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1 Introduction

YouTube

Watch our video tutorials on working with the report server. Subscribe to the Stimulsoft channel and be the first who watches new video tutorials. Leave your questions and suggestions in the comments to the video.

Samples

Check out the examples on our website on how to work with our report server. All samples are individual projects, grouped in one solution for Visual Studio. Also, you can view and download these examples on GitHub.

Stimulsoft Server is a client-server system for data management. This product is used to simplify the displaying of any data using reports, tables, charts. Data is automatically collected, visualized, converted to the required form, and delivered to end-users. The functionality and power of the reporting module are implemented by the time-tested, modern, and fast Stimulsoft report engine.

The main tasks that can be solved using the report server:

- Converting data from the database into multi-page reports with graphic elements;
- Building and editing reports using the built-in designer;
- Storing reports in the workspace of the server;
- Processing data using the powerful built-in scheduler;
- Notification of users about server events related to data processing, etc.

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1.1 System Requirements

Minimum system requirements are:

- 2-core processor, the frequency at least 2.31 GHz;

- 2 GB of RAM;
- At least 500 MB of free space;
- Installed Microsoft .NET Framework 4.7.2.
- Installed Internet Information Services.

1.2 Installation

Information

This chapter provides a step-by-step guide on how to install Stimulsoft Server on a Windows operating system. For information on using Stimulsoft Server in a Docker container, please refer to the corresponding section.

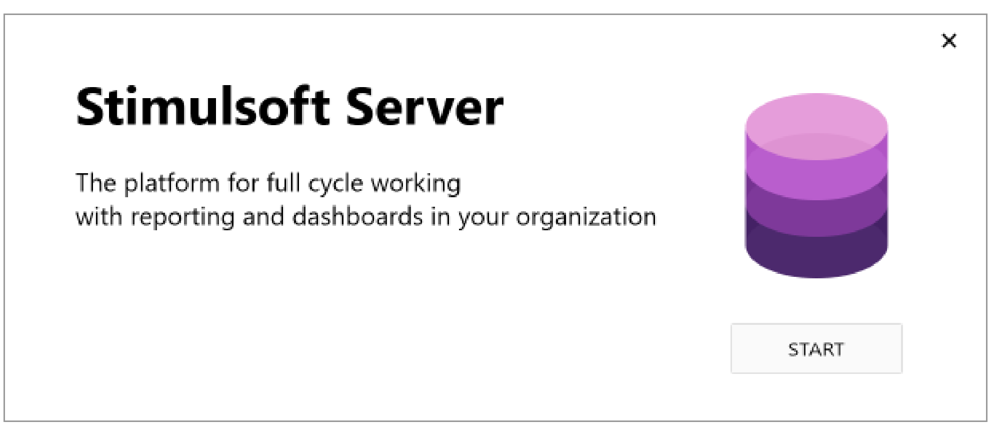
To install **Stimulsoft Server**, follow these steps:

Step 1: Download the **Stimulsoft Server** distribution package, for example from the official website - https://www.stimulsoft.com/downloads/business;

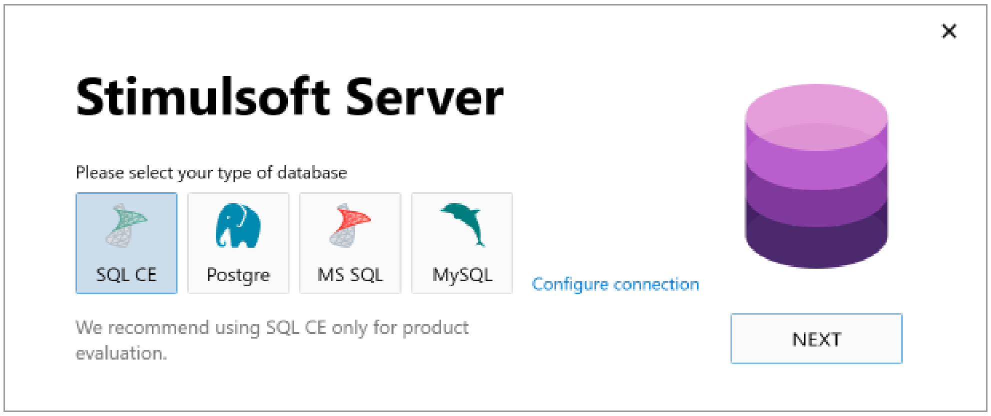
Step 2: Run the downloaded installer.

Step 3: After launching the installer, it will initialize the setup process by checking the system requirements system requirements for **Stimulsoft Server**.

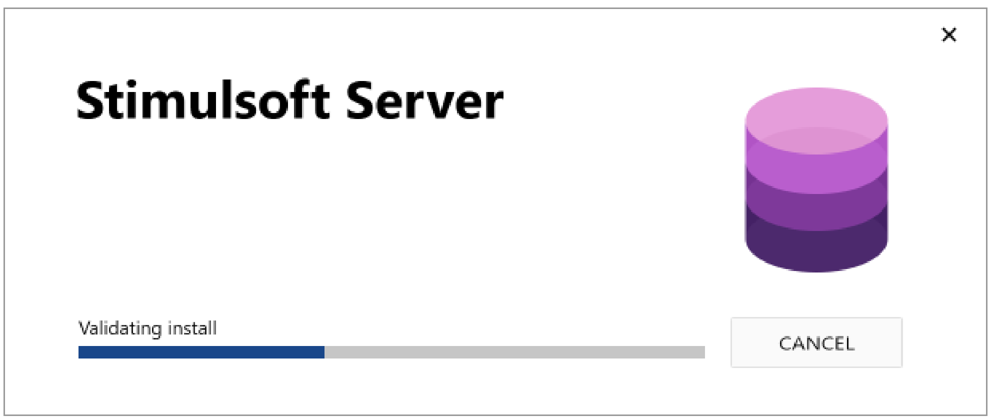
Step 4: Once the initialization is complete, a window will appear. Click the **Start** button to begin the installation process.



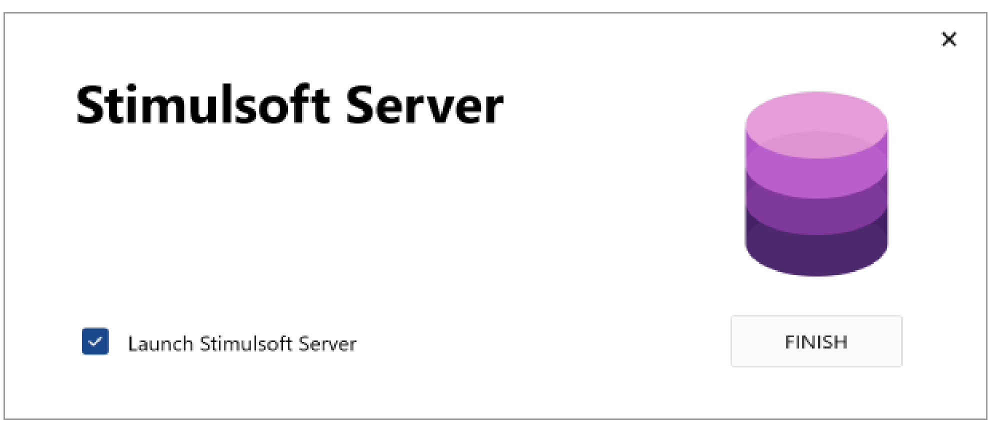
Step 5: The installer will then prompt you to select the type of database.



Step 6: No user interaction is required at this stage. The installation process continues automatically.



Step 7: After the installation is successfully completed, click **Finish** to close the installer window. If the **Launch Stimulsoft Server** checkbox is selected, the server will start automatically.



Install .NET Framework 4.5 and IIS

Let's consider how to install **.NET Framework 4.5** and **Internet Information Services**. A prerequisite for the installation of the platform and service is the availability of an internet connection.

› Installing **.NET Framework 4.5**

Before starting the installation, you should review the system requirements.

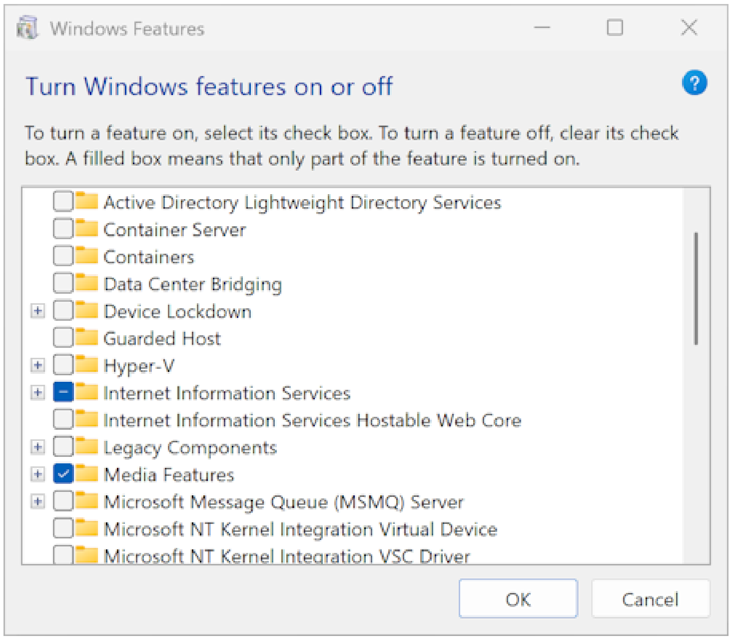
Criterion	List
Supported OS	Windows 7 Service Pack 1; Windows Server 2008 R2 SP1; Windows Server 2008 Service Pack 2; Windows Vista Service Pack 2 Windows Vista with 2 (SP2) (x86 and x64) Windows 7 with 1 (SP1) (x86 and x64) Windows Server 2008 R2 with 1 (SP1) (x64) Windows Server 2008 SP2 (x86 and x64) Windows 10
Hardware Requirements	Processor 1 GHz and higher RAM 512 Mb 850 Mb free space (x86) 2 Gb free space (x64)

After that, you need to download the installer from the official website and install the product.

› Installing **Internet Information Services (IIS)**

The installation procedure of the service can be performed through the Windows OS interface:

1. Click the button **Start** and select **Control Panel**.
2. In the **Control Panel**, click **Programs**, and then **Turn Windows Features on or off**.
3. In the **Windows Features** dialog box, click **Internet Information Services** and then click **Ok**.



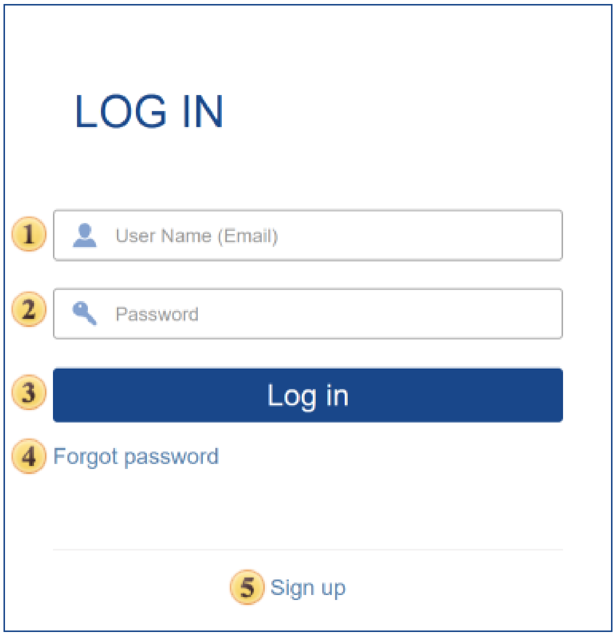
Information

To install IIS, you need to be "Administrators".

More information about IIS can be found on the official website of Microsoft.

1.3 Login Dialog

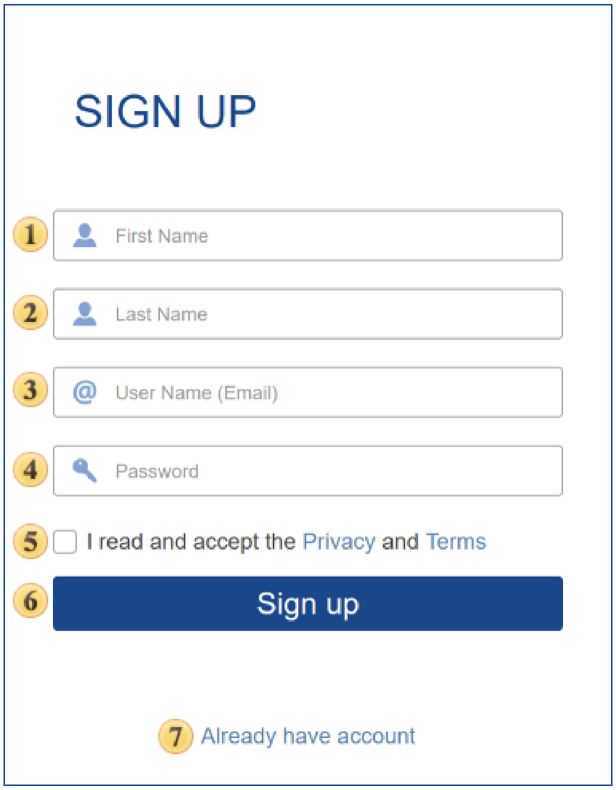
When you run **Stimulsoft Server**, the first menu displayed is user authentication. Here you must specify the username and password of an account to get to the workspace. Below is the login dialog:



1 In this field, you enter a user name (login) of your account. A login account can be an email address provided in the process of registration.
2 In this field, you specify the current password for your account.
3 If you check this flag, the Login and Password fields will be automatically populated with authentication information, using which the last entry was made with the computer.
4 When you click this button, the entered authentication information is verified. If authentication credentials are correct, there will be signing in.
5 Click this item, if you need to restore your password.
6 This button redirects you to the registration form of a new account with a new workspace.

Sign Up

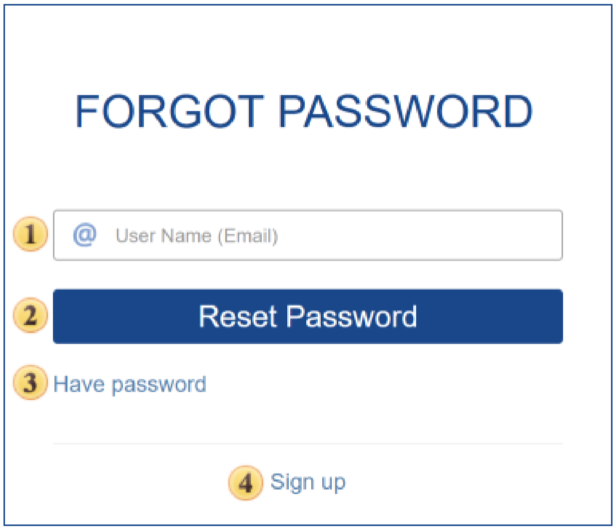
If you want to register a new account and workspace, go to the Registration menu and fill in the user profile.



1 Put your first name.
2 Put your second name.
3 Type your email address (login) of the future profile. You should remember that the email address provided here is the login to access the account.
4 Type the password to your account. Minimum 6 characters are allowed in the password.
5 Go to the terms of the license agreement. Do not forget to read this.
6 After clicking this button, a new account with a working space will be created.
7 Click this menu item if you do not need registration or already have the account.

Forgot Password

Sometimes you need to log in to your account but forgot your password. To recover your password, use the following menu.



1 This field specifies the Username (email address) that is used for logging into your account.
2 After you click this button, your current password will be reset, and a new one will be created and sent to the email address specified when filling the registration form.
3 This button redirects you to the registration form of a new account with a new workspace.
4 This button closes the menu.

1.4 SSO Authentication

The SSO (Single Sign-On) technology allows users to securely authenticate across multiple applications using a single set of credentials. After linking one or more supported providers to the Server account, the user can use any of these providers for quick and secure access to their account.

SSO uses the widely adopted OAuth 2.0 protocol, which is supported by most authentication providers. The following providers are currently supported:

- Google
- GitHub
- Facebook
- Microsoft / Azure AD
- Okta

To activate one (or more) of the listed authentication providers, it is sufficient to set the Client ID and Client Secretvalues in the options. These can be obtained from the provider’s own console. This data will be used in requests to the selected provider’s server, which will verify it and, upon successful authorization, return a unique user token. The token will be linked to the Server user account and used for subsequent quick logins to the system.

ASP.NET
File:
C:\ProgramData\Stimulsoft-Server\server.config

Section:
Accounts

Name	Description
AllowOAuthRegistration	Allows new user regis

	tration through OAuth authentication.
`DefaultUserRoleKey`	Defau

ItrolekeyassignedtonewusersduringOAuthr

	egistration.
GoogleClientId	Google OAuth Client ID for SSO au

	thentication
GoogleClientSecret	GoogleOAuthClientSecretforS

	SO authentication.
GitHubClientId	GitHub OAuth Client ID for

	SSO authentication.
GitHubClientSecret	GitHubOAuthClientSecr

	etforSSOauthentication.
FacebookClientId	FacebookOAuthCli

	entID for SSO authentication.
`FacebookClientSecret`	FacebookOAuth

	Client Secret for SSO authentication.
`MicrosoftClientId`	Micros

	oft/AzureADOAuthClientIDforSSOauthentic

	ation.
MicrosoftClientSecret	Microsoft/AzureADOAuthClientSecre

	t for SSO authentication.
MicrosoftTenantId	Microsoft/Azure AD

	Tenant ID for SSO authentication.
OktaClientId	Okta OAuth C

	lient ID for SSO authentication.
`OktaClientSecret`	OktaOAuthCl

	ientSecret for SSO authentication.
OktaDomain	OktaDoma

	in for SSO authentication (e.g., your-domain

	.okta.com).

Docker

Accounts

Name	Description
`Accounts__AllowOAuthRegistration`	Allows new us

erregistrationthroughCAuthauthenticatio

	n.
`Accounts__DefaultUserRoleKey`	Default role key assigned to new users durin

	gOAuthregistration.
`Accounts__GoogleClientId`	GoogleOAuthClientIDf

	or SSO authentication.
Accounts__GoogleClientSecret	GoogleOAuthClientSe

	cret for SSO authentication.
Accounts__GitHubClientId	GitHub OAuth Cli

	entID for SSO authentication.
Accounts__GitHubClientSecret	GitHubOAuthCl

	ientSecretforSSOauthentication.
Accounts__FacebookClientId	Facebook

	OAuth Client ID for SSO authentication.
Accounts__FacebookClientSecret	Faceb

	ookOAuthClientSecretforSSOauthenticatio

	n.
Accounts__MicrosoftClientId	Microsoft/Azure AD OAuth Client ID for SSO a

	uthentication.
Accounts__MicrosoftClientSecret	Microsoft/AzureADOAuthCli

	entSecretforSSOauthentication.
Accounts__MicrosoftTenantId	Microsoft

	/ Azure AD Tenant ID for SSO authentication.
`Accounts__OktaClientId`	Ok

	ta OAuth Client ID for SSO authentication.
Accounts__OktaClientSecret	Okt

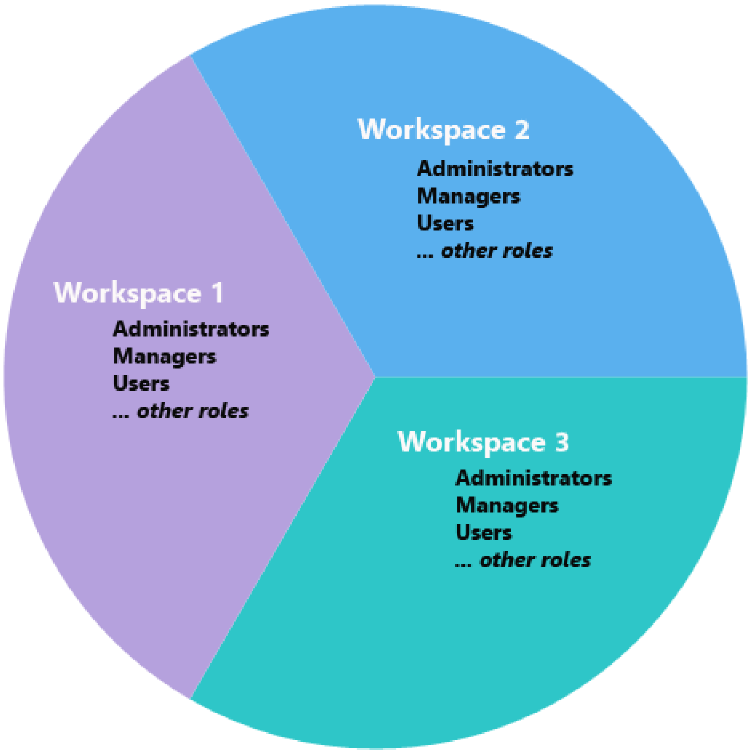
	a OAuth Client Secret for SSO authentication.

Accounts__OktaDomain	Okta Domain for SSO authentication (e.g., you

	r-domain.okta.com).

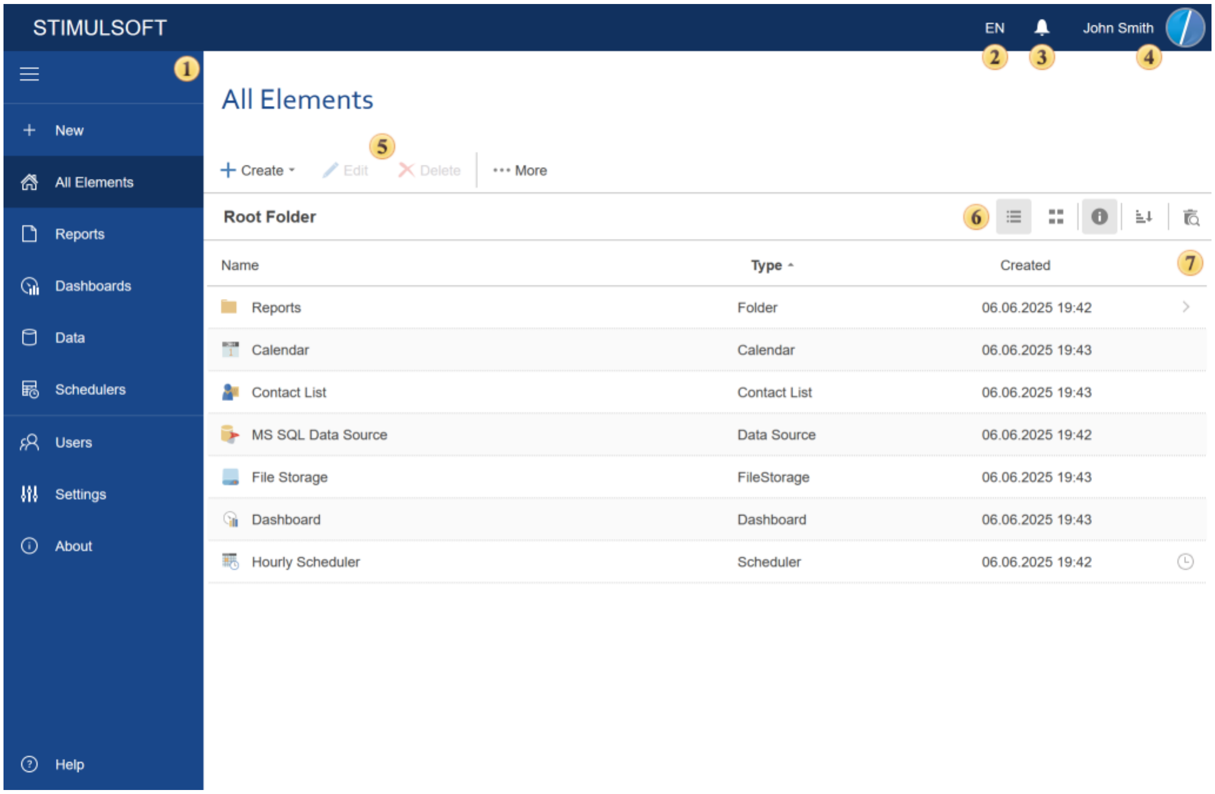
1.5 Structure

Stimulsoft Server is a sophisticated software that has a client-server architecture. Data of different users are separated by different workspaces. The picture below shows a system with three **workspaces**:



Users who have the role of the **Supervisor** manage the server. They have absolute rights in all **workspaces** on the server. In particular, they have the right to create and delete workspaces. Besides, each workspace has **administrators**, **managers**, **users**, and other roles that perform certain activities within their workspace.

Stimulsoft Server is a client part of the server, using what actions are carried out on the server. Consider the structure in more detail.



1 The **Bookmarks** panel of the server.
2 The **Localization** button. Click this button to expand the list of server localization.
3 The **Notifications** button. New notifications will be created when various operations with the server item will be performed. Click this button to show a log of server notifications.
4 Click this button to open an account profile.
5 The toolbar contains basic commands to work with server items.
6 The view modes panel of the item list.
7 The list of items in this server workspace.

Information

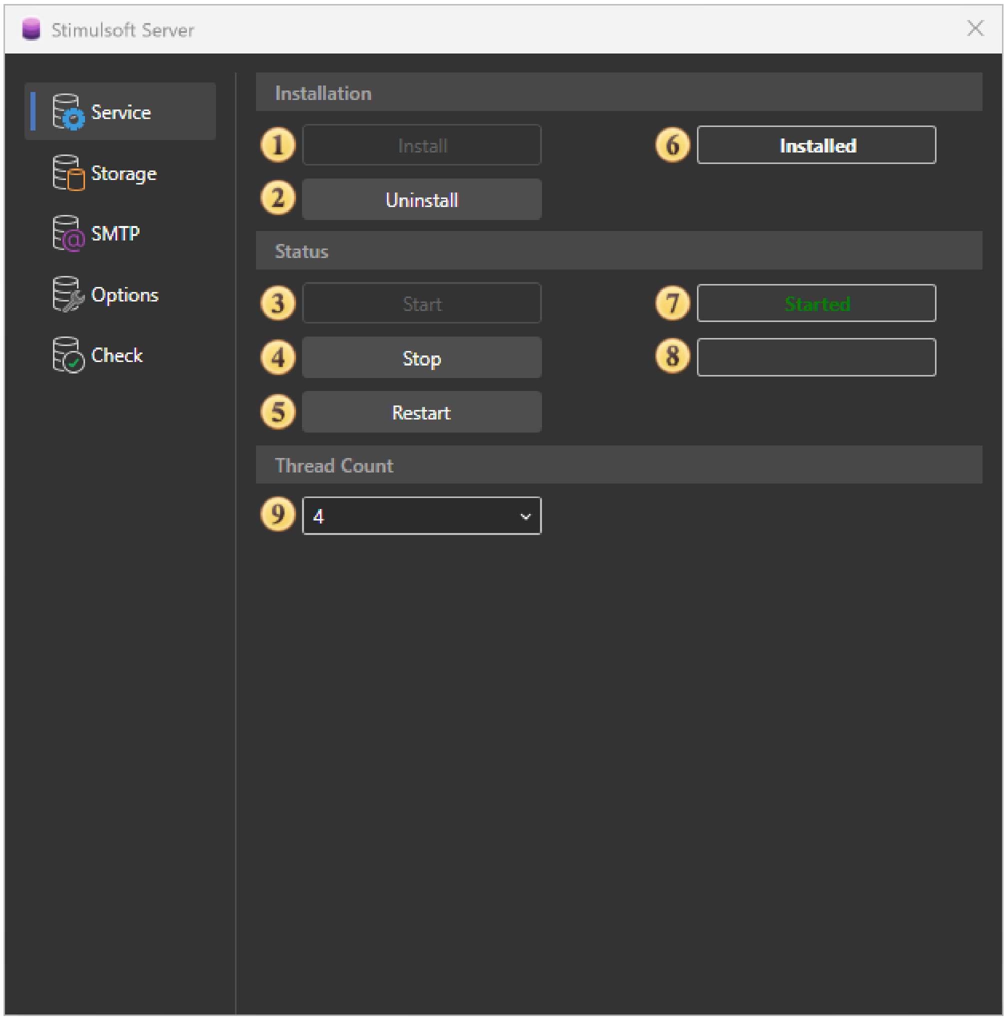
If an account (i.e., a user assigned to a specific role) does not have permission to view certain types of elements, those elements will be hidden from that account, and the list of elements may appear differently. Additionally, if the user has a different root folder assigned, the list of elements will also differ accordingly.

Run in Background
These operations can be performed in the background. The background mode provides the ability to perform an unlimited number of activities simultaneously. In this case, the number of operations in the background mode depends on the technical abilities of the server. To enable the background mode, you must check the Run in Background flag in the dialog window of the operation (removal, restoration, cleaning the recycle bin).

1.6 Server Controller

The server controller can control **Stimulsoft Server**. This utility is installed with the server and folded into a tray on the taskbar. With this utility, you can delete, stop, start, and restart the report server, change the database used by the server, check for server issues. All commands to control the server are separated into tabs: Service, Storage, SMTP, Check. Consider these tabs in more detail.

The tab Service
On the Service tab, you can find the server controls.



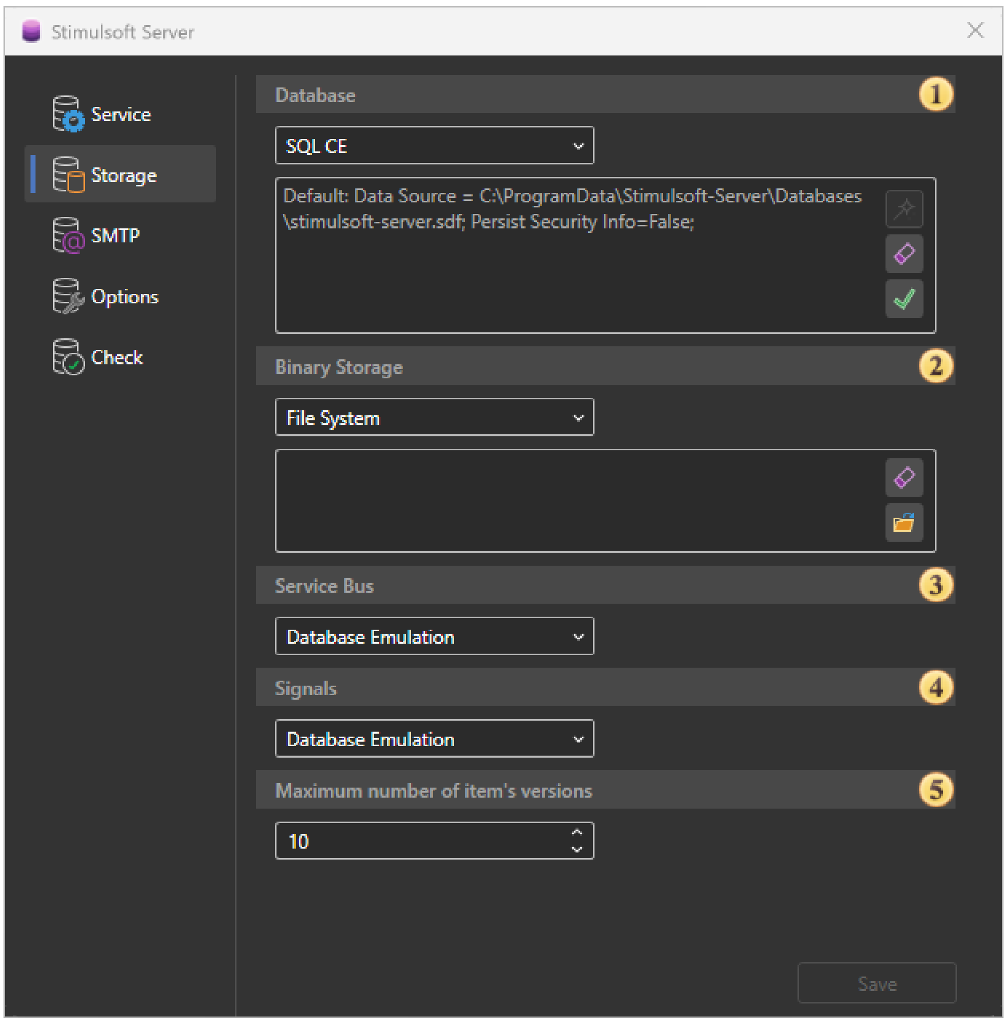
1 The install button of **Stimulsoft Server**. The button is disabled when the server is installed.
2 The uninstall button of **Stimulsoft Server**. Uninstalls the report server.
3 The **Start** button runs the report server.
4 The **Stop** button stops the report server.
5 The **Restart** button the report server.
6 The field shows the current state of the server.
7 This field displays the status of the **running** server. If the server is stopped, this field is blank.
8 This field displays the status when the server is **stopped**. If the server is running, this field is blank.
9 In the **Thread Count** group, you can specify the number of server threads.

The tab Storage

Stimulsoft Server can be run only on the following types of databases - **MySQL**, **MS SQL**, **SQL CE**.

Information

It is important to understand that the server saves its structure in these databases MySQL, MS SQL, SQL CE.

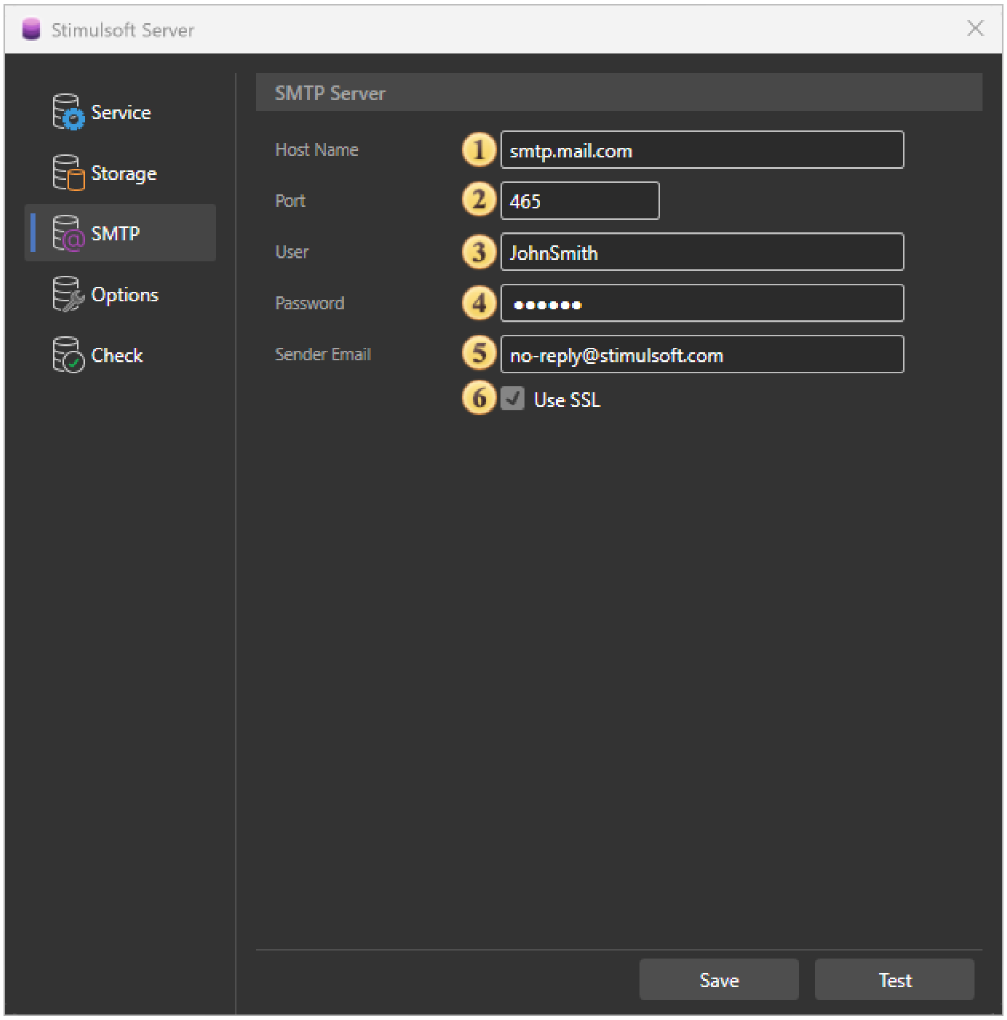


1. The **Database** field specifies the database for Stimulsoft Server.
2. The **Binary Storage** field specifies storage for server items.
3. The **Service Bus** field specifies the storage of server tasks.
4. The **Signals** field specifies the storage of server signals.

5 The **Maximum number of item versions** field specifies the number of versions of an item.

The tab SMTP

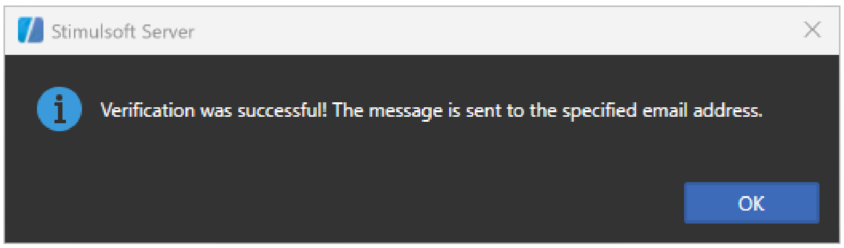
For sending emails, you need to use an SMTP server.



1 The field **SMTP Host**. Here you specify the address of the SMTP server.
2 The field **SMTP Port**. Here you specify the port of connection to the server.
3 The field **User**. The username (login) to connect to the SMTP server is specified in this field.
4 The field **Password**. In this field, the password is specified to authentication on the SMTP server.
5 The field **Sender Email**. Specifies the e-mail address that will appear to the recipient as a sender email.

