for easy and secure integration with the following email providers:

- GMail. For this provider the OAuth authentication is enabled by default. Read more >>>
- Office 365. You will need additional setup to use OAuth authentication.

OAuth is an open standard for access delegation that provides Creatio with secure delegated access to email accounts without saving user login and password in the application.

Below is an example of setting up email accounts of popular email providers.

CONTENTS

SEE ALSO

- Working with emails

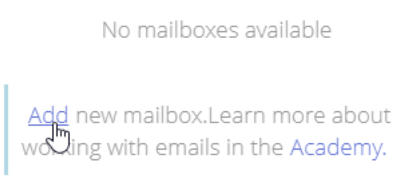
Setting up a GMail account using OAuth

For the GMail provider, the OAuth authentication is enabled by default. Since the users enter mailbox login and password directly on the GMail page, the mailbox credentials are not saved in Creatio database.

To set up a Gmail mailbox in Creatio:

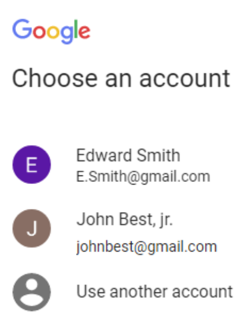
1. Open the [Email] tab of the communication panel and add an email account. You can do this in one of the following ways:
    - If the list of mailboxes is empty, click the [Add new mailbox] link on the [Email] tab of the communication panel (Fig. 1). Click the mailbox authentication link.

    Fig. 1 Adding a GMail account in Creatio

    - If there is at least one mailbox in the list, click ⋮ and select [New email account]. As a result, the GMail authentication window will open.
2. Enter email address and click the [Next] button. Google account selection page will open.
3. Select a Google account (Fig. 2). You may need to log in to Google at this point.

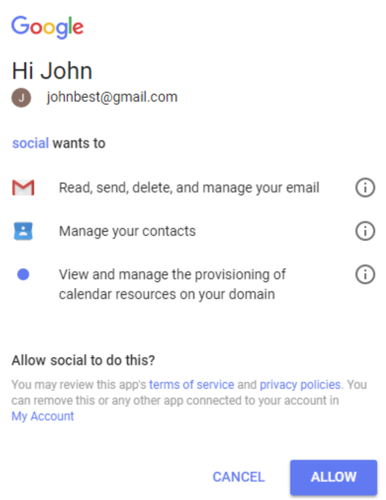
    Fig. 2 Selecting a Google account

    NOTE

    If the 2-step authentication is enabled for the selected Google account, you will need verify Creatio's access to your mailbox.
4. Permit access to emails and contacts for Creatio (Fig. 3).

Fig. 3 Permitting Creatio access to Google contacts and emails



As a result, an email account with default parameters will be created in Creatio. You can start working with emails or customize additional mailbox settings (add signatures, configure synchronization period, etc.).

SEE ALSO

- Setting up an email account of a pre-configured provider
- Setting up an email account on the corporate domain
- Email account individual settings
- Integration with email services by the IMAP/SMTP protocol

Setting up an email account of a pre-configured provider

Before you can set up a mailbox of an email provider, basic integration with that provider must be set up in Creatio. By default, Creatio is integrated with the following email providers:

- AOL
- GMail
- Mai.ru
- Office 365
- Yahoo
- Yandex.ru
- Zoho.

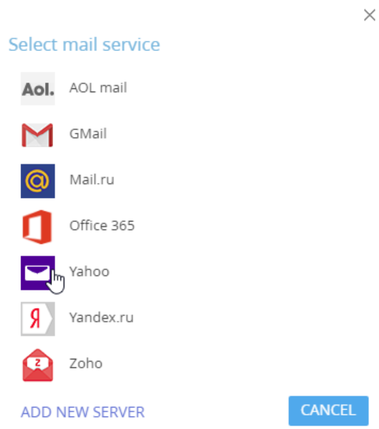
If you use another provider, you will need to add that provider's IMAP/SMTP or Exchange parameters to Creatio. Email provider integration is configured by system administrators.

To configure email account of a pre-configured provider:

1. Open the [Email] tab on the communication panel, then click ⋮ and select [New email account]. As a result, the email account authentication window will open.
2. Enter email address and click the [Next] button. The email provider will be identified according to the domain name.

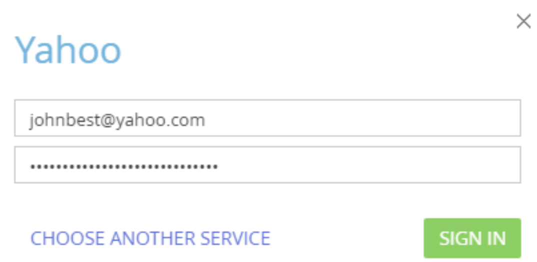
   If the provider was not identified automatically, a window will open, where you will be able to specify the provider manually (Fig. 4).

   Fig. 4 Selecting email provider for synchronization

3. Enter a password and click [Sign in] (Fig. 5).

   Fig. 5 Signing in a mailbox account

As a result, an email account with default parameters will be created in Creatio. You can start working with emails or customize additional mailbox settings (add signatures, configure synchronization period, etc.).

SEE ALSO

- Setting up a GMail account using OAuth
- Setting up an email account on the corporate domain
- Email account individual settings
- Integration with email services by the IMAP/SMTP protocol

Setting up an email account on the corporate domain

If you use corporate email domain, you will need to set up integration with the corporate email provider by the IMAP/SMTP or Exchange protocol and match domain names to corresponding email providers. This is performed by a system administrator.

To configure email account on a corporate domain:

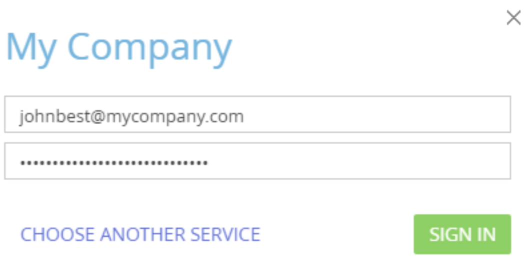
1. Open the [Email] tab on the communication panel, then click ⋮ and select [New email account]. As a result, the email account authentication window will open. This method of adding the account does not depend on the availability of configured accounts.
2. Enter email address and click the [Next] button. The email provider will be identified according to the domain name.

   If the provider was not identified automatically, you will be able to specify it manually.

   NOTE

   The mailbox with corporate domain address (for example, mycompany.com) can be serviced by a global email provider (for example, Yahoo or GMail). If you do not know which email provider to choose, verify this with your system administrator.
3. Enter a password and click [Sign in] button (Fig. 6).

Fig. 6 Singing in to an email account of a corporate provider



As a result, an email account with default parameters will be created in Creatio. You can start working with emails or customize additional mailbox settings (add signatures, configure synchronization period, etc.).

SEE ALSO

- Setting up a GMail account using OAuth
- Setting up an email account of a pre-configured provider
- Email account individual settings

- Integration with email services by the IMAP/SMTP protocol

Email account individual settings

Email accounts are added with default parameters. For each added email account, you can configure:

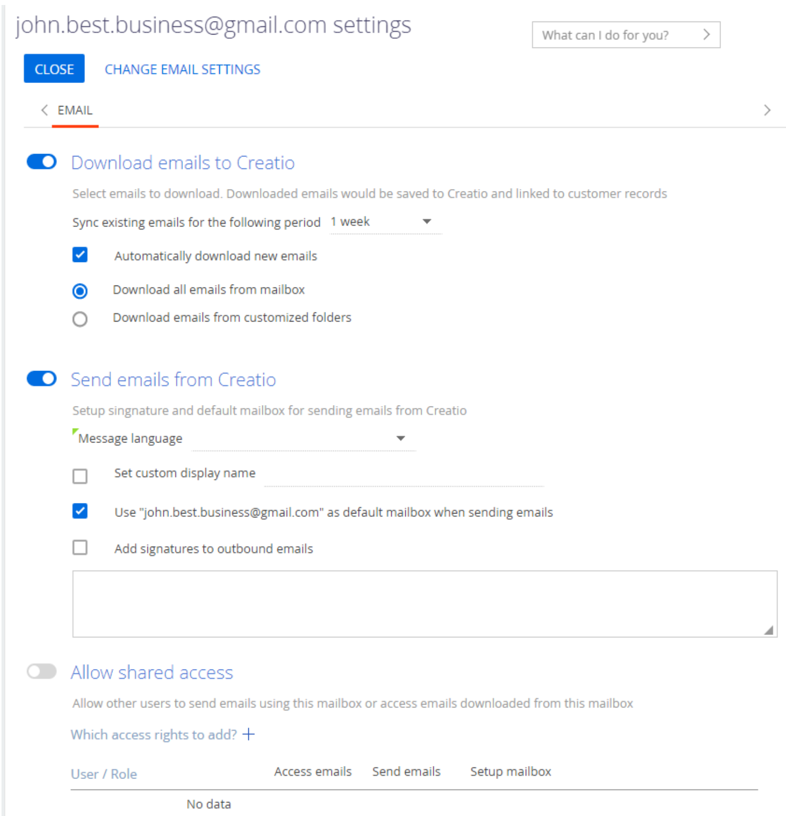
- email downloading parameters
- email sending parameters
- email message signatures.

NOTE

If you have configured the synchronization with the MX Exchange mailbox, the [Meetings and tasks] and [Contacts] tabs will be displayed at the email account settings page. Here you can configure parameters of synchronization of MS Exchange calendar and contacts. Read more >>>

You can go to the mailbox settings directly from the mailbox registration notification or by selecting the account in the [Edit email accounts] menu of the button.

Fig. 7 Edit page of the email account settings



CONTENTS

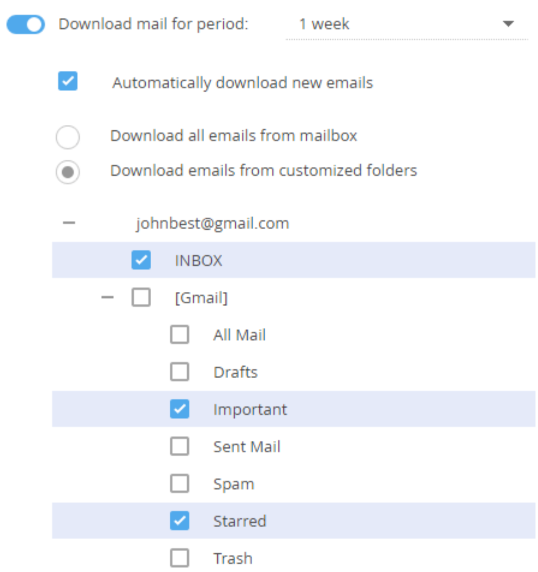
Receiving emails in Creatio

1. To download emails from the mailbox to Creatio, enable the [Download mail for period] switch and specify the time interval (day, week, month) for which emails will be downloaded to Creatio at the first synchronization.

   NOTE
   The periodicity of automatic mailbox synchronization is set in the [Mailbox synchronization interval] system setting.

2. Select the [Automatically download new emails] checkbox to download incoming emails automatically.
3. Select the [Download all emails from mailbox] option to download all messages from the mailbox, or the [Download emails from customized folders] option to download messages from specific folders only.
4. To download emails from specific folders only, select the [Download emails from customized folders] option, click the [+] button to display the folders of the specified account and select folders from which you need to receive emails (Fig. 8).

Fig. 8 Specifying synchronization folders



5. Save the changes.

   NOTE

   If you select only a parent folder for downloading emails, the messages from the nested folders will not be downloaded to the Creatio. Select the nested folders to download emails from them.

Sending emails from Creatio

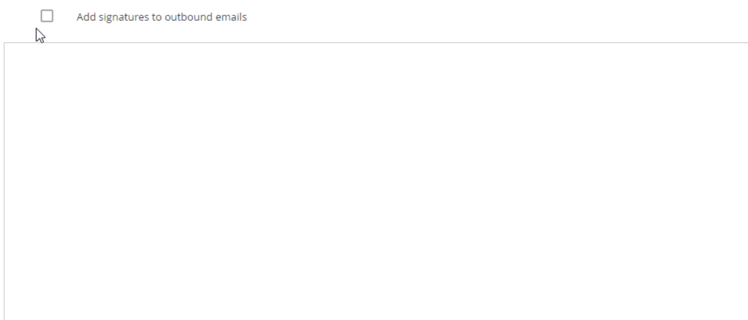
To reply to emails directly from Creatio, set up sending of emails. To do this:

1. Enable the [Send emails using this mailbox] switch to use the mailbox for sending the emails. If the switch is disabled, the mailbox will not be available for selection on the email edit page, as well as in the corresponding business process and case elements.
2. Select the [Set "email address" as default sender address] checkbox to use the mailbox by default. The mailbox address will be specified by default in the [From] field for new emails.
3. Save the changes.

Configuring email signatures

To add a signature to the outgoing emails, select the [Add signatures to outbound emails] checkbox and add the signature text in the input area below (Fig. 9). Save the changes.

Fig. 9 Adding signatures in outgoing emails



NOTE

You can copy a signature from your mail client and paste it to the text area.
In some browsers, only one image can be copied to the signature template at a time from the clipboard. If your signature contains several images, the remaining images must be added one by one.

SEE ALSO

- How to set up a personal mailbox
- Email account individual settings
- Working with emails

Configuring shared mailbox

Shared email account enables managing shared access to the mailbox: set the access permissions to read emails for different groups of users, enable processing of incoming emails and sending emails from one address for different users or groups of users.

Shared mailboxes are commonly used

- for case registration, sending notifications and emailing between the customers and the service team in the process of case resolution or for processing requests about company products.
- For example, you can create a shared sales department mailbox and grant access to the advertising department employees for sending newsletters and special offers.

NOTE

All incoming and outgoing emails from the shared mailbox, will only be visible in the communication panel, timeline and history to the user who registered this mailbox in Creatio and to the users which get the access permission to work with emails.

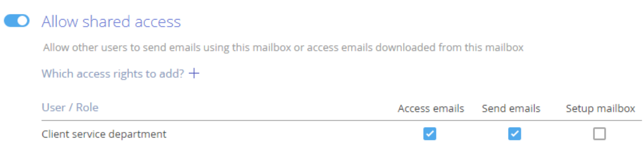
ATTENTION!

To set up a shared mailbox, you need permission to perform the [Access to shared account setup] and [Shared mailbox synchronization setup] system operations. Managing access to system operations is covered in a separate chapter.

Shared mailbox setup is similar to personal mailbox setup, but requires the following additional actions:

1. Select the [Allow shared access] option on the email settings page.
2. Click the + button to add employees who will use the shared mailbox. Click the button in the displayed field and specify system user or role to grant access to a group of users. Click the [Save] button. If you want to grant access to the mailbox for a number of users or groups, repeat the previous step for each user or group.
3. Configure access permissions for the shared mailbox (access emails, sending emails or setting up mailbox) for the added users. For this, select the checkbox in the corresponding column (Fig. 10).

Fig. 10 Example of configuring permissions to a shared mailbox



The following options can be used for managing access to the mailbox:

- "Access email" – enables to display emails received on this mailbox in the system sections, for example, on the [Timeline] tab. At the same time, the emails from the shared mailbox will not be displayed in the communication panel of the user with granted access to emails. This option is used if several employees process emails from one mailbox. For example, for cases registered via email.

- "Send emails" – enables to select this mailbox in the [From] field when sending emails, setting up business processes and display incoming emails at the communication panel.
- "Setup mailbox" – enables modification of the mailbox settings by several administrators.

4. Save the changes.

SEE ALSO

- How to set up a personal mailbox
- Email account individual settings
- Working with emails

Integration with Google services

You can synchronize your Creatio contacts and tasks with the Google contacts and calendar. After the synchronization, the latest modifications in the Creatio contacts will be transmitted to the Google organizer and vice versa.

Integration with Google must be performed for Creatio deployed on-site. Creatio cloud requires a single authorization when logging in for the first time.

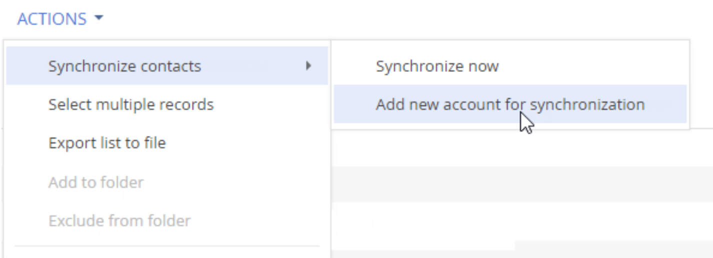
CONTENTS

How to set up synchronization from Google for Creatio cloud

To set up synchronization for Creatio cloud, do the following:

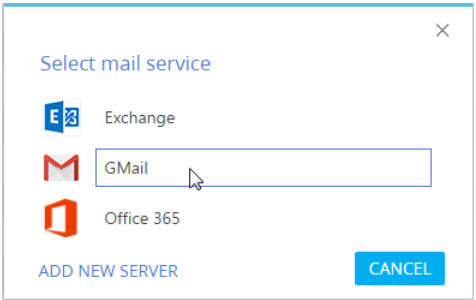
1. Open the [Contacts] section and tag the Creatio contacts that need to be synchronized with Google. A personal tag is used to mark the contacts that need to be synchronized with Google. For example, contacts tagged as "Personal contacts" are to be synchronized with Google.
2. From the [Actions] menu, select the [Synchronize contacts]-[Add account for synchronization] option (Fig. 1).

Fig. 1 Specifying synchronization folders



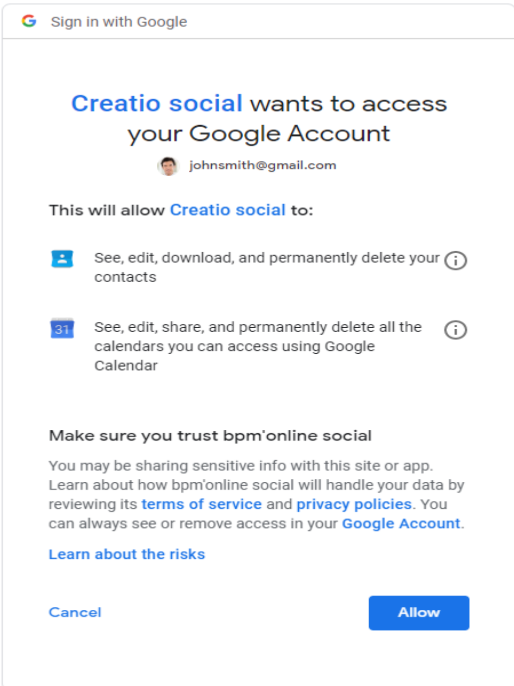
3. Open the [Select service for synchronization] and click the [Gmail] icon (Fig. 2).

Fig. 2 Specifying synchronization folders



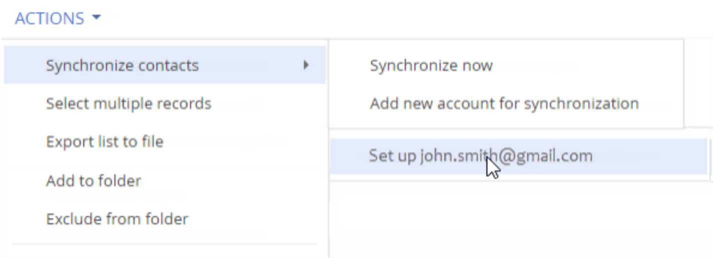
4. Allow Creatio to access your data (Fig. 3). If necessary, enter the login and password for your account.

Fig. 3 Allowing access to application



5. Press the [Actions] button and select [Synchronize contacts]-[Set up...] (Fig. 4).

Fig. 4 Setting up property details



6. Define the parameters of synchronization with Google Calendar and Google Contacts. For automatic synchronization of activities, select the [Synchronize activities automatically.] checkbox. select a time interval for automatic synchronization.
7. In the [Synchronize from] field select the date from which you want to synchronize activity.
8. For automatic synchronization of contacts, select the [Synchronize contacts automatically.] checkbox and select a time interval for automatic synchronization.

SEE ALSO

- Registering application for synchronization with Google (for on-site users only)
- How to set up synchronization of Creatio contacts and activities with Google contacts and calendar
- How to synchronize Creatio with Google contacts
- How to synchronize Creatio activities with Google calendar
- How to configure email accounts in Creatio

Registering application for synchronization with Google (for on-site users only)

On-site users need to register their Creatio application in Google before synchronization.

Registration procedure can be divided into two steps:

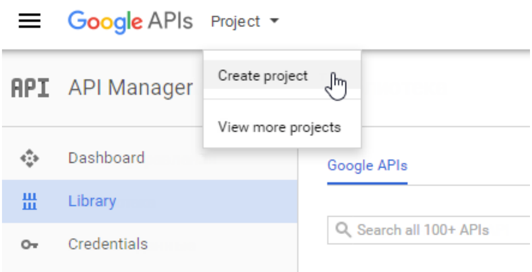
- First, register a Google account and set it up, enable access for to the Calendar API, and generate the keys ("Client ID" and "Client Secret") needed for integration.
- Second, enter the received "Client ID" and "Client Secret" keys in Creatio for the values of the [Google Service Access Key] and [Google Secret Access Key] system settings respectively.

Setting up an account and receiving Google keys

To configure your Google account:

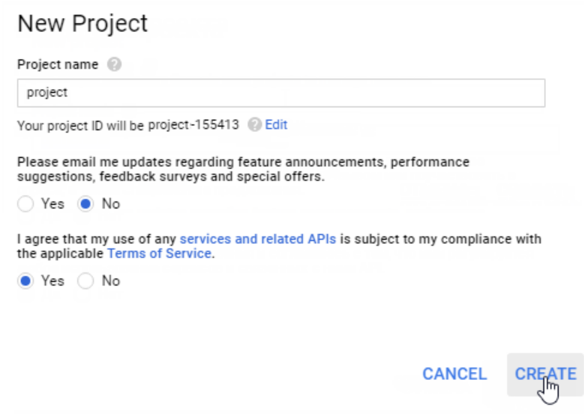
1. Follow the https://code.google.com/apis/console/ link.
2. Log in to your Google account.
3. From the [Project] menu, select the [Create project] option (Fig. 5).

Fig. 5 Creating a new project



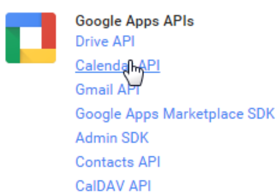
4. Enter the project name and click [Create] (Fig. 6).

Fig. 6 Creating a new project



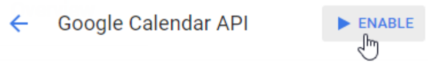
5. In the [Google Apps APIs] group, click [Calendar API] (Fig. 7).

Fig. 7 Selecting API to enable access



6. Click [Enable] (Fig. 8).

Fig. 8 Activating Calendar API



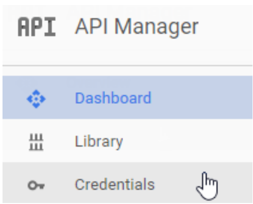
7. Add [Contacts API] and enable it, just like you did with the [Calendar API]. As a result, the Calendar API is added to the list of available APIs of the project (Fig. 9).

Fig. 9 The list of available project API

API	Requests	Errors	Error ratio	Latency, median	Latency, 98%	
Contacts API	–	–	–	–	–	Disable
Google Calendar API	–	–	–	–	–	Disable

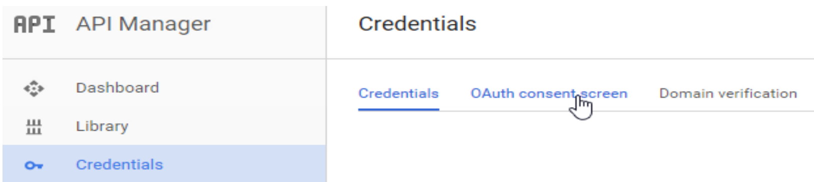
8. Specify the information about the product to create the client ID. In the [API Manager] menu, click [Credentials] (Fig. 10).

Fig. 10 Opening the credentials setup page



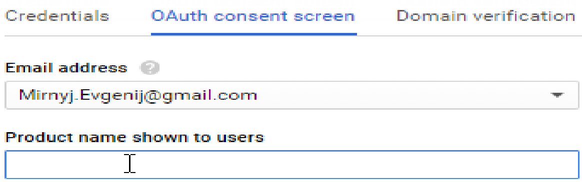
9. Click the [OAuth consent screen] tab (Fig. 11).

Fig. 11 Opening the credentials setup page



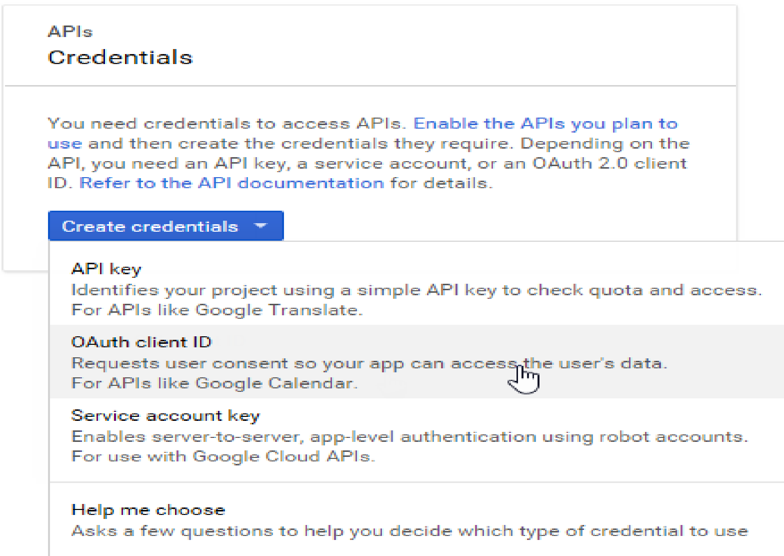
10. Fill in the [Product name shown to users] field (Fig. 12) and click [Save]. This name will be shown to the users during Creatio authorization for using Google accounts.

Fig. 12 Filling in the [Product name shown to users] field



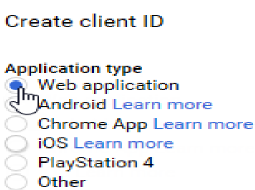
11. To create an ID, open the [Credentials] tab and in the [Create credentials] menu, select [0Auth client ID] (Fig. 13).

Fig. 13 Creating 0Auth client ID



12. Specify the application type. Select [Web application] (Fig. 14).

Fig. 14 Selecting the connection type



13. In the [Authorized JavaScript origins] field, enter your Creatio website address.

14. In the [Authorized redirect URLs] enter the url of the application to which the data will be sent to. The page address has to contain this prefix "/0/ViewPage.aspx?Id=3b22f0ff-034a-48da-8758-a0660e5a26ff". For example, https://creatioapp.com/0/ViewPage.aspx?Id=3b22f0ff-034a-48da-8758-a0660e5a26ff.

    ATTENTION

    For on-site applications, deployed on a dedicated domain and accessible only by a specific IP or from the internal network, enter "localhost" in the [Authorized JavaScript origins] field. In the [Authorized redirect URLs] enter the IP and server port, on which the application is deployed, and a special prefix. For example, ip:port/0/ViewPage.aspx?Id=3b22f0ff-034a-48da-8758-a0660e5a26ff

15. Click [Create]. A pop-up message with your client ID and client secret will be displayed.
16. Enter your Google keys in the corresponding system settings in Creatio.

    ATTENTION

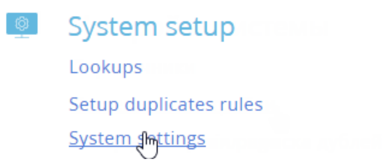
    For the Google APIs projects added after 05/11/2017 you have to additionally verify the application . Without this step, the "invalid_scope" error will be thrown to a user at integration attempt.

How to enter a Google key into Creatio

Second, enter the received "Client ID" and "Client Secret" keys in Creatio for the values of the [Google Services Access Key] and [Google Secret Access Key] system settings respectively. To do this:

1. Open the Creatio application.
2. Open the System Designer by clicking in the top right corner of the application window.
3. Click [System settings] in the [System setup] block (Fig. 15).

    Fig. 15 The [System settings] section

4. Select the [Google Services Access Key] system setting in the list -> [Open].
5. In the [Default value] field of the system setting page that opens, enter the "Client ID" key (the text in the [Here is your client ID] field of the Google message) you received during your Creatio registration in Google and click [Save] -> [Close].
6. Select the [Google Secret Access Key] system setting in the list -> [Open].
7. In the [Default value] field of the system setting page that opens, enter the "Client secret" key (the text in the [Here is your client secret] field of the Google message) you received during your Creatio registration in Google and click [Save] -> [Close].

    As a result, users will be able to synchronize their tasks and contacts with their Google calendar and Google contacts.

SEE ALSO

- How to set up synchronization of Creatio contacts and activities with Google contacts and calendar
- How to synchronize Creatio with Google contacts

- How to synchronize Creatio activities with Google calendar
- How to configure email accounts in Creatio

How to set up synchronization of Creatio contacts and activities with Google contacts and calendar

To enable synchronization setup of Google contacts and calendar with Creatio contacts and activities, the synchronization must be set up beforehand.

An example of synchronization setup in the Contacts section is described below.

1. Open the [Contacts] section.
2. Create a private tag to be used for synchronization, for example, "Google synchronization".

   NOTE

   Only the records marked with a tag will be synchronized. Records marked with a corporate or public tag will not be synchronized.

3. Press the [Actions] button and select [Synchronize contacts]-[Set up...] In the Settings page do the following:
   a. For activities to synchronize automatically, select the [Synchronize activities automatically] checkbox and specify the synchronization interval. To start synchronization from a specified date, select the required date in the [synchronize from].
   b. To automatically synchronize contacts, select the [Synchronize contacts automatically] checkbox and specify the synchronization interval.
   c. To synchronize contacts with a specific tag, in the [Send all contacts with a tag from Creatio to Google] field select the required tag.
4. Click the [Save] button.

   NOTE

   Date and time of the latest synchronization session is displayed on the setup page.

   As a result, both your Google account and the Creatio contact tag for synchronization will be saved in the system, and the synchronization will be started at the specified time intervals automatically.

   NOTE

   In the [Activities] section, setting up synchronization with Google is done in the same manner. Note that you don't need to specify the tag for synchronizing tasks in the synchronization settings of the [Activities] section.

SEE ALSO

- How to synchronize Creatio with Google contacts
- How to synchronize Creatio activities with Google calendar
- How to configure email accounts in Creatio

SEE ALSO

- Working with tags

How to synchronize Creatio with Google contacts

You can use the synchronization option to add your Google contacts into Creatio. Synchronization with Google can be performed only for those Creatio records that have a tag specified in the synchronization settings.

To run the synchronization for the first time:

1. Open the [Contacts] section.
2. Click the [Actions] button and select [Synchronize contacts]-[Start synchronization].

   As a result of synchronization, a new group of contacts titled "Creatio" will be added to your Gmail contacts.

   NOTE

   If you set up automatic synchronization, the process starts automatically.

3. Move the Gmail contacts to the "Creatio" group.
4. Run the [Synchronize with Google contacts] action again to perform the synchronization.

As a result, the Gmail contacts from the "Creatio" group will be imported into Creatio with the tag that was specified during the synchronization setup.

NOTE

If you set up automatic synchronization, the process starts automatically.

From this point on, the synchronization of Google and Creatio contacts is performed in both directions. Synchronization is run only for those records that have been changed or added since the last synchronization session.

If a record has been modified in both Gmail and Creatio, the most recent changes will be used for the synchronization.

If records were deleted in Gmail or Creatio, the next synchronization will not delete them from Creatio or Gmail. In the first case, the tags will be removed from such records. In the second case, the records will be excluded from the "Creatio" group.

SEE ALSO

- How to synchronize Creatio activities with Google calendar
- How to configure email accounts in Creatio

How to synchronize Creatio activities with Google calendar

If you use the Google calendar to plan your activities, you can synchronize it with your Creatio calendar.

To start synchronization, click the [Actions] button and click [Synchronize activities] - [Start synchronization] in the Activities section.

When you run this action, the Creatio activities are synchronized with the primary calendar of the Google account specified in the synchronization settings. All activities with the [Display in calendar] mark synchronize from Creatio Synchronization runs by the [Organizer] field. Thus, if an event organizer has not set up synchronization, the [Organizer] field is filled by the participant of the activity who has run the synchronization. If the current author creates an event in Google, synchronization with Creatio adds it into the system and adds the participants to the [Participants] detail. Only users who have the same email listed on the [Communication options] detail and in the Google event will be added to the list of participants. This collective task is displayed for other participants only after they synchronize their calendar with Google.

If a collective task that was created in Creatio by synchronizing with Google has been modified by one of its participants, all changes will be displayed in Google.

NOTE

Synchronization can also be run automatically, within the time intervals specified in the synchronization settings.

SEE ALSO

- How to configure email accounts in Creatio

How to configure email accounts in Creatio

To delete a Google account, do the following:

1. Open the user profile page. Click the [Profile] button on the home page.
2. Click the [Accounts in external resources] button.
3. Select the Google account, click [Actions] and select [Delete]. Click the [Yes] button.

SEE ALSO

- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service
- Synchronizing user accounts and roles with LDAP

Phone integration

The integration between Creatio and telephone networks enables making and receiving calls directly from the system interface. To use other phone integration functions in Creatio, phone integration setup is required.

After the phone integration has been set up, you will be able to manage calls in Creatio: make and receive calls, put calls on hold, transfer calls, make video calls and record conversations.

To manage your calls, use the [Calls] tab ( ) of the communication panel.

The history of all calls is stored in the [Calls] section that provides standard options for working with the information. In the section, you can search and group the stored data, and set up the section analytics.

CONTENTS

SEE ALSO

- Managing calls
- Phone integration (development guide)

Phone integration setup

Creatio has a built-in integration feature with Webitel phone integration service. Creatio users can make internal calls just using the headset without any additional software installation.

To use other phone integration services in Creatio, additional settings are needed.

Phone integration works in browsers that support the WebRTC tschnology:

- Google Chrome, the latest official version on the Creatio release date;
- Mozilla Firefox, the latest official version on the Creatio release date;
- Microsoft IE 11 and higher versions;
- Microsoft Edge;
- Apple Safari, the last official version on the Creatio release date.

CONTENTS

SEE ALSO

- The [Calls] section
- Managing calls
- Feature Comparison for supported phone systems
- Creatio phone integration FAQ
- Phone integration (development guide)

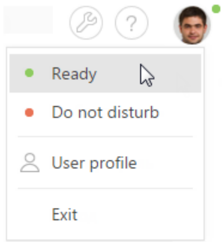
Available Webitel base phone integration settings

Webitel phone integration is a built-in service and is available for internal calls without the need for additional setup. To make and receive external calls in Webitel, you will need to install the Webitel connector from the Creatio marketplace and set up the phone integration. More information about installation of the marketplace applications is available in the separate article.

> **NOTE**
> If you purchase Webitel Call Manager cloud, all setup will be performed by Webitel support. If you purchase Webitel Call Manager on-site, you can order setup service from Webitel or study the requirements and perform the setup according to the Webitel setup guide.

A green indicator at the top right corner of the application indicates that phone integration runs correctly in Creatio (Fig. 1).

Fig. 1 Agent status indicator



To work with the service, populate the “Webitel users” lookup. You have to register your company's employees in Creatio to enable them to make internal calls directly from the application.

NOTE

See more details on how to register Creatio users in the “Add a new user in Creatio” article.

When adding a Creatio user, the system will automatically assign a Webitel extension number. It will be displayed on the [Communication options] detail of the contact page. By default, the phone number assignment starts from 100. Upon the next user registration, the following ordinal numbers will be assigned, for example, 101, 102, 103 etc.

NOTE

The telephone number is generated automatically based on the specified template. You can change the auto-numbering using the "Webitel user number mask" system setting.

Setting up Webitel internal phone parameters

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. Select or remove the required checkboxes:
   a. [Disable Contact Center integration] – this checkbox allows you to disable a built-in Webitel integration. The call button will not be displayed on the communication panel of the application.
   b. [Enable debugging] – this checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
   c. [Use Web phone] – this checkbox allows you to use a web phone. Clear the checkbox if you need to use the down-line phone.
   d. [Use video] – this checkbox allows to make video calls on internal numbers.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Managing users
- Webitel phone integration (development guide)

How to integrate with Oktell

In Creatio, the Oktell integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

> **NOTE**
> See more details about licensing in the "Software licensing" and "License distribution" articles.

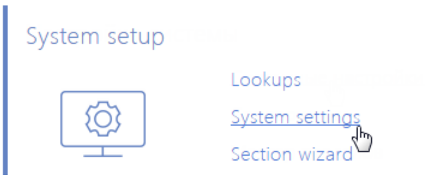
The integration is only possible if complete preliminary Oktell setup was performed by the phone integration administrator.

Selecting message exchange library

Message exchange library selection is performed once by the system administrator.

1. Open the system designer by clicking in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 2).

Fig. 2 Opening the [System settings] section



3. Select the [Default messages exchange library] system setting in the list and click the [Open] button.
4. On the system setting page, populate the [Value by default] field by selecting the "Phone integration library based on Oktell protocol".
5. Click the [Save] button.

Setting Oktell parameters

These settings should be applied with each Creatio user who received Oktell integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
    a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
    b. [Oktell server address] – Oktell website address, for example, "ws://oktell:4026".
    c. [Username], [Password] – authentication user data.

d. [Enable debugging] – this checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.

e. [Enable picking up phone from application] – this checkbox allows you to use the answer button from the application upon receiving an incoming call. If the checkbox is not selected, the answer to the call will be performed using the telephone receiver.

NOTE

The [Enable picking up phone from application] checkbox will run if the telephone set supports the auto-answer function while receiving SIP Header Auto Answer. For example, most Cisco phones support this function by default. The Grandstearm phones require additional telephone configuration options.

4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Software licensing
- License distribution
- Oktell phone integration (development guide)

How to integrate with Asterisk

The Asterisk integration functionality has a separate license in Creatio. Form a license request, send it to our service team, upload the received license file into the system and distribute the licenses between the users.

NOTE

See more details about licensing in the “Software licensing” and “License distribution” articles.

The integration is only possible if complete preliminary Asterisk setup was performed by the phone integration administrator.

NOTE

If you set up the telephony for a development environment application, locate TMS on a separate node instead of the Creatio application server.
To ensure the telephony fault tolerance, we recommend setting up at least two nodes with TMS, as well as a balancer that would redirect users in case of lost connection with one of the nodes.

Preparing Asterisk

The AMI (Asterisk Manager Interface) interface is used to interact with Asterisk. Use AMI to connect to Asterisk servers, configure and manage client programs.

1. Create an AMI user for Creatio, specify the user's parameters in the “manager.conf” file, for example:

```
]vgttcuqhv_
ugetgv"?"vgttcuqhv
fgp{?202020212020202
rgtokv?202020212020202
tgcf"?"u{uvgo.ecnn.nqi.xgtdqug.eqoocpf.cigpv.wugt.qtkikpcvg
ytkvg"?"u{uvgo.ecnn.nqi.xgtdqug.eqoocpf.cigpv.wugt.qtkikpcvg
```

NOTE

The “deny” and “permit” values should be replaced with the corresponding addresses.

2. Check the parking feature activity and the “features.conf” file parameters, for example:

```
rctmgzv"?@"922
rctmrqu"?@"923/942
eqpvgzv"?@"rctmgfecnnu
rctmkpivkog"?@"67
```

ATTENTION

The "parkingtime" value determines the maximum time a call can be on hold. Upon the expiry of this time the subscriber will resume the conversation with the agent. The “parkingtime” value should be sufficiently long to avoid early call return.

Setting up Creatio messaging service

The messaging service enables the use of AMI protocols to connect to Asterisk and distribute call events between Creatio users.

1. Contact Creatio support to receive the installation files. Run the received Creatio Messaging Service Install.msi file on the computer that will be used as the message exchange server and proceed with the installation.

ATTENTION

.NET Framework of version 4.7.2 or higher should be installed on the server where you configure the Creatio Messaging Service.

2. Specify the following parameters for Asterisk connector in the “Terrasoft.Messaging.Service.exe.config” configuration file:

```
>cuvgtkum"hkngRcvj?$$"wtn?$Cuvgtkumapcogaqtaugtxgtacfftguu$"
rqtv?$CuvgtkumaugtxgtarqtvË0"wugtPcog?$Cuvgtkum"nqikp$"
ugetgv?$Cuvgtkum"rcuuyqtf$"qtkikpcvgEqpvgzv?$Qwvdqwpf"eqpvgzvË"
rctmkpiNqvEqpvgzv?$Rctmkpi"eqpvgzv$"cwvqRcwugQpEqoowvcvkqpUvctv?$vtwgË"
swgwgGzvgpukqpHqtocv?$Nqecn1}2¡Bhtqo/swgwg1p$"cu{peQtkikpcvg?$vtwg$"
ugpfTkpiUvctvgfQpTkpikpiUvcvg?$vtwg$"vtcegSwgwguUvcvg?$hcnug$"
rtqvqeqn?$Vjg"wugf"rtqvqeqn"v{rg"Ç"UKR1"qt"RLUKR1Ë"
rcemgvKphqEqphki?$Cffkvkqpcn"rcemcigu"xcnwgu"vq"jcpfng"ykvjkp"vjg"
eqphkiwtcvkqp$"1@
```

See the list of Asterisk connector parameters in the following table.

Parameter caption	Parameter function
FilePath	Use this parameter for diagnostics of the system. It allows to repeat a set of events from the file. The default value should be empty.
URL	Asterisk server IP address parameter.
protocol	The parameter enables selecting the protocol type: SIP or PJSIP. To learn the needed type of protocol, contact your ATS administrator.
Port	AMI protocol port. By default, “5038”.

