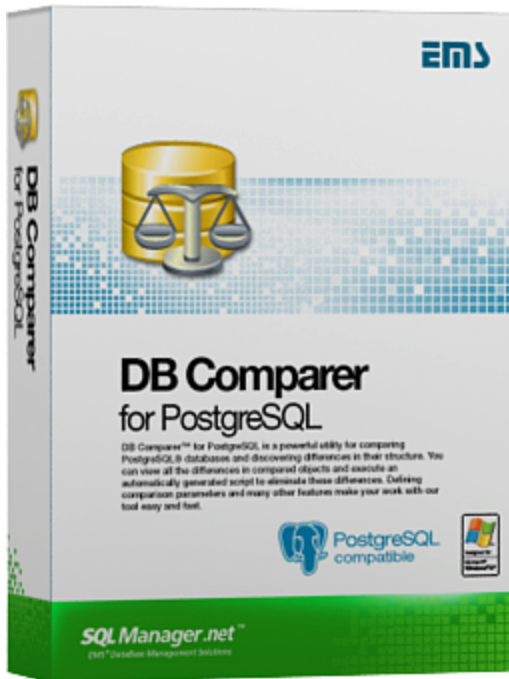


# SQL Manager.net™

EMS® Software Development



## DB Comparer for PostgreSQL User's Manual

© 1999-2023 EMS Software Development

# **DB Comparer for PostgreSQL User's Manual**

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**Part**



# 1 Welcome to DB Comparer for PostgreSQL!

**DB Comparer for PostgreSQL** is an excellent tool for comparing PostgreSQL databases and discovering differences in their structures. You can view all the differences in compared database objects and execute an automatically generated script to eliminate all or selected differences. A simple and intuitively comprehensive GUI allows you to work with several projects simultaneously, define comparison parameters, and alter modification scripts. Many other features are implemented to make your work with our database comparison tool easy and fast.

Visit our web-site for details: <https://www.sqlmanager.net>

## Key features

- Comparing and synchronization of databases or schemas on different servers as well as on a single server
- Comparing all database objects or selected ones only. Comparing by all or by selected properties of objects only
- Visual representation of differences between databases with details and modification scripts for the different objects
- Ability to synchronize databases manually step by step or automatically
- Ability to generate reports with database differences. Possibility to add custom reports
- Ability to automate the database comparison and synchronization using the console application
- Working with several compare projects at once
- Saving and loading projects with all their parameters
- A wide variety of options for comparison and synchronization
- Built-in SQL Script editor with syntax highlight
- Easy-to-use user interface with dark schema support
- Latest PostgreSQL versions support

and more...

## Product information

Homepage <https://www.sqlmanager.net/products/postgresql/dbcomparer>

Support Ticket <https://www.sqlmanager.net/support>

System

Register online at <https://www.sqlmanager.net/products/postgresql/dbcomparer/buy>

## 1.1 What's new

**Version**

DB Comparer for PostgreSQL 5.0.2

**Release date**

September 06, 2023

**What's new in DB Comparer?**

- Comparison of renamed objected added to the console version.
- Filter for compared objects improved.
- Batch or PowerShell file type can be now selected on saving the template.
- The issues of scaling the application window resolved.
- SSH passphrase prompt was missed in some cases. Fixed now.
- Support for CONCURRENTLY option added for indices.
- INCLUDE parameter is now generated for indices.

## 1.2 System requirements

- Microsoft Windows XP, Microsoft Windows Server 2003, Microsoft Windows Server 2008, Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2016, Microsoft Windows Server 2019, Microsoft Windows Vista, Microsoft Windows 7, Microsoft Windows 8/8.1, Microsoft Windows 10, Microsoft Windows 11, Microsoft Windows 11 ARM
- 512 MB of RAM or more
- 50 MB of available HD space for program installation
- Possibility to connect to any local or remote PostgreSQL server
- Supported PostgreSQL server versions: from 7.3 up to 15



## 1.3 Installation

If you are **installing DB Comparer for PostgreSQL for the first time** on your PC:

- download the DB Comparer for PostgreSQL distribution package from the [download page](#) available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- run *PgComparerSetup.exe* from the local directory and follow the instructions of the installation wizard;
- after the installation process is completed, find the DB Comparer shortcut in the corresponding group of Windows Start menu.

If you want to **upgrade an installed copy of DB Comparer for PostgreSQL** to the latest version:

- download the **DB Comparer for PostgreSQL** distribution package from the [download page](#) available at our site;
  - unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
  - close DB Comparer application if it is running;
  - run *PgComparerSetup.exe* from the local directory and follow the instructions of the installation wizard.
- 

**See also:**

[System requirements](#)

## 1.4 Registration

All purchases are provided by **Digital River** registration service. The **Digital River** order process is protected via a secure connection and makes on-line ordering by credit/debit card quick and safe.

**Digital River** is a global e-commerce provider for software and shareware sales via the Internet. It accepts payments in US Dollars, Euros, Pounds Sterling, Japanese Yen, Australian Dollars, Canadian Dollars or Swiss Franks by Credit Card (Visa, MasterCard/ EuroCard, American Express, Diners Club), Bank/Wire Transfer, Check or Cash.

If you want to review your order information, or you have questions about ordering or payments please visit our [Customer Care Center](#), provided by **Digital River**.

Please note that all of our products are delivered via ESD (Electronic Software Delivery) only. After purchase you will be able to immediately download the registration keys or passwords. Also you will receive a copy of registration keys or passwords by email. Please make sure to enter a valid email address in your order. If you have not received the keys within 2 hours, please, contact us at [sales@sqlmanager.net](mailto:sales@sqlmanager.net).

To obtain more information on this product, visit us at <https://www.sqlmanager.net/products/postgresql/dbcomparer>

Product distribution	MyCommerce/ Digital River
<b>EMS DB Comparer for PostgreSQL</b> (Business license) + 1-Year Maintenance*	<a href="#">Register Now!</a>
<b>EMS DB Comparer for PostgreSQL</b> (Business license) + 2-Year Maintenance*	
<b>EMS DB Comparer for PostgreSQL</b> (Business license) + 3-Year Maintenance*	
<b>EMS DB Comparer for PostgreSQL</b> (Non-commercial license) + 1-Year Maintenance*	
<b>EMS DB Comparer for PostgreSQL</b> (Non-commercial license) + 2-Year Maintenance*	
<b>EMS DB Comparer for PostgreSQL</b> (Non-commercial license) + 3-Year Maintenance*	
<b>EMS DB Comparer for PostgreSQL</b> (Trial version)	<a href="#">Download Now!</a>

\* **EMS Maintenance Program** provides the following benefits:

- Free software bug fixes, enhancements, updates and upgrades during the maintenance period
- Free unlimited communications with technical staff for the purpose of reporting Software failures
- Free reasonable number of communications for the purpose of consultation on operational aspects of the software

After your maintenance expires you will not be able to update your software or get technical support. To protect your investments and have your software up-to-date, you need to renew your maintenance.

You can easily reinitiate/renew your maintenance with our on-line, speed-through Maintenance Reinstatement/Renewal Interface. After reinitiating/renewal you will receive a confirmation e-mail with all the necessary information.

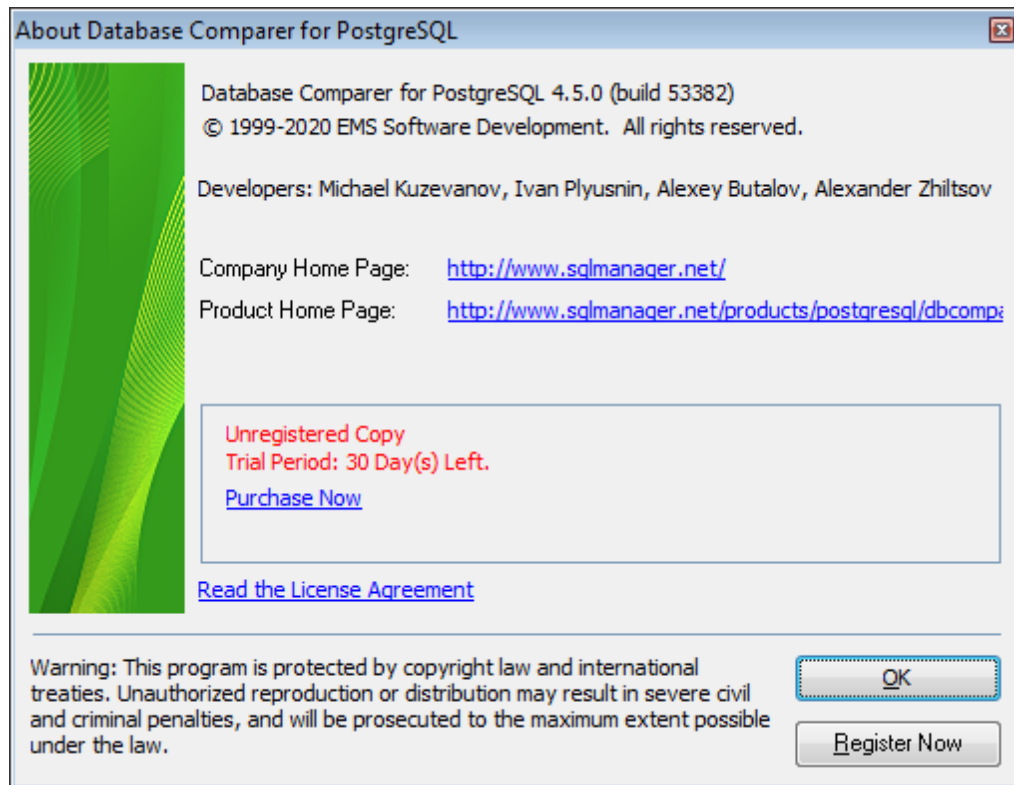
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**See also:**

[How to register DB Comparer](#)

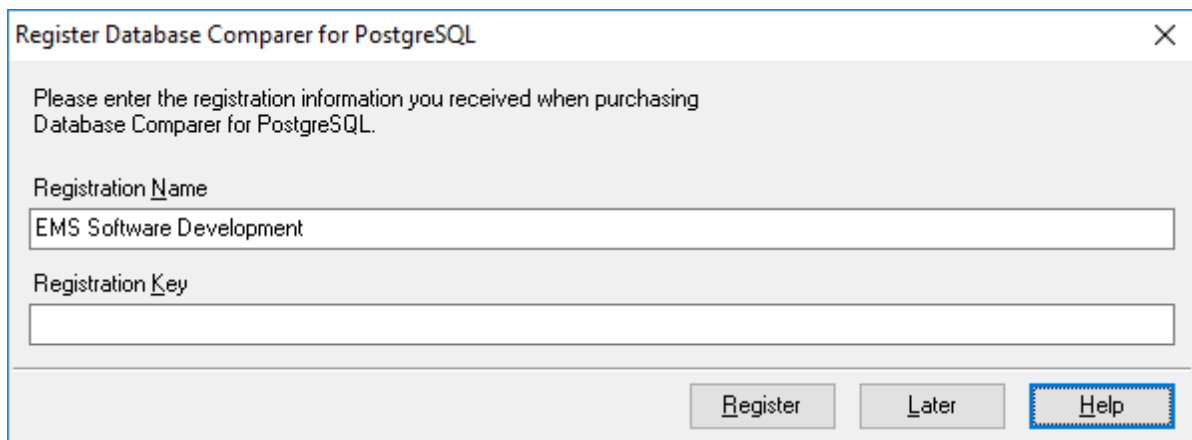
## 1.5 How to register DB Comparer

If you have not registered your copy of DB Comparer for PostgreSQL yet, you can do it by selecting the **Help | Register DB Comparer for PostgreSQL** main menu item or by selecting the **Help | About** main menu item and pressing the **Register Now** button to call the **Register DB Comparer for PostgreSQL** dialog.



To register your newly purchased copy of EMS DB Comparer for PostgreSQL, perform the following steps:

- receive the notification letter from **Digital River** with the registration info;
- enter the **Registration Name** and the **Registration Key** from this letter;
- make sure that the registration process has been completed successfully – check the registration information in the **About DB Comparer for PostgreSQL** dialog (use the **Help | About** main menu item to open this dialog).



Register Database Comparer for PostgreSQL

Please enter the registration information you received when purchasing Database Comparer for PostgreSQL.

Registration Name  
EMS Software Development

Registration Key

Register Later Help

---

**See also:**

[Registration](#)

## 1.6 Other EMS Products

### Quick navigation



[MySQL](#)



[Microsoft SQL Server](#)



[PostgreSQL](#)



[InterBase / FireBird](#)



[Oracle](#)



[IBM DB2](#)



[Tools & components](#)

### MySQL



#### [SQL Management Studio for MySQL](#)

EMS SQL Management Studio for MySQL is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!



#### [SQL Manager for MySQL](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



#### [Data Export for MySQL](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.



#### [Data Import for MySQL](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.



#### [Data Pump for MySQL](#)

Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to MySQL.



#### [Data Generator for MySQL](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



#### [DB Comparer for MySQL](#)

Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.



#### [DB Extract for MySQL](#)

Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



#### [SQL Query for MySQL](#)

Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.



#### [Data Comparer for MySQL](#)

Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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## Microsoft SQL Server



### [SQL Management Studio for SQL Server](#)

EMS SQL Management Studio for SQL Server is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!



### [EMS SQL Backup for SQL Server](#)

Perform backup and restore, log shipping and many other regular maintenance tasks on the whole set of SQL Servers in your company.



### [SQL Administrator for SQL Server](#)

Perform administrative tasks in the fastest, easiest and most efficient way. Manage maintenance tasks, monitor their performance schedule, frequency and the last execution result.



### [SQL Manager for SQL Server](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



### [Data Export for SQL Server](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more



### [Data Import for SQL Server](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.



### [Data Pump for SQL Server](#)

Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to Microsoft® SQL Server™.



### [Data Generator for SQL Server](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



### [DB Comparer for SQL Server](#)

Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.



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Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



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Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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## PostgreSQL



### [SQL Management Studio for PostgreSQL](#)

EMS SQL Management Studio for PostgreSQL is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!



### [EMS SQL Backup for PostgreSQL](#)

Creates backups for multiple PostgreSQL servers from a single console. You can use automatic backup tasks with advanced schedules and store them in local or remote folders or cloud storages



### [SQL Manager for PostgreSQL](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



### [Data Export for PostgreSQL](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more



### [Data Import for PostgreSQL](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.



### [Data Pump for PostgreSQL](#)

Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, InterBase/Firebird, etc.) to PostgreSQL.



### [Data Generator for PostgreSQL](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



### [DB Comparer for PostgreSQL](#)

Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.



### [DB Extract for PostgreSQL](#)

Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



### [SQL Query for PostgreSQL](#)

Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.



### [Data Comparer for PostgreSQL](#)

Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

[Scroll to top](#)

## InterBase / Firebird



### [SQL Management Studio for InterBase/Firebird](#)

EMS SQL Management Studio for InterBase and Firebird is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!





### [SQL Manager for InterBase/Firebird](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



### [Data Export for InterBase/Firebird](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more



### [Data Import for InterBase/Firebird](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.



### [Data Pump for InterBase/Firebird](#)

Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, PostgreSQL, etc.) to InterBase/Firebird.



### [Data Generator for InterBase/Firebird](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



### [DB Comparer for InterBase/Firebird](#)

Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.



### [DB Extract for InterBase/Firebird](#)

Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



### [SQL Query for InterBase/Firebird](#)

Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.



### [Data Comparer for InterBase/Firebird](#)

Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

[Scroll to top](#)

## Oracle



### [SQL Management Studio for Oracle](#)

EMS SQL Management Studio for Oracle is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!



### [SQL Manager for Oracle](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



### [Data Export for Oracle](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.



### [Data Import for Oracle](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via

user-friendly wizard interface.



#### [Data Pump for Oracle](#)

Migrate from most popular databases (MySQL, PostgreSQL, MySQL, DB2, InterBase/Firebird, etc.) to Oracle



#### [Data Generator for Oracle](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



#### [DB Comparer for Oracle](#)

Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.



#### [DB Extract for Oracle](#)

Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



#### [SQL Query for Oracle](#)

Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.



#### [Data Comparer for Oracle](#)

Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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## IBM DB2



#### [SQL Manager for DB2](#)

Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.



#### [Data Export for DB2](#)

Export your data to any of 20 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.



#### [Data Import for DB2](#)

Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.



#### [Data Pump for DB2](#)

Migrate from most popular databases (MySQL, PostgreSQL, Oracle, MySQL, InterBase/Firebird, etc.) to DB2



#### [Data Generator for DB2](#)

Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.



#### [DB Extract for DB2](#)

Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.



#### [SQL Query for DB2](#)

Analyze and retrieve your data, build your queries visually, work with query plans, build charts

based on retrieved data quickly and more.

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## Tools & components



### [Advanced Data Export for RAD Studio VCL](#)

Advanced Data Export for RAD Studio VCL allows you to save your data in the most popular office programs formats.



### [Advanced Data Export .NET](#)

Advanced Data Export .NET is a component for Microsoft Visual Studio .NET that will allow you to save your data in the most popular data formats for the future viewing, modification, printing or web publication. You can export data into MS Access, MS Excel, MS Word (RTF), PDF, TXT, DBF, CSV and more! There will be no need to waste your time on tiresome data conversion - Advanced Data Export will do the task quickly and will give the result in the desired format.



### [Advanced Data Import for RAD Studio VCL](#)

Advanced Data Import for RAD Studio VCL will allow you to import your data to the database from files in the most popular data formats.



### [Advanced PDF Generator for RAD Studio](#)

Advanced PDF Generator for RAD Studio gives you an opportunity to create PDF documents with your applications written on Delphi or C++ Builder.



### [Advanced Query Builder for RAD Studio VCL](#)

Advanced Query Builder for RAD Studio VCL is a powerful component for Delphi and C++ Builder intended for visual building SQL statements for the SELECT, INSERT, UPDATE and DELETE clauses.



### [Advanced Excel Report for RAD Studio](#)

Advanced Excel Report for RAD Studio is a powerful band-oriented generator of template-based reports in MS Excel.



### [Advanced Localizer for RAD Studio VCL](#)

Advanced Localizer for RAD Studio VCL is an indispensable component for Delphi for adding multilingual support to your applications.

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**Part**



## 2 Managing projects

**DB Comparer for PostgreSQL** allows you to create, save and open saved *projects*. To start working with the program you need to [create the project](#). You can [modify options](#) of an existing project any time your work with it.

[Creating project](#)

[Opening / saving project](#)

[Compare Project wizard](#)

---

### See also:

[Working with project](#)

[SQL Script editor](#)


[Reports management](#)

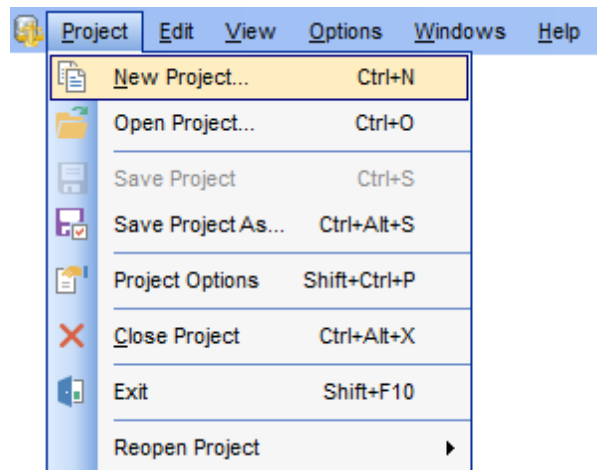
[DB Comparer options](#)

[Console application](#)

## 2.1 Getting started

To start working with DB Comparer for PostgreSQL, you should either create a new project or [open](#) an existing one.

To create the new project select the **Project | New Project** main menu item or use the  **New Project** button on the toolbar (*Ctrl+N*).



Then you need to set [connection properties](#) for source and target databases.