⑥ **Use SSL**. This option provides the ability to apply a cryptographic cipher to e-mails. If this box is enabled, the cipher is applied.

After entering the smtp server settings, you must click the **Save** button. Also, on this tab there is a **Test** button to check the smtp server settings. When clicked, a test letter will be sent to the specified address.

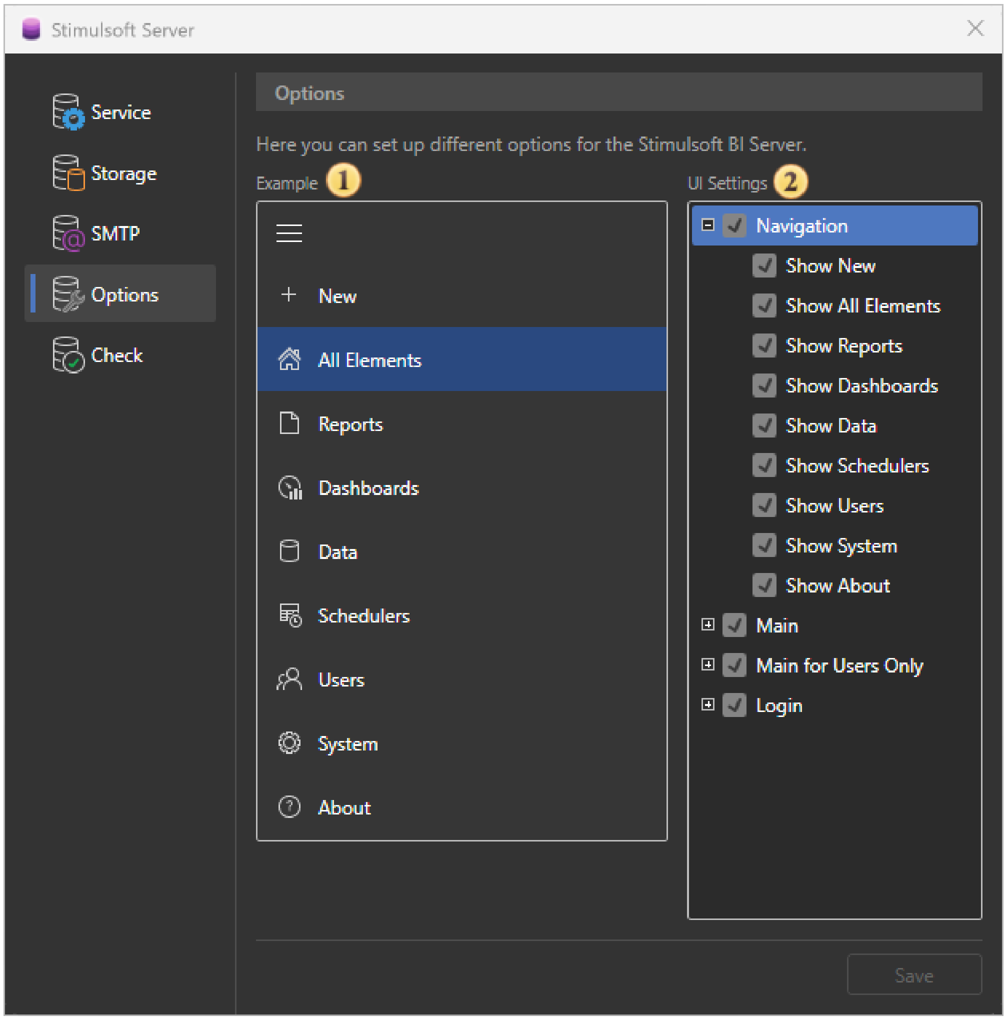


Information

If, after saving the SMTP server settings, the test letter is not delivered to the specified email address, you should run the restart command on the server. To do this, click the **Restart** button on the **Service** tab in the server controller.

The tab Options

This tab is where you configure the settings.



1 Example of User Interface Display
2 User Interface Configuration. Here you can enable or disable the visibility of various sections and features for users.

In the **Navigation** section, you can configure the display of:In the Navigation section, you can configure the display of:

- **Show New**. Displays the option to create new elements
- **Show All Elements**. Displays the "All Elements" item
- **Show Reports**. Displays the "Reports" item
- **Show Dashboards**. Displays the "Dashboards" item
- **Show Data**. Displays the "Data" item
- **Show Schedulers**. Displays the "Schedulers" item
- **Show Users**. Displays the "Users" item
- **Show System**. Displays the "System" item
- **Show About**. Displays the "About" item

In the **Main** section, you can configure the display of:

- **Show More**. Displays the More button
- **Show Versions**. Displays the Versions button
- **Show Using**. Displays Using
- **Show Access Key**. Displays the Access Key button
- **Show Upload**. Displays the Upload button
- **Show Download**. Displays the Download button

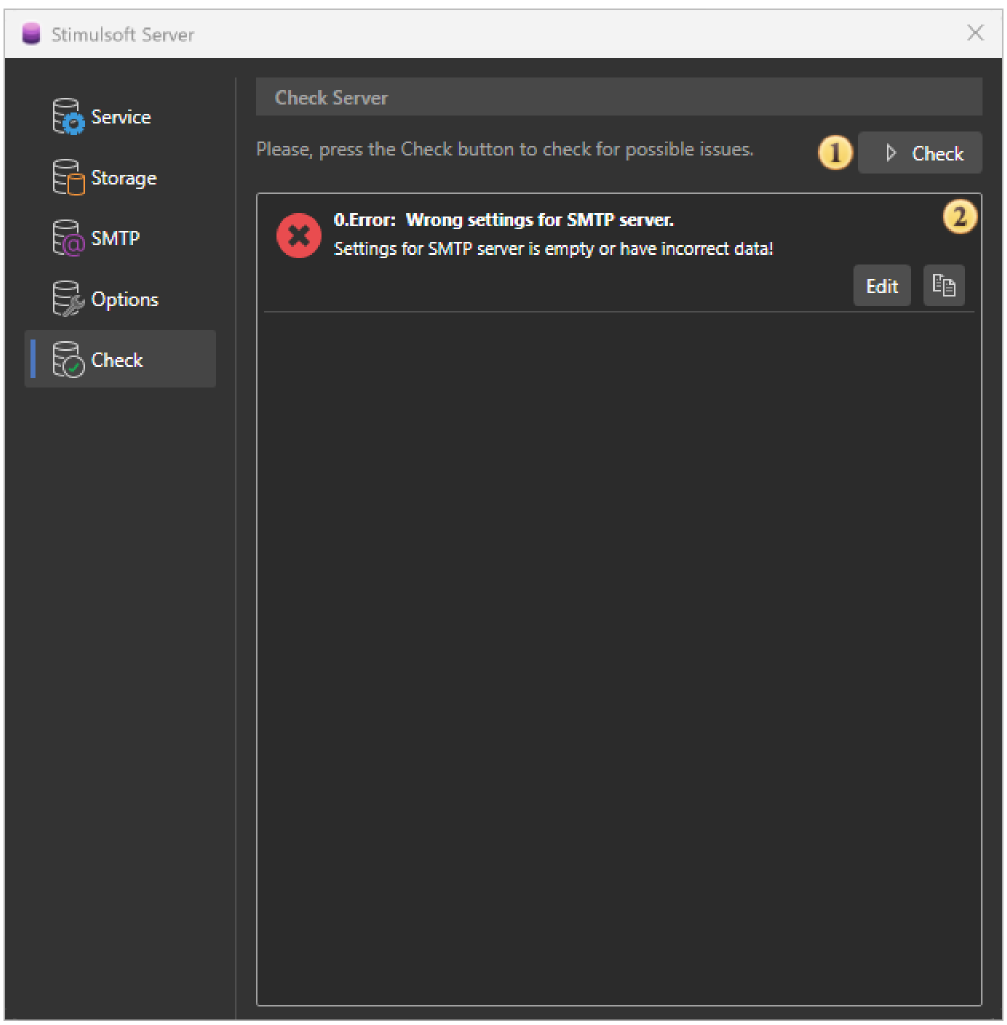
In the **Main for Users Only** section, you can configure the visibility of the Main section only for regular users (without administrative rights).

In the **Login** section, you can configure:

- **Show Sign Up**. Displays the Sign Up button

The tab Check

On this tab, you can check for errors, warnings, and information messages in the server.



① The button to start the test of the report server on errors, warnings, and information messages.
② The panel displays a general list of messages and alerts.

1.7 Migration Assistant

The **Migration Assistant** is a specialized tool for transferring Stimulsoft Server service data from one Stimulsoft Server instance to another. The tool allows you to transfer data between different storage systems without manually copying and configuring service tables. For example, the Assistant can be used to transfer data between test and production Stimulsoft Server instances, when migrating to a new server, or when changing the data storage system. You can launch the Migration Assistant from the Server Controller context menu or by directly running the `Stimulsoft.Server.MigrationAssistant.exe` executable file located in the installed Stimulsoft Server folder. By default, the file is located in the following directory: `C:\ProgramData\Stimulsoft-Server\Software-Releases\202*...`

Note

The actual file path may vary depending on the Stimulsoft Server version and installation settings.

Migrated Data

The Migration Assistant transfers Stimulsoft Server service data, including:

- Stimulsoft Server navigator items: reports, report snapshots, exported files, folder structures, and other items;
- connections to data sources and related settings;
- users and user accounts;
- administrators and managers;
- roles and related access settings;
- workspaces;
- other service objects and data required for Stimulsoft Server operation.

The set of data that can be migrated may depend on the Stimulsoft Server version and the structure of the service tables in the source and target instances.

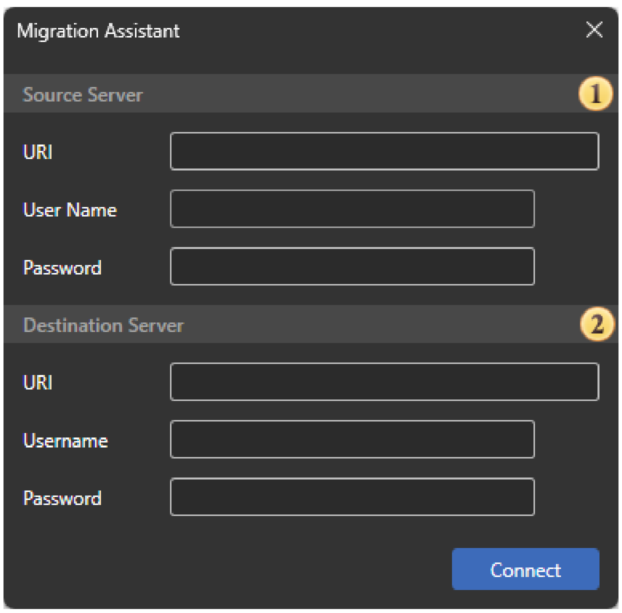
Migration Assistant Editor

The Migration Assistant Editor consists of two main stages:

1. establishing a connection to the source and target Stimulsoft Server instances;
2. analyzing service tables and transferring data.

Connecting to Stimulsoft Server Instances

At the first stage, specify the connection parameters for the source and target Stimulsoft Server instances.



1 In the Source Stimulsoft Server field group, specify the parameters of the instance from which the data will be transferred:

- URI - the address of the Stimulsoft Server navigator;
- User Name - the name of a user account with the permissions required to access the data;
- Password - the password for the specified account.

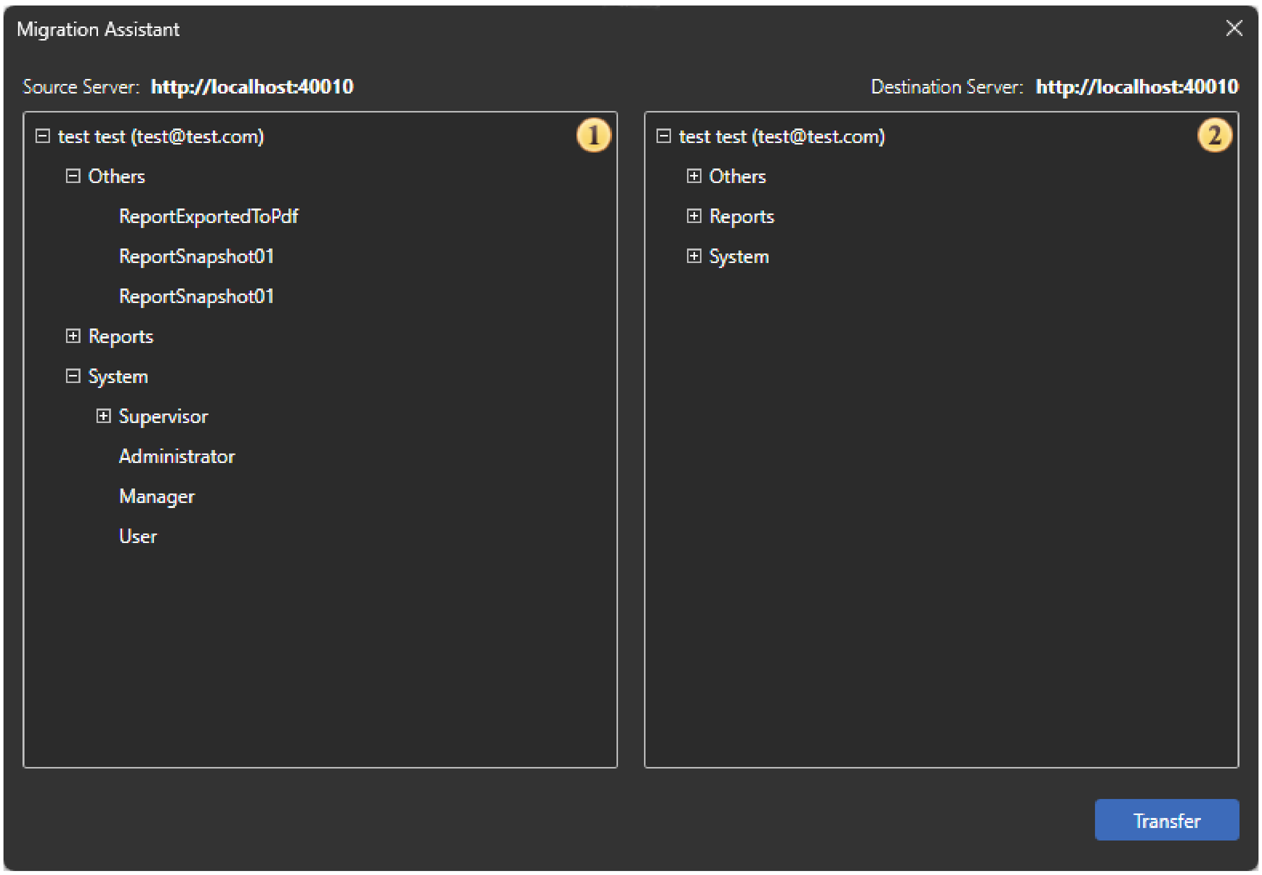
2 In the Target Stimulsoft Server field group, specify the parameters of the instance to which the data will be transferred:

- URI - the address of the Stimulsoft Server navigator;
- User Name - the name of a user account with the permissions required to perform the operation;
- Password - the password for the specified account.

After successfully establishing a connection to both Stimulsoft Server instances, the Assistant analyzes the structure of the service tables and prepares the data for transfer.

Analyzing Service Tables and Transferring Data

At the second stage, information about the service tables of the source and target Stimulsoft Server instances is displayed. The window contains:



1 a list of the source Stimulsoft Server service tables;
2 a list of the target Stimulsoft Server service tables;

Before starting the transfer, it is recommended that you check the connection parameters and make sure that the correct source and target Stimulsoft Server instances are selected. To start the operation, click Transfer. The data from the source Stimulsoft Server service tables will then be transferred to the corresponding tables of the target instance. The duration of the operation depends on the volume of data being transferred and the performance of the storage system in use.

Information

Note that existing data in the target Stimulsoft Server may be modified or lost during the transfer. Before performing the operation, it is recommended that you create a backup copy of the target Stimulsoft Server instance data. It is also recommended that you verify the specified connection settings in advance and make sure that the required servers are selected as the source and target instances.

1.8 Backup And Restore

Backup and Restore is a specialized tool designed to create backups of Stimulsoft Server service data and restore data from a backup. You can launch the **Backup and Restore** tool from the Server Controller context menu or by directly running the `Stimulsoft.Server.BackupAndRestore.exe` executable file located in the installed Stimulsoft Server folder. By default, the file is located in the following directory: `C:\ProgramData\Stimulsoft-Server\Software-Releases\202*.*.*\.`

Note

The actual file path may vary depending on the Stimulsoft Server version and installation settings.

Backup

A Stimulsoft Server backup is a ZIP archive that includes:

- Stimulsoft Server navigator items: reports, report snapshots, exported files, folder structures, and other items;
- connections to data sources and related settings;
- users and user accounts;
- administrators and managers;
- roles and related access settings;
- workspaces;
- other service objects and data required for Stimulsoft Server operation.

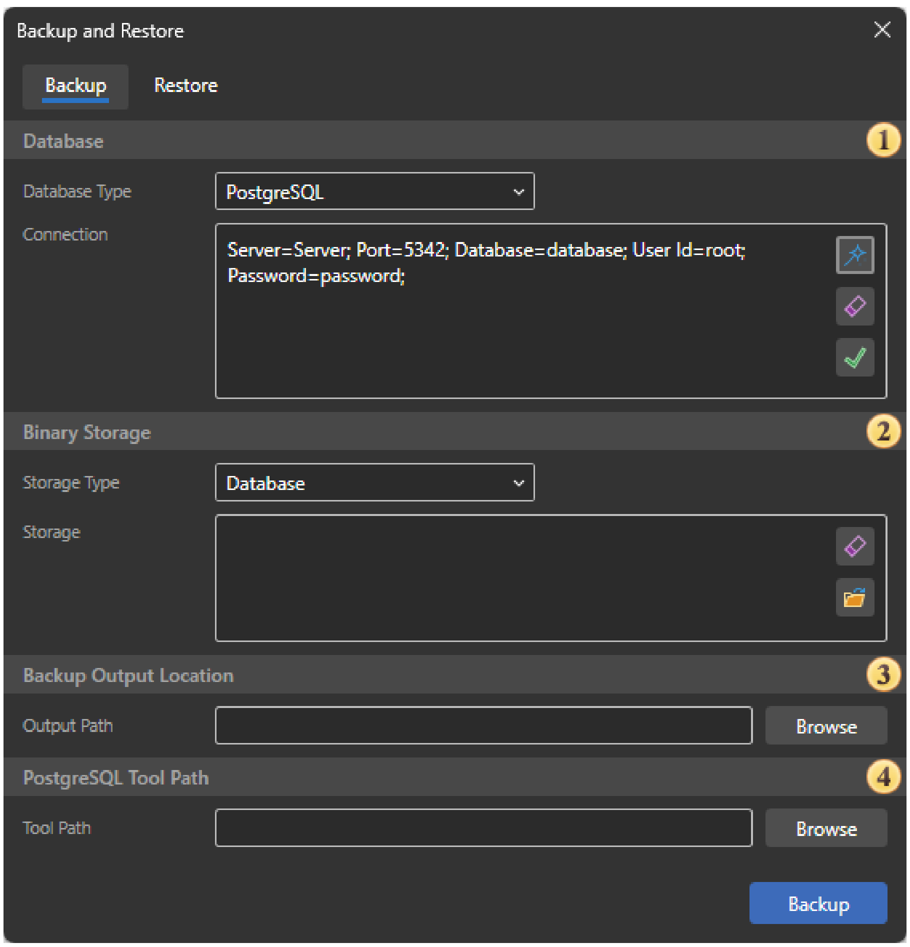
Backup and Restore Editor

The editor contains two tabs:

- Stimulsoft Server Backup;
- Restore from Backup.

Backup

Backup is performed without connecting to the navigator. You only need to specify the connection string to the data storage and the path for saving the backup. The backup editor is shown below:



1 The data storage settings group, where you need to specify the database type and connection string.

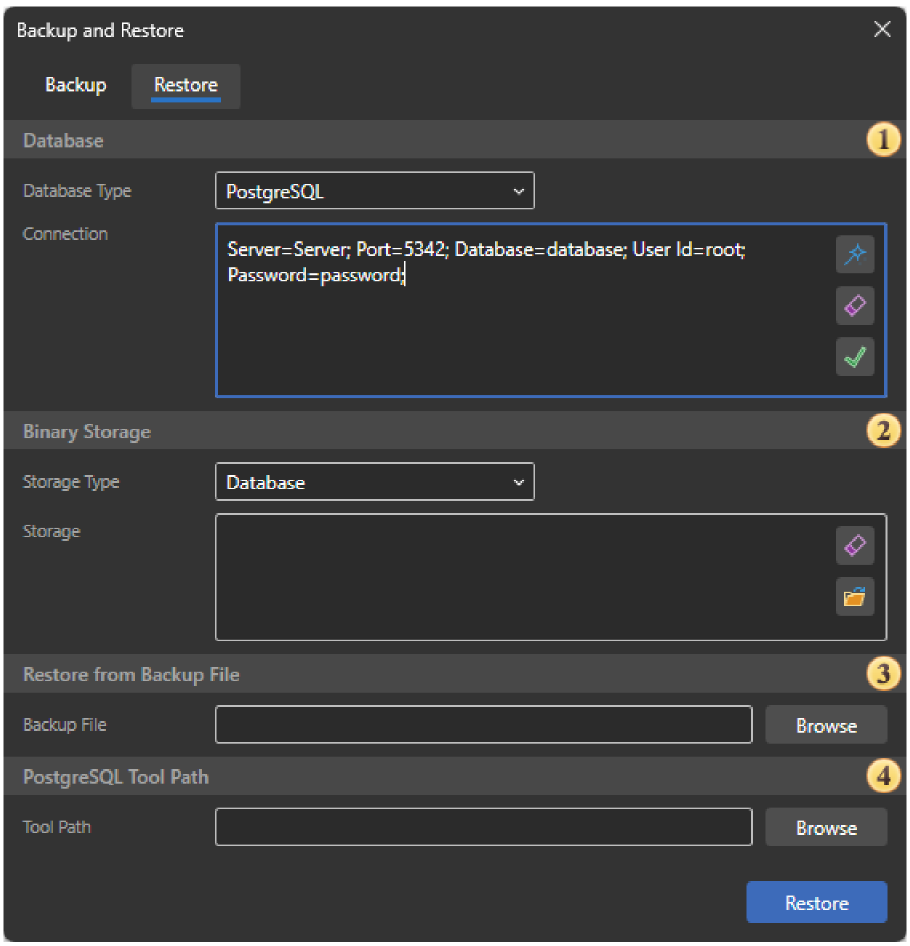
2 In the Binary Storage group, you can change the storage type for the content of server items and specify the path to this storage.

3 Settings for the path to the output backup file.

④ An optional setting available only for PostgreSQL databases. Allows you to specify the path to the backup creation tool.

Restore

To perform a restore, you must first create at least one backup. The data storage type must match the type of storage from which the backup was created. The restore editor is shown below:



① The data storage settings group, where you need to specify the database type and connection string.
② In the Binary Storage group, you can change the storage type for the content of server items and specify the path to this storage.
③ Settings for the path to the backup file from which the restore is performed.
④ An optional setting available only for PostgreSQL databases. Allows you to specify the path to the restore tool.

1.9 Server Docker

This chapter covers launching **Stimulsoft Server** in a Docker container. The product is built on the .NET 8 platform, which ensures cross-platform compatibility and allows it to run on various operating systems. The primary requirement is that **Docker** must be installed and functioning correctly on the system in use. We also recommend reviewing the following chapters:

- Using the HTTPS protocol;
- Key options for working with Stimulsoft Server in a Docker container.

System Requirements

The minimum system requirements for Stimulsoft Server include:

- Docker container support;
- One of the following databases: MySQL, PostgreSQL, or MS SQL;
- Dual-core processor with a clock speed of at least 2.31 GHz;
- 2 GB of RAM;
- At least 500 MB of free disk space.

Deployment Using docker-compose

In this case, create a `docker-compose.yml` file. Below is an example configuration file:

docker-compose.yml

```
services:
  server:
    image: stimulsoft/server:latest
    ports:
      - 8080:8080
    environment:
      ASPNETCORE_HTTP_PORTS: 8080
      ASPNETCORE_ENVIRONMENT: "Development"
      Storage__DatabaseType: "MySql"
      Storage__MySqlConnectionString: "Server=mysql; port=3306; Database=s

  mysql:
    image: mysql:8.0
    ports:
      - 3306:3306
    volumes:
      - './mysql:/var/lib/mysql'
    environment:
      MYSQL_ROOT_PASSWORD: "root"
      MYSQL_DATABASE: "server"
```

Then, run the `docker-compose.yml` file:

terminal

```
docker compose up
```

After that, open a browser and navigate to: `http://localhost:8080`.

1.9.1 Main options

All necessary configurations can be specified in the `docker-compose.yml` file using environment variables. For convenience, all settings are grouped, and each group name is separated from the setting name by a double underscore. Example of passing server settings:

docker-compose.yml

```
...
Environment:
  ASPNETCORE_HTTP_PORTS: 8080
  Urls: "http://*:8080"
  Storage__DatabaseType: "MySql"
  Storage__MySqlConnectionString: "Server=mysql; port=3306; Database=server
...
```

Core Settings

Name	Description
ASPNETCORE_HTTP_PORTS	D

efinesthereportormultiplereportsusedfortheH

	TTP protocol.
ASPNETCORE_HTTPS_PORTS	Defines the port or multiple por

	t s u s e d f o r t h e H T T P S p r o t o c o l .
`Urls`	S p e c i f i e s t h e U

	RL addresses that the web server will listen to

	, separated by semicolons.

Certificate Settings

Name	Description
ASPNETCORE_Kestrel__Certificates__Default__Path	S

	pecifies the path to the certificate file.
ASPNETCORE_Kestrel__Certificates__Default__Password	Spe

	cifies the password for the certificate.

Database Settings

Name	Description
Storage__DatabaseType	Specifies the type of database being used. Supported values: • "MySql" • "MsSql" • "PostgreSql"
Storage__MySqlConnectionString	Connection string for a MySQL database.
Storage__MsSqlConnectionString	Connection string for a MS SQL database.

Storage__PostgreSqlConnectionString	Connection string for a PostgreSQL database.
Data__ConnectionTimeOut	Sets the database connection timeout in seconds. The default is 30 seconds.

Email Settings

Name	Description
Smtp__EnableSsl	En

	ables encryption of the connection to the SMTP

	serverusingtheSecureSocketsLayerprotoco

	l. Default is false.
Smtp__Host	SMTP server address.
Smtp__Port	SMTP

	server port.
Smtp__UserName	Username associated with the SMTP

	Server credentials.
Smtp__Password	Password for the specif

	iedSMTPusername.
Smtp__SenderEmail	Email address used as the sender

	nder.

Navigation Panel Settings

Name	Description
NavigationUi__ShowAllElements	Enables the **AllElemen**

	ts button in the navigation panel. Default is tr

	ue.
NavigationUi__ShowData	Enables the **DataSources** button. Defaulti

	s true.
NavigationUi__ShowNew	Enables the **Create** button. Default is tr

	ue.
NavigationUi__ShowReports	Enables the **Reports** button. Default is true

	.
NavigationUi__ShowDashboards	Enables the **Dashboards** button. Default is `tr`

	ue.
NavigationUi__ShowSchedulers	Enables the **Scheduler** button. Default is t

	rue.
NavigationUi__ShowSystem	Enables the **System** button. Default is true

	.
NavigationUi__ShowUsers	Enables the **Users** button. Default is `true`.
NavigationUi__ShowAbout	En

	ables the **About** button. Default is true.

Main Interface Settings

Name	De

	scription
`MainUi__ShowMore`	Enables the **More** button. Default is

	true.
MainUi__ShowVersions	Enables the **Versions** button. Default is t

	rue.
MainUi__ShowUsing	Enables the **Using** button. Default is true.

MainUi__ShowAccessKey	Enables the **AccessKey** button. Default is `true`.

`MainUi__ShowUpload`	Enables the **Upload** button. Default is `true`.
`MainUi__ShowDownload`	En

	ables the **Download** button. Default is true.
MainUi__ShowMoreForUsers	En

	ables the **More** button for regular users. Defau

	It is `true`.
`MainUi__ShowVersionsForUsers`	Enables the **Versions** button for reg

	ular users. Default is `true`.
`MainUi__ShowUsingForUsers`	Enables the **Using**

	button for regular users. Default is `true`.
`MainUi__ShowAccessKeyForUsers`	Ena

	bles the **Access Key** button for regular users. D

	efault is `true`.
`MainUi__ShowUploadForUsers`	Enables the **Upload** button for r

	egular users. Default is `true`.
`MainUi__ShowDownloadForUsers`	Enables the **Dow**

	nload button for regular users. Default is `true`

	.

Login Window Settings

Name	Description
LoginUi__ShowSignUp	Enables the SignUp buttoni

	n the login window. Default is true.

Report Configuration Parameters

Name	Descri

	ption
Reports__AllowLoadingCustomFontsToClientSide	Allows sending fonts embedded in the rep

ort to the client side in the viewer and designe

	r. Default is false.
Reports__AllowLoadingSystemFontsToClientSide	Allows sending fonts insta

	lled on the server to the client side in the view

	erand designer. Default is false.
Reports__AllowReportCompilation	Allows repor

	to compilation. Default is `true`.
`Reports__AllowReportEngine`	Allows switch

	ing the report engine version. Default is `true`.

`Reports__ResourcesMaximumSize: 20000000`	Sets the maximum file size for adding to the rep

	ort resources. The value is specified in bytes

	.
`Reports__QRCodeECIMode`	Sets the encoding value for bytencode. Defaul

	t encoding is "Windows_1251".
Reports__ViewMode	Sets the viewer di

	splay mode. Default mode is "`SinglePage`".

Additionally, it is recommended to mount a folder with server working files and logs in the virtual machine settings. This can be done in the `docker-compose.yml` file using the following command:

docker-compose.yml

```
...
volumes:
  - ./stimulsoft-server:/var/lib/stimulsoft-server
...
```

1.9.2 Using HTTPS

An HTTPS certificate (SSL/TLS) provides a secure connection between the client and the server by verifying the website's authenticity and encrypting transmitted data. In .NET development, you can use either a locally generated self-signed certificate or one purchased from a certification authority. A certificate is essential for ensuring security (data protection), building user trust (browser padlock icon), and complying with standards. During development, local certificates are often used.

To generate a local .pfx certificate in .NET, run the following command:

terminal

```
dotnet dev-certs https -ep d:/aspnetapp.pfx -p 123456
```

This command specifies the certificate's output path and password. Note that such a certificate is suitable for development and testing purposes only. For production environments, a certificate from a trusted certification authority should be used.

Connecting the Certificate

Navigate to the folder with your **Docker** container and create a subfolder called **stimulsoft-server**. Then, copy the generated certificate into that folder.

Next, edit the `docker-compose.yml` file by adding parameters to enable HTTPS. You will need to define the HTTPS port, internal URLs (for production, it is recommended to use real domain names or IP addresses instead of `*`), and the path to the certificate along with its password:

docker-compose.yml

```
...
  ASPNETCORE_HTTPS_PORTS: 8081
```

```
  Urls: "https://*:8081;http://*:8080"
  ASPNETCORE_Kestrel__Certificates__Default__Path: "/var/lib/stimulsoft-ser
  ASPNETCORE_Kestrel__Certificates__Default__Password: 123456
...
```

If the directory with the server files hasn't yet been mounted, this can be done using the volumes section in docker-compose.yml:

docker-compose.yml

```
...
  volumes:
    - ./stimulsoft-server:/var/lib/stimulsoft-server
...
```

Launch the container using the following command:

terminal

```
docker-compose up
```

Now, Stimulsoft Server will be available via HTTPS at port `8081` using the address: `http://localhost:8081`. The server will still be accessible via HTTP at: `http://localhost:8080`.

Docker-compose.yml File

Below is an example of the contents of a docker-compose.yml file:

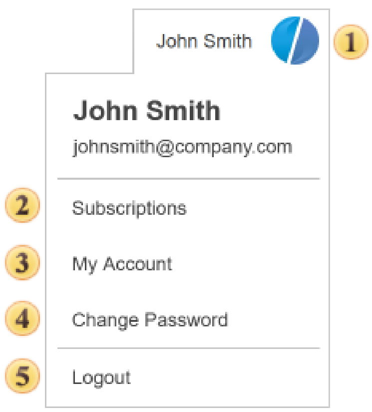
docker-compose.yml

```
services:
  server:
    image: stimulsoft/server:dev
    ports:
      - 8080:8080
      - 8081:8081
    volumes:
      - ./stimulsoft-server:/var/lib/stimulsoft-server
    environment:
      ASPNETCORE_HTTP_PORTS: 8080
      ASPNETCORE_HTTPS_PORTS: 8081
```

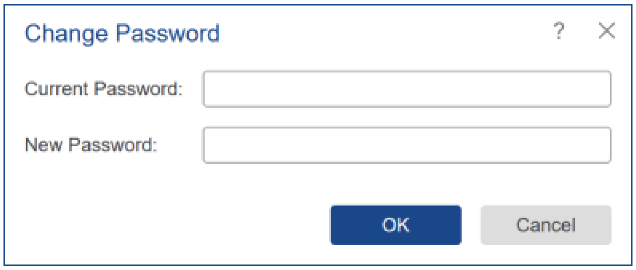
```
    Urls: "https://*:8081;http://*:8080"
    ASPNETCORE_Kestrel__Certificates__Default__Path: "/var/lib/stimulsof
    ASPNETCORE_Kestrel__Certificates__Default__Password: 123456
    Storage__DatabaseType: "MySql"
    Storage__MySqlConnectionString: "Server=mysql; port=3306; Database=s

mysql:
  image: mysql:8.0
  ports:
    - 3306:3306
  volumes:
    - './mysql:/var/lib/mysql'
  environment:
    MYSQL_ROOT_PASSWORD: "root"
    MYSQL_DATABASE: "server"
```

2 Menu Account

From the **Account** menu, you can set up a user profile. The menu is located in the upper right corner of the Navigator, under the window control buttons.



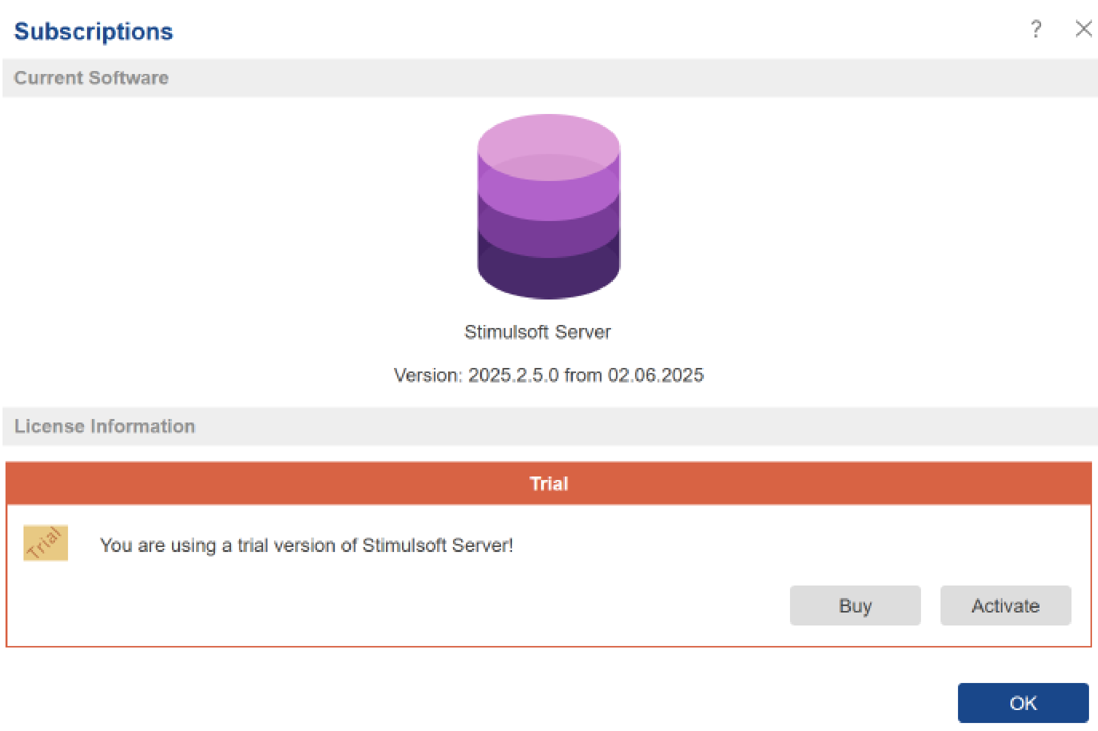
1 The **Account Information** field. Consists of a graphic part, user's full name, and email address. In the center of the graphic item, the first letter of the name and the first letter of the last name is displayed.
2 Select the Subscriptions command to activate the license or purchase the software.
3 The menu Profile has controls to configure the server interface and navigator.
4 Select the **Change Password** command to change the password for the current account. In the form opened, you will need to enter the current password and the new password.