Parameter caption	Parameter function
OriginateContext	The command is used to initialize the call from Creatio phone number. The parameter contains the caption of the context from which the call will be made to the user phone number. The default value for FreePBX is “from-internal”
parkingLotContext	The context for call initialization to receive parking line. The default value is “originateContext”.
AutoPauseOnCommutationStart	The checkbox is used for the correct work with Asterisk queues. If the checkbox is selected, the system will put the agent on a pause in all queues after answering the call. The feature is used to avoid the second call during the handling of the first one and/or putting the first call on hold.
queueExtensionFormat	The call channel format while receiving the call from the queue. If using LocalChannel, the default value in FreePBX is “Local/{0}@from-queue”.
sendRingStartedOnRingingState	The checkbox stands for the correct handling of the call from the queue. If this checkbox is selected, the system will display the call with the user after receiving the “NewState” event with the Ringing parameter by AMI. The default value is “On”.
traceQueuesState	This setting is used to define the agent's status in the queues. If the agent receives the second call from the queue while handling the first one in Creatio, it is used for debugging. Information about the status of agents is being written to the log file of the connector. The default value is “Off”.

Configuration example:

```
>cuvgtkumhkngRcvj?$"$wtn?$320203703:7$"rqtv?$725:$"
wugtPcog?$dro$"ugetgv?$dro$"qtkikpcvgEqpvgzv?$htqo/kpvgtpcn$"
rctmkpiNqvEqpvgzv?$htqo/kpvgtpcn$"cwvqRcwugQpEqoowvcvkqpUvctv?$vtwg$"
swgwgGzvgpukqpHqtocv?$Nqecn1}2¡Bhtqo/swgwg1p$"cu{peQtkikpcvg?$vtwg$"
ugpfTkpiUvctvgfQpTkpikpiUvcvg?$vtwg$"vtcegSwgwguUvcvg?$hcnug$"
rtqvqeqn?$UKR1$"rcemgvKphqEqphki?$$1@
```

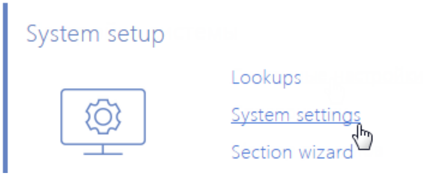
Setting up message exchange library

Message exchange library selection and setup is performed once by the system administrator. To set up the message exchange library:

1. Open the system designer by clicking in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 3).

ACCELERATE

Fig. 3 Opening the [System settings] section



3. In the [Default messages exchange library] system setting, set the default value to "Phone integration library based on Asterisk (AMI) protocol".
4. In the [Message exchange server] system setting, select the connection parameters of the system messages service. In the [Default value] field, specify the message exchange network address in the following format: "ws://0.0.0.0:2013", if your website is available by the http protocol, or "wss://0.0.0.0:2013", if your website is available by the https protocol, where:
    - "0.0.0.0" – IP address that your Creatio users use to access your message exchange server.
    - "2013" – the port used by default for connecting to the messaging service. You can change the port number in the "Terrasoft.Messaging.Service.exe.config" file.

NOTE

If your website is available by https and secure (wws) connection is used for websockets, you will need to install a security certificate on the message exchange server and specify it in the configuration files of the message service. For more information about the setup process, contact Creatio's technical support.

Setting Asterisk parameters

These settings should be applied to every Creatio user who received Asterisk integration license. To do this:

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the displayed page, populate the required fields:
    a. [Disable Contact Centre integration] – this checkbox allows you to disable Creatio integration with the phone integration. The call button will not be displayed on the communication panel of the application.
    b. [Number] – Asterisk user line number. It matches the phone number by default. For example, to track the SIP/305 user line, specify the "305" value, and to track the SIP/office line, specify the "office" value.
    c. [Outgoing call context] – specify the outgoing call context if it differs from the system outgoing call context specified in the "Terrasoft.Messaging.Service.exe.config" file for this particular user.
    d. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.

5. Refresh the browser page to apply the changes.

SEE ALSO

- Software licensing
- License distribution
- Configure WSS connection for the phone service
- Creatio phone integration FAQ
- Asterisk phone integration (development guide)

How to integrate with Cisco Finesse

In Creatio, the Cisco Finesse integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

> NOTE
> See more details about licensing in the "Software licensing" and "License distribution" articles.

The integration is only possible if complete preliminary Cisco Finesse setup was performed by the phone integration administrator.

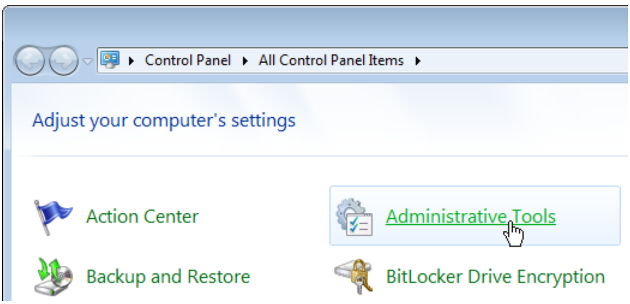
Setting the IIS server to connect to the Cisco Finesse

To integrate Creatio with Cisco Finesse, set up the Internet Information Services (IIS) Manager 7 or higher and the Application Request Routing (ARR) for it.

> ATTENTION
> If the Finesse API service is available by the https protocol, then use the correct ssl certificates, which must pass the security check on the PC where the server side of the Creatio is deployed.

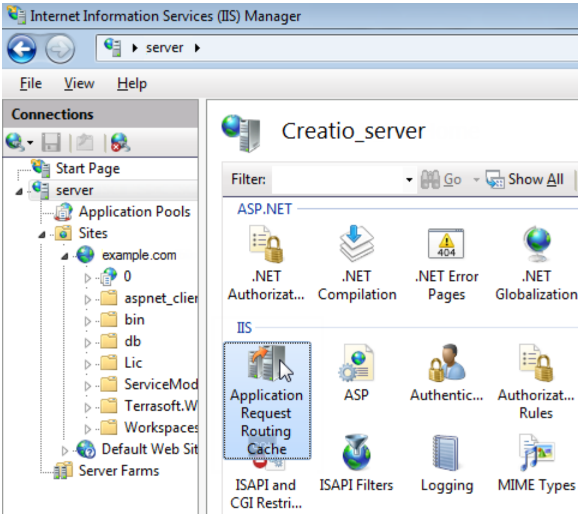
1. Open the control panel and click the [Administrative Tools] link (Fig. 4).

Fig. 4 Opening administrative tools



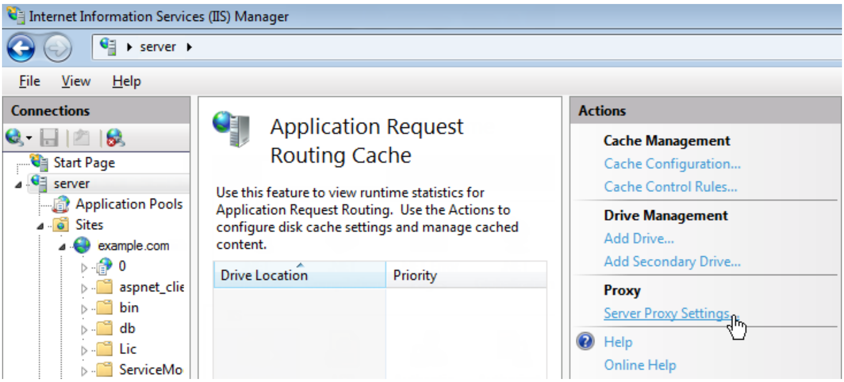
2. Run the Internet Information Services (IIS) Manager in the opened window.
3. In the [Connections] area, select the server where Creatio application is deployed and open the [Application Request Routing] setting for it (Fig. 5).

Fig. 5 Opening the [Application Request Routing] setting



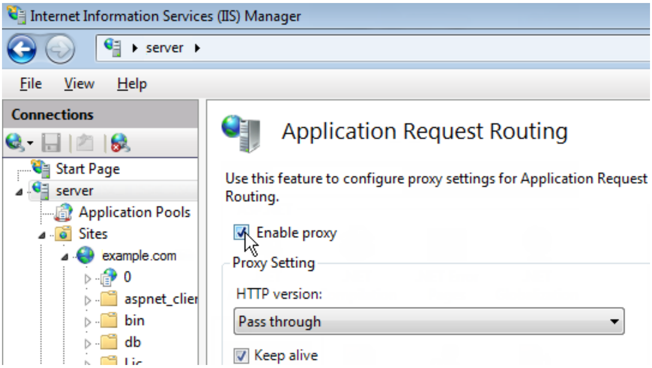
4. Click the [Server Proxy Settings] link in the [Actions] area of the Application Request Routing settings (Fig. 6).

Fig. 6 Opening proxy settings



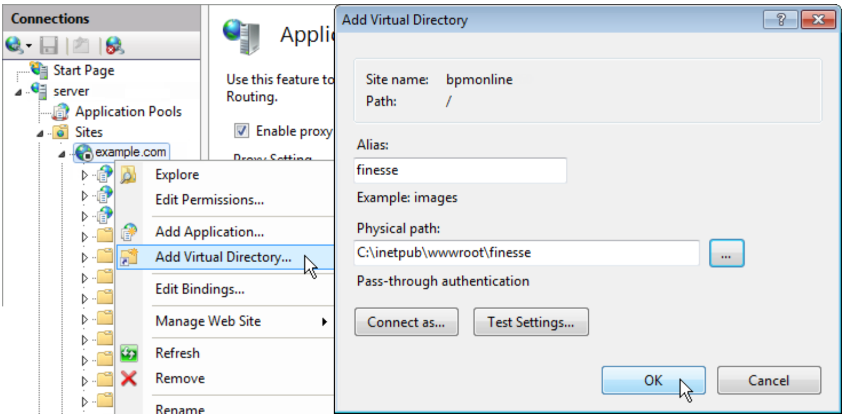
5. Select the [Enable proxy] checkbox in the displayed [Application Request Routing] area (Fig. 7).

Fig. 7 Proxy enabling



6. Create a virtual directory with the “finesse” name (Fig. 8) at the same level with the Creatio deployed website. For example, if the website of the application is “http://myhost:0000/example.com”, then the finesse should be available at the “http://myhost:0000/finesse” address.

Fig. 8 Creating virtual catalog



7. Find in the “finesse” directory the “Web.config” file (if there is no such file, you will need to create one).
8. Replace the contents of the file with the following parameters:

```
>Azon"xgtukqp?$302$"gpeqfkpi?$WVH/:$A@
>eqphkiwtcvkqp@
"""">u{uvgo0ygdUgtxgt@
"""""""">tgytkvg@
"""""""""""">twngu@
"""""""""""""""">twng"pcog?$TgxgtugRtqz{KpdqwpfTwng4$"gpcdngf?$vtwg$"
uvqrRtqeguukpi?$vtwg$@
```


ACCELERATE

```
"""""""""""""""""""">ocvej"wtn?$crk1*0,+$"1@
"""""""""""""""""""">cevkqp"v{rg?$Tgytkvg$"wtn?$jvvr<1120202021hkpguug1
crk1}T<3¡$"nqiTgytkvvgpWtn?$vtwg$"1@
"""""""""""""""">1twng@
"""""""""""""""">twng"pcog?$TgxgtugRtqz{KpdqwpfTwng5$"gpcdngf?$vtwg$"
uvqrRtqeguukpi?$vtwg$@
"""""""""""""""""""">ocvej"wtn?$jvvr/dkpf$"1@
"""""""""""""""""""">cevkqp"v{rg?$Tgytkvg$"wtn?$jvvr<112020202<92931
jvvr/dkpf1$"nqiTgytkvvgpWtn?$vtwg$"1@
"""""""""""""""">1twng@
"""""""""""">1twngu@
"""""""""""">qwvdqwpfTwngu@
"""""""""""""""">rtgEqpfkvkqpu@
"""""""""""""""""""">rtgEqpfkvkqp"pcog?$TgurqpugKuJvon3$@
"""""""""""""""""""""""">cff"kprwv?$}TGURQPUGaEQPVGPVaV[RG¡$"
rcvvgtp?$‘vgzv1jvon$"1@
"""""""""""""""""""">1rtgEqpfkvkqp@
"""""""""""""""">1rtgEqpfkvkqpu@
"""""""""""">1qwvdqwpfTwngu@
"""""""">1tgytkvg@
"""">1u{uvgo0ygdUgtxgt@
>1eqphkiwtcvkqp@
```

NOTE

Replace the “0.0.0.0” value with the Cisco Finesse website IP address.

As a result, the request forwarding records from Creatio website to Cisco Finesse will be displayed on the IIS “URL Rewrites” website tabs. Such records indicate the successful setting.

ATTENTION

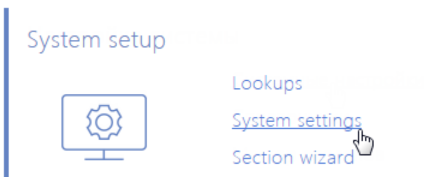
If the URL-Rewrite menu is not displayed after the Application Request Routing setup, ensure that the IIS management console runs correctly using the IISmanager standalone (Inetmgr.exe), instead of server control.

Selecting message exchange library

Message exchange library selection is performed once by the system administrator.

1. Open the system designer by clicking  in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 9).

Fig. 9 Opening the [System settings] section



3. Select the [Default messages exchange library] system setting in the list and click the [Open] button.

4. On the system setting page, populate the [Value by default] field by selecting "Phone integration library based on Finesse protocol".
5. Click the [Save] button.

Setting Cisco Finesse parameters

These settings should be applied for each Creatio user who received Finesse integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
   a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
   b. [Finesse server address] – specify Cisco Finesse server address.
   c. [Agent Id], [Extension], [Password] – specify Cisco Finesse user parameters.
   d. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Software licensing
- License distribution

How to integrate with TAPI

In Creatio, the TAPI integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

> **NOTE**
> See more details about licensing in the “Software licensing” and “License distribution” articles.

The integration is only possible if complete preliminary TAPI driver setup was performed by the phone integration administrator.

> **NOTE**
> If you set up the telephony for a development environment application, locate TMS on a separate node instead of the Creatio application server.
> To ensure the telephony fault tolerance, we recommend setting up at least two nodes with TMS, as well as a balancer that would redirect users in case of lost connection with one of the nodes.

Setting Creatio messaging service

The messaging service allows you to connect Creatio to the phone integration using the integration protocol to connect to TAPI and distributing the call events between Creatio users.

Contact Creatio support to receive the installation files. Run the received .MSI file on the message exchange server and proceed with the installation.

ATTENTION

.NET Framework of version 4.7.2 or higher should be installed on the server where you configure the Creatio Messaging Service.

NOTE

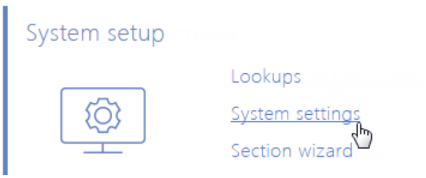
To ensure that the TAPI driver runs correctly, use the “Conference.exe” utility that can be received from the support team.

Setting up message exchange library

Message exchange library selection and setup is performed once by the system administrator.

1. Open the system designer by clicking in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 10).

Fig. 10 Opening the [System settings] section



3. Specify the message exchange library. To do this, open the “Default messages exchange library” system setting. On the system setting page:
   a. Populate the [Value by default] field by selecting the "Phone integration library based on Tapi protocol" value.
   b. Click the [Save] button.
4. Specify the message service connection parameters. To do this, open the “Message exchange server” system setting. On the system setting page:
   a. In the [Default value] field, specify the message exchange network address in the following format: “ws://0.0.0.0:2013”, if your website is available by the http protocol, or “wss://0.0.0.0:2013”, if your website is available by the https protocol, where:
      - “0.0.0.0” – IP address that your Creatio users use to access your message exchange server.
      - “2013” – the port used by default for connecting to the messaging service. You can change the port number in the “Terrasoft.Messaging.Service.exe.config” file.

NOTE

If your website is available by https and secure (wws) connection is used for websockets, you will need to install a security certificate on the message exchange server and specify it in the configuration files of the message service. For more information about the setup process, contact Creatio's technical support.

b. Click [Save] to apply the changes.

Setting TAPI parameters

These settings should be applied with each Creatio user who received TAPI integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
   a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
   b. [Line] – user line number in TAPI.
   c. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Configure WSS connection for the phone service
- Software licensing
- License distribution

How to integrate with CallWay

In Creatio, the CallWay integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

> **NOTE**
> See more details about licensing in the "Software licensing" and "License distribution" articles.

The integration is only possible if complete preliminary CallWay setup was performed by the phone integration administrator.

> **NOTE**
> If you set up the telephony for a development environment application, locate TMS on a separate node instead of the Creatio application server.
> To ensure the telephony fault tolerance, we recommend setting up at least two nodes with TMS, as well as a balancer that would redirect users in case of lost connection with one of the nodes.

Setting up Creatio messaging service

The messaging service allows you to connect Creatio to the phone integration using the integration protocol to connect to CallWay and distributing the call events between Creatio users.

1. Contact Creatio support to receive the installation files. Run the received .MSI file on the message exchange server and proceed with the installation.

ATTENTION

.NET Framework of version 4.7.2 or higher should be installed on the server where you configure the Creatio Messaging Service.

2. Specify the CallWay server address in the "Terrasoft.Messaging.Service.exe.config" file:

```
>ecnnyc{"wtn?$EcnnYc{augtxgtacfftguu$"nqikp?$ZZZ$"rcuuyqtf?$ZZZ$"
rqtv?$56822$"tguvqtgEqppgevkqpKpvgtxcn?$4222$"1@
```

See the list of configuration file parameters in the table below.

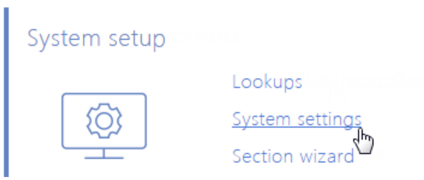
Parameter caption	Parameter function
url	CallWay server IP address parameter.
login	Integration protocol login and password.
password	
port	Integration protocol port. By default, "34600".
restoreConnectionInterval	The time interval to reconnect the integration messaging service to the CallWay phone integration server, if a failure occurs. The value is specified in milliseconds and is "2000" - by default.

Setting up message exchange library

Message exchange library selection and setup is performed once by the system administrator.

1. Open the system designer by clicking  in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 3).

Fig. 11 Opening the [System settings] section



3. Specify the message exchange library. To do this, open the "Default messages exchange library" system setting. On the system setting page:
    a. Populate the [Value by default] field by selecting the "Phone integration library based on Callway protocol" value;
    b. Click the [Save] button.
4. Specify the message service connection parameters. To do this, open the "Message exchange server" system setting. On the system setting page:

a. In the [Default value] field, specify the message exchange network address in the following format: "ws://0.0.0.0:2013", if your website is available by the http protocol, or "wss://0.0.0.0:2013", if your website is available by the https protocol, where:

    - "0.0.0.0" – IP address that your Creatio users use to access your message exchange server.
    - "2013" – the port used by default for connecting to the messaging service. You can change the port number in the "Terrasoft.Messaging.Service.exe.config" file.

NOTE

If your website is available by https and secure (wws) connection is used for websockets, you will need to install a security certificate on the message exchange server and specify it in the configuration files of the message service. For more information about the setup process, contact Creatio's technical support.

b. Click [Save] to apply the changes.

Setting CallWay parameters

These settings should be applied for each Creatio user who received CallWay integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
    a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
    b. [Agent internal number] – CallWay user phone number.
    c. [Routing rule] – specify the routing rule if it is required for the CallWay configured server.
    d. [Use CallWay client] – select the checkbox if an employee uses CallWay internal client. While using the CallWay internal client, the answer button in the application becomes available.
    e. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Configure WSS connection for the phone service
- Software licensing
- License distribution

How to integrate with Infinity

In Creatio, the Infinity integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

NOTE

See more details about licensing in the "Software licensing" and "License distribution" articles.

The integration is only possible if complete preliminary Infinity setup was performed by the phone integration administrator.

NOTE

If you set up the telephony for a development environment application, locate TMS on a separate node instead of the Creatio application server.
To ensure the telephony fault tolerance, we recommend setting up at least two nodes with TMS, as well as a balancer that would redirect users in case of lost connection with one of the nodes.

ATTENTION

Creatio supports integration with Infinity X.

Setting Creatio messaging service

The messaging service allows you to connect Creatio to the phone integration using the integration protocol to connect to Infinity and distributing the call events between Creatio users.

Contact Creatio support to receive the installation files. Run the received .MSI file on the message exchange server and proceed with the installation.

ATTENTION

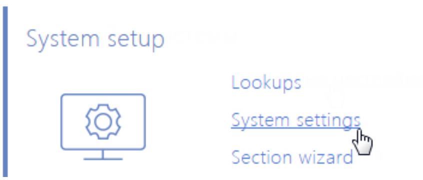
.NET Framework of version 4.7.2 or higher should be installed on the server where you configure the Creatio Messaging Service.

Setting up message exchange library

Message exchange library selection and setup is performed once by the system administrator.

1. Open the system designer by clicking  in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 3).

Fig. 12 Opening the [System settings] section



3. Specify the message exchange library. To do this, open the "Default messages exchange library" system setting. On the system setting page:
   a. Populate the [Value by default] field by selecting the "Phone integration library based on Infinity protocol" value.
   b. Click the [Save] button.

4. Specify the message service connection parameters. To do this, open the "Message exchange server" system setting. On the system setting page:
    a. In the [Default value] field, specify the message exchange network address in the following format: "ws://0.0.0.0:2013", if your website is available by the http protocol, or "wss://0.0.0.0:2013", if your website is available by the https protocol, where:
        - "0.0.0.0" – IP address that your Creatio users use to access your message exchange server.
        - "2013" – the port used by default for connecting to the messaging service. You can change the port number in the "Terrasoft.Messaging.Service.exe.config" file.

    NOTE

    If your website is available by https and secure (wws) connection is used for websockets, you will need to install a security certificate on the message exchange server and specify it in the configuration files of the message service. For more information about the setup process, contact Creatio's technical support.

    b. Click [Save] to apply the changes.

Setting Infinity parameters

These settings should be applied for each Creatio user who received Infinity integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
    a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
    b. [Infinity server address] – Infinity server address.
    c. [Line] – specify the telephone number of the line which will be used for the call.
    d. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Configure WSS connection for the phone service
- Software licensing
- License distribution

How to integrate with Avaya

In Creatio, the Avaya integration functionality has a separate license. You need to generate a license request, send it to our service team, upload the received license file into the system and finally, distribute the licenses between the users.

> NOTE
> See more details about licensing in the "Software licensing" and "License distribution" articles.

The integration is only possible if complete preliminary Avaya setup was performed by the phone integration administrator.

> NOTE
> If you set up the telephony for a development environment application, locate TMS on a separate node instead of the Creatio application server.
> To ensure the telephony fault tolerance, we recommend setting up at least two nodes with TMS, as well as a balancer that would redirect users in case of lost connection with one of the nodes.

Setting up Creatio messaging service

The messaging service allows you to connect Creatio to the phone integration using the DMCC .NET API integration protocol to connect to Avaya and distributing the call events between Creatio users.

DMCC .NET API integration protocol requires licenses. The number of the licenses should correspond to the number of Creatio users who simultaneously use Avaya phone integration.

> NOTE
> See Avaya documentation for more information.

> NOTE
> Avaya Application Enablement Services (AES) component within the telecommunication system [PBX] is needed for Avaya phone integration. The integration is available for AES version of 5.2 server and up.

1. Contact Creatio support to receive the installation files. Run the received .MSI file on the message exchange server and proceed with the installation.

   > ATTENTION
   > .NET Framework of version 4.7.2 or higher should be installed on the server where you configure the Creatio Messaging Service.

2. Specify the following parameters in the "Terrasoft.Messaging.Service.exe.config" configuration file:

```
>cxc{c"ugtxgtKr?$$"rqtv?$6943$"wugUgewtgUqemgvu?$Hcnug$"evkWugt?$$"
ruy?$$"rtqvqeqnXgtukqp?$jvvr<11yyy0geoc/kpvgtpcvkqpcn0qti1uvcpfctfu1
geoc/5451euvc1gf51rtkx8$"uykvejPcog?$EO$
```

See the list of configuration file parameters in the table below.

Parameter caption	Parameter function
avaya serverIp	AES server address.
port	Connection port to AES server. Default value: "4721" for the unsecured connection or "4722" for the secured connection.

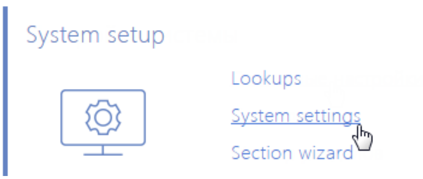
Parameter caption	Parameter function
useSecureSockets	The checkbox for the encrypted connection usage requires adding a certificate. By default, “False”.
ctiUser	Avaya AES (Avaya AES user login) username.
psw	Avaya AES user password.
protocolVersion	The protocol used to connect to AES server. the default value: “http://www.ecma-international.org/standards/ecma-323/csta/ed3/priv6”.
switchName	Avaya (hostname Avaya switch) hostname switch.

Setting up message exchange library

Message exchange library selection and setup is performed once by the system administrator.

1. Open the system designer by clicking in the top right corner of the application window.
2. Click the [System settings] link in the [System setup] block (Fig. 3).

Fig. 13 Opening the [System settings] section



3. Specify the message exchange library. To do this, open the “Default messages exchange library” system setting. On the system setting page:
   a. Populate the [Value by default] field by selecting "Phone integration library based on Avaya (DMCC.NET API)
   b. Click [Save].
4. Specify the message service connection parameters. To do this, open the “Message exchange server” system setting. On the system setting page:
   a. In the [Default value] field, specify the message exchange network address in the following format: “ws://0.0.0.0:2013”, if your website is available by the http protocol, or “wss://0.0.0.0:2013”, if your website is available by the https protocol, where:
      - “0.0.0.0” – IP address that your Creatio users use to access your message exchange server.
      - “2013” – the port used by default for connecting to the messaging service. You can change the port number in the “Terrasoft.Messaging.Service.exe.config” file.

> **NOTE**
> If your website is available by https and secure (wws) connection is used for websockets, you will need to install a security certificate on the message exchange server and specify it in the configuration files of the message service. For more information about the setup process, contact Creatio's technical support.

   b. Click [Save] to apply the changes.

Setting Avaya parameters

These settings should be applied for each Creatio user who received Avaya integration license. Use the user login credentials to access the system.

1. Open the user profile page by clicking the [Profile] image button on the main page of the application.
2. Click the [Call Center parameters setup] button.
3. On the opened page, populate the required values:
   a. [Disable Contact Centre integration] – the checkbox allows you to disable Creatio integration with the telephony. The call button will not be displayed on the communication panel of the application.
   b. [Agent's Id], [Password] – agent's data on Avaya server.
   c. [Number] – agent's number of Avaya server.
   d. [Enable debugging] – the checkbox allows you to display troubleshooting information within the browser console. This troubleshooting information can be used when the phone integration runs into problems and the customer addresses the service team.
4. Click the [Save] button on the page.
5. Refresh the browser page to apply the changes.

SEE ALSO

- Configure WSS connection for the phone service
- Software licensing
- License distribution

Configure WSS connection for the phone service

You can configure WSS connection for the phone service. This procedure is relevant for Asterisk, Avaya, TAPI, CallWay and Infinity phone service users.

> **NOTE**
> Configure the WebSockets technology for proper work of the phone service in the Creatio.

To configure the secure connection with phone service, you need to modify the Terrasoft.Messaging.Service.exe.config configuration file on the phone server:

1. Delete or uncomment the following configuration block in the <servers> section:

```
>ugtxgt"pcog?$EnkgpvYgdUqemgvUgtxkeg$
"ugtxkegPcog?$EnkgpvYgdUqemgvUgtxkeg$"kr?$Cp{$"rqtv?$4235$"oqfg?$Ver$
"kfngUguukqpVkogQwv?$32222$"oczEqoocpfNgpivj?$62;8$
"oczEqppgevkqpPwodgt?$32222$@
">1ugtxgt@
```

2. Contact the official certification center to receive a certificate in the PFX format. The certificate is issued to a system administrator.
3. Uncomment the following block on the <servers> section:

```
>ugtxgt"pcog?$EnkgpvYgdUqemgvUgtxkeg$
"ugtxkegPcog?$EnkgpvYgdUqemgvUgtxkeg$"kr?$Cp{$"rqtv?$4235$"oqfg?$Ver$
"kfngUguukqpVkogQwv?$32222$"oczEqoocpfNgpivj?$62;8$"ugewtkv{?$vnu$"@

>egtvkhkecvg"hkngRcvj?$egtvkhkecvg0rhz$"rcuuyqtf?$333$@>1egtvkhkecvg@
">1ugtxgt@
```

4. Specify the PFX format digital certificate that you received from the certification center, as well as the access password in the <certificate> section. Put the certificate in the folder with the Creatio Messaging Service binary files.

   ATTENTION
   It is not recommended to use self-signed certificates, because this may violate the safety conditions.

5. After modifying the configuration file, change the address of connection to the phone server in the [Message exchange server] system setting from ws:// to wss://.

SEE ALSO

- Software licensing
- License distribution

Feature Comparison for supported phone systems

Phone systems integration largely depends on the type of phone system. By default, Creatio is integrated with Webitel telephone service. You can set up integration with other phone systems, if needed. Below is a feature comparison table for different phone systems.

Phone system features	Phone systems that support TAPI	Cisco Finesse	Avaya	Webitel	Oktell	Infinity	Asterisk	CallWay
Caller ID for incoming calls Displaying information about an incoming call, searching contact/account by phone number	1	+	+	+	+	+	+	+
Outgoing calls Initiating outgoing calls from Creatio	+	+	+	+	2	+	3	4
Pick up Ability to receive incoming calls in Creatio	+	+	+	+	5	+	-	6
Place on hold, resume calls Ability to place calls on hold and resume calls placed on hold	+	+	+	+	+	+	+	+
End calls Ending calls (hang up) in Creatio	+	+	+	+	+	+	+	+

ACCELERATE

Phone system features	Phone systems that support TAPI	Cisco Finesse	Avaya	Webitel	Oktell	Infinity	Asterisk	CallWay
Status management Ability to set statuses, such as “Ready”, “Away”, “Busy”, etc. The available statuses depend on the type of telephone system.	7	+	8	+	+	+	-	+
Transfer calls Ability to transfer of calls	+	+	+	+	+	+	+	+
Statistics Saving information about calls in the “Calls” section: agent name, subscriber account/contact, call duration.	+	+	+	+	+	+	+	+
Built-in phone Ability to make calls from a web browser without the need to use desktop phone.	-	-	-	+	-	-	-	-
Call replay Ability to listen to recorded calls using Creatio interface	-	-	-	+	+	-	-	-

Phone system features	Phone systems that support TAPI	Cisco Finesse	Avaya	Webitel	Oktell	Infinity	Asterisk	CallWay
Telephone system versions	All phone systems that work using TAPI 2.0	Cisco Finesse 9.1+	AES v5.2-7		2.10+	X	1.6-13	

1 – If a call is routed through UCCX while using CUCM, then number identification is unavailable due to TAPI limitations.

2, 3 – In certain situations, if calls are made from Creatio, the user must receive an incoming “system“ call first before initiating an outgoing call. This depends on the software or hardware phone version/model.

4 – Fully supported, if the operator is using CallWay software phone. If other IP phones are used, then to make a call from Creatio, an operator must respond to incoming “system“ call.

5 – Not all software/hardware phones support this feature.

6 – Only supported, if the operator is using CallWay software phone.

7 – The following 2 statuses are available: “Ready” and "Do not disturb" (DND). Currently unavailable for Cisco.

8 — Because of limitations Avaya API has only 2 states Log in and log out (AgentLoggedOn and AgentLoggedOff), and an answer on status change request.

SEE ALSO

- Available Webitel base phone integration settings
- How to integrate with Oktell
- How to integrate with Asterisk
- How to integrate with Cisco Finesse
- How to integrate with TAPI
- How to integrate with CallWay
- How to integrate with Infinity
- How to integrate with Avaya

Creatio phone integration FAQ

- Which telephone systems can be integrated with Creatio?
- How to integrate with cloud telephone providers?
- Which functions are supported by the connectors that can be integrated with Creatio?Phone integration stops working after updating Asterisk to version 12. Why?
- Can I dial an external phone number with an extension external number, bypassing the secretary/answering machine?
- How do I add a custom process to the CTI panel?

Which telephone systems can be integrated with Creatio?

By default, Creatio is integrated with Webitel telephone service. Other telephone systems can be integrated with Creatio, if needed. The list of supported telephone systems is available in a separate article.

How to integrate with cloud telephone providers?

Creatio interacts with phone providers through an IP-PBX. To integrate with a cloud telephone system, set up one of the supported IP-PBX. The setup procedures for integration with different phone systems are available in a separate article.

If you are using one of the connectors listed in the comparison table for phone integration features, you can use universal Any VoIP connector for Creatio. This connector enables easy connection of any virtual or standard IP-PBX as well as SIP number from any provider.

Additionally, you can use any connector from the Creatio marketplace.

Which functions are supported by the connectors that can be integrated with Creatio?

The feature comparison for integration with different telephone systems, as well as requirements for integrating these systems with Creatio, are available in a separate article.

Phone integration stops working after updating Asterisk to version 12. Why?

Phone integration may stop working because the message transfer services in the new and previous Asterisk versions work differently. To enable Creatio integration with Asterisk 12 and up, update Terrasoft Messaging Service (TMS) connector. To do this:

1. Obtain an updated connector file from Creatio support and save it locally.
2. Stop the TMS service.
3. Delete TMS.
4. Restart the phone integration server.
5. Install the new TMS version.
6. Duplicate your settings in the new version.
7. Run the TMS service.
8. Check phone integration operation.

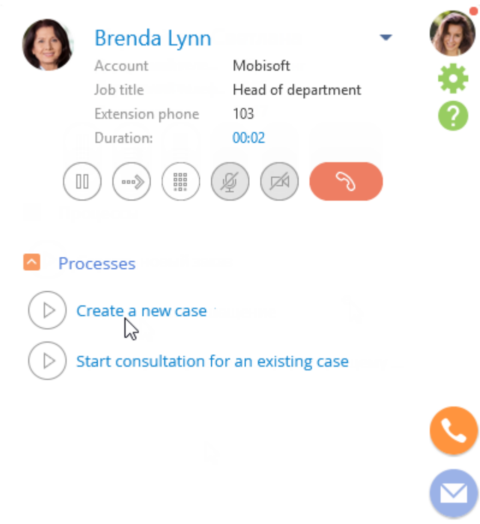
Can I dial an external phone number with an extension external number, bypassing the secretary/answering machine?

This depends on the settings in the PBX API. Most APIs do not have this function. If the PBX API has this function, you will need to perform additional settings on the phone integration server.

How do I add a custom process to the CTI panel?

Products that include Agent Desktop functionality come with several out-of-the-box business processes that an agent can run directly from the CTI panel during calls. For example, in service products, these are [Create new case] and [Start consultation for an existing case] processes (Fig. 1).

Fig. 1 Processes in the CTI panel



To add a business process to the CTI panel, you need to add the process to the [CTI panel actions] lookup. As a result, the process will become available in the [Processes] area of the CTI panel for the Contact Center agents.

NOTE

In Creatio, "contact center agents" are users who are members of the organizational role specified in the [Folder – Contact Center agents] (ContactCenterOperatorsFolder) system setting. By default, the role is "CC agents."

If such a process must also use data from the corresponding call, e.g., bind the call to an activity, etc. – add a process parameter with the name "CallId" and type "Unique identifier." When an agent runs this process during a call, Creatio will populate the "CallId" parameter with the unique identifier of the corresponding record in the [Calls] section.

SEE ALSO

- Feature Comparison for supported phone systems

On-site deployment

The "on-site" deployment involves hosting the system on the servers of your company, while the "cloud" deployment means the application is deployed on the Creatio servers and becomes available in the SaaS mode.

To deploy Creatio application on-site, the server-side and the client-side must meet certain technical requirements.

CONTENTS

Client-side system requirements

Software products on the Creatio platform are web applications, so they do not require any installation on the client side. Users access the application via an Internet browser and required parameters of the customer's computer must meet the requirements of the browser. The indicative characteristics:

Monitor minimum resolution	1280x768
CPU	Pentium 4, Athlon 64 or higher with SSE2 support.
RAM	2GB recommended 512 MB of free RAM is recommended during the work process
HDD	500 MB free space is recommended

NOTE

You can learn more about the recommended parameters for the mobile apps in the "System requirements for mobile devices" article.

Connection channel

The recommended data channel for the client-server connection is 512 Kbps per one active user.

Additional software

One of the following Internet browsers must be installed on the client-side:

Microsoft Windows: • Windows 7; • Windows 8; • Windows 10.	Google Chrome, the latest official version on the Creatio release date
	Mozilla Firefox, the latest official version on the Creatio release date
	Microsoft Internet Explorer 11 and up Microsoft Edge
OS X, the latest official version.	Apple Safari, the last official version on the Creatio release date

NOTE

Release dates are available in the release calendar.

ATTENTION!

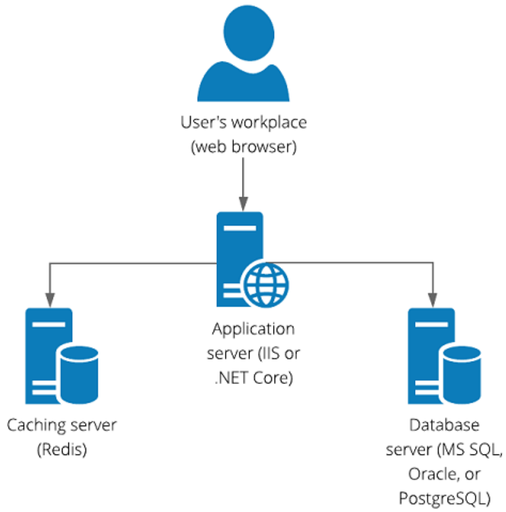
Using third-party plug-ins and add-ons for browsers may increase the page loading time and cause incorrect display of pages.

Server-side system requirements

The following components are required for any Creatio on-site application (Fig. 1):

- Web server, which is also going to be Creatio application server
- Database server with the chosen database management system (DBMS)
- Session storage server (Redis), also known as "caching server"

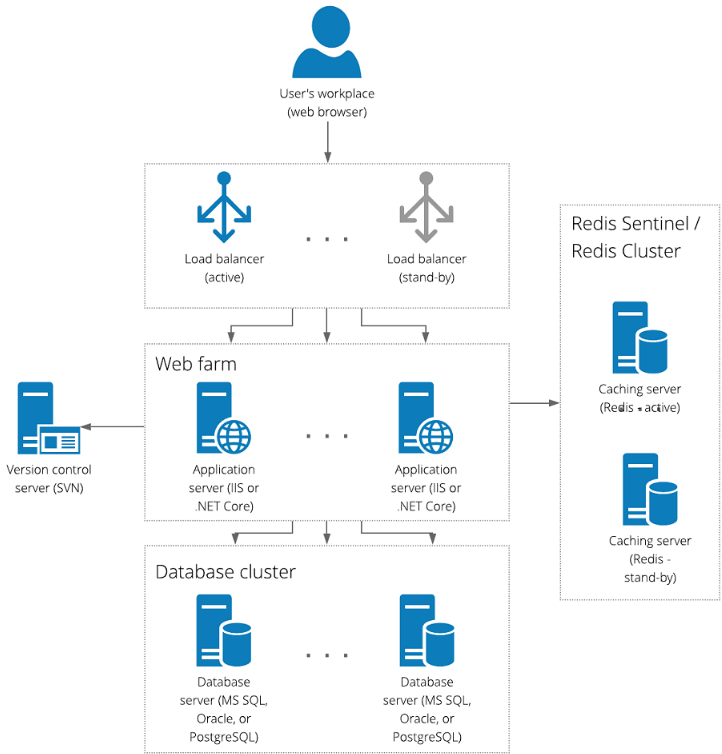
Fig. 1 Creatio basic infrastructure



Optional components include:

- Version control server (SVN) – recommended for development environments. It lets the developers manage versions and changes of the Creatio configuration (eg., rollback, merge versions, etc).
- Load balancers for the application, database, and caching servers for fault-tolerant configurations (Fig. 2).

Fig. 2 Creatio fault-tolerant infrastructure



Several functions, such as global search, deduplication, and machine learning require deployment of additional containerization (operating-system-level virtualization) infrastructure. Implementing the containerization (operating-system-level virtualization) is required for the following Creatio services:

- machine learning
- data enrichment
- bulk email service
- global search
- deduplication
- Exchange Listener

General guidelines

All system components should be functional in a virtual environment. The list of officially supported cloud/virtual platforms:

- Amazon Web Services
- Microsoft Azure / Hyper-V

- VMware vCloud Director / vSphere

  NOTE

  Compatibility with other cloud / virtual platforms is not guaranteed.

Active system component instances must be placed in a single location (data center / server room / office building, etc.). Placing backup components in remote locations when implementing protection against catastrophic events is acceptable.

All components should function in their dedicated operating systems. Merging components is possible, but not recommended.

To organize a DBMS cluster, you can use either a shared file storage or separate disk space of cluster nodes.

The version control server (SVN) is optional. You only need it in case of configuration version control.

The load balancer is an optional component, which may be useful, if:

- there is an increased network load on the application servers
- application servers are deployed in a fault-tolerant configuration (web farm)

The load balancer may be either hardware or software. To work in fault-tolerant mode, use the HTTP/ HTTPS traffic balancer that supports the WebSocket protocol. Creatio has been tested on HAproxy and MS ARR (Microsoft Advanced Request Routing) software load balancers. There are known cases where other balancers like Citrix, Cisco, NginX, FortiGate were successfully implemented.

