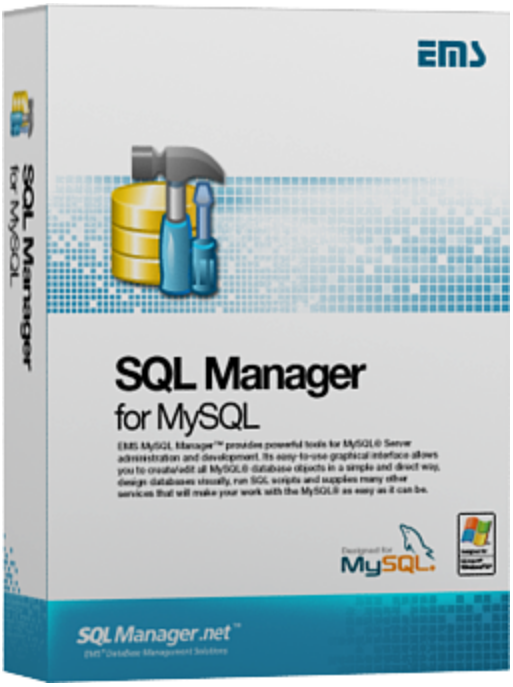
SQL Manager.net™
EMS® Software Development



SQL Manager for MySQL User's Manual

SQL Manager for MySQL
User's Manual

This manual documents EMS SQL Manager for MySQL

Document generated on: 26.03.2025

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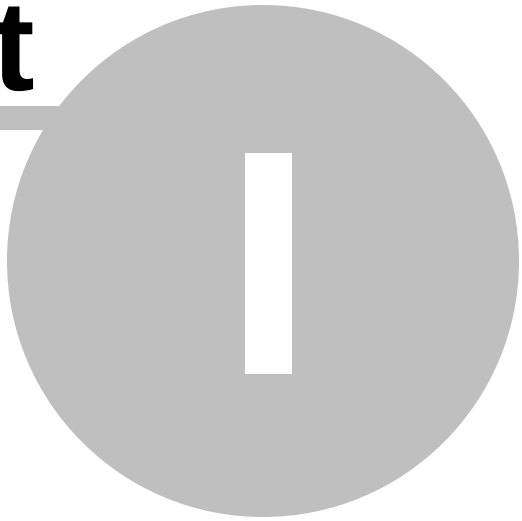


1 Welcome to SQL Manager for MySQL!

EMS SQL Manager for MySQL is a powerful tool for MySQL® database server administration and development. **SQL Manager for MySQL** works with any MySQL versions from 4.1 to 9 and supports all of the latest MySQL features including views, stored procedures and functions, InnoDB foreign keys, events and so on. It offers plenty of powerful tools for experienced users to satisfy all their needs. **SQL Manager** has a new state-of-the-art graphical user interface with well-described wizard system, so clear in use that even a newbie will not be confused with it.

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

Key features

- Support of MySQL up to 9, MariaDB from 5.1 and higher
- Full support of Unicode
- Rapid database management and navigation
- Easy management of all MySQL objects
- Advanced data manipulation tools
- Effective security management
- Excellent visual and text tools for query building
- Impressive data export and import capabilities
- Visual Database Designer to handle database structure in a few clicks
- Easy-to-use wizards performing MySQL services
- Powerful tools to make your work with MySQL as easy as it can be
- Report designer with clear in use report construction wizard
- User friendly graphical interface

Product information

Homepage	https://www.sqlmanager.net/products/mysql/manager
Support Ticket System	https://www.sqlmanager.net/support
Register online	https://www.sqlmanager.net/products/mysql/manager/buy

1.1 What's new

Version	Release date
SQL Manager for MySQL 5.9.3	March 26, 2025

What's new in SQL Manager for MySQL?

- The 64-bit version of the app released.
- Support for Windows 11 ARM added.
- Scaling for autocompletion list fixed.
- Improved processing of autocompletion list for functions on debugging.
- The size of the Autocompletion code popup window is saved now.
- The error occurred on debugging functions with variables and synonyms with the same name. Fixed now.
- Fixes for Foreign keys in table reports.
- Improvements for work with MySQL 9.
- Other fixes and improvements.

1.2 System requirements

System requirements for SQL Manager for MySQL

- 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 Vista, Microsoft Windows 7, Microsoft Windows 8/8.1, Microsoft Windows 10, Microsoft Windows 11, Windows 11 ARM
- 512 MB RAM or more; 1024 MB or more recommended
- 200 MB of available HD space for program installation
- Possibility to connect to any local or remote MySQL server
- Supported MySQL server versions: from 4.1 up to 9, MariaDB from 5.1 and higher
- Microsoft Visual C++ Redistributable 2015-2022

1.3 Feature matrix

The **FREE** *Lite version* of **SQL Manager for MySQL** does not include all features of the *Full version* and has some limitations concerning the number of the databases that can be registered and the set of data manipulation and server maintenance tools. The detailed feature matrix is given below.

Note that when using the **FREE** *Lite version* of **SQL Manager for MySQL** you can activate a 30-day period of fully-functional usage. After the period expires, you will be able to continue using the **Lite** version.

For more information on activating the **Full** version features see Full Mode activation.

1.4 Installation

If you are installing SQL Manager for MySQL for the first time on your PC

- download the SQL Manager for MySQL distribution package from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- run *MyManagerFullSetup.exe* (**Full** version) or *MyManagerLiteSetup.exe* (**Lite** version) from the local directory and follow the instructions of the installation wizard;
- after the installation process is complete, find the **SQL Manager** shortcut in the corresponding group of Windows Start menu.