---


### See also:

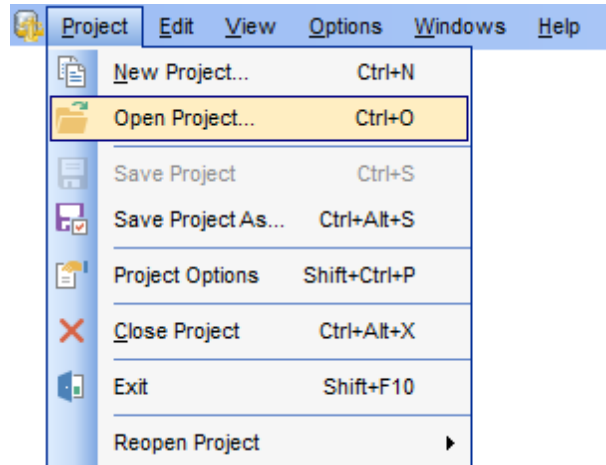
[Opening / saving Project](#)



[Compare Project wizard](#)

[Viewing Summary Info](#)

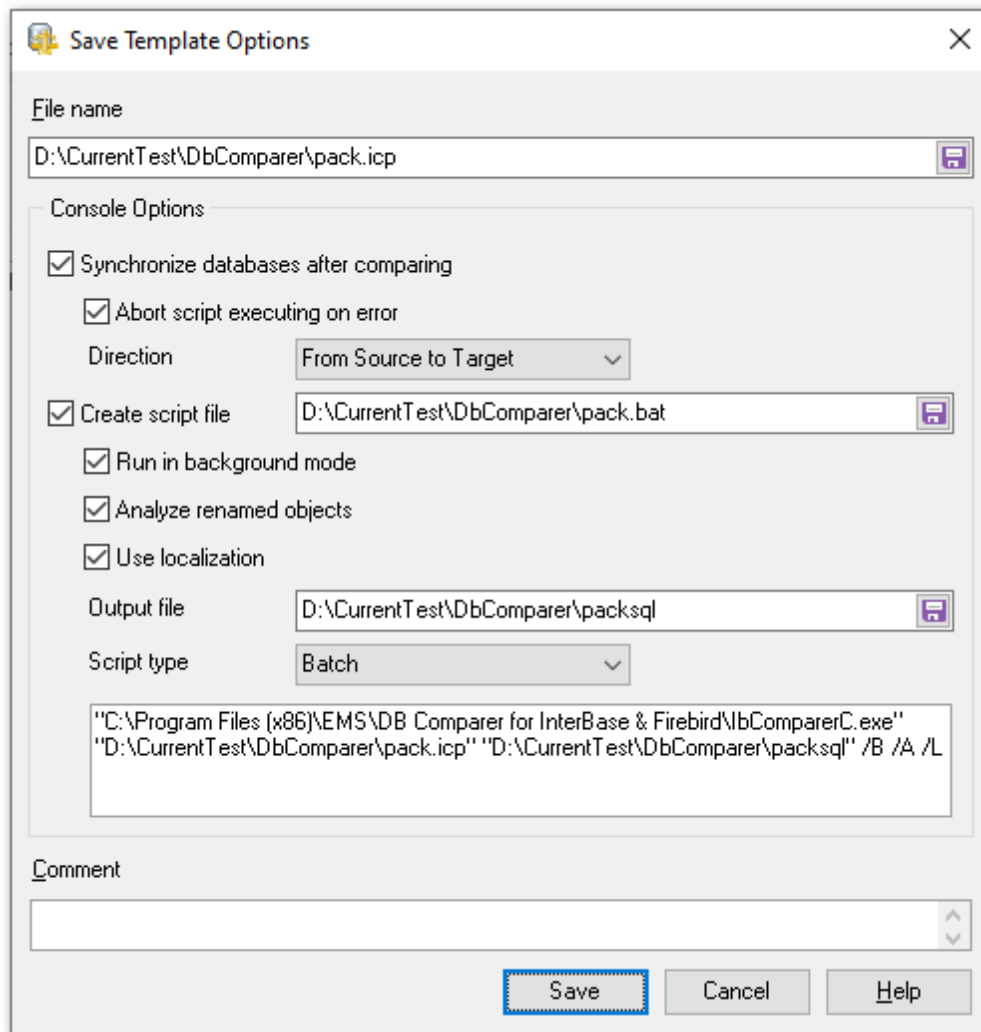
## 2.2 Opening / saving project

To open an existing DB Comparer project, select **Project | Open Project...** or use the  **Open Project...** button on the toolbar (*Ctrl+O*).



To save a DB Comparer project, select **Project | Save Project (Save Project As...)** or use the  **Save Project** ( **Save Project As**) button on the toolbar (*Ctrl+S / Ctrl+Alt+S*). In the Project Options select **Save Project** button to save the currently edited project.

If this is the first time that this project is being saved or if you select **Save Project As...**, you are to specify the path to the project file and provide a name for the project file within the **Save project options** dialog.



### Console options

#### Synchronize databases after comparing

With this option the generated script is executed right after comparing. With this option disabled, the synchronization script is saved without executing.

#### Abort script executing on error

This option specifies whether the synchronization script must be aborted on the error.

#### Direction:

Select the database synchronization direction.

#### Create script file

Enable to specify the path to create a command file for Command Line or PowerShell.

#### Run in background mode

Enable to add the /B option and run the file in the background mode.

#### Analyze renamed objects

Enable to add the /A option for comparison in the console application with the [Analyze](#)



[renamed\\_objects](#) option.

**Use localization**

Enable it to add the /L option and output text in the console application on the same language as in the GUI.

**Output file**

Specify the directory to save the text file with SQL script.

**Script type**

Select Batch or PowerShell type of the file with the command.

**Comment**

Add custom text to describe the project. This info is saved to the template file in [#Comment#] section.

---

**See also:**

[Creating Project](#)

[Compare Project Wizard](#)

[Viewing Summary Info](#)

## 2.3 Compare Project wizard

After you have created or loaded the project, the Compare Project wizard starts.

When the comparison process is finished, the project will be loaded into the DB Comparer application automatically, and you will be able to start [working with the project](#).

### Wizard steps

[Setting database options](#)

[Setting compare options](#)

### See also:

[Getting started](#)

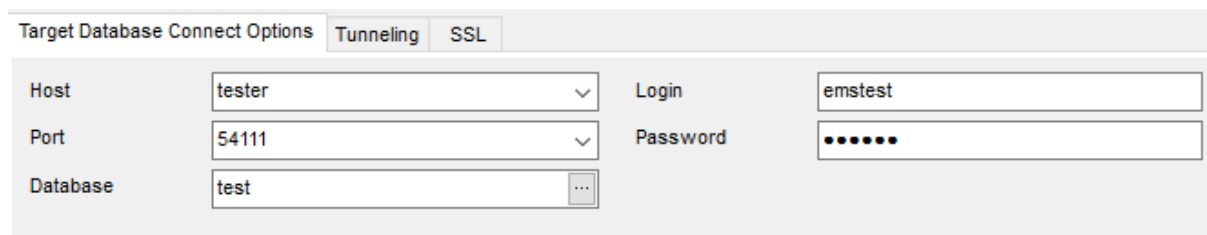
[Opening / saving Project](#)

[Viewing Summary Info](#)

### 2.3.1 Setting database options

Database connection properties for the source and target databases are set in the same way.

If both the source and target databases are located on the same server, you can check the  **Both databases on the same server** option and set all the properties (except for the database/schema name) only once.



Target Database Connect Options

Tunneling SSL

Host: tester

Port: 54111

Database: test

Login: emstest

Password: .....

### Connect options

Set the host name for PostgreSQL in the **Host** field. Type server name or IP address or set Localhost for local server. The **Host** drop-down list contains the list of already registered hosts. Specify the port value in the **Port** field.

Afterwards you should specify *authorization* settings: **Login** and **Password**.

The default superuser name is 'postgres' with the password specified during PostgreSQL server installation.

After that it is necessary to *specify the database* you are going to work with: type in its name in the **Database** field or use the  ellipsis button to select one from the [Select database](#) list.

If necessary, use the drop-down list to specify the preferable **Client charset** to be used by the application.

If you are using the EMS SQL Management Studio for PostgreSQL version of DB Comparer for PostgreSQL then the **Select registered database** button is available. Click this button to pick a database already registered in the EMS SQL Management Studio in the [Select Host or Database](#) dialog.

## Tunneling

To setup the connection via **SSH tunnel**, input the following values in the corresponding fields:

- **SSH host name** is the name of the host where SSH server is running
- **SSH port** indicates the port where SSH server is activated
- **SSH user name** stands for the user on the machine where SSH server is running (**Note:** it is a Linux/Windows user, not a user of PostgreSQL server)
- **SSH password** is the Linux/Windows user password

**Note:** When the SSH tunneling is set the '\*' symbol appears on the tab header.

The screenshot shows the 'Target Database Connect Options' dialog with the 'Tunneling\*' tab active. The 'Connect through the Secure Shell (SSH) tunnel' radio button is selected. The 'SSH host' dropdown is set to 'testssh', 'SSH port' is '22', 'SSH login' is 'sshuser', and 'SSH password' is masked with dots. There is an unchecked checkbox for 'Use Private Key for authentication' and an empty 'SSH key file' field. The 'Connect through the HTTP tunnel' option is also visible but not selected.

### Use Private Key for authentication

Check this option to enable Private Keys usage for the connection.

For details see [SSH tunneling options](#).

To use **HTTP tunneling**, just upload the tunneling script to the webserver where PostgreSQL server is located, or to any other webserver from which direct connections to your PostgreSQL server are allowed. This script exposes the PostgreSQL API as a set of web-services which are used by DB Comparer for PostgreSQL.

For details see [HTTP tunneling options](#).

## SSL

### SSL mode

Select the required SSL mode from the dropdown menu: *Disabled, Allow, Prefer, Require, Verify CA, Verify Full*.

Target Database Connect Options	Tunneling*	SSL
SSL mode	Require	Root certificate
Client certificate	D:\SSL\postgresql.crt	Revocation list
Client key	D:\SSL\postgresql.key	

**Root certificate**

Select the path to the client root.crt file.

**Client certificate**

Select the path to the client certificate.

**Client key**

Select the path to the client private key.

**Revocation list**

Select the file for Certificate Revocation List.

When done, press the **Next** button to [set compare options](#).

[Next step >](#)

---

**See also:**

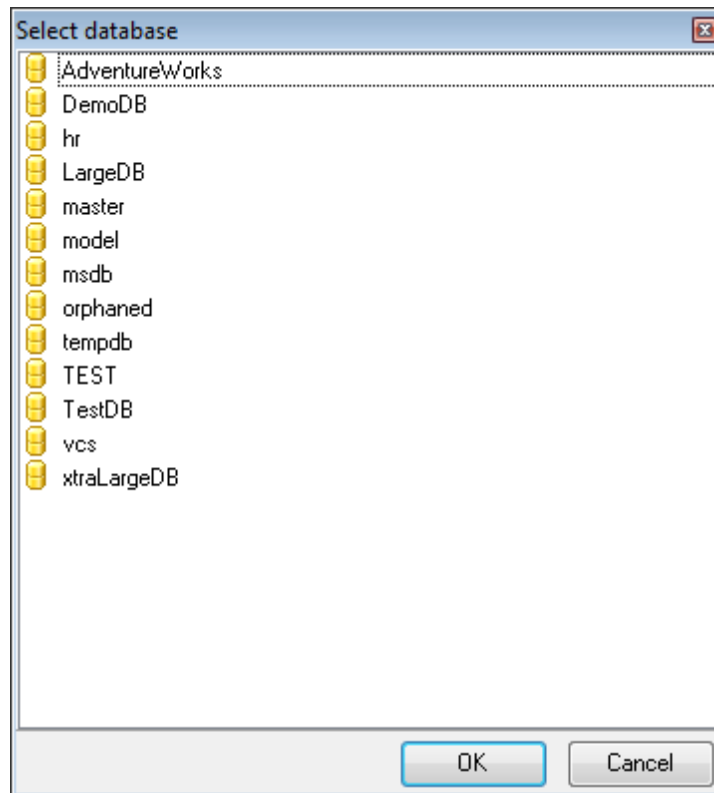
[Setting database options](#)

[Setting compare options](#)

**2.3.1.1 Selecting databases**

When the server connection settings are specified, you should select databases for comparison using the **Select database** dialog.

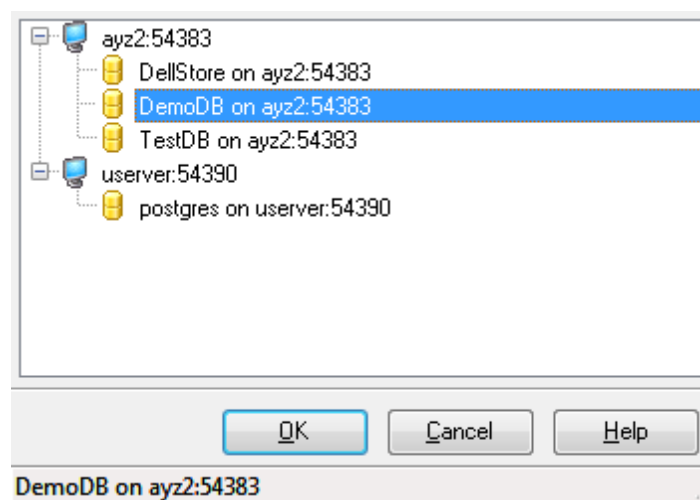
To call this dialog, click the  ellipsis button of the **Database** control at the [Step 1](#).



When you are done, press **OK** to apply the database selection.

### 2.3.1.2 Selecting registered database

Use this dialog to select a database for comparison. This dialog is available only in EMS SQL Management Studio version of DB Comparer for PostgreSQL.



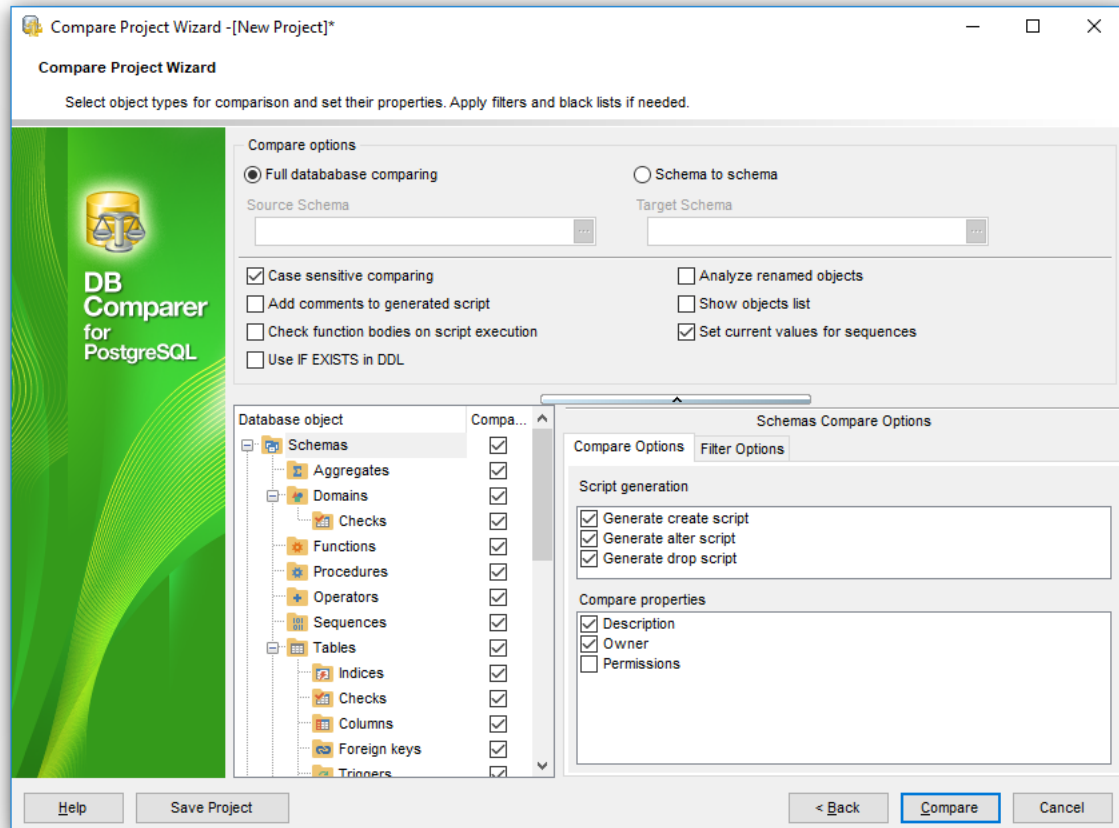
All databases registered in EMS SQL Management Studio for PostgreSQL are displayed in the list.

Select the necessary database and click the **OK** button.


Database registration information will be filled on the [first step](#) automatically.

### 2.3.2 Setting compare options

Set comparison options for the project.



#### Compare options

Here you can specify whether to perform *Full database* or *Schema to schema* comparing. In the latter case select *Source* and *Target* schemas by clicking the  ellipsis button of the corresponding controls.

#### Case sensitive comparing

Enable this option to make the comparing process case sensitive.

Note that you can use a **Case sensitive** filter as well, just turn on the corresponding option.

#### Analyze renamed objects

This option enables/disables comparing tables and fields which might have been renamed.

**Check function bodies on script execution**

If this option is disabled then a script will be executed even in case the function body is syntactically incorrect.

**Set current values for sequences**

If this option is checked then the sequence in the target database is created with current value, otherwise with '0' start value.

**Use IF EXISTS in DDL**

With this option enabled IF EXISTS part is added to drop objects statements.

**Show objects list**

If this option is checked the list of all objects is displayed on the next step. If there is no need to check the list of retrieved objects you can uncheck this option to speed up comparison process.

**Add comments to generated script**

Use this option to toggle comments in [modification script](#).

Select object type in the **Database object** tree, set a flag to include the object type into the comparison process.

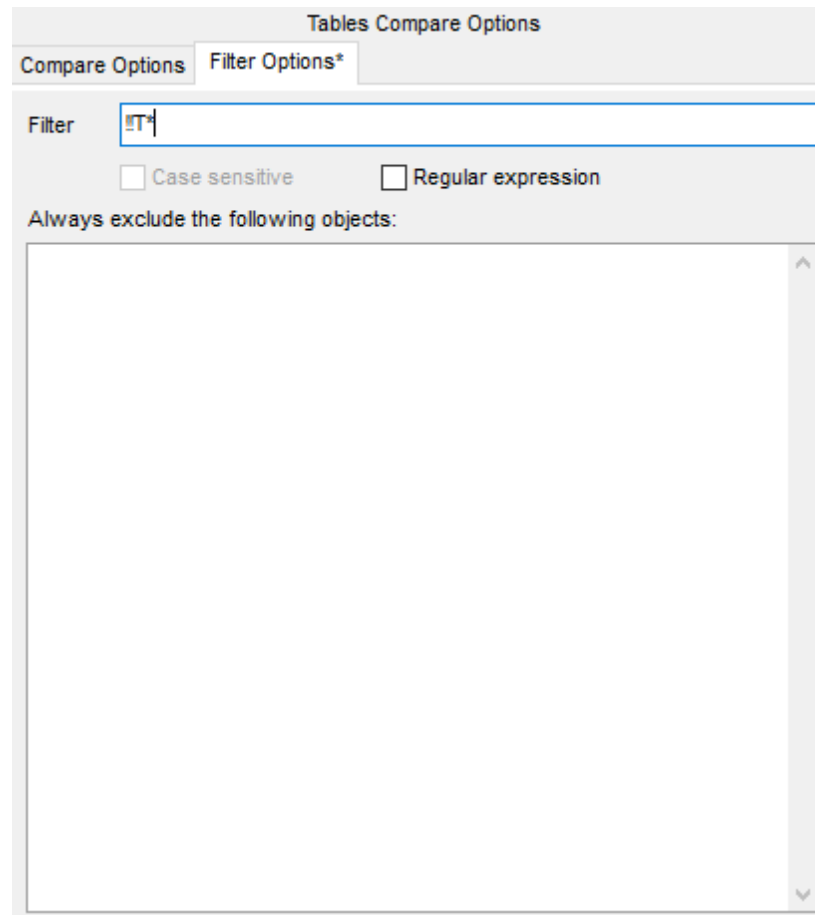
The **Select All** and **Unselect All** buttons in the popup menu are implemented to make option selection easier.

### Compare Options

Define which properties are compared for the selected object type.

### Filter Options

For your convenience the filter of object names is added. By default, *filter by mask* is used. A valid mask consists of literal characters, sets, and wildcards. Each literal character must match a single character in the string. The comparison to literal characters is case-insensitive. Each set begins with an opening bracket ([) and ends with a closing bracket (]). You can use standard wildcards such as asterix (\*) or percent sign (%) which are the same, or the question mark (?).



Tables Compare Options

Compare Options Filter Options\*

Filter

Case sensitive  Regular expression

Always exclude the following objects:

To apply filter using regular expression, check the  **Regular expression** option.

Enable  **Case sensitive** option to make the regular expression filter case sensitive.

#### **Always exclude following objects**

Enter the objects (one on the line) that you do not want to be compared.

To delete filter condition you may use the **Clear Filter** button of the **Database objects** popup menu.