Connection channels

IIS – SQL:

- the capacity of 10Mb/sec per 100 active users
- delays no more than 15-20 ms

IIS – user:

- minimum 256 Kb/sec per 1 active user
- recommended 512 Kb/sec per 1 active user
- formula: 30kByte/sec * (total number of users working at a time) * 10%

Input/output:

- IIS; 100 IOPS per 1000 active users
- SQL: 1000 IOPS per 1000 active users.

Requirements for sending marketing emails (Marketing Creatio):

The recommended speed of DB disks depends on the number of recipients.

- Audience of up to 1 mln recipients in an email or above 1 mln recipients per month – minimum 300 IOPS, < 8 ms.
- Audience from 1 mln to 2 mln recipients in an email or above 3 mln recipients per month – minimum 500 IOPS, < 8 ms.
- Audience from 2 mln to 5 mln recipients in an email or above 5 mln recipients per month – minimum 1000 IOPS, < 7 ms.

Requirements to servers for the Exchange Listener synchronization service

Exchange Listener processes requests by separate handlers simultaneously serving 50 active mailboxes each.

You specify the number of handlers when installing the microservice component. It depends on the planned number of mailboxes.

One processor requires 30% of the 2Hz processor time and 700 Mb of RAM (disk storage is not used).

You can configure automatic scaling depending on the number of active subscriptions. To learn more, contact support@creatio.com.

Software requirements

Component	Software
Web server	Windows Server 2012 R2,2016,2019; IIS: .Net framework 4.7.2
Database server	Windows Server 2012 R2, 2016, 2019; MSSQL 2016; Oracle 11g and up; PostgreSQL 11
Caching server	Linux Debian 8-9; Redis
Load balancer server	Linux Debian 8-9; HAproxy
Version control system server (SVN)	Linux Debian 8-9; SVN
Containers	Linux Debian 8-9; Docker; Kubernetes

CONTENTS

SEE ALSO

- System requirements calculator

System requirements for 1 - 50 users

The requirements are presented in the table below:

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz (Haswell ge. or newer)
RAM	8 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	2 > 3 GHz (Haswell ge. or newer)
RAM	10 Gb
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <8 ms Application - 15 GB, 100 IOPS, <8 ms Tempdb - 5 GB, 100 IOPS, <8 ms Transaction logs (full recovery model) - 10 GB, 100 IOPS, <8 ms
Ratio of virtual and physical cores	No more than 1 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	2 GB
Disk space (capacity, IOPS, latency)	20 GB, 30 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 50 - 100 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz (Haswell ge. or newer)
RAM	10 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	2 > 3 GHz (Haswell ge. or newer)
RAM	12 Gb
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <8 ms Application - 30 GB, 200 IOPS, <8 ms Tempdb - 5 GB, 200 IOPS, <8 ms Transaction logs (full recovery model) - 12 GB, 200 IOPS, <8 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	2 GB
Disk space (capacity, IOPS, latency)	20 GB, 30 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 100 - 300 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz (Haswell ge. or newer)
RAM	14 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	2 > 3 GHz (Haswell ge. or newer)
RAM	22 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <8 ms Application - 90 GB, 300 IOPS, <8 ms Tempdb - 9 GB, 300 IOPS, <8 ms Transaction logs (full recovery model) - 36 GB, 300 IOPS, <8 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	2 GB
Disk space (capacity, IOPS, latency)	20 GB, 30 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 300 - 500 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	4 > 3 GHz (Haswell ge. or newer)
RAM	34 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <8 ms Application - 150 GB, 500 IOPS, <8 ms Tempdb - 15 GB, 500 IOPS, <8 ms Transaction logs (full recovery model) - 60 GB, 500 IOPS, <8 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	4 Gb
Disk space (capacity, IOPS, latency)	20 GB, 30 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 500 - 1000 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 2
	With considering the fault tolerance: 3
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	8 > 3 GHz (Haswell ge. or newer)
RAM	62 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <7 ms Application - 300 GB, 1000 IOPS, <7 ms Tempdb - 30 GB, 1000 IOPS, <7 ms Transaction logs (full recovery model) - 120 GB, 1000 IOPS, <7 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	6 Gb
Disk space (capacity, IOPS, latency)	20 GB, 30 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 1000 - 3000 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 6
	With considering the fault tolerance: 7
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	22 > 3 GHz (Haswell ge. or newer)
RAM	172 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <7 ms Application - 900 GB, 3000 IOPS, <7 ms Tempdb - 90 GB, 3000 IOPS, <7 ms Transaction logs (full recovery model) - 360 GB, 3000 IOPS, <7 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	12 Gb
Disk space (capacity, IOPS, latency)	20 GB, 100 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.5 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 3000 - 5000 users

The requirements are presented in the table below.

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 10
	With considering the fault tolerance: 11
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	36 > 3 GHz (Haswell ge. or newer)
RAM	282 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <7 ms Application - 1500 GB, 5000 IOPS, <6 ms Tempdb - 100 GB, 5000 IOPS, <6 ms Transaction logs (full recovery model) - 600 GB, 5000 IOPS, <6 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	18 Gb
Disk space (capacity, IOPS, latency)	20 GB, 100 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.5 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 5000 - 7000 users

The requirements are presented in the table below:

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 14
	With considering the fault tolerance: 15
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	50 > 3 GHz (Haswell ge. or newer)
RAM	392 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <7 ms Application - 2100 GB, 7000 IOPS, <6 ms Tempdb - 100 GB, 7000 IOPS, <6 ms Transaction logs (full recovery model) - 840 GB, 7000 IOPS, <6 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,4 GHz
RAM	26 GB
Disk space (capacity, IOPS, latency)	20 GB, 100 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.5 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

System requirements for 7000 - 10000 users

The requirements are presented in the table below:

Application server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,6 GHz (Haswell ge. or newer)
RAM	20 Gb
Disk space (capacity, IOPS, latency)	Operating system - 60 GB, 100 IOPS, <10 ms Application - 20 GB, 100 IOPS, <10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 20
	With considering the fault tolerance: 21
Fault-tolerance options	N+1

The database server

Environment	Virtual infrastructure (physical servers preferable)
CPU (number of virtual cores, frequency)	72 > 3 GHz (Haswell ge. or newer)
RAM	446 GB
Disk space (capacity, IOPS, latency)	Operating system - 80 GB, 100 IOPS, <7 ms Application - 3000 GB, 10000 IOPS, <5 ms Tempdb - 100 GB, 10000 IOPS, <5 ms Transaction logs (full recovery model) - 1200 GB, 10000 IOPS, <5 ms
Ratio of virtual and physical cores	No more than 1 virtual core per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Caching server (user sessions)

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,4 GHz
RAM	36 GB
Disk space (capacity, IOPS, latency)	20 GB, 200 IOPS, < 8 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 3
Fault-tolerance options	Redis Sentinel (N+2)

Load balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,6 GHz
RAM	10 Gb
Disk space (capacity, IOPS, latency)	20 GB, 20 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	2 >= 10 GbE
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Version control system server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	8 Gb
Disk space (capacity, IOPS, latency)	100 GB, 20 IOPS, < 20 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 0.1 GbE
Node configuration of fail-over cluster	Not supported

Containerization (operating-system-level virtualization) requirements

Implementing the containerization (operating-system-level virtualization) is required for the following Creatio services:

- machine learning
- data enrichment
- bulk email service
- global search
- deduplication
- Exchange Listener

Typical infrastructure configuration for operating-system-level virtualization:

Kubernetesmaster server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	2 > 2,60 GHz
RAM	4 Gb
Disk space (capacity, IOPS, latency)	30 GB, 100 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 Gbit / s
Number of servers	Without considering the fault tolerance: 2
	With considering the fault tolerance: 3
Fault-tolerance options	N+1

Kubernetes node server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	4 > 2,60 GHz
RAM	28 GB
Disk space (capacity, IOPS, latency)	120 GB, 500 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 Gbit / s
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Kubernetes balancer server

Environment	Virtual infrastructure
CPU (number of virtual cores, frequency)	1 > 2,60 GHz
RAM	1 Gb
Disk space (capacity, IOPS, latency)	30 GB, 100 IOPS, < 10 ms
Ratio of virtual and physical cores	No more than 2 virtual cores per 1 physical core
Network interface (number, speed)	1 >= 1 Gbit / s
Number of servers	Without considering the fault tolerance: 1
	With considering the fault tolerance: 2
Fault-tolerance options	N+1

Deploying Creatio .NET Framework application on Windows

This guide covers all stages of Creatio on-site setup and deployment on Windows using IIS.

After installing the application, you will need to perform additional setup to ensure correct operation of all its components. You will need to do the following:

- Set up websockets. Read more >>>
- Switch Creatio from HTTP to HTTPS. Read more >>>
- Set up global search. Read more >>>
- Set up machine learning. Read more >>>
- Set up integrations and Internet access for additional functions, for example, for data enrichment service, social media integration or Google synchronization. Read more >>>
- Set up bulk emails (only for configurations containing Marketing Creatio). Read more >>>

NOTE

If during login you receive the "Unable to load one or more of the requested types" error, make sure that you install the Microsoft Visual C++ 2010 SP1 Redistributable Package to the web-server (application server PC). You can download it on Microsoft site using the following link.

Creatio .NET Framework application on IIS

The following software components are required to deploy Creatio:

1. Database management system (DBMS). The following DBMS are supported:
   - MS SQL Server 2012 SP3 or higher. If all database server components use default settings, additional DBMS setup is not needed. To ensure correct operation of Creatio on MS SQL, install Database Engine.
   - Oracle Database 11g Release 2 or higher. To deploy Creatio database on Oracle, set up Oracle Data Access Components (ODAC) of version 11.
2. PostgreSQL 11. PostgreSQL setup files are available for download at postgresql.org. 64-bit Microsoft .Net Framework 4.7.2.
3. IIS 8.0 and up.
4. Redis Server 3.0 or 3.2.
5. To ensure correct compilation of the application, download and install .NET Core SDK 3.1.301 and .NET Framework SDK v 4.7.2.

   Grant permissions to read, create and delete files and subfolders of the \Terrasoft.WebApp\Terrasoft.Configuration catalog to the user who runs the application pool in IIS.

   Download 64-bit .NET Core SDK 3.1.301

   Download 64-bit .NET Framework SDK v 4.7.2

The general procedure for Creatio application on-site deployment is as follows:

- Install and/or enable required Windows components.
- Install the latest Windows updates.
- Install the Redis server.
- Deploy the database.

- Modify the ConnectionStrings.config file.
- Create and set up application website using IIS.

Please note that the specifics of the deployment procedure may vary, depending on the chosen DBMS.

NOTE

MS SQL Server, Oracle Database and SVN server deployment procedures are covered in the documentation of these products.
The procedure for running PostgreSQL in Docker is covered in the Docker documentation.

ATTENTION

It is not recommended to unpack any Creatio setup files using the built-in Windows archiver. Use 7-Zip, WinRAR or WinZIP instead.

Set up Creatio database server

Deploy the Creatio database on the database server by restoring it from a backup copy file located in the application folder. You can also use a backup copy of an existing Creatio database if you are deploying a website for development or testing environment.

NOTE

The procedure for creating a MS SQL Server DB backup is described in a separate article.

The procedure for restoring the database from a backup copy depends on the chosen DBMS.

Deploy MS SQL database for Creatio

Install Microsoft SQL Server Management Studio on the database server. Installation instructions are available in the Microsoft SQL Server documentation.

NOTE

MS SQL has been tested for deployment of clustered Creatio databases. Using MS SQL Always On availability groups is a recommended method of setting up a high availability configuration. For more information on MS SQL Always On technology, please refer to the MS SQL documentation.

In Microsoft SQL Server Management Studio, create two database users.

- A user with the “sysadmin” role, who has maximum access privileges on the database server level. This user will restore the Creatio database from a backup file and assign access permissions.
- A user with the “public” role, whose permissions are limited. You will need this user to set up a connection to the restored Creatio database.

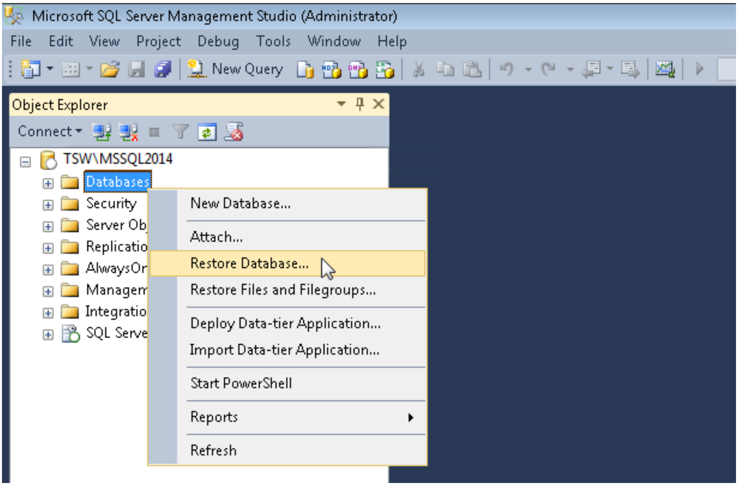
NOTE

We recommend using “public” users with MS SQL Server authentication for connections to the Creatio database. For more on creating users and access permissions on the database server, see Microsoft SQL Server documentation.

To restore a database:

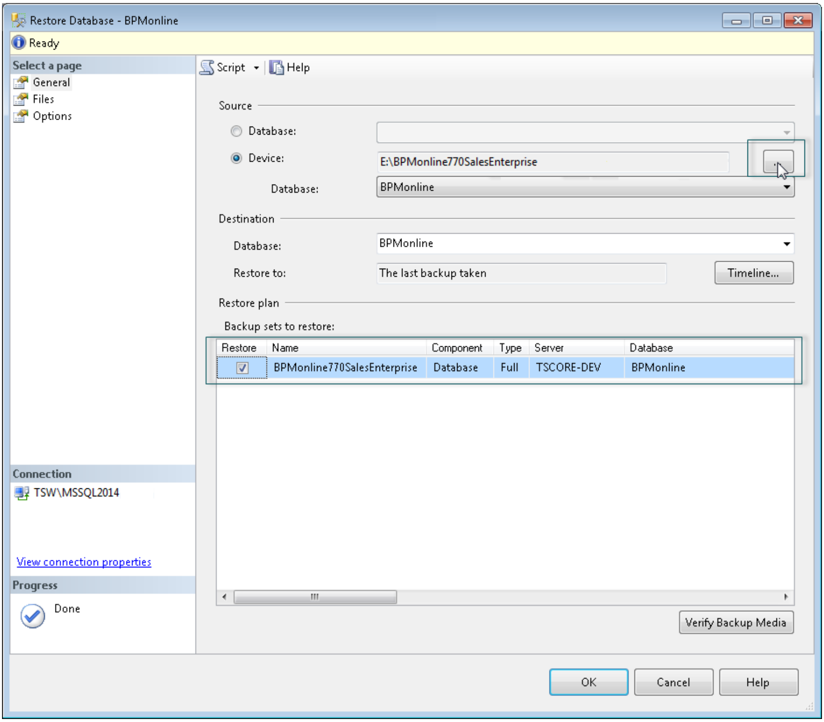
1. Authenticate in Microsoft SQL Server Management Studio as a “sysadmin” user.
2. Click the [Databases] catalog and select the [Restore Database] option from the context menu (Fig. 1).

Fig. 1 Selecting database backup command



3. In the [Restore Database] window:
    a. Specify the name of the database in the [Database] field;
    b. Specify the [Device] checkbox and specify the path to the database backup copy file. The database backup file is supplied together with executable files and is located in the ~\db folder (Fig. 2).

Fig. 2 Selecting database backup

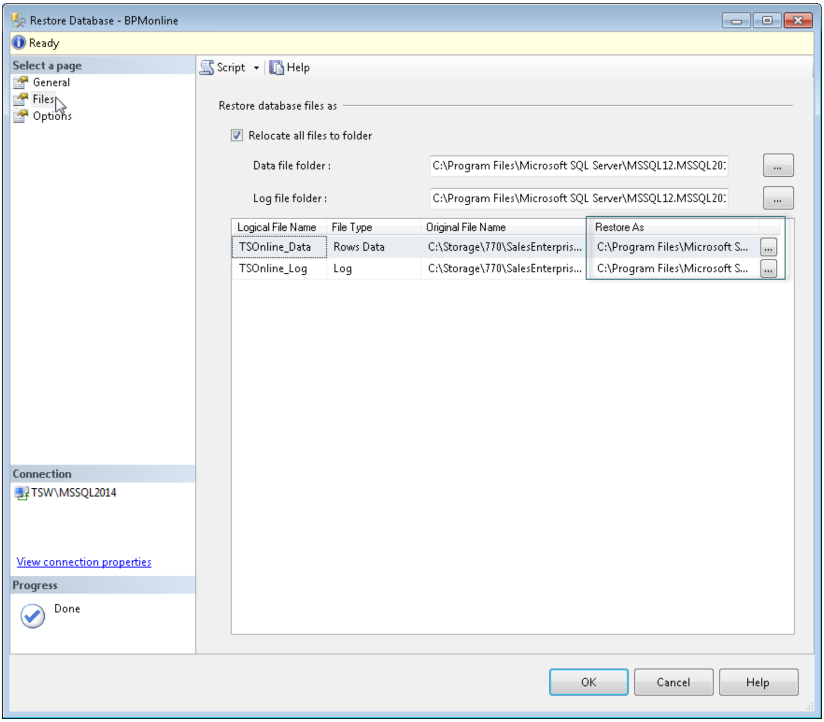


4. Specify a folder on the database server where the Creatio database will be restored.
   a. Go to the [Files] tab.
   b. In the [Restore the database files as] area, select the [Relocate all files and folders] checkbox.
   c. Specify paths to the folders where SQL Management Studio will save the TS_Data.mdf and TS_Log.ldf files (Fig. 3).

ATTENTION

It is required to create a folder that will be used for database files restoring beforehand, as the SQL Server may not create directories.

Fig. 3 Specifying the names and paths to TS_Data.mdf and TS_Log.ldf files.



5. Click the [OK] button and wait for the database restore process to be finished.
6. Enable connection for the public MS SQL user who Creatio will use to access the database.
    a. Locate the restored Creatio database in MS SQL Server Management Studio.
    b. Click the [Security] tab.
    c. Add the user to the [Users] list.
    d. Click [Membership] and specify the db_owner, which will grant the user full access to the restored Creatio database.

Deploy Oracle Database for Creatio

Install Oracle Database on the database server. Installation instructions are available in the Oracle Database Online Documentation.

> **NOTE**
> Creatio have not been tested on Oracle high-availability configurations, however, there are cases of successful deployment of Creatio using Oracle RAC. Please refer to the Oracle Database Online Documentation for more details on Oracle Database clustering.

In Oracle Database, create two database users.

- A user with the "admin" role, who has maximum access privileges on the database server level. This user will restore the Creatio database from a backup file and assign access permissions.
- A user with the "public" role, who will be granted object privileges on the Creatio database but whose permissions are otherwise limited. You will need this user to set up a connection to the restored Creatio database.

NOTE

We recommend using "public" users with Oracle Database authentication for connections to the Creatio database. For more on creating users and access permissions on the database server, see Oracle Database Online Documentation.

Download and unzip the archive with the SQL scripts that are used to restore the database from the Oracle backup file.

To restore the database:

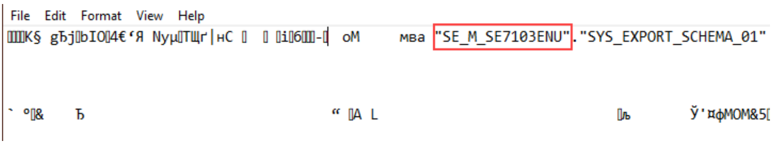
1. Open the CreateUser.sql and RecompileSchema.sql scripts in the editor and modify the following macros:
   - YOUR_SCHEMA_NAME – schema name
   - YOUR_SCHEMA_PASSWORD – schema password
   - \\your_server.com\Share – path to the backup (.dmp file).

   NOTE

   By default the Oracle DB backup file is located in the ~\db folder with the Creatio executable files. If the backup file is located not on the Oracle server, it should be located in the network folder with general access.

2. Open the backup file in a text editor, find and save the name of the used schema located before the ".SYS_EXPORT_SCHEMA" record (Fig. 4).

   Fig. 4 The schema name in the backup file

3. Remove the modified scripts on the Oracle server. To create a new schema, execute the following command from the folder with the scripts:

   ```
   usnrnwu0gzg"$U[U1U[UaRCUUYQTFB{qwtaugtxgt0eqo<37431[QWTaUGTXKEGaPCOG"
   CU"U[UFDC$"BEtgcvgWugt0usn
   ```

   - SYS_PASSWORD – a password for authorization on the Oracle server
   - your_server.com – network address of the Oracle server
   - YOUR_SERVICE_NAME – Oracle service name.

4. Run import of the DB backup copy in the created schema:

   ```
   korfr"$[QWTaUEJGOCaPCOG1[QWTaUEJGOCaPCOGB11{qwtaugtxgt0eqo<37431
   DRODWKNF$
   "TGOCRaUEJGOC?QTKIKPCNaUEJGOCaPCOG<[QWTaUEJGOCaPCOG
   "FKTGEVQT[?DCEMWRFKT"FWORHKNG?hkngpcog0for"PQNQIHKNG?[GU
   ```

   - YOUR_SCHEMA_NAME – the name of the schema specified in the CreateUser.sql

- your_server.com – network address of the Oracle server
- ORIGINAL_SCHEMA_NAME – the name of the schema from the backup file (step 2).

NOTE

The sqlplus and impdp utilities are installed with the Oracle server.

5. Consistently run:

```
usnrnwu0gzg"$[QWTaUEJGOCaPCOG1
[QWTaUEJGOCaRCUUYQTFB{qwtaugtxgt0eqo<37431[QWTaUGTXKEGaPCOG$
"BvurmiaWvknkvkguInqdcnV{rgu0usn
usnrnwu0gzg"$[QWTaUEJGOCaPCOG1
[QWTaUEJGOCaRCUUYQTFB{qwtaugtxgt0eqo<37431"[QWTaUGTXKEGaPCOG$
"BTgeqorkngUejgoc0usn
```

Deploy PostgreSQL database for Creatio

Use one of two database configurations to deploy Creatio:

- Use a remote DBMS (recommended)
- Use a local PostgreSQL server.

If you already have a PostgreSQL Server running on the intended machine, skip to step II.

If you have set up sysadmin (with privileges to log in, create and modify databases) and public (unprivileged) user roles, skip to step III.

I. Install PostgreSQL

PostgreSQL setup files are available for download at postgresql.org.

NOTE

High-availability PostgreSQL configurations have not been tested with Creatio. Please refer to the PostgreSQL documenation for details on PostgreSQL clustering.

II. Create PostgreSQL user

A fresh installation of PostgreSQL Server is not ready for deploying Creatio immediately. If you plan to use a fresh installation of PostgreSQL Server, you need to create a user that can log in to the database using a password and has sufficient privileges to create and update a database. By default, no such user will be available.

We recommend to create two database users in PostgreSQL:

- A user with the “sysadmin” role, who has maximum access privileges on the database server level. This user will restore the Creatio database from a backup file and assign access permissions.
- A user with the “public” role, who will be the owner of the Creatio database but whose permissions are otherwise limited. You will need this user to set up a connection to the restored Creatio database.

NOTE

We recommend using “public” users with PostgreSQL authentication for connections to the Creatio database.

To create the two PostgreSQL users:

1. Open Command Prompt.

2. Navigate to the PostgreSQL software setup folder:

```
ef"1F"$\\path\to\PostgreSQL\folder$
```

   - \\path\to\PostgreSQL\folder – the path to the PostgreSQL software setup folder.

3. Navigate to the folder with Command Line Tools:

```
ef"dkp
```

4. Enter DB connection password in the environment variable.

```
ugv"RIRCUUYQTF?riarcuuyqtf
```

   - pg_password – password of the postgres user for connecting to the PostgreSQL server.

5. Run PostgreSQL shell as postgres:

```
rusn0gzg"//wugtpcog"rquvitgu
```

6. Create a sysadmin user:

```
ETGCVG"WUGT"riau{ucfokp=
```

   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server. This user will restore the Creatio database from a backup file and assign access permissions.

7. Make pg_sysadmin a system administrator:

```
CNVGT"TQNG"riau{ucfokp"YKVJ"UWRGTWUGT=
```

8. Allow pg_sysadmin to log in:

```
CNVGT"TQNG"riau{ucfokp"YKVJ"NQIKP=
```

9. Set a password for pg_sysadmin:

```
CNVGT"TQNG"riau{ucfokp"YKVJ"RCUUYQTF")riau{urcuuyqtf)=
```

   - pg_syspassword – sysadmin user password for connecting to the PostgreSQL server.

10. Create a public user:

```
ETGCVG"WUGT"riawugt=
```

   - pg_user – public user for connecting to the PostgreSQL server. You will need this user to set up a connection to the restored Creatio database.

11. Allow pg_user to log in:

```
CNVGT"TQNG"riawugt"YKVJ"NQIKP=
```

12. Set a password for pg_user:

```
CNVGT"TQNG"riawugt"YKVJ"RCUUYQTF")riarcuuyqtf)=
```

   - pg_password – public user password for connecting to the PostgreSQL server.

13. Exit the PostgreSQL shell:

```
^s
```

III. Restore PostgreSQL database

To restore a PostgreSQL database from a backup file, you will need psql.exe and pg_restore.exe utilities. Both are part of the Command Line Tools PostgreSQL component that comes with the PostgreSQL Server.

If you plan to use a remote PostgreSQL database without installing the PostgreSQL Server on your machine:

1. Get a PostgreSQL binary package. Binary packages are available for download at postgresql.org.
2. Select the Command Line Tools component during installation. Selecting the other components is optional.

To restore the database from a backup file:

1. Open Command Prompt.
2. Navigate to the PostgreSQL software setup folder:

   ```
   ef"1F"$\\path\to\PostgreSQL\folder$
   ```

   - \\path\to\PostgreSQL\folder – the path to the PostgreSQL software setup folder.
3. Navigate to the folder with executables:

   ```
   ef"dkp
   ```
4. Enter DB connection password in the environment variable:

   ```
   ugv"RIRCUUYQTF?riau{urcuuyqtf
   ```

   - pg_syspassword – sysadmin user password for connecting to the PostgreSQL server.
5. Create a database where the backup data will be restored:

   ```
   rusn0gzg"//jquv"riaugtxgtacfftguu"//rqtv"riaugtxgtarqtv"//
   wugtpcog?riau{ucfokp"//fdpcog?riafdpcog"Çe"$ETGCVG"FCVCDCUG"
   riafdpcogaetgcvkq"YKVJ"QYPGT"?"riawugt"GPEQFKPI"?")WVH:)"EQPPGEVKQP"
   NKOKV"?"/3$
   ```

   - pg_server_address – PostgreSQL server address
   - pg_server_port – PostgreSQL server port
   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server
   - pg_dbname – name of the PostgreSQL DB where the instructions will be executed

   NOTE

   If you have not created any databases yet or an attempt to connect to a database triggers the “FATAL: database "pg_dbname" does not exist” error, use the default database “template1”.

   - pg_dbname_creatio – name of the PostgreSQL DB which will host Creatio tables
   - pg_user – the "public" user who will be granted permission to use and update the Creatio database
6. If you are using AWS RDS:
   - Download the ChangeTypesOwner.sql script.
   - In the script, replace the “postgres” value with a valid Postgres username.
   - Run the updated ChangeTypesOwner.sql script.
7. Restore the database from the backup file:

   ```
   riatguvqtg0gzg"//jquv"riaugtxgtacfftguu"//rqtv"riaugtxgtarqtv"//
   wugtpcog?riau{ucfokp"//fdpcog?riafdpcogaetgcvkq"//xgtdqug"
   ^^rcvj^vq^fd0dcemwr
   ```

   - pg_server_address – PostgreSQL server address
   - pg_server_port – PostgreSQL server port
   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server

- pg_dbname_creatio – name of the PostgreSQL DB to insert backup tables. Use the name you specified in the "CREATE DATABASE" command on step 2.

8. Download the CreateTypeCastsPostgreSql.sql file.
9. Execute type conversion:

```
rusn0gzg"//jquv"riaugtxgtakr"//rqtv"riaugtxgtarqtv"//
wugtpcog?riau{ucfokp"//fdpcog?riafdpcogaetgcvkq"//
hkng?\\path\to\CreateTypeCastsPostgreSql.sql
```

- pg_server_ip – PostgreSQL server address
- pg_server_port – PostgreSQL server port
- pg_sysadmin – sysadmin user for connecting to the PostgreSQL server
- pg_dbname_creatio – name of the Creatio PostgreSQL DB where the instructions will be executed
- \\path\to\CreateTypeCastsPostgreSql.sql – path to the downloaded CreateTypeCastsPostgreSql.sql file.

NOTE

If you are deploying 7.15.0 or lower version, use the CreateTypeCastsPostgreSql_7_15_0.sql script.

Set up Creatio caching server

Caching server functions:

- storing the data of user sessions
- storing cached data
- facilitate data exchange between web farm nodes

Creatio uses Redis open-source, in-memory data structure store. Redis stores data in RAM, which ensures high performance and fast response times.

ATTENTION

Redis is primarily developed and tested on Linux and, to a lesser extent, other Unix-like operating systems, such as OS X, FreeBSD and OpenBSD. While Redis is also available on Windows Server, running Redis on Windows machines has significant drawbacks and is not officially recommended.
We recommend deploying Redis on Linux operating systems.

You can deploy Redis server on Windows or Linux:

- Set up Creatio caching server (Redis) on Windows (not recommended)
- Set up Creatio caching server (Redis) on Linux

Set up Creatio caching server (Redis) on Windows

This article covers deploying Redis caching server on Windows.

ATTENTION

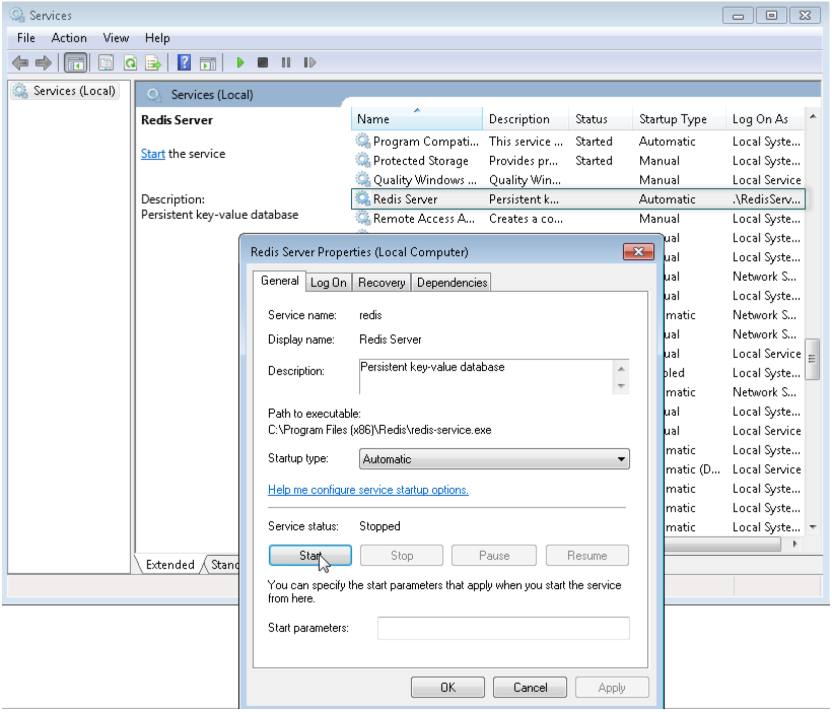
We recommend deploying Redis on Linux operating systems.
While Redis can be deployed on Windows Server, running Redis on Windows machines has significant drawbacks and is not officially recommended.

Use the following link to download Redis Server setup file.

Run the redis-server.exe file to start Redis Server setup. During the installation, a number of commands will be run sequentially. After the completion of each command, click [Next] and wait for the process to complete.

Start the Redis Server after the installation. To do this, go to the menu [Control Panel]-[Administrative Tools]-[Services] or enter "Services.msc" in the command line (Fig. 5).

Fig. 5 Redis Server service start window



ATTENTION

The application setup files should correspond to the DBMS that you use.
Examples of the setup files:
For Oracle DBMS: 7.14.3.1686_SalesEnterprise_Softkey_Oracle _ENU.zip;
For PostgreSql DBMS: 7.14.3.1686_SalesEnterprise_Softkey_PostgreSQL_ENU.zip

Set up Creatio caching server (Redis) on Linux

The Redis server package is available in the standard Debian repositories. To install Redis on Debian and Debian derivatives (such as Ubuntu and Linux Mint):

1. Log in as root:

```
uwfq"uw
```

2. Update the package lists:

```
crv/igv"wrfcvg
```

3. Install Redis:

```
crv/igv"kpuvcnn"tgfku/ugtxgt
```

4. Enable Redis to run as a systemd service. To do this:
    a. Open redis.conf in a text editor as root. For example, use the Nano text editor:

```
pcpq"1gve1tgfku1tgfku0eqph
```

    b. Locate the “supervised no” entry. Replace the entry with “supervised systemd.”
    c. Save changes and exit the editor.
5. Restart the Redis server:

```
u{uvgoevn"tguvctv"tgfku/ugtxgt
```

6. Log out from your root session:

```
gzkv
```

Set up Creatio application server on IIS

Deploying Creatio application server consists of the following general steps:

1. Set up the ConnectionStrings.config file.
2. Specify connection strings, depending on the chosen DBMS:
    - Specify MS SQL Server connection strings.
    - Specify Oracle Database connection strings.
    - Specify PostgreSQL connection strings.
3. Configure Web.config for Oracle Database (if you use Oracle Database).
4. Enable required Windows components.
5. Set up application website in IIS.
6. Set up websockets.
7. Switch Creatio website from HTTP to HTTPS.

Set up the ConnectionStrings.config file

The ConnectionStrings.config file is located in the Creatio website folder, e.g., C:\WebAppRoot\Creatio. Use the following parameters in the ConnectionStrings.config file:

db – the element that ensures connection with the database. In this element, you configure the path to the database you need to establish connection with and the method of authorization on the database server.

```
>cff"pcog?$fd$"eqppgevkqpUvtkpi?$Fcvc"Uqwteg?]Vjg"fcvcdcug"ugtxgt"
pcog_="
Kpkvkcn"Ecvcnqi?]Vjg"fcvcdcug"pcog_="
Rgtukuv"Ugewtkv{"Kphq?Vtwg="OwnvkrngCevkxgTguwnvUgvu?Vtwg="
]Cwvjqtk|cvkqp"ogvjqf"qp"vjg"fcvcdcug"ugtxgt_="Rqqnkpi"?"vtwg="Ocz"
Rqqn"Uk|g"?"322="Cu{pe"?"vtwg$"1@
```

redis the element that ensures interaction with the Redis server.

```
>cff"pcog?$tgfku$"eqppgevkqpUvtkpi?$jquv?]Eqorwvgt"pcog_=fd?]Tgfku"FD"
pwodgt_=rqtv?859;=
oczTgcfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
```

ATTENTION

The number of Redis database must be unique for each application site.

defPackagesWorkingCopyPath – the path to the working copy of application (if version control system is used):

```
>cff"pcog?$fghRcemciguYqtmkpiEqr{Rcvj$"eqppgevkqpUvtkpi?]Rcvj"vq"vjg"
yqtmkpi"eqr{"qh"crrnkecvkqp"kp"xgtukqp"uvqtcig"u{uvgo"*UXP+_"1@
```

tempDirectoryPath – path to the temporary directory used by the package installation mechanism:

```
>cff"pcog?$vgorFktgevqt{Rcvj$"eqppgevkqpUvtkpi?]Rcvj"vq"vjg"vgorqtct{"
fktgevqt{"wugf"d{"vjg"rcemcig"kpuvcnncvkqp"ogejcpkuo_"1@
```

sourceControlAuthPath – path to the authorization data of the version storage system (SVN, if used):

```
>cff"pcog?$uqwtegEqpvtqnCwvjRcvj$"eqppgevkqpUvtkpi?]Rcvj"vq"vjg"
cwvjqtk|cvkqp"fcvc"qh"vjg"xgtukqp"uvqtcig"u{uvgo"*UXP+_"1@
```

elasticsearchCredentials – ElasticSearch authorization data for the global search operation:

```
>cff"pcog?$gncuvkeugctejEtgfgpvkcnu$"eqppgevkqpUvtkpi?$Wugt?]Vjg"
GncuvkeUgctej"wugt"pcog_="Rcuuyqtf?]Vjg"GncuvkeUgctej"wugt"rcuuyqtf_=$"
1@
```

Specify MS SQL Server connection strings

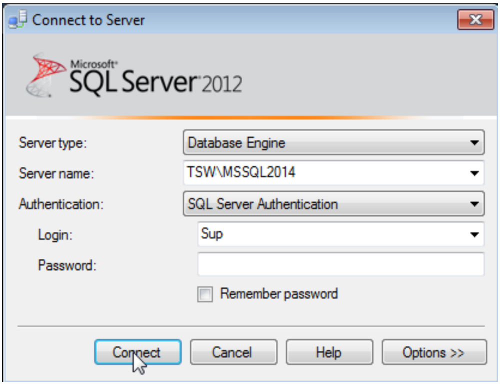
Open the ConnectionStrings.config file in a text editor and specify the connection parameters (connectionStrings) for the restored database (name=”db”) and Redis Server (name=”redis”).

```
>Azon"xgtukqp?$302$"gpeqfkpi?$wvh/:$A@
>eqppgevkqpUvtkpiu@
"">cff"pcog?$fd$"eqppgevkqpUvtkpi?$Fcvc"Uqwteg?]Vjg"fcvcdcug"ugtxgt"
pcog_="
Kpkvkcn"Ecvcnqi?]Vjg"fcvcdcug"pcog_="
Rgtukuv"Ugewtkv{"Kphq?Vtwg="OwnvkrngCevkxgTguwnvUgvu?Vtwg="
Kpvgitcvgf"Ugewtkv{?UURK="Rqqnkpi"?"vtwg="Ocz"Rqqn"Uk|g"?"322="Cu{pe"?"
vtwg$"1@
"">cff"pcog?$tgfku$"eqppgevkqpUvtkpi?$jquv?]Eqorwvgt"pcog_=fd?]Tgfku"
FD"pwodgt_=rqtv?859;=
oczTgcfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
Kpvgitcvgf"Ugewtkv{?UURK$"1@
"">cff"pcog?$fghTgrqukvqt{Wtk$"eqppgevkqpUvtkpi?$$"1@
"">cff"pcog?$fghYqtmkpiEqr{Rcvj$"eqppgevkqpUvtkpi?$'VGOR'^'YQTMURCEG'$"
1@
"">cff"pcog?$fghRcemciguYqtmkpiEqr{Rcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^VgttcuqhvRcemcigu$"
1@
"">cff"pcog?$enkgpvWpkvEqpvgpvRcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^EnkgpvWpkvUte$"1@
"">cff"pcog?$uqwtegEqpvtqnCwvjRcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^Uxp$"1@
>cff"pcog?$gncuvkeugctejEtgfgpvkcnu$"eqppgevkqpUvtkpi?$Wugt?]Vjg"
```

```
GncuvkeUgctej"wugt"pcog_="Rcuuyqtf?]Vjg"GncuvkeUgctej"wugt"rcuuyqtf_=$"
1@
>1eqppgevkqpUvtkpiu@
```

You can see the database server name (Data Source) in the authorization window while connecting to the server using Microsoft SQL Server Management Studio (Fig. 6).

Fig. 6 SQL server authorization window



The (Initial Catalog) database name should match the [Database] field value that you specified when restoring database (Fig. 2).

The Integrated Security authentication based on the SPPI interface) is used by default to connect Creatio to the database server. To ensure successful connection to the database, it is necessary to specify the Windows user under which the connection to the database server will be performed.

If you want to log in to the MS SQL server with the user's login and password, you need to modify the ConnectionStrings.config file located in the Creatio site root folder. Replace the Integrated Security=SSPI variable with the UserID and Password variables in the database connection string (add name="db"):

```
>cff"pcog?$fd$"eqppgevkqpUvtkpi?$Fcvc"Uqwteg?VUY^OUUSN4236="
Kpkvkcn"Ecvcnqi?90320403638aUcnguGpvgtrtkugaFgoq="
Rgtukuv"Ugewtkv{"Kphq?Vtwg="OwnvkrngCevkxgTguwnvUgvu?Vtwg="
Wugt"KF?Uwr="Rcuuyqtf?rcuuyqtf="Rqqnkpi"?"vtwg="Ocz"Rqqn"Uk|g"?"322="
Cu{pe"?"vtwg$"1@
```

In the case of using the login and password, it is also necessary to create a login and password for corresponding user on the MS SQL server.

Specify Oracle Database connection strings

Open the ConnectionStrings.config file in a text editor and specify the connection parameters (connectionString) for the restored Oracle database (name="db") as well as Redis Server (name="redis").