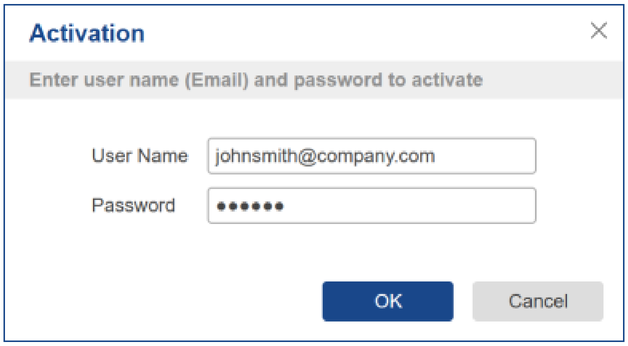
5 Select this option to **Logout** of the current profile.

2.1 Subscriptions

When you click **Subscriptions**, the **Subscriptions** window will pop up. Here you can find information about the current version of the report server and activate it.



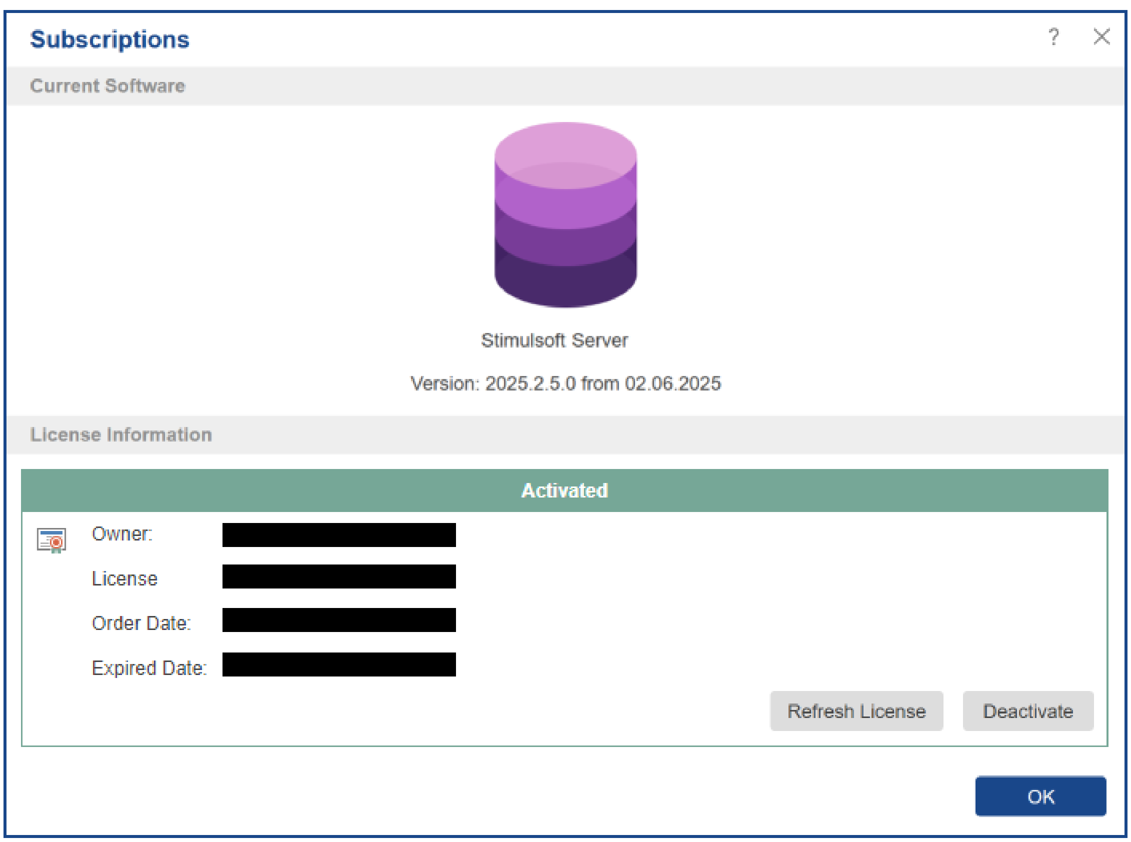
As you can see in the picture above, the version is trial. To get a licensed version of **Stimulsoft Server**, click **Activate** and enter the registration information (username and password).



Information

To obtain registration information, click **Buy**, choose the type of the license, and follow the instructions.

After successful activation, the field **License Information** will look like in the picture below.



As can be seen from the picture, this field indicates the status of the license (activated) and contains the following information

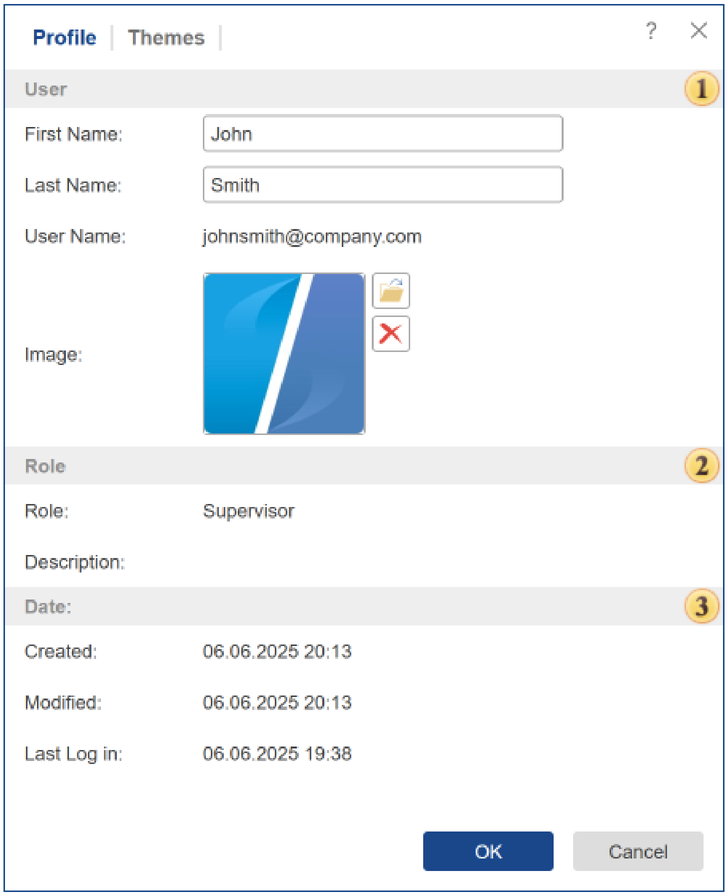
- **Owner**. It specifies the user name of the license holder.
- **License**. In the above example, the license up to 5 users.
- **Order Date**. Shows the date when the order was paid.
- **Expired Date**. The date when the subscription expires.

There are also buttons **Refresh License** and **Deactivate**. When clicked, they will respectively update the license validity period or deactivate the license.

2.2 Profile

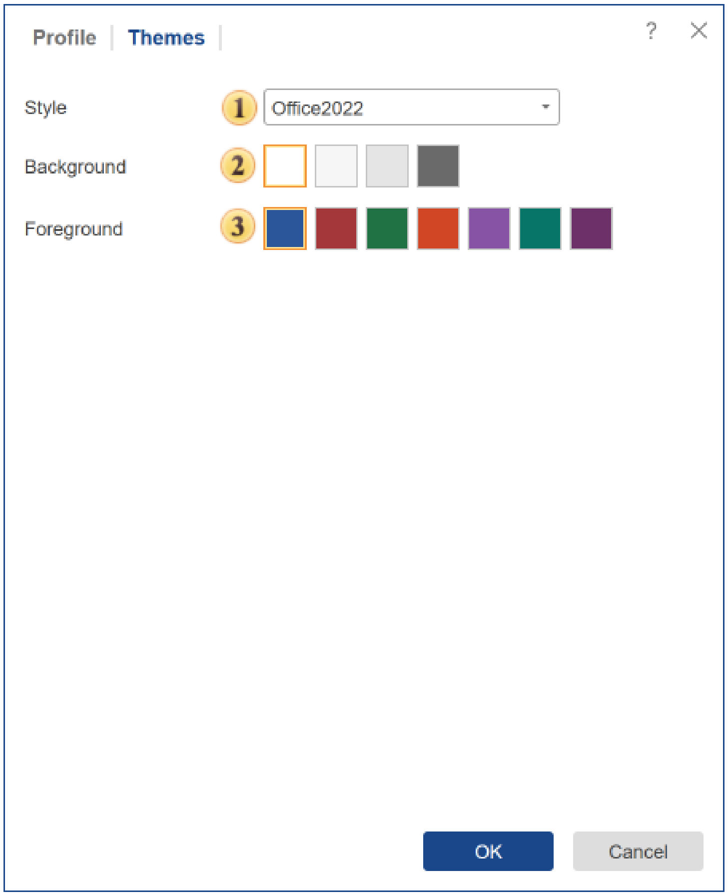
In the menu **Settings** menu, you can change your account settings. You can find Parameters in the following tabs:

The tab Profile.
It provides information on the current account. It is represented by the following groups of items.



1 The group **User** includes personal data such as user name, email address, and the ability to upload a picture (avatar). If the picture is not uploaded, then, instead of the user's avatar, the graphic element of a specific color, which is located in the center of the first letter of the name and surname, will be displayed.
2 The tab **Role** provides information on supplies of the current account to a particular role in this workspace. You may also see the description of the established role.
3 The group **Date** contains information about the actions of the current account, date and time of creation, modification, and last authentication.

The tab Themes.
In this tab, you can change the color scheme of the UI, as well as its style.



3 Toolbar

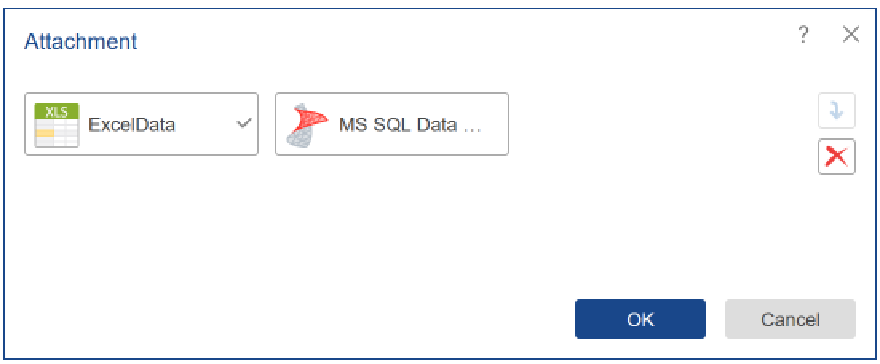
The toolbar contains the basic commands of the report server and its elements. At the same time, depending on the selected element, the list of commands may be different. The picture below shows the toolbar, with the commands for the **Report** and **Dashboards** item.

1 The Create menu contains a list of items that can be added to the report server list.
2 The **Edit** button is used to edit the selected item.

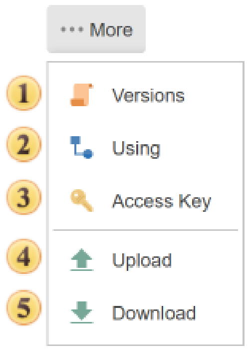
Information

If the report or dashboard is selected, then selecting this command, the report will be uploaded to the report designer. In the Details panel, you can edit the name and description of the report or dashboard item, as well as other items of the server.

3 The Delete button is used to delete the selected item. The user will see the dialog box that is shown in the picture below.
4 To attach a server element to the report, you need to select the report item and select the **Attachment** command. It will call a menu in which to specify the items that you want to attach.



5 The **View** button. When you select this command, the report is rendered and loaded into the viewer.
6 The **Run** command. With this command, you can export the report without loading it in the report viewer.
7 The Share command is used to call the sharing menu;
8 The ...More menu contains other commands of item management:

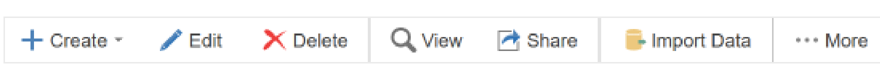


1 The [Versions] button calls the appropriate menu.
2 The [Using] button calls the appropriate menu.
3 When creating an item, the unique key of the item is automatically generated. To obtain this key, select the command. The unique key of the item is needed for future access to this item when using the API of the report server in third-party applications. After selecting this command, the key will be displayed on the Access Key panel.
4 The **Upload** command allows uploading the file to the server workspace.
5 The **Download** button saves the item as a file of a particular type. After selecting this comman,d the dialog box will appear. In the dialog, you should determine a saving location and click Save. You should know that not every item has this command.

Information

Depending on the item type, a list of commands in the toolbar may be different.

Below is toolbar for Excel, XML, JSON, CSV, DBF files:

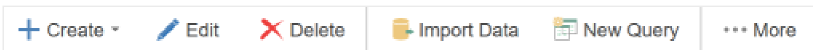


Some commands are not available, and there is a team of [Import Data].

Below is toolbar for [schedulers]:

The toolbar contains commands for the scheduler: Run Once, Start, Stop.

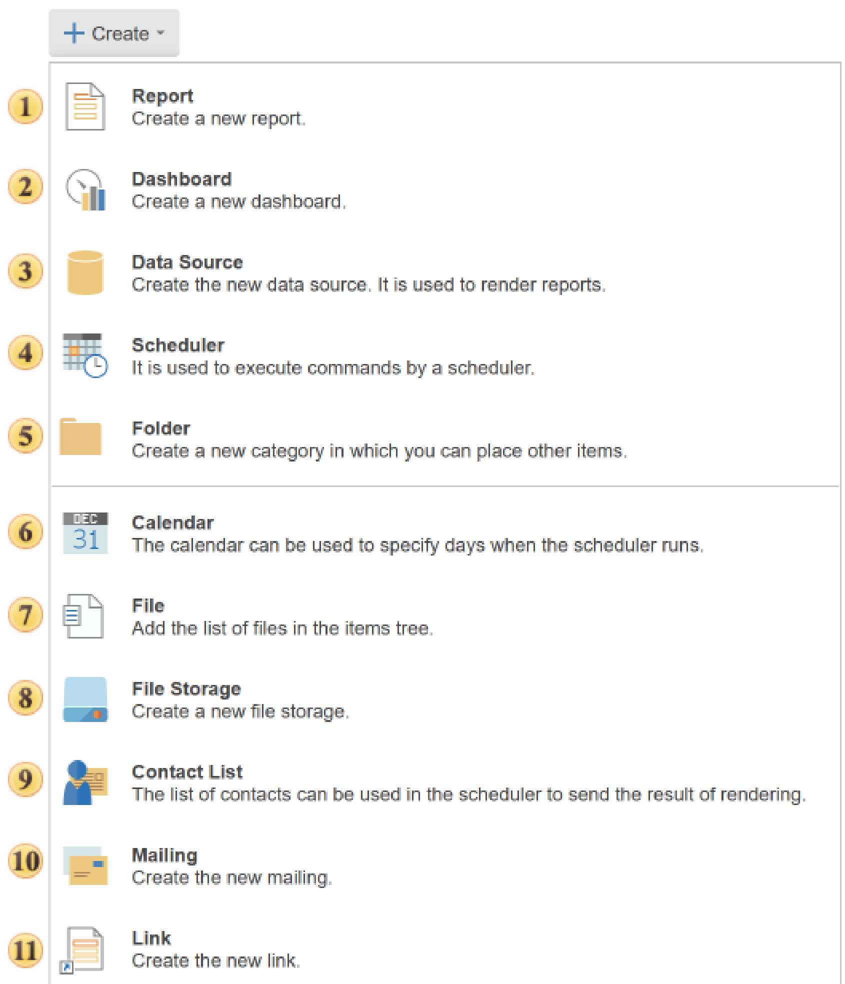
Below is toolbar for data sources



The toolbar contains New Query, and Import Data commands.

3.1 Menu Create

The tab **Create** contains commands with which new items are added to the list of items.



1 The command Report calls a menu to create a report or upload it from the file.

2 The command Dashboard calls a menu to create a dashboard or upload it from the file.

3 The command Data Source is used to create a new data source

4 The command Scheduler is used to execute commands on the schedule, add new ones.

5 The command Folder is used to organize and store items in right places. You can create a hierarchy of folders in the list of items.

6 The command Calendar is used to create a calendar. For example, you can create a calendar to run the scheduler.

7 The command File is used to add a file to the list of items.

8 The command File Storage is used to create directory in which can save the contents of the server items.

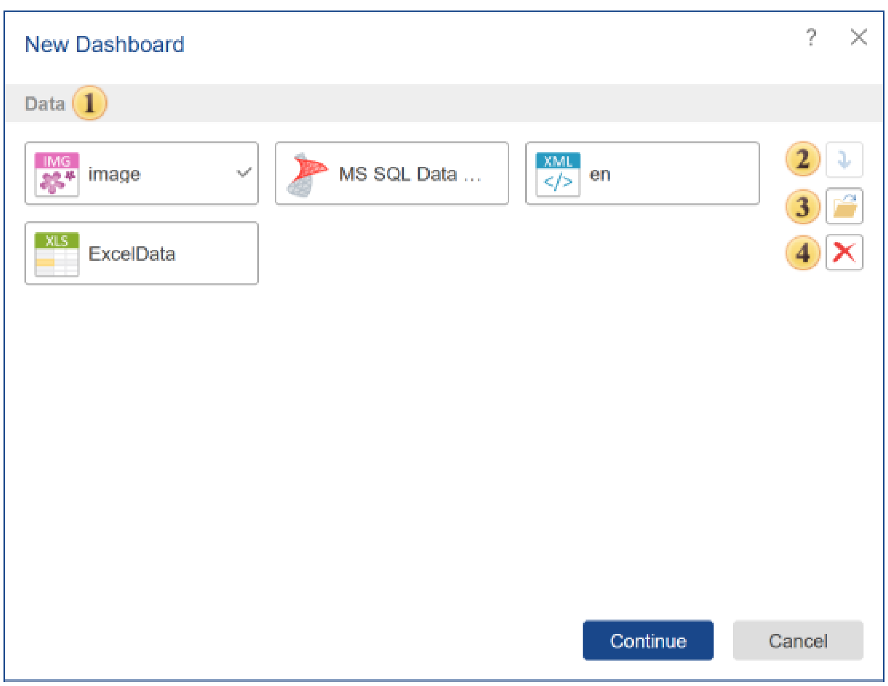
9 The command Contact List is used to create a list of contacts. For example, the contact list may be used by the scheduler, i.e. can form a permanent list of contacts by what users will receive the results by e-mail.

10 The command Mailing calls a menu to create a mailing list.

11 Command to call the creation of a Link.

3.1.1 Dashboard

You can add the dashboard to the list of items. Select the **New Dashboard** panel command in the **Create** menu. In the menu that pops up, you can attach various server elements to the new dashboard or upload files from the local storage.



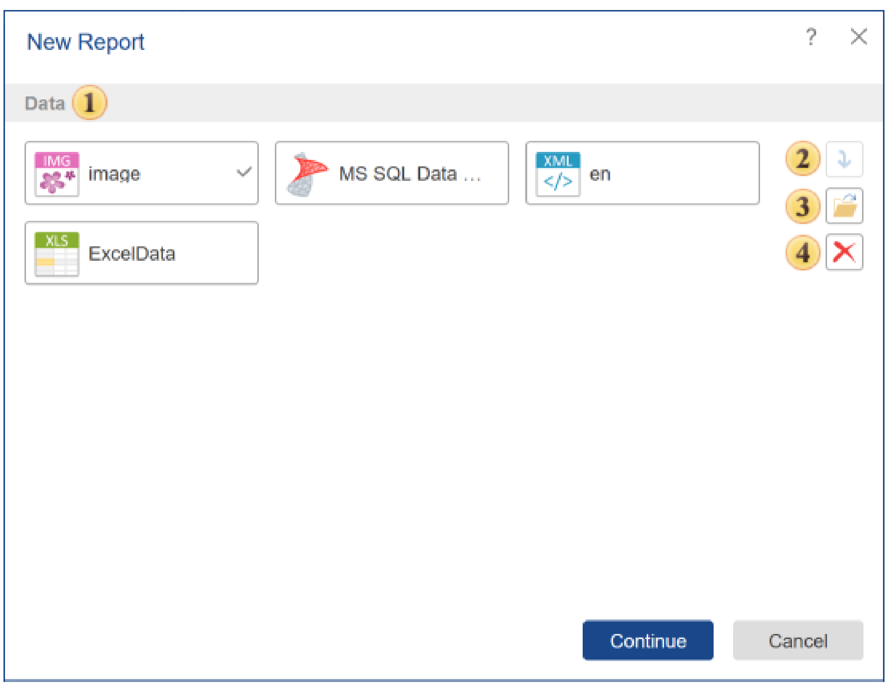
1 In this field, you can attach additional elements to the report.
2 The button is used to add a selected server item to the current report.
3 The button is used to call the Explorer to choose files from the local storage that you need to attach to a new report.
4 The button is used to delete items from the list of attached items. To remove items from the list of attached items, select them with a single click and click the Delete button.

Information

You should know that all elements and files attached to the report will be added to its resources. This does not apply to Data Sources and data files. Based on any attached data source or data file, data sources in the dictionary will be created.

3.1.2 Report

You can add the report to the list of items. Select the **New Report** panel command in the **Create** menu. In the menu that pops up, you can attach various server elements to the new report or upload files from the local storage.



1 In this field, you can attach additional elements to the report.

2 The button is used to add a selected server item to the current report.
3 The button is used to call the Explorer to choose files from the local storage that you need to attach to a new report.
4 The button is used to delete items from the list of attached items. To remove items from the list of attached items, select them with a single click and click the Delete button.

Information

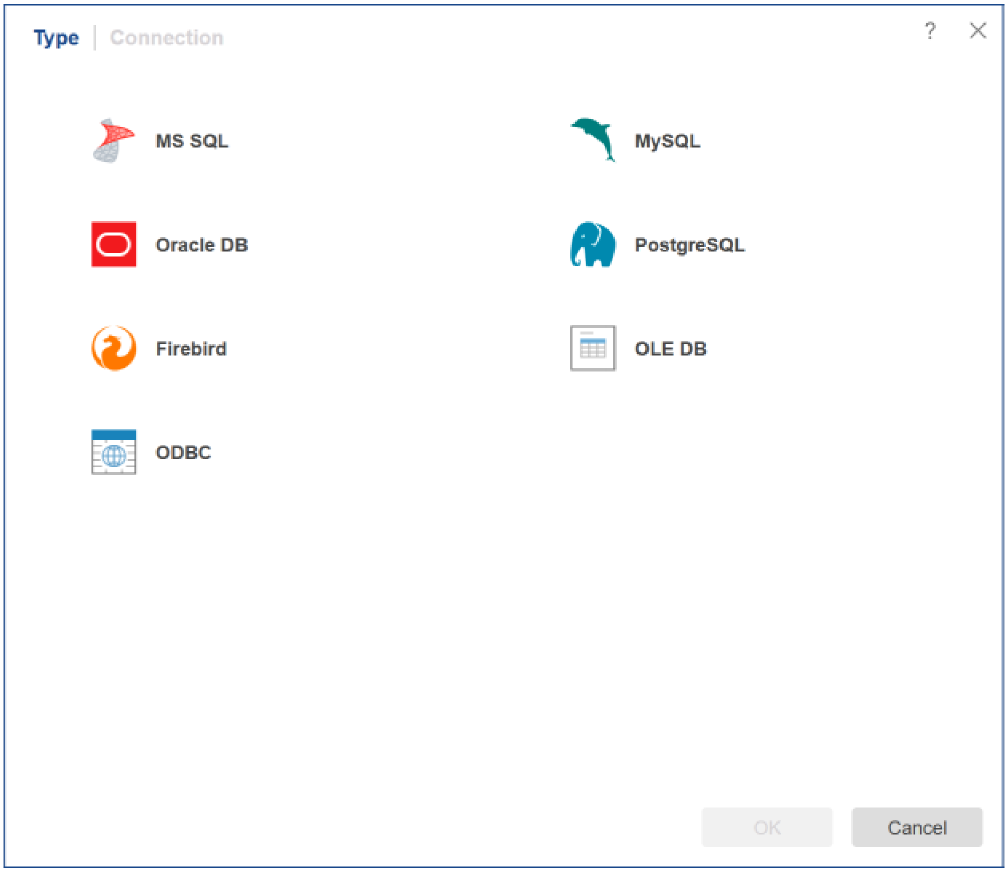
You should know that all elements and files attached to the report will be added to its resources. This does not apply to Data Sources and Data Files. Based on any attached data source or data file, data sources in the dictionary will be created. Also, you can use some types of files added to resources in the development of reports. For example, an attached **Text File**, a file added to report resources, can be a source of text when working with text components of a report, including a **Rich Text** component.

3.1.3 Data Source

The **data source** is a structural representation of data that is used to generate reports. Each data source belongs to a particular type of connection and may vary depending on the type of data source parameters. Creating a data source can be done in several steps:

- Select the type of connection;
- Defining the connection parameters, i.e., creating a connection.
- Creating a new query or importing data.

Below is the menu of selecting the connection type:

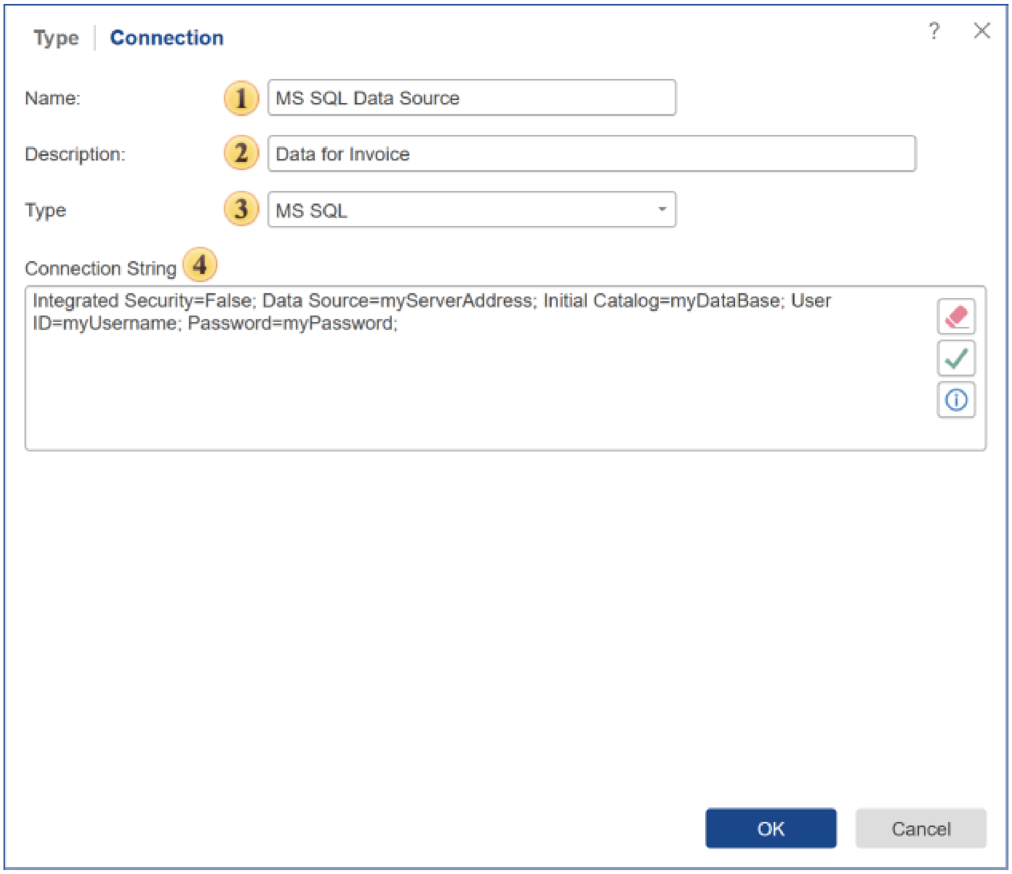


Information

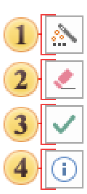
Data can also be obtained from certain types of files (XML, Excel, JSON, CSV, DBF). If you want to get the data from these files, it is not required to initiate the Connection to these files, but you should add them to the tree of items as the File elements. Then you should run the Import Data command.

3.1.3.1 Connection

To create a description of the data source and retrieve the data itself from storage, you should create a connection to this storage. Some parameters of the connection may vary depending on the type of the data source. The picture below shows the menu, which specifies the connection parameters to the data storage:



1 The field **Name** is the name of the data source in the item tree. By default, the data source name is automatically generated, depending on its type. For example, if you select the data source ODBC, then the name of the data source is ODBC.
2 In the **Description** field, you can put some notes, information on the data source.
3 In the **Type** field, you can specify the type of data source without going back to the previous tab. Depending on the selected type, parameters can be changed.
4 In the **Connection String** field, you can specify the connection string to connect to the database. Also, this field has some controls.



1 Calls the **Connection String Wizard**. This control is available for specific data types.
2 The command **Clean Connection String** removes all information from the connection string field.

3 The command **Test** sets the test connection to the data storage.
4 When you select this command, a pattern of a corresponding connection will be inserted.

Once the connection is created, you should retrieve data from the data source. You can do this in the following ways:

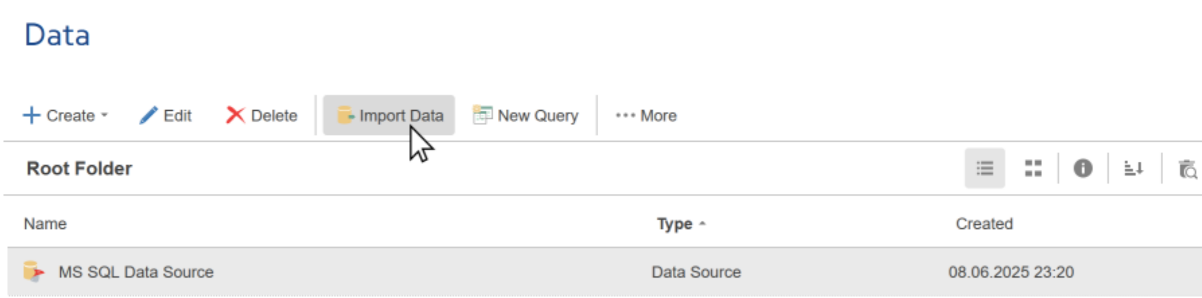
- Select the Import Data command;
- Select the New Query command.

3.1.3.2 Import Data

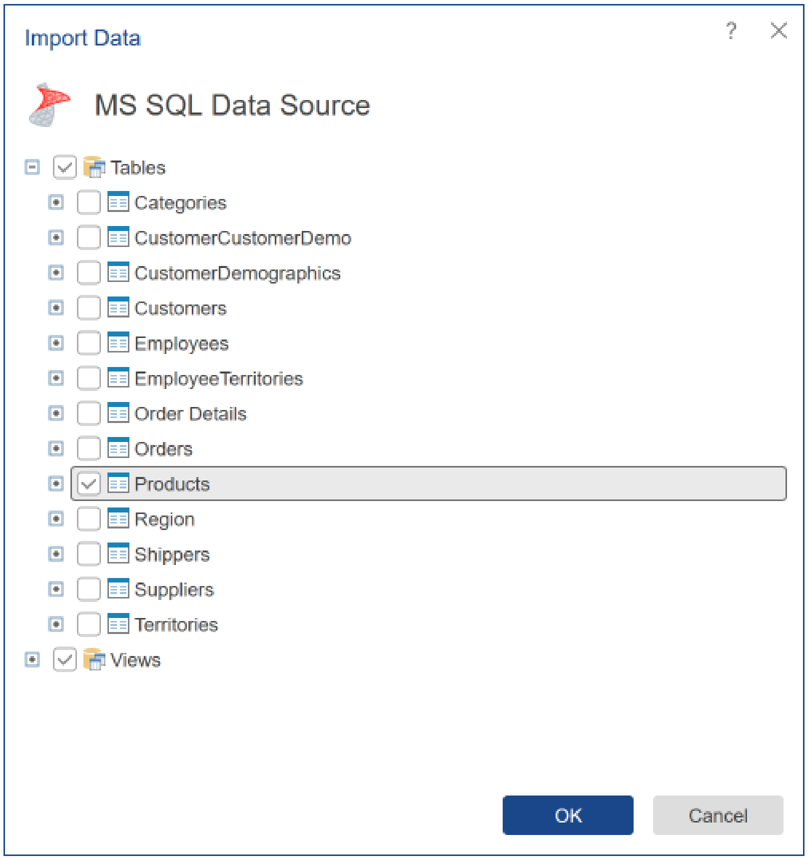
After creating a connection to the data storage, you need to get data from it (as tables, views, stored procedures, etc.). Data can be obtained from any created sources, as well as from data files. Files from which data import is possible are:

- XML files with attached XSD files.
- JSON files.
- Excel files (xls, xlsx).
- CSV, DBF.

Import Data
You can get data from the storage using the **Import Data** command. Select the data connection and click the **Import Data** button on the server toolbar.



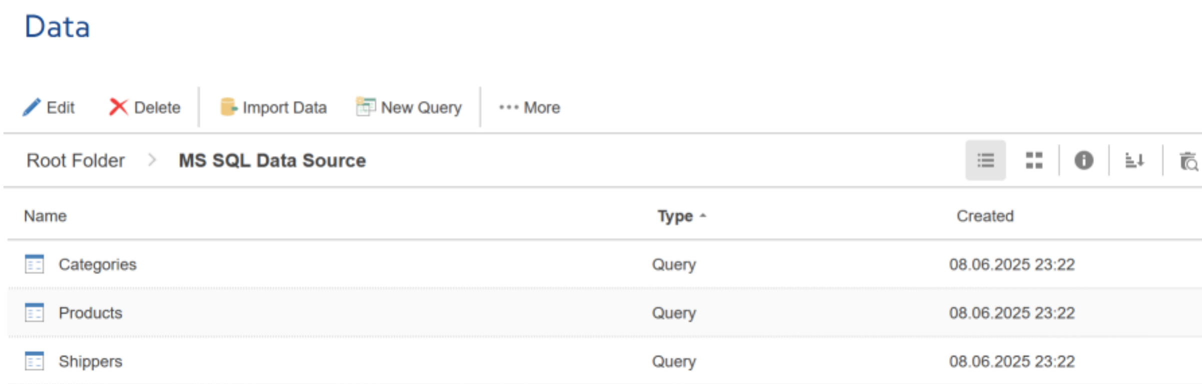
As you can see in the picture, in the item list of the server, the **MS SQL** data source is selected. When you choose the **Import Data** command, **Stimulsoft Server** will check the data storage for the presence of tables, views, stored procedures, etc. The result will be displayed as the **Import Data**:



In this window, the data to be added to the data source should be checked. As can be seen from the picture above:

- Selected **data tables** Categories, Products, and Suppliers. If there are multiple items, but not all, chosen in the category, this category will be marked with ▣.
- Selected **Views**. Checking this category (in this example, in the category of views) entails the installation of flags all sub-items.
- No stored procedures are checked.

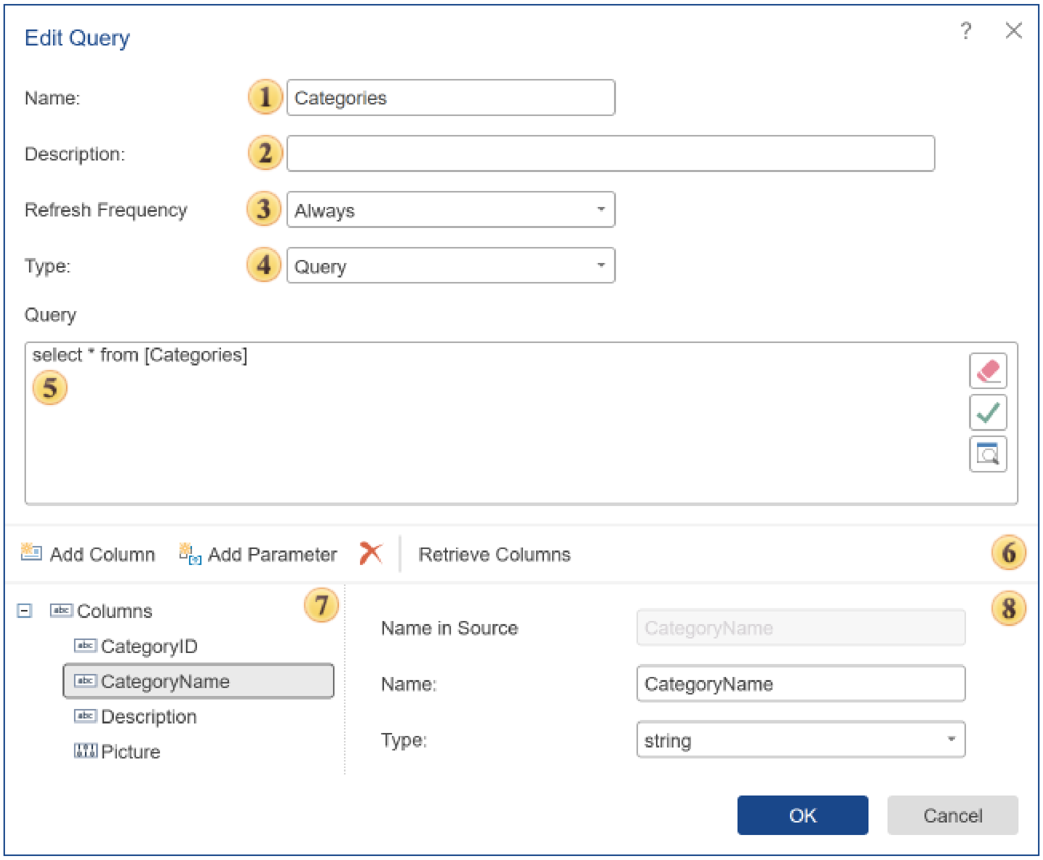
Once the necessary tables, views, stored procedures, and other elements of the data storage are selected, press the button **Ok**. All data from the storage will be converted into a data table and displayed in the list of the server:



Now the data tables can be attached to the report. All attached tables will be displayed in the data dictionary of a report. It is also possible to attach a data source to the report. In this case, the data dictionary will have all the attached tables of the data source.