[< Previous step](#)

---

#### **See also:**

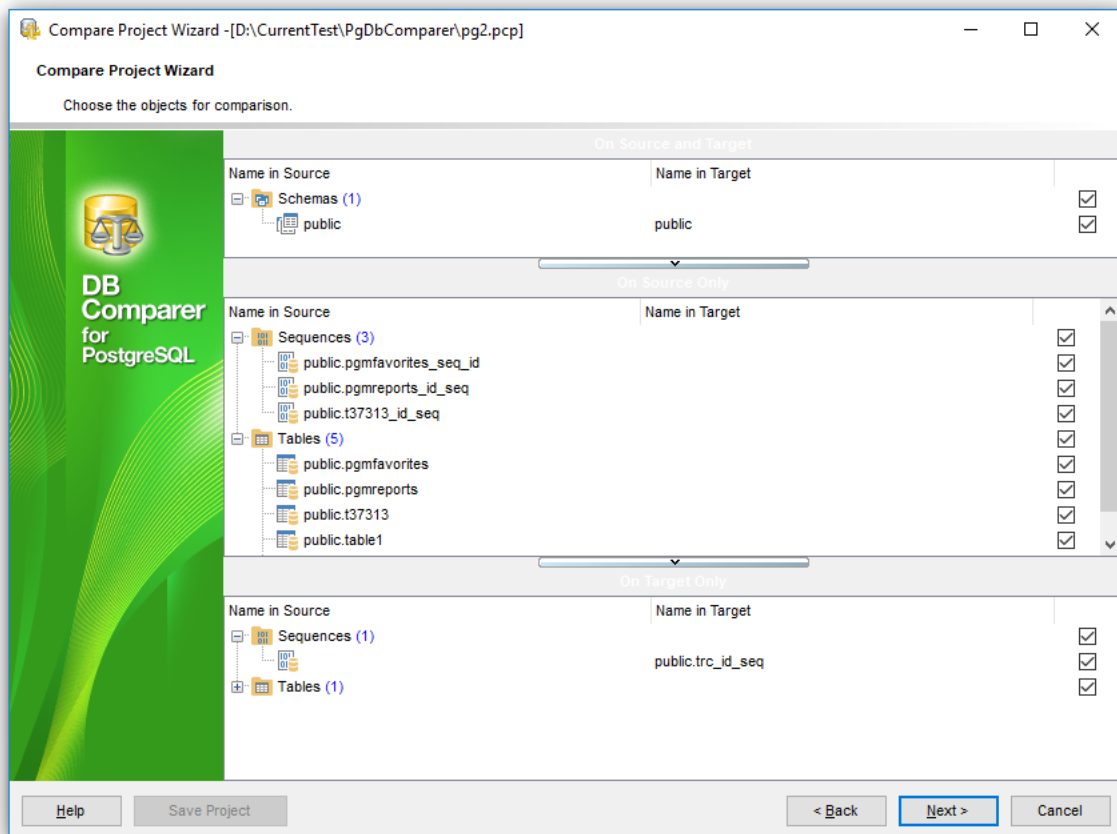
[Setting database options](#)

[Setting compare options](#)



### 2.3.3 Select objects for comparison

You can review objects for both databases at this step.



The objects that exist in both databases are displayed in the **On Source and Target** window.

The objects that exist in either source or target database are displayed in **On Source Only** and **On Target Only** window correspondingly.

You need to check the objects to be synchronized.

[< Previous step](#)

[Next step >](#)

#### See also:

[Setting database options](#)

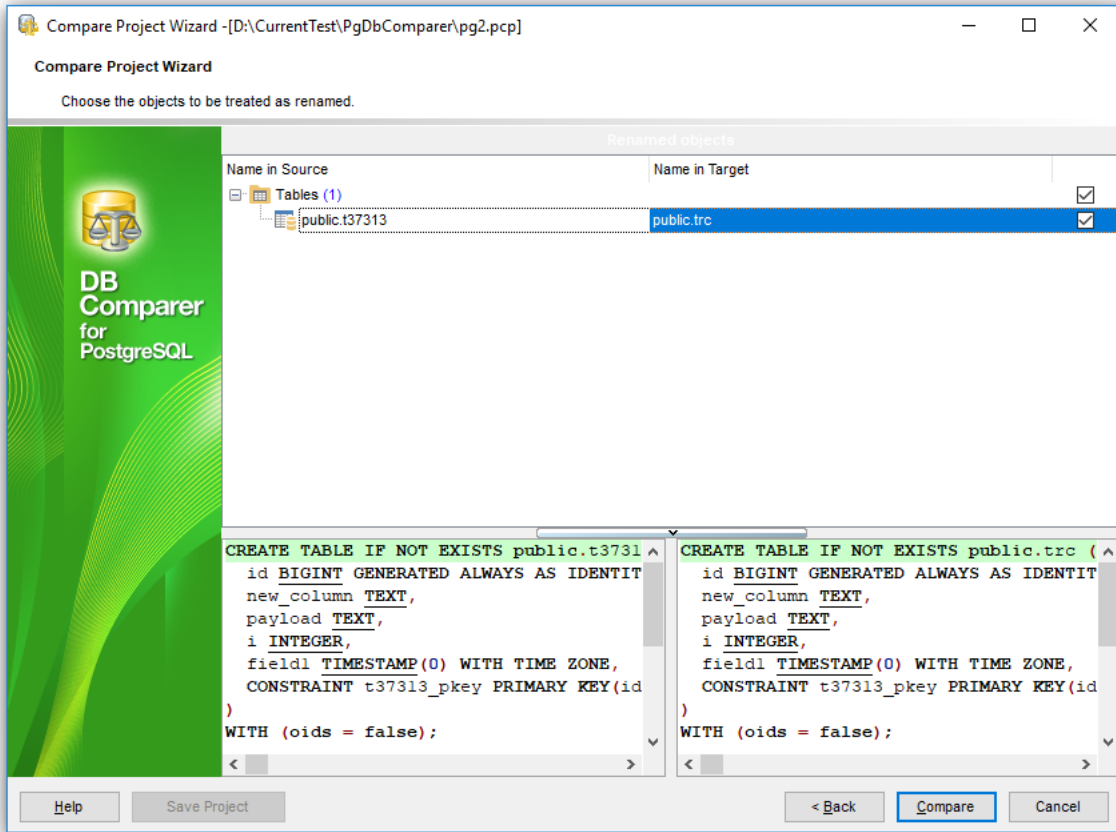
[Setting compare options](#)

[Select objects for compare](#)

[Renamed objects](#)

### 2.3.4 Renamed objects

At this step you can see the list of objects which might have been renamed. This list includes similar objects with different names in source and target databases.



The script for the selected objects is displayed in the bottom part of the window.

Click the **Compare** button to start the database comparison process.

After the comparison has finished, the project is loaded in DB Comparer automatically and you can start [working](#) with it.

[<Previous step](#)

#### See also:

[Setting database options](#)

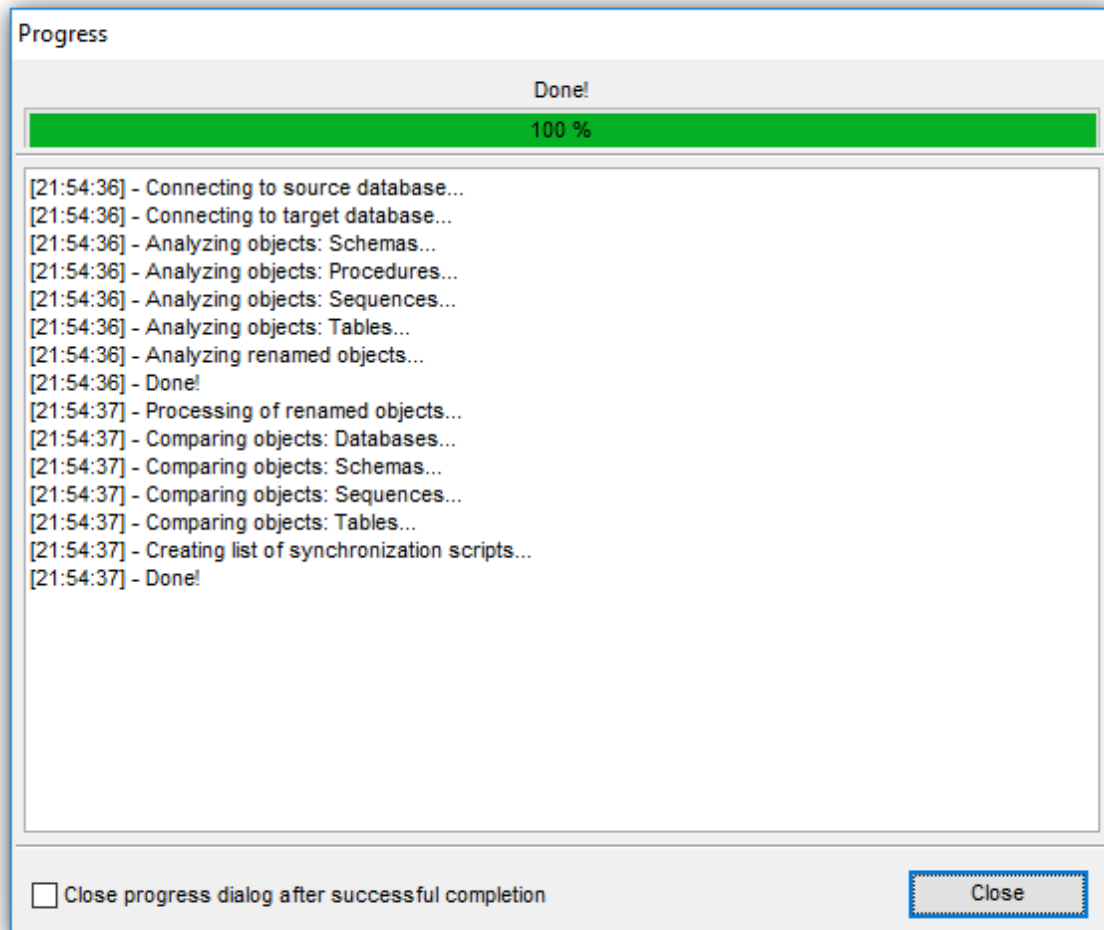
[Setting compare options](#)

[Select objects for compare](#)

[Renamed objects](#)

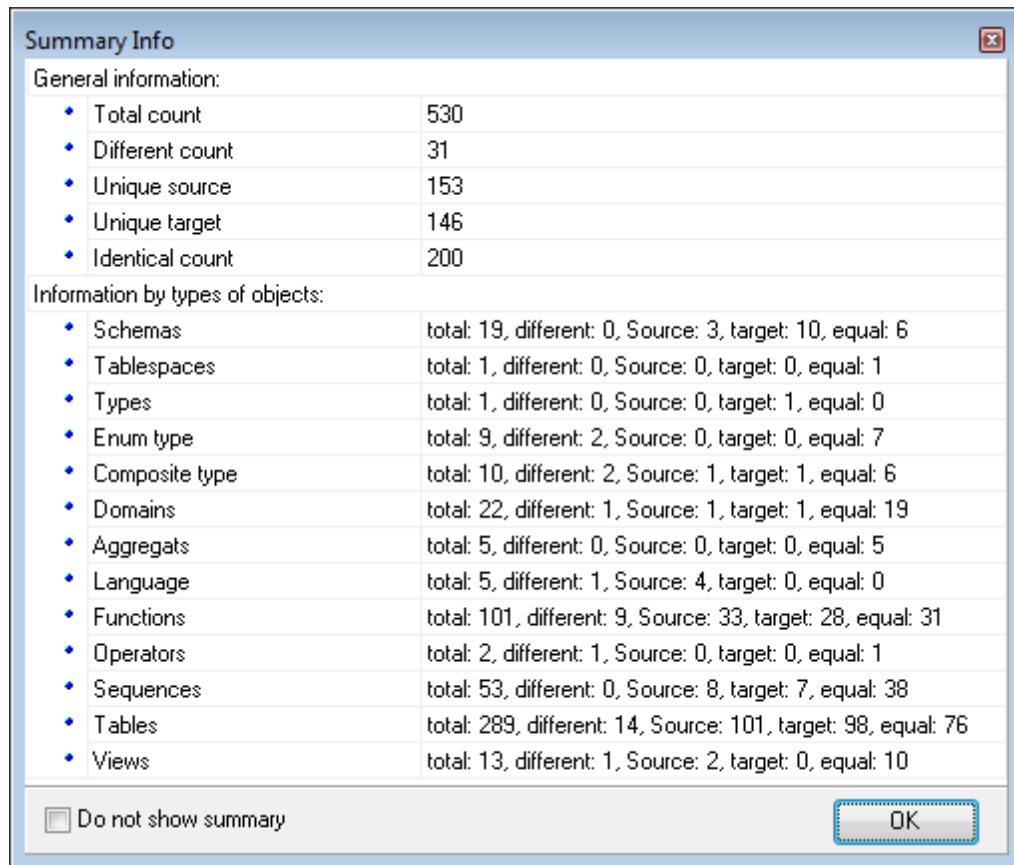
## 2.4 Viewing Summary Info

After you have [created/opened](#) a project, the selected databases/schemas are analyzed for differences. The **Progress** window displays the total progress of the comparison process and the sequence of operations performed by the utility appears.



**Note:** The comparing process cannot be stopped if [renamed objects](#) were found.

If the  **Show summary after comparing** option is selected in the [Confirmations](#) section of the [Environment Options](#) dialog, the **Summary Info** window appears upon completion of the comparing process. This window contains information concerning the differences between the compared databases/schemas.



To disable this window for the future projects, check the  **Do not show summary** option.

**See also:**

- [Creating Project](#)
- [Opening / Saving Project](#)
- [Compare Project Wizard](#)

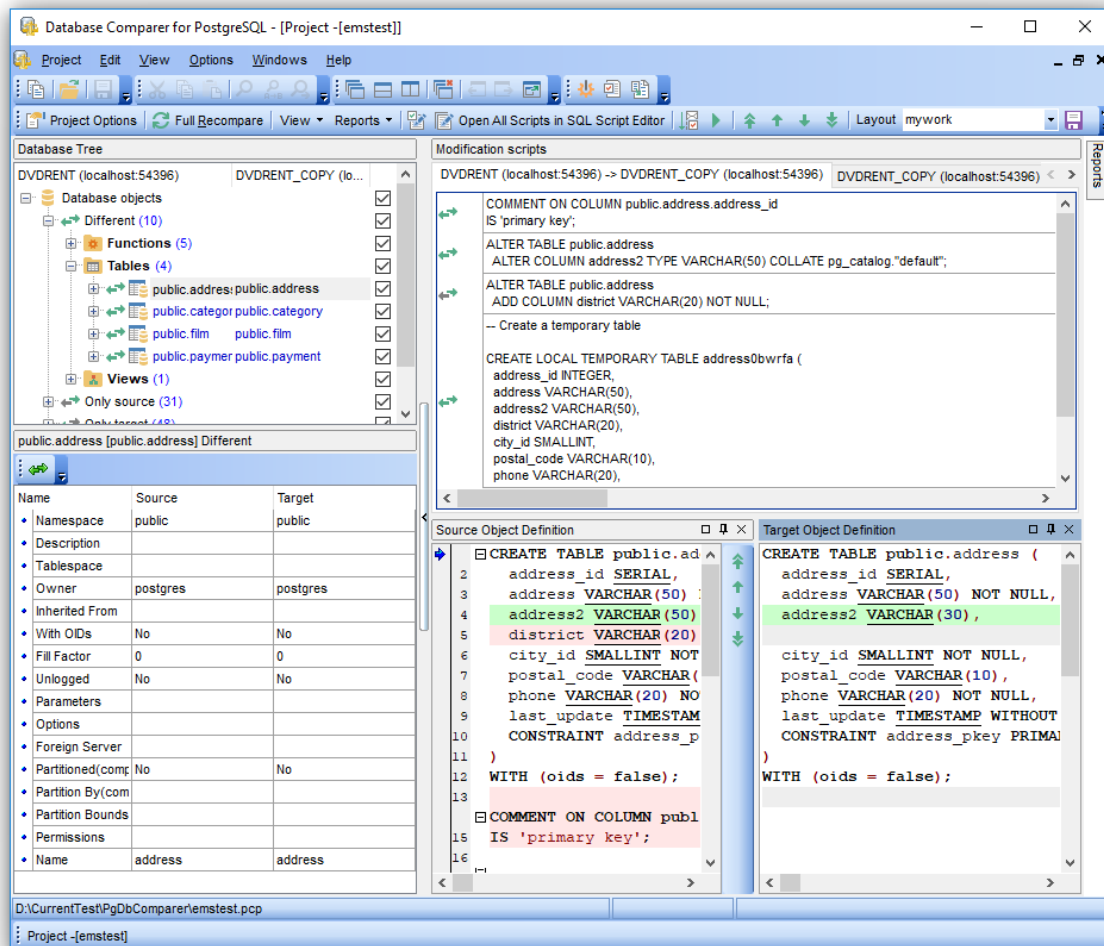
**Part**



### 3 Working with project


Having [created](#) or [opened](#) a project, you see the **Project window**.

By default, the Project window contains the [Database Tree](#), [Source and Target Object Definitions](#), [Modification Scripts](#) and [Information](#) windows.



When working with your project, you are provided with a powerful project toolbar which is available at the top of the project window.

 [Open project in Project Wizard](#).

 Perform a full recompare

#### View


- Show/hide Identical node in the [Database Tree](#)
- Choose the way objects should be grouped
- Show/hide All objects node in the [Database Tree](#)

#### Reports


The same reports are available on the **Reports** pane on the right side.


- View [Summary Info Report](#)
- View [Summary Info with Chart Report](#)
- View [Detailed Report](#)

 Open selected scripts in [SQL Script Editor](#)



 Open all scripts in SQL Script Editor

 Execute selected scripts

 Execute all scripts

    - change [script](#) order

### Layout

Use this drop-down list to specify a name for current positional layout of the windows. If necessary, you can click the  **Save Layout** toolbar button to save the layout for future use, or the  **Remove Layout** toolbar button if you do not need the current layout any longer.

---

### See also:

[Managing projects](#)

[SQL Script editor](#)

[Reports management](#)

[DB Comparer options](#)

[Console application](#)

## 3.1 Browsing database tree

The **Database Tree** contains the objects of both databases and is situated on the left (by default). It displays objects of both (source and target) databases side by side.

**Database Tree** consists of four major groups:

- ➡ *Different* (objects are to be modified to become identical with the same objects in the source/target databases)
- ➡ *Only Source* (objects that exist in the source database, but do not exist in the target database)
- ➡ *Only target* (objects that exist in the target database, but do not exist in the source database)
- ➡ *Identical* (objects in the source database coincide with the ones in the target database)

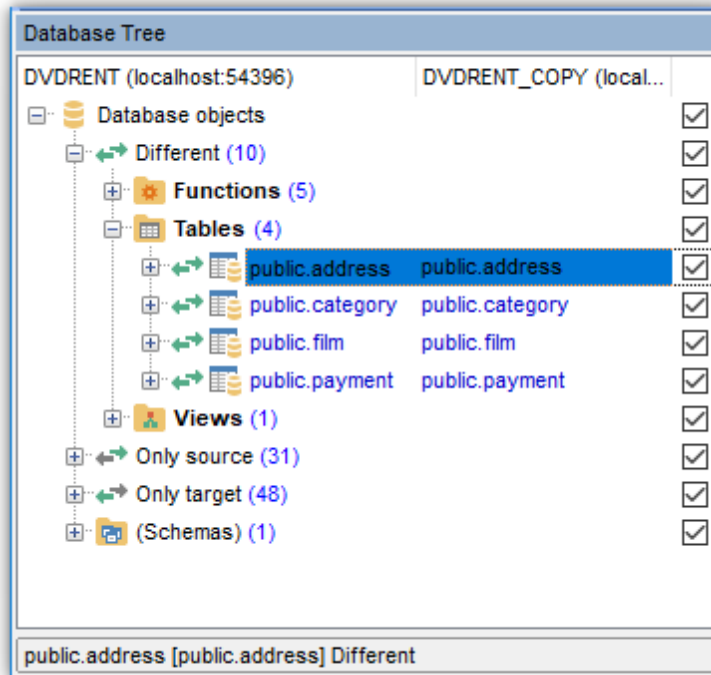
Numbers in brackets next to the captions of the group nodes denote the amount of objects inside each group.


The objects which are identical in both databases are displayed in black (by default). You can customize all the colors using the [Colors](#) section of the [Environment Options](#) dialog.

If **Forward Navigation** is enabled within the Project Options section of the [Environment Options](#) dialog, upon selecting an element in the Database Tree the corresponding entry will be selected in the [Modification scripts](#) window.


**Note:** You can expand and collapse lists of objects quickly using the context menu. Moreover, the context menu of the **DB Tree** allows you to open the appropriate modification scripts in [SQL Script Editor](#).

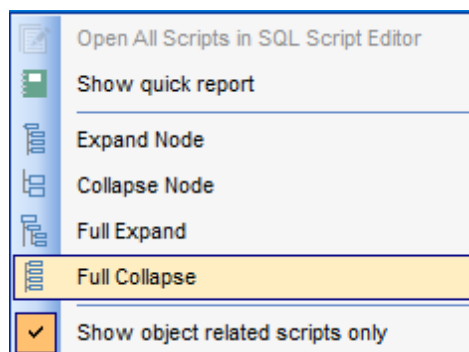




To refresh the **Database Tree**, use the corresponding  **Refresh** button on the toolbar or press *Ctrl+F5*. To refresh a selected group of objects only, right-click the node and select the corresponding context menu item (e.g. *Refresh tables* if you want to refresh the **Tables** group).

The **context menu** of the [DB Tree](#) allows you to:

-  open all scripts in [SQL Script Editor](#);
- refresh all objects of the type (depending on the current selection in [DB Tree](#));
- open a simple printing report of the tree;
- expand/collapse the selected node in the tree;
- enable [Forward Navigation](#) for the project.