If you want to upgrade an installed copy of SQL Manager for MySQL to the latest version

- download the SQL Manager for MySQL distribution package from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- close **SQL Manager** application if it is running;
- run *MyManagerFullSetup.exe* (**Full** version) or *MyManagerLiteSetup.exe* (**Lite** version) from the local directory and follow the instructions of the installation wizard.

See also:

SQL Manager FAQ

1.5 Registration

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

PayPro Global 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.

If you want to review your order information, or you have questions about ordering or payments please visit our PayPro Global Shopper Support, provided by **PayPro Global.**

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. Also you will receive a copy of registration keys 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.

Product distribution	PayPro Global
EMS SQL Manager for MySQL (Business license) + 1-Year Maintenance*	Register Now!
EMS SQL Manager for MySQL (Business license) + 2-Year Maintenance*	
EMS SQL Manager for MySQL (Business license) + 3-Year Maintenance*	
EMS SQL Manager for MySQL (Non-commercial license) + 1-Year Maintenance*	
EMS SQL Manager for MySQL (Non-commercial license) + 2-Year Maintenance*	
EMS SQL Manager for MySQL (Non-commercial license) + 3-Year Maintenance*	
EMS SQL Manager for MySQL (Trial version)	Download Now!
EMS SQL Manager for MySQL Freeware	Download Now!

***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.

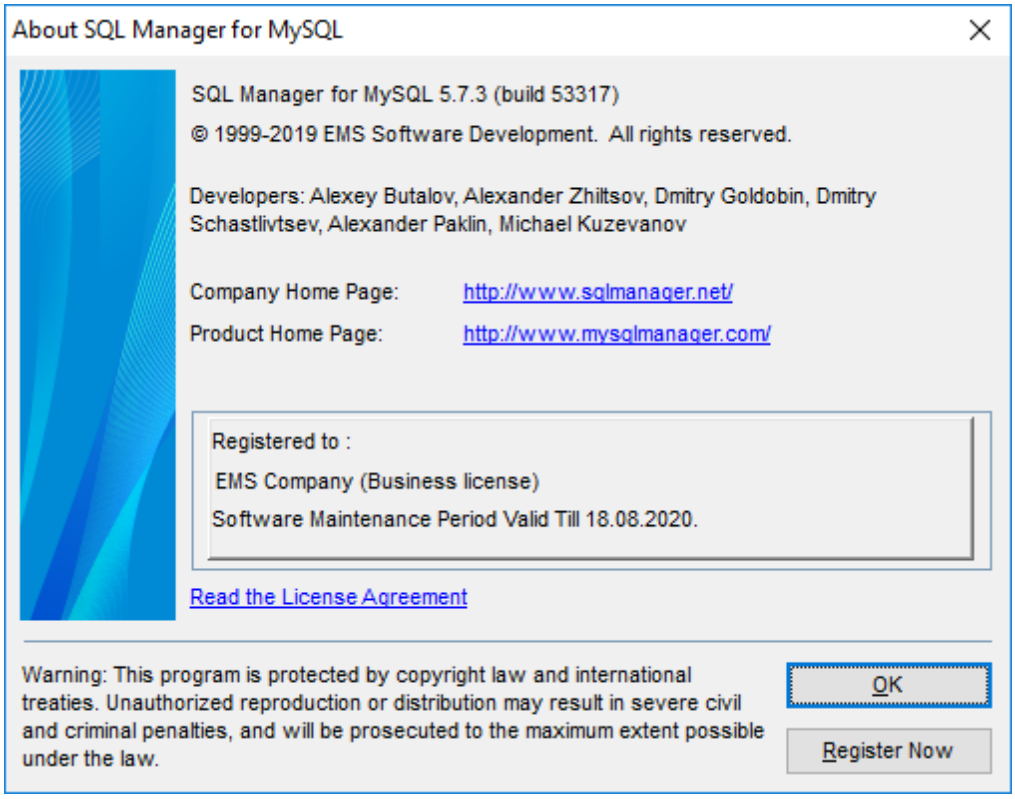
You can easily reinitiate/renew your maintenance with our on-line, speed-through Maintenance Reinstatement/Renewal Interface. After reinitiating/renewal you will receive a confirmation e-mail with all the necessary information.

See also:

How to register SQL Manager

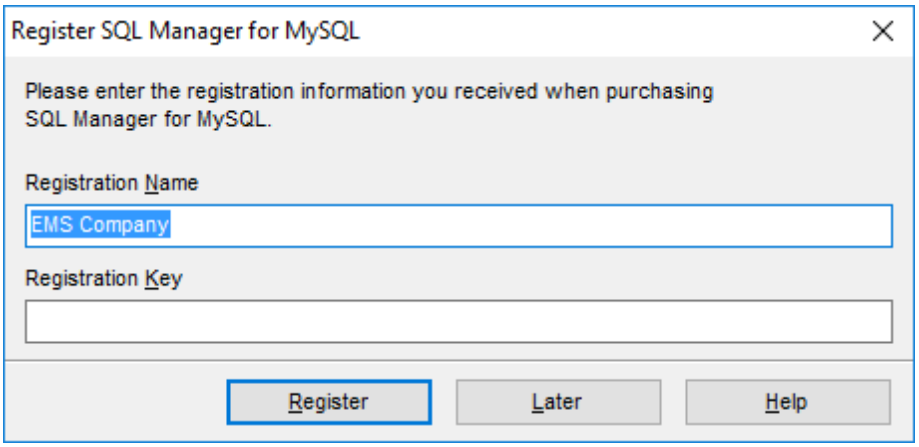
1.6 How to register SQL Manager

If you have not registered your copy of **SQL Manager for MySQL** yet, you can do it by pressing the **Register Now** button and entering your registration information in the **Register SQL Manager for MySQL** dialog.