Editing data tables

You can modify data tables. For example, change the type and number of data columns. To do this, select a data table and click **Edit**.



1 A name of the table that is displayed to the user in the item tree of the navigator;
2 A short description and annotations to the table can be specified in this field;
3 Using the **Refresh Frequency** parameter, you can set the length of time after which reconnection to the data storage will be done. The following options are available:

- **Once** - retrieving data is carried out once when you create a data source;
- **Every 10 Minutes** - in this case, data will be carried out every 10 minutes;
- **Every 30 Minutes** - every half hour, the data will be updated;
- **Every Hour** - updates go every hour;
- **Every 4 Hour** - retrieving data will be every 4 hours;
- **Every Half Day** - data will be updated every 12 hours;
- **Every Day** - once a day the data will be updated;
- **Always** - this option means that whenever you build a report, the data will be updated.

4 Query Type: Query of Stored Procedure.
5 Field of Query Text.
6 The control panel contains the following buttons:

- **Add Column**. With this button, you can add a data column to the data source. It

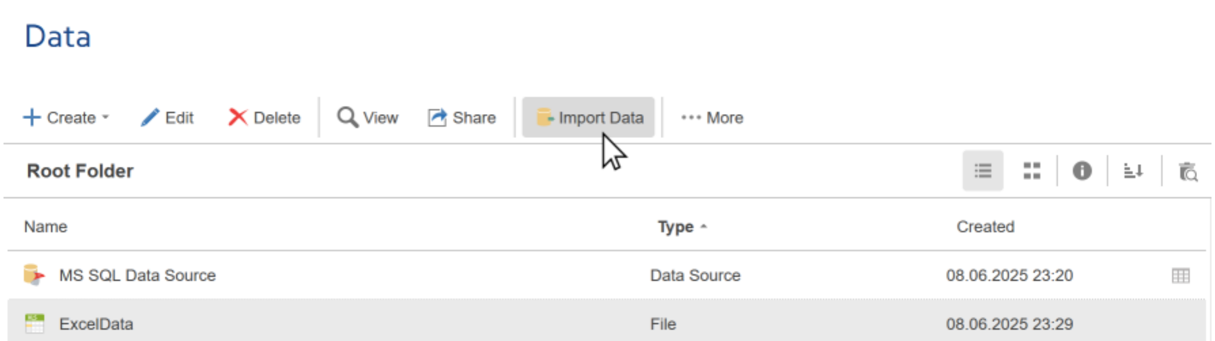
should be considered that this column will contain a description. It does not contain actual data.
- The **Add Parameter** command. Using this command, you can add an option to the category of Parameters. In this case, this parameter must be specified manually in the query.
- **Delete Column**. Clicking this button will delete the selected columns from the data source.
- The command **Retrieve Columns**. Once the query is created, press this button to get a column with the data from the data storage.

7. This panel displays a data column in the data source.
8. The settings panel of selected columns.

Also, when editing a SQL data source, you can use parameters in the query.

Import Data from Files

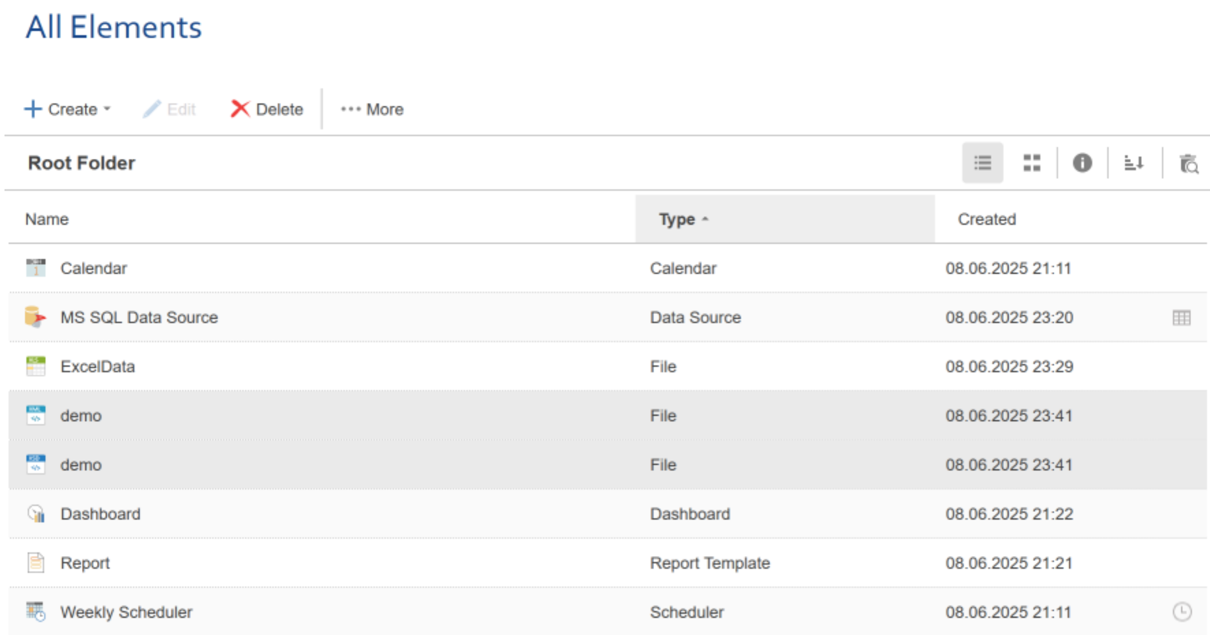
The command **Import Data** provides the ability to retrieve data from files (XML, CSV, JSON, Excel, DBF) and convert them into tables. This command can be found on the **Toolbar** of the file from which it is possible to import.



Sample Import Data from File

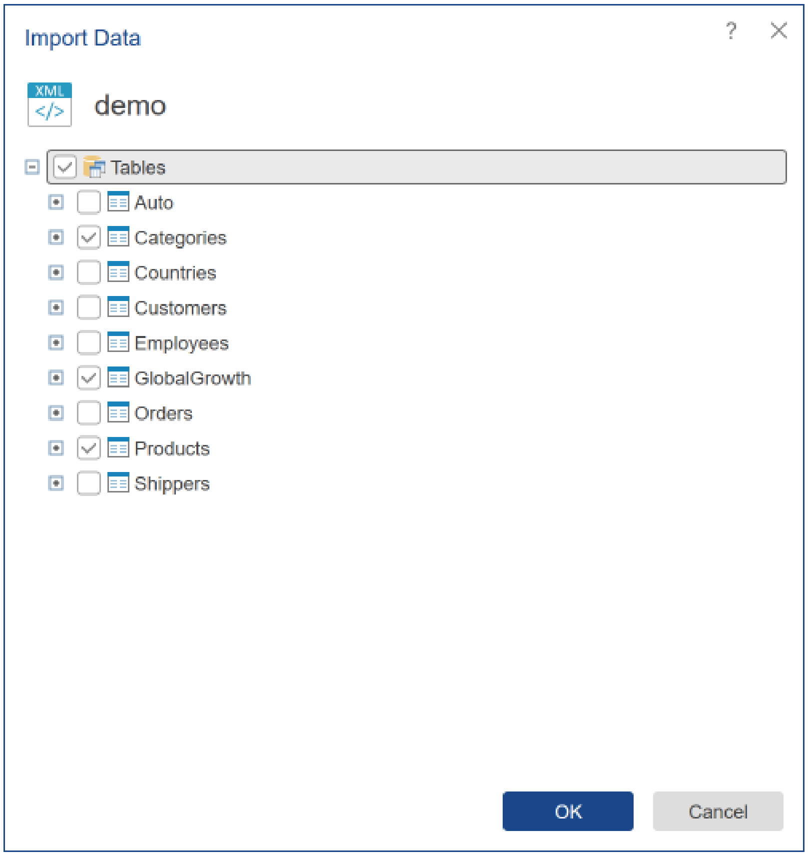
Let's look at how to retrieve data from an XML file. Data can also be retrieved in a similar way from Excel (XLS, XLSX), JSON, CSV, and DBF files.

Step 1: First, you need to upload the **XML** and **XSD** files to the server workspace. To do this, drag and drop the **XML** and **XSD** files from any location into the list of elements, or create a File element and upload the **XML** and **XSD** files to it.



Step 2: The **XSD** file must be linked to the **XML** file. To do this, drag the **XSD** file onto the **XML** file, hover your cursor over the **XSD** file, hold down the left mouse button, then drag and drop it onto the **XML** file. Alternatively, you can link it using the **XML** file's Edit form. Select the **XML** file from the element list and click the **Edit** button on the toolbar. In the edit form, attach the **XSD** file.

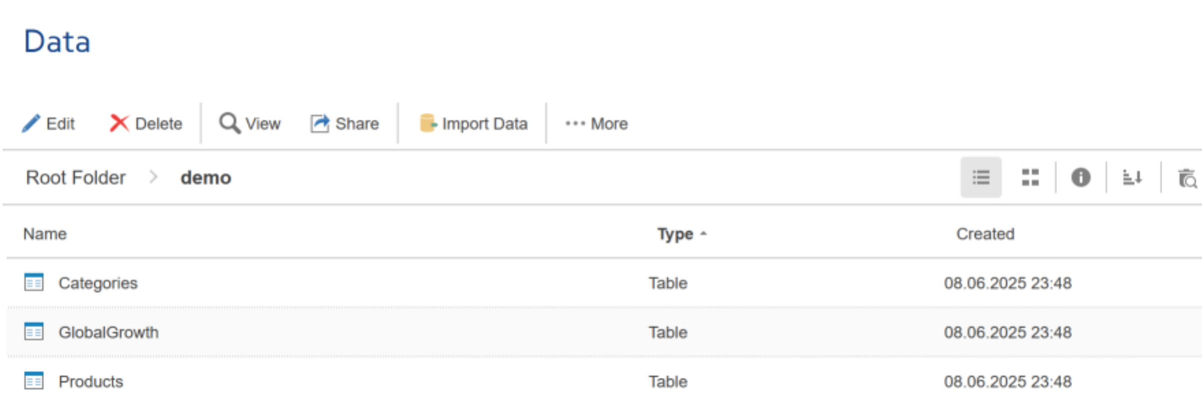
Step 3: Select the **XML** file from the element list and click the **Import Data** button on the toolbar. The report server will extract the data from the file, convert it into tables, and display the result in the **Import Data** window.



Step 4: In this window, you can select data tables. In the example above, the selected tables are **Categories**, **Products**, **GlobalGrowth**.

Step 5: You need to click the **Ok** button.

After you click the **Ok** button, the selected tables will be displayed in the item list. Now, based on these tables, you can generate reports and dashboards.

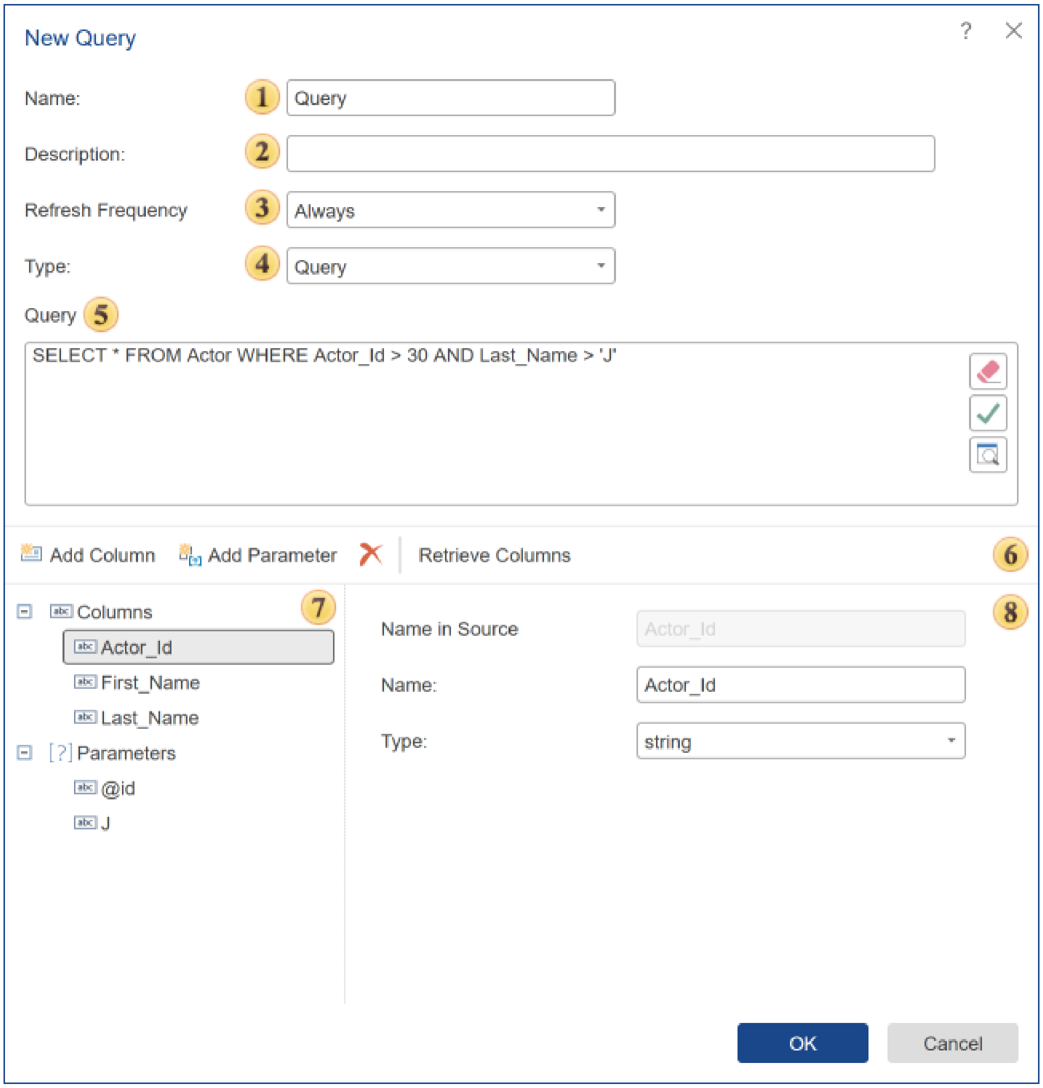


3.1.3.3 New Query

The second way to obtain data from the storage is a method of retrieving data from the query to the repository. **Queries** are script-like texts in one of the dialects of SQL that is used to extract data from tables and to make them available to the report server. Queries get the data from database tables and, on their basis, create temporary tables. The data in the temporary table will be filtered, grouped, sorted, and arranged according to the query parameters. Then, the temporary table is passed to the report server. Applying requests provides an opportunity to avoid duplication of data in the tables, minimizes the amount of data traffic between the database and the client-side, and also provides maximum flexibility for searching and displaying data in a database. Below is the **New Query** dialog.

New Query

Select the data connection and click the **New Query** button on the server toolbar to create a data query. After you clicked the **New Query** button, the **New Query** menu will be called.



1 The Name field indicates the name of the new request.

2 In the Description field, you can specify a description for the current request.

3 Using the Refresh Frequency parameter, you can set the time interval, after which the connection to the data storage will be reconnected, and the necessary data will be updated. The following options are available:

- **Once** - data is obtained once when creating a data source;
- **Each 10 Minutes** - in this case, data will be updated every 10 minutes;
- **Each 30 Minutes** - the data will be updated every 30 minutes;
- **Each Hour** - select this option to update hourly;
- **Each 4 Hour** - data will be updated after every 4 hours;
- **Each Half Day** - data will be updated every 12 hours;
- **Each Day** - data will be updated once a day;
- **Always** - this option means that every time you build a report (when accessing

a data source), data will be updated.

4 This field specifies the type - query or stored procedure.
5 The panel **Query** contains a text field for typing a query and controls.

- The **Clear field** command, i.e., the query text will be removed;
- The **Check query** command. When you call this command, the report server will generate a test query execution. The result will be shown to the user as a message.
- When you press this button, then in the View Query window, data columns specified in the query will be displayed.

6 The control panel that contains the following buttons:

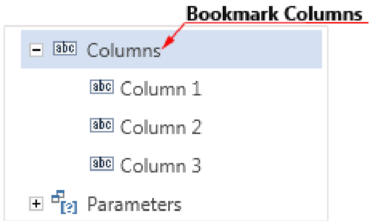
- The command **Add Column** creates a new column. Keep in mind that this will be the description of the data columns, and it will not contain real data.
- The command **Add Parameter**. Using this command, you can add an option to the category of Parameters. In this case, this parameter must be specified manually in the query.
- The command **Delete** deletes the selected column or the parameter.
- The command **Retrieve Columns**. Once the query is created, press this button to get a column with the data from the data storage.

7 This panel displays the data columns in this data source.
8 On the **Columns** panel, you can find the following tabs.

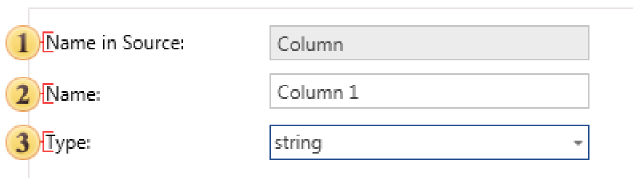
Data Columns

Sometimes it is necessary to add a data column to the data source. To create a new data column, you must click **Add Column**.

You should know that the data column created this way is a description of a (virtual) data column, and it does not contain the actual data. If this column is absent in the data database, then, when referring to the database, the server will return an error. All generated data columns are displayed in the list of columns:



Also, you can change the settings of the created column.

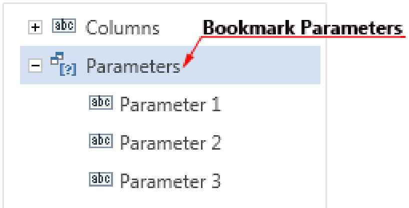


① In the field **Name in Source** the name of the column in the data source is specified;
② In the field **Name** the name of the column that will be displayed to the user is displayed;
③ The field **Type** provides the ability to select the type of the column.

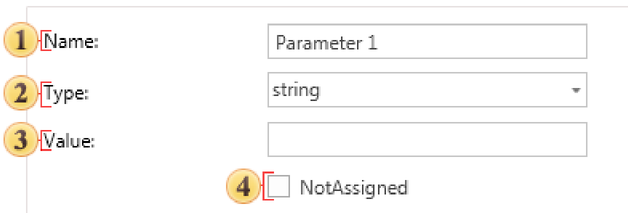
Parameters

When creating a query, it is possible to use the **Parameter** object. This object is designed to send additional conditions for selecting data into a query. For example, if you need a query to use a value entered by the user each time the query is executed, you can create a query using parameters. The Parameter object can only be used with SQL data sources. These data sources typically have the Text Query field. To insert a parameter in the query, you must click the **New Parameter** button. The picture below shows the toolbar, on which the **New Parameter** button can be found.

After you click this button, a new parameter will be created. This parameter will be displayed in the **Parameters** tab in the Columns panel. The picture below shows an example of the Columns panel with the Parameters tab.

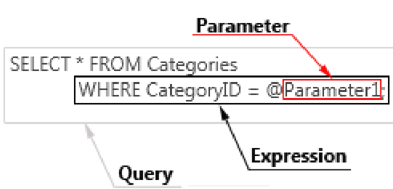


Each parameter has a property with which you can change its settings. The picture below shows the panel of parameters properties.

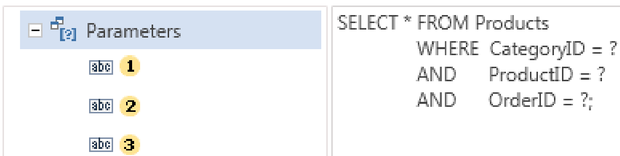


1 The **Name** property. It is used to change the parameter name. This feature works only for named parameters.
2 Use the **Type** property to change the parameter type. The values of the properties are in the drop-down list and are a list of types used in the parameters for a particular database. It should be noted that a list of types differs depending on the database.
3 For each parameter, you can specify a value that is used to fill the parameter in the process of automatic request calls without any action from the user.
4 If this option is enabled, then the field Value will be unavailable. By default, null or value which is specified in the stored procedure on the server will be used.

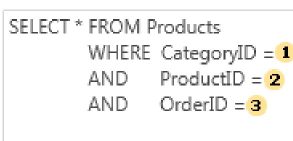
Also, you must specify the parameter in the query. Here is an example of a schematic position of parameters in the query.



As a rule, the @ symbol is used to specify a parameter in the query. The @ symbol is used with named parameters, i.e., after the @ symbol goes the name of the parameter. But in some databases (for example, in **OleDB**), the @ symbol cannot be perceived by the adapter, and database queries with parameters will not work. In this case, you can use unnamed parameters. For specifying **unnamed parameters** in the query, the ? character is used. After the ? symbol, the parameter name is not specified. In this case, the order of parameters in the Parameters tab is essential. As indications of the ? characters in the query, settings will be taken sequentially from the Parameters tab in the top-down direction. Consider the following example. Suppose three parameters are specified in the query.



Since, in this case, unnamed parameters (marked with **?**) are used, then, when running, the query parameters will be taken from the **Parameters** tab in the top-down order. The picture below schematically presents a comparison of parameters of the Parameters tab to the parameters in the query.



Moreover, the parameters used in this example must have names, but when using the ? they do not play a role.

3.1.4 Scheduler

The **scheduler** is one of the main tools of the report server, using which you can plan specific actions at a particular time. To do this, you need to create a scheduler and specify the time and actions that you must perform. For example, at the beginning of each hour (at a specific minute), the report will be rendered, exported to **PDF** format and sent via email to particular persons. The picture below shows a window to create a new scheduler:

To create a scheduler, you should

- Select the Scheduler command in the Create menu;
- Select the Create scheduler command in the context menu on the item list panel.

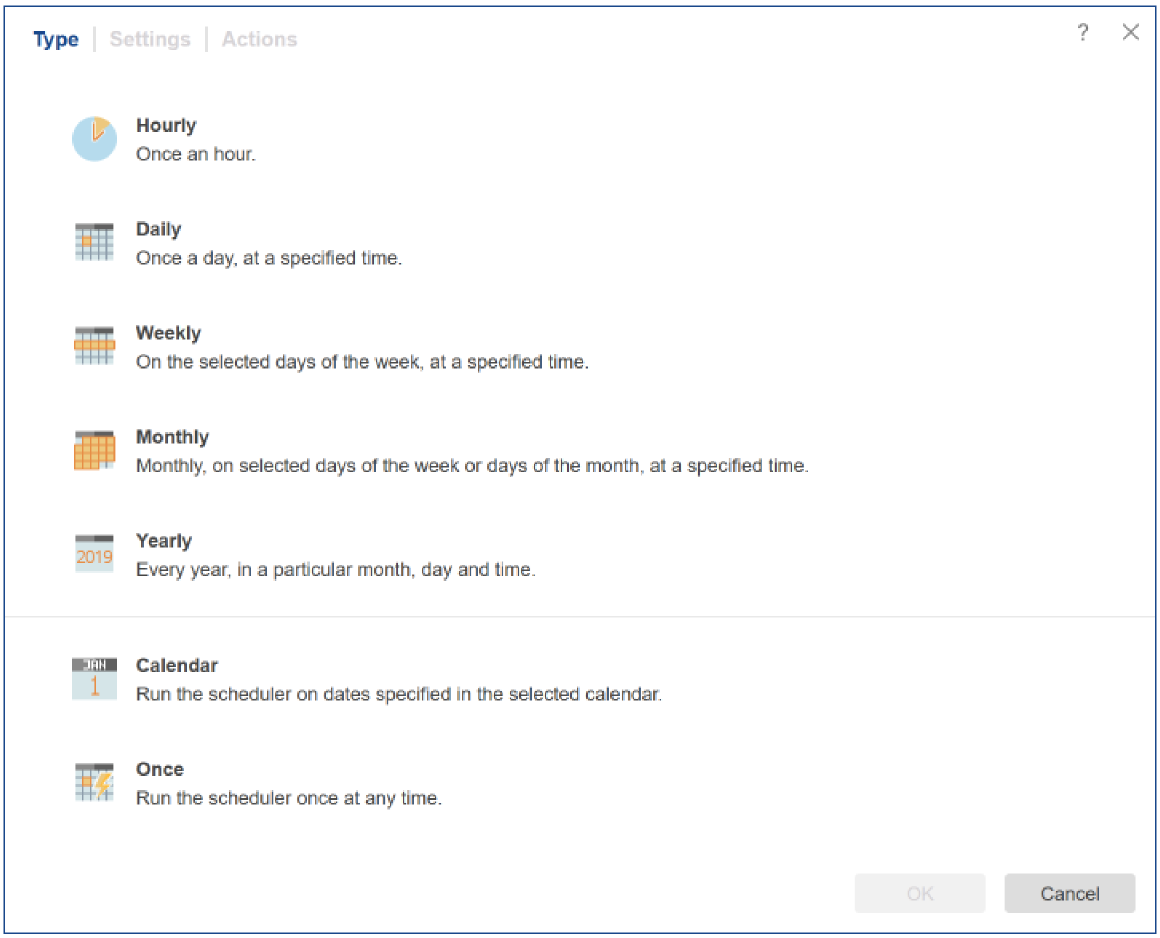
Also, you can edit a scheduler, for this, you should:

› Select the scheduler in the list of server elements and click the Edit button;
› Select the scheduler in the list of server elements and select the Edit command in the context menu of the scheduler.

The scheduler is configured in its editor.

Scheduler Editor

The scheduler editor consists of the following tabs - **Type**, **Settings**, and **Actions**.



As can be seen from the picture, the scheduler consists of the following tabs:
› In the Type tab you can specify time when the scheduler should run.
› In the Settings tab, you can set up the scheduler.
› In the Actions tab, you can specify the list of what should be done with the scheduler.

Scheduler Types

On the **Type** tab, you can set up when the scheduler should run, when the scheduler actions will be executed. Frequency can be set as follows:

- Hourly. The scheduler will perform some action every hour, at a certain minute of every hour (minute configurable).
- Daily. The scheduler is executed once a day, depending on the specified time (hour and minute).
- Weekly. In this case, the scheduler will be executed once a week on the specified day, at the time (hour and minute). Also, you can specify the required days of the week. For example, you can specify all the days of the week, or only Monday or Monday + Friday + Saturday.
- Monthly. This type of scheduler provides the ability to create a schedule at a certain time during the month. Moreover, it is possible to select the months; schedule will only work on certain months.
- Yearly. In this case, you can set the time (hours and minutes), a month and a day when the scheduler runs.
- Calendar. In this case, you should specify the calendar, a list of items of which will be a timetable for the scheduler.
- Once. Any action will be executed once, after running the scheduler. Typically, such a scheduler is started by another scheduler or manually.

3.1.4.1 Settings

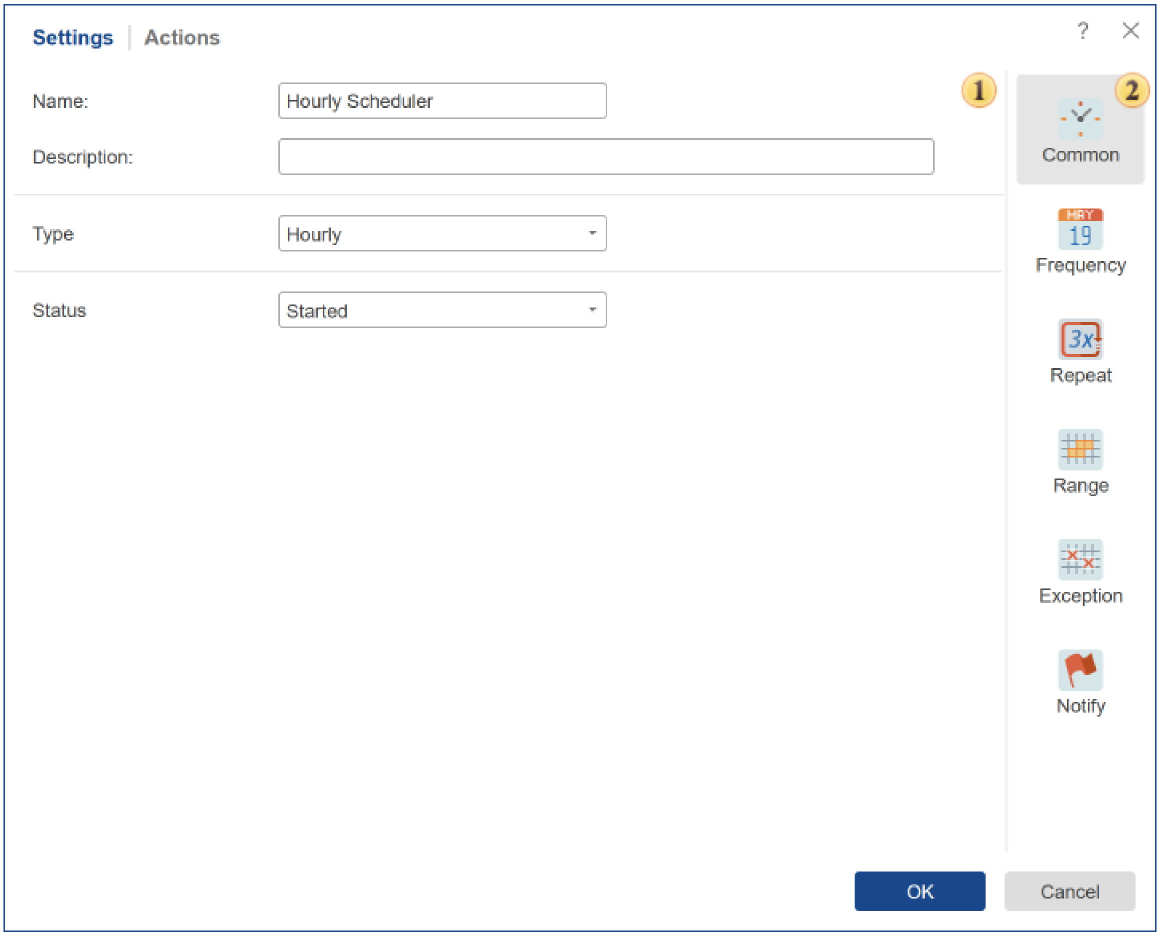
On the **Settings** tab, you can define scheduling parameters. Depending on the selected type, the number and names of the parameters may vary.

This chapter will cover the following:

- Description of Settings Tab;
- Common;
- Frequency and Time Zone. The scheduler may be daily, weekly, monthly, yearly, calendar, once.
- Repeat;
- Range;
- Exception;
- Notify.

Description of Settings Tab

Scheduling parameters are presented in groups.



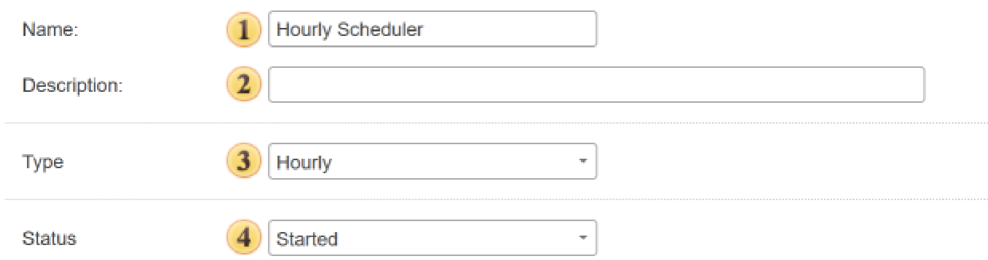
1 The panel **Settings**. This panel displays a list of options, depending on the selected group.
2 This panel contains a list of parameters.

Information

The number of groups may vary depending on the type of scheduler.

Common

This group of a parameter contains general settings that do not depend on the type of the selected scheduler.



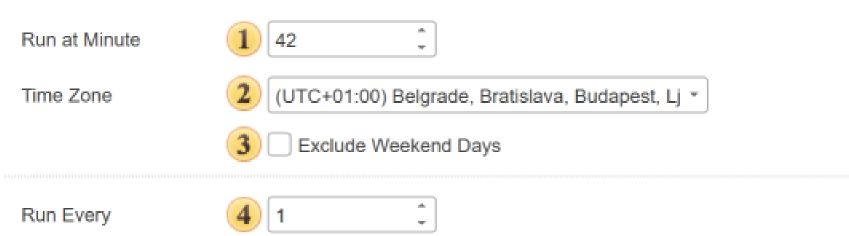
1 In the **Name** field, you can set the name of the scheduler.
2 This field is used to describe the scheduler. The description is used for making notes and explanations for the scheduler.
3 With this option, you can change the **Type** of the scheduler without going back to the previous tab.
4 This parameter defines the status of the scheduler after it is created. If you select the state **Started**, the scheduler will be active after saving and work according to the schedule. If you choose the status **Stopped**, the scheduler will not be active when you save it, and the schedule will not be executed.

Information

The parameter **Status After Creation** is not available if you select a single scheduler. The parameter **Run After Creation** is available instead of that parameter. If this box is checked, the scheduler will work after saving and perform defined actions. If the box is not checked, the scheduler does not work, and it is possible to start it or to use another scheduler manually.

Frequency

This group contains parameters by which the scheduler is running. Some of the settings in this group will vary depending on the type of scheduler. Here is an example of the parameters of the hourly scheduler.



① The **Run at Minute** parameter specifies the minute for each hour, upon the occurrence of which the scheduler will trigger.

② The parameter **Time Zone** indicates the time zone, which will be considered by the scheduler.

Information

Always pay attention to the **time zone** because wrong time zone definitions will cause the scheduler running at the wrong time.

Suppose you want to perform an action for the scheduler at 14:00. Depending on the geographical location, i.e., due to differences in time zones, the response time of the scheduler can vary significantly. For example, the east and the west coast of the United States refers to the different time zones. Eastern - (GMT -5:00), West - (GMT -8:00), so the difference in time will be 3:00 at this moment. To calculate time in a different time zone, you must specify the time and time zone. Therefore, if you set the time of 15:01, determine the time zone GMT -8:00, then the scheduler will work at 15:01 on the west coast or in 12:01 - the east coast. This parameter will be present in all types of the scheduler, except the Once.

③ The **Exclude Weekend Days** option. This parameter allows you to prevent the scheduler from running on weekends (Saturday and Sunday). If the checkbox is selected, the scheduler will not trigger on Saturdays and Sundays. Any missed executions will be deferred to the next working day — that is, Monday. The total number of executions will remain unchanged: for example, if the scheduler was supposed to run 5 times over the weekend, it will run 5 times on the next working day.

Information

When enabling this parameter, keep in mind that it can also be used in combination with an exclusion calendar. In this case, the system will determine the next available execution day that is not listed in the exclusion calendar and does not fall on a weekend (Saturday or Sunday). If the exclusion calendar contains many entries and this parameter is enabled, there may be a significant delay in the scheduler's execution relative to the initially defined date. This happens because all exclusion conditions must be met in order for the scheduler to run. If the checkbox is not selected, the scheduler will operate normally, according to the defined schedule. This parameter is available for all scheduler types except for One-time and Calendar-based schedulers.

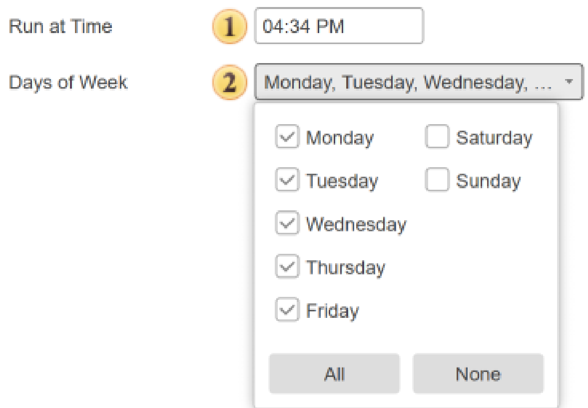
4 The **Run Every** parameter sets the shift when the scheduler triggers. For example, if the value is 1, the scheduler will be triggered every time as scheduled. If the value of this parameter is 2, the scheduler will be triggered through 1 time, every second time in the schedule, etc. This option has in all schedulers, except the Once and Calendar.

Let's look at other types of schedulers and their schedules:

Daily

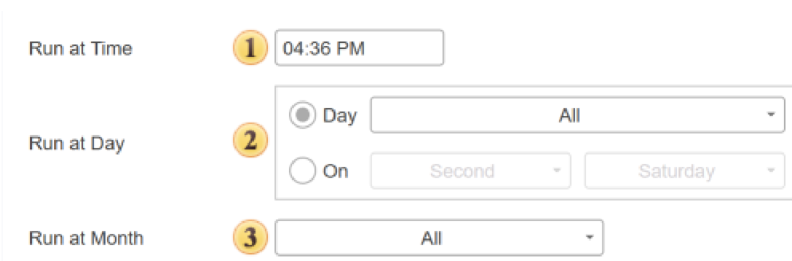
1 Under this option, you must specify the exact time when the scheduler runs. Then, every day, if there are no exceptions, the scheduler will perform specific actions at the specified time.