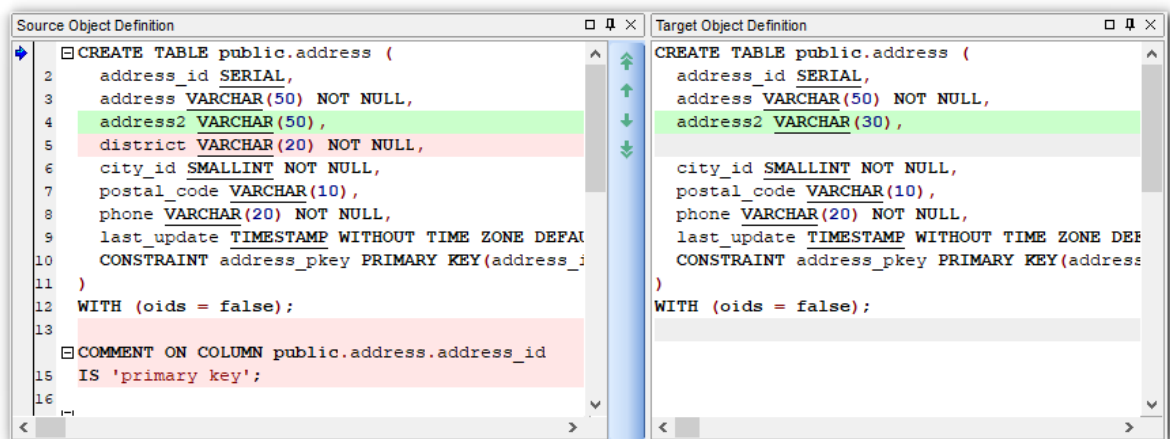


**See also:**[Viewing Summary Info](#)[Viewing Objects Definition](#)[Information window](#)[Working with Modification Scripts](#)[Switching windows](#)

## 3.2 Viewing objects definition

The **Source Object Definition** and the **Target Object Definition** windows contain the DDL structure (Data Definition Language) of the source and target database objects. This area is read-only, hence you cannot modify object definitions using **Object Definition** windows.

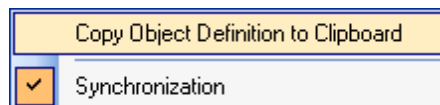
For your convenience visual representation of definition differences is implemented: you can see the corresponding DDL differences highlighted in both **Object Definition** windows. If necessary, you can customize the colors using the [Colors](#) section of the [Environment Options](#) dialog.



**Note:** You can show/hide these windows using the **View | Source Object Definition** and the **View | Target Object Definition** main menu items.

Use the arrow buttons to quickly get to the **Next\Previous** or **First\Last** difference.

### Popup menu



Use **Synchronization** to synchronize scrolling of the contents in both windows (i.e. when you scroll through one DDL text, the other scroll bar moves synchronously).

Use **Copy Object Definition** to copy the DDL displayed within the area to Windows clipboard.

**See also:**[Viewing Summary Info](#)[Browsing Database Tree](#)[Information window](#)[Working with Modification Scripts](#)[Switching windows](#)

### 3.3 Information window


The **Information** window displays detailed information on the database objects being compared.

Information	
Name	Source
• Schemas	total: 19, different: 0, Source: 3, target: 10,
• Tablespaces	total: 1, different: 0, Source: 0, target: 0,
• Types	total: 1, different: 0, Source: 0, target: 1,
• Enum type	total: 9, different: 2, Source: 0, target: 0,
• Composite type	total: 10, different: 2, Source: 1, target: 1,
• Domains	total: 22, different: 1, Source: 1, target: 1,
• Aggregats	total: 5, different: 0, Source: 0, target: 0,
• Language	total: 5, different: 1, Source: 4, target: 0,
• Functions	total: 101, different: 9, Source: 33, target: 28,
• Operators	total: 2, different: 1, Source: 0, target: 0,
• Sequences	total: 53, different: 0, Source: 8, target: 7,
• Tables	total: 289, different: 14, Source: 101, target:
• Views	total: 13, different: 1, Source: 2, target: 0,

Depending on the current selection in [DB Tree](#), the **Information** window either lists the total count of different objects in the source and the target database (if a group of objects is selected in [DB Tree](#)) or contains the complete list of properties of the source object as compared to the corresponding object in the target database (if a particular object is selected in [DB Tree](#)).

Production.function2() [Production.function2()] Different		
Name	Source	Target
• Aggregate(compare only)	No	No
• Cache	No	No
• Strict	No	No
• Is Window	No	No
• Definition	BEGIN	BEGIN
• Estimated Cost	1	100
• Estimated Rows	1	1000
• Object file	-	-
• Description		
• Arguments		

If an object property in the source database /schema differs from an object property in the target database /schema, it is highlighted (red by default) in the **Information** window.

Use the  button to hide identical objects.

**See also:**[Viewing Summary Info](#)[Browsing Database Tree](#)[Viewing Objects Definition](#)[Working with Modification Scripts](#)[Switching windows](#)

## 3.4 Working with modification scripts

The **Modification scripts** window displays differences between the database objects as a row of modification scripts.

To change the direction of synchronization switch between **Source to Target** and **Target to Source** tabs of the **Modification scripts** window.

### Script type

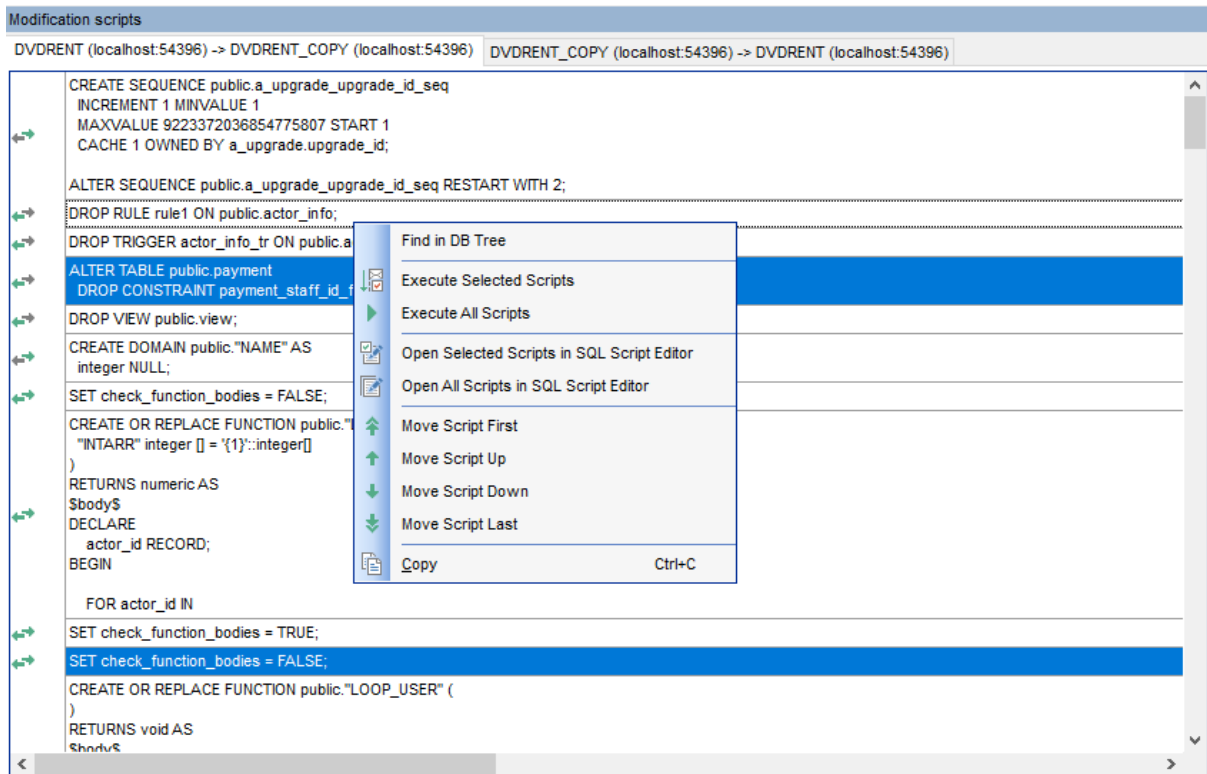
According to the kind of difference between objects in the Source and the Target databases, DB Comparer generates the following modification scripts:

- ➡ **ALTER** script: if there are different objects with the same name in the Source and the Target databases, script of this type is generated to eliminate the differences;
- ➡ **CREATE/ADD** script: if an object exists in the Source database and it does not exist in the Target database, script of this type is generated to create the object in the Target database;
- ➡ **DROP** script: if an object exists in the Target database and it does not exist in the Source database, script of this type is generated to drop the object in the Target database.








**Note:** Synchronization is always performed in one direction (i.e. in one database) depending on the tab selected.

**Note:** To change the height of the script entries, use the **List of modify scripts** group of options available within the [Preferences](#) section of the [Environment Options](#) dialog.

**Note:** multiple selection of script entries is possible with the *Ctrl* and *Shift* keys used.



The **context menu** allows you to:

- find the object (the one used in the selected script) in [DB Tree](#);
-  [execute](#) the selected modification script(s);
- [execute](#) all modification scripts of the project;
-  open the selected modification script(s) in [SQL Script Editor](#);
-  open all modification scripts of the project in [SQL Script Editor](#);
-    manage the order of the modification scripts;
-  copy the text of the selected script(s) to Windows clipboard.

### See also:

[Viewing Summary Info](#)

[Browsing Database Tree](#)

[Viewing Objects Definition](#)

[Information window](#)

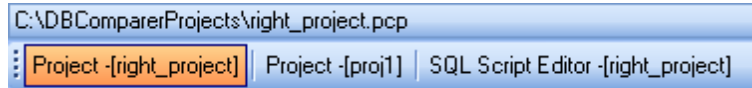
[Switching windows](#)



## 3.5 Switching windows

The **Windows Toolbar** allows you to switch between child windows easily, like in Windows Task Bar.

To activate the window you need, simply click one of the window buttons.



### See also:

[Viewing Summary Info](#)

[Browsing Database Tree](#)

[Viewing Objects Definition](#)

[Information window](#)

[Working with Modification Scripts](#)


**Part**



## 4 SQL Script editor


**SQL Script Editor** allows you to edit and execute SQL scripts for modifying compared databases.


### How to open SQL Script Editor

- Use  **Open all scripts in SQL Script Editor in the [DB Tree](#)** popup menu or on the toolbar.
- Double-click the modification script in the list or select the corresponding item of the context menu.
- Use **Edit --> New SQL Editor** from the main menu.

### How to work with the script

The **Database** combo-box allows you to switch source/target databases/schemas where the script is to be executed.

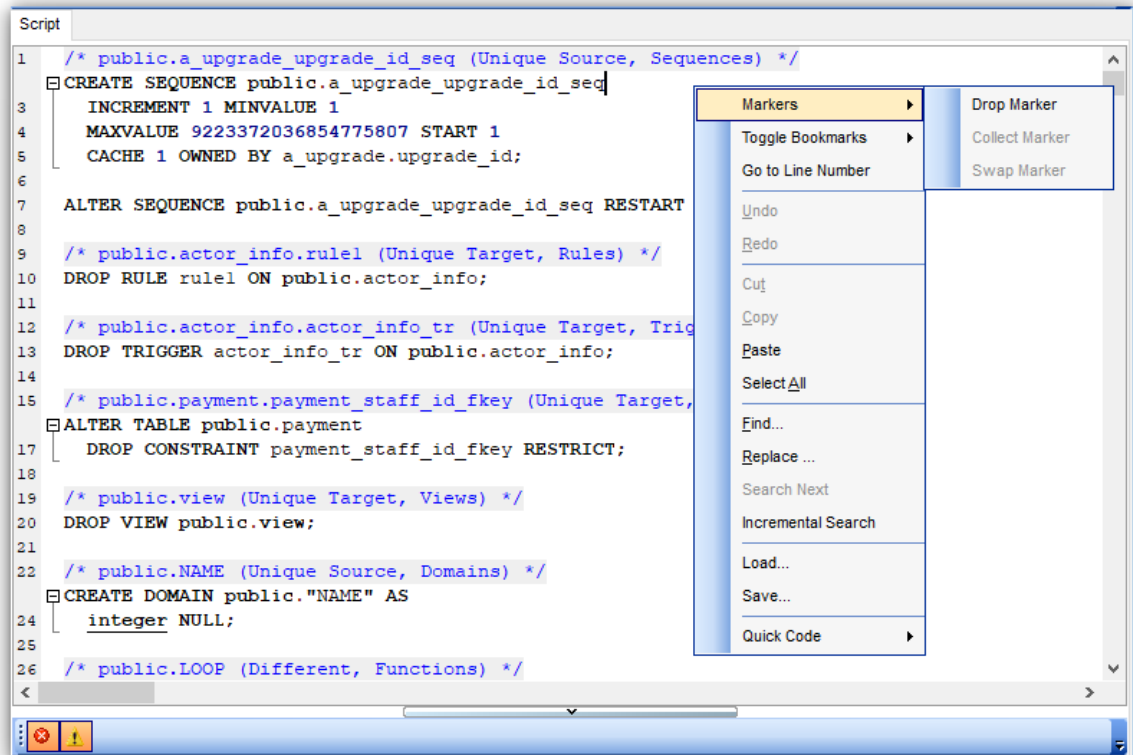
Use  **Save to file** button to save the current script.

Use  **Load from file** button to load the script from \*.sql file.

Press the  **Execute** toolbar button (or *F9*) to execute the script.



For your convenience the *syntax highlight*, *code completion* and a number of other features are implemented. If necessary, you can enable/disable or customize most of SQL Script Editor features using the [Editor Options](#) dialog.

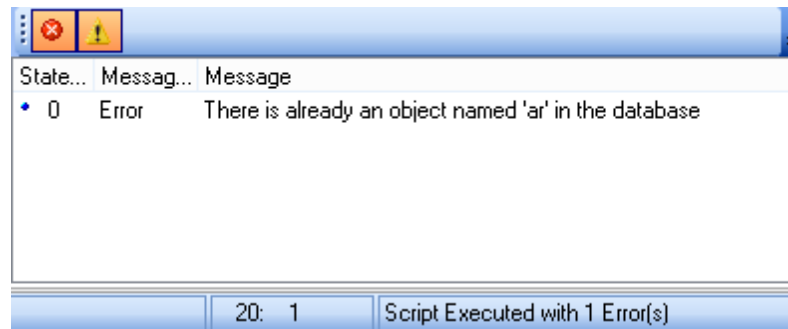
You can set the delay for code completion within the [Quick code](#) section or manually activate the completion list using the *Ctrl+Space* shortcut.



The **context menu** of SQL Script Editor area contains most of the standard text-processing functions (*Cut*, *Copy*, *Paste*, *Select All*) and specific functions for working with the script:

- the *Quick Code* submenu allows you to select a character, to toggle comments, to change case of currently selected text and to manage indents;
- saving and loading options;
- numerical bookmarks to make navigation within the script easier. Use the **Toggle Bookmarks** context menu item to select a number to label the current code line. If you want to jump to a bookmark, select the **Goto Bookmarks** context menu item and pick one of the existing bookmarks within the submenu;
- the *Go to Line Number* item allows you to jump to the specified line;
- you can drop marker (F2), collect marker (ESC) or swap markers (last dropped marker will be moved to the current cursor position, and the cursor will be set to the initial marker position);
- implementation of the [Find Text](#) and the [Replace Text](#) dialogs contributes to more efficient work with the SQL code.

The **Log** area displays errors and messages on script execution. You can toggle displaying of  **errors** and  **warnings** with the corresponding buttons.



---

**See also:**

[Managing projects](#)

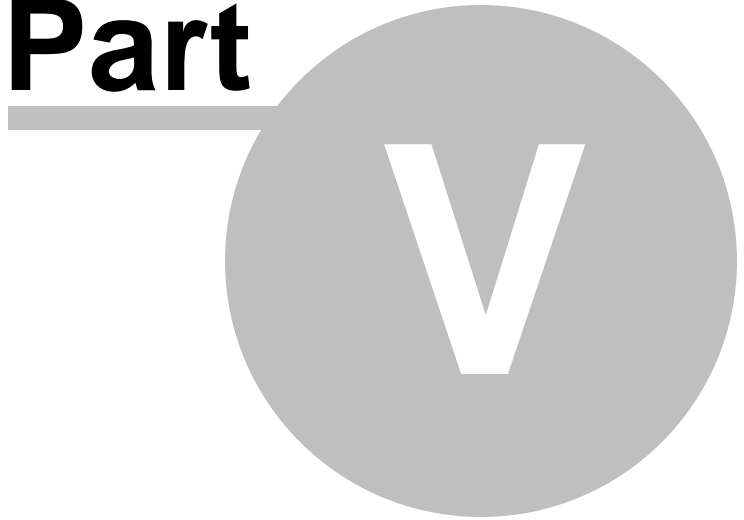
[Working with project](#)

[Reports management](#)

[DB Comparer options](#)

[Console application](#)

**Part**

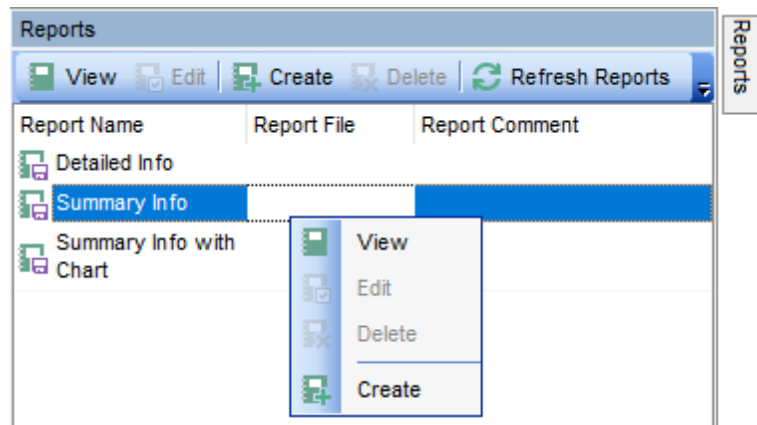


## 5 Reports management

**DB Comparer for PostgreSQL** provides [Report Designer](#) for creating powerful reports.

By default, the **Reports** panel is located on the right side of the project window. It has some [sample reports](#) which cannot be edited. Using its toolbar buttons you can create, delete, view and edit custom reports.

- [Report Designer](#)
- [Sample reports](#)



### See also:

- [Managing projects](#)
- [Working with project](#)
- [SQL Script editor](#)
- [DB Comparer options](#)
- [Console application](#)


## 5.1 Report designer

**Report Designer** allows you to create and edit reports. This tool is opened when you create a report in the **Reports** window or select any of the existing reports for editing. For your convenience there are several [sample reports](#) available.

This module is provided by FastReport (<http://www.fast-report.com>) and has its own help system. Press **F1** key in the **Report Designer** to call the **FastReport** help.

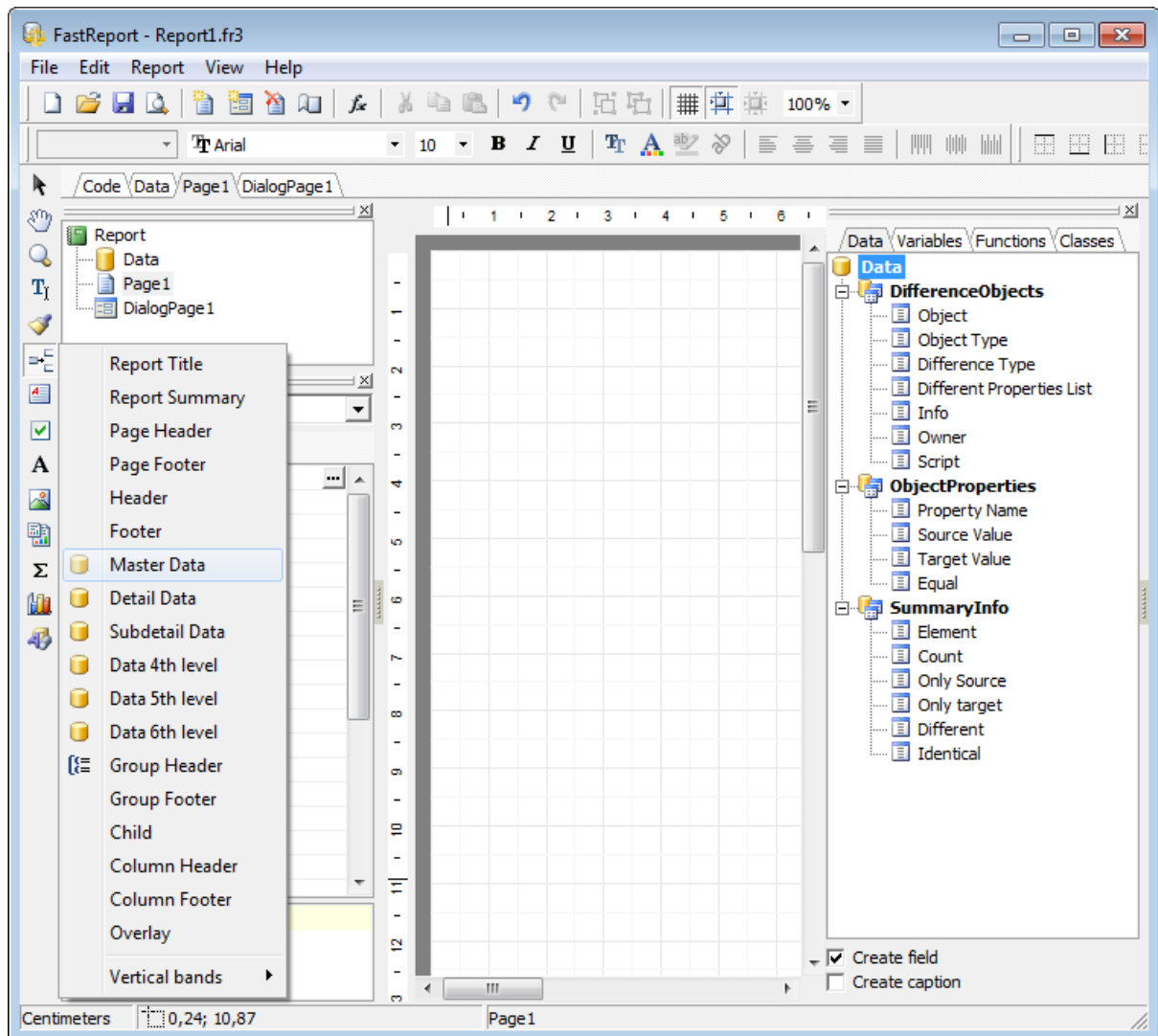
Please find the instructions on how to create a simple report in **Report Designer** below:

### Adding bands

- proceed to the **Page1** tab of **Report Designer**;
- select the  **Insert Band** component on the toolbar (on the left);
- select the band to be added to the report;
- click within the working area - the corresponding element appears in the area;
- set element properties within the **Properties Inspector**.