To register your newly purchased copy of **EMS SQL Manager for MySQL**, 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 SQL Manager for MySQL** dialog (use the **Help | About** menu item to open this dialog).



See also:

Registration

1.7 EMS SQL Manager FAQ

Please read this page attentively if you have questions about **EMS SQL Manager for MySQL**.

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product support 4.1.x?
- Every time I try to connect to MySQL on a remote Linux server, I get the 'Lost connection to MySQL server during query' error. What's wrong?
- I tried to create a foreign key for InnoDB table, but received the "Can't create table ... (errno: 150)" error. What's wrong?

Question/answer list

Product questions

Q: What is EMS SQL Manager for MySQL?
A: **EMS SQL Manager for MySQL** is a powerful tool for MySQL database server administration and development. **SQL Manager for MySQL** works with any MySQL versions from 4.1 to 5.6 and supports all of the latest MySQL features including views, stored procedures and functions, InnoDB foreign keys, events and so on. It offers plenty of powerful tools for experienced users to satisfy all their needs. **SQL Manager for MySQL** has a new state-of-the-art graphical user interface with well-described wizard system, so clear in use that even a newbie will not be confused with it.

Q: What is the difference between Full/Lite editions of EMS SQL Manager for MySQL?
A: These editions of SQL Manager for MySQL differ in price and features. To register SQL Manager for MySQL, see the Purchase page, and to learn about the difference in features please go to our Feature Matrix page.

Q: What do I need to start working with EMS SQL Manager for MySQL?
A: First of all you must have a possibility to connect to some local or remote MySQL server to work with **SQL Manager for MySQL**. You can download MySQL server from https://www.mysql.com/downloads/ (download is free). Besides, you need your workstation to satisfy the system requirements of **SQL Manager for MySQL**.

Q: What is the difference between the Export/Import functions in SQL Manager and the Data Export/Import utilities?
A: The Data Export/Import for MySQL utilities include some additional features which are not available in SQL Manager, such as:
- export/import data from/to several tables simultaneously;
- export/import data from/to tables selected from different databases on one host;
- a command-line utility to export/import data using the configuration file with all the export/import options.

Q: What is the difference between the Query Builder module in SQL Manager and the SQL Query for MySQL utility?
A: First of all, SQL Query for MySQL works faster as it is a much lighter product. Besides, it provides additional features for query building, e.g.:
- keeping query history which allows you to rollback to any edited query;
- various interface improvements for more productive and easier work.

Q: What is the difference between the Extract Database function in SQL Manager for MySQL and the DB Extract for MySQL standalone utility?
A: The DB Extract for MySQL utility includes some additional features which are not available in SQL Manager, such as:
- extracting metadata and/or data from several databases on one host;
- a console application for performing extract in one-touch;
- faster extraction speed.

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Common questions

Q: I can't modify DDL. Why?
A: The DDL tabs of the **SQL Manager** editors are read-only. To modify an object, you can copy the text to the clipboard and modify it using SQL Editor. For more details refer to Viewing object DDL structure.

Q: How can I customize data formats in grid?
A: You can customize all display formats: integer, float, date, time and datetime using the Color & Formats page of the Environment Options dialog.

Q: I can't backup/restore tables on the remote server. Why?
A: The Backup/Restore Tables functions do not work with remote MySQL server. This is not a limitation of **SQL Manager for MySQL**. MySQL server tries to backup tables only on the server side, so the Backup Tables function works properly only with local MySQL server. If you want to backup tables from the remote server, you can use the Extract Database feature.

Q: When I create a table like `TestTable`, it will get stored as `testtable`. This is wrong!
A: Probably the value of the "lower_case_table_names" variable is currently set to 1. Please visit https://dev.mysql.com/doc/refman/8.0/en/identifier-case-sensitivity.html for additional information about this variable.

Q: I am trying to create a report in Report Designer, but I can't get access to the table data: 'Band data source' list is empty.
A: It is recommended to use Create Report wizard which is run by right-clicking the Reports node in DB Explorer and selecting the 'New Report...' context menu item. The wizard will create all necessary data sources.
If you still want to use Report Designer, to get the data source in a report, you need to add database and query components to the report.

Q: How can I speed up my work with large tables?
A: For your convenience and to speed up your work, the Data Grid allows customizing a number of data display parameters. Here are the most important of them (accessible through the Grid | Data Options section of the Environment Options dialog):
- *Limit options in table and view editors*. The 'Select all records of a table' option will enable you to see all table records without extra references to the server, yet in case of large tables or low speed connection channel the data may be fetched with huge delays and the incoming traffic might grow considerably. This mode is recommended when working with local databases or in a private network. The 'Select only' mode restricts the maximum number of records returned after the query. A man cannot process a massive amount of information at once. Hence, we came up with this mode. This mode speeds up table data viewing considerably, prevents hanging and connection timeout. It is recommended to work with large tables, in case of low speed connection channels and when the traffic volume is of importance. This is the default mode. When in this mode, enabling the 'Use SQL sorting in data view' and 'Use SQL filter in data view' options comes really helpful.
- *Default Grid Mode*. This option defines whether the requested rows will be loaded in the Grid all at once ('Load all rows'), or in parts ('Load visible rows') as the user scrolls down table data. The first mode increases the query opening time, but speeds up

scrolling. In the second mode the query opens very fast, but there might be delays when navigating the grid.
We recommend that you set the following option values to achieve maximum efficiency when working with large tables:
- *Select only* – ON
- *Load visible rows* – ON

Q: I have a table with appr. 1000 records only, and a large number of columns. Opening this table on the 'Data' tab takes too much time.
A: You need to set the Grid Mode for the table to 'Load Visible Rows'. Please right click within the table grid and select the 'Grid Mode' | 'Load Visible Rows' context menu item.