Under name="db", specify the Oracle server network address ([Database server name]), [Oracle service name], name of the restored database ([Schema name]) and password ([Schema password]).

```
>Azon"xgtukqp?$302$"gpeqfkpi?$wvh/:$A@
>eqppgevkqpUvtkpiu@
```

```
"">cff"pcog?$fd$"eqppgevkqpUvtkpi?$Fcvc"Uqwteg?*FGUETKRVKQP"?
"*CFFTGUUaNKUV"?"*CFFTGUU"?"*RTQVQEQN"?"VER+*JQUV"?"]Fcvcdcug"ugtxgt"
pcog_+*RQTV"?"3743+++"*EQPPGEVaFCVC"?"*UGTXKEGaPCOG"?"]Qtceng"ugtxkeg
"pcog_+"*UGTXGT"?"FGFKECVGF+++=Wugt"Kf?]Uejgoc"pcog_=Rcuuyqtf?]Uejgoc
"rcuuyqtf_=Uvcvgogpv"Ecejg"Uk|g"?"522$"1@
"">cff"pcog?$tgfku$"eqppgevkqpUvtkpi?$jquv?]Eqorwvgt"pcog_=fd?]Tgfku"
FD
"pwodgt_=rqtv?859;=
oczTgcfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
"">cff"pcog?$fghTgrqukvqt{Wtk$"eqppgevkqpUvtkpi?$$"1@
"">cff"pcog?$fghYqtmkpiEqr{Rcvj$"eqppgevkqpUvtkpi?$'VGOR'^'YQTMURCEG'$"
1@
"">cff"pcog?$fghRcemciguYqtmkpiEqr{Rcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^VgttcuqhvRcemcigu$"
1@
"">cff"pcog?$enkgpvWpkvEqpvgpvRcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^EnkgpvWpkvUte$"1@
"">cff"pcog?$uqwtegEqpvtqnCwvjRcvj$
"eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'YQTMURCEG'^Uxp$"1@
>1eqppgevkqpUvtkpiu@
```

Specify PostgreSQL connection strings

Edit the ConnectionStrings.config file that is located in the root folder of Creatio. Specify the connection parameters (connectionString) for the restored database (name="db") as well as Redis Server (name="redis").

```
>Azon"xgtukqp?$302$"gpeqfkpi?$wvh/:$A@
>eqppgevkqpUvtkpiu@
"">cff"pcog?$fd$"eqppgevkqpUvtkpi?$Ugtxgt?]Etgcvkq"fcvcdcug"ugtxgt"
pcog_=Rqtv?]Fcvcdcug"ugtxgt"rqtv_=Fcvcdcug?]Fcvcdcug"pcog_=Wugt"
KF?]RquvitgUSN"rwdnke"wugt"hqt"eqppgevkpi"vq"vjg"Etgcvkq"
fcvcdcug_=rcuuyqtf?]RquvitgUSN"rwdnke"wugt"rcuuyqtf_=Vkogqwv?722="
EqoocpfVkogqwv?622=OczRqqnUk|g?3246=$"1@
"">cff"pcog?$tgfku$"eqppgevkqpUvtkpi?$jquv?]Eqorwvgt"pcog_=fd?]Tgfku"
FD"pwodgt_=rqtv?859;=oczTgcfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
"">cff"pcog?$tgfkuUgpvkpgn$"
eqppgevkqpUvtkpi?$ugpvkpgnJquvu?nqecnjquv<485:2.nqecnjquv<485:3.nqecn
jquv<485:4=ocuvgtPcog?o{ocuvgt=uecpHqtQvjgtUgpvkpgnu?hcnug=fd?3=oczTg
cfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
"">cff"pcog?$fghRcemciguYqtmkpiEqr{Rcvj$"
eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'CRRRQQNKFGPVKV['^'YQTMURCEG'^
VgttcuqhvRcemcigu$"1@
"">cff"pcog?$vgorFktgevqt{Rcvj$"
eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'CRRRQQNKFGPVKV['^'YQTMURCEG'^
$"1@
"">cff"pcog?$uqwtegEqpvtqnCwvjRcvj$"
eqppgevkqpUvtkpi?$'VGOR'^'CRRNKECVKQP'^'CRRRQQNKFGPVKV['^'YQTMURCEG'^
Uxp$"1@
"">cff"pcog?$gncuvkeugctejEtgfgpvkcnu$"eqppgevkqpUvtkpi?$Wugt?]Vjg"
GncuvkeUgctej"wugt"pcog_="Rcuuyqtf?]Vjg"GncuvkeUgctej"wugt"rcuuyqtf_=$"
```

```
1@
"">cff"pcog?$kphnwz$"eqppgevkqpUvtkpi?$wtn?jvvr<113202090383<5257;="
wugt?="rcuuyqtf?="dcvejKpvgtxcnOu?7222$"1@
>1eqppgevkqpUvtkpiu@
```

Configure Web.config for Oracle Database

When deploying an Oracle-based Creatio application, edit the Web.config file located in the Creatio website root folder:

1. In the general parameter of the <db> block, change the value of the currentSchemaName attribute to the schema name that is specified in ConnectionStrings.config:

   ```
   >fd@
   """">igpgtcn"
   ugewtkv{GpikpgV{rg?$Vgttcuqhv0FD0Qtceng0QtcengUgewtkv{Gpikpg."
   Vgttcuqhv0FD0Qtceng$"
   gzgewvqtV{rg?$Vgttcuqhv0FD0Qtceng0QtcengGzgewvqt."Vgttcuqhv0FD0Qtceng$
   "kuEcugKpugpukvkxg?$vtwg$"oczCpukLqkpEqwpv?$2$
   "gpikpgV{rg?$Vgttcuqhv0FD0Qtceng0QtcengGpikpg."Vgttcuqhv0FD0Qtceng$
   "ogvcGpikpgV{rg?$Vgttcuqhv0FD0Qtceng0QtcengOgvcGpikpg.
   "Vgttcuqhv0FD0Qtceng$
   "ogvcUetkrvV{rg?$Vgttcuqhv0FD0Qtceng0QtcengOgvcUetkrv.
   "Vgttcuqhv0FD0Qtceng$"
   v{rgEqpxgtvgtV{rg?$Vgttcuqhv0FD0Qtceng0QtcengV{rgEqpxgtvgt.
   "Vgttcuqhv0FD0Qtceng$"eqppgevkqpUvtkpiPcog?$fd$
   "dkpct{RcemcigUk|g?$326:798$"wugQtfgtPwnnuRqukvkqp?$vtwg$
   "ewttgpvUejgocPcog?$]Qtceng"FD"uejgoc"pcog_$"
   oczGpvkv{UejgocPcogNgpivj?$52$"1@
   >1fd@
   ```

2. Make sure that the 4.112.1.2 library version is specified.

   ```
   >u{uvgo0fcvc@
   """""""">FdRtqxkfgtHcevqtkgu@
   """""""""""">tgoqxg"kpxctkcpv?$Qtceng0FcvcCeeguu0Enkgpv$"1@
   """""""""""">cff"pcog?$Qtceng"Fcvc"Rtqxkfgt"hqt"0PGV$
   "kpxctkcpv?$Qtceng0FcvcCeeguu0Enkgpv$"fguetkrvkqp?$Qtceng"Fcvc
   "Rtqxkfgt"hqt"0PGV$"
   v{rg?$Qtceng0FcvcCeeguu0Enkgpv0QtcengEnkgpvHcevqt{."Qtceng0FcvcCeeguu.
   "Xgtukqp?603340304."Ewnvwtg?pgwvtcn."RwdnkeMg{Vqmgp?:;d6:5h64;e69564$1
   @
   """""""">1FdRtqxkfgtHcevqtkgu@
   """">1u{uvgo0fcvc@
   ```

3. Specify the quartz.dataSource.SchedulerDb.provider key value in the <quartz> block:

   ```
   >cff"mg{?$swctv|0fcvcUqwteg0UejgfwngtFd0rtqxkfgt$"xcnwg?$QtcengQFR/
   3345/62$"1@
   ```

4. Save the changes.

Enable required Windows components

Make sure that you install the following components on the web server before you create and set up a website:

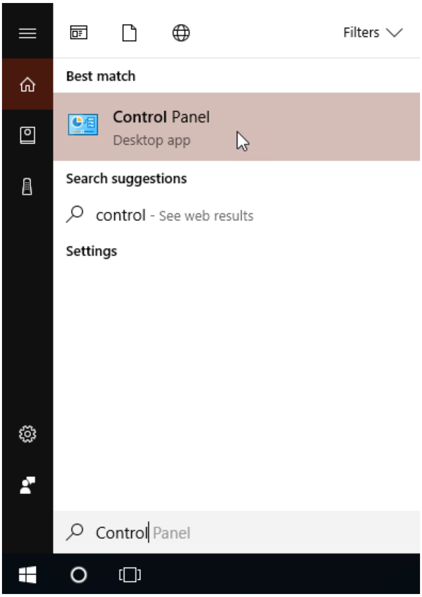
- Windows components. Note that the Microsoft Visual C++ 2010 component is required.
- Web Server IIS components.

COMPONENT	COMPONENT ITEMS
Common HTTP Features	Static Content Default Document HTTP Errors HTTP Redirection
Application Development	ASP.Net .Net extensibility ISAPI extensions ISAPI Filters WebSocket Protocol
Microsoft .Net framework 3.5.1	Windows Communication Foundation HTTP Activation Windows Communication Foundation Non-HTTP Activation
Microsoft .Net Framework 4.7 Advanced Services and up (Windows 8, Windows 10, Windows Server 2012, Windows Server 2016).	ASP.NET 4.6.2 or 4.7; WCF services HTTP Activation Message Queuing (MSMQ) Activation Named Pipe Activation TCP Activation TCP Port Sharing
Health and Diagnostics:	HTTP Logging Logging Tools Request Monitor Custom Logging
Security	Basic Authentication Request Filtering IP and Domain Restriction

To check the availability of the needed components:

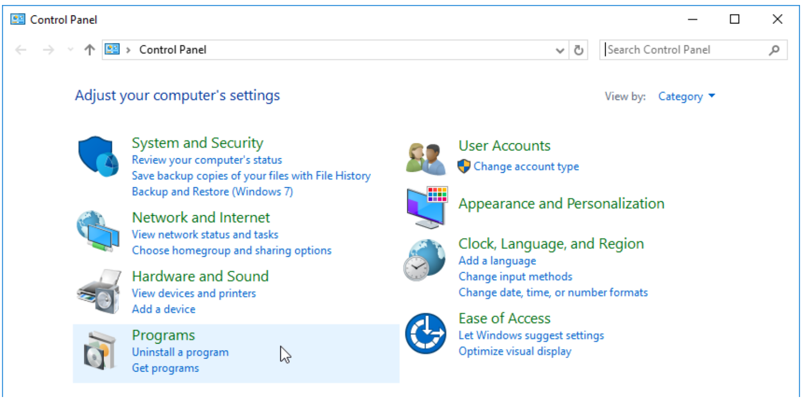
1. Enter the “control panel” in the [Start] menu and select the [Control Panel] (Fig. 7).

Fig. 7 The [Control Panel] section in the [Start] menu



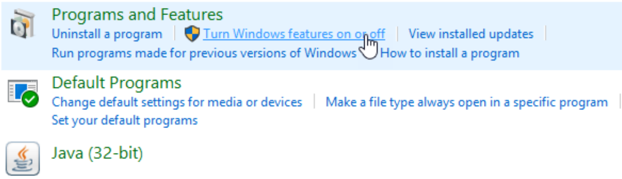
2. Select the [Programs] option in the opened window (Fig. 8).

Fig. 8 The [Programs] menu



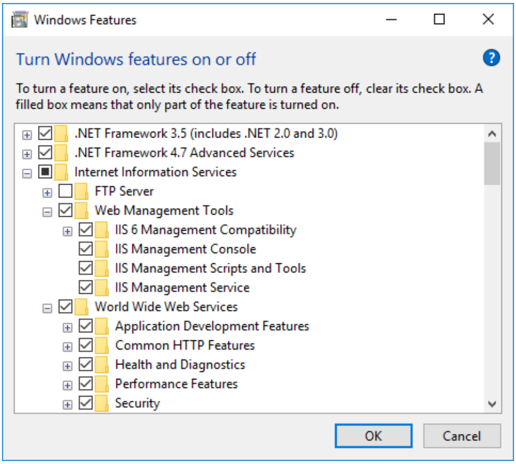
3. From the [Programs and Features] menu, select the [Turn Windows features on or off] option (Fig. 9).

Fig. 9 Selecting the [Turn Windows features on or off] option



4. Select all required components in the [Windows Features] window (Fig. 10).

Fig. 10 Selecting Web Server IIS and Windows components

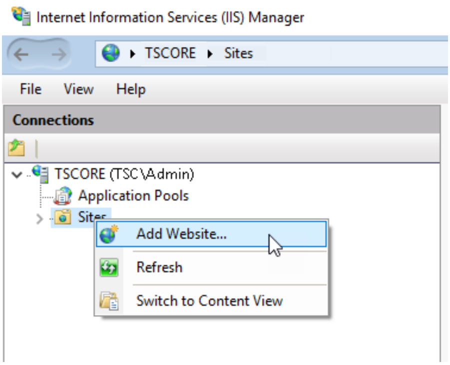


Set up application website in IIS

To create and set up a website:

1. In the IIS control window, click the [Sites] folder and select the [Add Website] option from the context menu (Fig. 11).

Fig. 11 Creating a website for Creatio application

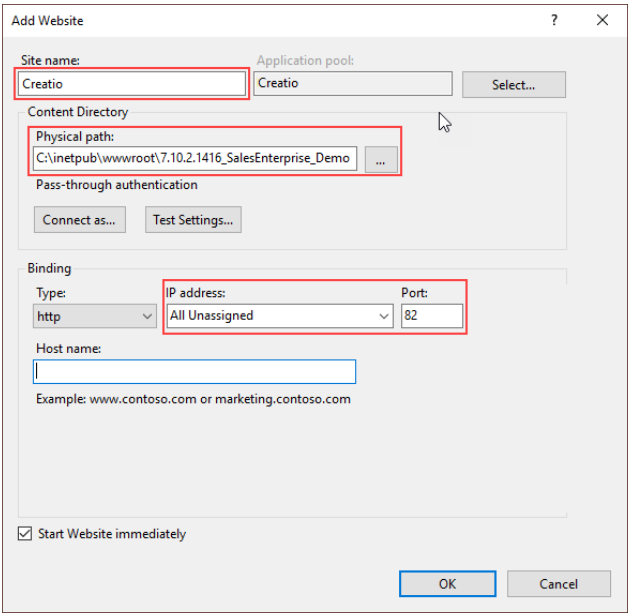


2. Specify the name of the website, the path to the root folder with Creatio files, IP address and website port (Fig. 12).

ATTENTION

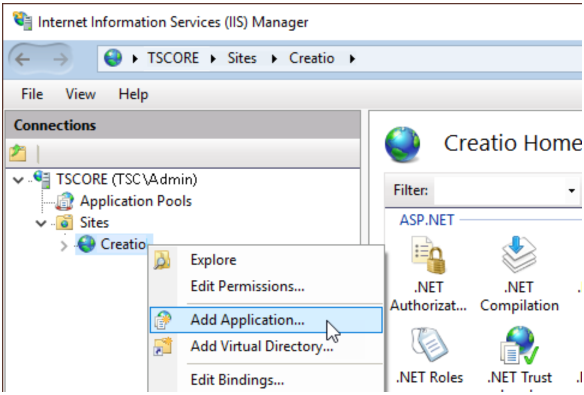
The following path C:\Inetpub\wwwroot is used by default. If needed, specify your own IP address.

Fig. 12 New website parameters window



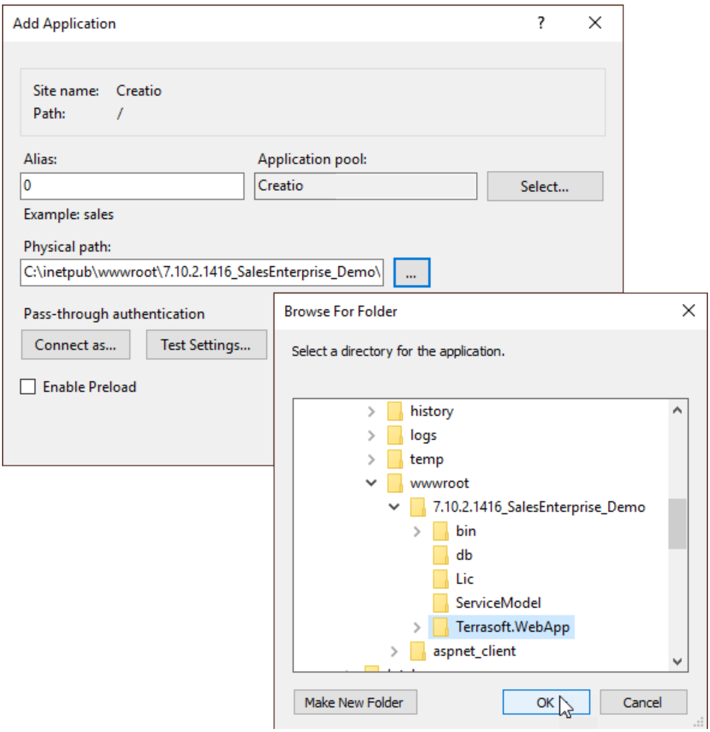
3. In the [Connections] field, click the created website and select the [Add Application] option in the menu (Fig. 13).

Fig. 13 Selecting IIS application adding command



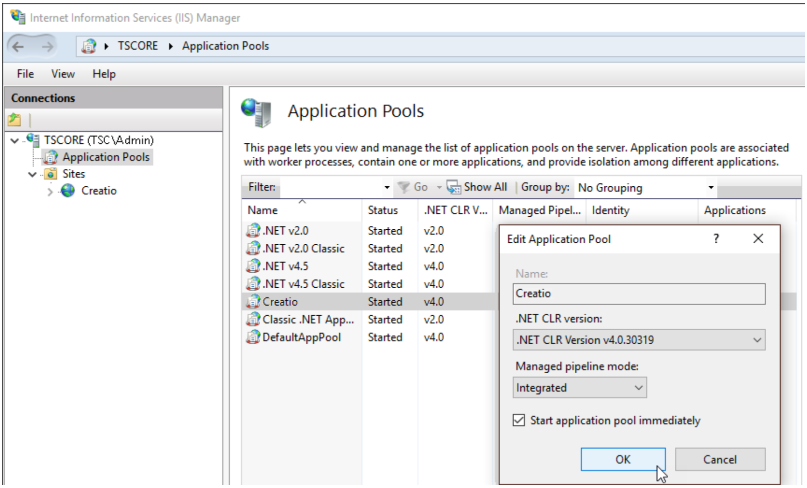
4. Specify the name of the application "0" in the [Alias] field. Specify the "Terrasoft.WEBApp" directory (Fig. 14).

Fig. 14 The application parameters selection window



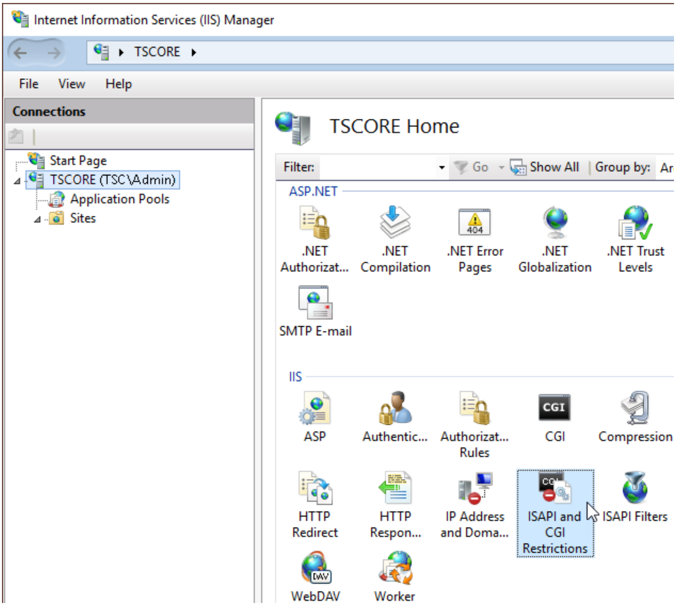
5. Go to the [Application Pools] section.
6. Select the [Creatio] pool.
7. Select the [Integrated] mode in the [Managed pipeline mode] field.
8. Specify the Asp.Net - 4.0.30319 version in the [.Net Framework version] field (Fig. 15).

Fig. 15 Applications Pools parameters input window



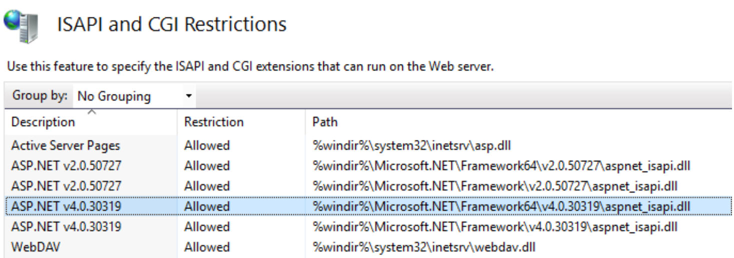
9. Check if the specified ASP.Net version is allowed. To do this:
   a. Go to the ISAPI and CGI Restrictions on the web-server level (Fig. 16).

Fig. 16 Opening ISAPI and CGI Restrictions



b. Make sure that the [Allowed] status is checked in the [Restriction] field for the used ASP.Net version (Fig. 17).

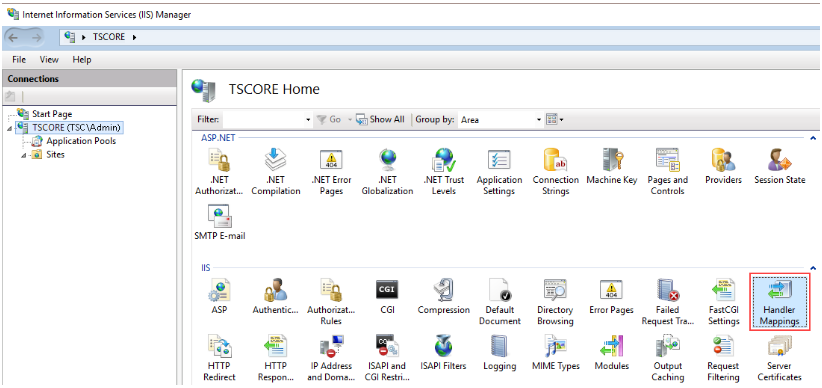
Fig. 17 Status check for the ASP.Net version used



10. Make sure that all the required permissions are active. To do this:

a. Open the Handler Mappings on the server level (Fig. 18).

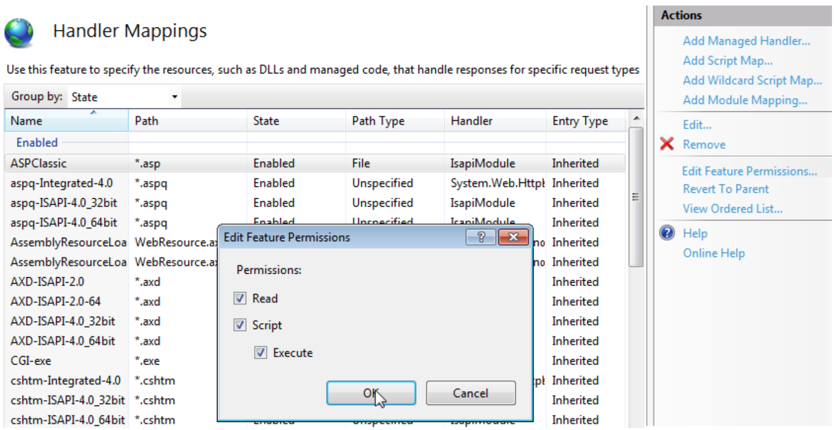
Fig. 18 Opening the Handler Mappings



b. Select the [Edit Feature Permissions] action in the [Actions] area.

c. Make sure that all the required checkboxes are selected in the [Edit Feature Permissions] window (Fig. 19).

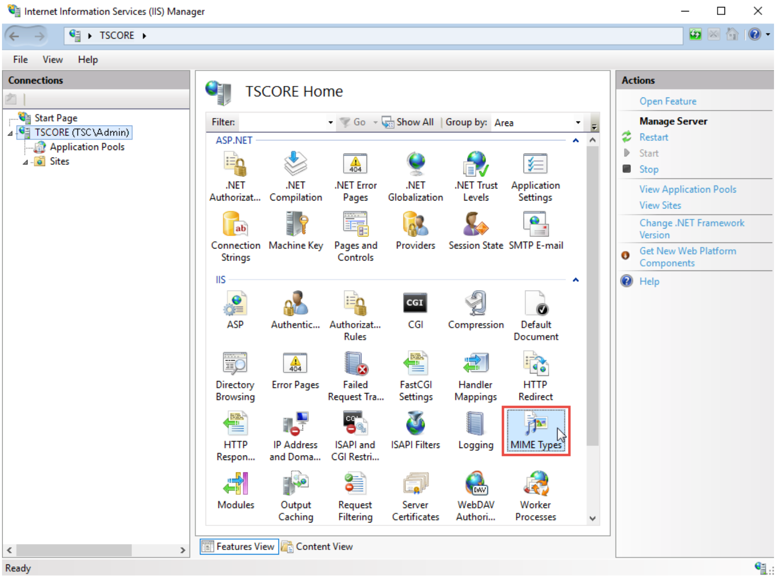
Fig. 19 Checking required parameters in the [Edit Feature Permissions] window



11. Make sure that MIME-type for the .svg files is configured in the new application. This configuration can be performed both on the level of the server (in this case it is inherited for all the applications located thereon) as well as on the level of the application. To verify:

a. Go to MIME Types on the server or application level (Fig. 20).

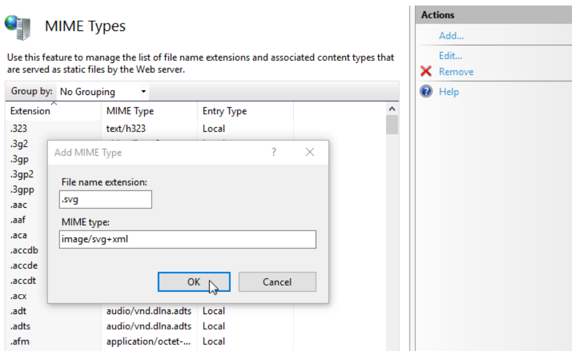
Fig. 20 Opening MIME Types



b. Make sure that configuration for .svg files is available. If the configuration is available, go to step 12.

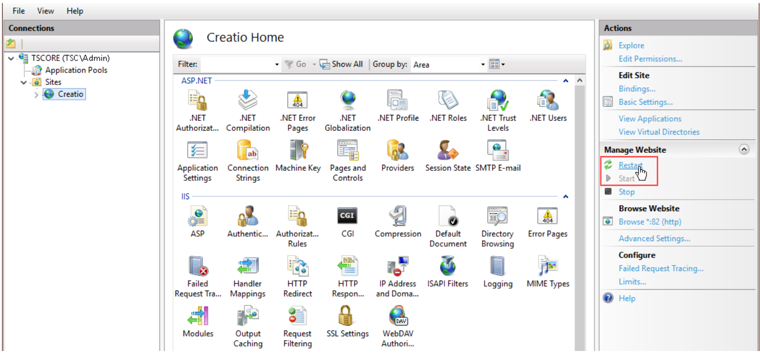
c. If configuration is not available, click [Add] in the [Actions] area. In the opened window, specify .svg and MIME-type of the data that corresponds to this extension (Fig. 21).

Fig. 21 Configuring MIME-type of the data for .svg files



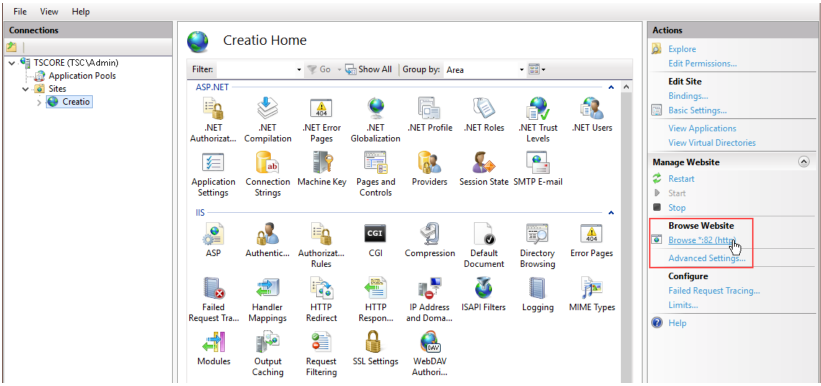
12. Restart the website with the [Restart] command on the [Manage Website] area (Fig. 22).

Fig. 22 [Restart] command at the [Manage Websites] area



13. Open the site with the address or use the [Browse] command (Fig. 23). Make sure that the application authorization page is displayed.

Fig. 23 Selecting the [Browse] command in the website [Actions] area



NOTE

To log in to a newly deployed application, use the default Supervisor user account. It is highly recommended to change the Supervisor password immediately. Login: Supervisor; Password: Supervisor.

14. To enable additional interface language:
    - Go to the [Languages] section in the system designer.
    - Select the needed language and click [Open].
    - Select the [Active] and [Use by default] checkboxes on the opened page. Save the changes.
15. In system designer, click [System settings] and change the [Order of first/last names] system setting value to "Last name, First name [Middle name]". It is necessary to correctly display contact names per separate columns: [Last name], [First name], [Middle name].

NOTE

To enable a language, the user who has run the IIS application pool needs to have access permissions to read, edit and delete application files and content subordinate catalogs (catalog .\Terrasoft.WebApp\conf).

SEE ALSO

- Set up websockets
- Switch Creatio website to HTTPS
- Additional setup
- Creatio setup FAQ

Set up websockets

The websocket protocol (WebSockets) is used in Creatio to run custom processes, notifications, and for integration with telephony. It is important to enable the websockets and configure the applications on the server for all system functions to operate correctly.

ATTENTION

If you use proxy server in your local network, you will need to set up the websocket protocol. You can find the setup instruction in proxy server documentation.

This article describes the process of setting up Creatio configuration files for the correct operation of websockets.

NOTE

Installation of the components providing WebSockets protocol operation on the server is covered in a separate article.

Configuration can be performed in two ways:

- Windows Server 2012, Windows Server 2016 or Windows 8/10 with the installed Internet Information Services (IIS) version 8 or higher is deployed on the application server. Configuration files are set up in Creatio base version by default and you only need to perform settings on the server side. However, if you deploy and set up Creatio for the first time, we recommend checking configuration file settings to make sure the websockets work correctly. Read more >>>

  To use the protected HTTPS connection, you need to perform additional settings. Read more >>>
- If Creatio is deployed on Windows Server 2008 or older, you need to perform additional configuration of components which support port, IIS and WebSockets protocol operation. Read more >>>

  When deploying Creatio on Windows Server 2008 or older, you cannot use the advantages of HTTPS.

CONTENTS

Check websocket settings for Windows Server 2012 or Windows server 2016

To check websocket settings in Creatio deployed on a server running on Windows Server 2012 or Windows Server 2016:

1. Make sure that inheritance is disabled in the Web.config file located at Creatio root directory. The query length limits and execution time should also be specified.

```
>nqecvkqp"rcvj?$0$"kpjgtkvKpEjknfCrrnkecvkqpu?$hcnug$@
"""">u{uvgo0ygd@
""""""000
"""""">jvvrTwpvkog"oczTgswguvNgpivj?$95622$"gzgewvkqpVkogqwv?$4::22$"
vctigvHtcogyqtm?$609$"1@
```

2. In the Web.config file located at the [Path to Creatio root folder]\Terrasoft.WebApp\: check that the "Terrasoft.Messaging.MicrosoftWSService.MicrosoftWSService, Terrasoft.Messaging.MicrosoftWSService" default value is specified for the wsService type and make sure that the port for connecting clients, the HTTP query execution time and length limits, as well as calling of additional modules are indicated.

ATTENTION

We recommend using the "MicrosoftWSService" (instead of the "SuperWSService") value for Microsoft Windows Server 2012.

NOTE

The portForClientConnection="0" value means using the web-application port.

```
>yuUgtxkeg"
v{rg?$Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg0OketquqhvYUUgtxkeg.
Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg$"gpet{rvgf?$hcnug$"
rqtvHqtEnkgpvEqppgevkqp?$2$"1@
000
>nqecvkqp"rcvj?$0$"kpjgtkvKpEjknfCrrnkecvkqpu?$hcnug$@
"""">u{uvgo0ygd@
"""""000
"""""">jvvrTwpvkog"oczTgswguvNgpivj?$324622$"gzgewvkqpVkogqwv?$4::22$
"vctigvHtcogyqtm?$60804$"1@
""">jvvrJcpfngtu@
""""""""000
"""""""">cff"xgtd?$IGV$"rcvj?$,XkgyOqfwng0curz0cujz$"
v{rg?$Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg0YUJcpfngt.
Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg$"1@
000
>u{uvgo0ygdUgtxgt@
""""000
"""">jcpfngtu@
""""""000
"""""">cff"pcog?$YUJcpfngt$"xgtd?$,$"rcvj?$,XkgyOqfwng0curz0cujz$
v{rg?$Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg0YUJcpfngt."
Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg$"1@
```

NOTE

You can check the WebSockets connection via browser built-in Developer Tools. If the connection is successful, the console will contain a record like: WebSocket-connection opened for url:ws://demo.creatio.com/0/Nui/ViewModule.aspx.ashx

Configure websockets for Windows Server 2008

To set up websockets in the application deployed on Windows Server 2008 or earlier, open the Web.config file located in the [Path to the root Creatio directory]\Terrasoft.WebApp\ directory. The wsService configuration block should look like:

```
>yuUgtxkeg"v{rg?$Vgttcuqhv0Oguucikpi0UwrgtYUUgtxkeg0UwrgtYUUgtxkeg.
Vgttcuqhv0Oguucikpi0UwrgtYUUgtxkeg$"fghcwnvRqtv?$4233$"
gpet{rvgf?$hcnug$"rqtvHqtEnkgpvEqppgevkqp?$66532$
oczEqppgevkqpPwodgt?$322$"engctKfngUguukqp?$hcnug$
engctKfngUguukqpKpvgtxcn?$342$"1@
```

Note that the defaultPort value must be unique and should not coincide with other port values for all server applications.

If Creatio is deployed on Windows Server 2008, and Internet Explorer is used to work with the system, you need to provide access to cookie session from the JavaScript. To do this, change the httpOnlyCookies value in the Web.config file.

```
Á
>jvvrEqqmkgu"jvvrQpn{Eqqmkgu?$hcnug$"1@
Á
```

Check port availability

To check port availability, enter the following into the Windows command line:

```
vgnpgv"Çc"]jquv"]rqtv__
```

Specify the web address of the deployed Creatio application as host and the default value of the Web.config file as port. For example:

```
vgnpgv"/c"fgoq0etgcvkq0eqo"4233
```

Websocket setup FAQ

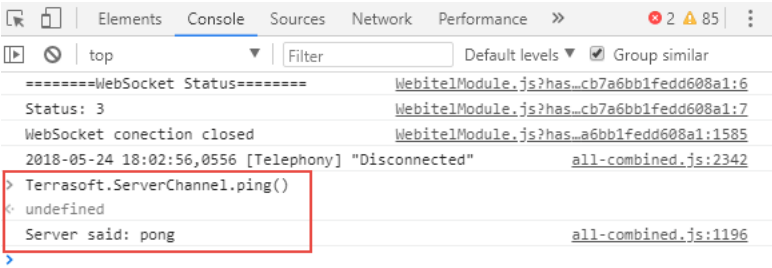
- How can I check the correctness of websocket setup?
- I configured websockets, but they do not work. Why?

How can I check the correctness of websocket setup?

There are several quick ways to check the correctness of websocket setup:

- Use the Excel data import function. If websockets are configured correctly, the data import will be performed.
- Enter the following command into the command line of web browser developer console: Terrasoft.ServerChannel.ping(). If websockets are configured correctly, the sever will return a pong response (Fig. 24). If any other response is returned, check the correctness of websocket setup.

Fig. 24 – Websocket setup verification via the developer console of a web browser



- Manually run the business process containing the start timer and the auto-generated page elements. If the auto-generated page opens, the websockets are configured correctly.

NOTE

More information about business process elements is covered in a separate article.

I configured websockets, but they do not work. Why?

If websockets do not work after the setup, check:

- Whether all the WebSockets protocol components are configured. Read more >>>
- Whether the used ports are available. Read more >>>
- Whether the protocol for using websockets with a proxy server is installed, if it is used for your local network.
- Settings of antivirus and Firewall. If you cannot disable these programs on the server, add the IP-address and your Creatio site port to the list of exceptions for incoming and outgoing flows.
- Available web browser extensions and add-ons, including VPN. Extensions may block websocket work.

SEE ALSO

- Switch Creatio website to HTTPS
- Additional setup
- Creatio setup FAQ

Switch Creatio website from HTTP to HTTPS

The HTTPS protocol ensures secure connection between a client and a web service. Switching from HTTP to HTTPS is recommended to increase system security and enable additional services, such as WebRTC support in Webitel. Please note that this article refers only to on-site applications. To switch to HTTPS, you need to change several options of the website in IIS and edit the Web.config file. Creatio cloud uses secure connection by default.

NOTE

You will not be able to use the advantages of HTTPS if Creatio application is deployed on Windows Server 2008.

CONTENTS

- IIS setup

- Web.config setup

IIS setup

Before configuring HTTPS, do the following:

- Obtain a digital certificate from the certification center in PFX format;

  NOTE

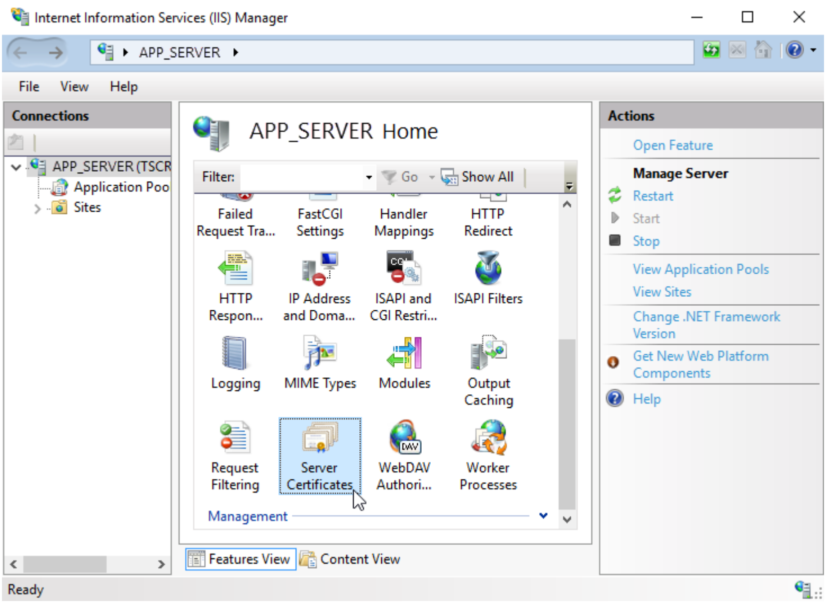
  If you are using a self-signed certificate, Creatio mobile application will not be able to connect to the Creatio site due to the security policies of mobile applications.

- Set up websockets for the correct operation of all system components;
- Additionally, check the list of installed IIS components to avoid errors during Creatio setup and operation.

The received digital certificate must be loaded into the server certificate storage:

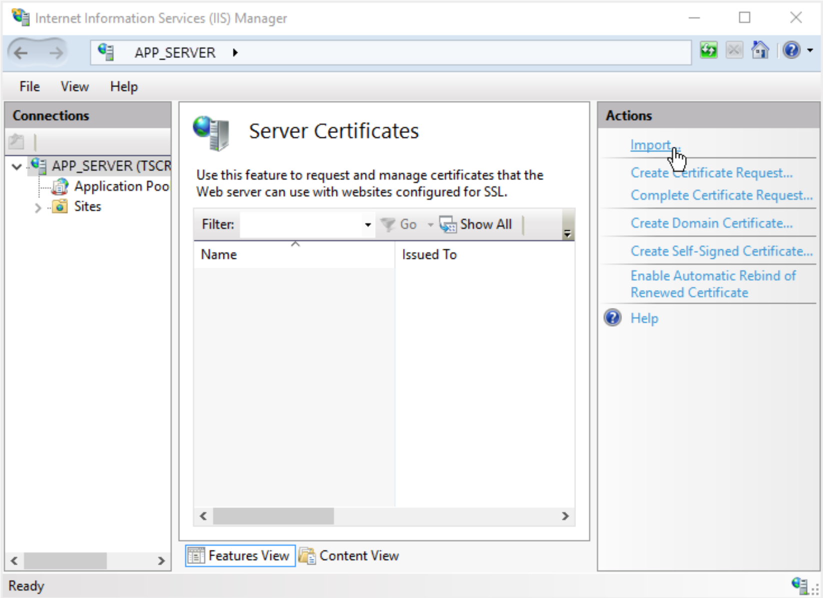
1. Open Internet Information Services (IIS) Manager.
2. In the main IIS window, double-click the [Server Certificates] detail (Fig. 25).

   Fig. 25 Selecting the [Server Certificates] detail

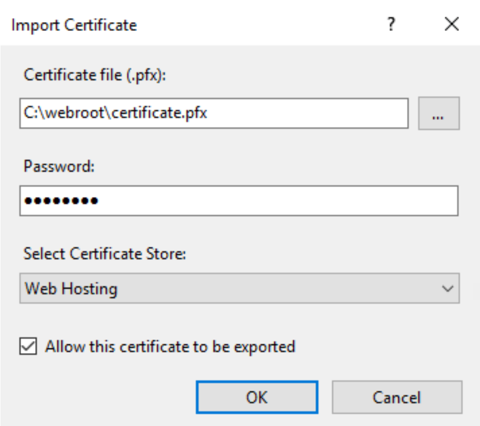
3. In the [Server Certificates] window, click the [import] link in the action menu to the right (Fig. 26).