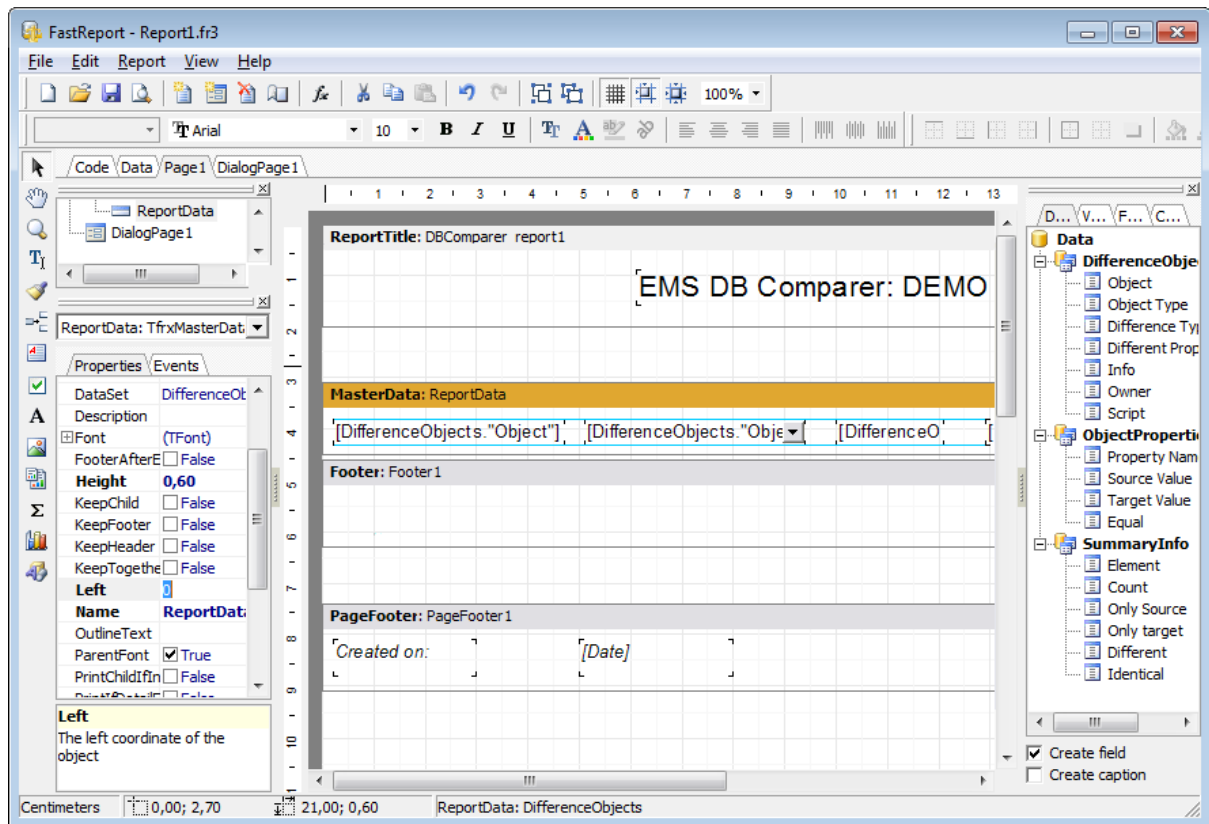
**Note:** The **Properties Inspector** panel that allows you to edit report object properties can be shown/hidden by pressing the **F11** key.





### Adding report data

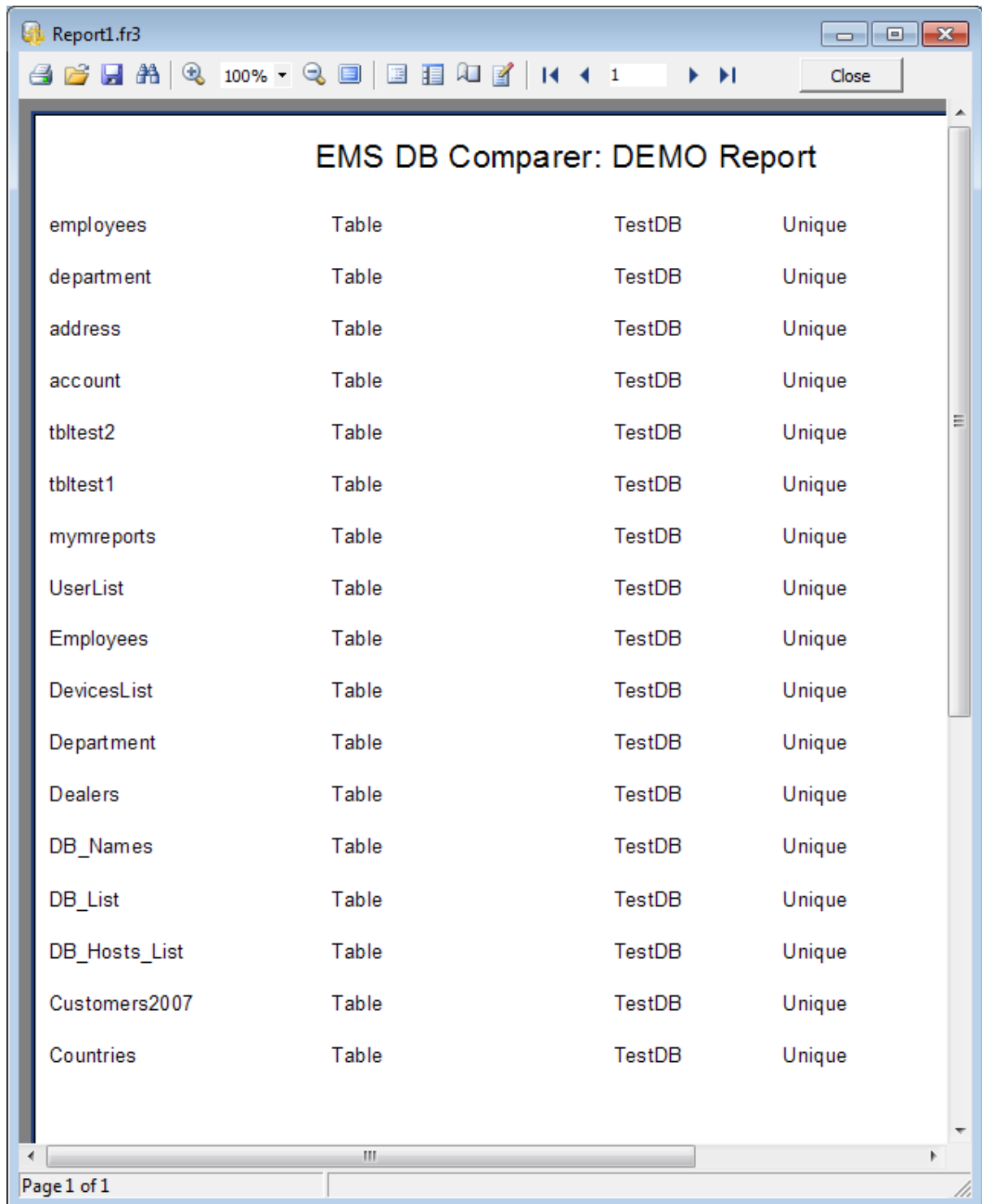
- proceed to the **Data** tab within the panel on the right side of the window;
- pick an element within the **Data** tree and drag it to the working area;
- add all necessary elements one by one using drag-and-drop operation for each of them.



### Viewing the report

To preview the newly created report, select the **Project | Preview** main menu item or use the corresponding **Preview** toolbar button. You can also use the *Ctrl+P* shortcut for the same purpose. This mode allows you to view, edit and print the result report.

To print the report, use the **Print** toolbar button or the corresponding context menu item.



Report1.fr3

100% Close

### EMS DB Comparer: DEMO Report


employees	Table	TestDB	Unique
department	Table	TestDB	Unique
address	Table	TestDB	Unique
account	Table	TestDB	Unique
tbltest2	Table	TestDB	Unique
tbltest1	Table	TestDB	Unique
mymreports	Table	TestDB	Unique
UserList	Table	TestDB	Unique
Employees	Table	TestDB	Unique
DevicesList	Table	TestDB	Unique
Department	Table	TestDB	Unique
Dealers	Table	TestDB	Unique
DB_Names	Table	TestDB	Unique
DB_List	Table	TestDB	Unique
DB_Hosts_List	Table	TestDB	Unique
Customers2007	Table	TestDB	Unique
Countries	Table	TestDB	Unique

Page 1 of 1

### Saving the report

When all report parameters are set, you can save the report to an external \*.fr3 file on your local machine or in a machine in the LAN.

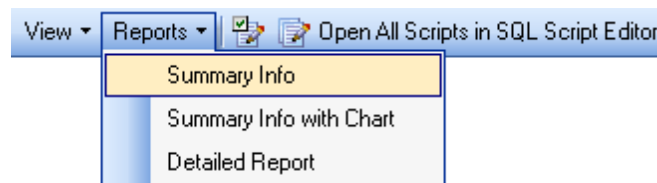
To save the report, select the **Project | Save** main menu item or use the corresponding

 **Save Report** toolbar button. You can also use the *Ctrl+S* shortcut for the same purpose.

## 5.2 Sample reports

There are several sample reports implemented in [Report Designer](#): *Detailed Info*, *Summary Info with Chart*, *Summary Info*.

Sample reports can be accessed from the utility toolbar or from the **Reports** panel on the right side.



### Detailed info

This sample report provides you with the complete list of compared database objects with their DDL, properties and their values.

**Detailed Info**

Master database:  
Target database: ayz\_moved (ayz2:54383)  
Generated: 09.06.2012 30.12.1899 10:07:02

---

**public.Address\_new2.Address\_new2\_rl**  
Rules, Unique Target

Script: DROP RULE "Address\_new2\_rl" ON public."Address\_new2";

Identical	Property Name	Master Value	Target Value
*	Description		
*	Where		
*	Instead		No
*	Event		INSERT
*	Action		DELETE FROM a1;
*	Name		Address_new2_rl

---

**public.testsequence.testsequence\_pkey**  
Indices, Unique Target

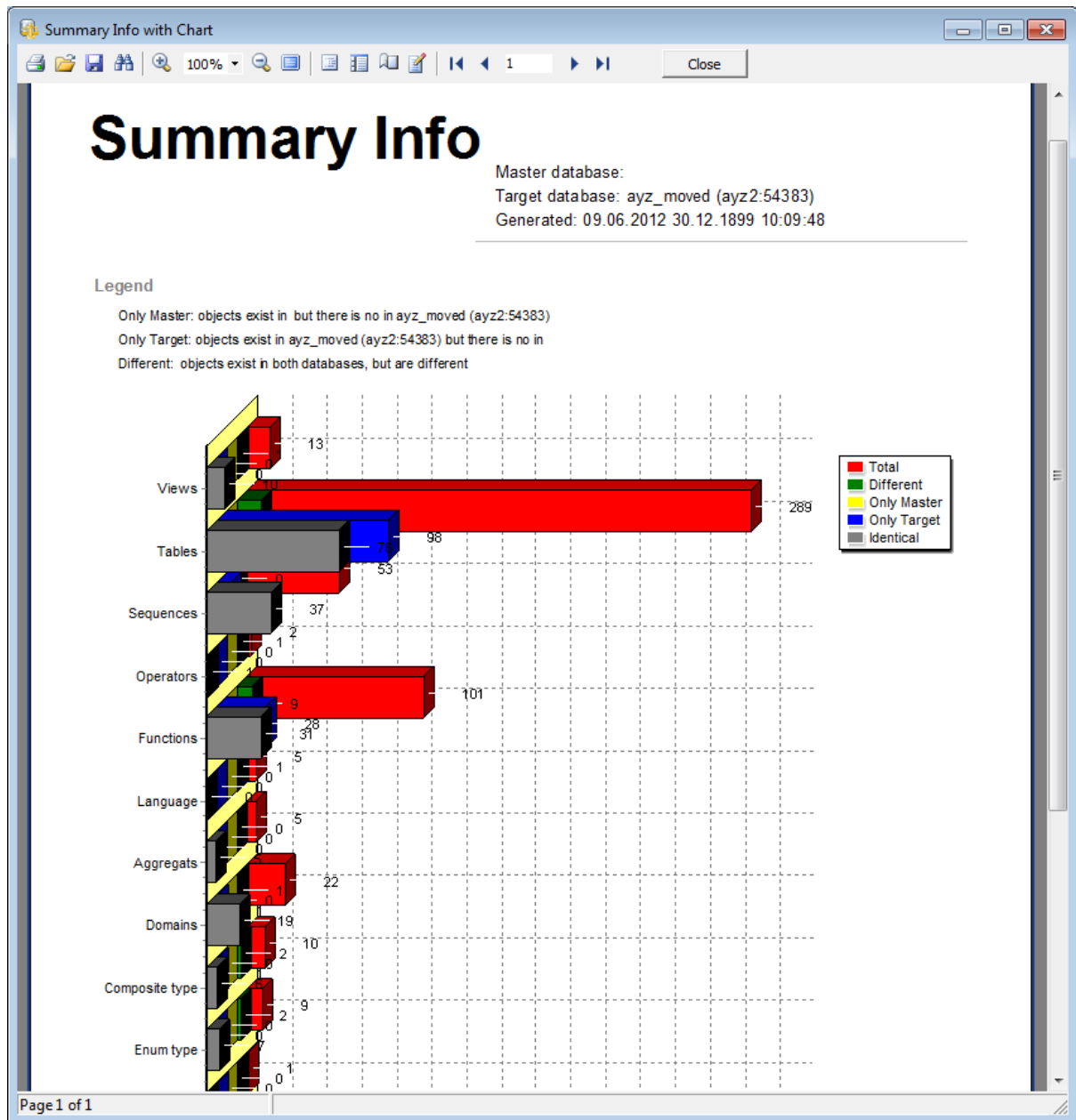
Script: ALTER TABLE public.testsequence  
DROP CONSTRAINT testsequence\_pkey RESTRICT;

Identical	Property Name	Master Value	Target Value
*	Description		
*	Fields		serialvalue
*	Where		

Page 1 of 24

### Summary Info With Info Chart

Use this sample report to get graphical summary info about the compared databases.



### Summary Info

The result of this report is a table with the summary numeric information about compared databases.

Summary Info

Master database:  
Target database: ayz\_moved (ayz2:54383)  
Generated: 09.06.2012 30.12.1899 10:10:33

Element	Different	Only Master	Only Target	Identical	Total
Schemas	0	0	10	6	19
Tablespaces	0	0	0	1	1
Types	0	0	1	0	1
Enum type	2	0	0	7	9
Composite type	2	0	1	6	10
Domains	1	0	1	19	22
Aggregats	0	0	0	5	5
Language	1	0	0	0	5
Functions	9	0	28	31	101
Operators	1	0	0	1	2
Sequences	0	0	8	37	53
Tables	14	0	98	76	289
Views	1	0	0	10	13
<b>Total:</b>	<b>31</b>	<b>0</b>	<b>147</b>	<b>199</b>	<b>530</b>

Legend

- Only Master: objects exist in but there is no in ayz\_moved (ayz2:54383)
- Only Target: objects exist in ayz\_moved (ayz2:54383) but there is no in
- Different: objects exist in both databases, but are different

Page 1 of 1

**Part**





## 6 DB Comparer options

DB Comparer for PostgreSQL provides full customization of the program interface, windows behavior, various options of all tools and more. This chapter informs you how to use these options.

### **[Environment Options](#)**

General options: environment style, confirmations, project options, compare options, fonts, colors and more.

### **[Editor Options](#)**

Customizing of the [SQL editing tool](#).

### **[Keyboard Templates](#)**

Managing keyboard templates for quicker typing regularly used expressions in [SQL editor](#).

### **[Selecting program language](#)**

---

#### **See also:**

[Managing projects](#)

[Working with project](#)


[SQL Script editor](#)

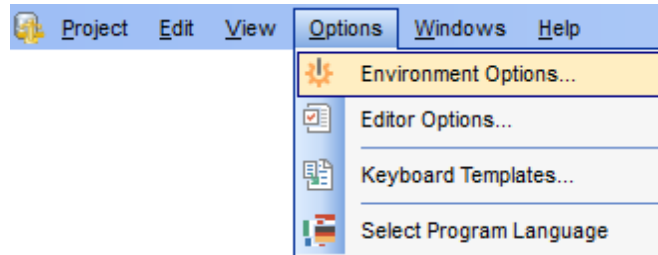
[Reports management](#)

[Console application](#)

## 6.1 Environment options

**Environment Options** allow you to customize general options of the DB Comparer application.

To open the **Environment Options** window, select the **Options | Environment Options...** main menu item, or use the  **Environment Options** button on the main toolbar.



[Preferences](#)  
[Confirmations](#)  
[Compare Options](#)  
[Languages](#)  
[Colors](#)

The **Default** button located at the bottom of the **Environment Options** form can be used to set option values to defaults.

---

### See also:

[Editor Options](#)  
[Keyboard Templates](#)

### 6.1.1 Preferences

#### Schema

Select the main color theme for the application: Light, Blue or Dark.

#### General

**Save passwords into project file**

If this option is checked, database connection passwords are saved in project files.

**Show object related scripts only**

If this option is checked then the script of only selected in [DB Tree](#) object is displayed in the [Modification scripts](#) window.

**Hide identical objects**

This option can be used to hide the identical objects in [DB Tree](#). It makes navigation easier and may increase the navigation speed.


**Load connection info for new projects**

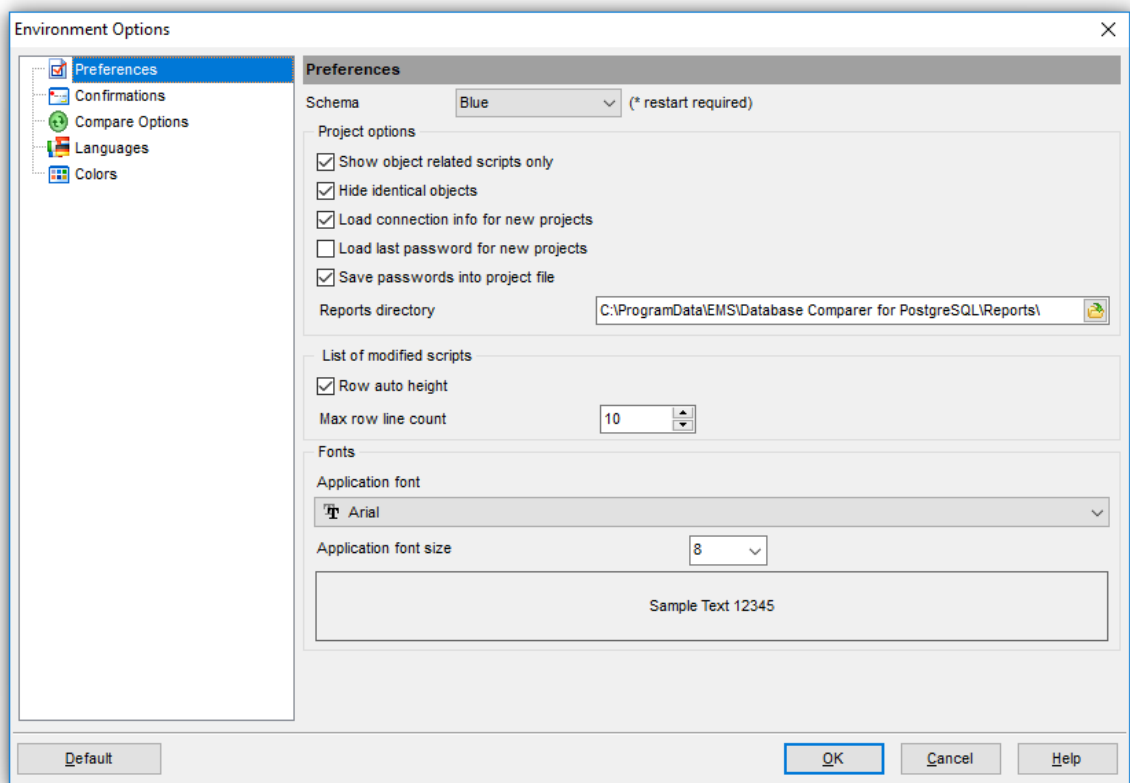
This option can be used to insert the latest used login automatically when [creating a new project](#).