Q: I cannot see procedures and functions in the object tree, but they are seen in the database. How can I fix it?
A: This situation may occur if you do not have permissions to extract data from the 'mysql.proc' table. Please contact your MySQL server administrator to provide you with the necessary permissions. If it is not allowed to change the privilege settings, and if you are using MySQL 5.5 or higher, try to enable the 'Use INFORMATION_SCHEMA database to refresh metadata' option of the 'Database Registration Info -> Options' dialogue.

Q: I cannot find a way to create a foreign key. How can I create it?
A: Please note that foreign keys are supported not for all table engines of MySQL server. If the engine (set for your table) supports foreign keys (i.e. InnoDB), there should be the 'Foreign keys' tab available in the editor. Switch to this tab and chose the 'Add a new foreign key' option on the navigation bar.

Q: I cannot connect to the hosting provider database, but when using PHPMyAdmin the connection to the database is established successfully.
A: If you want to connect to MySQL server of your hosting provider through the Internet, please note that our program establishes the direct TCP/IP connection to the server port, and most of the hosting providers do not allow such remote connections. When connecting to your database via CPanel, PHPMyAdmin or your backend scripts (PHP, ASP, etc.), the connection to MySQL server is performed by the HTTP Server. In most cases, this is a local connection or connection inside a subnet of the hosting provider. In this case your Internet browser just receives the processed data from the HTTP Server.
To establish a connection to your database, you need to find out (with your hosting provider or from the provided by him documentation) whether they support direct connection on port 3306 (MySQL port by default) from the remote client machines. If it is not supported, you need to find out whether they provide SSH port to connect to the remote server. If so, you can use the SSH-tunneling feature in SQL Manager specifying the SSH authentication parameters provided by your hosting provider. To connect in such way, you should perform the following:
1) Upload the 'emsproxy.php' script (which is included in the installation package of SQL Manager) to your site root directory using the available FTP-account. In your browser specify the URL path to the downloaded 'emsproxy.php' script (e.g.: http://mysite.com/emsproxy.php). The 'emsproxy.php script is installed correctly' message should be displayed. It means that the script works correctly.
2) Launch SQL Manager.
3) At Step 1 of Register Database Wizard specify the connection parameters for your MySQL database, as they are specified in PHPMyAdmin or your scripts (e.g.: specify 'localhost' in the 'Host' field), enable the 'Use tunneling' and 'HTTP tunneling' options. Press 'Next'.

4) Specify the URL path to the uploaded 'emsproxy.php' script as you specified it in the browser (Item 1).
5) Press 'Next'.
6) Specify your database name (the database may not be available, if you have limited permissions on the server) and press 'Finish'.

Q: My database uses a 'Greek' codepage. In data grid view all information is displayed as "??????". What is wrong?
A: Data is often displayed in such way, when the actual data encoding does not match the encoding of the database fields. For example, Greek characters are stored in a Latin1 encoded field. If so, set the 'Windows charset' value in the 'Client charset' field of the 'Database Registration Info' dialogue. If in this case the data is displayed correctly, this mode can be used as a temporary solution. However, you should remember that this is the incorrect database configuration, therefore the server-side comparisons and data sorting will work incorrectly. We recommend you to contact our technical support team in this case.

Q: Is it possible somehow to restore my database queries/settings/registrations from the old or faulty HDD, where SQL Manager was installed?
A: SQL Manager for MySQL stores all your settings in the Windows registry. It means that the only way to transfer your database data is to get access to the Windows registry. You can do it by loading OS from your old HDD (if possible) or by opening the registry file with a special editor program. If you managed it, you can unload the 'HKEY_CURRENT_USER\Software\EMS\MySQL Manager' branch to the *.REG file, transfer this file to a new system and add information to the registry by double-clicking the file.

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Export/Import questions

Q: I'm trying to export data from a table, but LONGTEXT fields are not exported.
A: Fields of type LONGTEXT are not exported by default. You should select these fields manually at the Selecting fields for export step.

Q: What is the difference between the "Extract Database" and "Export as SQL Script" functions?
A: Export as SQL Script is intended for exporting table data that will be inserted into a database system other than MySQL. Use Extract Database Wizard to copy metadata and/or data to a database on MySQL afterwards.

Q: How can I change the default directory where exported data are saved?
A: Follow the steps below to change the default directory:
1. Right-click the database alias in DB Explorer and select the 'Database Registration Info...' context menu item (you can also find this item in the 'Database' main menu) to open the Database Registration Info dialog.
2. Proceed to the Directories section within the dialog.
3. Set the 'Default directory for Export Data'.

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Troubleshooting

Q: When I try to register a database, I get the following message:

Access denied for user: user@host.domain
Why does it happen?
A: This error is generated by MySQL server because you do not have privileges to connect to the server from your host. Please contact your database administrator to resolve this problem.

Q: I try to connect to remote MySQL host, but I receive only the "Host not allowed to connect to server" message. What can be a reason?
A: This error occurs because you don't have a permission to connect to remote MySQL server from your host. Please contact your database administrator or, if you have access to MySQL server with grant privilege, you can use the GRANT statement to add a new user. For example, the following command will give full access from your host to the user:

```
GRANT ALL PRIVILEGES ON *.* TO 'user'
IDENTIFIED BY 'user_password'
WITH GRANT OPTION;
```

Please read the "GRANT and REVOKE Syntax" chapter of MySQL reference.

Q: I've registered the DB, but on attempt to open it the "dynamic library libmysql.dll not found" message appears.
A: Please make sure that the libmysql.dll file exists in the **SQL Manager for MySQL** directory. Reinstallation of the application can solve the problem.