Fig. 26 Opening the [Import] window



4. In the import dialog box, specify:
    a. Path to the import file hosted on the server
    b. Password (if required)
    c. Certificate storage (Fig. 27)

Fig. 27 Certificate import window

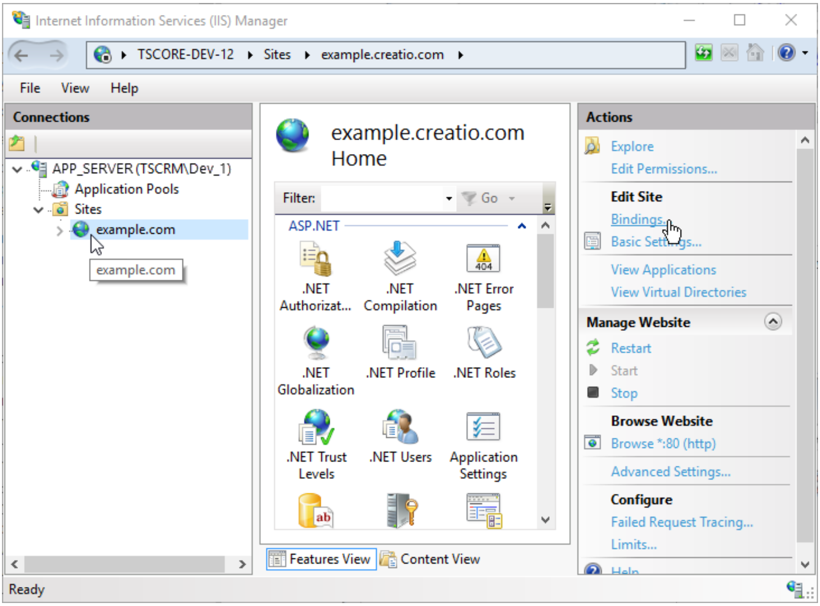


5. Click [OK] to import the certificate.

Next, connect the imported certificate to the bCreatio application:

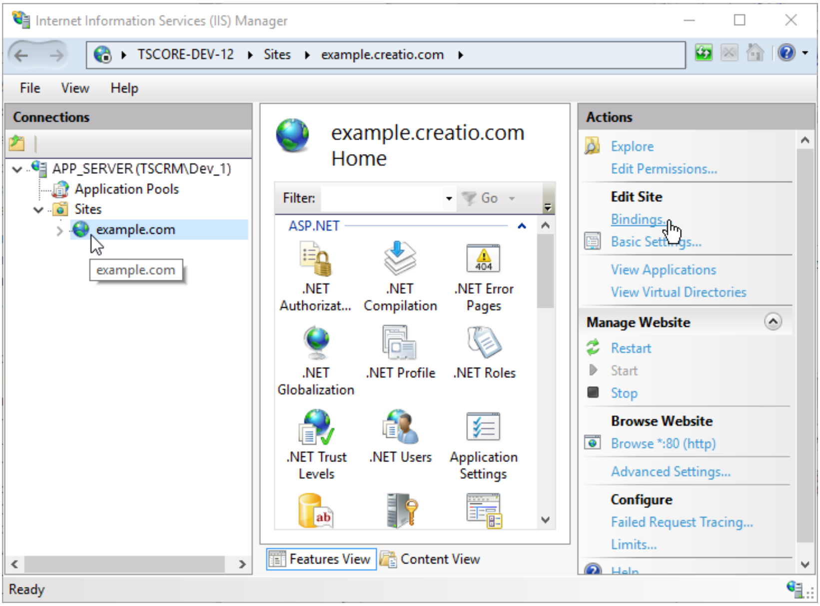
1. In the IIS window, go to the application website by clicking its name in the left [Connections] menu (Fig. 28).

Fig. 28 Selecting the Creatio website in the IIS window



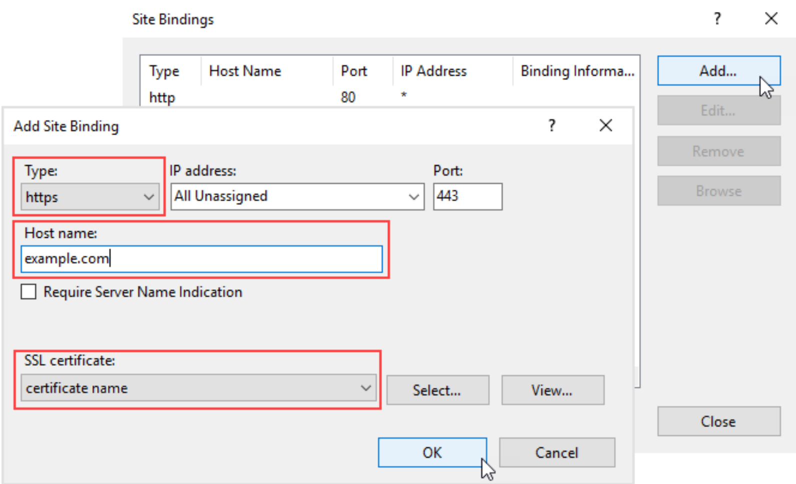
2. Click the [Bindings] link in the action menu (Fig. 29).

Fig. 29 Selecting website bindings



3. In the website bindings menu, click [Add] and add a new binding. In the [Add Site Binding] window, specify:
   a. Type "https "
   b. Website address
   c. SSL certificate (Fig. 30).

Fig. 30 Binding a certificate to the Creatio website



4. Click [OK] to confirm the settings.

Now the certificate is successfully bound to the web application.

Web.config setup

After adding the certificate, you need to make changes to the Web.config configuration file, located in the root directory of the Creatio website.

1. At the end of the file, find:

```
>dgjcxkqtu"
eqphkiUqwteg?$Vgttcuqhv0YgdCrr^UgtxkegOqfgn^jvvr^dgjcxkqtu0eqphki$"1@
>dkpfkpiu"
eqphkiUqwteg?$Vgttcuqhv0YgdCrr^UgtxkegOqfgn^jvvr^dkpfkpiu0eqphki$"1@
```

2. Change paths from “http” to “https”:

```
>dgjcxkqtu"
eqphkiUqwteg?$Vgttcuqhv0YgdCrr^UgtxkegOqfgn^jvvru^dgjcxkqtu0eqphki$"1@
>dkpfkpiu"
eqphkiUqwteg?$Vgttcuqhv0YgdCrr^UgtxkegOqfgn^jvvru^dkpfkpiu0eqphki$"1@
```

Edit the Web.config file located in the [Path to the root website directory]\Terrasoft.WebApp\ directory.

1. Set the variable value to encrypted="true". The configuration differs depending on the operating system of the server with Creatio application.

   For Windows Server 2012 and higher, the configuration string should look as follows:

```
>yuUgtxkeg
"v{rg?$Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg0OketquqhvYUUgtxkeg.
"Vgttcuqhv0Oguucikpi0OketquqhvYUUgtxkeg$"gpet{rvgf?$vtwg$
"rqtvHqtEnkgpvEqppgevkqp?$665$"oczEqppgevkqpPwodgt?$322$
"engctKfngUguukqp?$hcnug$"engctKfngUguukqpKpvgtxcn?$342$"1@
```

2. At the end of the file, find:

```
>ugtxkegu"eqphkiUqwteg?$UgtxkegOqfgn^jvvr^ugtxkegu0eqphki$"1@
```

3. Change the path from “http” to “https”:

```
>ugtxkegu"eqphkiUqwteg?$UgtxkegOqfgn^jvvru^ugtxkegu0eqphki$"1@
```

Save the configuration files.

Restart the application in the IIS and then go to your Creatio website. If all is done right, then in the address bar you will see "https://" before the web address of the application.

SEE ALSO

- Additional setup
- Creatio setup FAQ

Deploying Creatio .NET Core application on Linux

The following software components are required to deploy a .NET Core Creatio application on Linux:

1. Database management system (DBMS). PostgreSQL 11 and up are supported.
2. .NET Core version 3.1
3. GDI+ compatible API for non-Windows operating systems
4. Development libraries and header files for GNU C
5. Redis Server 3.0 and up

The general procedure for Creatio application on-site deployment is as follows:

- Prepare Creatio setup files. Read more >>>
- Deploy Creatio database server. Read more >>>
- Deploy Creatio caching server (Redis). Read more >>>
- Modify the ConnectionStrings.config file. Read more >>>
- Deploy Creation application server. Read more >>>
- If you are going to run Creatio from the local machine directly:
    - Install .NET Core, GDI+ compatible API for non-Windows operating systems, and Development libraries and header files for GNU C. Read more >>>
    - Run Creatio application server. Read more >>>
- If you are going to run Creatio from a Docker container:
    - Make Redis accessible from the Docker container. Read more >>>
    - Install Docker. Read more >>>
    - Create a Dockerfile. Read more >>>
    - Build and run Docker image. Read more >>>

Please note that the specifics of the deployment procedure may vary, depending on the chosen DBMS.

> NOTE
> The procedure for running PostgreSQL in Docker is covered in the Docker documentation.

SEE ALSO

- Set up Creatio caching server
- Set up Creatio database server
- Deploying Creatio .NET Framework application on Windows

Prepare Creatio setup files

Creatio setup files come as a zip archive. To unzip the archive, use the unzip command.

```
wp|kr"/f"1rcvj1vq1crrnkecvkqp1fktgevqt{1"creatio_archive_name.zip
```

/path/to/application/directory/ – the directory to which Creatio setup files will be unzipped. We recommend using an empty directory. If you copied the setup archive to an empty directory, unzip the setup files to the same directory:

```
wp|kr"creatio_archive_name.zip
```

creatio_archive_name.zip – the name of the archive with Creatio setup files.

NOTE

If running the unzip command results in the "command not found" error, install the unzip package first:

```
uwfq"crv/igv"kpuvcnn"wp|kr
```

Next step: Deploy Creatio database server via PostgreSQL on Linux

Deploy Creatio database server via PostgreSQL on Linux

Use one of two database configurations to deploy Creatio:

- Use a remote DBMS (recommended)
- Use a local PostgreSQL server.

If you already have a PostgreSQL server running on the intended machine, skip to step II.

If you have set up sysadmin (with privileges to log in, create and modify databases) and public (unprivileged) user roles, skip to step III.

I. Install PostgreSQL

PostgreSQL is unavailable in most standard repositories. To install PostgreSQL on Linux:

1. Log in as root:

   ```
   uwfq"uw
   ```

2. Add the PostgreSQL repository:

   ```
   gejq"/g"$fgd"jvvr<11crv0rquvitgusn0qti1rwd1tgrqu1crv1"&*nudatgngcug"/
   ue+/rifi"ockp$"@"1gve1crv1uqwtegu0nkuv0f1rifi0nkuv
   ```

3. Import the signing key of the PostgreSQL repository:

   ```
   yigv"//swkgv"/Q"/"jvvru<11yyy0rquvitgusn0qti1ogfkc1mg{u1CEEE6EH:0cue"~"
   crv/mg{"cff"/
   ```

4. Update the package lists:

   ```
   crv/igv"wrfcvg
   ```

5. Install PostgreSQL:

   ```
   crv/igv"kpuvcnn"/{"rquvitgusn/34
   ```

6. Log out from your root session:

   ```
   gzkv
   ```

NOTE

High-availability PostgreSQL configurations have not been tested with Creatio. Please refer to the PostgreSQL documenation for details on PostgreSQL clustering.

II. Create PostgreSQL user

A fresh installation of PostgreSQL is not ready for deploying Creatio immediately. If you plan to use a fresh installation of PostgreSQL, you need to create a user that can log in to the database using a password and has sufficient privileges to create and update a database. By default, no such user will be available.

We recommend to create two database users in PostgreSQL:

- A user with the “sysadmin” role, who has maximum access privileges on the database server level. This user will restore the Creatio database from a backup file and assign access permissions.

- A user with the “public” role, who will be the owner of the Creatio database but whose permissions are otherwise limited. You will need this user to set up a connection to the restored Creatio database.

  NOTE

  We recommend using “public” users with PostgreSQL authentication for connections to the Creatio database.

To create PostgreSQL users:

1. Log in as postgres:

   ```
   uwfq"uw"/"rquvitgu
   ```

2. Open PostgreSQL shell:

   ```
   rusn
   ```

3. Create a sysadmin user:

   ```
   ETGCVG"WUGT"riau{ucfokp=
   ```

   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server. This user will restore the Creatio database from a backup file and assign access permissions.

4. Make pg_sysadmin a system administrator:

   ```
   CNVGT"TQNG"riau{ucfokp"YKVJ"UWRGTWUGT=
   ```

5. Allow pg_sysadmin to log in:

   ```
   CNVGT"TQNG"riau{ucfokp"YKVJ"NQIKP=
   ```

6. Set a password for pg_sysadmin:

   ```
   CNVGT"TQNG"riau{ucfokp"YKVJ"RCUUYQTF")riau{urcuuyqtf)=
   ```

   - pg_syspassword – sysadmin user password for connecting to the PostgreSQL server.

7. Create a public user:

   ```
   ETGCVG"WUGT"riawugt=
   ```

   - pg_user – public user for connecting to the PostgreSQL server. You will need this user to set up a connection to the restored Creatio database.

8. Allow pg_user to log in:

   ```
   CNVGT"TQNG"riawugt"YKVJ"NQIKP=
   ```

9. Set a password for pg_user:

   ```
   CNVGT"TQNG"riawugt"YKVJ"RCUUYQTF")riarcuuyqtf)=
   ```

   - pg_password – public user password for connecting to the PostgreSQL server.

10. Exit the PostgreSQL shell:

    ```
    ^s
    ```

11. Log out from your postgres session:

    ```
    gzkv
    ```

III. Restore PostgreSQL database

To restore a PostgreSQL database from a backup file, you will need psql and pg_restore utilities. Both are part of the postgresql-client-common package.

If you install postgresql-12 locally using apt-get, APT will install postgresql-client-common as a dependency for postgresql-12.

If you plan to use a remote PostgreSQL database without installing the PostgreSQL DBMS on your server, install the postgresql-client-common package manually by running:

```
uwfq"crv/igv"kpuvcnn"rquvitgusn/enkgpv/eqooqp
```

To restore the Creatio database from a backup file:

1. Enter DB connection password in the environment variable:

   ```
   gzrqtv"RIRCUUYQTF?riau{urcuuyqtf
   ```

   - pg_syspassword – sysadmin user password for connecting to the PostgreSQL server.

2. Create a database where the backup data will be restored:

   ```
   rusn"//jquv?riaugtxgtacfftguu"//rqtv?riaugtxgtarqtv"//
   wugtpcog?riau{ucfokp"//fdpcog?riafdpcog"/e"$ETGCVG"FCVCDCUG"
   riafdpcogaetgcvkq"YKVJ"QYPGT"?"riawugt"GPEQFKPI"?")WVH:)"EQPPGEVKQP"
   NKOKV"?"/3$
   ```

   - pg_server_address – PostgreSQL server address
   - pg_server_port – PostgreSQL server port
   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server
   - pg_dbname – name of the PostgreSQL DB where the instructions will be executed

   NOTE

   If you have not created any databases yet or an attempt to connect to a database triggers the “FATAL: database "pg_dbname" does not exist” error, use the default database “template1”.

   - pg_dbname_creatio – name of the PostgreSQL DB which will host Creatio tables
   - pg_user – the "public" user who will be granted permission to use and update the Creatio database

3. If you are using AWS RDS:

   - Download the ChangeTypesOwner.sql script.
   - In the script, replace the “postgres” value with a valid Postgres username.
   - Run the updated ChangeTypesOwner.sql script.

4. Navigate to the application directory:

   ```
   ef"1rcvj1vq1crrnkecvkqp1fktgevqt{1
   ```

   - /path/to/application/directory/ – the directory with Creatio setup files.

5. Navigate to the database directory:

   ```
   ef"fd
   ```

6. Restore the database from the backup file:

   ```
   riatguvqtg"//jquv?riaugtxgtacfftguu"//rqtv?riaugtxgtarqtv"//
   wugtpcog?riau{ucfokp"//fdpcog?riafdpcogaetgcvkq"//xgtdqug"1rcvj1vq1
   fd0dcemwr
   ```

   - pg_server_address – PostgreSQL server address
   - pg_server_port – PostgreSQL server port
   - pg_sysadmin – sysadmin user for connecting to the PostgreSQL server

- pg_dbname_creatio – name of the PostgreSQL DB to insert backup tables. Use the name you specified in the "CREATE DATABASE" command on step 2.

7. Download the CreateTypeCastsPostgreSql.sql file.
8. Execute type conversion:

```
rusn"//jquv?riaugtxgtacfftguu"//rqtv?riaugtxgtarqtv"//
wugtpcog?riau{ucfokp"//fdpcog?riafdpcogaetgcvkq"//hkng?/path/to/
CreateTypeCastsPostgreSql.sql
```

- pg_server_ip – PostgreSQL server address
- pg_server_port – PostgreSQL server port
- pg_sysadmin – sysadmin user for connecting to the PostgreSQL server
- pg_dbname_creatio – name of the PostgreSQL DB where the instructions will be executed
- /path/to/CreateTypeCastsPostgreSql.sql – path to the CreateTypeCastsPostgreSql.sql file.

Previous step: Prepare Creatio setup files

Next step: Set up Creatio caching server (Redis)

Set up Creatio caching server (Redis)

Read more in the "Set up Creatio caching server (Redis) on Linux" article.

Previous step: Deploy Creatio database server via PostgreSQL on Linux

Next step: Set up the ConnectionStrings.config file

Set up the ConnectionStrings.config file

Use the following parameters in the ConnectionStrings.config file:

Db – the element that ensures connection with the database. In this element, you configure the path to the database you need to establish connection with and the method of authorization on the database server.

```
>cff"pcog?$fd$"eqppgevkqpUvtkpi?$Ugtxgt?]Fcvcdcug"ugtxgt"
cfftguu_=Rqtv?]Fcvcdcug"ugtxgt"rqtv_=Fcvcdcug?]Fcvcdcug"pcog_=Wugt"
KF?]Rwdnke"wugtÍu"pcog_=rcuuyqtf?]Rwdnke"wugtÍu"rcuuyqtf_=Vkogqwv?722="
EqoocpfVkogqwv?622=OczRqqnUk|g?3246=$"1@
```

Redis – the element that ensures interaction with the Redis server.

```
>cff"pcog?$tgfku$"eqppgevkqpUvtkpi?$jquv?]UgtxgtpcogFd?]Tgfku"FD"
pwodgt_=rqtv?859;=oczTgcfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
```

Previous step: Set up Creatio caching server (Redis)

Next step:

- Deploy Creatio .NET Core application server on Linux directly

  or
- Deploy Creatio .NET Core application server on Linux using Docker

Deploy Creatio .NET Core application server on Linux directly

To deploy Creatio application server:

- Instal .NET Core, GDI+ compatible API for non-Windows operating systems, and Development libraries and header files for GNU C. Read more >>>
- Run Creatio application server. Read more >>>

Install .NET Core and other Creatio dependencies

1. Download the packages-microsoft-prod package:

```
yigv"/s"jvvru<11rcemcigu0oketquqhv0eqo1eqphki1wdwpvw13:0261rcemcigu/
oketquqhv/rtqf0fgd"/Q"rcemcigu/oketquqhv/rtqf0fgd
```

2. Log in as root:

```
uwfq"uw
```

3. Install the downloaded package:

```
frmi"/k"rcemcigu/oketquqhv/rtqf0fgd
```

4. Update the package lists:

```
crv/igv"wrfcvg
```

5. Install the APT transport for downloading via the HTTP Secure protocol:

```
crv/igv"kpuvcnn"crv/vtcpurqtv/jvvru
```

6. Update the package lists:

```
crv/igv"wrfcvg
```

7. Install .NET Core:

```
crv/igv"kpuvcnn"fqvpgv/ufm/503
```

8. Install GDI+ compatible API for non-Windows operating systems:

```
crv/igv"kpuvcnn"/{"nkdifkrnwu
```

9. Install development libraries and header files for GNU C:

```
crv/igv"kpuvcnn"/{"nkde8/fgx
```

10. Log out from your root session:

```
gzkv
```

Run Creatio application server

To run the application:

1. Navigate to the directory with Creatio setup files:

```
ef"/path/to/application/directory/
```

2. Run the .Net Core server:

```
fqvpgv"Vgttcuqhv0YgdJquv0fnn
```

The HTTP version of the Creatio application will be available on port 5000.

The HTTPS version of the Creatio application will be available on port 5002.

> NOTE
>
> To log in to a newly deployed application, use the default Supervisor user account. It is highly recommended to change the Supervisor password immediately. Login: Supervisor; Password: Supervisor.

Previous step: Set up the ConnectionStrings.config file

SEE ALSO

- Deploy Creatio .NET Core application server on Linux using Docker

Deploy Creatio .NET Core application server on Linux using Docker

Use this deployment method to run a compartmentalized Creatio application. We assume that you have installed the Redis sever, deployed the Creatio database, and set up the ConnectionStrings.config file.

To deploy Creatio application server using Docker:

- Make Redis accessible from the Docker container. Read more >>>
- Install Docker. Read more >>>
- Create a Dockerfile. Read more >>>
- Build and run Docker image. Read more >>>

Configure Creatio caching server (Redis)

To make Redis accessible from the Docker container:

1. Open redis.conf in a text editor as root. For example, use the Nano text editor:

```
uwfq"pcpq"1gve1tgfku1tgfku0eqph
```

2. Locate the “bind 127.0.0.1 ::1” entry. Replace the entry with “bind 0.0.0.0.”
3. Save changes and exit the editor.
4. Restart the Redis server:

```
uwfq"u{uvgoevn"tguvctv"tgfku/ugtxgt
```

Install Docker

To install Docker, run

```
uwfq"crv/igv"kpuvcnn"fqemgt
```

Create a Dockerfile

To create a Dockerfile:

1. Navigate to the application root directory:

   ef"/path/to/application/directory/

   /path/to/application/directory/ – the directory with Creatio setup files.

2. Create a Dockerfile using the Nano text editor:

```
pcpq"Fqemgthkng
```

3. Then, insert the following code:

```
HTQO"oet0oketquqhv0eqo1fqvpgv1eqtg1ufm<503"CU"dcug
GZRQUG"7222"7224

TWP"crv/igv"wrfcvg"(("^
""""crv/igv"/{"//pq/kpuvcnn/tgeqoogpfu"kpuvcnn"^
""""nkdifkrnwu"^
""""nkde8/fgx"(("^
```

```
""""crv/igv"engcp"cnn"((" ^
""""to"/th"1xct1nkd1crv1nkuvu1,"1xct1ecejg1crv1,

YQTMFKT"1crr
EQR["0"01

HTQO"dcug"CU"hkpcn
YQTMFKT"1crr
GPX"CURPGVEQTGaGPXKTQPOGPV"Fgxgnqrogpv
GPX"V\"WU1Gcuvgtp
GPVT[RQKPV"]$fqvpgv$."$Vgttcuqhv0YgdJquv0fnn$_
```

4. Save changes by pressing Ctrl+O
5. Exit the editor by pressing Ctrl+X.

Build and run a Docker image

Build a docker image by running the following command:

```
fqemgt"dwknf"/h"Fqemgthkng"/v"etgcvkqkoi"0
```

Run the docker image:

```
fqemgt"twp"/r"jvvrarqtvapwodgt<7222"/r"jvvruarqtvapwodgt<7224""/f"//
fpu?FPUaugtxgtakr"//fpu/ugctej?FPUacfftguuauwhhkz"//pcog"Etgcvkq"
etgcvkqkoi
```

http_port_number – a port number. Docker will serve the HTTP version on this port

https_port_number – a port number. Docker will serve the HTTPS version on this port

DNS_server_ip – the IP address of a DNS server to enable the container to resolve Internet domains. You can use multiple --dns flags for multiple DNS servers.

DNS_address_suffix – a DNS search domain to enable the container to search non-fully-qualified hostnames. You can use multiple --dns-search flags for multiple DNS search domains.

NOTE

Add the --restart=always flag to the command make a persistent Docker container.

The HTTP version of the Creatio application will be available on port http_port_number.

The HTTPS version of the Creatio application will be available on port https_port_number.

NOTE

To log in to a newly deployed application, use the default Supervisor user account. It is highly recommended to change the Supervisor password immediately. Login: Supervisor; Password: Supervisor.

Previous step: Set up the ConnectionStrings.config file

SEE ALSO

- Deploy Creatio .NET Core application server on Linux directly

Set up containerized components

CONTENTS

Set up global search

The Global Search Service is designed to integrate ElasticSearch with Creatio. It performs the following functions:

- Recording:
    - Subscribes clients by creating an index in ElasticSearch and saves the connection between the index and the application.
    - Disconnects clients by removing their index in ElasticSearch.
- Transporting:
    - Participates in the indexing process by retrieving data from the application database (DB).

You need to have 2 servers (physical or virtual machines) with Linux OS installed. Docker software is used for deploying the global search components. Use the Docker documentation to learn more about the supported OS.

> NOTE
>
> Depending on your company needs you can use either Docker Community Edition (CE) or Enterprise Edition (EE). Learn more in the Docker documentation.

> ATTENTION
>
> You need to have basic knowledge of Docker software and Linux OS administration to set up global search.

CONTENTS

Server-side system requirements

Minimum requirements

Characteristics	ElasticSearch server (server 1)	Server with the global search components (server 2)
Processor	2,4 GHz, 1 core minimum	2,4 GHz, 1 core minimum
RAM	4 GB and more	2 GB and more
HDD	50 % of free disk space available from the Creatio database, with 15 GB minimum. For example, if the database takes 40 GB, the disk should have 20+ GB of free space to install ElasticSearch. If the database takes 25 GB, the disk must have 15+ GB for this purpose.	30 GB or more of hard drive free space

Recommended requirements

Characteristics	ElasticSearch server (server 1)	Server with the global search components (server 2)
Processor	2,4 GHz, 2 cores minimum	2,4 GHz, 2 cores minimum
RAM	8 GB or more	4 GB and more
Solid-state drive (SSD)	50 % of free disk space available from the Creatio database, with 15 GB minimum. For example, if the database takes 40 GB, the disk should have 20+ GB of free space to install ElasticSearch. If the database takes 25 GB, the disk must have 15+ GB for this purpose.	30 GB or more of hard drive free space

The sequence of actions depends on the global search version you are looking to install. The latest version of Creatio always requires the latest version of the global search service.

Recommended operations for the service functioning

We recommend performing Elasticsearch backup once a day to support the functionality of the service and enable restoring of data, e.g., in case of electricity breakdowns.

> **NOTE**
> More information about setting up older global search versions is available in the "Setting up the global search service (version 1.4)", "Setting up the global search service (version 1.5)", and "Setting up the global search service (version 1.6)" articles in the Creatio 7.15 documentation.

SEE ALSO

- Setting up the global search service (version 1.7)

- Setting up the global search service (version 2.0)
- Global search

Setting up the global search service (version 1.7)

Global search components

Deployed on separate servers:

rabbitmq – message broker.

elasticsearch – search engine.

mysql – database of global search component configuration.

redis – database used for caching and speed.

Deployed on a single server:

gs-web-api – web-service for global search component configuration.

gs-scheduler – scheduler of data indexing from Creatio into ElasticSearch.

gs-worker – component for indexing data from Creatio to ElasticSearch as per the scheduler tasks.

gs-worker-replay – component for processing the indexing results (gs-worker operation results).

gs-worker-single – component for targeted indexing of business process data in ElasticSearch upon a request from the business process.

gs-worker-single-replay – component processing indexing results (gs-worker operation results).

gs-worker-single-task – component for scheduling tasks for gs-worker-single.

gs-worker-queried-single-task – component for generating tasks for gs-worker-single.

> ATTENTION
>
> To create a productive environment, we recommend deploying the ElasticSearch, RabbitMQ and MySQL components in fault-tolerant clusters. If the listed components are deployed separately, disable the deployment of these components in the Docker container via the RUN_RABBITMQ, RUN_ELASTICSEARCH and RUN_MYSQL variables.

To set up the components, download the source files. Download files.

> NOTE
>
> You can deploy all global search components on a single server for demonstration purposes. To do this, To do this, in the linux / onsite-custom-env file, set the RUN_RABBITMQ, RUN_ELASTICSEARCH, RUN_MYSQL variable values to "1".

List of ports used by global search components

Component	Outgoing port	Incoming port	Notes
gs-web-api	6379	81	The incoming port is configured with the WEB_API_PORT variable
gs-web-indexing-service	5672	82	The incoming port is configured with the WEB_INDEXING_SERVICE_PORT variable
gs-worker	5672 9200 MSSQL or Oracle port		MSSQL or Oracle port - port communicating with the Creatio database
gs-worker-single	5672 9200 MSSQL or Oracle port		MSSQL or Oracle port - port communicating with the Creatio database
gs-scheduler	3306 5672		
gs-worker-replay	3306 5672		
gs-worker-single-task	3306 5672 6379		
gs-worker-single-replay	3306 5672		
rabbitmq		5672	
elasticsearch		9200	
mysql		3306	
redis		6379	

Global search setup procedure

1. Install Docker on a physical or virtual machine running Linux OS. Read more >>>
2. Install ElasticSearch. Read more >>>
3. Install RabbitMQ. Read more >>>
4. Set up MySQL. Read more >>>

5. Set up the container variables. Read more >>>
6. Install and run the Global Search Service components. Read more >>>
7. Enable the global search function in Creatio. Read more >>>
8. Populate the database with initial data. Read more >>>.

NOTE

Skip steps 2-4 for demo applications with all global search components installed on a single server.

CONTENTS

Docker setup

Install Docker to Linux OS to deploy global search components. The installation is covered in the Docker documentation. Read more >>>

Run the “docker-version” command on a Linux machine to verify the installed Docker version.

Installing RabbitMQ

Instructions on RabbitMQ cluster setup for Docker are available in a separate guide. Read more >>>

Instructions on RabbitMQ cluster setup without Docker are available in RabbitMQ guide documentation. Read more >>>

Installing ElasticSearch

1. Install ElasticSearch version 5.6.8. See ElasticSearch documentation for more information on the setup procedure. Read more >>>
2. After installing ElasticSearch, install the plugin for morphology search. Download the current version of the Morphological Analysis Plugin for ElasticSearch using the following link. You can find the morphology plugin installation instruction in ElasticSearch guide. Read more >>>
3. Add the following command to ElasticSearch docker file to install the plugin:

```
TWP"dkp1gncuvkeugctej/rnwikp"kpuvcnn"jvvr<11fn0dkpvtc{0eqo1eqpvgpv1
koqvqx1gncuvkeugctej/rnwikpu1qti1gncuvkeugctej1gncuvkeugctej/
cpcn{uku/oqtrjqnqi{17080:1gncuvkeugctej/cpcn{uku/oqtrjqnqi{/7080:0|kr
```

Installing MySQL

Instructions on MySQL cluster installation for Docker are available in the Docker documentation. Read more >>>

Instructions on MySQL cluster setup without Docker are available in the MySQL guide. Read more >>>

Setting up container variables

All global search component containers are configured via a file with environment variables. The variables are contained in the Docker/linux/onsite-custom-env base file. Edit this file to set the values of variables,

ATTENTION

During the update of global search containers, set the value of "1" for the CLEAR_ELASTICSEARCH_DATA, CLEAR_RABBITMQ_DATA, CLEAR_MYSQL_DATA variables in the Docker/linux/onsite-custom-env file.

Variable name	Details	Default value
GS_WORKER_DB_CONNECTION_STRING_PATTERN (for MS SQL)	Creatio database connection template. Specify the [DBLogin] user, the [DBPassword] password, the [DBServerName] Creatio database server (for example, dbserver\\mssql2016) and the [DBName] Creatio database name. Since containers are run under Linux OS control, Windows does not support authorization. For authorization, create a new SQL user or use an existing one. When creating a password for the user, avoid using the “$”, “@” and “#” characters.	Server=[DBServerName]; Database=[DBName]; User Id=[DBLogin]; Password=[DBPassword]; Connection Timeout=10
GS_WORKER_DB_CONNECTION_STRING_PATTERN (for Oracle)	Creatio database connection template. Change the GS_WORKER_DB_CONNECTION_STRING_PATTERN variable in the Docker/linux/oracle-env file for Creatio applications using the Oracle database.	The example of a variable value can be found in the Docker/linux/oracle-env file.

Variable name	Details	Default value
GS_WORKER_DB_CONNECTION_STRING_PATTERN (for PostgreSQL)	Creatio database connection template. Change the GS_WORKER_DB_CONNECTION_STRING_PATTERN variable in the Docker/linux/oracle-env file for Creatio applications using the Oracle database.	The example of a variable value can be found in the Docker/linux/oracle-env file.
GS_ES_URL	Internal host for ElasticSearch. For applications that have global search components deployed on different servers, specify a host for which ElasticSearch will be available. For demo applications where all components of the global search are deployed on one server ((RUN_ELASTICSEARCH = 1), the internal host is available in the gs-web-api and gs-worker-xx docker containers.	http://elasticsearch:9200
GS_PUBLIC_ES_URL	The external elasticsearch host, ehich is used for access from Creatio. If ElasticSearch is deployed in the DOCKER container (RUN_ELASTICSEARCH = 1) - specify the external host, or ip-address of the machine with DOCKER deployed.	http://[external.elasticSearchHostName]:9200
RUN_RABBITMQ	A container with RabbitMQ will run if the value is set to “1”. If you do not need to run the container with RabbitMQ, set the value to “0”.	1
RUN_ELASTICSEARCH	A container with ElasticSearch will run if the value is set to “1”. If you do not need to run the container with ElasticSearch, set the value to “0”.	1

Variable name	Details	Default value
RUN_MYSQL	A container with MySQL will run if the value is set to "1". If you do not need to run the container with MySQL, set the value to "0".	1
RUN_REDIS	A container with REDIS will run if the value is set to "1". If REDIS is already deployed on an external server, set the value to "0".	1

Set the values of the below listed parameters only if the RabbitMQ, ElasticSearch or MySQL components are deployed separately.

Parameter	Description
GS_ES_LOGIN	If ElasticSearch does not require base64 authorization, leave the parameter unpopulated.
GS_ES_PASSWORD	If ElasticSearch does not require base64 authorization, leave the parameter unpopulated.
GS_RABBITMQ_AMQP	Access to external RabbitMQ. You need to change the parameter if the RabbitMq component is deployed separately.
GS_DB_CONNECTION_STRING	MySQL connection string. Change this parameter in the Docker/linux/mysql-env file if the MySQL component is deployed separately. • Server=gs-mysql – host; • ser id=$MYSQL_USER – user; • pwd=$MYSQL_PASSWORD – password.
GS_REDIS_CONNECTION_STRING	Access to external REDIS. You need to change the parameter if the REDIS component is deployed separately.

Additional variables that control the data indexing parameters in ElasticSearch

Variable name	Details	Default value
GS_DB_BATCH_SIZE	The number of records that form the batch for an indexing bulk request on ElasticSearch.	2000 records
GS_DB_INCREMENT_DAYS	The number of days to be indexed per one iteration of the scheduler. The ModifiedOn columns of system records are used for comparison.	500
GS_DB_FILL_QUEUE_INTERVAL	The interval for collecting data from the Creatio database by a regular scheduler. The load of the Creatio database depends on how small this parameter is. However, the primary indexing will happen faster if this parameter is smaller. The interval is specified in milliseconds.	30000

Running containers with the Global Search Service components

ATTENTION

For the correct container operation, the UTC-time on the Linux machine with Docker installed should correspond to the UTC-time on the Creatio database server. The permissible deviation is up to five minutes. Otherwise, the global search may not index all records.

1. Copy the Docker folder from the application setup files to the linux machine.
2. Run the command.
   - For Creatio applications, deployed on MS SQL:

```
uj"Fqemgt1nkpwz1twp0uj"o{usn"ouusn"30902"qpukvg
```

   - For Creatio applications, deployed on Oracle:

```
uj"Fqemgt1nkpwz1twp0uj"o{usn"qtceng"30902"qpukvg
```

   - For Creatio applications, deployed on PostgreSQL:

```
uj"Fqemgt1nkpwz1twp0uj"o{usn"rquvitg"30902"qpukvg
```

NOTE

The "Error response from daemon: network with name net1 already exists" error may occur after restarting the sh Docker/linux/run.sh command, because the docker network named "net1" was created the at the time the command was run. This message is shown because the docker network with the "net1" name was created when you first started the command.

The following Docker volumes will automatically be mounted upon successful container running:

- es1, if RUN_ELASTICSEARCH=1 (es-node1);
- es2, if RUN_ELASTICSEARCH=1 (es-node2);
- mysql, if RUN_MYSQL=1;
- rabbitmq, if RUN_RABBITMQ=1.

NOTE

The "docker volume list" command displays the information about created volumes.
If one of the containers (MySQL, RabbitMQ or ElasticSearch) stops working, the data will be stored on external disk outside the Docker-container. You can learn more about volumes in Docker guide. Read more >>>

Verifying successful running of containers

Enter the docker ps -a command in the console to see all the containers that have been run.

The following containers should be run:

- gs-web-api;
- gs-web-indexing-service;
- gs-scheduler;
- gs-worker:
  - gs-worker1;
  - gs-worker2;
  - gs-worker3;
- gs-worker-replay;
- gs-worker-single;
- gs-worker-single-replay;
- gs-worker-single-task;
- gs-worker-queried-single-task;
- ES, if RUN_ELASTICSEARCH = 1:
  - es-node1;
  - es-node2;
- rabbitmq, if RUN_RABBITMQ = 1;
- gs-mysql, if RUN_MYSQL = 1;
- gs-redis, if RUN_REDIS=1.

Logging

By default, the container is logging the stdout stream.

NOTE

docker logs --tail 100 gs-worker displays 100 last log strings from the gs-worker container.

NOTE

When you first run the global search components you may receive an error about the failed mysql or rabbitmq connection attempt in their logs. At startup, it is possible that mysql or rabbitmq containers are temporarily unavailable. In this case, continue the connection attempts until the message about the successful connection and start of the container is displayed in stdout: "Now listening on: http://[::]:80 Application started. Press Ctrl+C to shut down."

Connecting global search service to Creatio

Actions on the server

To connect global search to Creatio, perform the following steps on the server:

1. Install the curl package for http queries.

```
crv/igv"kpuvcnn"ewtn
```

2. Execute the AddSite API operation and specify the following:
    - [site name] – Creatio database name, for example, SalesTeamENU;
    - [gs-web-api] – external address of the gs-web-api container that was run earlier.

```
ewtn"/x"/Z"RQUV"/f")}$CrkMg{$<"$vguvMg{$."$UkvgPcog$<"$]ukvg"pcog_$¡)"
/J"$Eqpvgpv/V{rg<"crrnkecvkqp1luqp$"jvvr<11]iu/ygd/crk_<:31cffukvg
```

3. Perform the AddSearch API operation and specify the following:
    - [site name] – Creatio database name, for example, SalesTeamENU;
    - [gs-web-api] – external address of the gs-web-api container that was run earlier.
    - [default.json] – search template by default. Description of other available search templates is below:

```
ewtn"/x"/Z"RQUV"/f")}$CrkMg{$<"$vguvMg{$."$UkvgPcog$<"$]ukvg"pcog_$."
$VgorncvgPcog$<"$fghcwnv0luqp$¡)"/J"$Eqpvgpv/V{rg<"crrnkecvkqp1luqp$"
jvvr<11iu/ygd/crk<:31cffugctej
```

NOTE

The indicated query will return URL to the index created in ElasticSearch. Save the URL and use it in the system setting installation SQL script below.

ATTENTION

To change the search template, perform the DeleteSearch and AddSearch actions. This will lead to full re-indexing of the site.