Weekly



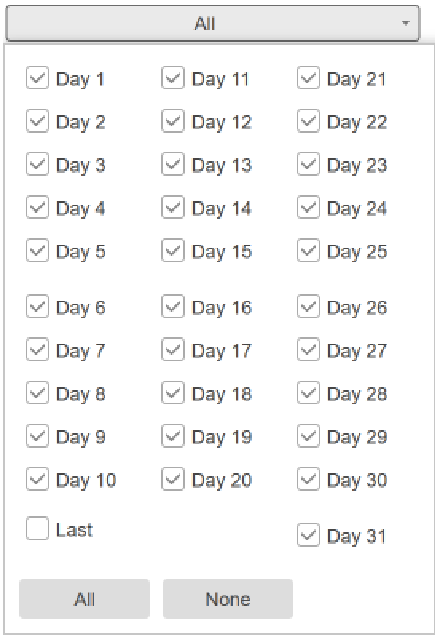
1 In this field, you must specify the exact time the scheduler should trigger. Be sure to take into account the AM (midnight to noon) and PM (noon to midnight) format.
2 You also need to select the days of the week on which the scheduler will run. If no days are selected, the scheduler will not run according to this schedule. To include a day of the week, check the corresponding box. To exclude a day from the schedule, uncheck the box. There are also two buttons available: **All** — selects all days of the week. **None** — clears all selected days

Monthly

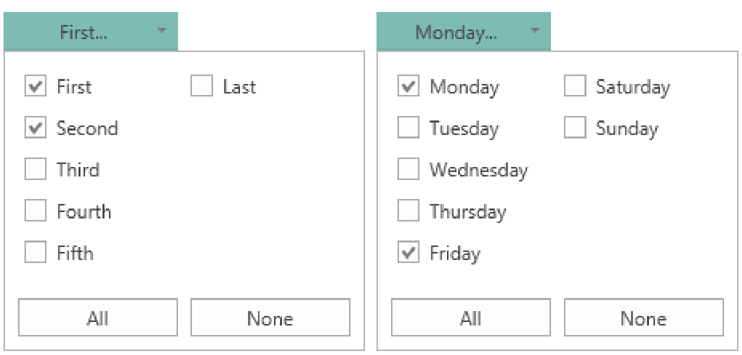


1 In this field, you must specify the exact time the scheduler should start. Be sure to take into account the AM (12:00 midnight to 12:00 noon) and PM (12:00 noon to 12:00 midnight) format.
2 This parameter allows you to select specific days of the month. The following options are available:

› Select the ordinal number of the day in the month. In this case, you need to check the boxes for the specific day numbers on which the scheduler should run. You can also select the Last checkbox, which means the scheduler will run on the last day of the selected month. There are also two buttons available: **All** — selects all days of the month (except the Last checkbox). **None** — clears all selected days, including the **Last** checkbox

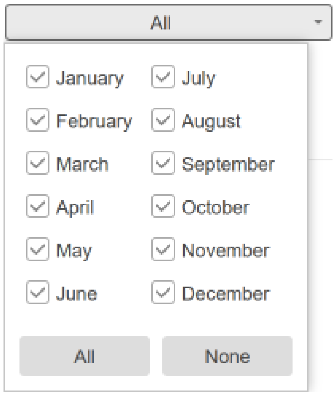


› Defining a relative day of the month. In this case, you need to select the order of the day (e.g., first, second), and then choose the days of the week, such as Monday and Friday. In this example, the scheduler will trigger on the first and second Mondays and Fridays of the selected month.



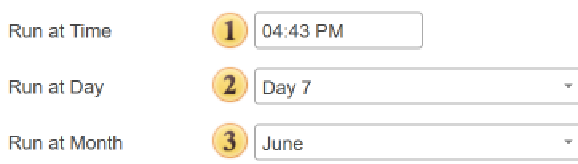
You can select the desired order and day of the week by checking the corresponding boxes. If no order or no day of the week is selected, the scheduler will not run based on this schedule. Two additional buttons are available: **All** — selects all days of the week **None** — clears all selected days of the week

3 Selecting months is done using this parameter. You can select one or multiple months.



To include a month, check the corresponding box. If no months are selected, this schedule will be considered inactive. Two buttons are also available: **All** — selects all months. **None** — clears all selected months

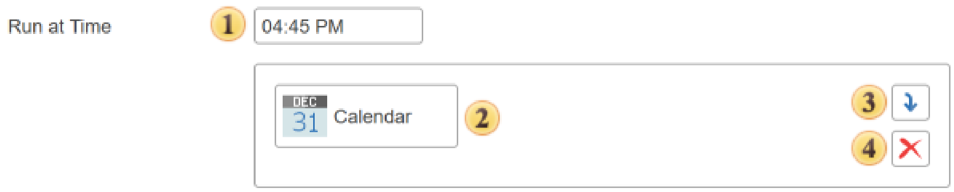
Yearly



1 Under this option, you must specify the exact time when the scheduler runs. Then, every year, if there are no exceptions, the scheduler will perform certain actions at the specified time.
2 With this parameter, you can set the day of the month on which the scheduler will run.
3 Months of the year in which you will run the scheduler is defined using this parameter. If the month has already passed, the selected schedule will work next year.

Calendar

When you select this option you must specify a calendar with a schedule (the calendar contains a list of specific dates):



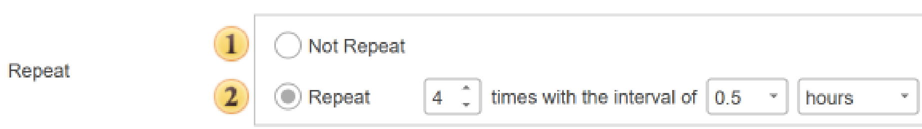
1 In this field, you should specify the exact time when the scheduler triggers. The calendar indicates only the dates, so the time of running is defined on the tab Calendar.
2 The added item Calendar.
3 The button is used to add the selected item from the tree to the panel of the scheduler.
4 The **Delete** button is used to delete an item from the panel of the scheduler.

Once

In this case, the scheduler works immediately after creation. It should be known that the scheduler will not work if to uncheck the parameter Run After Saving. In this case, the running must be implemented manually, i.e., select this scheduler and select the command **Run Once** on **Toolbar**. Also, the scheduler of this type can be started by another scheduler through the action **Run Scheduler**.

Repeat

Sometimes you need to repeat the scheduler operations after its actions by the schedule have been executed. You can enable the repetition and configure it in the group **Repeat**:



1 This radio button turns **on/off** the repeat mode.
2 Includes the repeat mode and provides the ability to set the repeat options:
- The first parameter defines the number of repeats after the scheduler is executed;
- The second value defines the range of 0.5; 0.25; 1, etc.
- The third parameter specifies the unit: hours or minutes. Depending on the selected unit, the repeat interval will be calculated.

Information

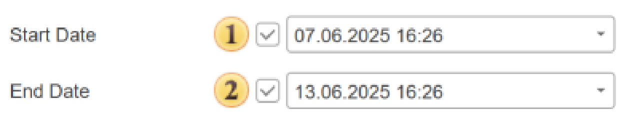
The picture above shows an example of the enabled repeat mode: 3 repeats with an interval of half an hour after each execution of the schedule. Suppose there is a scheduler which runs daily at 10.00 AM. If the repeat mode is enabled (see the picture above), the scheduler will run:

- at 10.00 AM on a daily schedule;
- at 10.30 AM will be the first repeat;
- at 11.00 AM will be made to the second repeat;
- at 11.30 AM will be made the third repetition.

The next day, the scheduler will run at 10.00 AM, and if the repeat mode is enabled, the repetitions will be performed.

Range

The group of parameters **Range** provides an opportunity to specify the interval when the scheduler works. In other words, the scheduler will only work if its schedule falls within the range:



1 With this parameter, you can specify the beginning of the range. Check the checkbox and select a date-time.

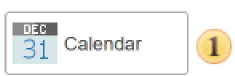
2 The end of the range is set using this parameter. You must also check the checkbox and select a date-time.

Information

For example, on July 30, 2014, we will create a daily scheduler, which must be executed at 10.00 AM. Next, we will define the range from July 31, 2014, from 8.09 AM to August 2, 2014, 8.09 AM. In this case, the scheduler will run on July 31, August 1, August 2. On other days, the scheduler will not be executed because its schedule does not fall within the specified range.

Exception

Sometimes, on specific dates, the scheduler mustn't run. A list of these dates (exceptions) is made in the item calendar. Next, the item is added to the scheduler and will be considered as a list of exceptions. For example, a daily scheduler is running, but the 4th of July is a holiday, and it is not necessary to run the scheduler. Therefore, it is essential to create a calendar with the date July 4, and then drag it out of the item tree to the panel of exceptions. Now, this scheduler will not run on July 4.



1 The item Calendar that contains the dates of exceptions.

2 The button is used to add the selected item from the tree to the panel of exceptions. In this case, the item Calendar.

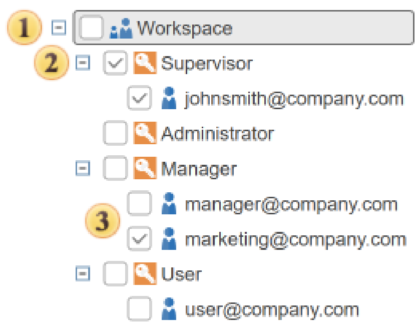
3 The button is used to delete an item from the panel of exceptions.

Information

When using exceptions, you should take into account the value of the Time Zone.

For example, the scheduler is launched daily, but July 4 is a holiday and there is no need for the scheduler to be triggered. Therefore, you should create a calendar with the date July 4, and then drag it from the list of items to the exceptions panel. Now this scheduler will not be triggered on July 4.

Notify
In this group of parameters, it is possible to set up a list of users who will get notifications of the executed scheduler. You can notify all users of the workspace, or users with a specific role, or users by selection.



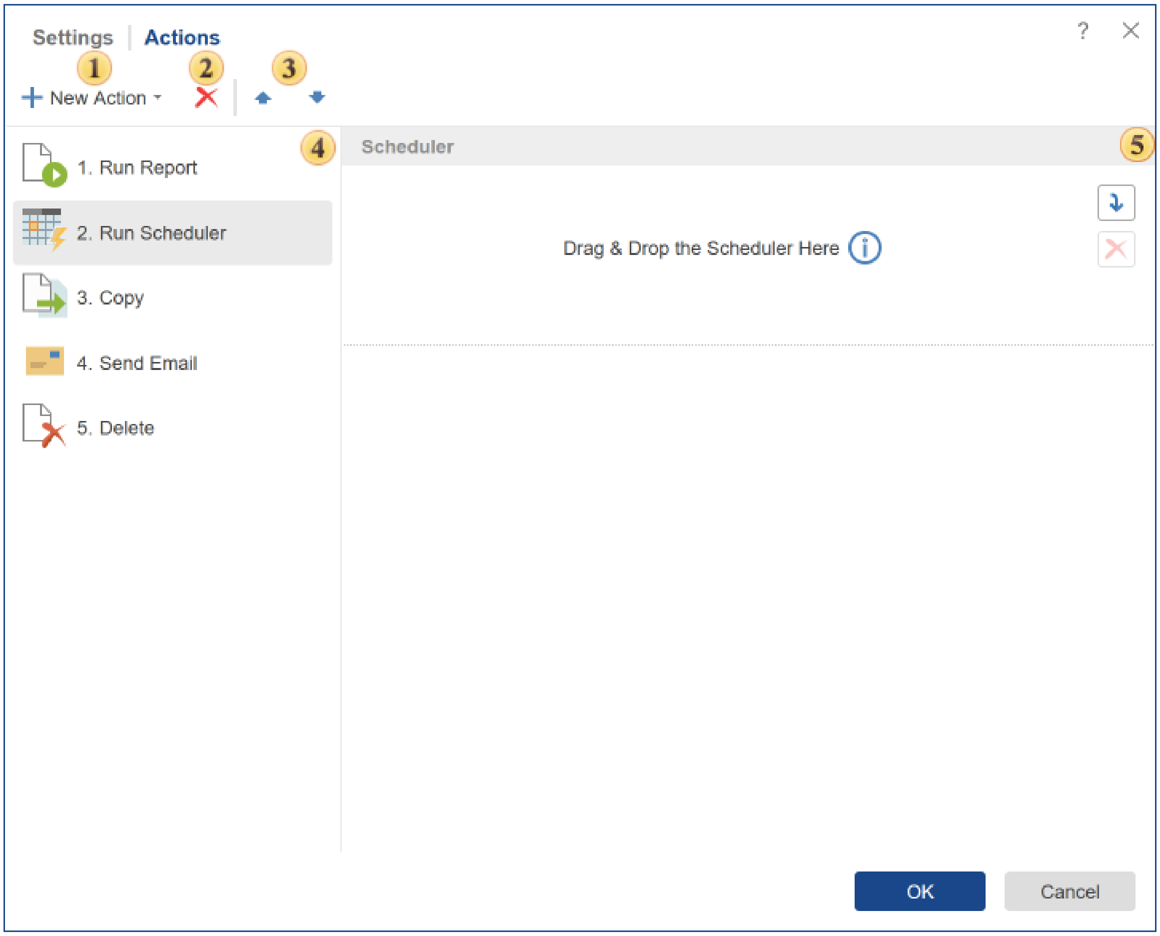
1 In order notifications of the executed scheduler send to all the users in this workspace, you should select this checkbox.
2 If you check the role, all users in this role will be notified of the executed scheduler.
3 In addition, it is possible to notify users selectively.

3.1.4.2 Actions

The scheduler in the active (running) state performs a specific list of actions on schedule. Actions performed by the scheduler:

- Copy;
- Delete;
- Run Report;
- Run Scheduler;
- Send Email.

Description of Actions Tab
The list of actions is generated when you create or edit the scheduler on the tab **Actions**. Actions are executed alternately in the scheduler, in the direction from top to bottom. The higher is the location of a particular action in the generated list of scheduler actions; the higher is the order of execution.



1 The drop-down menu contains a list of actions available for the **Scheduler**.
2 Delete the selected action from the actions list.
3 Moves the selected action up and down, increase-decrease execution priority.
4 The panel list of actions. This panel displays the added action, those that will be executed each time you run the Scheduler.
5 The panel of parameters of the selected action.

Information

Methods for adding elements to the action parameters panel:

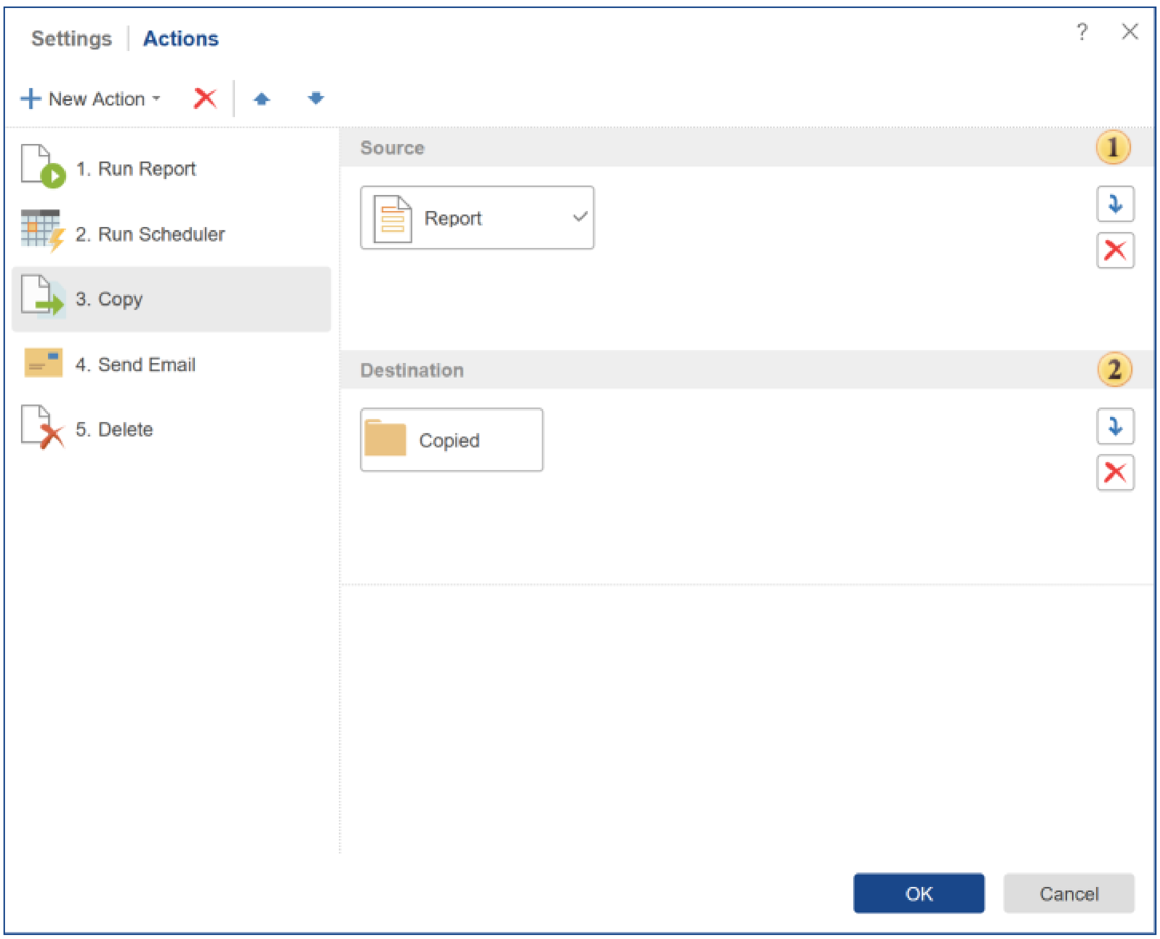
- Drag an element from the server elements list to the current panel.
- Select an element in the server elements list and click the **Add** button on the action parameters panel.

Copy

Copying elements can be done using the scheduler. And, at the same time, you can copy multiple items, but to one destination. You cannot specify multiple destinations for copying. In addition, you can copy items to the list of contacts. In this case, a copy will be sent to the e-mail addresses from your contact list. You can also copy the item to an item. In this case, you must consider the following restrictions:

- Similar types of objects in the fields **Source** and **Destination**. It is impossible to copy **Report** to **File**, or vice versa.
- It is allowed to use only one item as the destination.

Below is the action menu **Copy**.



1 This field specifies the elements that will be copied.

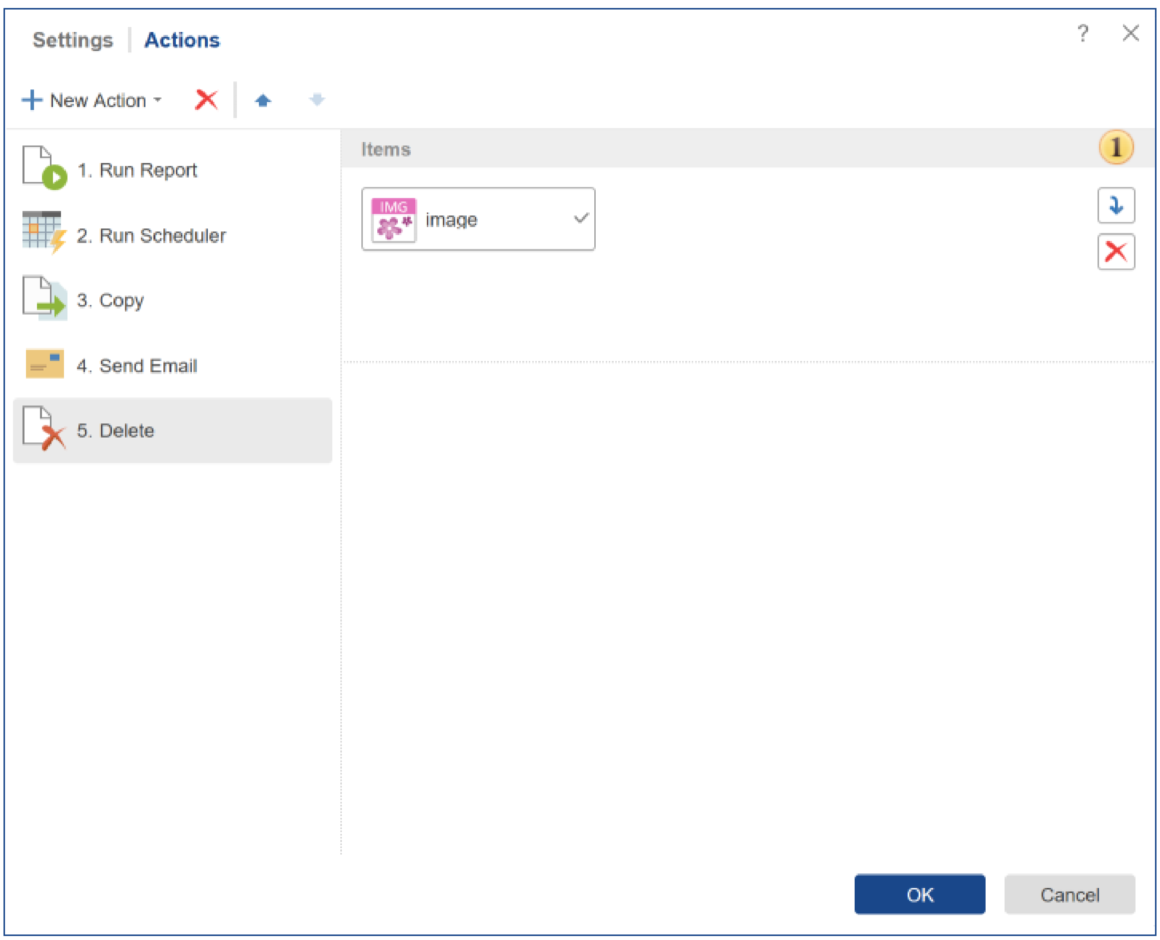
2 In the field of this parameter, you should specify the destination for the copies. This can be a folder, a list of contacts, cloud storage, etc. For example, if you specify a folder, the items will be copied to this folder. It is also possible to copy one item to another.

Information

If you specify the [contact list] as the destination, it will be necessary to determine how to attach items to e-mail. Items can be directly attached as an attachment to the letter, or links to these items will be attached.

Delete

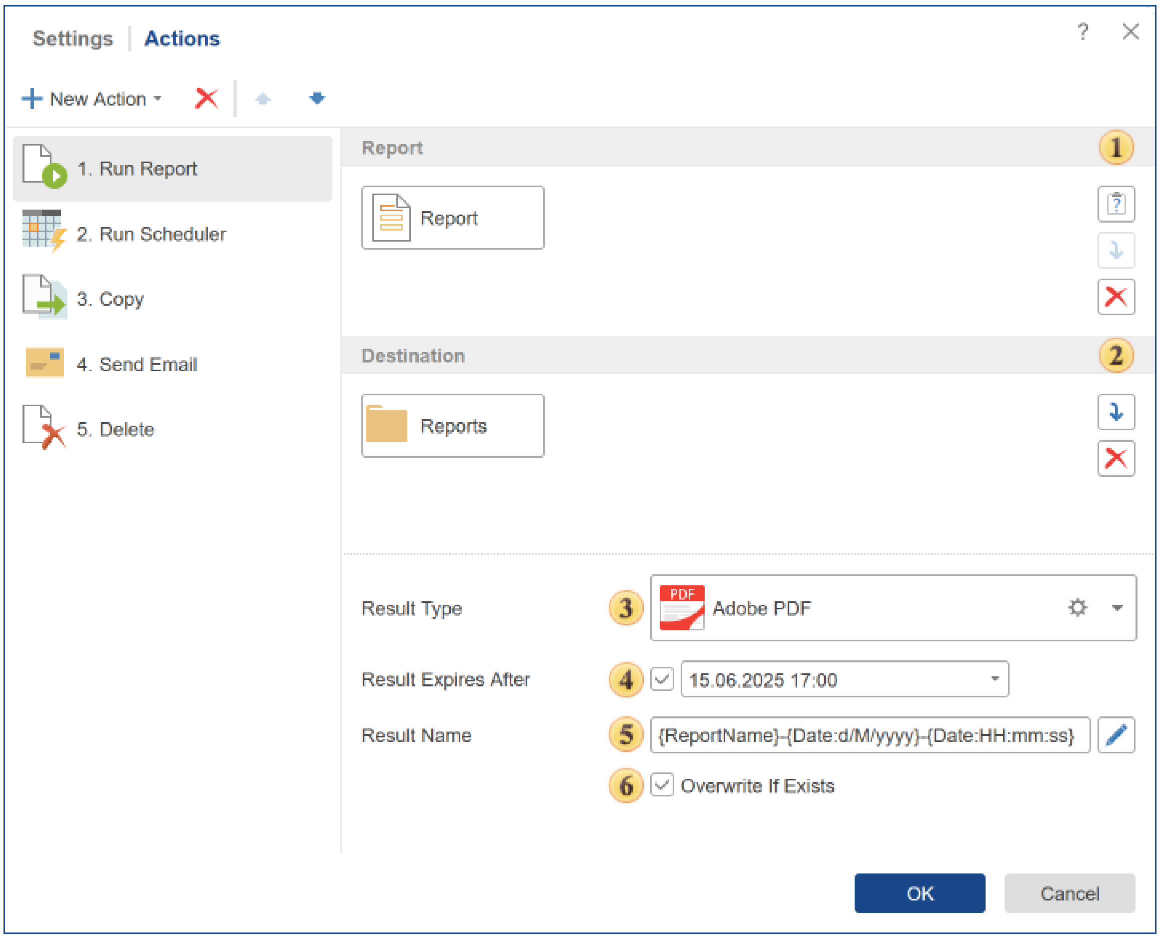
The item can be removed by a certain schedule. To do this, add the **Delete** action in the scheduler and specify the items that must be removed when the scheduler triggers.



1 The list of items that will be removed when the scheduler is triggered.

Run Report

The action **Run Report** is used to start the rendering of a report at a specific time, or to convert the report to any of the available file formats. After rendering, the report can be saved into the item tree, cloud storage, emailed, etc. Below is a menu of the action run a report.



1 The field **Report**. In this field, you can specify the report template or a rendered report, the item that you want to convert. If the report uses parameters, then click the button  to change the default settings.

2 The field **Destination**. It specifies the destination of the output file, location of the report after the conversion. This may be a folder, a list of contacts, etc. For example, if you specify a folder, the report will be converted and saved in it. If the destination is a list of contacts, the report will be converted and sent to all recipients present in the contact list.

Information

If you specify a contact list item as the destination, it will be necessary to determine the method of attaching the report to an email. The report can be directly attached to the email as a file, or a link to this report will be attached.

3 In the field of this parameter, you can determine the **Result Type** the report should be converted to.
4 If you want to delete the result after a specific date and time automatically, then it can be done using this parameter. To do this, you must check the box and specify the time. When the date and time come, the file will be automatically moved to the recycle bin.
5 This field contains the template of the result name.
6 The **Overwrite If Exists** parameter provides an opportunity to rewrite the result. If this option is disabled, then each time you perform this action, the result will be represented as a separate item, if the report is converted once an hour, then a new item in the tree will appear every hour or sent according to the list of contacts. In this case, the names of these items may be similar. If this option is enabled, and the names are identical, then each new result is overwritten instead of the previous one.

Information

For example, every hour a report named **Report** is converted to a **PDF** document. If the **Overwrite If Existing** parameter is disabled, then after four launches, there will be four elements named **Report** in a certain directory.

If the **Overwrite If Existing** parameter is enabled, then after four launches, there will be one element **Report** in the same directory. It is also worth noting that this element will have 4 versions.

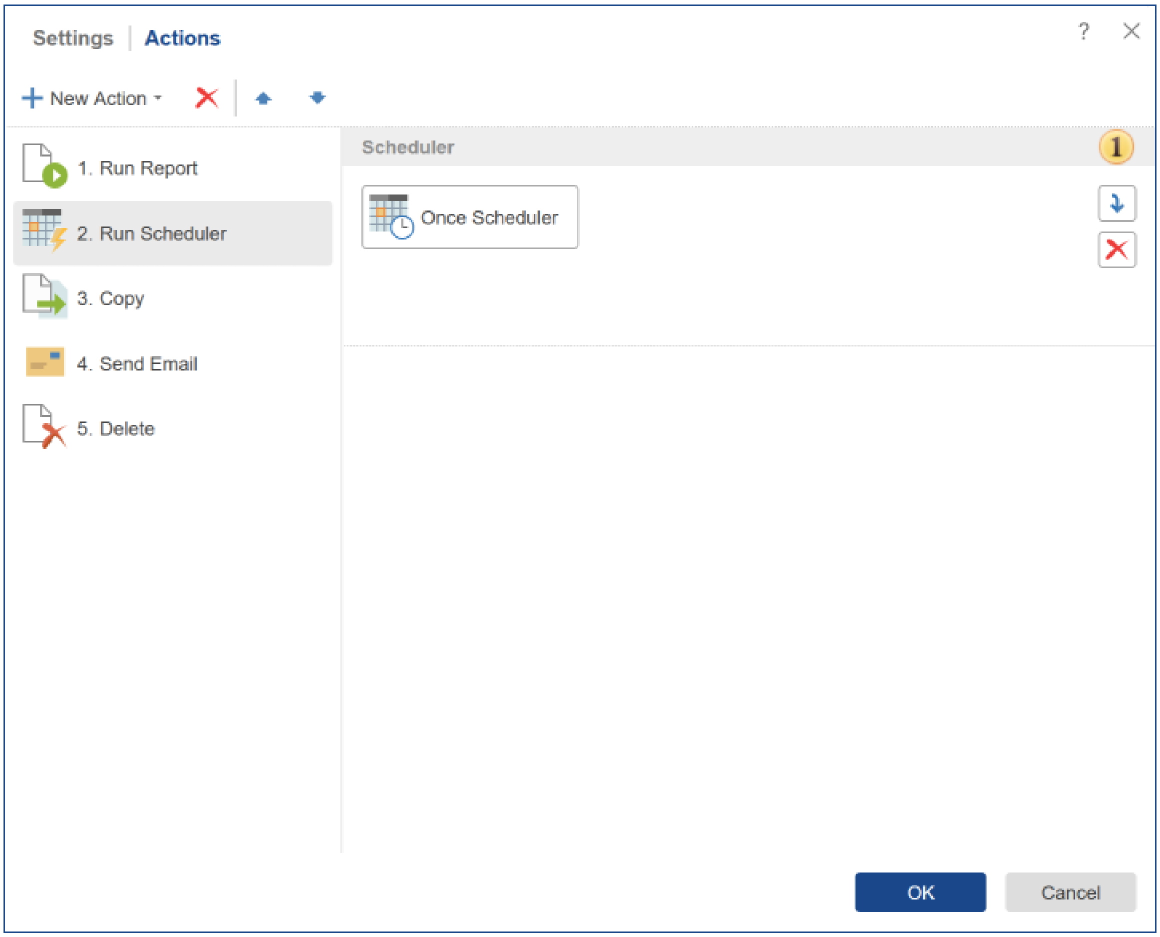
Run Scheduler

The action **Run Scheduler** provides the ability to run another scheduler. In other words, one scheduler can run the other, and that one is already carrying out any action. For this action, it is necessary to consider the following limitations:

- The slave scheduler is the one that will run another scheduler must be of the

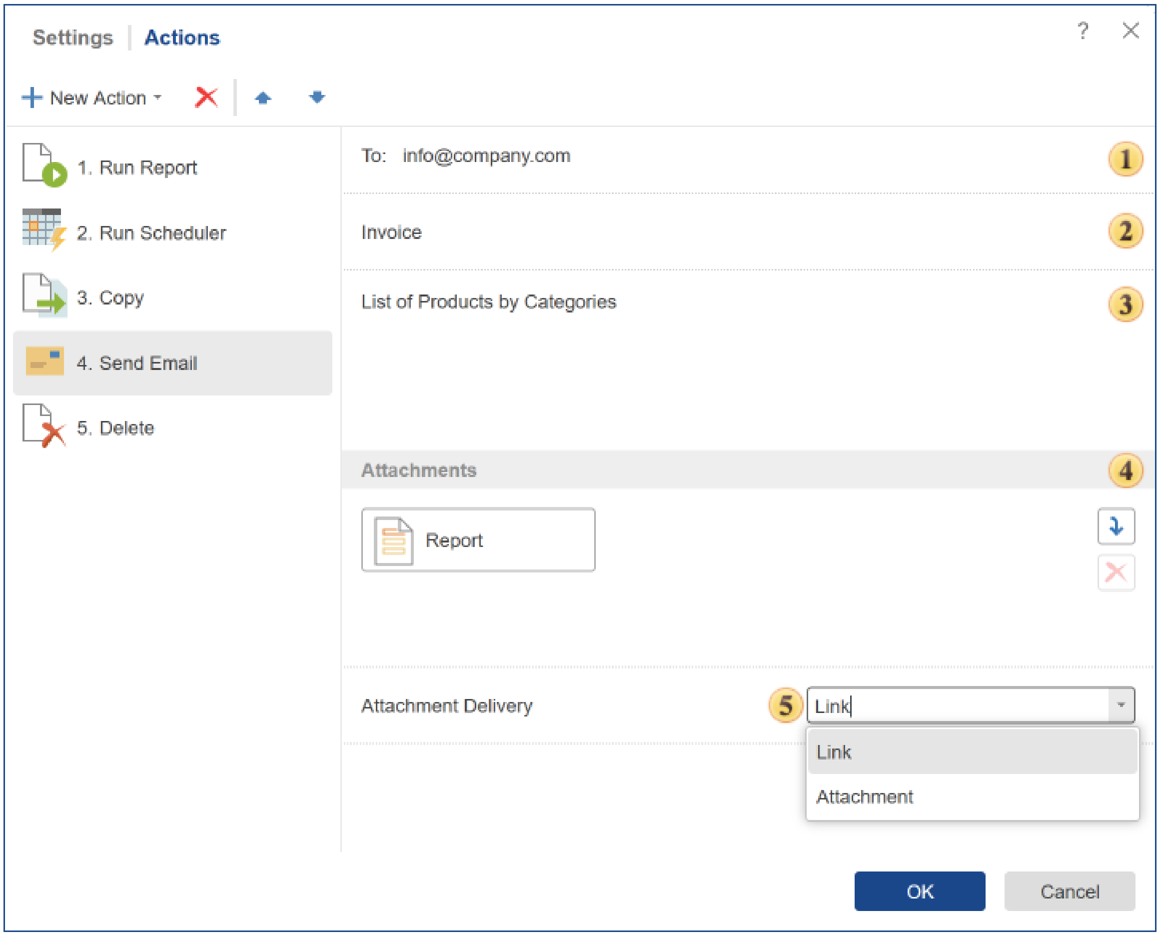
type **Once**;
› One level structure. You cannot run a scheduler that will run another scheduler that will run the third scheduler. In other words, it is impossible to build a multilevel hierarchy of action.

Below is a menu of the action **Run Scheduler**.



1 The slave scheduler. It will run when the **Run Scheduler** action of the main scheduler is executed.

Send Email
One of the actions that can be performed by a scheduler is sending emails. To do this, use the **Send Email** action. Below is a menu of this action.

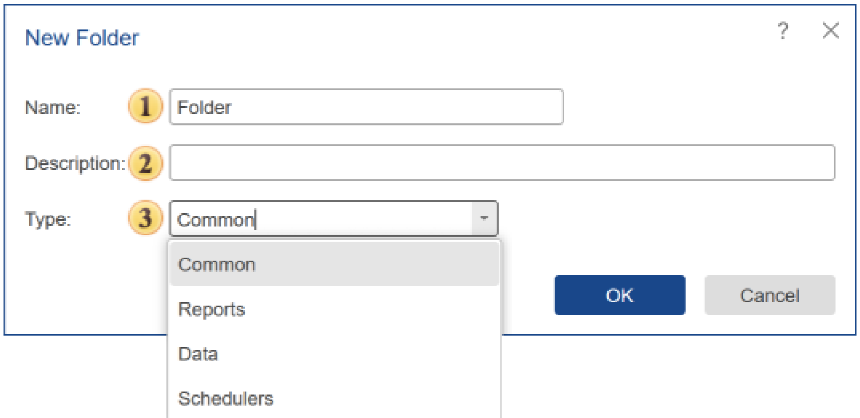


1 This field **To**. Specifies the address to which the email will be sent. The list of email addresses should be filled through a separator "," or space. The field is mandatory.
2 The field **Subject**. Here you need to write a subject of the message. The field is not mandatory.
3 The field **Message**. Here you need to write a text of the message. The field is mandatory.
4 **Attachments**. If necessary, you can attach certain items into it. You should add items from the Navigator tree. The field is not mandatory.
5 **Attachment Delivery**. Items can be directly attached as an annex to the letter, as well as references to this item.

3.1.5 Folder

Folders in the list of elements are necessary for organizing and storing other server elements and folders in them. Also, using folders, you can create hierarchies in the list of **Stimulsoft Server** elements. In addition, a folder can be the beginning of the list of elements for certain users, i.e. be the root folder for a certain user.

To create a folder, select the **Folder** command in the **Create** menu on the server toolbar.