**Load last password for new projects**

This option can be used to insert the latest used password automatically when [creating a new project](#).

### Reports directory

Use the  **Explorer** button to specify the directory where DB Comparer [reports](#) will be stored by default.



### List of modified scripts

**Row auto height**

If this option is selected, script row height in the [Modification Scripts](#) area is adjusted to the content automatically.

### Max row line count

Defines the maximum number of lines displayed in each script row in the [Modification Scripts](#) area.

### Fonts

#### Application font

Defines the font used by DB Comparer for PostgreSQL. Select the font name from the

drop-down list of available system fonts.

**Application font size**

Defines the font size used by DB Comparer for PostgreSQL. Type in or use the spin editor to specify the required value.

The box below displays the sample text with the selected font applied.

---

**See also:**

[Confirmations](#)

[Compare Options](#)

[Languages](#)

[Colors](#)

## 6.1.2 Confirmations

 **Confirm exit from DB Comparer for PostgreSQL**

If this option is set, you are prompted for confirmation each time when you exit the application.

 **Recompare object after executing the script**

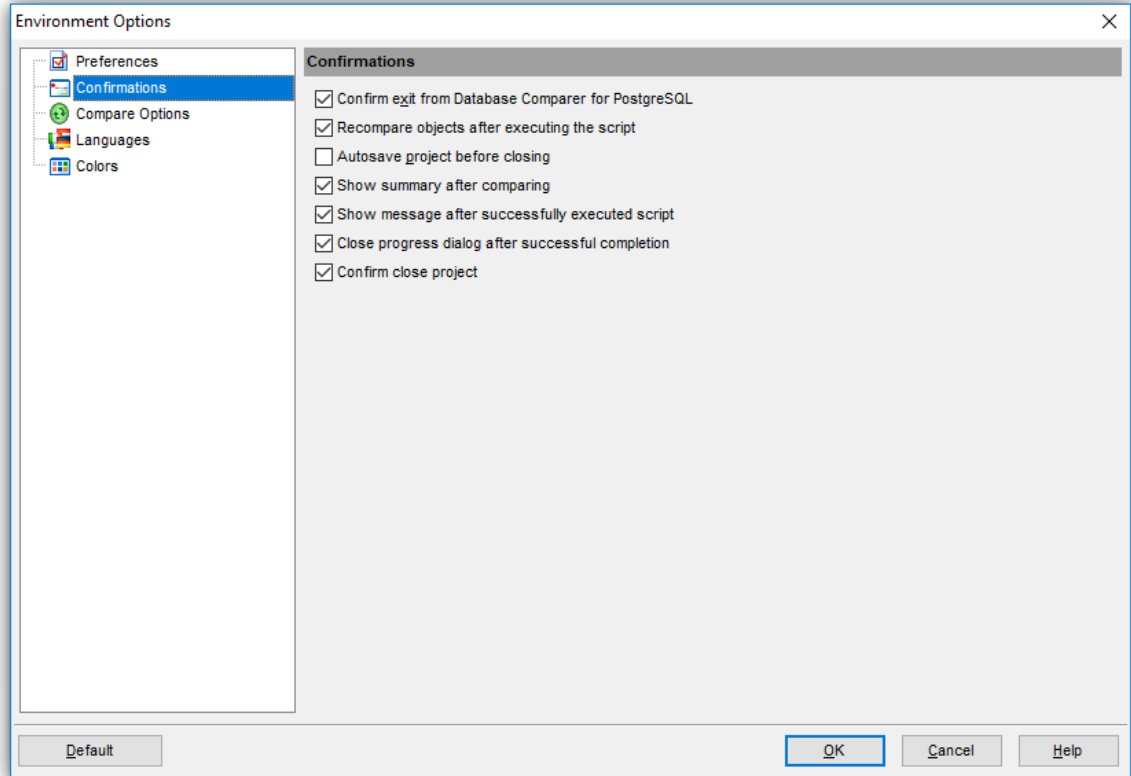
The process of re-comparing objects starts automatically right after execution of the modification script.

 **Autosave project before closing**

Disables/enables a confirmation window that appears upon closing the project. If the option is checked, modifications made in the project are saved automatically.

 **Show summary after comparing**

Toggles displaying the [Summary Info](#) window that appears after the comparison process is finished.



**Show message after successfully executed script**

Toggles the *Script executed successfully* message upon successful [script execution](#).

**Close progress dialog after successful completion**

If this option is selected, the project dialog is closed automatically when the operation is completed successfully.

**Confirm close project**

If this option is set, you are prompted for confirmation each time when you exit the project.

---

**See also:**

[Preferences](#)

[Compare Options](#)

[Languages](#)

[Colors](#)

### 6.1.3 Compare options

Set specific parameters of comparison for each type of database objects.

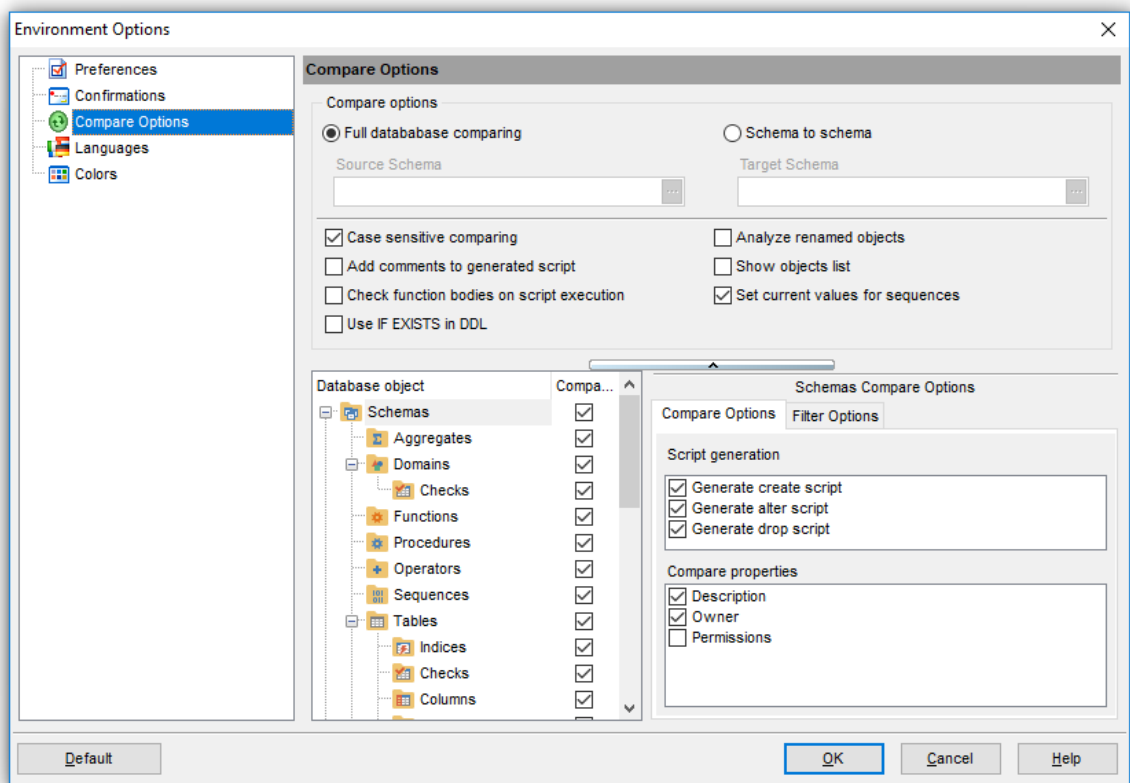
#### Compare options

Here you can specify whether to perform *Full database* or *Schema to schema* comparing. In the latter case select *Source* and *Target* schemas by clicking the  ellipsis button of the corresponding controls.

Select an object type in the **object tree**, set a flag to include the object type into the comparison process and define **Compare properties** in the corresponding group within the **Compare Options** tab.

The **Script generation** group allows you to specify whether a specific type of script (*CREATE*, *ALTER*, *DROP*) should be generated for objects of the selected type.

The **Select All**, **Unselect All** and **Invert Selection** buttons are implemented to make options selection easier.



**Case sensitive comparing**

Enable this option to make the comparing process case sensitive.

**Analyze renamed objects**

This option enables/disables comparing databases object which might have been renamed.

**Do not set current values for sequences**

If this option is checked then the sequence in the target database is created with the '0' start value.

**Show objects list**

If this option is checked the list of all objects is displayed on the next step. If there is no need to check the list of retrieved objects you can uncheck this option to speed up comparison process.

 **Check function bodies on script execution**

If this option is disabled then a script will be executed even in case the function body is syntactically incorrect.

 **Add comments to generated script**

Use this option to toggle comments in [modification script](#).

You can also set filtering criteria for objects to be compared. Use the **Filter options** tab for that purpose. For details see [Setting compare options](#).

---

**See also:**

[Preferences](#)

[Confirmations](#)


[Languages](#)

[Colors](#)

## 6.1.4 Languages

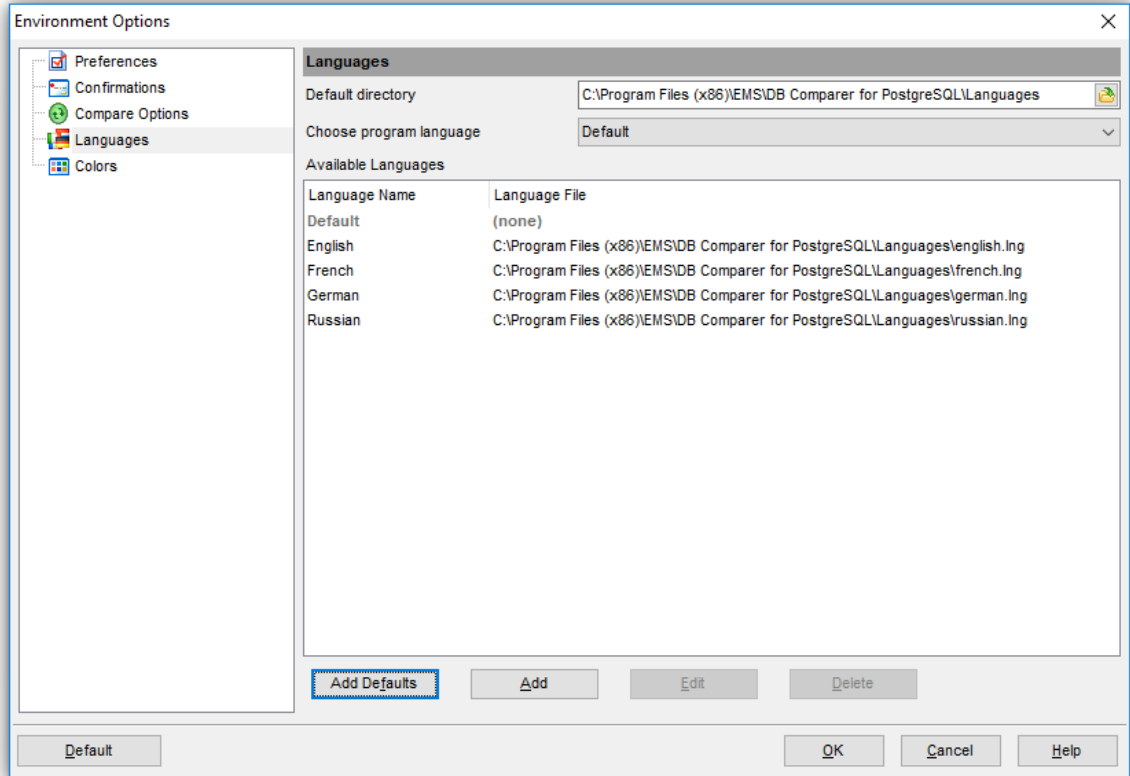
You can create your own *\*.lng* files similar to those available in the %program\_directory%\Languages folder, add them to the list of available languages and set the new language as the program interface language.

**Default directory**

Use the  button to specify the directory where the *\*.lng* files are to be stored by default.

**Choose program language**

Use the drop-down list of available languages to select the interface language to be applied to the application.



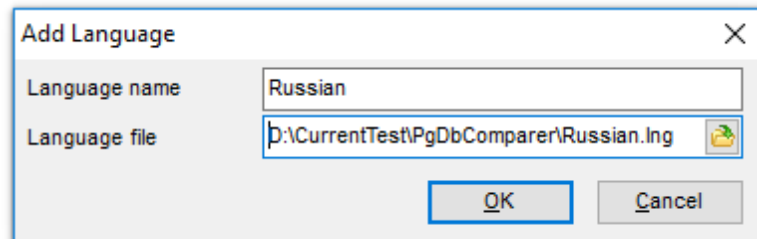
In the **Available Languages** area the list of available languages and the names of the corresponding localization (\*.Ing) files is displayed. You can manage the list of languages using the buttons below.

### Add Defaults

Adds languages from the default directory to the list of available languages.

### Add

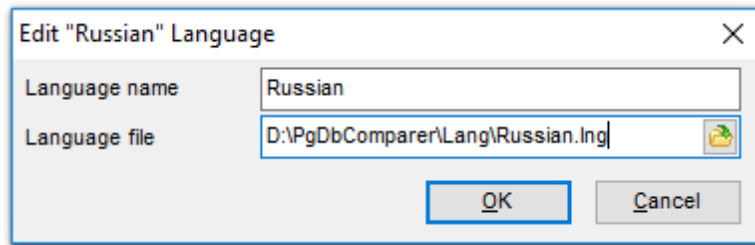
Opens the *Add language* dialog where you can specify your own localization file and set the language name.



### Edit

Opens the *Edit language* dialog where you can change the language name or select another localization file for the specified language.



**Delete**

Removes the selected language from the **Available languages** list (without confirmation).

---

**See also:**

[Preferences](#)

[Confirmations](#)

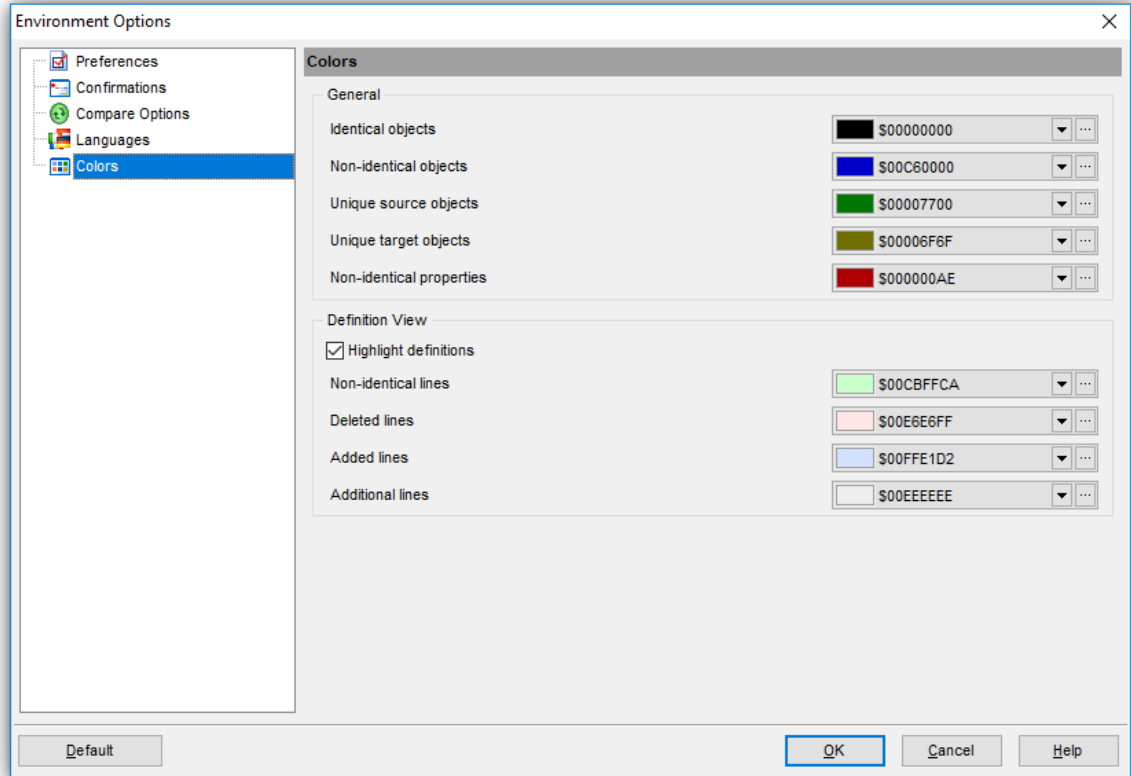
[Compare Options](#)

[Colors](#)

### 6.1.5 Colors

This section of the **Environment Options** dialog allows you to set colors of various elements used in your [project](#):

General colors used in [DB Tree](#) (*Identical objects, Non-identical objects, Unique source objects, Unique target objects, Non-identical properties*) and [Definition View](#) colors (*Non-identical lines, Deleted lines, Added lines, Additional lines*).



### General

Options of this group allow you to set colors for basic [DB Tree](#) elements. Select a system color from the list or use the  ellipsis button to open the **Color** dialog allowing you to select the required color from the palette.

### Definition View

Options of this group allow you to set colors for [Definition View](#) elements. Select a system color from the list or use the  ellipsis button to open the **Color** dialog allowing you to select the required color from the palette.

---

### See also:

[Preferences](#)


[Confirmations](#)

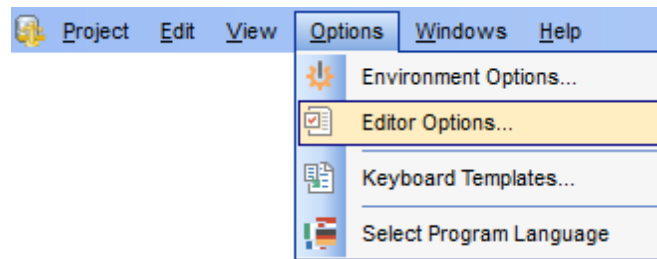
[Compare Options](#)

[Languages](#)

## 6.2 Editor options

**Editor Options** dialog allows you to set the parameters of SQL statements viewing and editing in DB Comparer for PostgreSQL.

To open the **Editor Options** window, select the **Options | Editor Options...** main menu item, or use the  **Editor Options** button on the main toolbar.



[General](#)  
[Display](#)  
[Color](#)  
[Quick Code](#)

---

### See also:

[Environment Options](#)  
[Keyboard Templates](#)

### 6.2.1 General

**Auto indent**

If this option is checked, each new indentation is the same as in the previous line in [SQL Script Editor](#).

Indents and outdents are used in the process of text editing to make the source code easier to read.

**Insert mode**

If this option is checked, the insert symbols mode is on by default.

**Use syntax highlight**

Enables syntax highlight in the [editor area](#).