All the available search templates are listed in the table below:

	Old template (version 1.6)	default.json	ngram_2.json	ngram_3.json	without_ngram .json
Search by partial match	+	–	+	+	–
Search by misspelled words	+	–	+	+	–
Search communication options by phone number (partial match)	+	+	+	+	–

	Old template (version 1.6)	default.json	ngram_2.json	ngram_3.json	without_ngram .json
Search communication options (partial match)	+	+	+	+	–
Search by word swapping	+	+	+	+	+
Search by exact match	+	+	+	+	+
Search by two characters	–	–	+	–	–
Average search speed (the lower the better)		1x	13x	7x	<1x
Index size at elasticsearch (the less the better)		1x	4x	2,5x	<1x
Primary indexing time (the less the better)		1x	1,8x	1,4x	<1x

Settings on the Creatio side

For MS SQL DBMS:

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
FGENCTG"BIUaTGKpfgzkpiHgcvwtg"PXCTEJCT*72+"?"
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
FGENCTG"BIUaTGKpfgzkpiHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG
Eqfg"?"BIUaTGKpfgzkpiHgcvwtg+=

FGENCTG"BInqdcnUgctejHgcvwtg"PXCTEJCT*72+"?")InqdcnUgctej)=
FGENCTG"BInqdcnUgctejHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BInqdcnUgctejHgcvwtg+=

FGENCTG"BInqdcnUgctejX4Hgcvwtg"PXCTEJCT*72+"?")InqdcnUgctejaX4)=
FGENCTG"BInqdcnUgctejX4HgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BInqdcnUgctejX4Hgcvwtg+=
```

```
FGENCTG"BcnnGornq{gguKf"WPKSWGKFGPVKHKGT"?")C4;C5DC7/6D2F/FG33/;C73/
227278E2222:)=

KH"*BInqdcnUgctejHgcvwtgKf"KU"PQV"PWNN+
"DGIKP
"""KH"GZKUVU"*UGNGEV",HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BInqdcnUgctejHgcvwtgKf+
""""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?"BInqdcnUgctejHgcvwtgKf
""""GNUG
"""""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejHgcvwtgKf+
"GPF
GNUG
"DGIKP
"""UGV"BInqdcnUgctejHgcvwtgKf"?"PGYKF*++
"""KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"
*BInqdcnUgctejHgcvwtgKf."BInqdcnUgctejHgcvwtg."BInqdcnUgctejHgcvwtg+
"""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejHgcvwtgKf+
"GPF

KH"*BInqdcnUgctejX4HgcvwtgKf"KU"PQV"PWNN+
"DGIKP
"""KH"GZKUVU"*UGNGEV",HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BInqdcnUgctejX4HgcvwtgKf+
""""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?"BInqdcnUgctejX4HgcvwtgKf
""""GNUG
"""""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejX4HgcvwtgKf+
"GPF
GNUG
"DGIKP
"""UGV"BInqdcnUgctejX4HgcvwtgKf"?"PGYKF*++
"""KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"
*BInqdcnUgctejX4HgcvwtgKf."BInqdcnUgctejX4Hgcvwtg."
BInqdcnUgctejX4Hgcvwtg+
"""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejX4HgcvwtgKf+
"GPF

KH"*BIUaTGKpfgzkpiHgcvwtgKf"KU"PQV"PWNN+
DGIKP
"KH"GZKUVU"*UGNGEV",HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BIUaTGKpfgzkpiHgcvwtgKf+
""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"?"
BIUaTGKpfgzkpiHgcvwtgKf
""GNUG
""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BIUaTGKpfgzkpiHgcvwtgKf+
```

```
GPF
GNUG
DGIKP
"UGV"BIUaTGKpfgzkpiHgcvwtgKf"?"PGYKF*+
"KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"*BIUaTGKpfgzkpiHgcvwtgKf."
BIUaTGKpfgzkpiHgcvwtg."BIUaTGKpfgzkpiHgcvwtg+
"KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BIUaTGKpfgzkpiHgcvwtgKf+
GPF
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"vjg"WTN"vq"vjg"GncuvkeUgctej"kpfgz."wug"c"
uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221
kpfgzpcog_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"?"
)InqdcnUgctejWtn)+

WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Ugctej"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"
?)InqdcnUgctejEqphkiUgtxkegWtn)+

WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Kpfgzkpi"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/kpfgzkpi/ugtxkeg<:4_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"
?)InqdcnUgctejKpfgzkpiCrkWtn)+
```

3. Restart Creatio, flush Redis and log into the application.

For Oracle DBMS

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
ETGCVG"QT"TGRNCEG"HWPEVKQP
igpgtcvgawwkf"tgvwtp"xctejct4"ku
""""xawwkf"xctejct4*5:+=
""""xaiwkf"xctejct4*54+=
DGIKP
""""xaiwkf"<?"u{uaiwkf*+=
""""xawwkf"<?"nqygt*
"""""""""""""""")})"~~
""""""""""""""""uwduvt*xaiwkf."3.:+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf.";.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."35.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."39.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."43+"~~
"""""""""""""""")¡)
```

```
""""""""""""""""+=
""""TGVWTP"xawwkf=
GPF=
1

FGENCTG
"IUaTGKpfgzkpiHgcvwtg"XCTEJCT*72+"<?"
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
"IUaTGKpfgzkpiHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
"IUaTGKpfgzkpiHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=

InqdcnUgctejHgcvwtg"XCTEJCT*72+"<?")InqdcnUgctej)=
""InqdcnUgctejHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
""InqdcnUgctejHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
""InqdcnUgctejX4Hgcvwtg"XCTEJCT*72+"<?")InqdcnUgctejaX4)=
""InqdcnUgctejX4HgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
""InqdcnUgctejX4HgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
""cnnGornq{gguKf"XCTEJCT*5:+"<?")}9H5D:8;H/56H5/6H42/CD6F/
96:2C7HFH869¡)=
""UvcvgaInqdcnUgctej"XCTEJCT*3+"<?"PWNN=
""UvcvgaInqdcnUgctejX4"XCTEJCT*3+"<?"PWNN=
""UvcvgaIUaTGK"XCTEJCT*3+"<?"PWNN=

DGIKP
""UGNGEV"OCZ*$Kf$+"KPVQ"InqdcnUgctejHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"InqdcnUgctejHgcvwtg"CPF"tqypwo"?"3=
""UGNGEV"OCZ*$Kf$+"KPVQ"InqdcnUgctejX4HgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"InqdcnUgctejX4Hgcvwtg"CPF"tqypwo"?"3=
UGNGEV"OCZ*$Kf$+"KPVQ"IUaTGKpfgzkpiHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"IUaTGKpfgzkpiHgcvwtg"CPF"tqypwo"?"3=

""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaInqdcnUgctej"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf"CPF"
tqypwo"?"3=
""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaInqdcnUgctejX4"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf"
CPF"tqypwo"?"3=
""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaIUaTGK"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"HgcvwtgKf$"?"IUaTGKpfgzkpiHgcvwtgKf"CPF"
tqypwo"?"3=

""KH"*InqdcnUgctejHgcvwtgKf"KU"PWNN+"VJGP
""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejHgcvwtgKfaIWKF."InqdcnUgctejHgcvwtg."
InqdcnUgctejHgcvwtg+=
""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""GNUG
""""""KH"*UvcvgaInqdcnUgctej"KU"PQV"PWNN+"VJGP
""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
```

```
$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf=
"""""""GNUG
""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""""GPF"KH=
""GPF"KH=

""KH"*InqdcnUgctejX4HgcvwtgKf"KU"PWNN+"VJGP
""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejX4HgcvwtgKfaIWKF."InqdcnUgctejX4Hgcvwtg."
InqdcnUgctejX4Hgcvwtg+=
""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKfaIWKF+=
""""GNUG
""""""KH"*UvcvgaInqdcnUgctejX4"KU"PQV"PWNN+"VJGP
""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf=
"""""""GNUG
""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""""GPF"KH=
""GPF"KH=

"KH"*IUaTGKpfgzkpiHgcvwtgKf"KU"PWNN+"VJGP
""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*IUaTGKpfgzkpiHgcvwtgKfaIWKF.IUaTGKpfgzkpiHgcvwtg."
IUaTGKpfgzkpiHgcvwtg+=
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTGKpfgzkpiHgcvwtgKfaIWKF+=
""GNUG
""KH"*UvcvgaIUaTGK"KU"PQV"PWNN+"VJGP
""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?IUaTGKpfgzkpiHgcvwtgKf=
""GNUG
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTGKpfgzkpiHgcvwtgKfaIWKF+=
""GPF"KH=
"GPF"KH=

GPF=
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
FGENCTG
""WTNaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=
""EQPHKIaWTNaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=
```

```
""KPFaCRKaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=

""WTNaXCNaKF"XCTEJCT*5:+"<?"PWNN=
""EQPHKIaWTNaXCNaKF"XCTEJCT*5:+"<?"PWNN=
""KPFaCRKaXCNaKF"XCTEJCT*5:+"<?"PWNN=

""U[UaCFOKPaWKF"XCTEJCT*5:+"<?")}C4;C5DC7/6D2F/FG33/;C73/
227278E2222:¡)=

""GUaKPF"XCTEJCT*722+"<?")]gpvgt"vjg"WTN"vq"vjg"GncuvkeUgctej"kpfgz."
uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221
kpfgzpcog_)=
""EQPHKIaWTN"XCTEJCT*722+"<?")]gpvgt"vjg"WTN"vq"vjg"Inqdcn"Ugctej"
Ugtxkeg."uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_)=
""KPFaCRKaWTN"XCTEJCT"*722+<"?")]gpvgt"vjg"WTN"vq"vjg"Inqdcn"Ugctej"
Kpfgzkpi"Ugtxkeg."uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/
kpfgzkpi/ugtxkeg<":4_Í
DGIKP
""UGNGEV"$Kf$"KPVQ"WTNaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejWtn)=
""UGNGEV"$Kf$"KPVQ"EQPHKIaWTNaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"
$Eqfg$"?")InqdcnUgctejEqphkiUgtxkegWtn)=
""UGNGEV"$Kf$"KPVQ"KPFaCRKaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"
?")InqdcnUgctejKpfgzkpiCrkWtn)=

""UGNGEV"OCZ*$Kf$+"KPVQ"WTNaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"YJGTG"
$U{uUgvvkpiuKf$"?"WTNaUGVVKPIaKF=
""UGNGEV"OCZ*$Kf$+"KPVQ"EQPHKIaWTNaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"
YJGTG"$U{uUgvvkpiuKf$"?"EQPHKIaWTNaUGVVKPIaKF=
""UGNGEV"OCZ*$Kf$+"KPVQ"KPFaCRKaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"YJGTG"
$U{uUgvvkpiuKf$"?"KPFaCRKaUGVVKPIaKF=

""KH"*WTNaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*WTNaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."GUaKPF+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"GUaKPF"YJGTG"
$U{uUgvvkpiuKf$"?"WTNaUGVVKPIaKF=
""GPF"KH=

""KH"*EQPHKIaWTNaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*EQPHKIaWTNaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."EQPHKIaWTN+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"EQPHKIaWTN"YJGTG"
```

```
$U{uUgvvkpiuKf$"?"EQPHKIaWTNaUGVVKPIaKF=
""GPF"KH=

""KH"*KPFaCRKaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*KPFaCRKaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."KPFaCRKaWTN+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"KPFaCRKaWTN"YJGTG"
$U{uUgvvkpiuKf$"?"KPFaCRKaUGVVKPIaKF=
""GPF"KH=
GPF=
```

3. Restart Creatio, flush Redis and log into the application.

For PostgreSQL DBMS

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
FQ"&&

FGENCTG"
""""InqdcnUgctejHgcvwtg"XCTEJCT*72+"<?")InqdcnUgctej)=
""""InqdcnUgctejHgcvwtgKf"wwkf=
""""InqdcnUgctejX4Hgcvwtg"XCTEJCT*72+"<?")InqdcnUgctejaX4)=
""""InqdcnUgctejX4HgcvwtgKf"wwkf=
""""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg"XCTEJCT*72+"<?"""
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
""""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"wwkf=
""""cnnGornq{gguKf"wwkf"<?")C4;C5DC7/6D2F/FG33/;C73/227278E2222:)=

DGIKP

"""UGNGEV"$Kf$"KPVQ"InqdcnUgctejHgcvwtgKf"HTQO"$Hgcvwtg$
"""YJGTG"$Eqfg$"?"InqdcnUgctejHgcvwtg
"""NKOKV"3=
"""KH"*InqdcnUgctejHgcvwtgKf"KU"PQV"PWNN+
""""""VJGP
""""""""""KH"GZKUVU"*UGNGEV",""HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf+"VJGP
"""""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"
YJGTG"$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf=
""""""""""GNUG
""""""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKf+=
""""""""""GPF"KH=
"""GNUG
"""""""InqdcnUgctejHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
"""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
```

```
*InqdcnUgctejHgcvwtgKf."InqdcnUgctejHgcvwtg."InqdcnUgctejHgcvwtg+=
"""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKf+=
"""GPF"KH=

"""UGNGEV"$Kf$"KPVQ"InqdcnUgctejX4HgcvwtgKf"HTQO"$HgcvwtgË
"""YJGTG"$Eqfg$"?"InqdcnUgctejX4Hgcvwtg
"""NKOKV"3=
"""KH"*InqdcnUgctejX4HgcvwtgKf"KU"PQV"PWNN+
""""VJGP
""""""""KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf+"VJGP
"""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf=
""""""""GNUG
"""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKf+=
""""""""GPF"KH=
"""GNUG
"""""""InqdcnUgctejX4HgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
"""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejX4HgcvwtgKf."InqdcnUgctejX4Hgcvwtg."
InqdcnUgctejX4Hgcvwtg+=
"""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKf+=
"""GPF"KH=

""UGNGEV"$Kf$"KPVQ"IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"HTQO"$Hgcvwtg$"
YJGTG"$Eqfg$"?IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg"NKOKV"3=
""KH"*IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"KU"PQV"PWNN+
""VJGP
""KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"
DwnmaGUaFFaHgcvwtgKf+"VJGP
WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf=
""GNUG
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf+=
""GPF"KH=
""GNUG
""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf."IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg+=
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf+=
```

```
""GPF"KH=
GPF"&&=
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"GncuvkeUgctej"kpfgz."uvtkpi"qh"vjg"
hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221kpfgzpcog_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?
")InqdcnUgctejWtn)"NKOKV"3"+=

WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Ugctej"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejEqphkiUgtxkegWtn)"NKOKV"3"+=

WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Kpfgzkpi"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/kpfgzkpi/ugtxkeg<:4_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejKpfgzkpiCrkWtn)"NKOKV"3"+=
```

3. Restart Creatio, flush Redis and log into the application.

Initial population of the database

The database is populated with system records once the GSS is launched. Prior to that, there is not even a database file, since the database is automatically generated.

SEE ALSO

- Global search

Setting up the global search service (version 2.0)

Global search components

The global search service requires the deployment of two separate servers (“server 1” and “server 2”) that can be either physical or virtual machines. The system requirements for the servers are available in the “Set up global search” article.

Components to deploy on server 1:

elasticsearch – the search engine.

Components to deploy on server 2:

postgres – database for configuring the global search component.

rabbitmq – message broker.

redis – database used for caching and speed.

gs-web-api – web-service for global search component configuration.

gs-web-indexing-service – web service for processing the queries for the targeted indexing of Creatio data.

gs-scheduler – scheduler for indexing data from Creatio to ElasticSearch.

gs-worker – component for indexing data from Creatio to ElasticSearch as per the scheduler tasks.

gs-worker-replay – component for processing the indexing results (gs-worker operation results).

gs-worker-single – component for targeted indexing of business process data in ElasticSearch upon a request from the business process.

gs-worker-single-replay – component processing indexing results (gs-worker operation results).

gs-worker-single-task – component for scheduling tasks for gs-worker-single.

gs-worker-queried-single-task – component for generating tasks for gs-worker-single.

To set up the components, download the source files, using the following link: download files.

List of ports used by global search components

Component	Outgoing port	Incoming port	Notes
gs-web-api		81	The incoming port is configured with the WEB_API_PORT variable
gs-web-indexing-service		82	The incoming port is configured with the WEB_INDEXING_SERVICE_PORT variable
gs-worker	9200		Requires connection to the server where elasticsearch is located.
gs-worker-single	9200		Requires connection to the server where elasticsearch is located.
elasticsearch		9200	

Global search setup procedure

1. Install Docker on a physical or virtual machine running Linux OS. Read more >>>
2. Install Docker Compose. Read more >>>
3. Install ElasticSearch. Read more >>>
4. Set up the container variables. Read more >>>
5. Install and run the Global Search Service components. Read more >>>
6. Enable the global search function in Creatio. Read more >>>

Install Docker

Install Docker to Linux OS to deploy global search components. The installation is covered in the Docker documentation.

Run the "docker-version" command on a Linux machine to verify the installed Docker version.

Installing Docker Compose

The installation of Docker-Compose is covered in the Docker documentation.

Install ElasticSearch

NOTE

This guide covers the procedure for deploying the ElasticSearch in Docker-Compose. You can also deploy ElasticSearch as daemon OS, which does not involve installing Docker and Docker-Compose. See the ElasticSearch guide for more information on the setup procedure.

To install ElasticSearch:

1. On the ElasticSearch installation server (server 1), open the /opt folder.
2. Download and unzip the archive with setup files to the opened folder. Download the archive
3. Open the /opt/docker-compose/elasticsearch folder (where the components are located) and run the following command:

   ```
   fqemgt/eqorqug"wr"/f
   ```

   The command might take up to several minutes to complete.
4. After the command is complete, make sure that the log files do not contain any errors. To do this, run the following command:

   ```
   fqemgt"nqiu"gu/23
   ```

Set up container variables

All global search component containers are configured via a file with environment variables. The variables are stored in the /opt/docker-compose/services/.env file. Edit this file to set the values of variables.

Variable name	Details	Default value
GS_ES_URL	The external ElasticSearch host, used for access from Creatio. Specify the server IP, where the ElasticSearch is deployed.	http://[ElasticSearchsever IP]:9200

Additional variables that control the data indexing parameters in ElasticSearch

Variable name	Details	Default value
GS_DB_INCREMENT_DAYS	The number of days to be indexed per one iteration of the scheduler. The ModifiedOn columns of system records are used for comparison.	500
GS_DB_FILL_QUEUE_INTERVAL	The interval for collecting data from the Creatio database by a regular scheduler. The load of the Creatio database depends on how small this parameter is. However, the primary indexing will happen faster if this parameter is smaller. The interval is specified in milliseconds.	30000

Running containers with the Global Search Service components

ATTENTION

For the correct container operation, the UTC-time on the Linux machine with Docker installed should correspond to the UTC-time on the Creatio database server. The permissible deviation is up to five minutes. Otherwise, the global search may not index all records.

1. On the server with the global search components (server 2), open the /opt folder.
2. Download and unzip the archive with setup files to the opened folder. Download the archive
3. Open the /opt/docker-compose/elasticsearch folder (where the components are located) and run the following command:

```
fqemgt/eqorqug"wr"/f
```

Verifying successful running of containers

To see the running global search containers, use the following console command:

```
fqemgt"ru"//hknvgt"$ncdgn?ugtxkeg?iu$"/c"//hqtocv"$vcdng"
}}0Pcogu¡¡^v}}0Rqtvu¡¡^v}}0Uvcvwu¡¡^v}}0TwppkpiHqt¡¡$
```

All currently running containers will display the Up status.

Logging

By default, the container logging takes place in the stdout and stderr.

NOTE

The “docker logs --tail 100 gs-worker” command displays 100 last strings from the gs-worker container.

NOTE

The mysql or rabbitmq containers might become temporarily unavailable on start because they run after the rest of the containers. A notification about the successful connection and start of the container will appear in the log files: “Now listening on: http://[::]:80 Application started. Press Ctrl+C to shut down.”

Connecting global search service to Creatio

Actions on the server

ATTENTION

To connect global search to Creatio, execute the AddSite and AddSearch API operations. Use the http://[gs-web-api]:81/api link to access the description of the available global search API. We appreciate your feedback!
The updated description will be available in the upcoming Creatio releases.

To connect global search to Creatio, perform the following steps on the server:

1. Install the api-get install curl or yum install curl utilities for http queries.

```
crv/igv"kpuvcnn"ewtn
```

2. Execute the AddSite API operation and specify the following:
   - [DATABASE_TYPE] – Creatio database type (mssql, postgresql or oracle).
   - [DATABASE_CONNECTION_STRING] – connection string to the Creatio database.
   - [SITE_NAME] – Creatio site name, e.g. “my-test-site”

```
ewtn"/x"/Z"RQUV"/f")}$fcvcdcugV{rg$<"$]FCVCDCUGaV[RG_$."
$fcvcdcugEqppgevkqpUvtkpi$<"$]FCVCDCUGaEQPPGEVKQPaUVTKPI_$¡)"/J"
$Eqpvgpv/V{rg<"crrnkecvkqp1luqp$"jvvr<11]iu/ygdcrk_<:31ukvgu1
]UKVGaPCOG_,
```

CASE

curl -v -X POST -d '{"databaseType": "mssql", "databaseConnectionString": "Server=myserver\\mssql2016; Database=my-test-site; User Id=my-login; Password='my-password'; Connection Timeout=10"}' -H "Content-Type: application/json" http://[gs-webapi]:81/sites/my-test-site

3. Execute the AddSearch API operation and specify the following:
   - [SITE_NAME] – Creatio site name, e.g. “my-test-site”
   - [TEMPLATE_NAME] – the name of the search template used in ElasticSearch. The available templates are listed below:

```
ewtn"/x"/Z"RQUV"/f")}$vgorncvgPcog$<"$]VGORNCVGaPCOG_$¡)"/J"$Eqpvgpv/
V{rg<"crrnkecvkqp1luqp$"jvvr<11]iu/ygd/crk_<:31ukvgu1]UKVGaPCOG_1
ugctej
```

CASE

curl -v -X POST -d '{"templateName": "default.json"}' -H "Content-Type: application/json" http://[gs-web-api]:81/sites/my-test-site/search

NOTE

The indicated query will return URL to the index created in ElasticSearch. Save the URL and use it in the system setting installation SQL script below.

ATTENTION

To change the search template, run the DELETE query at /sites/{siteName}/search and the AddSearch action described above. This will enable the re-indexing of the site.

All available search templates are listed in the table below:

	Old template (version 1.6)	default.json	ngram_2.json	ngram_3.json	without_ngram .json
Search by partial match	+	–	+	+	–
Search by misspelled words	+	–	+	+	–
Search communication options by phone number (partial match)	+	+	+	+	–
Search communication options (partial match)	+	+	+	+	–
Search by word swapping	+	+	+	+	+
Search by exact match	+	+	+	+	+
Search by two characters	–	–	+	–	–
Average search speed (the lower the better)		1x	13x	7x	<1x
Index size at elasticsearch (the less the better)		1x	4x	2,5x	<1x
Primary indexing time (the less the better)		1x	1,8x	1,4x	<1x

Settings on the Creatio side

For MS SQL DBMS:

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
FGENCTG"BIUaTGKpfgzkpiHgcvwtg"PXCTEJCT*72+"?"
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
FGENCTG"BIUaTGKpfgzkpiHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG
Eqfg"?"BIUaTGKpfgzkpiHgcvwtg+=

FGENCTG"BInqdcnUgctejHgcvwtg"PXCTEJCT*72+"?")InqdcnUgctej)=
FGENCTG"BInqdcnUgctejHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BInqdcnUgctejHgcvwtg+=

FGENCTG"BInqdcnUgctejX4Hgcvwtg"PXCTEJCT*72+"?")InqdcnUgctejaX4)=
FGENCTG"BInqdcnUgctejX4HgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BInqdcnUgctejX4Hgcvwtg+=
FGENCTG"BcnnGornq{gguKf"WPKSWGKFGPVKHKGT"?")C4;C5DC7/6D2F/FG33/;C73/
227278E2222:)=

KH"*BInqdcnUgctejHgcvwtgKf"KU"PQV"PWNN+
"DGIKP
"""KH"GZKUVU"*UGNGEV",","HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BInqdcnUgctejHgcvwtgKf+
""""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?"BInqdcnUgctejHgcvwtgKf
""""GNUG
"""""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejHgcvwtgKf+
"GPF
GNUG
"DGIKP
"""UGV"BInqdcnUgctejHgcvwtgKf"?"PGYKF*+
"""KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"
*BInqdcnUgctejHgcvwtgKf."BInqdcnUgctejHgcvwtg."BInqdcnUgctejHgcvwtg+
"""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejHgcvwtgKf+
"GPF

KH"*BInqdcnUgctejX4HgcvwtgKf"KU"PQV"PWNN+
"DGIKP
"""KH"GZKUVU"*UGNGEV",","HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BInqdcnUgctejX4HgcvwtgKf+
""""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?"BInqdcnUgctejX4HgcvwtgKf
""""GNUG
"""""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejX4HgcvwtgKf+
"GPF
```

```
GNUG
"DGIKP
"""UGV"BInqdcnUgctejX4HgcvwtgKf"?"PGYKF*+
"""KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"
*BInqdcnUgctejX4HgcvwtgKf."BInqdcnUgctejX4Hgcvwtg."
BInqdcnUgctejX4Hgcvwtg+
"""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BInqdcnUgctejX4HgcvwtgKf+
"GPF

KH"*BIUaTGKpfgzkpiHgcvwtgKf"KU"PQV"PWNN+
DGIKP
"KH"GZKUVU"*UGNGEV","HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BIUaTGKpfgzkpiHgcvwtgKf+
""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"?"
BIUaTGKpfgzkpiHgcvwtgKf
""GNUG
""KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BIUaTGKpfgzkpiHgcvwtgKf+
GPF
GNUG
DGIKP
"UGV"BIUaTGKpfgzkpiHgcvwtgKf"?"PGYKF*+
"KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"*BIUaTGKpfgzkpiHgcvwtgKf."
BIUaTGKpfgzkpiHgcvwtg."BIUaTGKpfgzkpiHgcvwtg+
"KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BIUaTGKpfgzkpiHgcvwtgKf+
GPF
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"vjg"WTN"vq"vjg"GncuvkeUgctej"kpfgz."wug"c"
uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221
kpfgzpcog_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"?"
)InqdcnUgctejWtn)+

WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Ugctej"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"
?)InqdcnUgctejEqphkiUgtxkegWtn)+

WRFCVG"U{uUgvvkpiuXcnwg
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Kpfgzkpi"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/kpfgzkpi/ugtxkeg<:4_
YJGTG"U{uUgvvkpiuKf"?"*UGNGEV"VQR"3"Kf"HTQO"U{uUgvvkpiu"YJGTG"Eqfg"
?)InqdcnUgctejKpfgzkpiCrkWtn)+
```

3. Restart Creatio, flush Redis and log into the application.

For Oracle DBMS

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
ETGCVG"QT"TGRNCEG"HWPEVKQP
igpgtcvgawwkf"tgvwtp"xctejct4"ku
""""xawwkf"xctejct4*5:+=
""""xaiwkf"xctejct4*54+=
DGIKP
""""xaiwkf"<?"u{uaiwkf*+=
""""xawwkf"<?"nqygt*
"""""""""""""""")})"~~
""""""""""""""""uwduvt*xaiwkf."3.:+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf.";.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."35.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."39.6+"~~")/)"~~
""""""""""""""""uwduvt*xaiwkf."43+"~~
"""""""""""""""")¡)
""""""""""""""""+=
""""TGVWTP"xawwkf=
GPF=
1

FGENCTG
"IUaTGKpfgzkpiHgcvwtg"XCTEJCT*72+"<?"
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
"IUaTGKpfgzkpiHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
"IUaTGKpfgzkpiHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=

InqdcnUgctejHgcvwtg"XCTEJCT*72+"<?")InqdcnUgctej)=
""InqdcnUgctejHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
""InqdcnUgctejHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
""InqdcnUgctejX4Hgcvwtg"XCTEJCT*72+"<?")InqdcnUgctejaX4)=
""InqdcnUgctejX4HgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
""InqdcnUgctejX4HgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
""cnnGornq{gguKf"XCTEJCT*5:+"<?")}9H5D:8;H/56H5/6H42/CD6F/
96:2C7HFH869¡)=
""UvcvgaInqdcnUgctej"XCTEJCT*3+"<?"PWNN=
""UvcvgaInqdcnUgctejX4"XCTEJCT*3+"<?"PWNN=
""UvcvgaIUaTGK"XCTEJCT*3+"<?"PWNN=

DGIKP
""UGNGEV"OCZ*$Kf$+"KPVQ"InqdcnUgctejHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"InqdcnUgctejHgcvwtg"CPF"tqypwo"?"3=
""UGNGEV"OCZ*$Kf$+"KPVQ"InqdcnUgctejX4HgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"InqdcnUgctejX4Hgcvwtg"CPF"tqypwo"?"3=
UGNGEV"OCZ*$Kf$+"KPVQ"IUaTGKpfgzkpiHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"IUaTGKpfgzkpiHgcvwtg"CPF"tqypwo"?"3=
```

```
""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaInqdcnUgctej"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf"CPF"
tqypwo"?"3=
""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaInqdcnUgctejX4"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf"
CPF"tqypwo"?"3=
""UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaIUaTGK"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"HgcvwtgKf$"?"IUaTGKpfgzkpiHgcvwtgKf"CPF"
tqypwo"?"3=

""KH"*InqdcnUgctejHgcvwtgKf"KU"PWNN+"VJGP
""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejHgcvwtgKfaIWKF."InqdcnUgctejHgcvwtg."
InqdcnUgctejHgcvwtg+=
""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""GNUG
""""""KH"*UvcvgaInqdcnUgctej"KU"PQV"PWNN+"VJGP
"""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf=
""""""""GNUG
"""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""""GPF"KH=
""GPF"KH=

""KH"*InqdcnUgctejX4HgcvwtgKf"KU"PWNN+"VJGP
""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejX4HgcvwtgKfaIWKF."InqdcnUgctejX4Hgcvwtg."
InqdcnUgctejX4Hgcvwtg+=
""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKfaIWKF+=
""""GNUG
""""""KH"*UvcvgaInqdcnUgctejX4"KU"PQV"PWNN+"VJGP
"""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf=
""""""""GNUG
"""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKfaIWKF+=
""""""GPF"KH=
""GPF"KH=

"KH"*IUaTGKpfgzkpiHgcvwtgKf"KU"PWNN+"VJGP
""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*IUaTGKpfgzkpiHgcvwtgKfaIWKF.IUaTGKpfgzkpiHgcvwtg."
IUaTGKpfgzkpiHgcvwtg+=
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
```

```
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTGKpfgzkpiHgcvwtgKfaIWKF+=
""GNUG
""KH"*UvcvgaIUaTGK"KU"PQV"PWNN+"VJGP
""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?IUaTGKpfgzkpiHgcvwtgKf=
""GNUG
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTGKpfgzkpiHgcvwtgKfaIWKF+=
""GPF"KH=
"GPF"KH=

GPF=
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
FGENCTG
""WTNaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=
""EQPHKIaWTNaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=
""KPFaCRKaUGVVKPIaKF"XCTEJCT*5:+"<?"PWNN=

""WTNaXCNaKF"XCTEJCT*5:+"<?"PWNN=
""EQPHKIaWTNaXCNaKF"XCTEJCT*5:+"<?"PWNN=
""KPFaCRKaXCNaKF"XCTEJCT*5:+"<?"PWNN=

""U[UaCFOKPaWKF"XCTEJCT*5:+"<?")}C4;C5DC7/6D2F/FG33/;C73/
227278E2222:¡)=

""GUaKPF"XCTEJCT*722+"<?")]gpvgt"vjg"WTN"vq"vjg"GncuvkeUgctej"kpfgz."
uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221
kpfgzpcog_)=
""EQPHKIaWTN"XCTEJCT*722+"<?")]gpvgt"vjg"WTN"vq"vjg"Inqdcn"Ugctej"
Ugtxkeg."uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_)=
""KPFaCRKaWTN"XCTEJCT"*722+<"?")]gpvgt"vjg"WTN"vq"vjg"Inqdcn"Ugctej"
Kpfgzkpi"Ugtxkeg."uvtkpi"qh"vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/
kpfgzkpi/ugtxkeg<":4_Í
DGIKP
""UGNGEV"$Kf$"KPVQ"WTNaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejWtn)=
""UGNGEV"$Kf$"KPVQ"EQPHKIaWTNaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"
$Eqfg$"?")InqdcnUgctejEqphkiUgtxkegWtn)=
""UGNGEV"$Kf$"KPVQ"KPFaCRKaUGVVKPIaKF"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"
?")InqdcnUgctejKpfgzkpiCrkWtn)=

""UGNGEV"OCZ*$Kf$+"KPVQ"WTNaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"YJGTG"
$U{uUgvvkpiuKf$"?"WTNaUGVVKPIaKF=
""UGNGEV"OCZ*$Kf$+"KPVQ"EQPHKIaWTNaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"
YJGTG"$U{uUgvvkpiuKf$"?"EQPHKIaWTNaUGVVKPIaKF=
""UGNGEV"OCZ*$Kf$+"KPVQ"KPFaCRKaXCNaKF""HTQO"$U{uUgvvkpiuXcnwg$"YJGTG"
$U{uUgvvkpiuKf$"?"KPFaCRKaUGVVKPIaKF=
```

```
""KH"*WTNaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*WTNaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."GUaKPF+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"GUaKPF"YJGTG"
$U{uUgvvkpiuKf$"?"WTNaUGVVKPIaKF=
""GPF"KH=

""KH"*EQPHKIaWTNaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*EQPHKIaWTNaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."EQPHKIaWTN+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"EQPHKIaWTN"YJGTG"
$U{uUgvvkpiuKf$"?"EQPHKIaWTNaUGVVKPIaKF=
""GPF"KH=

""KH"*KPFaCRKaXCNaKF"KU"PWNN+
""""VJGP
""""""KPUGTV"KPVQ"$U{uUgvvkpiuXcnwg$
""""""""*$U{uUgvvkpiuKf$."$U{uCfokpWpkvKf$."$KuFgh$."$VgzvXcnwg$+
""""""""XCNWGU
""""""""*KPFaCRKaUGVVKPIaKF."U[UaCFOKPaWKF.")3)."KPFaCRKaWTN+=
""""GNUG
""""""WRFCVG"$U{uUgvvkpiuXcnwg$"UGV"$VgzvXcnwg$"?"KPFaCRKaWTN"YJGTG"
$U{uUgvvkpiuKf$"?"KPFaCRKaUGVVKPIaKF=
""GPF"KH=
GPF=
```

3. Restart Creatio, flush Redis and log into the application.

For PostgreSQL DBMS

1. Enable the Feature Toggle function of the global search (GlobalSearch, GlobalSearch_V2, GlobalSearchRelatedEntityIndexing) by running the following SQL script:

```
FQ"&&

FGENCTG"
""""InqdcnUgctejHgcvwtg"XCTEJCT*72+"<?")InqdcnUgctej)=
""""InqdcnUgctejHgcvwtgKf"wwkf=
""""InqdcnUgctejX4Hgcvwtg"XCTEJCT*72+"<?")InqdcnUgctejaX4)=
""""InqdcnUgctejX4HgcvwtgKf"wwkf=
""""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg"XCTEJCT*72+"<?"""
)InqdcnUgctejTgncvgfGpvkv{Kpfgzkpi)=
""""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"wwkf=
""""cnnGornq{gguKf"wwkf"<?")C4;C5DC7/6D2F/FG33/;C73/227278E2222:)=
```

```
DGIKP

"""UGNGEV"$Kf$"KPVQ"InqdcnUgctejHgcvwtgKf"HTQO"$Hgcvwtg$
"""YJGTG"$Eqfg$"?"InqdcnUgctejHgcvwtg
"""NKOKV"3=
"""KH"*InqdcnUgctejHgcvwtgKf"KU"PQV"PWNN+
""""""VJGP
""""""""""KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf+"VJGP
"""""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"
YJGTG"$HgcvwtgKf$"?"InqdcnUgctejHgcvwtgKf=
""""""""""GNUG
""""""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKf+=
""""""""""GPF"KH=
"""GNUG
"""""""InqdcnUgctejHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
"""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejHgcvwtgKf."InqdcnUgctejHgcvwtg."InqdcnUgctejHgcvwtg+=
"""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejHgcvwtgKf+=
"""GPF"KH=

"""UGNGEV"$Kf$"KPVQ"InqdcnUgctejX4HgcvwtgKf"HTQO"$HgcvwtgË
"""YJGTG"$Eqfg$"?"InqdcnUgctejX4Hgcvwtg
"""NKOKV"3=
"""KH"*InqdcnUgctejX4HgcvwtgKf"KU"PQV"PWNN+
""""VJGP
""""""""KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf+"VJGP
"""""""""""WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"InqdcnUgctejX4HgcvwtgKf=
""""""""GNUG
"""""""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKf+=
""""""""GPF"KH=
"""GNUG
"""""""InqdcnUgctejX4HgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
"""""""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*InqdcnUgctejX4HgcvwtgKf."InqdcnUgctejX4Hgcvwtg."
InqdcnUgctejX4Hgcvwtg+=
"""""""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
InqdcnUgctejX4HgcvwtgKf+=
"""GPF"KH=

""UGNGEV"$Kf$"KPVQ"IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"HTQO"$Hgcvwtg$"
```

```
YJGTG"$Eqfg$"?IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg"NKOKV"3=
""KH"*IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"KU"PQV"PWNN+
""VJGP
""KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"
DwnmaGUaFFaHgcvwtgKf+"VJGP
WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf=
""GNUG
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf+=
""GPF"KH=
""GNUG
""IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
""KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf."IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtg+=
""KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$.$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
IUaTgncvgfGpvkv{KpfgzkpiHgcvwtgKf+=
""GPF"KH=
GPF"&&=
```

2. Run the following script to set the system setting values (GlobalSearchUrl, GlobalSearchConfigServiceURL, and GlobalSearchIndexingApiUrl):

```
WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"GncuvkeUgctej"kpfgz."uvtkpi"qh"vjg"
hqnnqykpi"v{rg"/"jvvr<11gzvgtpcn0gncuvkeugctej<;4221kpfgzpcog_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?
")InqdcnUgctejWtn)"NKOKV"3"+=

WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Ugctej"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/crk<:3_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejEqphkiUgtxkegWtn)"NKOKV"3"+=

WRFCVG"$U{uUgvvkpiuXcnwg$
UGV"VgzvXcnwg"?"]urgekh{"WTN"vq"vjg"Inqdcn"Kpfgzkpi"Ugtxkeg."uvtkpi"qh"
vjg"hqnnqykpi"v{rg"/"jvvr<11iu/ygd/kpfgzkpi/ugtxkeg<:4_
YJGTG"$U{uUgvvkpiuKf$"?"*UGNGEV"$Kf$"HTQO"$U{uUgvvkpiu$"YJGTG"$Eqfg$"?"
)InqdcnUgctejKpfgzkpiCrkWtn)"NKOKV"3"+=
```

3. Restart Creatio, flush Redis and log into the application.

SEE ALSO

- Global search

Set up bulk duplicate search

Bulk duplicate search is a third-party service for bulk deduplication of Creatio section records.

ATTENTION

Set up the global search service in ElasticSearch to ensure correct operation of the bulk duplicate search. More information about global search setup is available in the "Setting up the global search service (version 2.0)" article.
Basic knowledge of Docker software and Linux OS administration is required to set up the service.

The bulk duplicate search service uses version control functionality. This instruction is universal for all service versions. Versions 1.0–1.5 are compatible with any Creation versions that use the bulk duplicate search functionality. Version 2.0 is compatible with Creatio 7.15.4 and up.

Recommended system requirements

Characteristics	Service version 1.0 - 1.5	Service version 2.0
Processor	Pentium 4, Athlon 64 or higher with SSE2 support.	Pentium 4, Athlon 64 or higher with SSE2 support.
RAM	2 GB and more	3 GB or more
HDD	20 GB and more of free RAM	30 GB and more of free RAM

Components of the bulk duplicate search service

Prerequisites:

1. Global search components. The list is available in the "Setting up the global search service (version 2.0)" article.
2. Components of the bulk duplicate search service. The list of components is available below.

Components to deploy on server 1:

Mongodb – document-oriented DBMS.

Components to deploy on server 2:

dd-web-api – web service for communicating in Creatio.

dd-data-service – internal service for communication with mongdb.

dd-duplicates-search-worker – duplicate search component.

dd-duplicates-deletion-worker – duplicate deletion component.

dd-duplicates-confirmation-worker – component that performs grouping and filtering of the detected duplicates taking into account their uniqueness.

dd-duplicates-cleaner – component for clearing the duplicates.

dd-deduplication-task-worker – component for setting the deduplication task.

dd-deduplication-preparation-worker – component for preparing the deduplication process, it generates queries for duplicate search according to the rules.

To set up the components, download the source files, using the following link: download files.

CONTENTS

Bulk duplicate search service setup procedure

1. Set up global search. Read more >>>
2. Set up mongodb. Read more >>>
3. Download and unzip the necessary setup source files. Copy them to the computer with the installed "docker-compose" software. download files.
4. Set up the environment variables. Read more >>>
5. Launch the containers. Read more >>>
6. Verify successful running of containers. Read more >>>
7. Verify logging. Read more >>>
8. Enable the bulk duplicate search function in Creatio. Read more >>>

Deploy and set up mongodb

The install and setup instruction is available on the mongodb official website. Go to the website.

Setting up the environment variables

The environment variables are contained in the compose.env file. Edit this file to set the values of variables.

Variable name	Details	Default value
DEDUPLICATION_TAG	Container tag on dockerhub.	Version 1.0 if the bulk duplicate search service version is also 1.0. Version 1.2 if the bulk duplicate search service version is also 1.2. Version 1.3 if the bulk duplicate search service version is also 1.3. Version 1.4 if the bulk duplicate search service version is also 1.4. Version 1.5 if the bulk duplicate search service version is also 1.5. Version 2.0 if the bulk duplicate search service version is also 2.0.

Variable name	Details	Default value
ELASTICSEARCH_URI	External path to elasticsearch that was deployed on the global search setup step in Creatio.	http://user:password@external.elasticsearch:9200/
WEB_API_PORT	The port that will contain the web-api component of the bulk duplicate search.	8086
REDIS_CACHE_OPTIONS_CONNECTION_STRING	External path to redis that was deployed on the global search setup step in Creatio. The variable is only used to set up the service of versions 1.0–1.5.	external.redis:6379,defaultDatabase=0,syncTimeout=5000
RABBITMQ_URI	External path to rabbitmq that was deployed on the global search setup step in Creatio. The variable is only used to set up the service of versions 1.0–1.5.	amqp://gs:gs@external.rebbitmq:5672
MONGODB_CONNECTION_STRING	External path to mongodb.	mongodb://dd:dd@external.mongodb:27017?uuidRepresentation=Standard

Launching the containers

To launch the containers, execute the following command:

```
ef"eqorqug"%"uykvej"vq"vjg"ÈeqorqugÍ"hqnfgt
fqemgt/eqorqug"wr"/f
```

Verify successful running of containers.

To view the list of all containers that are run, execute the following command in the console:

```
fqemgt"ru"//hknvgt"$ncdgn?ugtxkeg?ff$"/c"//hqtocv"$vcdng"
}}0Pcogu¡¡^v}}0Rqtvu¡¡^v}}0Uvcvwu¡¡^v}}0TwppkpiHqt¡¡$
```

The containers that are run will have an “Up” status.

Verify logging

By default, logging is performed during the “stdout” container command execution. To view the last 100 records from the dd-data-service container, execute the following command:

```
fqemgt"nqiu"//vckn"322"ff/fcvc/ugtxkeg
```

Enabling the bulk duplicate search function in Creatio

Settings on the Creatio side

1. Set up the "Deduplication service api address" system setting value. Read more >>>
2. Set up the "Duplicates search" operation permissions. Read more >>>
3. Enable the bulk duplicate search functionality in Creatio. Note that this setting is different for different DBMS. Read more >>>
4. Restart the Creatio application. Read more >>>

Modifying the "Deduplication service api address" system setting value

In the [System settings] section, find the "Deduplication service api address" system setting (DeduplicationWebApiUrl) and specify the URL to dd-web-api, string of the following type: http://external.deduplication-web-api:8086.

Adding the "Duplicates search" system operation

In the [Operation permissions] section, open the "Duplicates search" system operation (CanSearchDuplicates) and, on the [Operation permission] detail, provide permissions to the necessary users/roles, who will be able to perform the search for duplicates.

Enabling the bulk duplicate search functionality in Creatio

You can enable the bulk duplicate search (Feature Toggle) functionality (Deduplication, ESDeduplication, BulkESDeduplication) by running a specific SQL script. The script will differ depending on the used DBMS – MS SQL, Oracle or Postgre SQL.

FOR MS SQL DBMS

```
FGENCTG"BFgfwrnkecvkqpHgcvwtg"PXCTEJCT*72+"?")Fgfwrnkecvkqp)=
FGENCTG"BFgfwrnkecvkqpHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BFgfwrnkecvkqpHgcvwtg+=

FGENCTG"BGUFgfwrnkecvkqpHgcvwtg"PXCTEJCT*72+"?")GUFgfwrnkecvkqp)=
FGENCTG"BGUFgfwrnkecvkqpHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?"BGUFgfwrnkecvkqpHgcvwtg+=

FGENCTG"BDwnmaGUaFFaHgcvwtg"PXCTEJCT*72+"?")DwnmGUFgfwrnkecvkqp)=
FGENCTG"BDwnmaGUaFFaHgcvwtgKf"WPKSWGKFGPVKHKGT"?"*UGNGEV"VQR"3"Kf"
HTQO"Hgcvwtg"YJGTG"Eqfg"?BDwnmaGUaFFaHgcvwtg+=

FGENCTG"BcnnGornq{gguKf"WPKSWGKFGPVKHKGT"?")C4;C5DC7/6D2F/FG33/;C73/
227278E2222:)=
KH"*BFgfwrnkecvkqpHgcvwtgKf"KU"PQV"PWNN+
DGIKP
 KH"GZKUVU"*UGNGEV",""HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BFgfwrnkecvkqpHgcvwtgKf+
 "WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?BFgfwrnkecvkqpHgcvwtgKf
 GNUG
```

```
 "KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3).
BFgfwrnkecvkqpHgcvwtgKf+
GPF
GNUG
DGIKP
 UGV"BFgfwrnkecvkqpHgcvwtgKf"?"PGYKF*+
 KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU
*BFgfwrnkecvkqpHgcvwtgKf."BFgfwrnkecvkqpHgcvwtg."
BFgfwrnkecvkqpHgcvwtg+
 "KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BFgfwrnkecvkqpHgcvwtgKf+
GPF

KH"*BGUFgfwrnkecvkqpHgcvwtgKf"KU"PQV"PWNN+
DGIKP
 KH"GZKUVU"*UGNGEV","HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BGUFgfwrnkecvkqpHgcvwtgKf+
""WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"?"
BGUFgfwrnkecvkqpHgcvwtgKf
 GNUG
 "KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BGUFgfwrnkecvkqpHgcvwtgKf+
GPF
GNUG
DGIKP
 UGV"BGUFgfwrnkecvkqpHgcvwtgKf"?"PGYKF*+
 KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"
*BGUFgfwrnkecvkqpHgcvwtgKf."BGUFgfwrnkecvkqpHgcvwtg."
BGUFgfwrnkecvkqpHgcvwtg+
 KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BGUFgfwrnkecvkqpHgcvwtgKf+
GPF

KH"*BDwnmaGUaFFaHgcvwtgKf"KU"PQV"PWNN+
DGIKP
 KH"GZKUVU"*UGNGEV","HTQO"CfokpWpkvHgcvwtgUvcvg"YJGTG"HgcvwtgKf"?"
BDwnmaGUaFFaHgcvwtgKf+
 "WRFCVG"CfokpWpkvHgcvwtgUvcvg"UGV"HgcvwtgUvcvg"?"3"YJGTG"HgcvwtgKf"
?BDwnmaGUaFFaHgcvwtgKf
 GNUG
 "KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."
HgcvwtgUvcvg.HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."
BDwnmaGUaFFaHgcvwtgKf+
GPF
GNUG
DGIKP
 UGV"BDwnmaGUaFFaHgcvwtgKf"?"PGYKF*+
 KPUGTV"KPVQ"Hgcvwtg"*Kf."Pcog."Eqfg+"XCNWGU"*BDwnmaGUaFFaHgcvwtgKf."
BDwnmaGUaFFaHgcvwtg."BDwnmaGUaFFaHgcvwtg+
 KPUGTV"KPVQ"CfokpWpkvHgcvwtgUvcvg"*U{uCfokpWpkvKf."HgcvwtgUvcvg."
```

```
HgcvwtgKf+"XCNWGU"*BcnnGornq{gguKf.")3)."BDwnmaGUaFFaHgcvwtgKf+
GPF
```

FOR ORACLE DBMS

```
ETGCVG"QT"TGRNCEG"HWPEVKQP
igpgtcvgawwkf"tgvwtp"xctejct4"ku
 "xawwkf"xctejct4*5:+=
 "xaiwkf"xctejct4*54+=
DGIKP
 "xaiwkf"<?"u{uaiwkf*+=
 "xawwkf"<?"nqygt*
)})"~~
 "uwduvt*xaiwkf."3.:+"~~")/)"~~
 "uwduvt*xaiwkf.";.6+"~~")/)"~~
 "uwduvt*xaiwkf."35.6+"~~")/)"~~
 "uwduvt*xaiwkf."39.6+"~~")/)"~~
 "uwduvt*xaiwkf."43+"~~
 ")¡)
 "+=
 "TGVWTP"xawwkf=
GPF=
1
FGENCTG
 FgfwrnkecvkqpHgcvwtg"XCTEJCT*72+"<?")Fgfwrnkecvkqp)=
 FgfwrnkecvkqpHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
 FgfwrnkecvkqpHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
 GUFgfwrnkecvkqpHgcvwtg"XCTEJCT*72+"<?")GUFgfwrnkecvkqp)=
 GUFgfwrnkecvkqpHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
 GUFgfwrnkecvkqpHgcvwtgKfaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
 DwnmGUFgfwrnkecvkqpHgcvwtg"XCTEJCT*72+"<?")DwnmGUFgfwrnkecvkqp)=
 DwnmGUFgfwrnkecvkqpHgcvwtgKf"XCTEJCT*5:+"<?"PWNN=
 DwnmaGUaFFaIWKF"XCTEJCT*5:+"<?"igpgtcvgawwkf*+=
 cnnGornq{gguKf"XCTEJCT*5:+"<?")}9H5D:8;H/56H5/6H42/CD6F/
96:2C7HFH869¡)=
 UvcvgaFgfwrnkecvkqp"XCTEJCT*3+"<?"PWNN=
 UvcvgaGUFgfwrnkecvkqp"XCTEJCT*3+"<?"PWNN=
 UvcvgaDwnmGUFgfwrnkecvkqp"XCTEJCT*3+"<?"PWNN=
DGIKP
 UGNGEV"OCZ*$Kf$+"KPVQ"FgfwrnkecvkqpHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"FgfwrnkecvkqpHgcvwtg"CPF"tqypwo"?"3=
 UGNGEV"OCZ*$Kf$+"KPVQ"GUFgfwrnkecvkqpHgcvwtgKf"HTQO"$Hgcvwtg$"YJGTG"
$Eqfg$"?"GUFgfwrnkecvkqpHgcvwtg"CPF"tqypwo"?"3=
 UGNGEV"OCZ*$Kf$+"KPVQ"DwnmGUFgfwrnkecvkqpHgcvwtgKf"HTQO"$Hgcvwtg$"
YJGTG"$Eqfg$"?"DwnmGUFgfwrnkecvkqpHgcvwtg"CPF"tqypwo"?"3=
 UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaFgfwrnkecvkqp"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"FgfwrnkecvkqpHgcvwtgKf"CPF"
tqypwo"?"3=
 UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaGUFgfwrnkecvkqp"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"
DwnmGUFgfwrnkecvkqpHgcvwtgKf"CPF"tqypwo"?"3=
```

```
 UGNGEV"OCZ*$HgcvwtgUvcvg$+"KPVQ"UvcvgaDwnmGUFgfwrnkecvkqp"HTQO"
$CfokpWpkvHgcvwtgUvcvg$"YJGTG"$HgcvwtgKf$"?"
DwnmGUFgfwrnkecvkqpHgcvwtgKf"CPF"tqypwo"?3=
 KH"*FgfwrnkecvkqpHgcvwtgKf"KU"PWNN+"VJGP
 "KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*FgfwrnkecvkqpHgcvwtgKfaIWKF."FgfwrnkecvkqpHgcvwtg."
FgfwrnkecvkqpHgcvwtg+=
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
FgfwrnkecvkqpHgcvwtgKfaIWKF+=
 "GNUG
 "KH"*UvcvgaFgfwrnkecvkqp"KU"PQV"PWNN+"VJGP
 "WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"FgfwrnkecvkqpHgcvwtgKf=
 "GNUG
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
FgfwrnkecvkqpHgcvwtgKfaIWKF+=
 "GPF"KH=
GPF"KH=
KH"*GUFgfwrnkecvkqpHgcvwtgKf"KU"PWNN+"VJGP
 "KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*GUFgfwrnkecvkqpHgcvwtgKfaIWKF."GUFgfwrnkecvkqpHgcvwtg."
GUFgfwrnkecvkqpHgcvwtg+=
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
GUFgfwrnkecvkqpHgcvwtgKfaIWKF+=
 "GNUG
 "KH"*UvcvgaGUFgfwrnkecvkqp"KU"PQV"PWNN+"VJGP
 "WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"GUFgfwrnkecvkqpHgcvwtgKf=
 "GNUG
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
GUFgfwrnkecvkqpHgcvwtgKfaIWKF+=
 "GPF"KH=
GPF"KH=
KH"*DwnmGUFgfwrnkecvkqpHgcvwtgKf"KU"PWNN+"VJGP
 "KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU*DwnmaGUaFFaIWKF."
DwnmGUFgfwrnkecvkqpHgcvwtg."DwnmGUFgfwrnkecvkqpHgcvwtg+=
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
DwnmaGUaFFaIWKF+=
 "GNUG
 "KH"*UvcvgaDwnmGUFgfwrnkecvkqp"KU"PQV"PWNN+"VJGP
 "WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"YJGTG"
$HgcvwtgKf$"?"DwnmGUFgfwrnkecvkqpHgcvwtgKf=

 "GNUG
 "KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
```

```
DwnmaGUaFFaIWKF+=
 "GPF"KH=
 GPF"KH=
GPF=
```

FOR POSTGRESQL DBMS

```
FQ"&&
FGENCTG
    FgfwrnkecvkqpHgcvwtg"XCTEJCT*72+"<?")Fgfwrnkecvkqp)=
    FgfwrnkecvkqpHgcvwtgKf"wwkf=

    GUFgfwrnkecvkqpHgcvwtg"XCTEJCT*72+"<?")GUFgfwrnkecvkqp)=
    GUFgfwrnkecvkqpHgcvwtgKf"wwkf=

    DwnmaGUaFFaHgcvwtg"XCTEJCT*72+"<?")DwnmGUFgfwrnkecvkqp)=
    DwnmaGUaFFaHgcvwtgKf"wwkf=

 "cnnGornq{gguKf"wwkf"<?")C4;C5DC7/6D2F/FG33/;C73/227278E2222:)=

DGIKP

    UGNGEV"$Kf$"KPVQ"FgfwrnkecvkqpHgcvwtgKf"HTQO"$Hgcvwtg$
    YJGTG"$Eqfg$"?"FgfwrnkecvkqpHgcvwtg
    NKOKV"3=
    KH"*FgfwrnkecvkqpHgcvwtgKf"KU"PQV"PWNN+
        VJGP
            KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"FgfwrnkecvkqpHgcvwtgKf+"VJGP
                WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"
YJGTG"$HgcvwtgKf$"?"FgfwrnkecvkqpHgcvwtgKf=
            GNUG
                KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
FgfwrnkecvkqpHgcvwtgKf+=
            GPF"KH=
    GNUG
        FgfwrnkecvkqpHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
        KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*FgfwrnkecvkqpHgcvwtgKf."FgfwrnkecvkqpHgcvwtg."FgfwrnkecvkqpHgcvwtg+=
        KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
FgfwrnkecvkqpHgcvwtgKf+=
    GPF"KH=

    UGNGEV"$Kf$"KPVQ"GUFgfwrnkecvkqpHgcvwtgKf"HTQO"$Hgcvwtg$
    YJGTG"$Eqfg$"?"GUFgfwrnkecvkqpHgcvwtg
    NKOKV"3=
    KH"*GUFgfwrnkecvkqpHgcvwtgKf"KU"PQV"PWNN+
        VJGP
            KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
```

```
$HgcvwtgKf$"?"GUFgfwrnkecvkqpHgcvwtgKf+"VJGP
             WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"
YJGTG"$HgcvwtgKf$"?"GUFgfwrnkecvkqpHgcvwtgKf=
          GNUG
             KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
GUFgfwrnkecvkqpHgcvwtgKf+=
          GPF"KH=
       GNUG
          GUFgfwrnkecvkqpHgcvwtgKf"<?"wwkfaigpgtcvgax6*+
          KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*GUFgfwrnkecvkqpHgcvwtgKf."GUFgfwrnkecvkqpHgcvwtg."
GUFgfwrnkecvkqpHgcvwtg+=
          KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf."
)3).GUFgfwrnkecvkqpHgcvwtgKf+=
       GPF"KH=

    UGNGEV"$Kf$"KPVQ"DwnmaGUaFFaHgcvwtgKf"HTQO"$Hgcvwtg$
    YJGTG"$Eqfg$"?"DwnmaGUaFFaHgcvwtg
    NKOKV"3=
    KH"*DwnmaGUaFFaHgcvwtgKf"KU"PQV"PWNN
       VJGP
          KH"GZKUVU"*UGNGEV","HTQO"$CfokpWpkvHgcvwtgUvcvg$"YJGTG"
$HgcvwtgKf$"?"DwnmaGUaFFaHgcvwtgKf+"VJGP
             WRFCVG"$CfokpWpkvHgcvwtgUvcvg$"UGV"$HgcvwtgUvcvg$"?"3"
YJGTG"$HgcvwtgKf$"?"DwnmaGUaFFaHgcvwtgKf=
          GNUG
             KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
DwnmaGUaFFaHgcvwtgKf+=
          GPF"KH=
    GNUG
       DwnmaGUaFFaHgcvwtgKf"<?"wwkfaigpgtcvgax6*+=
       KPUGTV"KPVQ"$Hgcvwtg$"*$Kf$."$Pcog$."$Eqfg$+"XCNWGU"
*DwnmaGUaFFaHgcvwtgKf."DwnmaGUaFFaHgcvwtg."DwnmaGUaFFaHgcvwtg+=
       KPUGTV"KPVQ"$CfokpWpkvHgcvwtgUvcvg$"*$U{uCfokpWpkvKf$."
$HgcvwtgUvcvg$."$HgcvwtgKf$+"XCNWGU"*cnnGornq{gguKf.")3)."
DwnmaGUaFFaHgcvwtgKf+=
    GPF"KH=
GPF"&&=
```

Restarting the Creatio application

Clear redis, restart the Creatio application and log in.

Recommended operations for the service functioning

We recommend performing mongodb backup once a day to support the functionality of the service and enable restoring of data, e.g., in case of electricity breakdowns.

SEE ALSO

- Global search setup
- Deduplication

Set up machine learning service

Machine learning service is used for predicting values based on large volumes of historical data and current facts. Read more >>>

ATTENTION

Base knowledge of Docker, Linux or Windows administration is required to set up the machine learning service.

CONTENTS

Machine learning service setup preparations

To set up the service, you need to have a server (physical or virtual machine) with Linux or Windows OS installed. Docker software is used for installing the service components. Download the archive containing the configuration files and installation scripts. Download archive

ATTENTION

We recommend using a Linux-based server for production environment. You can only use a Windows based server for the development environment. Contact the support service to receive Docker containers that care compatible with Windows.

NOTE

Depending on your company needs you can use either Docker Community Edition (CE) or Enterprise Edition (EE). Learn more in the Docker Guide.

Recommended system requirements for the server

Processor	64-Bit processor, minimum 4 cores
RAM	8 GB or more
HDD	20 GB or more of hard drive free space
OS	Docker-friendly Linux distribution. Supported Linux platforms are covered in the Docker guide. We recommend using stable versions of Ubuntu or Debian. 64-Bit versions of Windows 10, Windows Server 2016 with Hyper-V hypervisor support.
Docker	v.18.03.1 and higher

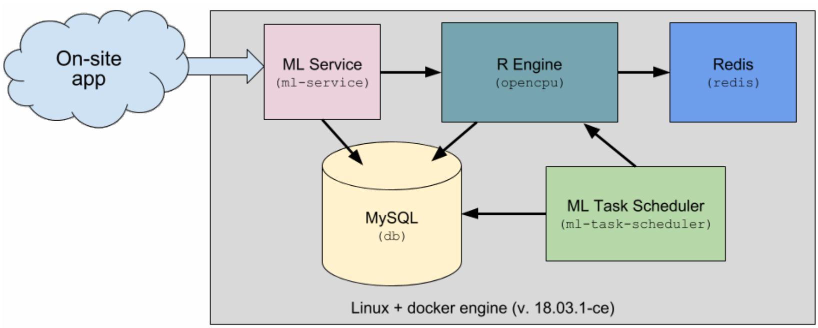
Machine learning service components

The machine learning service uses the following components (Fig. 1):

- ML Service – machine learning web service. The only component enabling external access.
- Python Engine – machine learning wrapper service for open-source machine learning libraries.
- ML Task Scheduler – task scheduler.

- MySQL– MySQL database. You can access it via the standard 3306 port.

Fig. 1 Machine learning service components



All the components are packed as Docker images for the convenient on-site installation of the service.

SEE ALSO

- Set up machine learning service

Set up machine learning service

Algorithm of machine learning service setup:

1. Install Docker. Read more >>>
2. Install Docker Compose. Read more >>>
3. Install and set up the service components. Read more >>>
4. Verify the installation. Read more >>>

Install Docker

Installing Docker on Linux platforms is covered in the Docker guide.

Run the “docker --version” command on Linux machine to verify the installed Docker version.

Install Docker Compose

Installing Docker Compose on Linux platforms is covered in the Docker guide.

Run the “docker-compose --version” command on Linux machine to verify the installed Docker Compose version.

Set up the machine learning service components

All the machine learning service component containers are deployed via the Docker Compose utility. Download the configuration files and scripts that are necessary to deploy and configure the service components. Download archive

NOTE

The configuration files contain all necessary default settings for a Linux based server.

The archive structure of the configuration files and scripts:

/etc/

../ml-service/appsettings.json – the ML web service configuration.

../ml-service/log4net.config – setup of the web service logging level.

../task-scheduler/appsettings.json – the "ML Task Scheduler" utility configuration.

../task-scheduler/log4net.config – setup of "ML Task Scheduler" logging level.

Docker-compose.yml – the "Docker Compose" utility configuration.

.env – the file containing environment variables for running the components. For example, it contains MySql password.

ATTENTION

If you need to change the password to MySql database, you need to update it in the .env file as well as in other configuration files that contain database access setup sections.

Set up the machine learning service components

1. Download and unzip the archive with the configuration files and scripts to a custom directory, for example, /opt/ml.
2. Using the Linux terminal, go to the /docker-compose catalog of the unzipped archive, for example, /opt/ml/docker-compose.
3. Run the "sudo docker-compose pull" command in the terminal. Wait until the download of the required service component images from the Docker Hub is complete.

ATTENTION

If the server is disconnected from the Internet, download all required images to an Internet-connected computer manually (see the "docker-compose.yml" configuration file). Then use the sudo docker export and sudo docker import commands to transfer the images to the target computer as files.

4. Run the sudo docker-compose run dbmigration command to initialize the database structure. Wait until the command execution is complete.
5. Run the sudo docker-compose up -d command to launch the services. A "logs" folder will be created in the current catalog.

Verify the setup of the machine learning service components

6. To verify the installation of ML web service, run the following command in Linux:

   curl -X GET localhost:5005/readiness

   The service must return the following response:

   Healthy
7. To verify the running of ML Task Scheduler, execute the following command in the Linux terminal:

   curl -X GET localhost:5004/readiness

   The service must return the following response:

   Healthy
8. To verify the running of R Engine, execute the following command in the Linux terminal:

   curl -X GET localhost:8081/readiness

The service must return the following response:

R Service is ready

9. To verify creating of tables, run the following command in the terminal:

   docker exec -it [DB Container Id] mysql -u root --password=Supervisor ml -e "show tables;"

   where [DB Container Id] is an identifier of the container with a database component. You can find out the container identifier using the sudo docker ps command.

   CASE

   Verification of creating tables:

   docker exec -it [DB Container Id] mysql -u root --password=Supervisor ml -e "show tables;"

   As a result, the names of primary service tables should be displayed: “modelinstance”, “traindata”, “trainsession”, etc.

SEE ALSO

- Update the machine learning service components

Update the machine learning service components

ATTENTION

We recommend saving a backup copy of MySQL database, before you update the services. Learn more in the Docker Guide.

10. Using the Linux terminal, go to the docker-compose catalog with the configured files, for example, /opt/ml/docker-compose.
11. Run the sudo docker-compose stop command to stop the service component containers.
12. Run the sudo docker-compose pull command in the terminal. Wait until the download of the required service component images from the Docker Hub is complete.
13. Run the sudo docker-compose run dbmigration command to initialize the database structure. Wait until the command execution is complete.
14. Run the sudo docker-compose up -d command to launch the services.

ATTENTION

If your application already has configured and trained data models, we recommend retraining them after updating the service.

SEE ALSO

- Predictive analysis
- Machine learning service (development guide)

Exchange Listener synchronization service

The Exchange Listener synchronization service synchronizes Creatio with MS Exchange and IMAP/SMTP mail services using a subscription mechanism.

This article covers deploying the Exchange Listener synchronization service for Creatio installed on-site.

The service consists of two required components:

- The Exchange Listener primary module
- NoSQL Redis DBMS

The Exchange Listener module initiates the outgoing connection to EWS API. It uses the mailbox credentials and creates a subscription to "new message" events. The open subscription remains in the component memory to ensure fast response time when new emails arrive. When a corresponding event is received, the email instance loads.

Using an in-memory repository will be enough for deploying the service.

Redis DBMS enables creating a scalable and fault-tolerant system of processing nodes. The Redis repository holds information about the mailboxes that are served. This lets any container process Creatio queries for adding a new subscription or check the status of a specific subscription regardless of the subscription node.

Requirements to Redis:

- anonymous access allowed
- separate database available for the Exchange Listener service operation

CONTENTS

Exchange Listener deployment methods

We recommend using the Kubernetes orchestrator and Helm package manager to deploy the service. Read more >>>

You can use Docker to speed up the deployment in the development environment. Read more >>>

CONTENTS

Deploying the synchronization service via Kubernetes

To deploy the Exchange Listener synchronization service in Docker:

1. Set up the target environment:
    a. The Kubernetes cluster. Read more about how to set up and manage the cluster on the Kubernetes documentation website.
    b. The "Helm" package manager. Read more about installing the package manager on the Helm documentation website.
2. Install Redis. Use the GitHub website to learn more about how to install Redis using Helm.

   Example of a command for installing Redis:

```
jgno"kpuvcnn"//pcogurceg">pcogurceg"pcog@"//ugv"wugRcuuyqtf?hcnug"//
ugv?uncxg0rgtukuvgpeg0gpcdngf?hcnug"//ugv"
ocuvgt0rgtukuvgpeg0gpcdngf?hcnug"//ugv"enwuvgt0gpcdngf?hcnug"//pcog"
>tgfkuafgrnq{ogpvapcog@"uvcdng1tgfku
```

3. Install the Exchange Listener module. To install the module, download the helm package. Find the available parameters of the helm package in the "Available parameters of the Exchange Listener helm package" table.

ATTENTION

For newer Kubernetes versions, specify the API version and add the following parameter:

```
//ugv"crkXgtukqp?crru1x3
```

Example of a command for installing Exchange Listener using the service address and relative path:

```
jgno"kpuvcnn"//ugv"gpx0jquv?>tgfkuajquv@"//ugv"CrkWtn?>mwdgtpgvguawtn@"
//ugv"kpitguu0rcvj?>nkuvgpgtarcvj@"//ugv"crkXgtukqp?crru1x3"//
pcogurceg">pcogurceg"pcog@"//pcog"gzejcpignkuvgpgt">1rcvj1vq1jgno1
gzejcpignkuvgpgt0vi|@
```

Exchange Listener address: <kubernetes_url>/<listener_path>.

To check whether the Exchange Listener service is available, execute the following request: <kubernetes_url>/<listener_path>/api/listeners/status (Fig. 1).

Example of installing the Exchange Listener using Node IP and port address:

```
jgno"kpuvcnn"//ugv"gpx0jquv??>tgfkuajquv@"//ugv"ugtxkeg0v{rg?>pqfgaKR@"
//ugv"ugtxkeg0pqfgRqtv?>pqfgarqtv@"//ugv"crkXgtukqp?crru1x3"//
pcogurceg">pcogurceg"pcog@"//pcog"gzejcpignkuvgpgt">1rcvj1vq1jgno1
gzejcpignkuvgpgt0vi|@
```

Exchange Listener address – <node_IP:node_port>.

To check whether the address is available, execute the following request: <node_IP:node_port>/api/listeners/status (Fig. 1).

Fig. 1 Example of the Exchange Listener service response


```
{
  "ServiceStatus": "Started",
  "version": "0.5.0",
  "connections": {
    "657b3ea8-477f-419c-a07a-4d4cc2158fc5": {
      "SenderEmailAddress": "[illegible]",
      "BpmUser": "[illegible]",
      "BpmEndpoint": "https://[illegible]/0/ServiceModel/ExchangeListenerService.svc/NewEmail",
      "State": "exists",
      "Id": "657b3ea8-477f-419c-a07a-4d4cc2158fc5",
      "RedisKey": "Subscription_657b3ea8-477f-419c-a07a-4d4cc2158fc5_exchangelistener-api-2",
      "UseFullEmail": true
    },
    "332bcae2-0530-4636-bc09-50a594389f53": {
      "SenderEmailAddress": "[illegible]",
      "BpmUser": "[illegible]",
      "BpmEndpoint": "https://[illegible]/0/ServiceModel/ExchangeListenerService.svc/NewEmail",
      "State": "exists",
      "Id": "332bcae2-0530-4636-bc09-50a594389f53",
      "RedisKey": "Subscription_332bcae2-0530-4636-bc09-50a594389f53_exchangelistener-api-1",
      "UseFullEmail": true
    },
```

Available parameters of the Exchange Listener helm package

Parameter	PARAMETER DESCRIPTION	DEFAULT VALUE
replicaCount	Number of StatefulSet processors	2 (specified in milliseconds)
service.type	Service type. You can find more information about the Kubernetes service types in the Kubernetes documentation.	ClusterIP
service.nodePort	If the service.type parameter equals NodePort, specify the external service port in this parameter. Read more about the NodePort type in the Kubernetes documentation.	
env.host	Host address for Redis.	
env.port	Host port for Redis.	6379 (specified in milliseconds)
env.base	Database number for Redis.	0 (specified in milliseconds)
ingress.enabled	Using address overriding via ingress.	true
ApiUrl	Service address if ingress.enabled=true	
ingress.path	Service relative path.	
log4Net.level	Logging level by default.	Info

System requirements to servers

By default, separate nodes of the StatefulSet type process the requests based on 1 processor replica per 50 active mailboxes. The number of replicas depends on the replicaCount parameter. If the number of mailboxes increases, you need to increase the number of processors by specifying the needed value.

One processor requires 30% of the 2Hz processor time and 700 Mb of RAM (disk storage is not used).

You can configure automatic scaling depending on the number of active subscriptions. To learn more, contact support@creatio.com.

SEE ALSO

- Deploying the synchronization service in Docker

Deploying the synchronization service in Docker

To set up the service, use a server (computer or virtual machine) with Linux or Windows OS installed.

> ATTENTION
>
> We recommend deploying the synchronization service in Docker only for installing in the development environment. This method differs by the high speed of deployment but it does not guarantee meeting the requirements of the product environment, namely: function fault tolerance, scaling for processing big

volumes of requests, and a single approach to manage the components using the container orchestration. For the product environment, we strongly recommend using the Kubernetes and Helm package manager. Learn more in the "Deploying the synchronization service via Kubernetes" article.

To deploy the Exchange Listener synchronization service in Docker:

1. Set up the target environment:
   a. Docker container platform. Read more about how to install and set up the platform on the Docker documentation website.
   b. Redis DBMS. To install the Redis Server, use the Windows OS setup file or the Linux OS Guide. Make sure you deploy an anonymous Redis DBMS. Learn more about deploying Redis DBMS in Docker on the Docker Hub community website.
2. Install and run the Exchange Listener module. To do this, download and deploy the Docker container image.

   Below is the example of a command for downloading and running the image via the command line and Docker installed.

```
fqemgt"twp"^
/f"^
%"Rqtv"hqtyctfkpi
/r">nqecnjquvarqtv@<:2"^
//tguvctv"wpnguu/uvqrrgf"^
%"Eqppgevkpi"vq"Tgfku
//gpx"GzejcpigNkuvgpgtTgfkuJquv?>tgfkuajquv@<>tgfkuarqtv@"^
//gpx"GzejcpigNkuvgpgtTgfkuFcvcdcug?>tgfkuafcvcdcugapwodgt@"^
//gpx"RqfPcog?GzejcpigNkuvgpgt"^
//pcog"GzejcpigNkuvgpgt"^
%"Vjg"GzejcpigNkuvgpgt"ewttgpv"kocig"kp"Fqemgt"Jwd
droqpnkpg1gzejcpignkuvgpgt<20903//tguvctv"wpnguu/uvqrrgf
```

In this example:

- <localhost_port> – local server port ;
- <redis_host> – Redis server address;
- <redis_database_number> – DB number of the Redis server;
- <service_name> – service name (entered manually).

NOTE

Use the Docker Hub community to see the current Exchange Listener version.

To check whether the deployed Docker container is available, run the following command:

```
fqemgt"ru"/c"/Çhknvgt"$pcog?>ugtxkegapcog@$
```

Exchange Listener service address – localhost:<localhost_port>.

To check whether Exchange Listener service address is available, execute the following request: <Localhost:<localhost_port>/api/listeners/status (Fig. 1).

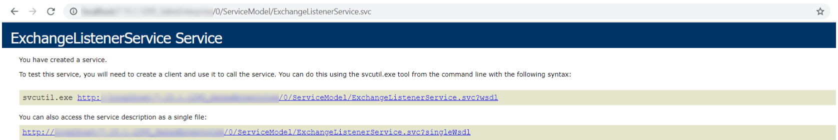
SEE ALSO

- Setting up the Exchange Listener service on the side of Creatio

Setting up the Exchange Listener service on the side of Creatio

1. Make sure the ExchangeListenerService anonymous service is available at [Creatioapplication address]/0/ServiceModel/ExchangeListenerService.svc (Fig. 2).

   Fig. 2 Example of a response from ExchangeListenerService



2. Set the needed system setting values. To do this:

   a. Open the System Designer, e.g., by clicking .

   b. Click “System settings” in the “System setup” block.

   c. Set the system setting values as follows:
   ExchangeListenerServiceUri. The format of the system setting value: [the service address used at installation]/api/listeners.
   The URL of the Exchange event processing service in Creatio. The format of the system setting value: [the anonymous ExchangeListenerService address]/NewEmail. For example, https://mycreatio.com/0/ServiceModel/ExchangeListenerService.svc/NewEmail.

3. On the feature toggle page, connect EmailIntegrationV2 and ExchangeListenerEnabled for all users.

4. Delete the mail synchronization triggers

   To do this:

   a. Stop the mail synchronization triggers and run the below MSSQL script:

```
Wrfcvg"STV\aVTKIIGTU"ugv"VTKIIGTaUVCVG"?")Rcwugf)"yjgtg"LQDaITQWR"?"
)Gzejcpig)"cpf"LQDaPCOG"nkmg")'Gocknu')
```

   b. Restart the application, clear the Redis repository.

   c. Run the below MSSQL query and make sure that the [QRTZ_TRIGGERS] database table contains a record with the “ExchangeListener” value in the [JOB_GROUP] column:

```
Ugngev","htqo"STV\aVTKIIGTU"yjgtg"LQDaITQWR"?")GzejcpigNkuvgpgt)
```

   d. Check the synchronization operation.

   e. Run the below MSSQL query and delete the strings with the “Exchange” value in the [JOB_GROUP] column and strings with the “Emails” in the [JOB_NAME] column value from the [QRTZ_TRIGGERS] database table:

```
Fgngvg"htqo"STV\aVTKIIGTU"yjgtg"LQDaITQWR"?")Gzejcpig)"cpf"LQDaPCOG"
nkmg")'Gocknu')
```

5. Restart the website.

SEE ALSO

- Integration with email services by the IMAP/SMTP protocol
- Integration with the MS Exchange service

Additional setup

After you install Creatio application on-site and enable websockets, additional setup is required for the correct operation of integrations and other functions, such as synchronization with Google and Facebook, bulk emails, cases, or landings.

> NOTE
> This chapter is intended for system administrators.

CONTENTS

Set up Google integration

To set up Google integration on a Creatio on-site application:

1. Set up a Google account.
2. Enable access to Calendar API.
3. Generate integration keys "Client ID" and "Client Secret".
4. Enter the keys in Creatio as system settings:

Detailed instructions are available in the "Registering the application to synchronize with Google (on-site only)" article.

SEE ALSO

- Registering the application to synchronize with Google (on-site only)
- Setting up the synchronization of Creatio contacts and activities with the Google contacts and calendar

Set up landing page integration

This functionality is available in all configurations containing the [Landing pages and web forms] section.

Customers who have their Creatio application deployed on-site may need to perform additional setup to have the HTML code displayed correctly on the landing page. It is required when according to URL safety rules the URL displayed in the user's browser must be different from the one used for external access to Creatio. For example, when the URL gets blocked by the firewall.

To set up landing pages:

1. Go to System Designer -> [System settings].
2. Open the "Landing pages data collection service URL" system setting in the [Landing pages section settings] folder.
3. In the [Default value] field, enter the external URL of your Creatio application, for example, http://creatio-marketing.mydomain.com, and save your settings.

As a result, the HTML code embedded in your landing page will use the correct URL to call the web service for creating a new lead in Creatio, for example:

```
ugtxkegWtn<"$jvvr<11o{ukvg0etgcvkq/octmgvkpi1UgtxkegOqfgn1
IgpgtcvgfYgdHqtoUgtxkeg0uxe1UcxgYgdHqtoNgcfFcvc$
```

If you use a secure connection protocol, enter the URL and specify https:// in it. The web service call address, in this case, will be as follows:

```
ugtxkegWtn<"$jvvru<11o{ukvg0etgcvkq/octmgvkpi1UgtxkegOqfgn1
IgpgtcvgfYgdHqtoUgtxkeg0uxe1UcxgYgdHqtoNgcfFcvc$
```

NOTE

By default, this setting is not configured and the application URL is generated automatically.

SEE ALSO

- The [Landing pages and web forms] section

Set up case resolution notifications

Service Creatio enterprise edition, Service Creatio customer center edition, and Financial Services Creatio, customer journey edition products can send your customers email notifications, informing them about changes in their support case status.

To enable automatic email notifications on case resolution:

1. Go to System Designer -> [System settings].
2. Open the "Website URL" system setting.
3. Specify the full URL of your Creatio website in the [Value] field, e.g., http://mydomain.com.
4. Click [Save].

SEE ALSO

- Case resolution notification setup

Set up data enrichment

Your personal cloud key and the URL to Creatio cloud services are required to use data enrichment. Use the following system settings to specify these values:

- "Account enrichment service URL". By default, this setting is populated for all applications.
- "Creatio cloud services API key". This setting is populated for cloud applications by default but needs to be configured for on-site applications.

Request your personal key for your on-site application from the Creatio support. After receiving the key:

1. In the system designer, click the [System settings] link.
2. Go to the [Creatio cloud services] group, and select the [Creatio cloud services API key] system setting.
3. Specify the key in the [Default value] field and click [Save]

Data enrichment functions can now be used.

SEE ALSO

- Data enrichment

Set up bulk emails

The functionality is available in Creatio marketing and CRM bundles.

Set up your email service integration with Creatio for sending bulk emails. All cloud email service settings for bulk emails are consolidated on the bulk email setup page in the [Email] section. You can use it to edit general settings of sending bulk emails and receiving responses, sender domains as well as to monitor the connection status.

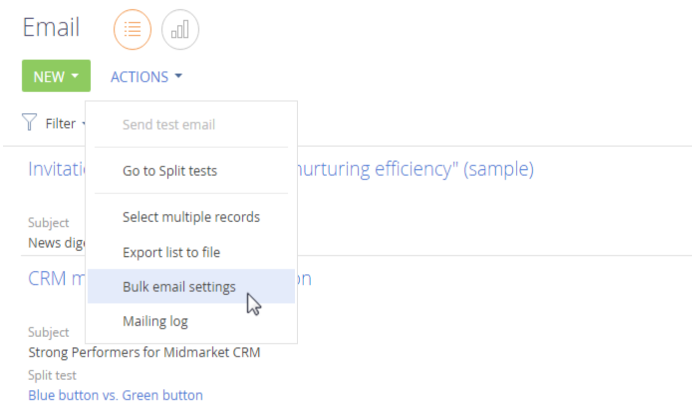
CONTENTS

How to set up integration with Creatio cloud email service (for on-site users)

To check integration with cloud email service:

1. Go to the [Email] section. Open the [Actions] menu and select [Bulk email settings] (Fig. 1).

   Fig. 1 Opening the bulk email setting page



2. Populate the [General settings] tab fields.
   - In the [API key] field, specify your personal access key to the bulk email service.
   - In the [Creatio cloud services connection URL] field, specify the bulk email cloud service address in the “https://url_adress.com” format.
   - In the [Auth key] field, specify the authentication key for receiving responses.

   To obtain the API key and the Auth key, as well as the URL to bulk email cloud services after installing product licenses, please contact our support at support@creatio.com.
   - The [Email provider] field will be populated automatically with the name of your email service provider after the [API key] and [Creatio cloud services connection URL] fields have been populated.

ATTENTION

Contact Creatio support to change your bulk email service provider.

3. In the [Domain to receive responses] field, specify the domain address of your Creatio application in the following format: http://www.yourdomain.com.

IMPORTANT

POST requests should be sent and received via the 443 port. To check the connection after you have completed the settings, open the following pages in the browser:
https://url_adress.com/metadata – checking connection via port 443;
"url_adress.com" is the received Creatio cloud service URL.
If the page opens, your setting has been performed correctly. If the page does not open, check whether the port is opened correctly.

How to set up sender domain list

For the sender name to be displayed correctly in the bulk email and to avoid unauthorized bulk email sent on your behalf, perform the following settings:

- Specify the list of your domains on the bulk email settings page.
- Verify each domain by using specific text SPF-, DKIM- and DMARK-records.
- Save the changes.

To do this:

1. Add the list of your domains by clicking the + button on the [Sender domains] tab.

NOTE

All added domains, including those that are no longer in use, are displayed in the list. Domains cannot be deleted from the list.

2. Select a domain from the list for verification. A DKIM/SPF setup manual for the selected domain will be displayed on the right side of the screen. The manual text will contain correct SPF and DKIM records generated for your domains.

NOTE

DKIM/SPF manuals are different for each domain. To view a specific manual, select the required domain from the list.

3. Set up domain verification. The verification setup process is covered in a separate article. Read more >>>

As a result, the bulk email settings [Connection status] field will display the " Connection active" message.

Additional settings for integration with bulk email service

Set up one of the Creatio access options for Creatio Cloud Email Service for the correct operation of bulk email functions:

1. In the server firewall, permit receiving POST requests from the Internet to the domain where Creatio is deployed: http://www.yourdomain.com.
2. In the server firewall, permit receiving POST requests from a specific web service. For example, if the application is deployed on http://www.yourdomain.com, then the following address must

be accessible: http://www.yourdomain.com/0/ServiceModel/CESWebhooksService.svc/HandleWebHooks.

NOTE

There is no need to set up processing of unsubscribe requests and to check if the Creatio application server is able to receive GET-requests. Creatio will process unsubscribe queries automatically.

ATTENTION

If the HTTPS protocol is used to access Creatio, the application server must have an active certificate installed. In case the data transfer protocol or application address is changed, make the appropriate changes on the bulk email setup page.

It is not recommended to use IP address "white lists" to limit access to open ports because the Creatio Cloud Email Service may send analytical information about responses from different IP addresses. If the "white list" doesn't contain the IP address that the analytical information is sent from, the data will be lost.

When using "blacklists", we recommend checking that the received IP addresses are not on this list.

How to enable bulk email monitoring on-site

We recommend that you set up monitoring of your bulk email status by the support service before you start working with bulk emails. If you do this, Creatio support will be able to resolve any potential bulk email issues faster. Support service employees will have access to aggregated bulk email metrics that do not contain personalized email message texts, email templates, etc.

NOTE

The procedure is different for cloud and on-site applications. The setup for cloud-based applications is described in a separate article – "How to permit monitoring bulk email status by Creatio support".

The setup procedure is as follows:

1. Go to the system designer by clicking the button in the top right corner of the application window and click [System settings].
2. Open the [Enable monitoring of the email troubleshooting indicators] system setting and select the [Default value] checkbox. Save the changes.
3. In the application server firewall, permit access from the Internet to the web service:

   /0/ServiceModel/CESTroubleshootingService.svc/emailstate.

   For example, if the application is deployed on http://www.yourdomain.com, then the following address must be accessible:

   http://www.yourdomain.com/0/ServiceModel/CESTroubleshootingService.svc/emailstate.

As a result, the support service employees will be able to identify and eliminate potential bulk email issues.

SEE ALSO

- Bulk email setup page
- How to send bulk emails with your company domain
- Bulk email guidelines

Set up a web-farm for Creatio application server

You can enhance the performance of large-scale Creatio projects (up to several thousand users) through horizontal scaling, i.e., increasing the number of servers with deployed Creatio applications and distributing the workload between them.

The load balancer may be either hardware or software. To work in fault-tolerant mode, use the HTTP/HTTPS traffic balancer that supports the WebSocket protocol. Creatio has been tested on HAProxy software load balancer. There are cases of successful implementation of other balancers, e.g., Citrix, Cisco, NginX, FortiGate, MS ARR.

This guide covers horizontal scaling of Creatio application using a free open-source load balancer (HAProxy), designed for distributing the load between several application servers.

General deployment procedure

To deploy Creatio with horizontal scaling of application servers:

1. Deploy all needed Creatio application instances in a web-farm.

   NOTE

   It is recommended to specify identical names in IIS and the Application pool setting for all instances of the application.

2. Specify the same SQL and Redis databases in the ConnectionStrings.config file for all instances.