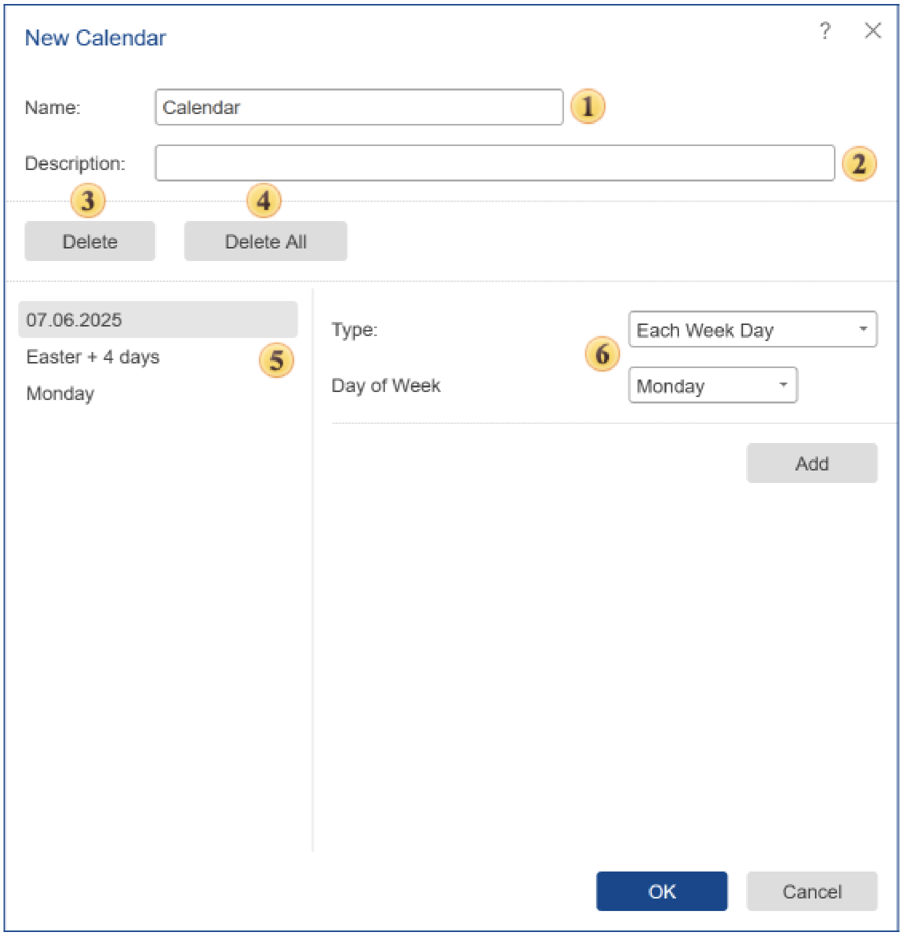
1 This field specifies the name of the folder.
2 Add description, explanation, or label for the new folder.
3 This field specifies the type of a folder. Depending on the type of the folder, it will appear on a particular tab:

- The **Common** type. In this case, the folder will be displayed on any tab, except for Users and System tabs.
- The **Reports** type. In this case, the folder will only be displayed on All Elements and Reports tabs.
- The **Data** type. In this case, the folder will only be displayed on All Elements and Data tabs.
- The **Scheduler** type. In this case, the folder will only be displayed on All Elements and Schedulers tabs.

3.1.6 Calendar

In addition to the direct scheduler settings, you can create a launch schedule, designate weekends, holidays and other exception dates using the **Calendar** element. To create a calendar, select the **Calendar** command in the **Create** menu on the server toolbar.

The calendar is configured in the **New Calendar** menu when creating it, or in the **Edit Calendar** window when editing it.



1 The name of the calendar is specified in the field **Name**.
2 In the field Description, you may specify additional information about the calendar or other information.
3 The **Delete** button deletes the selected schedule item in the calendar
4 If you want to remove all scheduler items in the calendar, click **Delete All**.
5 The **Calendar items** panel shows all the elements of the schedule, the time and date by which the action of the scheduler will be implemented.
6 On the **New Calendar** panel you can define settings of an item schedule. Depending on the Item type, other parameters may vary. Once the parameters are defined, the element, press the button Add to the element with the current settings written in the list of calendar items.

Types of calendars

Depending on the selected type, different parameters can be shown.

› The **Date** type. The parameter of the schedule is a specific day, month, year, and time. Also, a day of the week corresponding to the selected date is displayed.

› The type **Weekly**. For the calendar of this type, it is necessary to determine the day of the week.
› The type **Annual**. For the annual schedule, you should specify the month of the year and the day of the month.
› The type **Relative day** of the year. In this case, the calendar will not be "tied" to a specific date. The schedule parameters are:
- Priority: First, Second, Third, Fourth, Last.
- The day of the week.
- The month of the year.

› The **Holidays** type. This type of calendar provides an opportunity to create a schedule considering country holidays. For this type, you should choose a country. After this, the list of holidays, which may be present in the schedule, will be displayed on the panel of new items. If necessary, you can add one holiday or all at once to the items of the calendar.

› The type **Easter**. Schedule for this type will be calculated off-day of Easter, which is the start date, and it measured the number of days to offset. You should know that if this year Easter has passed, the reference point is Easter next year. Consider the examples of indications of some values:
- The minimum value that can be specified is -365. The calendar date will be a day before Easter - 365 days.
- The maximum value that can be specified is 365. The calendar date will be the day after the Easter day +365 days.
- If the number of days is not specified or is 0, then, in this case, the date of the calendar will be Easter (if Easter has passed this year, it will be a day of Easter next year, if the day of Easter had not yet arrived - in the current year).

Information

If the next year is a leap year and the date of the schedule falls on a day after February, then you should always add 1 to the offset.

3.1.7 File

You should call the **File** menu to add the required file from the storage to the list of server items or **Create** a new file based on an existing item. This command creates an object, which can contain any types of files.

The item can be attached in the following ways:

- From any storage (cloud, local drive, tree of items), you can add files by merely dragging them (Drag & Drop);
- The Control button allows adding a file from local user storage;

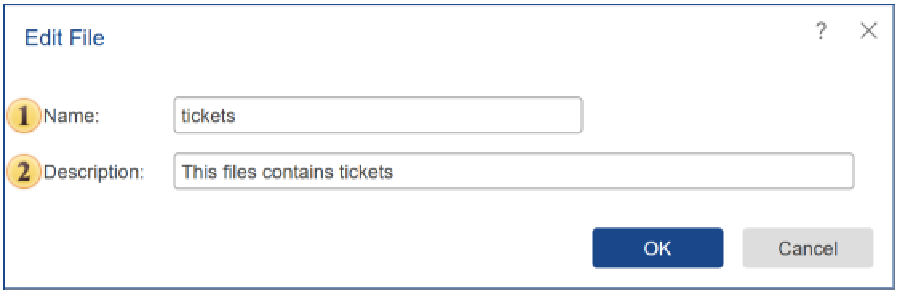
Information

These operations can be performed in the background. The background mode provides the ability to perform an unlimited number of operations simultaneously. In this case, the number of operations in the background mode depends on the technical abilities of the server. To enable the background mode, you must set the **Run in Background** checkbox in the dialog.

In this field, you can specify the number of files, and then each attached file will be created as a separate **File** item in the **Stimulsoft Server** tree. It should be considered that, in this case, the **Name** field will not be available, and the names of items in the tree will be generated automatically. Also, the **Description** field will not be available. So if you need to add or change the description of the item name that is automatically generated, then it is necessary to perform editing of the item. Clearing this field, deleting all files in this field, can be done by pressing the **Delete** button.

Edit File

Select File in the items list and click the **Edit** button on the server toolbar to change the name and description of the current file.

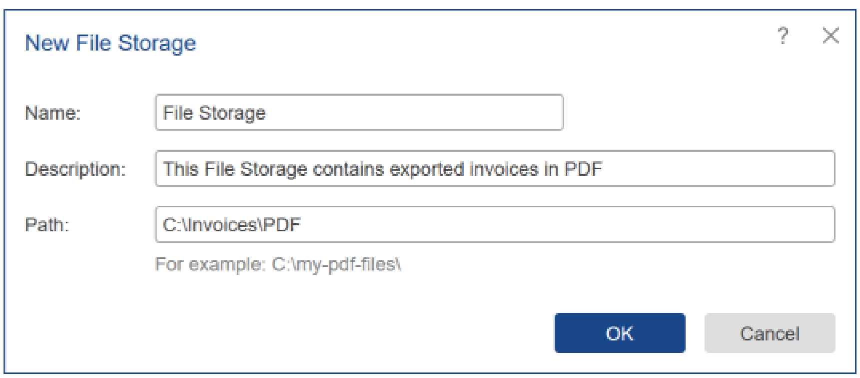


① The **Name** of the file item is specified in this field.
② The **Description** of the report item can be put in this field.

3.1.8 File Storage

The **File Storage** item is used to save another element outside the server. To do this, create a file repository and specify this item as a **Destination** when performing actions with other items. For example, when copying items using the **Scheduler**, or when you run the report without previewing.

To create a **File Storage**, select the appropriate command from the **Create** menu:



› The **Name** of the file storage item is specified in this field.
› The **Description** of the report item can be put in this field.
› The **Path** by which the items will be saved is specified. If the specified directory is not created, then, when the item is saved the first time, the directory will be created.

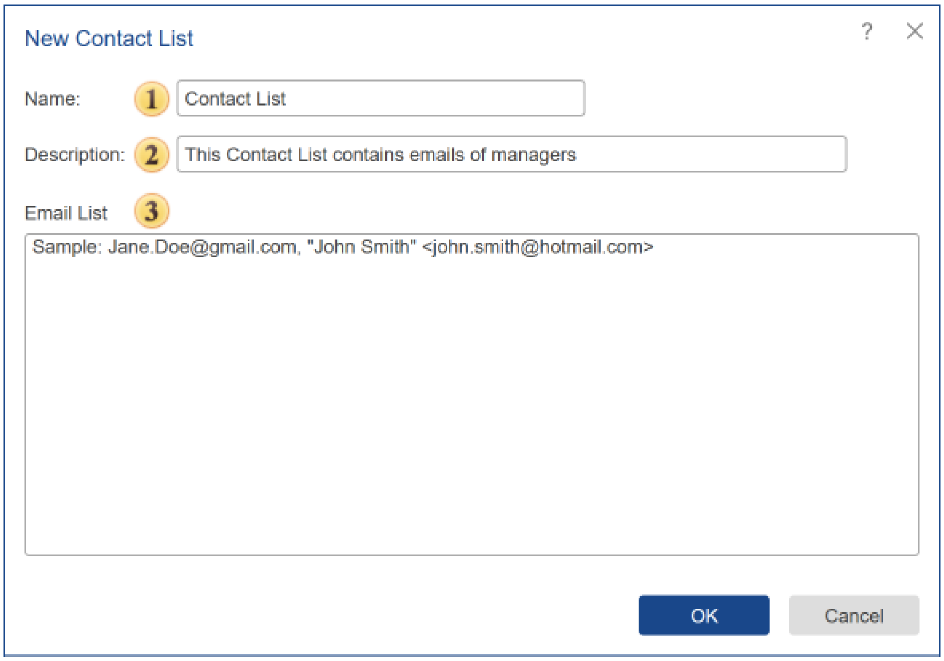
3.1.9 Contact List

The Contact List is used to send reports by groups of email. Here you need to specify a list of email addresses through a separator "," or space. It should be noted that the list of contacts can be used as the destination in the following actions of a scheduler:

- › Send Email. In this case, text messages (with the attached elements, if needed) will be sent by the list of contacts.

› Run Report. If your contact list is specified as the destination, then the report or dashboard will be converted, and the result will be sent to the email addresses.
› Copy. When copying items, contacts can also be specified as the destination. Copies will be sent to the email addresses.

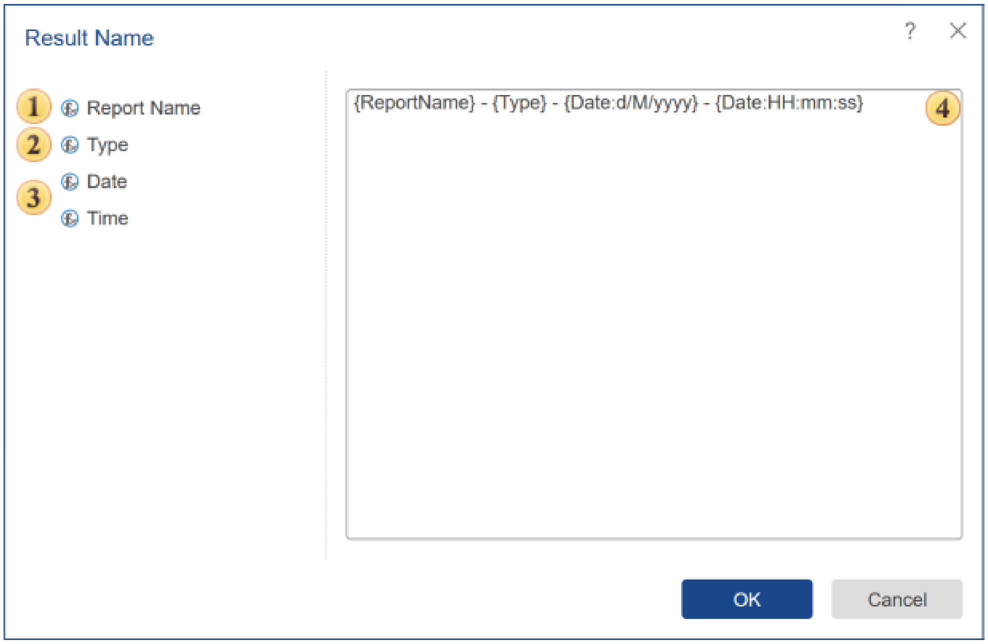
Below is the menu **New Contact List**.



1 The field **Name**. Here you should specify names of **Contact List**.
2 The field **Description**. You should put a brief description of the item.
3 The field Email List. Here you need to place email addresses directly through the separator ",". In quotation marks, you can indicate information about the recipient, but in this case, the email address enclosed in <...>, like this **<Email>**.

3.1.10 Result Name

By default, when you convert (export) the report, the result name is generated automatically. It will consist of the report name before the conversion date plus the conversion date-time. For example, there is the **.mrt** report, "**Report1**". Let's convert the report to PDF document using the command **Run**. This will create a **PDF** document with the name **Report1-10/4/2020 2:26:55 PM**, where **10/4/2020 2:26:55 PM** is the start time (conversion) of the report. Sometimes it is necessary to set a mask (template). This can be done in the window **Result Name**.



On the right side of the window, you can find functions with which you can compose the name of the result. The left side of the window is a field in which goes the creation of the mask (template).

1 The function **Report Name**. When you add this function the name of the result will contain the report name that has been converted. For example, there is a report template with the name **List of Products**. When you add the **Report Name**, the name of the result is the following - **List of Products**.

2 The function **Type**. When you add this function, the result will contain the name of the type of the result. For example, if you exported a report template to PDF, then the result has the following name - **PDFXXXXXXX**.

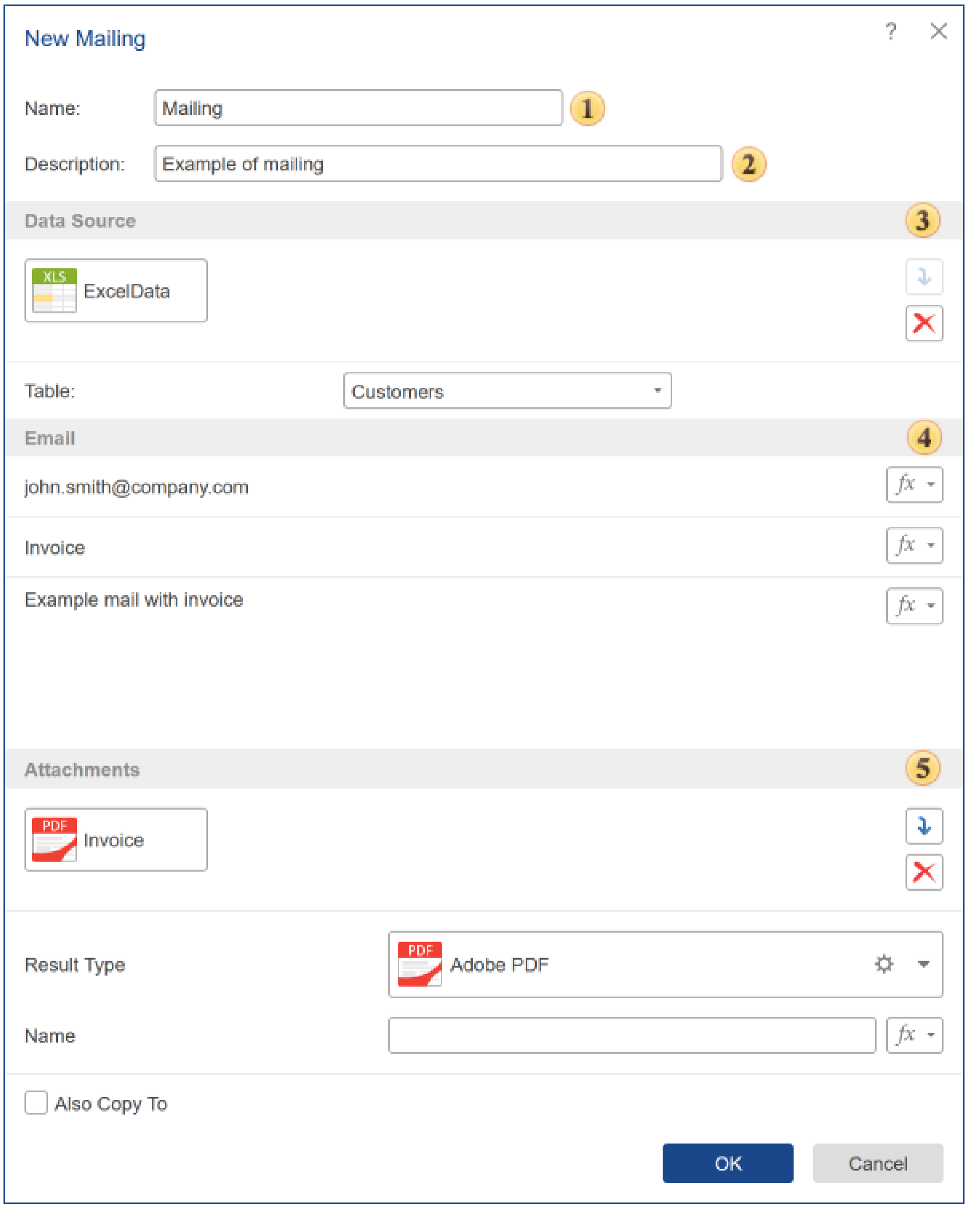
3 The function **Date** and **Time**. When you add these functions, the name of the result will contain the date (if the function is **Date**) and/or time (if the function is **Time**).

4 This is the field in which a mask (template) of the result names is displayed. This field specifies the above functions and any other characters that will be identified as text.

For example, there is a report, the name of which is formed according to the following pattern **{ReportName}{Type}{Date: HH: mm: ss}**. Then the name of the result is the name **ReportPDF09: 19: 06**. Let's format the mask (template), adding spaces between the functions and the delimiter "-" (see. picture above). Then, the result after the conversion will be the following - **Report - PDF - 09:19:06**.

3.1.11 Mailing

The **Mailing** element is used to automate email distribution. It allows you to send reports, dashboards, or other files as attachments to specific users — either manually or on a schedule using the Scheduler.

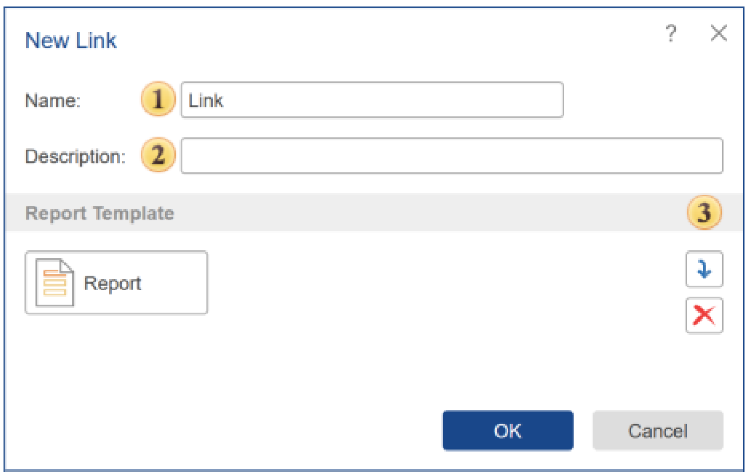


1 The **Name** field specifies the name of the mailing.
2 The **Description** field may contain additional details or other relevant information about the mailing.
3 In the **Data Source** section, you can select a data source from which the mailing will retrieve its data.

④ The **Email** section includes the sender's email address, the subject line, and the body of the email.
⑤ In the **Attachments** section, you can add additional attached files and configure how they will be presented. The resulting attachment generated during the mailing process can also be saved to a separate folder using the **Also Copy To** function.

3.1.12 Link

The **Link** element is a shortcut-like object designed to launch a specific report or dashboard directly. This element is useful when you need to provide users from child workspaces with access to a report or dashboard located in a parent workspace.



① The **Name** field specifies the name of the link.
② You can add a **Description** for the link in the corresponding field.
③ This field displays the report or dashboard that the link points to.

3.2 Sharing Settings

In **Stimulsoft Server**, you can provide remote access to view a report or dashboard, and download them after converting them to other file types. This can be done using the Share command. Access settings are configured in the **Access** menu.

This chapter will cover the following:

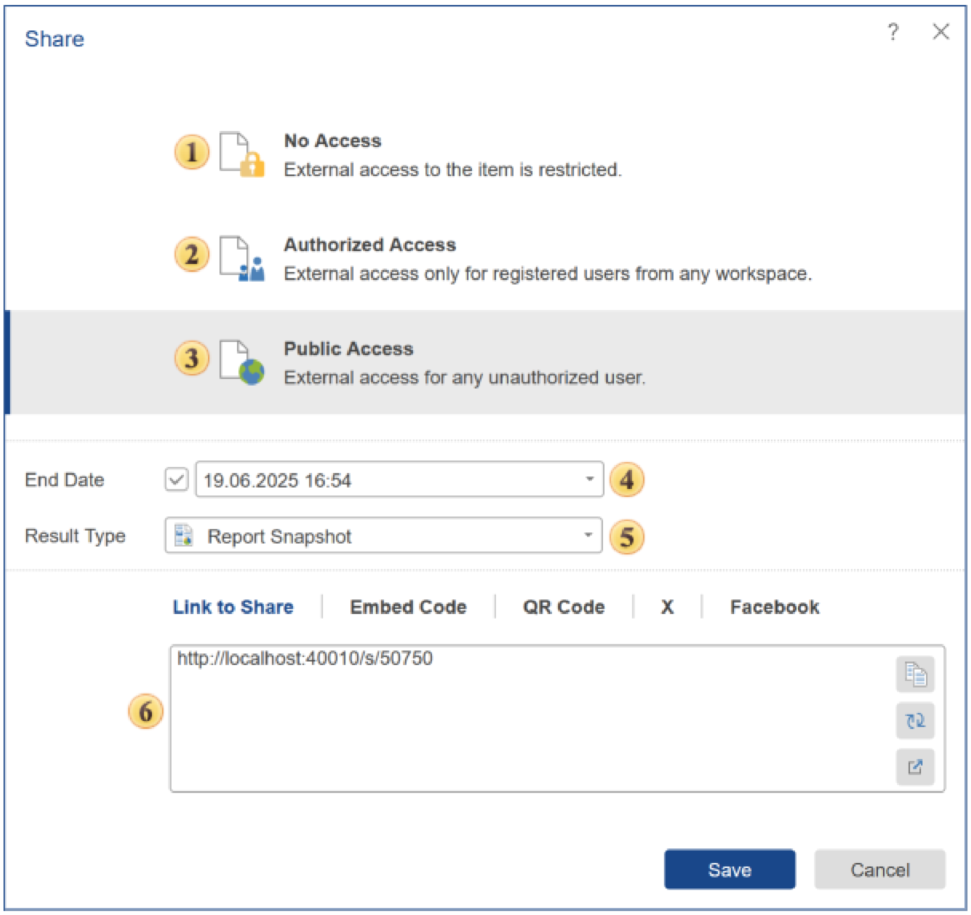
- Share menu;
- Embedding the access code to an item in the HTML page;
- Parameters in URL.

To open the **Share** menu, you should:

- Select the report or dashboard element in the list of server items;
- Click the **Share** button on the server toolbar.

Share menu

You can specify share settings of the report or dashboard in this menu.



1 The first mode sets the access only to users of the workspace. In other words, only users of the workspace will have access to this item.

2 In this mode, access to the item will have all the registered users on the server, regardless of whether they belong to a particular workspace.

Information

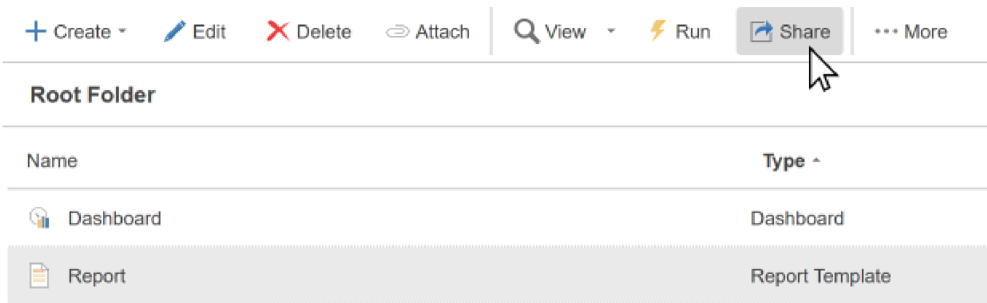
Regardless of the access to the item **(No Access Share** or **Authorized Access)**, it is necessary to take into account the rights of the user roles. For example, if the user does not have the right to view the report item (not allowed in the settings of the role), when setting the level of access **No Access Share** or **Authorized Access**, the user will still be able to view the item.

3 With this mode, there are no restrictions on the access level. The item will be public for any non-authorized user. In other words, everyone who has the link to this item can view it.
4 This parameter sets the time and date after which access will be closed. If this option is disabled, then there is no period of access, access is always enabled.
5 The **Result Type** parameter allows you to select the file type to which the report or dashboard will be converted.
6 The link to access an item can be provided in the following ways:
- **Link to Share**. Get only a link to this item.
- **Embed Code**. Get the code for the HTML page with the link to this item.
- **QR Code**. Display the QR code. When reading this code, you will automatically get a link to access the item.

Embedding the access code to an item in the HTML page
The item to which it is possible to adjust the level of access can also be embedded into the HTML page. This requires the following conditions:
- The report server must be deployed on any web server.
- Access level of the item must Public Access.

Step 1: You should select an element in the list of **Stimulsoft Server** elements. Let's say, a report.

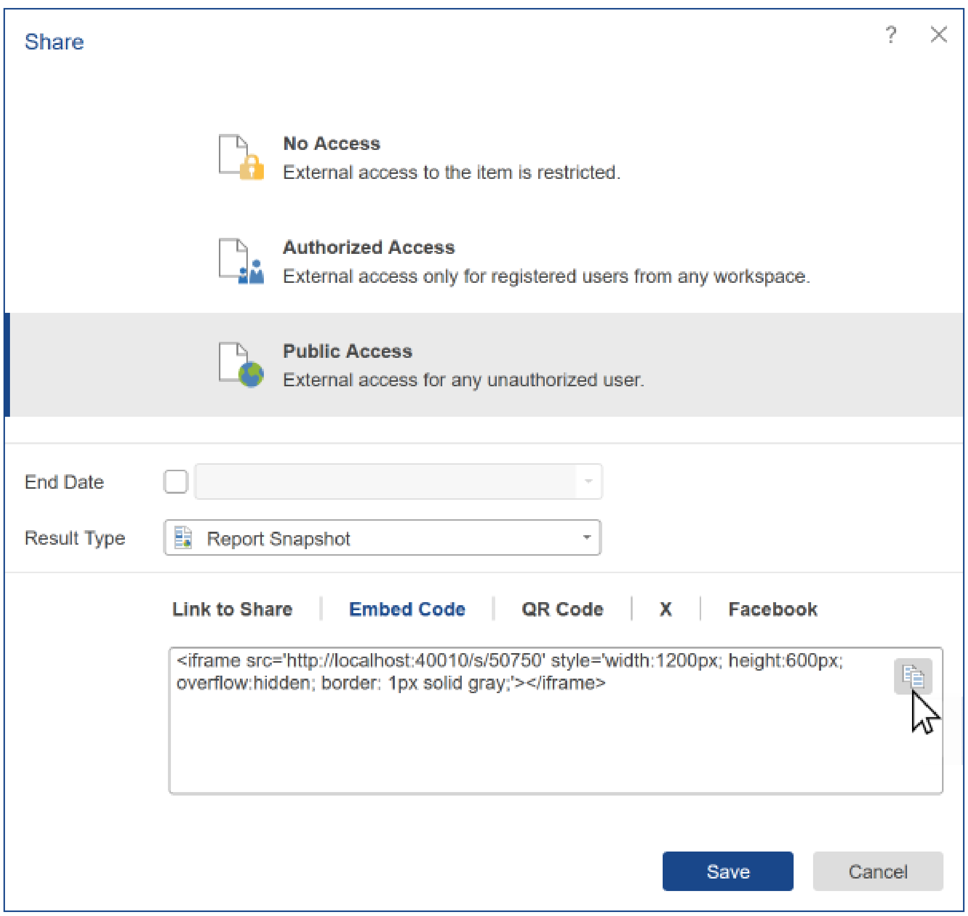
Step 2: Select the **Share** item on the toolbar.



Step 3: Define access settings. Set public access and, if necessary, set the **End** parameter value.

Step 4: Go to the **Embed Code** tab.

Step 5: Copy the access code.

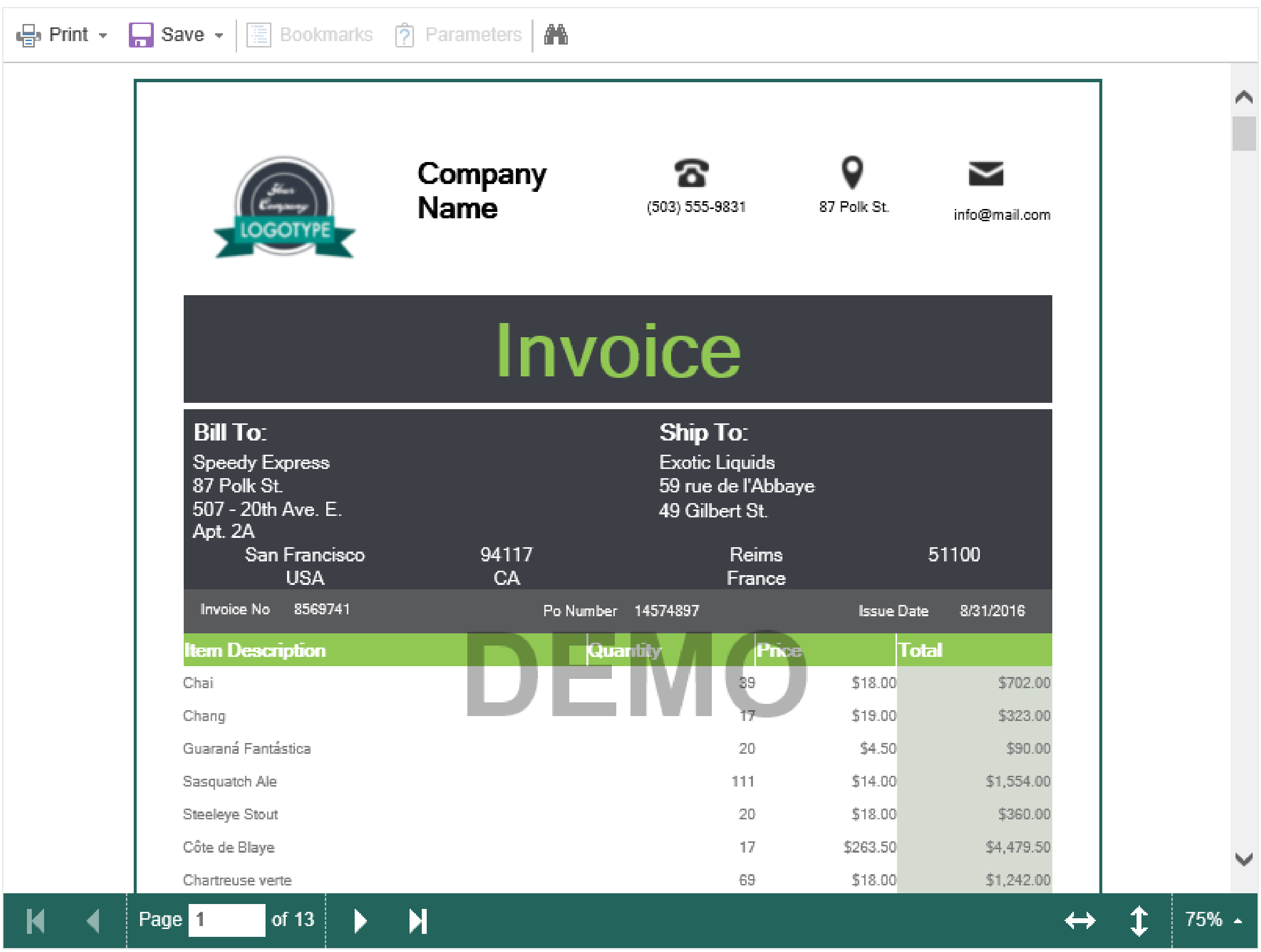


Step 6: Open the html page with any editor and paste the code. For example, let's open the html page with notepad:

```
<html>
    <head>
        <title>Your HTML page</title>
    </head>
    <body>
        <iframe src='http://localhost:40010/s/50750' style='width:1200px; height:600px;
        overflow:hidden; border: 1px solid gray;'></iframe>
    </body>
</html>
```

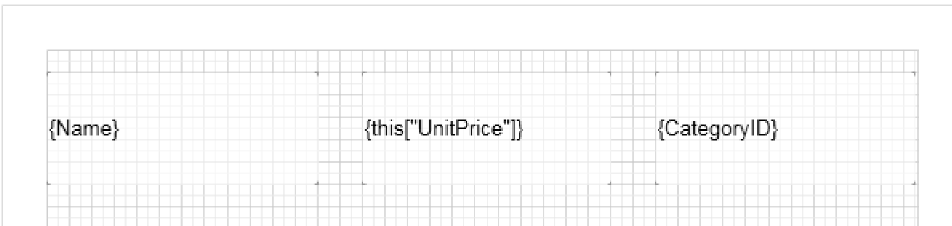
Step 7: Save changes.

Step 8: Open the html page in the browser.



Parameters in URL

Users can view reports depending on the access level. For example, a report can view any or only authorized users. However, the report parameters can be used. In this case, the transfer of parameters goes via the URL. To do this, you must specify the special character "**?**" at the end of the **URL**. After this character, the name of the parameter and its value is specified. If you want to specify several options, they should be written with a separator "**&**". Consider an example of passing parameters to the report through a URL. Below is a report template.

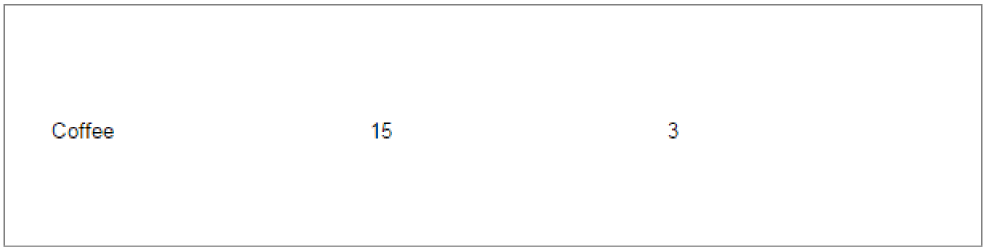


In the first and the last text component, you can find references to a variable - **Name** and **CategoryID**. The default values for these variables are **Chai** and **1**, respectively. In the text component in the middle of the page, you can see the expression with the keyword this and the parameter **UnitPrice**. Below is the rendered report.

As can be seen from the picture above, the default values were passed to the report. At the same time, UnitPrice did not keep any value and, therefore, it is not present in the rendered report. Let's pass parameters via URL.

- The access link to an item - http://localhost:40010/s/5fc3c.
- For the parameter Name the value will be Coffee;
- For parameter UnitPrice - 15;
- For the parameter CategoryID - 3.

Then the URL with parameters will look like this http://localhost:40010/s/5fc3c?Name=Coffee&UnitPrice=15&CategoryID=3. Below is a report with the passed parameters.