**Find text at cursor**

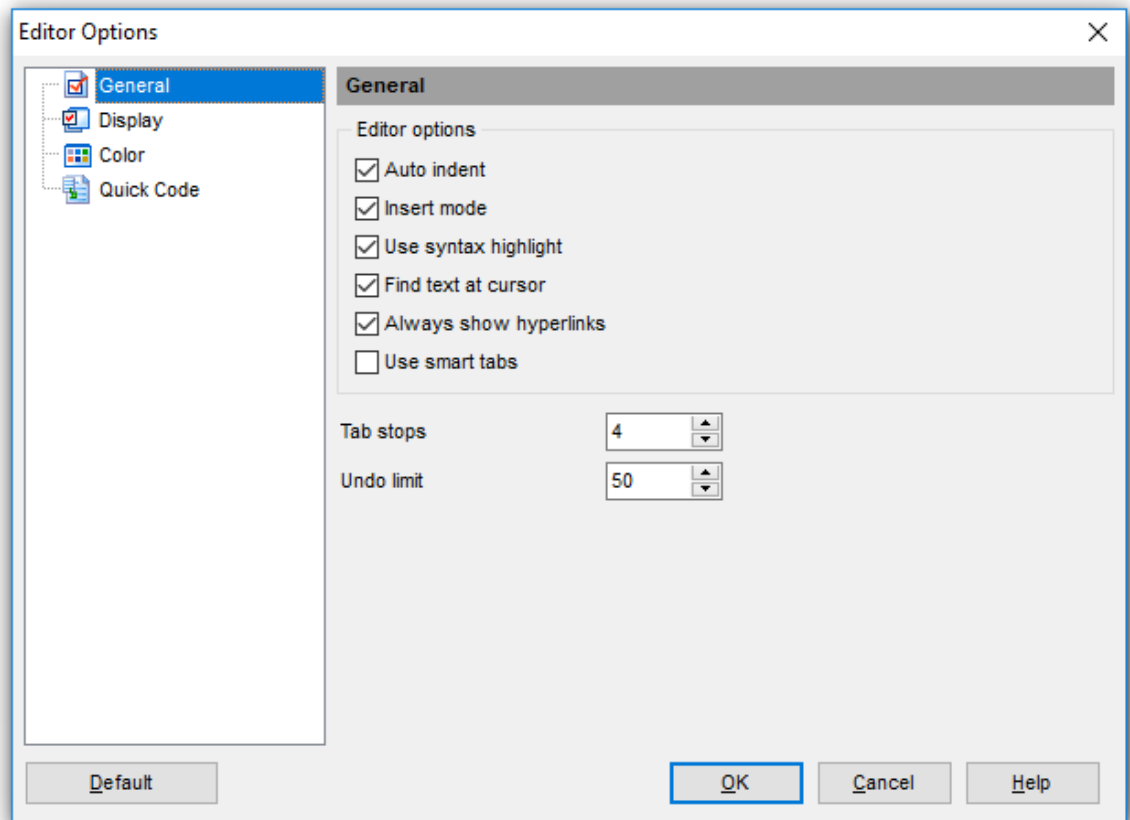
If this option is checked, the **Text to find** field in the [Find Text](#) and the [Replace Text](#) dialog windows is automatically filled with the text the cursor is set over.

**Always show hyperlinks**

If this option is checked, hyperlinks are displayed in the editor window. To open a link, click it with the *Ctrl* key pressed.

**Use smart tabs**

If this option is checked, the tab length is variable. After pressing the *Tab* key the cursor aligns with the nearest first (or last) position of the neighboring line.



### Tab stops

Defines the tab length used when [editing SQL text](#).

### Undo limit

Defines the maximum number of changes that can be undone.

---

### See also:

[Display](#)

[Color](#)

[Quick Code](#)

## 6.2.2 Display

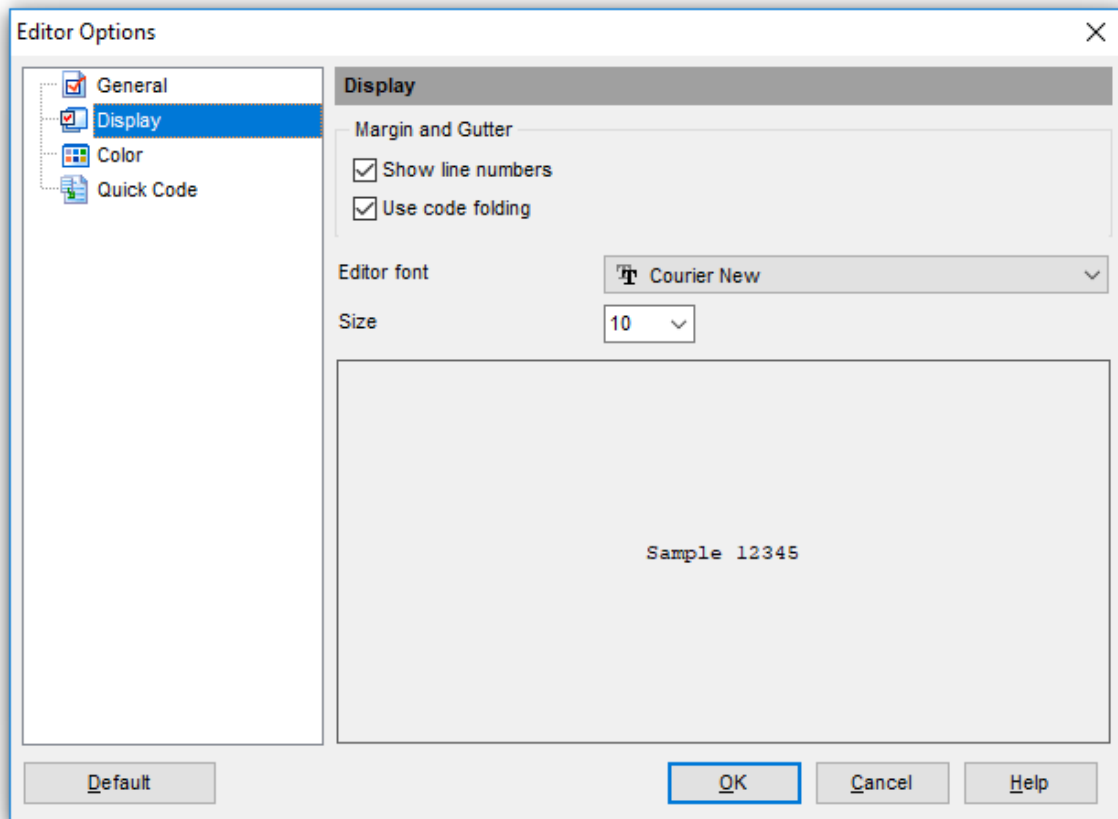
### Gutter

#### Show line numbers

Make line number visible in the left margin.

**Use code folding**

Enable folding of code blocks.

**Editor font, Size**

Use these options to set the editor font and its size.

The box below displays the *sample text* with the selected font applied.

**See also:**

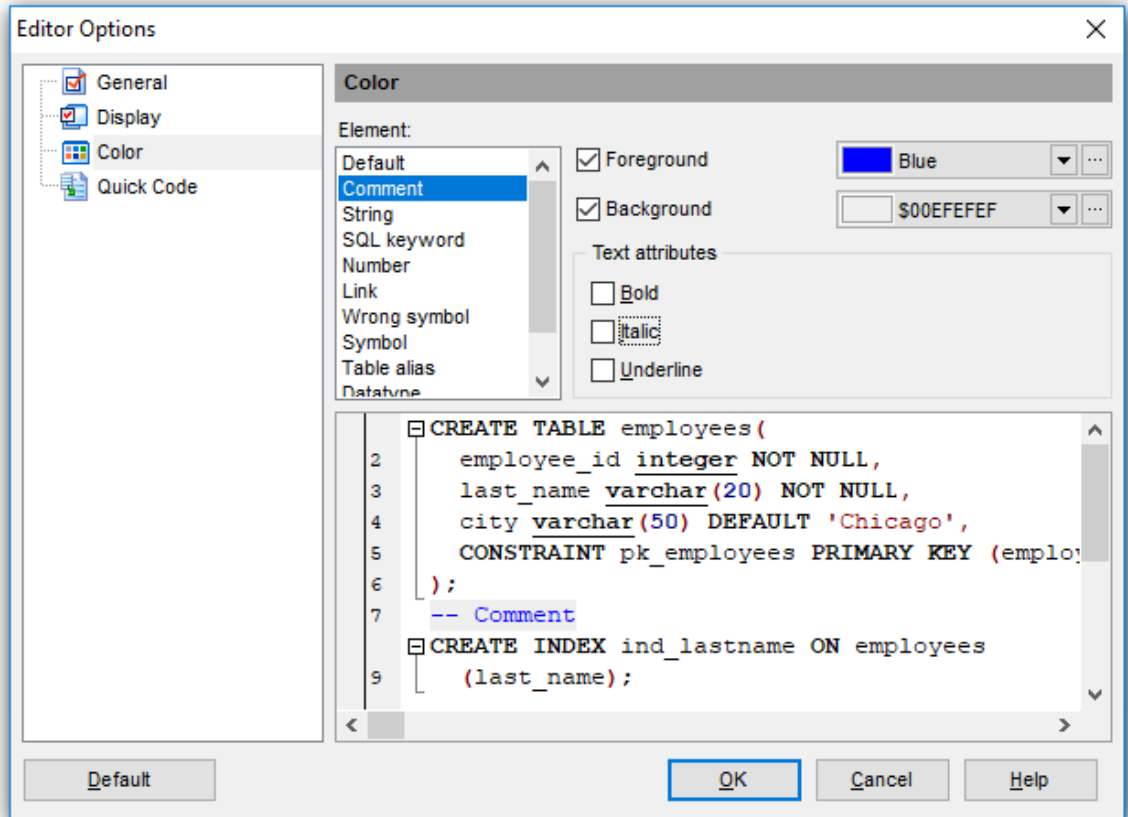
[General](#)

[Color](#)

[Quick Code](#)

### 6.2.3 Color

In the **Color** section of the **Editor Options** dialog you can set the background colors and text attributes (**Bold**, *Italic*, Underlined) used by [the editor](#) to mark out different text fragments: *Default*, *Comments*, *Strings*, *SQL Keywords*, *Numbers*, *Wrong Symbols*, *Identifiers*, *Symbols*, *Tables*, *Selected Text*, etc.



Use the **Foreground color** control to open the **Color** dialog allowing you to select the required color from the palette. Click the **Background color** control to select the required color using the **Color** dialog or leave the default value (white) if no background color is necessary for the selected text fragment.

#### See also:

[General](#)

[Display](#)

[Quick Code](#)

### 6.2.4 Quick code

#### Code completion

If this option is checked, then on typing the first characters in [SQL Script Editor](#) you are offered several options for the word completion as a popup list (an analogue of the *Code Insight* list in Delphi IDE). The code completion list popups after a delay defined by the **Delay** option.

#### Code parameters

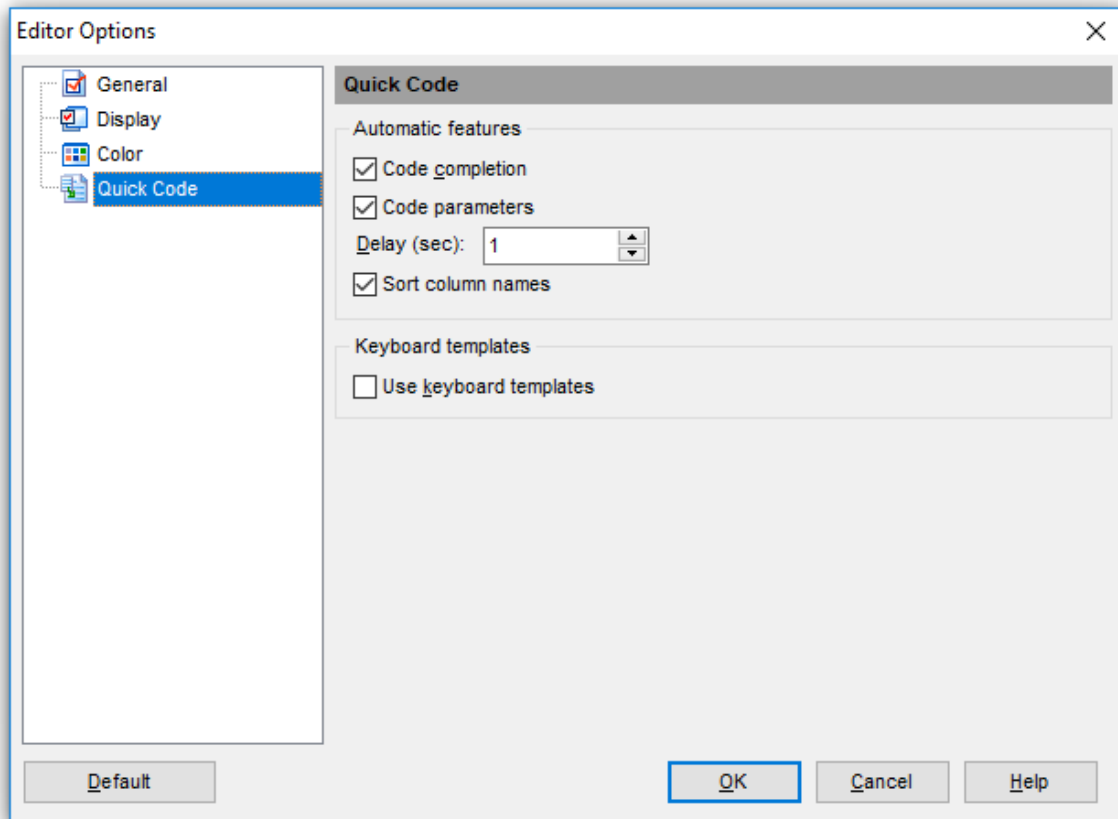
If this option is checked, the Delphi-like hint for key words is enabled.

**Delay (sec)**

Using this option you can change the time for code completion popup.

 **Sort column names**

Enable sorting of objects in the popup menu by name.

**Keyboard templates** **Use keyboard templates**

Allows you to use keyboard templates for faster typing of regularly used expressions (see [Keyboard templates](#)).

**See also:**


[General](#)

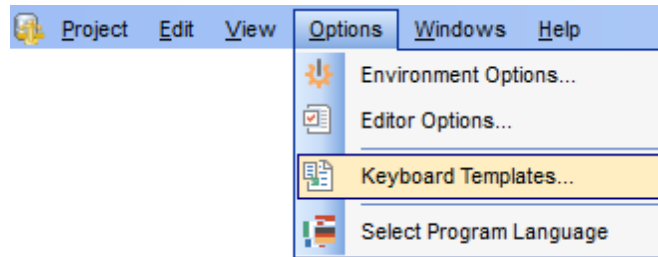
[Display](#)

[Color](#)

## 6.3 Keyboard templates

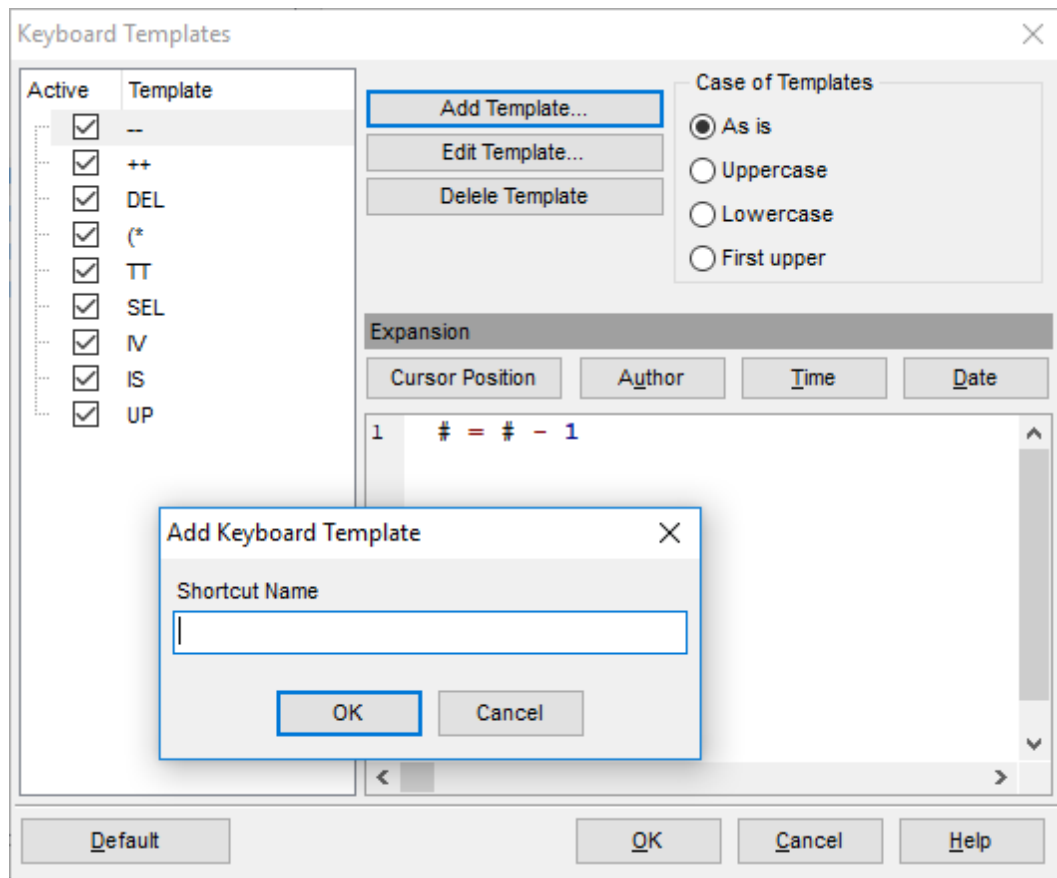
The **Keyboard Templates** window allows you to create new keyboard templates for quicker typing regularly used expressions and to edit the existing ones.

To open this window, select the **Options | Keyboard Templates...** main menu item, or use the  **Keyboard Templates** button on the main toolbar.



To add a new keyboard template, click the **Add Template...** button, set the template name and define the template expression. In the upper right area of the window you can change the **case** of the template expression.

You can deactivate an existing template by selecting it from the list on the left and removing the **Active** flag of the template.





If necessary, you can also edit the template name using the **Edit Template...** button, delete the template using the **Delete Template** button or edit the template expression within the **Expansion** area of the window. For faster editing you can use the *Symbols* menu and the *Author, Time, Date* buttons.

---

**See also:**

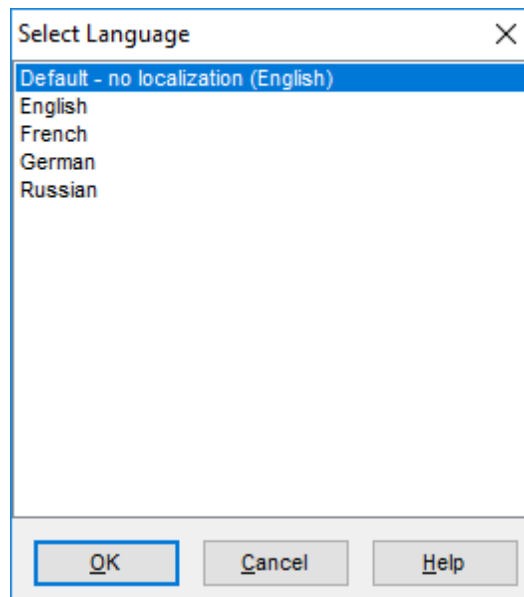
[Environment Options](#)

[Editor Options](#)

## 6.4 Selecting program language

The **Select Language** dialog allows you to select one of the available interface localizations to be applied to DB Comparer for PostgreSQL.

To open this dialog, use the **Options | Select Program Language** main menu item. The window contains the list of available languages according to the directory specified within the [Localization](#) section of the [Environment Options](#) dialog.



Select a language in the list and click **OK** to apply changes.

---

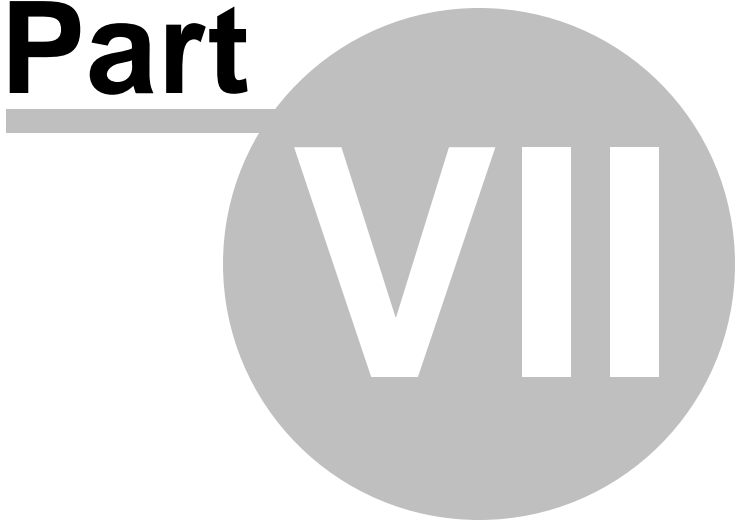
**See also:**

[Environment Options](#)

[Editor Options](#)

[Keyboard Templates](#)

**Part**



**VII**

## 7 Console application

Additionally to **the GUI version** which is implemented in the form of a windows application, the installation package of DB Comparer for PostgreSQL includes **the console version** which is intended for being run from Windows command line with a project file name used as the execution parameter.

DB Comparer command line utility is intended for quick metadata comparison/synchronization of PostgreSQL databases/schemas, which can be easily scheduled and run automatically.

[Using the console application](#)  
[How to schedule console run](#)

---

### See also:

[Managing projects](#)  
[Working with project](#)  
[SQL Script Editor](#)  
[Reports management](#)  
[DB Comparer options](#)

## 7.1 Using DB Comparer console

All the comparison options can be [saved](#) in **Project** (\*.pcp) files. A project file can be also used in the **Console version** of DB Comparer for PostgreSQL.