```
>cff"pcog?ËtgfkuË"
eqppgevkqpUvtkpi?Ëjquv?FQOCKP0EQO=fd?2=rqtv?859;=oczTgcfRqqnUk|g?32=o
czYtkvgRqqnUk|g?722Ë1@
>cff"pcog?ËfdË"eqppgevkqpUvtkpi?ËFcvc"Uqwteg?FQOCKP0EQO=Kpkvkcn"
Ecvcnqi?FcvcdcugPcog=Kpvgitcvgf"Ugewtkv{?UURK="
OwnvkrngCevkxgTguwnvUgvu?Vtwg=Rqqnkpi/vtwg=Ocz"Rqqn"Uk|g?322Ë1@
```

3. In the <appSettings> block of the application's "Web.config" file, add the following key:

```
>cff"mg{?$VgpcpvKf$"xcnwg?$3$"1@
```

   The "value" number should be the same for all application instances of the web-farm.

   ATTENTION

   Starting with Creatio version 7.14.1, the <add key="TenantId" value="..."/> key can only be added to the internal Web.config file (Terrasoft.WebApp\Web.config). Adding the key to an external Web.config file may lead to application failures.

4. For each application, specify the same machineKey values for all sites in the Web.config file.
5. Grant access permissions to created application directories for the IUSR user and the user who launches the Application pool in IIS.
6. Set up a load balancer (e.g., HAProxy) for distributing the workload between the deployed application servers.
7. If necessary, set up workload balancing for database and session servers.

   NOTE

   More information about the clustering setup is available in the MSSQL and Oracle user guides. The fault tolerance setup using Redis Sentinel is described in a separate article.

SEE ALSO

- Install HAProxy balancer

- Set up HAProxy balancer

Install HAProxy balancer

The HAProxy load balancer supports a range of free open-source OS. In this guide, we will cover one of the simpler methods of deploying HAProxy on the Debian OS via the haproxy.debian.net service.

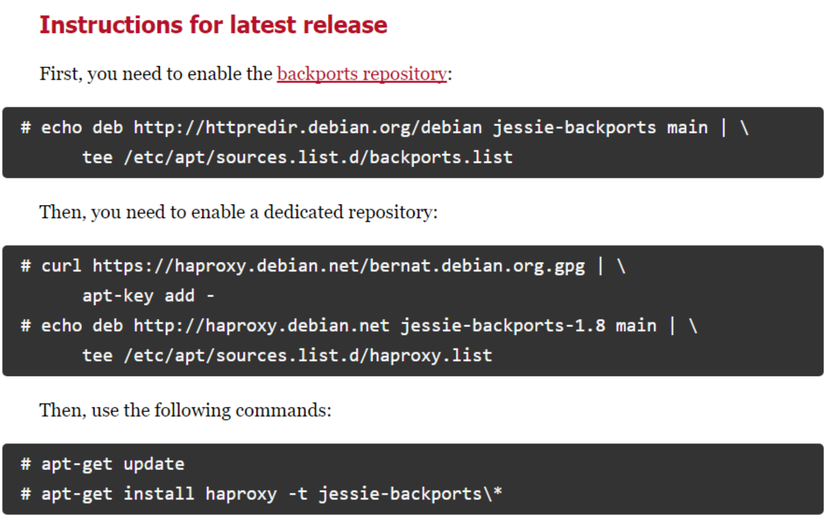
1. Open the installation service page by clicking https://haproxy.debian.net/
2. Select the OS and its version, afterward select the HAProxy version.

   NOTE

   Use the cat /etc/issue command to check the version of the currently installed Debian OS.

   As a result, the service will generate a set of commands that must be executed in the Debian OS to install HAProxy.

   Fig. 2 Example of HAProxy installation commands generated by the haproxy.debian.net service



Instructions for latest release

First, you need to enable the backports repository:

```
# echo deb http://httpredir.debian.org/debian jessie-backports main | \
      tee /etc/apt/sources.list.d/backports.list
```

Then, you need to enable a dedicated repository:

```
# curl https://haproxy.debian.net/bernat.debian.org.gpg | \
      apt-key add -
# echo deb http://haproxy.debian.net jessie-backports-1.8 main | \
      tee /etc/apt/sources.list.d/haproxy.list
```

Then, use the following commands:

```
# apt-get update
# apt-get install haproxy -t jessie-backports\*
```

3. Execute the generated commands one after another.

SEE ALSO

- Set up HAProxy balancer

Set up HAProxy balancer

To set up HAProxy, modify the haproxy.cfg file. You can find the file under the following path:

```
0001gve1jcrtqz{1jcrtqz{0ehi
```

Primary setup (required)

Add two sections necessary for HAProxy operation: frontend and backend.

The frontend section

Add two settings to the frontend section: bind and default_backend.

- In the bind setting, specify the address and the port that will receive requests distributed by HAProxy.
- In the default_backend option, specify the name that will match the name of the backend section.

As a result, the setup will look as follows:

```
htqpvgpf"htqpv
oczeqpp"32222
%Wukpi"vjgug"rqtvu"hqt"dkpfkpi
dkpf",<:2
dkpf",<665
%Eqpxgtv"eqqmkgu"vq"dg"ugewtg
turktgr"`*ugv/eqqmkg<0,+""^3=^"Ugewtg
fghcwnvadcemgpf"etgcvkq
```

The backend section

Add 2 required settings to the backend section:

- In the balance parameter, specify the type of balancing, e.g., roundrobin. More information about different types of balancing is available in HAProxy documentation.
- Use the server parameter to specify all servers (or “nodes”) for distributing the load.

Add a separate “server” parameter for each server (i.e. the deployed Creatio application instance) and specify the server/port addresses and weight. The server weight allows the balancer to distribute the load based on the physical capabilities of the servers. The more weight is specified for the server, the more requests it receives. For example, if you need to distribute the load between 2 Creatio application servers, add 2 “server” parameters to backend:

```
ugtxgt"pqfga3"]ugtxgt"cfftguu_<]rqtv_"ygkijv
ugtxgt"pqfga4"]ugtxgt"cfftguu_<]rqtv_"ygkijv
```

As a result, the setup will look as follows:

```
dcemgpf"etgcvkq
%ugv"dcncpeg"v{rg
dcncpeg"tqwpftqdkp

ugtxgt"pqfga3"pqfgugtxgt3<:2"ejgem"kpvgt"32222"ygkijv"4
ugtxgt"pqfga4"pqfgugtxgt4<:21ukvgpcog"ejgem"kpvgt"32222"ygkijv"3
```

The new settings will be applied as soon as you restart HAProxy. To restart HAProxy, use the following command:

```
ugtxkeg"jcrtqz{"tguvctv
```

Check server status

The HAProxy balancer works with the following server statuses:

Status name	Status details
UP	The server is operational.

Status name	Status details
UP - transitionally DOWN	The server registers as treated as operational at the moment, but the last health check has failed. As a result, the server is currently switching to the DOWN status.
DOWN - transitionally UP	The server registers as treated as not operational at the moment, but the last health check has succeeded. As a result, the server is currently switching to the UP status.
DOWN	The server is not operational.

Health checks initiate changes in a server's operational status. The simplest health check requires adding the "check" keyword in the server setup string. Running the health check requires the server's IP and TCP port. Health check example:

```
ugtxgt"pqfg3"000"ejgem
qrvkqp"jvvrejm"IGV"1NqikplPwkNqikp0curz
qrvkqp"jvvrejm"IGV"121rkpi
```

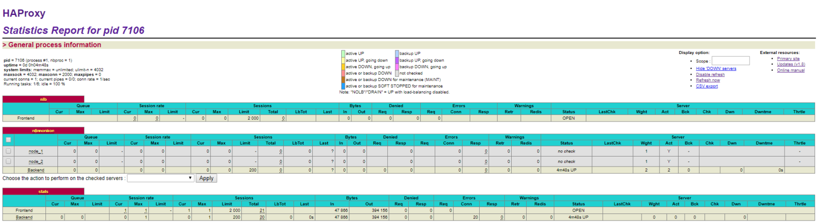
Set up web statistics (optional)

To enable web-statistics, add a new "listen" section with the following parameters: bind, mode http, stats enable, stats uri. The syntax is as follows:

```
nkuvgp"uvcvu"%"Fghkpg"c"nkuvgp"ugevkqp"ecnngf"$uvcvu©
    dkpf"<;222"%"Nkuvgp"qp"nqecnjquv<;222
    oqfg"jvvr
    uvcvu"gpcdng""%"Gpcdng"uvcvu"rcig
    uvcvu"wtk"1jcrtqz{auvcvu""%"Uvcvu"WTK
```

As a result, the web statistics of Creatio load balancing will be available for viewing in the browser.

Fig. 3 Example of a load balancer web statistics



To view the statistics, follow the path: [balancer address]:9000/haproxy_stats.

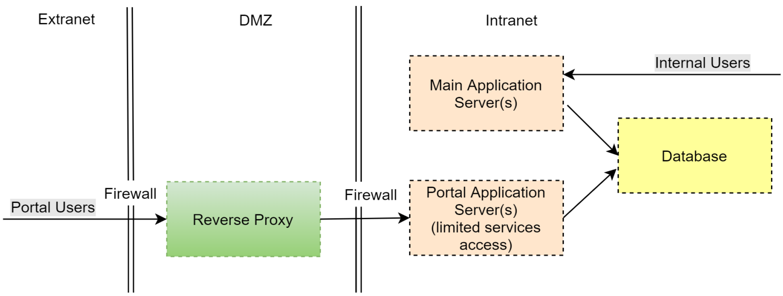
SEE ALSO

- Server-side system requirements
- Installing Creatio
- Set up secure access to the portal

Set up secure access to the portal

To ensure the safety of data, the on-site application must be deployed as a web farm when installing the portal. You can find a use case of setting up a web farm in the "Set up a web-farm for Creatio application server" article. Portal access is set up as follows (Fig. 4):

Fig. 4 Typical infrastructure with external network portal access



- Demilitarized zone (DMZ)
    - A reverse proxy server must be the only publicly accessible component in your DMZ.
    - The reverse proxy is used to implement the primary network activity logging. You can also configure it to limit access to the configuration files of your application.
    - Authorized portal users only have access to those configuration web services that they are expressly allowed to access at the application level.
    - During the development process, the access permissions for new web services are configured. Learn more in the "Restricting access to web services for portal users" article.
- Internal network (Intranet)
    - A separate set of application nodes is deployed on the web farm for servicing portal users. This set does not overlap with application nodes for servicing internal users.
    - To ensure the operation of the portal application and user application, separate accounts with different access permissions are created in the database.
    - The portal application settings deny the system users the ability to log in ("AuthProviders" are disabled, except for portal users). This is required to ensure that only portal users can create sessions from an external network (Extranet).
    - Additionally, you can configure external authentication providers to add a second authorization step.
    - Portal application nodes, DBMS, and user applications are deployed in separate segments with restricted access.

SEE ALSO

- Server-side system requirements
- Set up a web-farm for Creatio application server

Working with Creatio and Redis Sentinel

The Redis Sentinel mechanism is used to provide fault tolerance for the Redis repositories used by Creatio. It provides the following features:

- Monitoring. Sentinel makes sure that the master/slave instances work correctly in Redis.
- Notifications. Sentinel alerts system administrators if any instance–related errors occur in Redis.
- Automatic failover. If the Redis master instance is not working correctly, Sentinel promotes one of the slave instances to a master, and reconfigures the rest to work with the new master instance. Creatio is also notified about the new Redis connection address.

  ATTENTION

  Creatio does not support Redis clusters.

Redis Sentinel is a distributed system which is designed to run multiple instances that cooperate together. This approach has the following advantages:

- The fault is registered only if multiple Sentinel instances (which form a quorum) agree that the master instance is unavailable in Redis. This is done to reduce the number of false alerts.
- The Sentinel mechanism will still be available even if multiple Sentinel instances are not responding or do not work altogether. This is done to increase fault tolerance.

CONTENTS

Notable Sentinel specifics

- At least three Sentinel instances are required for a robust deployment. These instances should be placed into computers or virtual machines that are believed to fail in an independent way, i.e., the faults registered by these Sentinel instances should be caused by different sources. For example, the computers are located in different network zones. For example, the computers are located in different network zones.
- Due to asynchronous replication, the distributed system (Sentinel + Redis) does not guarantee that all data will be saved if a failure *does* occur.
- The fault tolerance of the configuration should be regularly monitored and further confirmed through tests that simulate failures.
- Docker port remapping creates certain issues with Sentinel processes (see the "Sentinel, Docker, NAT, and possible issues" block of the Sentinel documentation).

Minimal fault tolerance requirements for Redis Sentinel

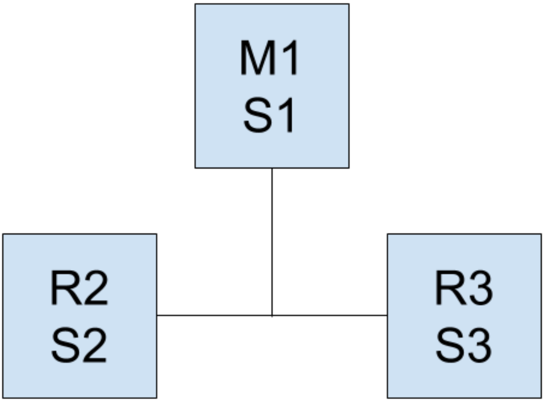
Legend:

- M1, M2 – Redis master instances.
- R1,R2, R3 – Redis slave instances.

- S1, S2, S3 – Sentinel instances.
- C1 – Creatio application.
- [M2] – promoted instance (e.g., from slave to master).

We recommend using a configuration with at least three Redis and Sentinel instances (see the "Example 2: basic setup with three boxes" block of the Sentinel documentation). This configuration is based on three nodes (computers or virtual machines), each containing running instances of both Redis and Sentinel (Fig. 1). Two Sentinel instances (S2 and S3) form a quorum (the number of instances required to ensure the fault tolerance of the current master instance).

Fig. 1 The three nodes configuration: quorum = 2



During regular operation, Creatio client application writes its data to a master instance (M1). This data is then replicated asynchronously to the slave instances (R2 and R3).

If the Redis master instance (M1) becomes unavailable, the Sentinel instances (S1 and S2) "conclude" that a failure has occurred and start the failover process. One of the Redis slave instances (R2 or R3) is promoted to the master, enabling the application to use it instead of the previous master instance.

ATTENTION

There is a risk of losing records in any Sentinel configuration, which uses asynchronous data replication. This occurs if the data were not written to the slave instance, promoted to a master.

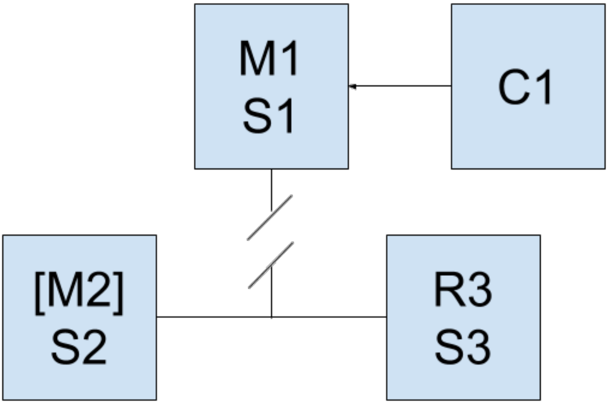
NOTE

Other possible fault tolerant configurations are described in the Sentinel documentation.

Network separation issues

If the network connection is lost, there is a risk that Creatio will continue to work with the old Redis master instance (M1), while the newly promoted master instance ([M2]) has already been assigned (Fig. 2).

Fig. 2 Network separation



This is easily avoided by enabling the option to stop writing data in case the master instance detects that the number of slave instances has decreased. To do this, set the following values in the redis.conf configuration file of the Redis master instance:

```
okp/uncxgu/vq/ytkvg"3
okp/uncxgu/ocz/nci"32
```

As a result, if the Redis master instance (M1) will not be able to transfer data to at least one slave instance, it will stop receiving data in 10 seconds after the first attempt. Once the system is recovered by Sentinel instances that form a quorum (S2 and S3), the Creatio application (C1) will be reconfigured to work with the new master–instance (M2).

ATTENTION

If the network is restored, the master instance will not be able to continue its operation automatically after stopping. If the remaining Redis slave instance (R3) also becomes unavailable, the system will stop working altogether.

System requirements

Redis is an in-memory database, therefore RAM capacity and performance rate are the main requirements for its correct operation. Since Redis is a single–threaded application which uses a single processor core, a single node (computer or virtual machine) with a dual-core processor is required to work with a single Redis instance. Sentinel instances require relatively few resources and can run on the same node as Redis.

It is recommended to deploy Redis and Sentinel on Linux OS.

The table below shows the recommended system requirements for a single node (computer or virtual machine), depending on the number of Creatio users.

Number of users	CPU	RAM
1–300	Intel Xeon E3-1225v5	2 GB
300–500		4 GB
500–1000		6 GB
1000–3000		12 GB
3000–5000		18 GB
5000–7000		26 GB
7000–10000		36 GB

Installing and configuring Sentinel

Redis Sentinel comes bundled up with the Redis distribution. The installation process is described in the Redis documentation. We recommend using the latest version of Redis.

Please refer to the "Quick tutorial" section of the Sentinel documentation to learn more about Sentinel configuration.

Configuring Creatio to work with Redis Sentinel

Customized libraries

Contact Creatio support to obtain customized libraries.

Files ConnectionStrings.config

Specify the following in the "redisSentinel" connection string:

- sentinelHosts – unlimited number of comma-separated addresses and ports of Sentinel instances in the <address>:<port> format.
- masterName – the name of the Redis master instance.

Connection string example:

```
>cff"pcog?$tgfkuUgpvkpgn$"
eqppgevkqpUvtkpi?$ugpvkpgnJquvu?nqecnjquv<485:2.nqecnjquv<485:3.nqecn
jquv<485:4=ocuvgtPcog?o{ocuvgt=uecpHqtQvjgtUgpvkpgnu?hcnug=fd?3=oczTg
cfRqqnUk|g?32=oczYtkvgRqqnUk|g?722$"1@
```

Web.config

Please make sure that the appSettings section includes the following parameters:

- Feature-UseRetryRedisOperation enables the internal Creatio mechanism that will retry any Redis operations that ended with errors.
- SessionLockTtlSec – the lifespan of the session lock key.
- SessionLockTtlProlongationIntervalSec – the period for which the lifespan of the session lock key is prolonged.

These settings must have the following values:

```
>cff"mg{?$curpgv<WugNgice{TgswguvWtnIgpgtcvkqp$"xcnwg?$vtwg$"1@
>cff"mg{?$UguukqpNqemVvnUge$"xcnwg?$82$"1@
>cff"mg{?$UguukqpNqemVvnRtqnqpicvkqpKpvgtxcnUge$"xcnwg?$42$"1@
```

Please make sure that the redis section includes the following parameters:

- enablePerformanceMonitor – enables the mechanism for monitoring the execution time of Redis operations. We recommend enabling this mechanism for debugging and troubleshooting. Default value: "Off" (enabling this mechanism might affect application performance).
- executionTimeLoggingThresholdSec – if the execution of a Redis operation exceeds this threshold, it will be recorded in the log. By default, "5 seconds".
- featureUseCustomRedisTimeouts – enables the use of timeouts specified in the configuration file. Default value: "Off".
- clientRetryTimeoutMs – all Redis operations that result in errors will be retried using the same client until they reach the timeout specified in this parameter. This parameter is used to eliminate errors caused by short network interruptions. At the same time, getting a new client from the pool is not required. By default, "4000 milliseconds".
- clientSendTimeoutMs – the time allocated for sending requests to the Redis server. By default, "3000 milliseconds".
- clientReceiveTimeoutMs – the time allocated for receiving responses from the Redis server. By default, "3000 milliseconds".
- clientConnectTimeoutMs – the time allocated for establishing a network connection to the Redis server. By default, "100 milliseconds".
- deactivatedClientsExpirySec – delay in deleting failed Redis clients after they are removed from the pool. The "0" value represents immediate removal. By default, "0".
- operationRetryIntervalMs – if the process for retrying a failed operation does not result in a successful execution, it will be postponed for the time period specified here. The operation will be performed with a new client, which may have already established a connection to the new master instance. By default, "1000 milliseconds".
- operationRetryCount – the number of repeated attempts to perform an operation with a new Redis client. By default, "10".

This settings must have the following values:

```
>tgfku"eqppgevkqpUvtkpiPcog?$tgfku$"gpcdngRgthqtocpegOqpkvqt?$hcnug$"
gzgewvkqpVkogNqiikpiVjtgujqnfUge?$7$"
hgcvwtgWugEwuvqoTgfkuVkogqwvu?$vtwg$"enkgpvTgvt{VkogqwvOu?$6222$"
enkgpvTgegkxgVkogqwvOu?$5222$"enkgpvUgpfVkogqwvOu?$5222$"
enkgpvEqppgevVkogqwvOu?$322$"fgcevkxcvgfEnkgpvuGzrkt{Uge?$2$"
qrgtcvkqpTgvt{KpvgtxcnOu?$3222$"qrgtcvkqpTgvt{Eqwpv?$32$"1@
```

SEE ALSO

- Creatio .NET Framework application on IIS
- Creatio setup FAQ

Creatio setup FAQ

Which Internet Information Services (IIS) components are required for Creatio?

To ensure the correct operation of Creatio on-site, enable the following components in the Windows [Programs and Features] menu:

1. .NET Framework 3.5:
    - Windows Communication Foundation Non-HTTP Activatvation
    - Windows Communication Foundation HTTP Activation
2. .NET Framework 4.7.2
    - ASP.NET 4.7.2
    - For WCF Services:
        - HTTP Activation
        - Message Queuing (MSMQ) Activation
        - Named Pipe Activation
        - TCP Activation
        - TCP Port Sharing

NOTE

Microsoft .Net Framework 4.7 or higher – for version 7.11.1 – 7.13.1, Microsoft .Net Framework 4.7.2 – for version 7.13.2 or higher;

Additionally, IIS services are key component for operation of websites and web applications deployed on Windows Server. Enable the following IIS components:

1. On the "Web Management Tools" tab:
    - IIS Management Console
    - IIS Management Script and Tools
    - IIS Management Service
2. On the "World Wide Web Services" tab:
    - For the Application Development Features component:
        - All ASP.NET elements
        - All .NET Extensibility elements
        - ISAPI extensions;
        - ISAPI Filters
        - WebSocket Protocol
    - For the Common HTTP Features component:

    - Default Document
    - HTTP Errors
    - HTTP Redirection
    - Static Content
- For the "Health and Diagnostics" component:
    - Custom Logging
    - HTTP Logging
    - Logging Tools
    - Request Monitor
- For the "Security" component:
    - Request filtering
    - IP and Domain Restriction

How do I switch from HTTP to HTTPS?

The detailed procedure for switching from HTTP to HTTPS is covered in a separate article.

Which account is used when you first log in to the system?

After the successful deployment of Creatio on-site, log in with these credentials: user - Supervisor, password - Supervisor.

Does the number of active Creatio users affect the number of Microsoft SQL Server?

The number Microsoft SQL Server users does not depend on the number Creatio users, though depends on the number of servers with databases. Please see the System requirements for on-site deployment

SEE ALSO

- Creatio .NET Framework application on IIS
- Websockets setup
- Switching from HTTP to HTTPS
- Additional setup

Creatio licensing

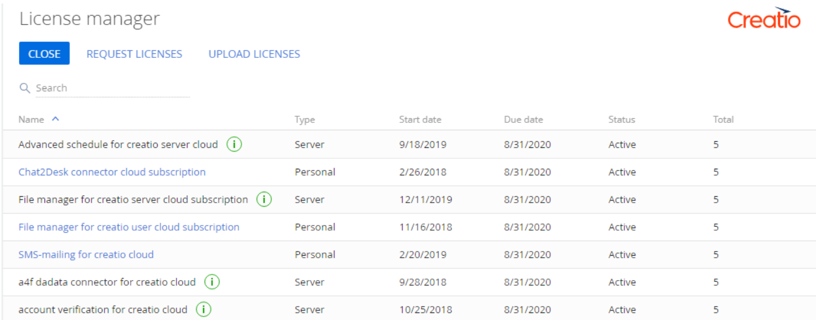
Only licensed users have access to Creatio functionality.

Licensing users in Creatio includes two stages:

1. Generating a license request and obtaining software licenses
2. Distribution of the available licenses between the user accounts

To license users, use the [License manager] section (Fig. 1) available in the System Designer.

Fig. 1 The [License manager] section



Use the License Manager for all Creatio licensing activities:

- check currently available licenses
- check the status, validity term and number of the available licenses
- generate requests for new licenses
- upload licenses
- distribute/recall licenses for multiple users

NOTE

Viewing, distributing and recalling licenses requires permission to the "Manage user licenses" ("CanManageLicUsers") system operation.
Learn more about using system operations in the "System operation permissions" article.

To open the license manager:

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [License manager].

NOTE

If the license validity term expires, the license manager page will automatically open for a user with the "System administrators" role when they log in to the application.

CONTENTS

Types of licenses in Creatio

There are several types of Creatio licenses, based on the type of licensed object: personal licenses, server licenses, and so-called “active marketing contact” licenses.

Personal licenses

Personal licenses provide access to the product for specific users. These licenses are linked to user accounts. A system administrator can redistribute the available licenses among users at any time.

> NOTE
> The license provides 1 GB of free data storage for users of the Creatio cloud application. Each additional 1 Gb of data storage is charged separately on an annual basis.

Server licenses

Server licenses provide access to additional system functionality, for example, phone integration – to all users on the server.

Unlike personal licenses, server licenses are not limited by the number of users.

Marketing campaign and active contact licenses

The marketing campaigns and active marketing contacts are available in Marketing Creatio.

Marketing Creatio functions require the following licenses:

- Marketing campaign licenses (“marketing creatio”). These licenses enable the functions of the Creatio Marketing sections: [Email], [Campaigns], [Events], etc. The number of licenses should correspond to the number of Creatio users.
- Active marketing contact licenses ("marketing creatio 1000 active contacts"). The licenses are used for creating records in the [Email], [Campaigns], and [Events] sections. The number of licenses must not be less than the number of active contacts who receive marketing communications (emails, campaigns, or events).

> NOTE
> License names include prefixes that specify the application deploy method - onsite or cloud. Cloud licenses do not apply to on-site applications and vice versa.

Active contacts are contacts who have had at least one of the following types of marketing communications within the last year:

- A contact was a part of an email audience and the email sent to the contact had an actual response.
- A contact was a part of an event audience.
- A contact was a part of a campaign audience.

Make sure that the number of active contacts (used licenses) does not exceed the number of available licenses.

If the number of used licenses exceeds that of the available licenses, errors may occur during the following:

- saving or sending emails
- editing email templates in the Content Designer
- advancing a campaign to the [Marketing email] step

- certain operations in the [Events] and [Campaigns] sections might be disabled

Creatio notifies the users when the number of available active contact licenses becomes lower than 10% of the total number of paid licenses. Please check the "Notifications" tab of the Communication panel regularly.

> NOTE
> If the number of active contacts exceeds the number of purchased licenses, you need to purchase additional licenses. Send a license request to Creatio technical support team.

The following guidelines will help avoid restrictions and errors caused by the lack of available licenses:

- When adding groups of contacts to email participants make sure to check the filters of corresponding contact folders. If the filters have been modified, participants who do not belong to the target audience of the email may be included in the folder.
- Creatio calculates the number of active contacts and available licenses regularly (once every four hours), and additionally – each time after an email is sent. That is why the notification about insufficient licenses may be missing when you form the email audience.

  If the number of active contacts does not exceed the available licenses on sending an email, Creatio will send emails to each of the recipients from the audience. For example, you have 10000 licenses and 9999 active contacts. You add 50000 recipients in the email audience. In this case, email messages will be sent to all contacts from the audience. After sending the email, Creatio check license availability and apply licensing limitations, if necessary.
- When sending emails, be sure to check the settings that enable you to manage the sending operation and restrict sending emails to inactive contacts, namely:
  - Prohibition to use a contact's email address (the [Do not use Email] checkbox on the [Communication options] detail of the contact).
  - Possibility to subscribe to certain email types as well as unsubscribe from them.

Check the number of used active contact licenses

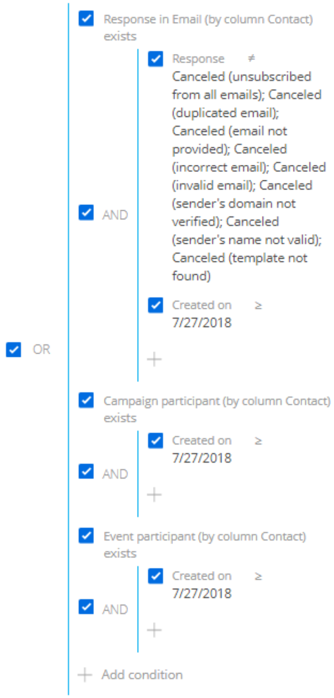
The number of owned licenses and active contacts is available in the [Dashboards] section, on the [Licenses] tab. These indicators may slightly differ from the actual data since they are calculated once a day.

> ATTENTION
> Creatio checks license availability on schedule or after sending an email. We recommend checking the number of available licenses manually when you prepare a new email communication with customers.

According to the terms of an "active contact license", one contact can receive no more than 365 marketing communications per year.

To view the list of active contacts, set up a filter in the [Contacts] section as shown in Fig. 2.

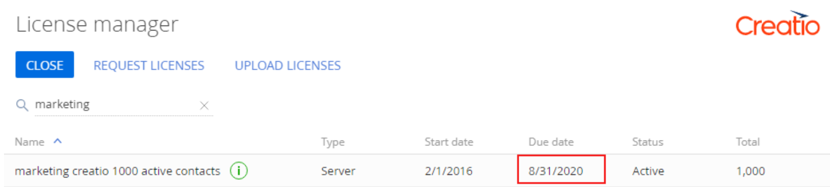
Fig. 2 A filter for viewing active marketing contacts



The “Created on” date in the filter is the date when the calculation of license validity term starts. To calculate the needed date:

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [License manager].
3. On the page that opens, use the search field to quickly find the needed license by name and view its validity (due) term (Fig. 3).

Fig. 3 Viewing the validity term of a license



4. Subtract one year from the received date.

As a result, you will get the start date of the license validity period, which needs to be populated in the [Created on] column when setting up the filter for selecting active contacts. For example, if the license validity period is 8/31/20, as shown in Fig. 3, the start date for setting up the filter will be 8/31/19.

SEE ALSO

- Software licensing
- License distribution

Software licensing

The process of licensing is similar for all types of licenses used in Creatio.

To buy or prolong the validity of a license:

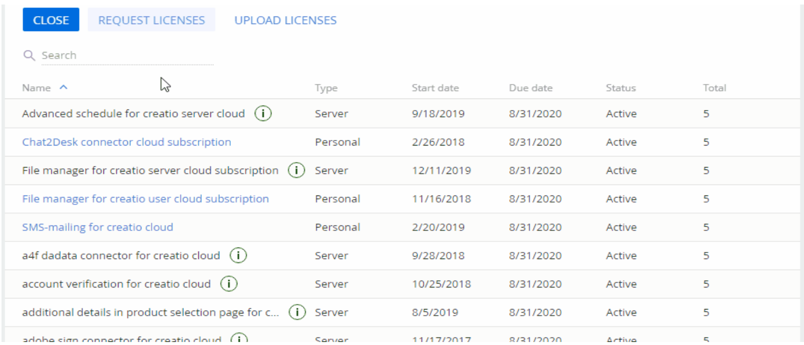
1. Generate a license request file and send it to the Creatio technical support team.
2. You will receive a file in return. Upload it to the system.

Generating a license request

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [License manager].
3. Click [Request licenses].

   In the window that pops up, enter the company Id for licensing. This Id is provided by the Creatio support service. After you enter the Id, click [Generate a license request file] (Fig. 4).

   Fig. 4 Generating a license request



   As a result, a license request file in the *.tlr format will be generated.

4. Send the license request file to Creatio technical support team. In response, the team will send you a file with the information about purchased licenses.

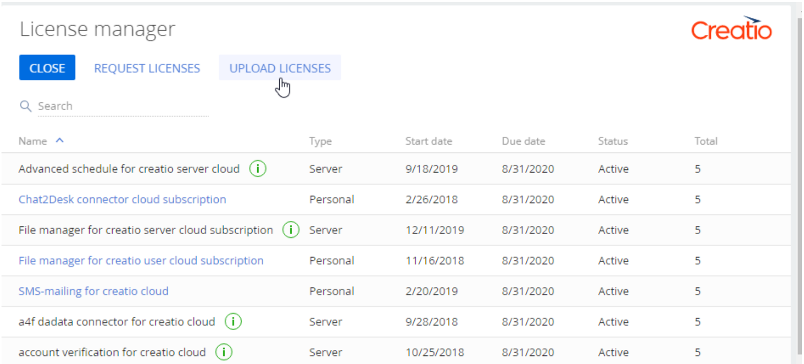
   NOTE

   You can also request licenses from the [System users] section by clicking “Request licenses” in the [Actions] menu.

Uploading a license file in the system:

1. Save the license file received from the technical support team.
2. Log in to Creatio as an administrator and open the System Designer, e.g., by clicking .
3. Under [Users and administration], click [License manager].
4. Click [Upload licenses] (Fig. 5).

Fig. 5 Uploading a license file to Creatio



5. Specify the path to the license file you saved earlier.

   NOTE

   You can also request licenses from the [System users] section by clicking “Upload licenses” in the [Actions] menu.

As a result, the updated license data will be uploaded in Creatio. The list of licenses will be updated, new personal licenses will be available for distribution between the users..

SEE ALSO

- License distribution

License distribution

To enable new employees to log in or use specific functions, their user accounts must be licensed. A system administrator can redistribute the available licenses at any time.

> **NOTE**
> When distributing personal licenses, make sure the number of provided licenses does not exceed the number of purchased licenses. Server licenses do not need to be distributed.

Use either the License Manager or the [System users] section to distribute the licenses.

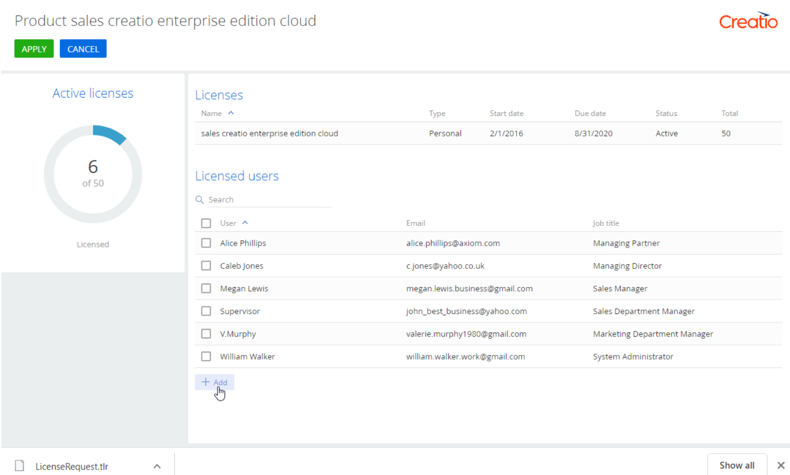
Licensing users in the license manager

If you need to distribute licenses to several user accounts at once, use the license manager.

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [License manager].
3. Select a license from the list. Use the search field and list sorting by columns to quickly find the needed product by name.
4. Click the product name.

   The product licensing page will open. On this page, you can view the license type, the start and due dates, the status, the total number of available licenses, as well as distribute the available licenses to users.
5. Click [Add] and select users that you want to distribute licenses to (Fig. 6).

   Fig. 6 Adding users in the license manager

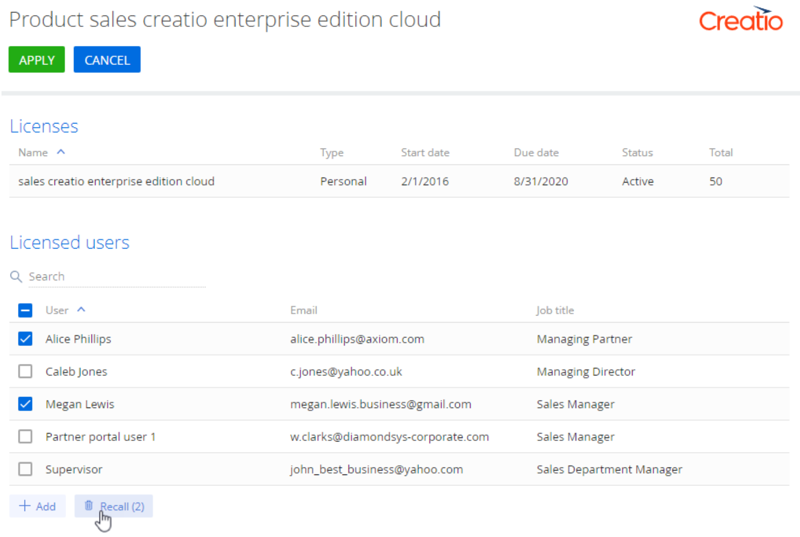
   

   Note that the number of licensed users should not exceed the number of available licenses. You can view the number of available/used licenses at the diagram in the left part of the screen (Fig. 6).

   You can recall licenses to redistribute them between other users if needed.

6. To recall licenses, select users from the list and click [Recall] (Fig. 7). You can also hover your cursor over the names of users whose license you want to recall and click .

Fig. 7 Recalling licenses



7. Save the settings by clicking [Apply].
8. Use the same procedure to distribute the available licenses for other purchased products.
9. Close the license manager window.

As a result, Creatio licenses will be distributed/recalled for specific user accounts.

Licensing users in the [System users] section

To license users, you can also use the [System users] section.

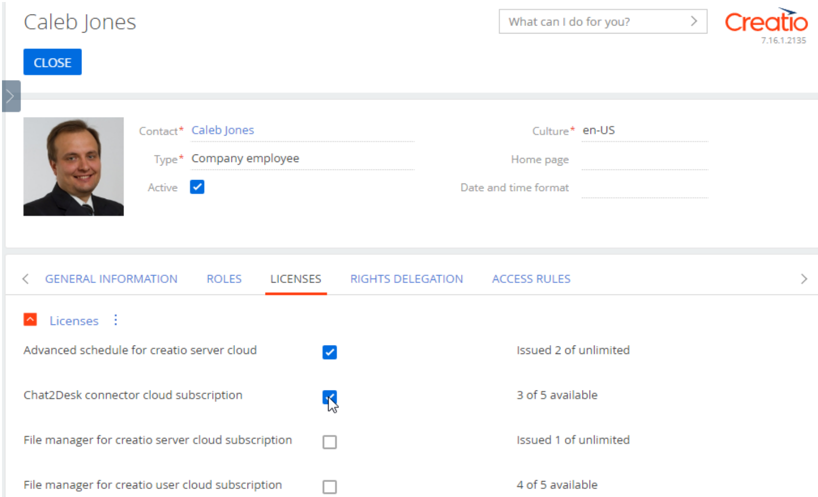
Licensing a user account

This method of licensing is recommended when licensing a single specific user account, for example, when you create a new employee account in Creatio.

To distribute or recall a user license in the [System users] section:

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [System users].
3. In the section list, select the user for distributing a license. On the [Licenses] tab of the user page, select the products for licensing (Fig. 8).

Fig. 8 Selecting products for licensing



Similarly, you can recall the licenses.

4. Save and close the page.

As a result, the selected licenses will be distributed or recalled for the user account.

Distributing and recalling licenses for multiple users in the [System users] section

You can also distribute and recall licenses for multiple users in the [System users] section.

To do this:

1. Open the System Designer, e.g., by clicking .
2. Under [Users and administration], click [System users].
3. Click [Actions] —> [Select multiple records].
4. Select the needed users in the list.
5. Click [Actions] —> [Grant licenses] / [Recall licenses].
6. In the window that opens, select the Creatio products for granting or recalling licenses. Select the needed checkboxes and click [Select].

As a result, the selected licenses will be distributed or recalled for the selected user accounts.

SEE ALSO

- Software licensing
- Managing users