Q: I get "Bad Handshake"message when I try to connect to MySQL 4.1.x. Does this product support 4.1.x?
A: You seem to use an old version of the client library libmysql.dll. You should use the client library from our installation package. Please try to reinstall the application.

Q: Every time I try to connect to MySQL on a remote Linux server, I get the 'Lost connection to MySQL server during query' error. What's wrong?
A: This error can occur if your Linux glibc requires greater than 128K of stack size to resolve a hostname. It happens primarily on RedHat 8.0 system with MySQL version lower than 4.0.10, but also can happen with another configuration. To resolve such issue, add/edit the following line to the [mysqld] section of MySQL configuration file:

```
set-variable = thread_stack=192k # value must be 192K or higher
```

Q: I tried to create a foreign key for InnoDB table, but received the "Can't create table ... (errno: 150)" error. What's wrong?
A: The referenced column should appear as the first column in some index, both in parent and child tables.

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If you still have any questions, contact us at our Support Center.

1.8 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.

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

SQL Query for SQL Server
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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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.

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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.

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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
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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.

Scroll to top

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.

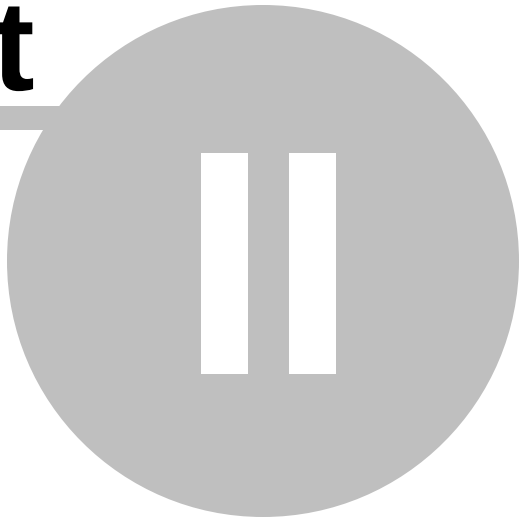
Advanced Query Builder for RAD Studio VCL
Advanced Query Builder for RAD Studio VCL is a powerful component for Delphi and C++ Builder intended for visual building SQL statements for the SELECT, INSERT, UPDATE and DELETE clauses.

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.

Scroll to top

Part



2 Getting Started

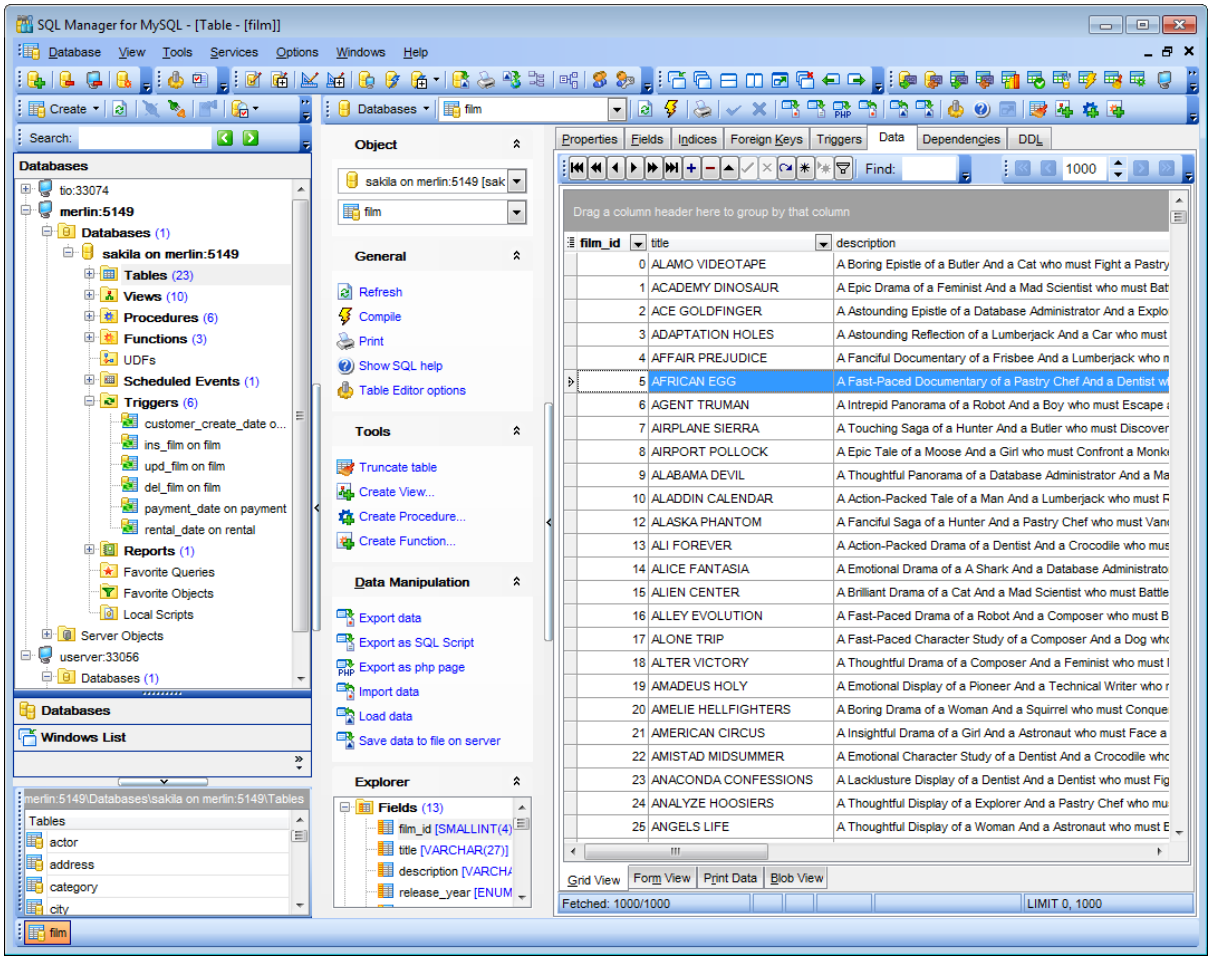
SQL Manager for MySQL provides you with an ability to contribute to efficient MySQL administration and development using a variety of available tools easily and quickly.