For your convenience the console version of DB Comparer for PostgreSQL is included in the distribution package of the utility. The command line utility is intended for quick database structure comparison and synchronization and further scheduling

### Usage

```
<path to DB Comparer for PostgreSQL console application>\PgComparerC.exe Projectfile  
[Scriptfile] [logfile] [/E] [/B] [/L]
```

### Projectfile

Stands for the \*.pcp file to be used as the console version execution parameter. See [Opening / Saving Project](#) for instructions on saving project files.

### Scriptfile

Specify the output file name to save the modification script generated by the utility. If not specified, the script will be saved as *Projectfile.sql* in the home directory of DB Comparer for PostgreSQL.

### Logfile

Specify the custom log file name.

### /E

Execute generated script after comparison.

### /L

Use the same [localization](#) in the console version as in the Wizard Application

### /B

Use this parameter to run the application in the background mode. No console window will appear.

### /A

Analyze renamed objects.

### Examples:

```
"C:\Program Files\EMS\DB Comparer for PostgreSQL\PgComparerC.exe"  
DBComparer_Project.pcp
```

Upon running the command line utility, the modification script will be generated into *DBComparer\_Project.sql*

```
"C:\Program Files\EMS\DB Comparer for PostgreSQL\PgComparerC.exe"  
DBComparer_PG.pcp Result.sql
```

Upon running the command line utility, the modification script will be generated into *Result.sql*

```
"C:\Program Files\EMS\DB Comparer for PostgreSQL\PgComparerC.exe"  
DBComparer_PG.pcp Result.sql /E
```

Upon running the command line utility, the modification script will be generated into *Result.sql* and executed.

**Note:** The following exit codes can be returned by DB Comparer for PostgreSQL to the operating system after performing the latest task:

0 - successful completion;

1 - error(s) occurred during task performing;

2 - fatal error occurred. The task was not performed.

## 7.2 How to schedule console run

Here are the steps to schedule program run with standard Windows scheduler:

1. Set all options in the [Project Options](#) and click Save Project button.
2. Open the command line in Windows (type CMD in the Run... dialog).
3. Use the following command to run the console version with the saved project:  
<path to DB Comparer for PostgreSQL console application>\PgComparerC.exe Projectfile  
[scriptfile] [logfile] [/E] [/B] [/L]

For example:

```
"C:\Program Files\EMS\DB Comparer for PostgreSQL\PgComparerC.exe"  
DBComparer_PG.pcp Result.sql
```

4. Launch the standard Task Scheduler tool in Windows OS.
5. Set the command for executing the project as described above.
6. Set the schedule for the command execution.
7. Save the scheduled task.

**Part**





## 8 Appendix

### 8.1 Find Text dialog

The **Find Text** dialog is provided for quick and flexible searching for specified text within the [SQL Script Editor](#) working area.

#### Text to find

Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

#### Options

##### Case sensitive

This option can be used to differentiate uppercase characters from lowercase ones during the search process.

##### Whole words only

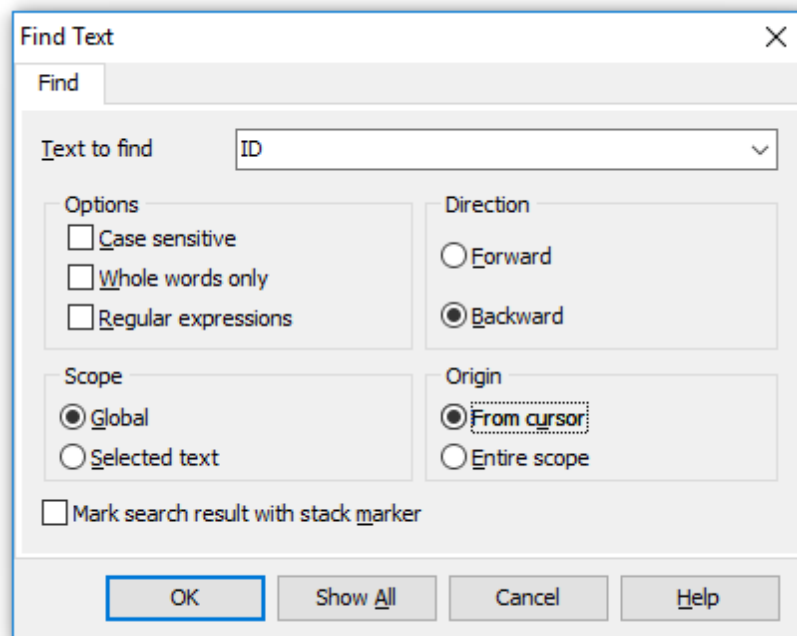
Use this option to search for words only (with this option off, the search string might be found within longer words.)

##### Regular expressions

Recognizes regular expressions in the search string.

For example, you can type "empl\*" to search for metadata containing the "empl" substring; enter "^emp" to search for words starting with "emp" or "^emp|emp\$" to search for the string "emp" at the beginning or at the end of the string.

**Note:** The syntax of regular expressions that can be used in the Text to find field is similar to that used in Perl regular expressions. Comprehensive information about it can be found at <http://perldoc.perl.org/perlre.html#Regular-Expressions>.



### Direction

**Forward**

Searches from the current position to the end of the SQL Script Editor area.

**Backward**

Searches from the current position to the beginning of the SQL Script Editor area.

### Scope

**Global**

Searches within the entire SQL Script Editor working area, in the direction specified by the *Direction* setting.

**Selected text**

Searches only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

### Origin

**From cursor**

The search starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

**Entire scope**

The search covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

**Mark search result with stack marker**

The option toggles marking search results. If this option is selected, stack markers are set at all search positions - this makes it possible to jump from one marker (search result) to another within the text.

## 8.2 Replace Text dialog

The **Replace Text** dialog is provided for searching and replacing text within the [SQL Script Editor](#) working area.

### Text to find

Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

### Text to replace

This box allows you to enter a string to replace the search string. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered strings. To replace the search string with an empty string, leave this input box blank.

### Options

**Case sensitive**

This option can be used to differentiate uppercase characters from lowercase ones during the search process.

**Whole words only**

Use this option to search for words only (with this option off, the search string might be found within longer words.)

**Regular expressions**

Recognizes regular expressions in the search string.

**Replace with template**

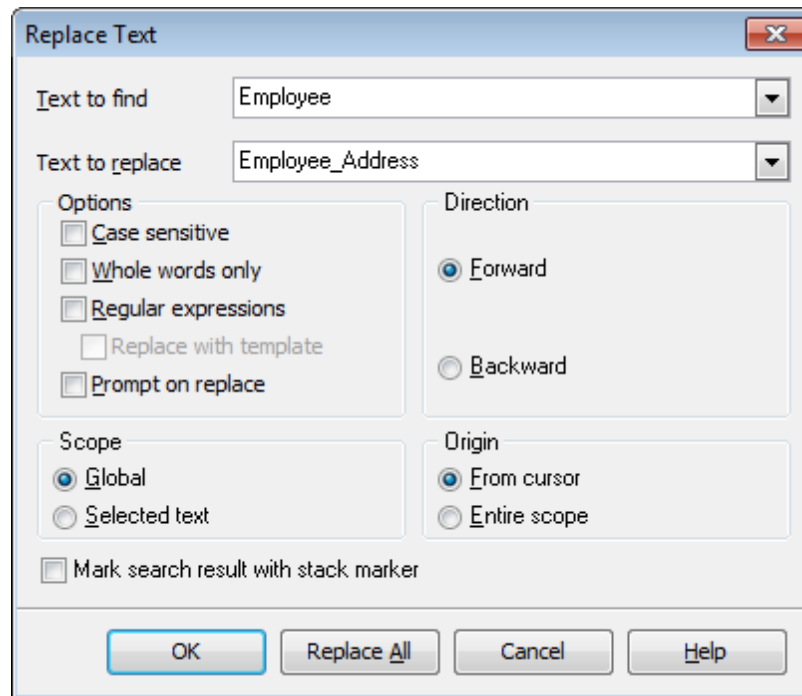
This option requires the **Regular expressions** option selection.

Enable this option to use regular expressions in the **Text to replace** field. Expression used in this field will be applied to each string that matches the **Text to find** expression.

**Note:** The syntax of regular expressions that can be used in the Text to find and the Text to replace fields is similar to that used in Perl regular expressions. Comprehensive information about it can be found at <http://perldoc.perl.org/perlre.html>.

**Prompt on replace**

Check this option if you wish to be prompted before replacing upon each occurrence of the search string. When this option is off, the search string is replaced automatically.



### Direction

#### **Forward**

Searches and replaces from the current position to the end of the SQL Script Editor area.

#### **Backward**

Searches and replaces from the current position to the beginning of the SQL Script Editor area.

### Scope

#### **Global**

Searches and replaces within the entire SQL Script Editor working area, in the direction specified by the *Direction* setting.

#### **Selected text**

Searches and replaces only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

### Origin

#### **From cursor**

The search and replace process starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

#### **Entire scope**

The search and replace process covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

#### **Mark search result with stack marker**

The option toggles marking search results. If this option is selected, stack markers are set at all search positions - this makes it possible to jump from one marker (search result) to another within the text.

Click the **Replace All** button to replace every occurrence of the search string. If you have checked the **Prompt on replace** option, the confirmation dialog box appears upon each occurrence of the search string.

## 8.3 SSH tunneling options

To setup the connection via **SSH tunnel**, input the following values in the corresponding fields:

- **SSH host name** is the name of the host where SSH server is running
- **SSH port** indicates the port where SSH server is activated
- **SSH user name** stands for the user on the machine where SSH server is running (**Note:** it is a Linux/Windows user, not a user of PostgreSQL server)
- **SSH password** is the Linux/Windows user password

Please note that PostgreSQL **host name** should be set relatively to the SSH server in this case. For example, if both PostgreSQL and SSH servers are located on the same computer, you should specify *localhost* as **host name** instead of the server external host name or IP address.

### Use Private Key for authentication

If the SSH encryption is enabled on the SSH server, a user can generate a pair of cryptographic keys (the **Private key** and the **Public key**). The **Public key** is placed on the SSH server, and the **Private key** is the part you keep secret inside a secure box that can only be opened with the correct passphrase (or an empty string as the passphrase). When you wish to access the remote system, you open the secure box with your passphrase (if any), and use the private key to authenticate yourself with the Public key on the remote Linux computer.

### SSH Key file

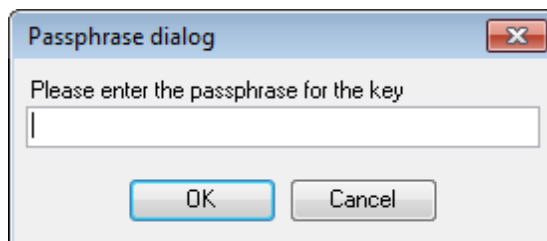
Specify the location (the secure box) of the **Private key** file on your local machine. Supported Private Key file formats are:

*OpenSSH*

*Putty*

*SSH.com*

Note that you need to trust your local machine not to scrape your passphrase or a copy of your Private key file while it is out of its secure box.



## 8.4 HTTP tunneling options

To use **HTTP tunneling**, just upload the tunneling script to the webserver where PostgreSQL server is located, or to any other webserver from which direct connections to your PostgreSQL server are allowed. This script exposes the PostgreSQL API as a set of web-services used by DB Comparer for PostgreSQL.

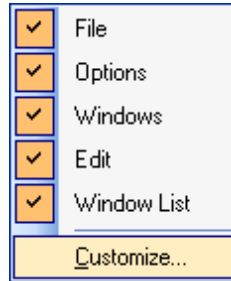
In case of using this connection method the response will be slower as compared to the direct connection or the SSH Tunneling method, since the data are XML encoded and HTTP is stateless by nature. However, all the features of DB Comparer for PostgreSQL are available.

Note that the *emproxy.php* script file is included into the distribution package and can be found in DB Comparer installation directory.

## 8.5 Customize toolbars and menus

The **Customize** dialog allows you to create and personalize DB Comparer menus and toolbars.

To call this dialog, click the down-arrow button on the right side of any toolbar, then click **Add or Remove Buttons** and select **Customize...** from the drop-down menu. Alternatively, you can right-click any toolbar and select the **Customize...** popup menu item.



### Toolbars

This list displays all currently existing toolbars of DB Comparer (both *default* and *user-defined* toolbars). Check/uncheck the box at a toolbar name to show/hide the toolbar.

### New...

Use this button to add a new user-defined toolbar to the **Toolbars** list. Set a name for the newly created toolbar and dock it by dragging it to any permitted location within the application window.

### Rename...

Use this button to rename the selected user-defined toolbar.

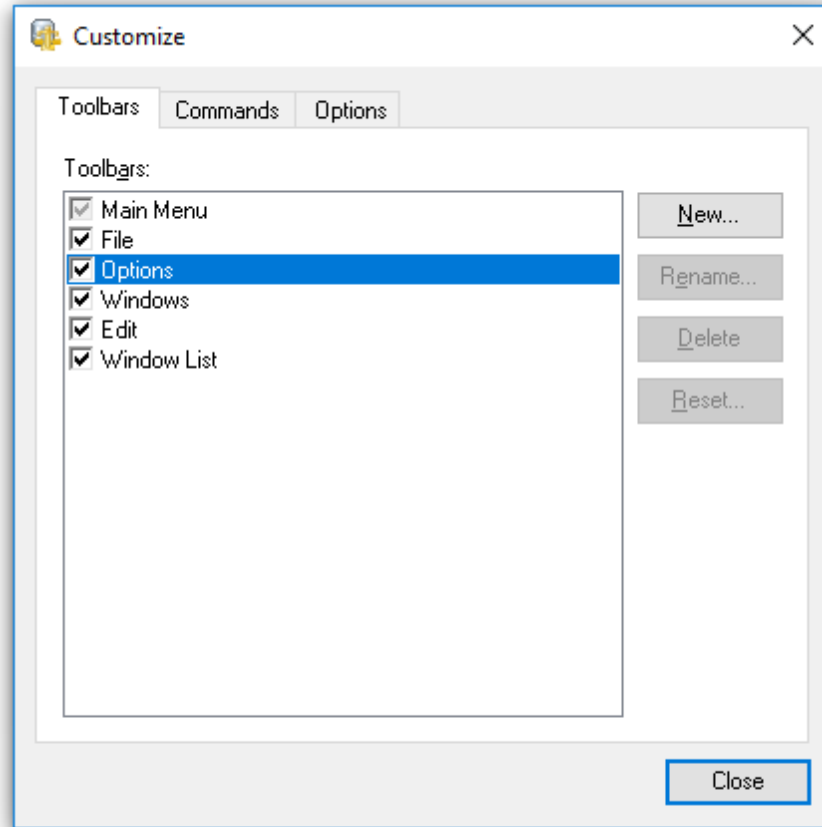
### Delete

Use this button to delete the selected user-defined toolbar.

### Reset...

Use this button to reset the selected toolbar.

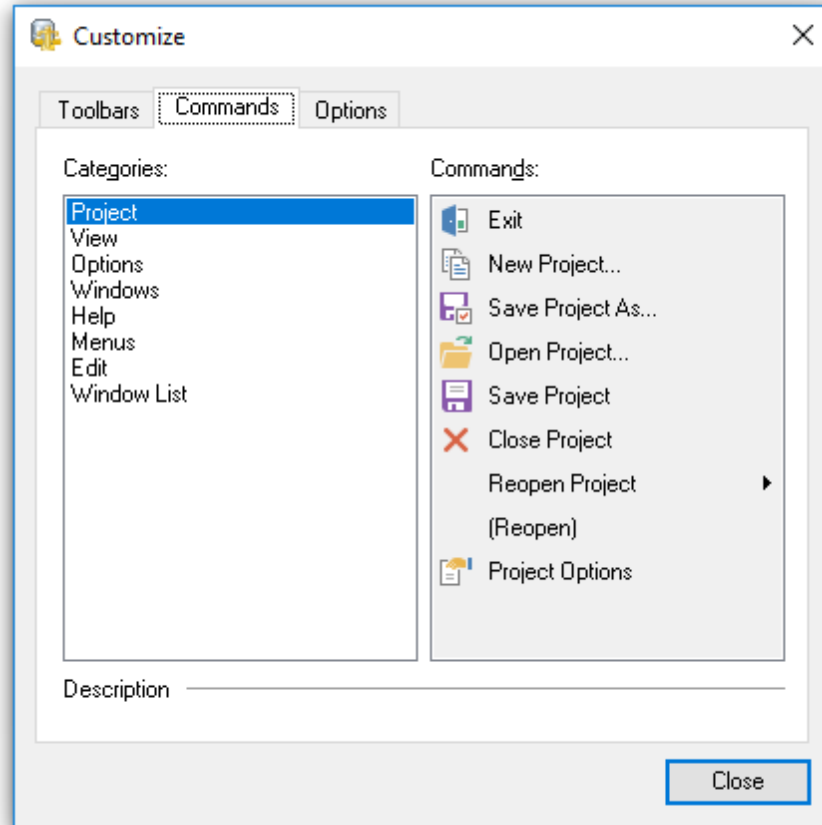




### Commands

This tab allows you to browse the list of all commands available within the menus and toolbars of the application window. Selecting categories in the **Categories** list displays commands of the selected category (e.g. 'File' or 'Options') in the **Commands** list.

If necessary, you can pick a command and drag it to any toolbar to create a button for this command.



## Options

### Personalized Menus and Toolbars

#### **Menu show recently used commands first**

This option determines whether the most frequently used items will be placed in menus at first position.

If this option is enabled, frequently used menu items are "promoted" and displayed higher on the list. Unused and infrequently used menu items are visually suppressed and appear "collapsed".

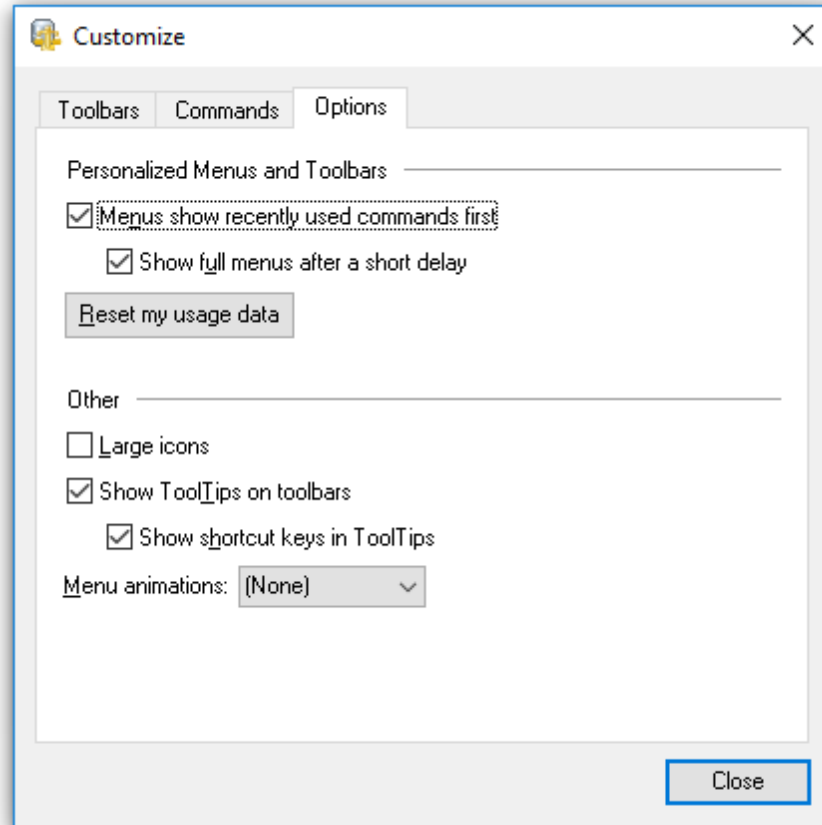
#### **Show full menus after a short delay**

This option is available only if the **Menu show recently used commands first** option is selected.

If this option is enabled, infrequently used menu items (if they appear "collapsed") will be automatically expanded after a delay upon setting mouse cursor (or upon selection with the *Up/Down* keys) on the bottom of the menu. Otherwise, the menu expands only after clicking its bottom-most button (or using the *Ctrl+Down* shortcut).

#### **Reset my usage data**

Resets the lists of recently used commands in the toolbars and menus.



### Other

#### **Large icons**

This option displays larger icons on the parent window toolbars.

#### **Show ToolTips on toolbars**

If this option is selected, ToolTips (hints) popup when the mouse cursor is positioned over a toolbar button.

#### **Show shortcut keys in ToolTips**

If this option is selected, the corresponding shortcuts are displayed in ToolTips (hints) for toolbar buttons.

#### **Menu animations**

Use the drop-down list to specify the menu animation effects:

*None* (no animation)

*Random* (random choice: *Unfold*, *Slide*, *Fade*)

*Unfold* (unfolding menus)

*Slide* (sliding menus)

*Fade* (menus fade in when appearing)

# Credits

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