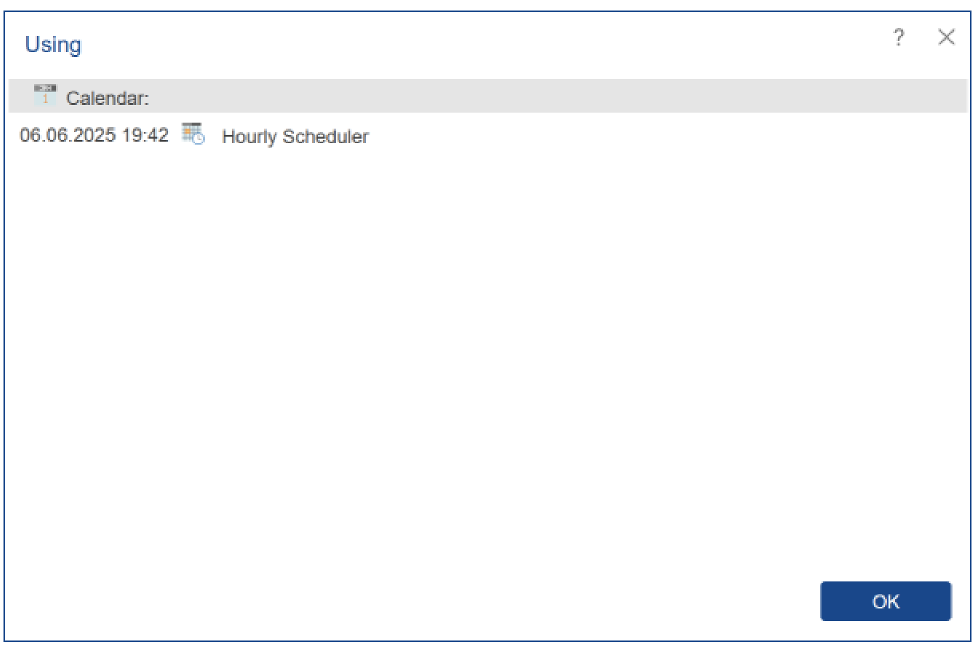


3.3 Using

Items in the report server can be used by other elements or can be attached to them. For example, the data source may be attached to the report, and the folder can be used as the destination source in the scheduler. In this case, it is impossible to remove used or attached items. At the same time, the same item can be attached (used) by an unlimited number of other items. In other words, the corresponding data source can be attached to various reports, and the same folder can be used in multiple schedulers.

To find out where the item is used, you should do the following:

- Select item;
- Click the Using button in the ...More menu on the server toolbar.



As can be seen from the picture above, the **Using** menu shows the following information:

- The name of the item about which information is requested. In this case, it is **Calendar**.
- Date and time of attaching to another item.
- The list of items where the selected item is used. In this case, these is **Hourly Scheduler**.

3.4 Versions

Sometimes, when editing items, especially when multiple users can modify the same items, some issues may occur. As a consequence, it is necessary to cancel the last, previous, and other changes, go back to the previous version of this item. It should be known that for each item change, a copy of this item state is created. And this state does not overwrite its previous state. Therefore, you can always refer to any copy of an item. This can be accomplished in the menu **Versions** of a selected item. This menu contains commands, as well as all versions' history of the item.

To call the **Versions** menu, you should:
- Select an item in the list of server items;
- Click the **Versions** button in the ...**More** menu on the server toolbar.

1 The version history of an item includes the version number, date, time, user name, and description of changes.
In the above example, you can see versions of the item Report, and therefore it has the following operations:

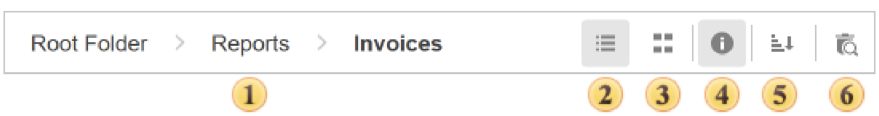
2 Buttons are used to run a specific version of the report. When you press this button, the report will be rendered and loaded in the report viewer. Each version has its button for running the item. For example, **Version 2** corresponds to the start button in the same line.
3 The buttons to load a specific version of the report in the report designer. Each report version has its button to open the report in the designer. For example, **Version 2** of the report corresponds to the button in the same line.
4 Report download button. Each version of the report has its own download button.

Information

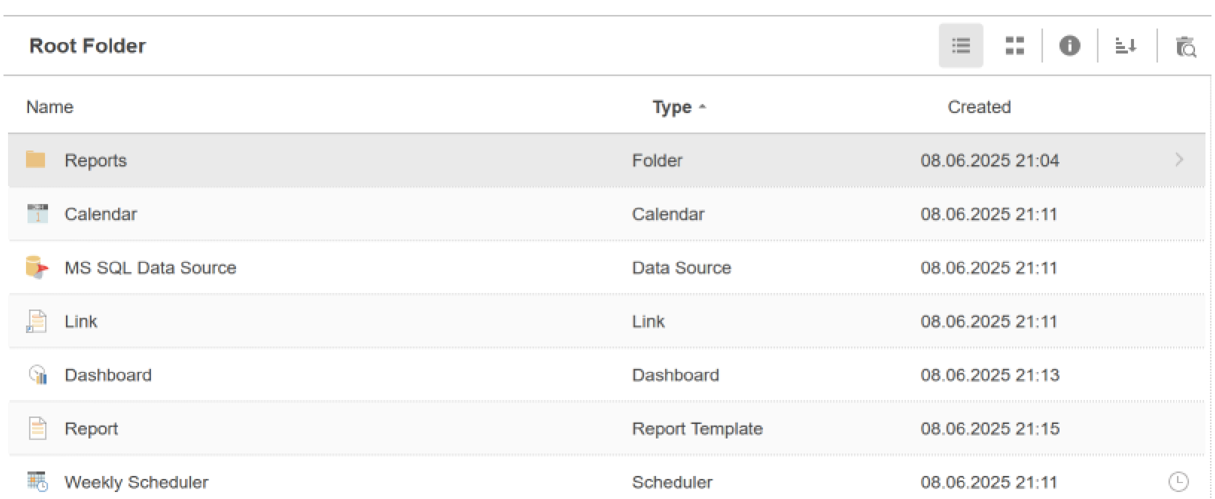
Depending on the item type (the version of the item), the operation performed with versions may be different.

4 Display panel

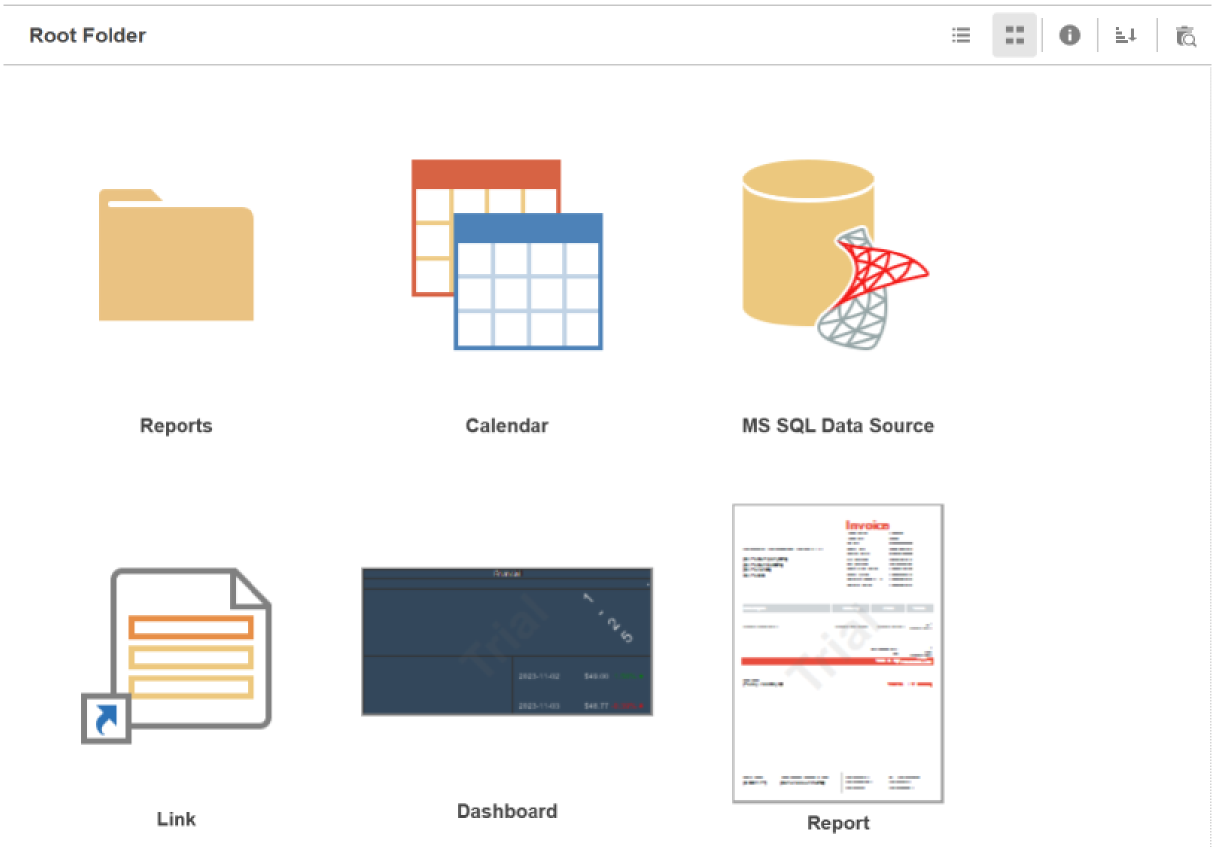
The display panel includes commands to control modes of displaying server items:



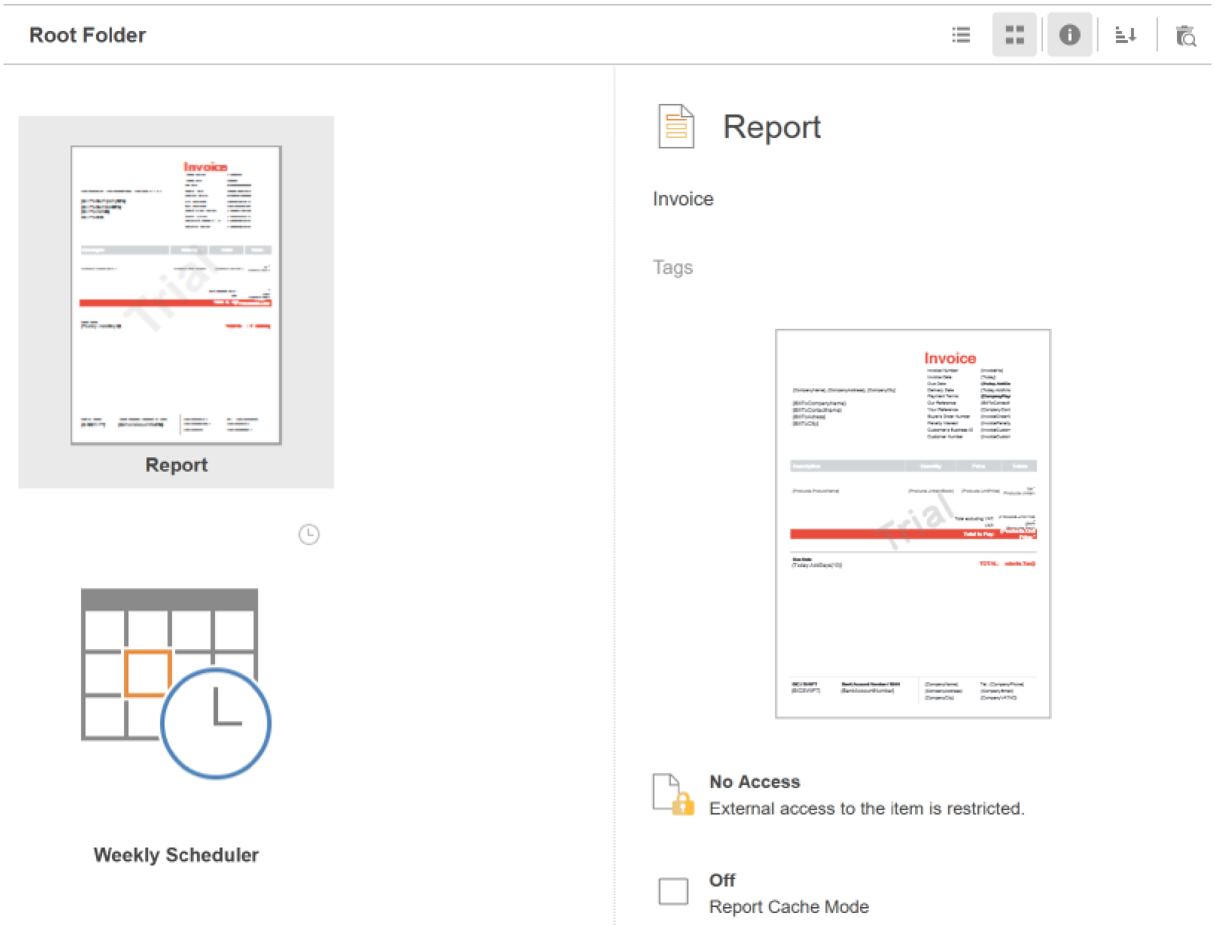
1 The full path to the current directory, the folder in which the user is located.
2 The button to enable the **List** mode. The items will be displayed a list of items with information about their type and date of creation.



❸ The button to enable the **Grid** mode. The list of items will look like big icons as a grid.



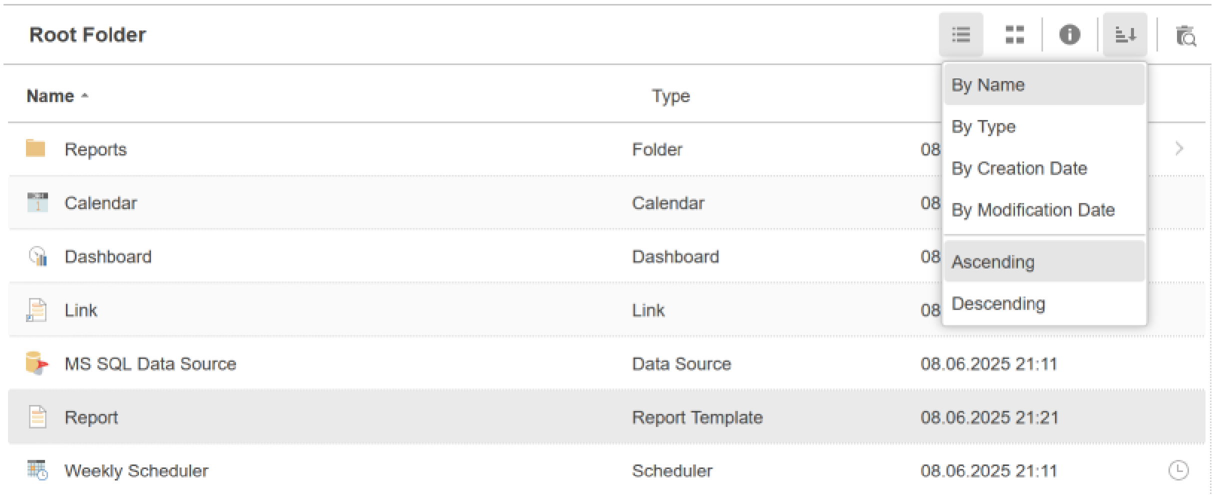
❹ The button is used to enable the **Details** panel. If you click this button, it will display an additional panel with detailed information of items.



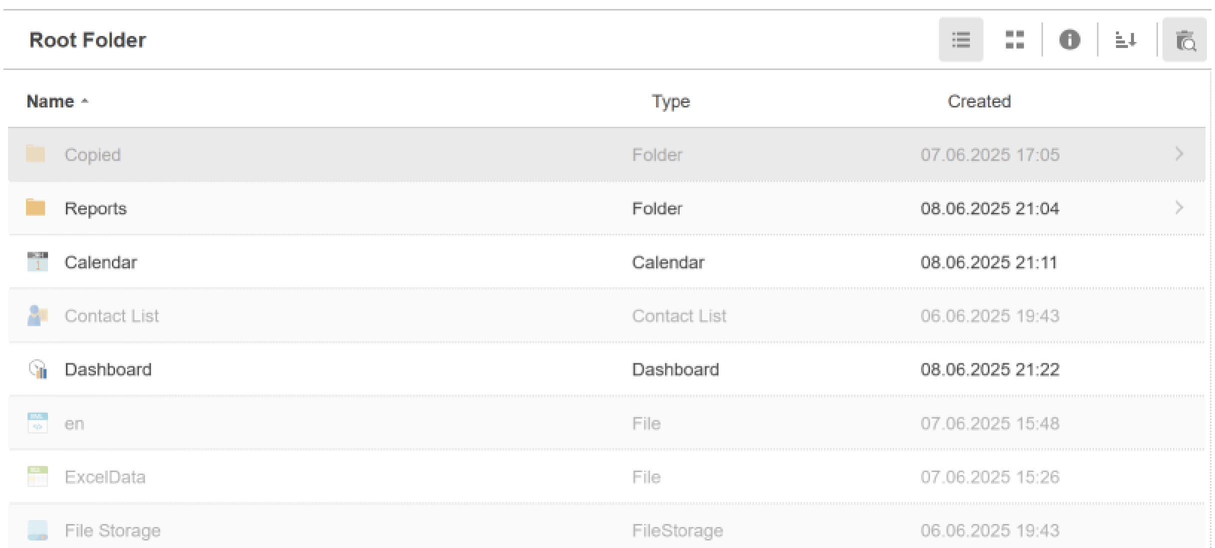
Information

On the **Details** panel, you can change the **Name** and **Description** of the selected item. To do this, click on the name or description and change the text.

5 The button to sort items. It contains the drop-down list, where you can define the type and direction of sorting.



6 The button to enable the [Recycle Bin](#) mode. If the button is enabled, it will display the items of the bin.

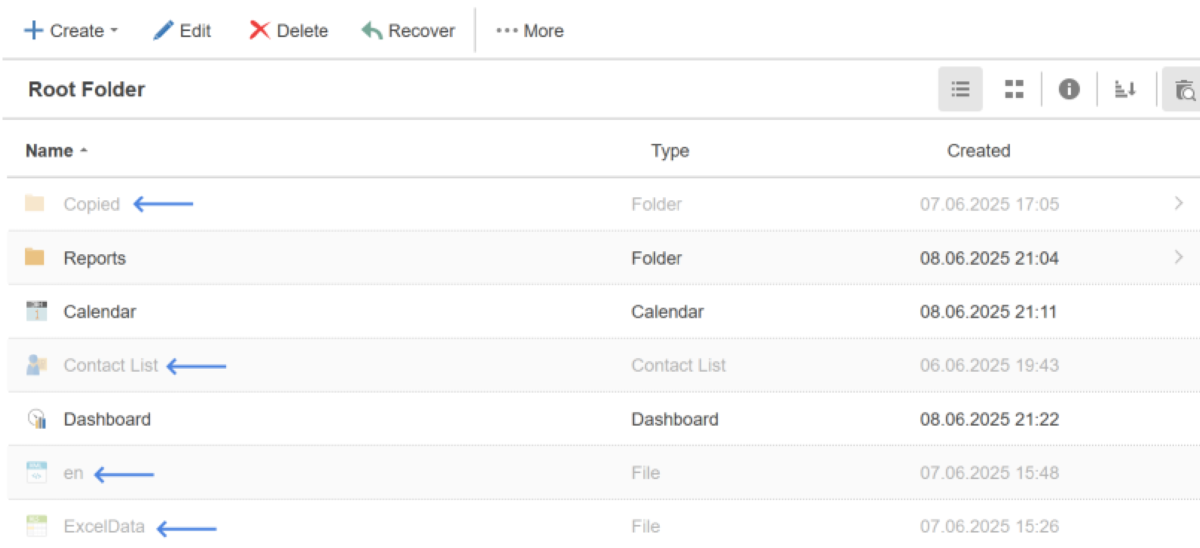


4.1 Recycle Bin

When you delete items, you can move them to the trash or completely remove them from the server.

- If the **Move to Recycle Bin** is enabled, the item will be moved to the basket.
- If the **Move to Recycle Bin** is disabled, the item will be removed from the server.

To view the contents of the basket, you should click the button **Recycle Bin**. After that, the items in the basket will be displayed in the tree (marked as deleted items):



As you can see in the picture above, the deleted items are displayed, keeping its location in the hierarchy. In other words, the deleted item retains binding to the location in the tree.

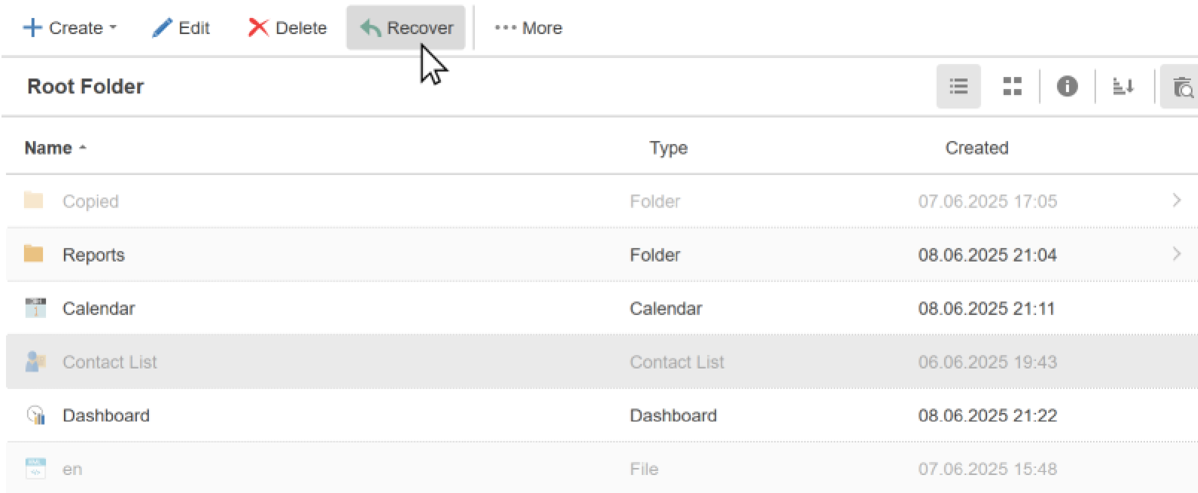
Information

It should be noted that when a folder is deleted (or restored), all items and subfolders within it will also be deleted (or restored).

Recovering items

Any item deleted to the **Recycle Bin** can be restored. To do this:

- Enable Recycle Bin mode;
- Select the item and select the **Recover** command on the server toolbar.



The item will be restored to the folder from which it was deleted. It is also possible to restore several items at once if you select them simultaneously (using the **Ctrl** or **Shift** buttons). It is important to understand that:

- Restoring a deleted folder entails restoring all the items contained in it;
- When restoring an item from a deleted folder, the folder will be restored automatically. The remaining items from this folder (or folders, if the nesting level is greater than 1) will not be restored.

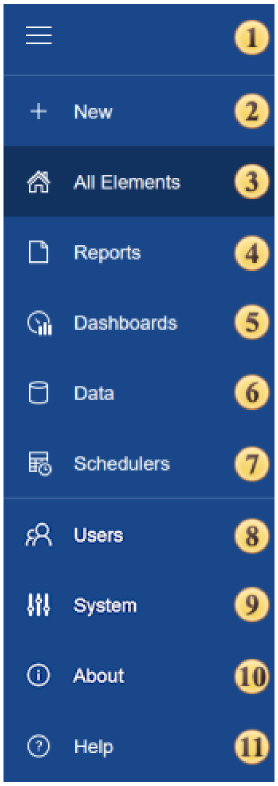
Emptying the recycle bin

There are no special commands to empty the recycle bin. You can remove items from the recycle bin:

- Select the necessary elements using the **Ctrl** or **Shift** buttons, and click **Delete** on the **Home** tab;
- Restore the files and delete them again without putting them into the recycle bin by unchecking the **Move to Recycle Bin** flag.

5 Tabs

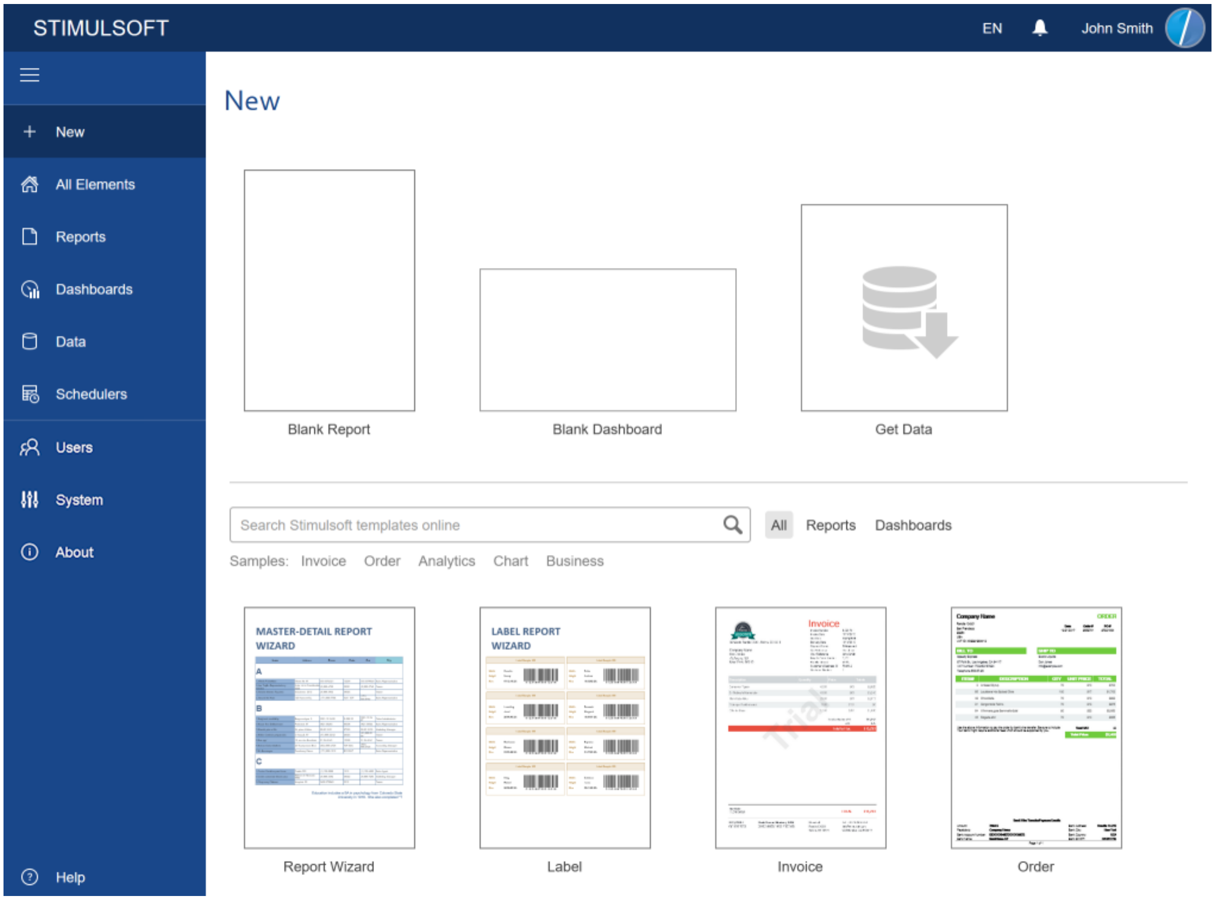
The tabs are used to display the items of a particular type. Also, the Users and System tabs contain system commands to control users and server system, respectively:



1 The expand/collapse button to the tab panel.
2 The New tab. Selecting this tab provides the ability to create a report.
3 The All Elements tab. When you select this tab, you will see all the elements, including folders.
4 The Reports tab. When you select this tab, folders and report items only will be displayed.
5 The Dashboards tab. Selecting this tab provides the ability to create dashboards.
6 The Data tab. When you select this tab, folders, data sources, and only the files that contain the data (XML, Excel, CSV, DBF, and JSON) will be displayed.
7 The Schedulers tab. When you select this tab, only folders and schedulers will be displayed.
8 The Users tab. This tab will display workspaces, roles, and user accounts.
9 The System tab. License and Email Templates commands will be displayed.
10 The command is used to call the About menu.
11 The command to navigate the **Stimulsoft Server**. The help files will be opened in a new browser tab.

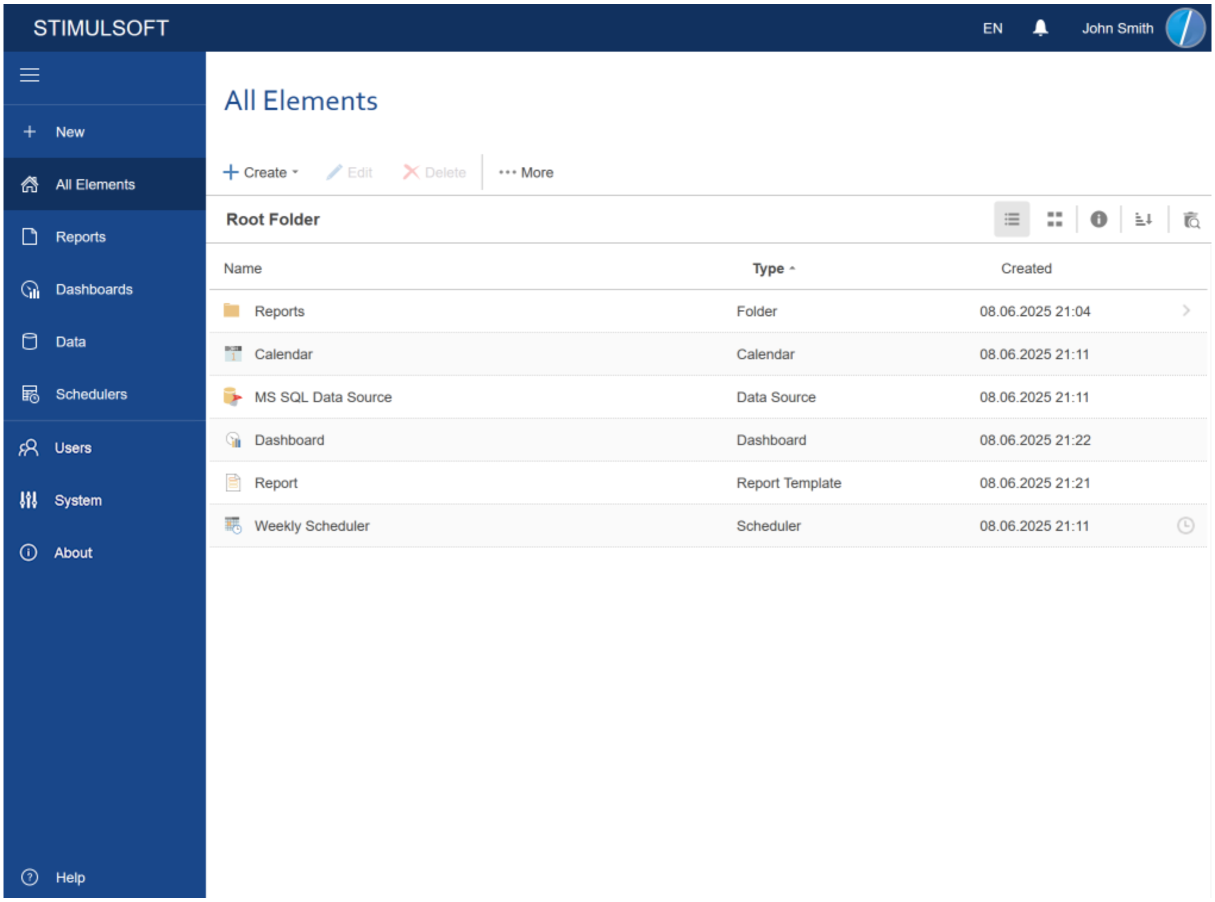
5.1 New

The **New** tab provides the ability to create a new report or dashboard.



5.2 All Elements

The **All Elements** tab provides the ability to display all the elements and all the folders in the current working server space:



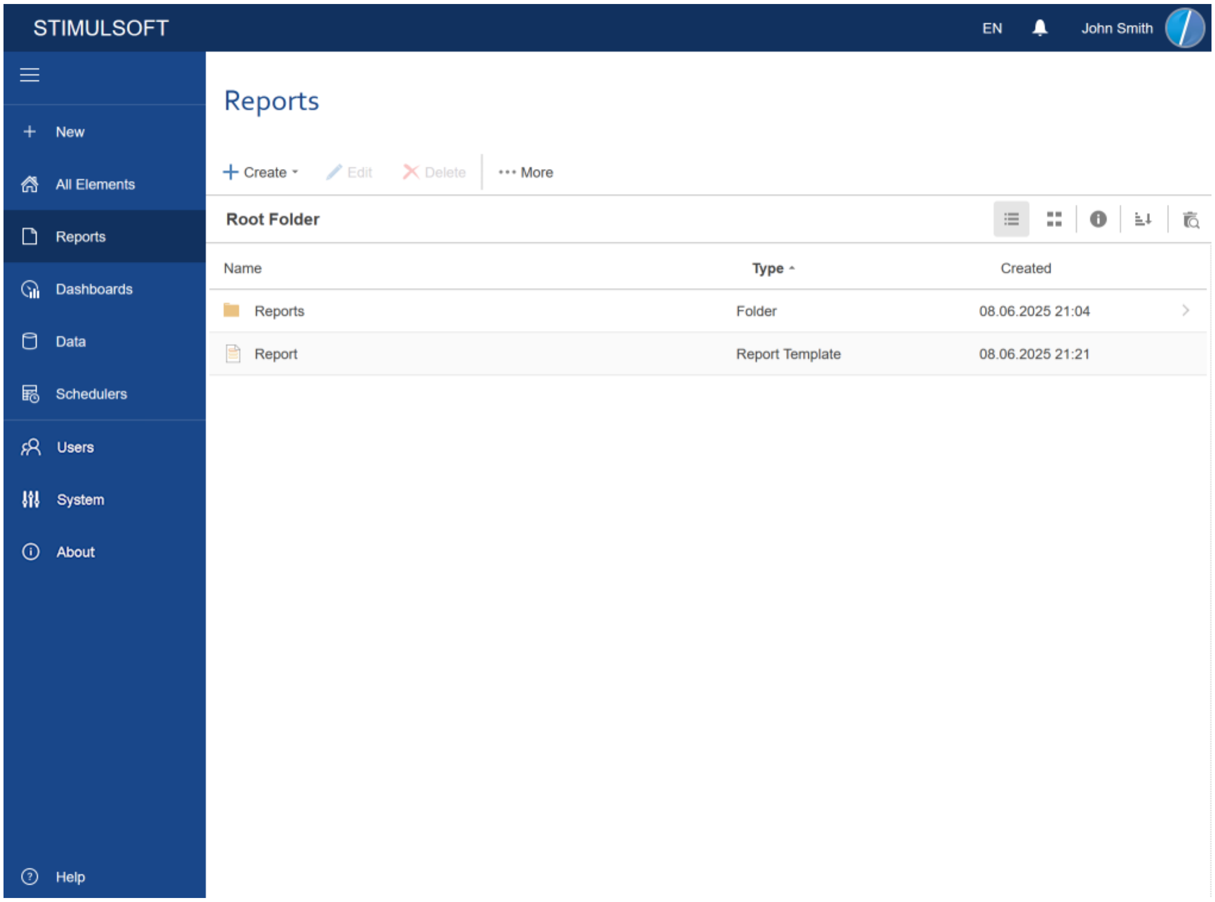
At the same time, in the Create menu, the commands for creating all server components, unless otherwise is defined by the account role, will be available.

Information

The list of commands in the Create menu will depend on the Role account. The list of items will also depend on the role permissions and the user's account. Because you can specify any folder as the parent one for your account, then the list of the displayed items may be different.