The succeeding chapters of this document are intended to inform you about the tools implemented in **SQL Manager for MySQL**. Please see the instructions below to learn how to perform various operations in the easiest way.

- Selecting style and language
- How the application looks when you start it for the first time
- Using Desktop Panel
- Database navigation
- Working with database objects
- Using context menus
- Working with child windows

See the How to... chapter to view brief instructions on how to perform some operations on databases, database objects, etc.

Enjoy your work with EMS SQL Manager for MySQL!



See also:

Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools
How To...

2.1 Selecting style and language

Before you start **SQL Manager** for the first time, you have to choose the environment style and the interface language. You can change these settings any time using the **Environment Options** dialog (**Options | Environment Options...**) to configure the environment style and the Select Language dialog (**Options | Select Program Language...**) to change the program language.

Environment style

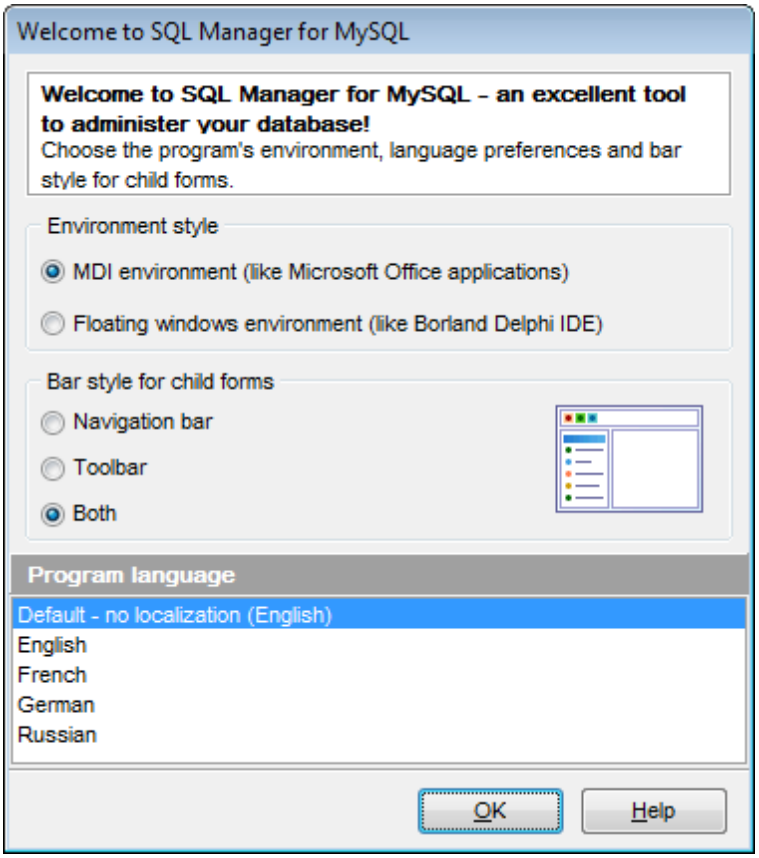
This switch allows you to define the main window behavior style - *MDI* (like in MS Office applications) or *Floating windows* (like Borland Delphi IDE).

Bar style for child forms

Here you can define the location of action buttons: within the *Navigation bar* (on the left) and/or on the *Toolbar*.

Program Language

Select the interface language from the list of available languages.

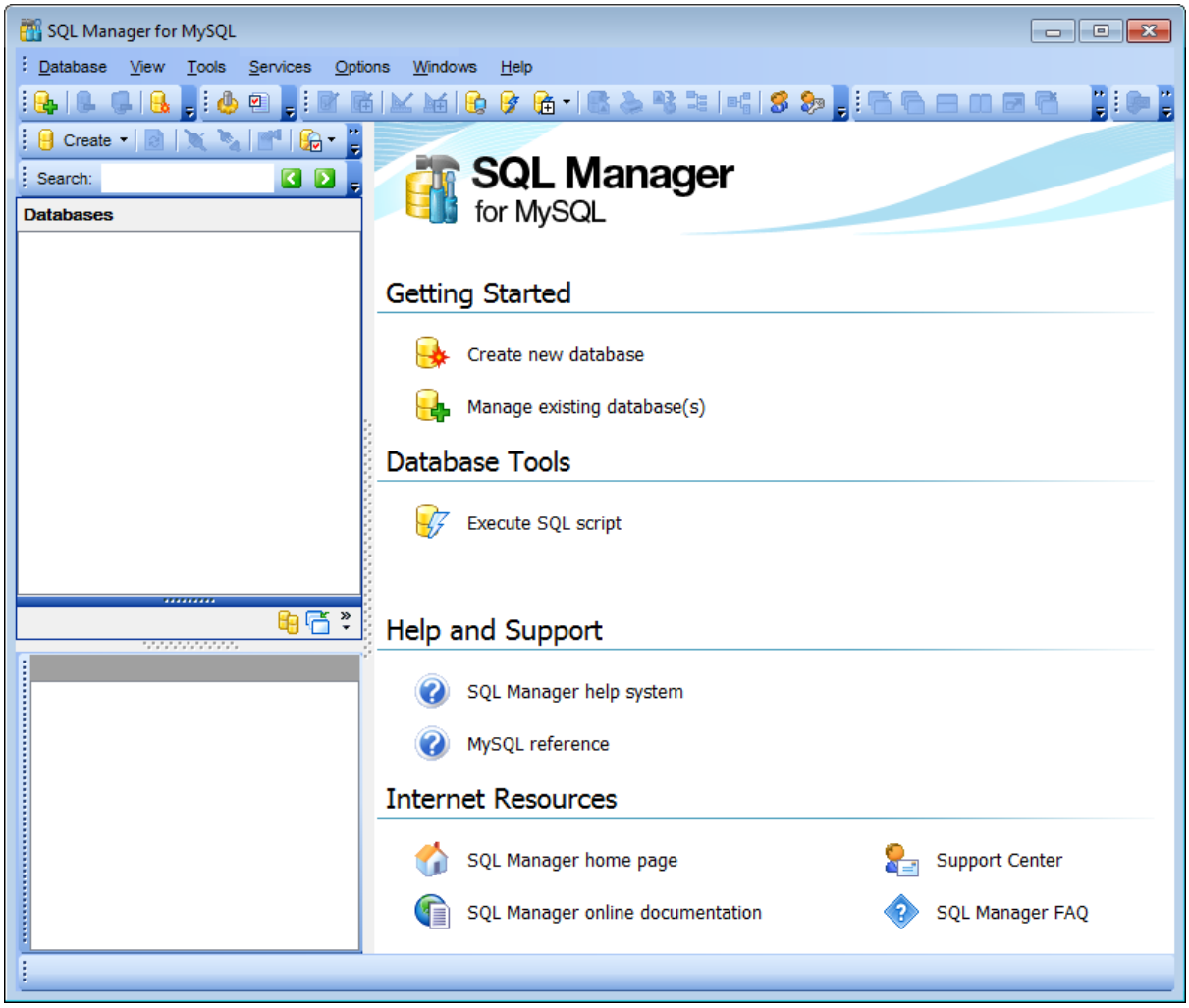


See also:

First time started
Using Desktop Panel
Database navigation

2.2 First time started

This is how **SQL Manager for MySQL** looks when you start it for the first time. Use the Desktop panel to fulfill any of common tasks: Create a new database, Manage existing database(s), and several tasks that do not require database registration, i.e. Execute SQL script, accessing the **reference system** or using available **Internet resources**.



The main menu allows you to perform various **Database** operations, open To-Do List and activate/deactivate Database Explorer, SQL Assistant and various toolbars within the **View** menu, manage your databases using items of the **Tools** and **Services** menus, customize the application using the **Options** menu, manage **SQL Manager Windows** using Window List and other tools, and access Registration information and product documentation, update the product to the latest version using the corresponding items available within the **Help** menu.

To start working with your MySQL server, you should first register the host using Register Database wizard. After that you need to register one or several databases using Register Database Wizard.

By default the corresponding **Register Host**, **Register Database** buttons are available on the toolbar and within the **Database** menu.

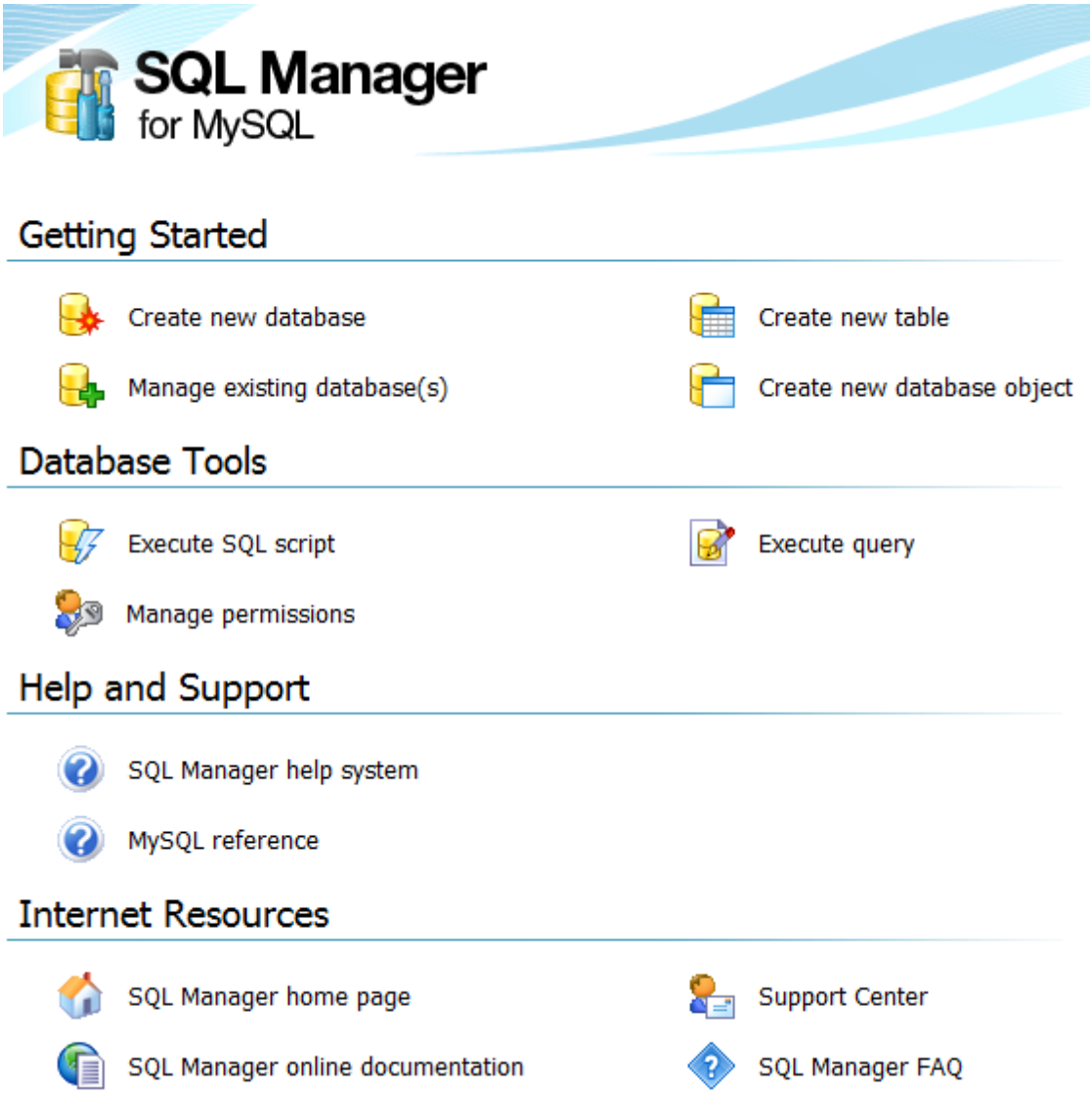
When the database connection settings are specified, you can set connection to your database and proceed to Database navigation, Database Objects management, working with SQL queries and other tools of **SQL Manager**.