5.3 Reports

On the **Reports** tab, report templates, folders of the **Common** type and folders of the **Reports** type will be displayed:



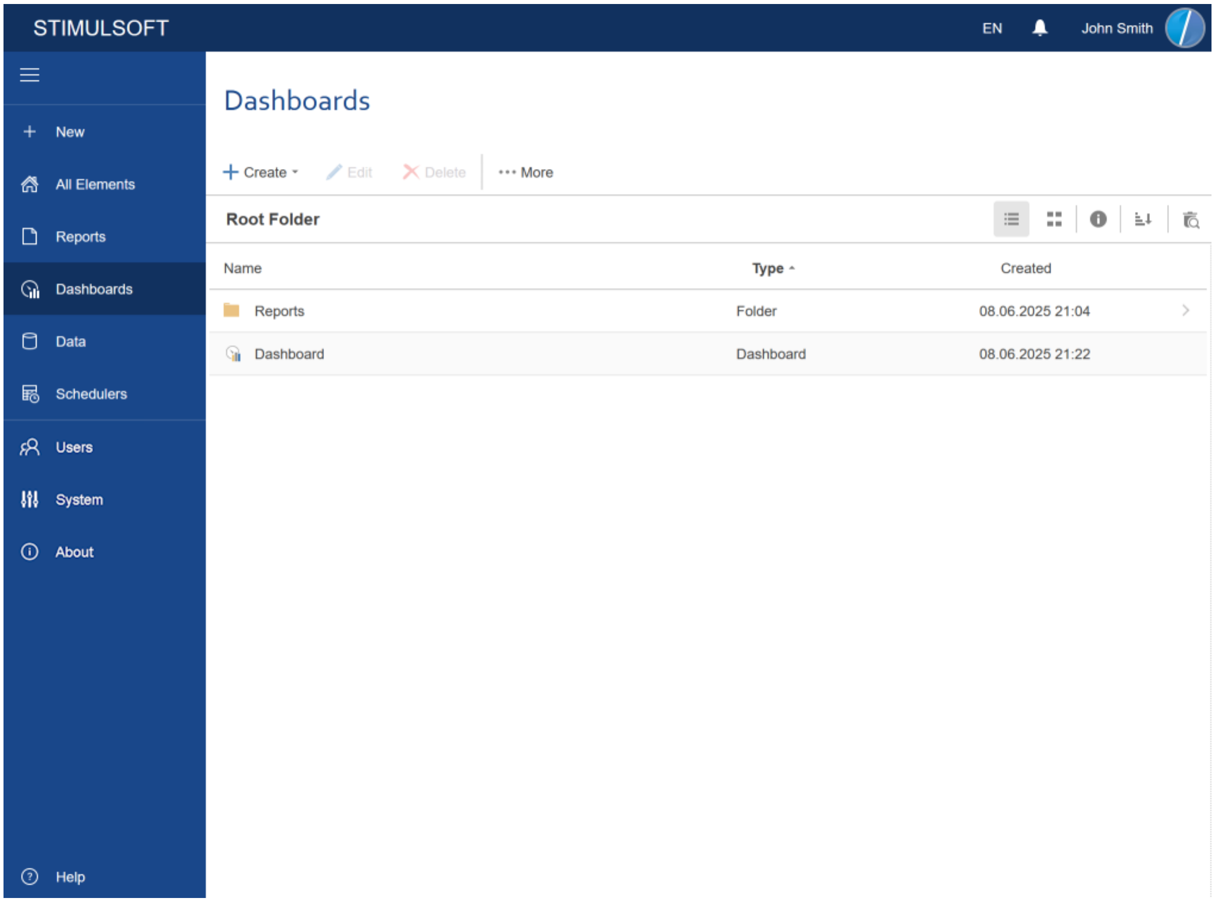
At the same time, in the Create menu, the commands to create Report and Folder items, unless otherwise defined by the account role, will be available. Also, you should consider that only the file types like *.mrt, *.mrx, *.mrz will be shown. Rendered reports and converted into other formats, including formats *.mdc, *.mdx, *.mdz, will not be displayed.

Information

The list of commands in the Create menu will depend on the Role account. The list of items will also depend on the role permissions and the user's account. Because you can specify any folder as the parent one for your account, then the list of the displayed items may be different.

5.4 Dashboards

On the **Dashboards** tab, report templates, folders of the **Common** type and folders of the **Dashboards** type will be displayed:



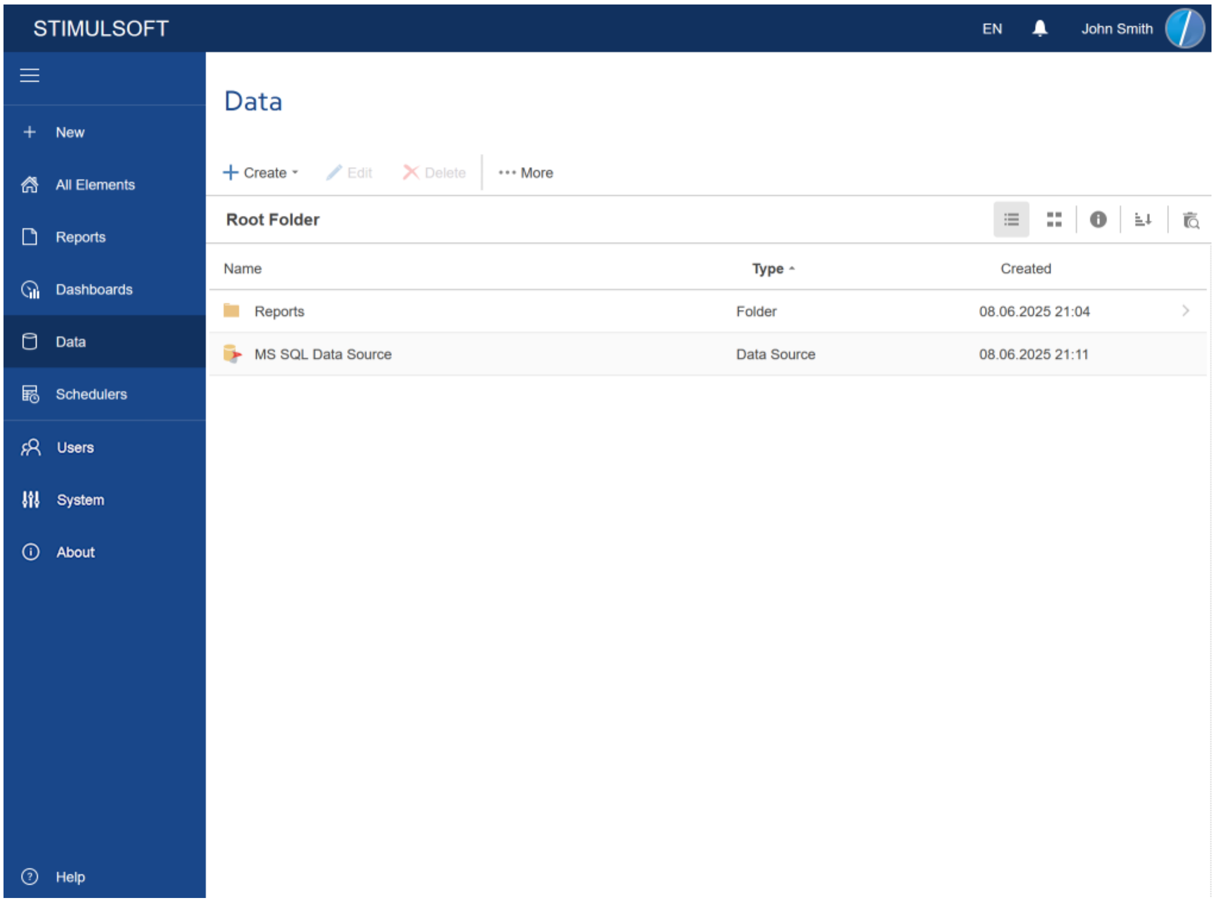
At the same time, in the Create menu, the commands to create Dashboards and Folder items, unless otherwise defined by the account role, will be available. Also, you should consider that only the file types like *.mrt, *.mrx, *.mrz will be shown. Rendered dashboards and converted into other formats, including formats *.mdc, *.mdx, *.mdz, will not be displayed.

Information

The list of commands in the Create menu will depend on the Role account. The list of items will also depend on the role permissions and the user's account. Because you can specify any folder as the parent one for your account, then the list of the displayed items may be different.

5.5 Data

On the **Data** tab, all data sources, files (Excel, JSON, CSV, XML, DBF), which contain information such as data, **Common** and **Data** folders, will be displayed:



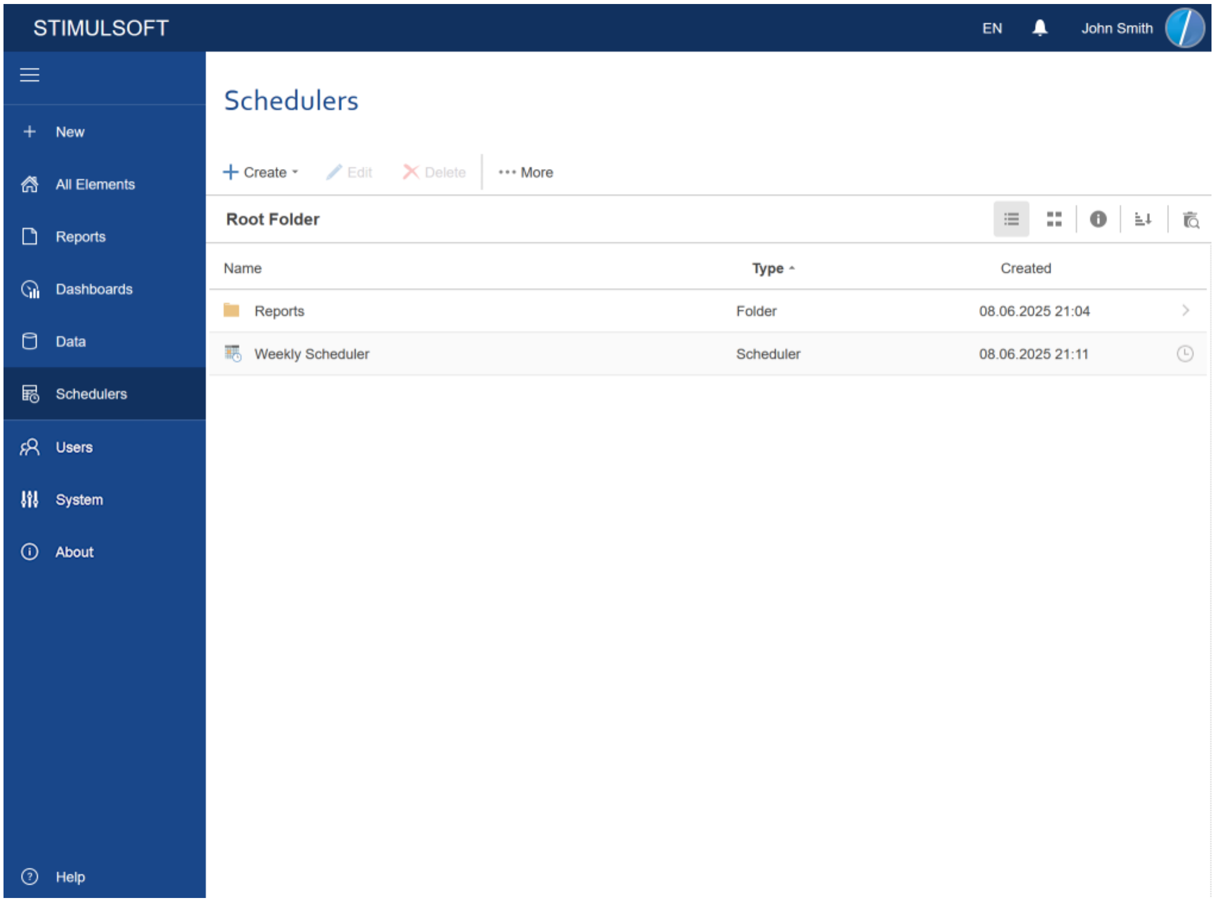
At the same time, in the Create menu, commands for creating the Data Source and Folder, unless otherwise defined by the account role, will be available.

Information

The list of commands in the Create menu will depend on the Role account. The list of items will also depend on the role permissions and the user's account. Because you can specify any folder as the parent one for your account, then the list of the displayed items may be different.

5.6 Schedulers

The **Schedulers** tab will display schedulers **Common** and **Schedulers** folders:



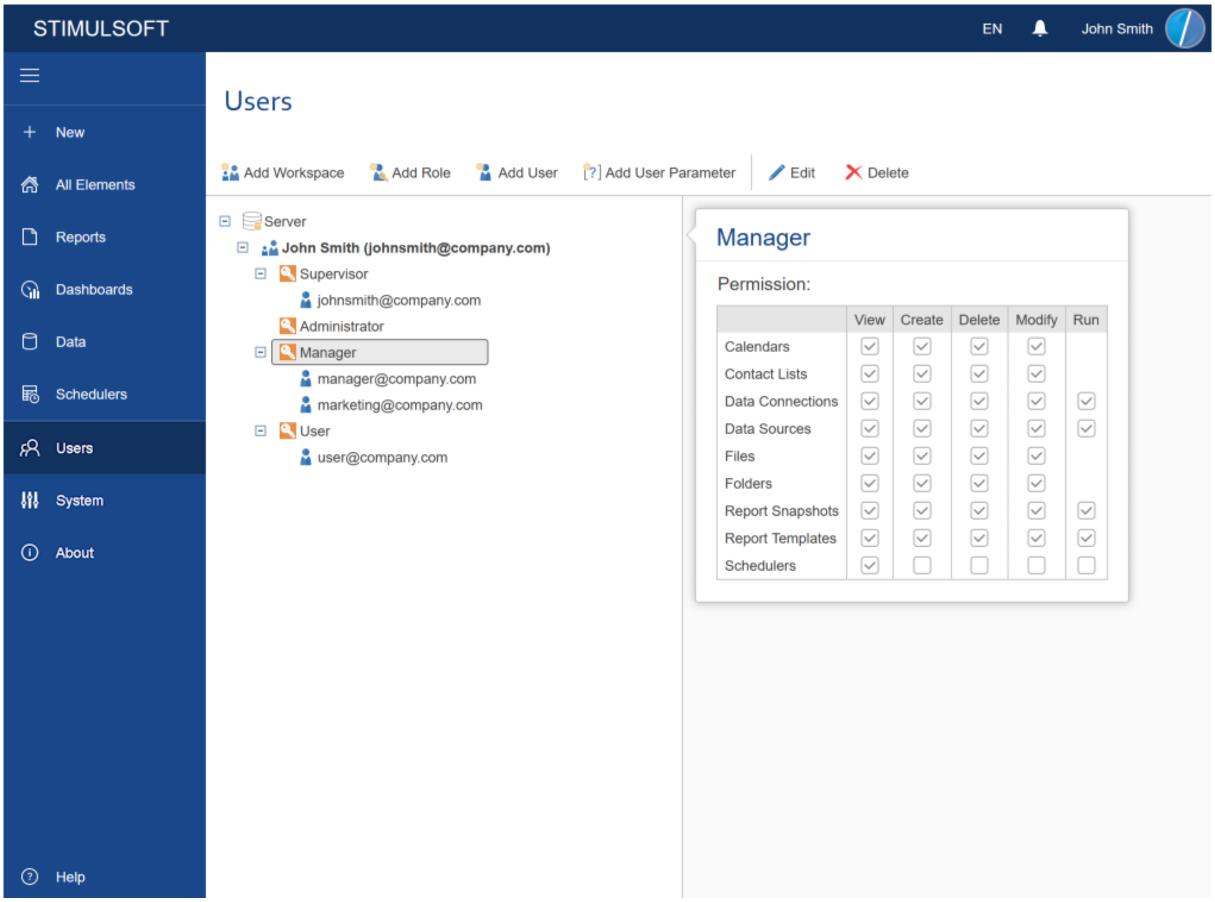
At the same time, in the Create menu, the command to create Scheduler and Folder items, unless otherwise defined by the account role, will be available.

Information

The list of commands in the Create menu will depend on the Role account. The list of items will also depend on the role permissions and the user's account. Because you can specify any folder as the parent one for your account, then the list of the displayed items may be different.

5.7 Users Tab

All tools to control workspaces, accounts, and a system of the report server are located on the Users Tab.



Toolbar

On the **Users tab**, you can control workspaces, roles, and accounts of other users.

1 **Add Workspace**. Adds a workspace on the server. Available only for Supervisors.
2 Add Role. Adds a new role in a workspace.
3 Add User. Creates a new user. You must first highlight the role to which a new account will be applied.
4 When you click the Add User Parameter button, the user parameter creation menu

will be called up.
5 **Edit**. Select the user (or role) and click on this button. Predefined roles (administrators, managers, users) cannot be edited.
6 **Delete**. To delete a user or role, you should select a user (or role) and click Delete. Also, with the help of this button, a supervisor can remove the workspace.

Information

System roles cannot be edited. You cannot change the rights of the members of one of these groups.

5.7.1 Add Role

The **Role** is a category of users with specific rights and restrictions in the workspace. In other words, each user is assigned to a particular role, has certain rights. By default, the workspace is created with system roles:
- The **Administrator** is a role in which there are no restrictions, and all rights are included.
- The **Manager** is a role in which the user has a great number of rights, except for features for managing the basic elements of the report server (for example, the Manager cannot create and modify Schedulers, Users, User Roles).
- The **User** is a role in which the user can only view items and run some of them.

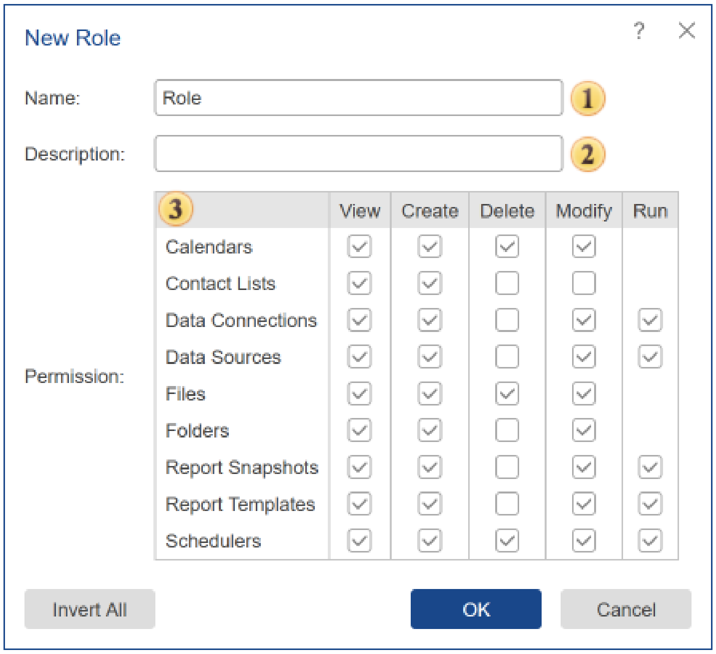
Information

Preset roles cannot be edited or deleted.

To create a new role, you should:
- Go to the **Users** tab;
- Click the **Add Role** button on the toolbar of the server.

Role Menu

When you create a new role, you can inherit **Permissions** from one of the existing roles selecting the parental role from the list.



1 The field **Name**. Here you can put the role name.
2 The field **Description**. If you need any additional description of the role, it can be put in this field.
3 The field **Permission**. Consists of columns (rights) and rows (list of items). Also, the rows are split into categories. Each column defines a certain right.

- The right **View** provides the ability to view items in the current workspace.
- The right **Create** provides the ability to create items in the current workspace.
- The right **Delete** provides the ability to delete items in the current workspace.
- The right **Modify** provides the ability to edit items in the current workspace.
- The right **Run** provides the ability to run the items in the current workspace.

In this case, the created role will be marked with checkboxes of the rights (permissions), which has a parental role. For example, if the parental role has only the ability to view reports (no other permissions), that only this permission will be given to the created role. At the same time, you can modify the role by enabling permissions or disabling them. Consider another example - the inheritance of permissions. Using the inheritance of permissions, you can create role duplicates of pre-installed roles with some modifications. By default, users as Administrators have all the rights. You want to create a role with all the features but without the permission to run Schedulers. The easiest way to do this is to create a role based on the Administrator's rights and put the restriction to run (uncheck the checkbox in the column **Run** -> row **Schedulers**).

Information

You should know that if the users of a certain role cannot view any item, then the rest of the actions performed on this item are not allowed too. For example, the role is not authorized to view the Scheduler, but the role has the right to create and run the Scheduler. In this case, members of this role CANNOT create or run the Scheduler.

Permissions Table

In this table, you will find items (rows) and rights (columns) and short descriptions of permissions.

Items / Rights	View	Create	Delete	Modify	Run
Calendar	Allows viewing **Calendar**	Allows creating **Calendar**	Allows deleting **Calendar**	Allows modifying **Calendar**	
Contact List	Allows viewing **Contact List**	Allows creating **Contact List**	Allows deleting **Contact List**	Allows modifying **Contact List**	
Data Sources	Allows viewing **Data Sources**	Allows creating **Data Sources**	Allows deleting **Data Sources**	Allows modifying **Data Sources**	
Files	Allows viewing **Files**	Allows creating **Files**	Allows deleting **Files**	Allows modifying **Files**	
Folders	Allows viewing **Folders**	Allows creating **Folders**	Allows deleting **Folders**	Allows modifying **Folders**	

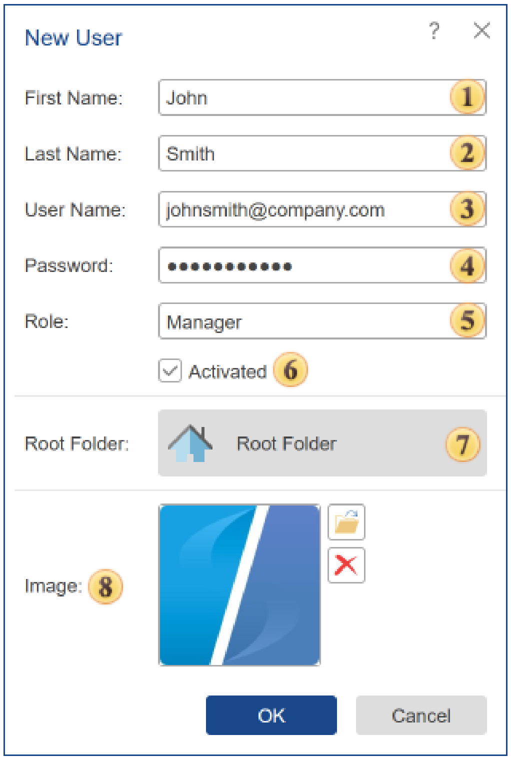
Report Snapshots	Allows viewing **Report Snapshots**	Allows creating **Report Snapshots**	Allows deleting **Report Snapshots**	Allows modifying **Report Snapshots**	Allows running **Report Snapshots**
Report Templates	Allows viewing **Report Template**	Allows creating **Report Template**	Allows deleting **Report Template**	Allows modifying **Report Template**	Allows running **Report Template**
Scheduler	Allows viewing **Scheduler**	Allows creating **Scheduler**	Allows deleting **Scheduler**	Allows modifying **Scheduler**	Allows running **Scheduler**

5.7.2 Add User

You can add other user accounts to the workspace. Before you add a new user, you should define its role, i.e., select one of the predefined roles or create a new one. Then, click Add User in the Users tab and fill out the form shown below.

To create a new user, you should:
- Go to the **Users** tab;
- Click the **Add User** button on the toolbar of the server.

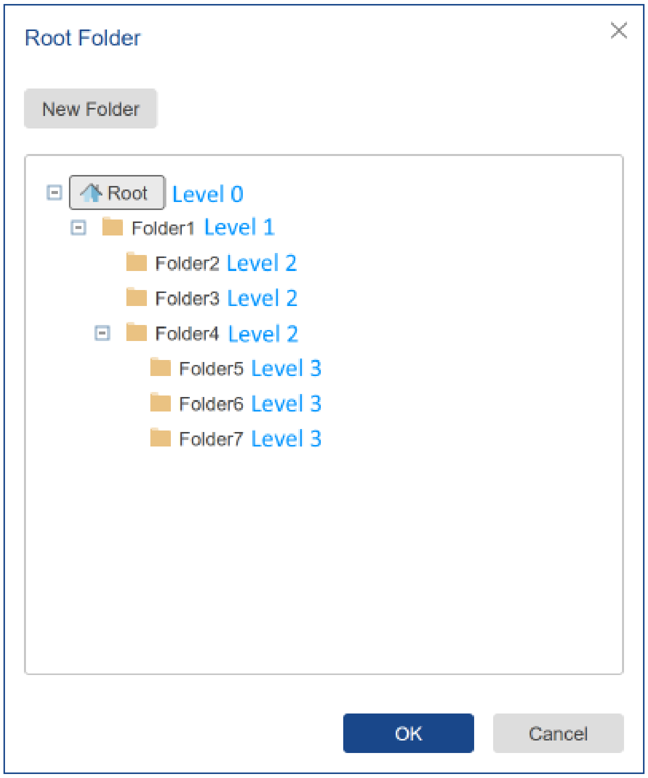
User Menu
In this menu, you can specify all user information and manage the user account.



1 This field contains the first name.
2 This field contains the last name.
3 This field contains the email that will be used as user login and for authentication.
4 In this field you should insert a password to protect your account from unauthorized access. Keep in mind - the combined and complex password (consisting of letters and numbers) enhances account security and reduces the risk of loss of sensitive data.
5 This field specifies the role for the user account.
6 Activate or Deactivate the user. The account will be activated if the checkbox is set to true. The account will be deactivated if the checkbox is set to false, and this account cannot be used to login to the server workspace.
7 This field specifies the root folder for the user account, the root folder for the server components in the current workspace.
8 In the picture field, you can upload an image that will be the user's avatar.

Root Folder

When you create or edit a user account, you can specify the root folder for it. This folder will be the beginning of the hierarchy of server items for the current user account. Below is a diagram of components for the root administrator:



For example, for a certain user account, we specify **Folder4** as the root. Then when logging into the server workspace, **Folder4** will be the root directory for this user account, and the hierarchy of server elements will be as follows.

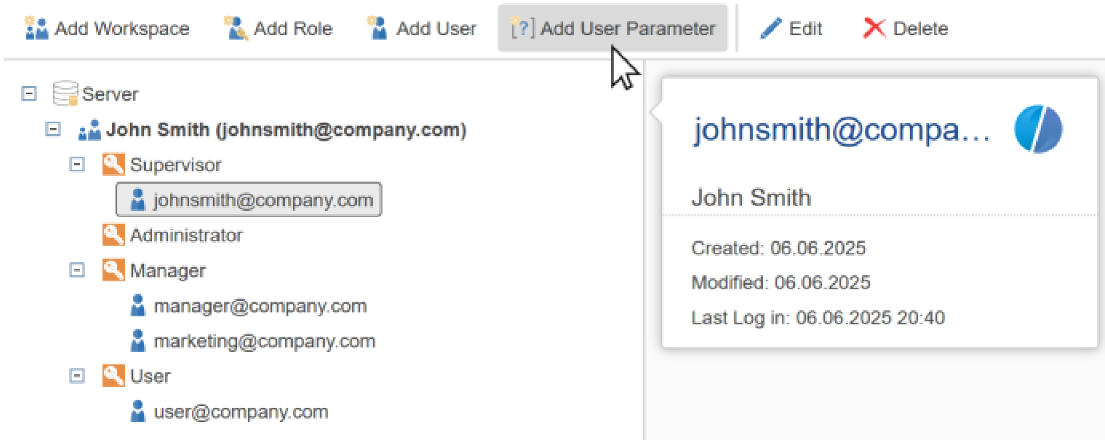
All elements in the workspace located in folders of a higher level will not be displayed to the current user.

5.7.3 Add User Parameter

User Parameter is a local variable that is automatically added to the report template when the user opens it.

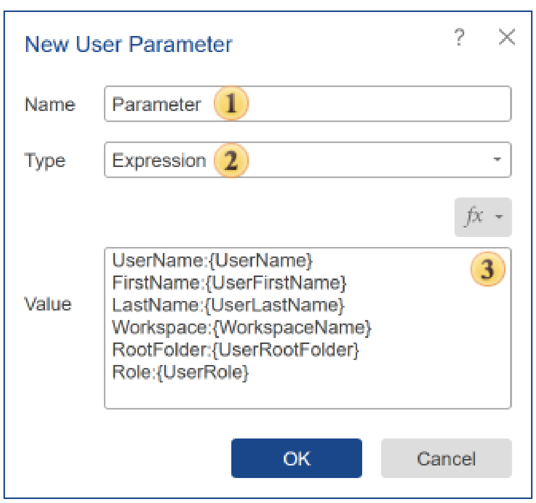
Information

A user parameter is a local variable assigned to a specific user. It is added to the report template as a report variable when that user works with the template. When the template is used by a different user, the variables from the previous user are cleared, and the parameters of the current user are added to the template.



To create a user parameter, you should:
- Go to the **Users** tab
- Select the appropriate context: workspace, role, or specific user
- Click the **Add User Parameter** button on the server toolbar

Creating a User Parameter



1. This field specifies the parameter name.
2. This field specifies the parameter type.
3. This field specifies the parameter value.

User parameters can accept string, numeric, boolean values, date, image, and expression. In user parameter expressions, you can also pass user-related data: first name, last name, username, role, parent folder name, and workspace name.

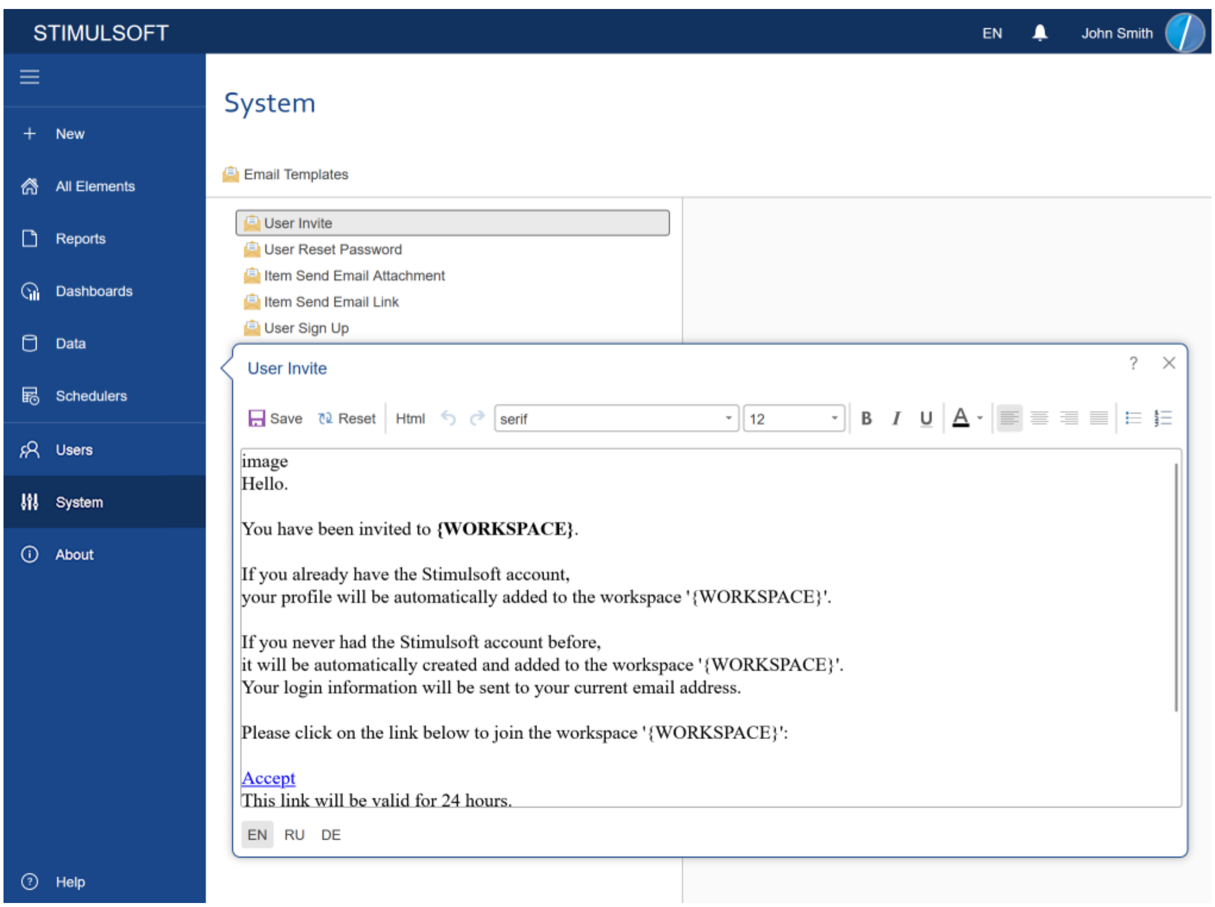
The created parameter will appear in the user hierarchy. It can later be edited or deleted using the Edit and Delete commands.

Information

It is important to distinguish between a report variable and a user parameter. A report variable belongs to the template. A user parameter belongs to the user and cannot override the report variable.

5.8 System Tab

On the **System** tab, you can edit the Email Stimulsoft Server templates.



The templates are configured in the Email editor. To call the editor, you should:

- Go to the **System** tab;
- Click the **Email Templates** button on the server toolbar.

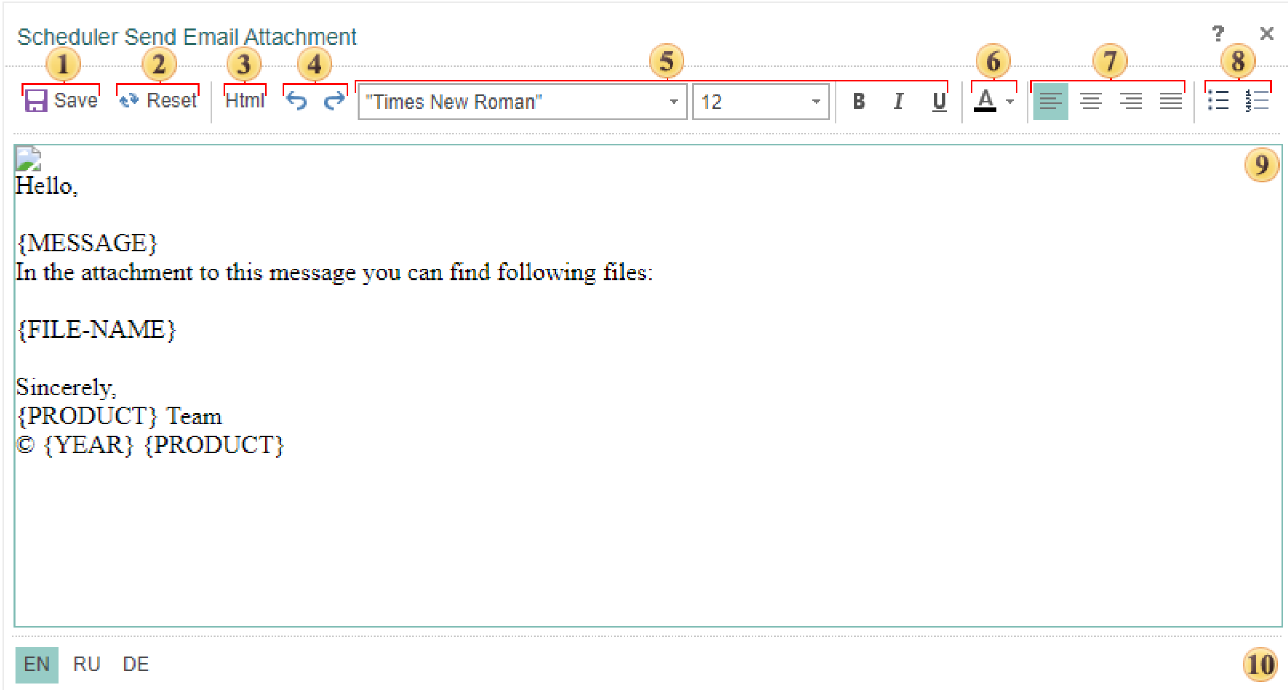
Email templates

This panel displays a list of actions, under which the user will be notified:

- The **Item Send Email Attachment** template. The scheduler sends a letter in this template if the result (for example, a report in the converted PDF) is attached to the message.
- The **Item Send Email Link** template. The scheduler sends a letter on this template if the link to the result (for example, a reference to the document PDF) is attached to the email.
- The **User Activation Complete** template. A letter for the given template is sent when the user account is activated.
- The **User Reset Password** template. When you change the password to the account, the user receives a message from this template.
- After changing the password to an account, the user will receive an email according to the **User Reset Password Complete** template. The email address is as specified during the registration process.

Templates Editor

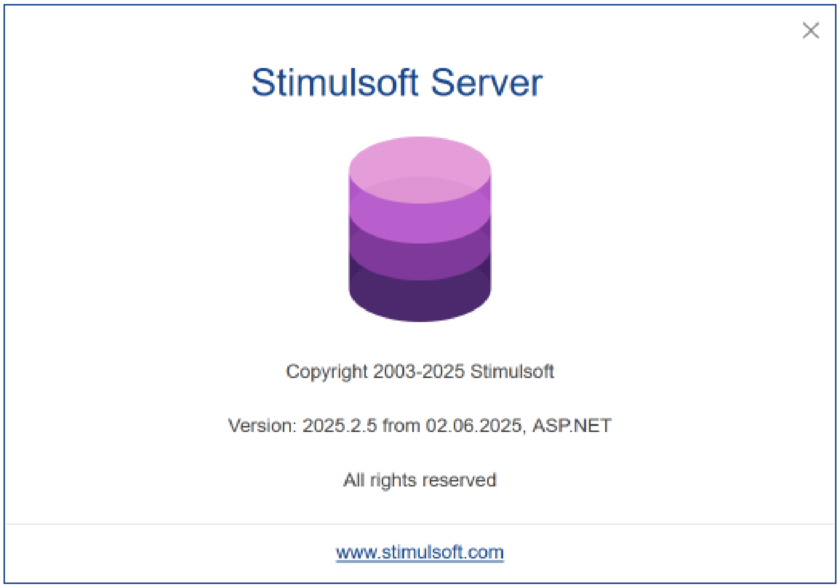
You can edit a letter template. Moreover, editing can be done both in visual mode and in HTML.



1 The **Save** button. Click the button to save the changes after making changes in the template;
2 The **Reset** button. Clicking this button, you will reset all changes, and the text will be returned to the default state.
3 This button is used to switch the editing mode of the template from visual to HTML and vice versa.
4 The buttons Back - Forward are used to go to the previous or next change.
5 Font settings - font family, size, and style of the selected part of the email.
6 The button is used to change the color of the selected text.
7 Commands are used to align the selected line in the template.
8 The button is used to activate the bullet mode.
9 The button is used to activate the "number list " mode.
10 **Localization panel**. Depending on the location, the template text will be localized to a particular language. By default, the localization pattern will correspond to the localization in the Navigator.

5.9 About

The window **About** contains information about the product, its version. Also, this screen has a link to the official site of the developer.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