See also:

Selecting style and language
Using Desktop Panel
Database navigation
Working with database objects
Using context menus
Working with windows

2.3 Using Desktop Panel

Desktop Panel is the area that is visible when no child windows are open in **SQL Manager for MySQL**. The working area of **Desktop Panel** is divided into four sections: *Getting Started*, *Database Tools*, *Help and Support*, *Internet Resources*.



Using the **Desktop Panel** items you can:

Getting Started section

create a new MySQL database

register existing database(s) to operate them afterwards in **SQL Manager**

create a new table within the current database using the New Table window (this item is available if there is at least one active database connection)

 create a new database object within the current database (this item is available if there is at least one active database connection)

Database Tools section

 execute a script using SQL Script Editor

 execute a SQL query (this item is available if there is at least one active database connection)

 manage MySQL users (this item is available if there is at least one active database connection)

 grant permissions on database objects to MySQL users using Grant Manager (this item is available if there is at least one active database connection)

Help and Support section

 show this help file

 use MySQL reference

Internet Resources section

 visit **SQL Manager** Home Page

 browse **SQL Manager** on-line documentation

 go to Technical Support Center

 look through the Frequently Asked Questions page

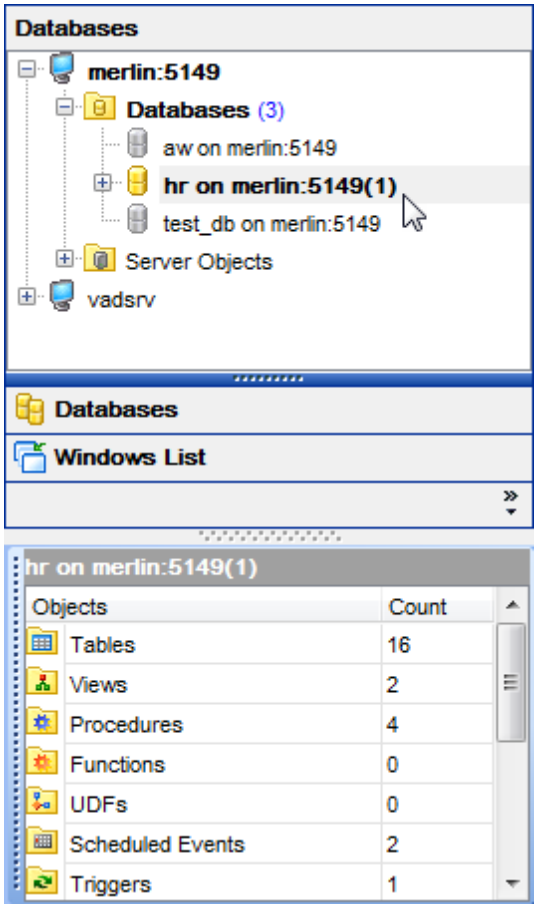
---

See also:

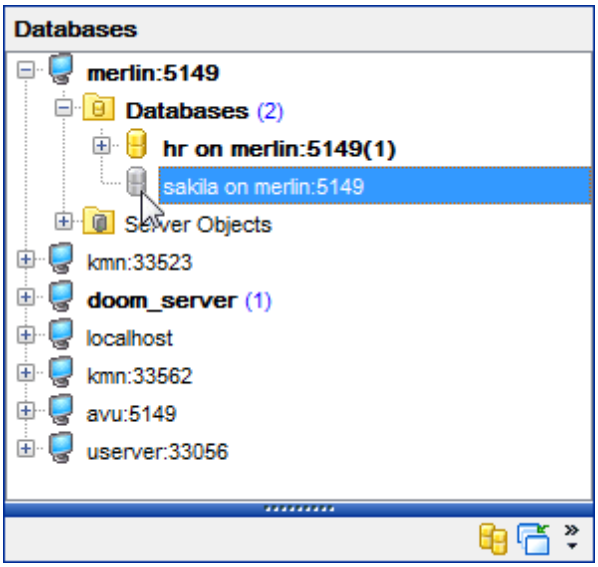
Selecting style and language
First time started
Database navigation
Working with database objects
Using context menus
Working with windows

2.4 Database navigation

After you have registered the required database(s), the corresponding alias(es) appear in the DB Explorer tree on the left. If the **Show Hosts** option is checked on the Environment Options | DB Explorer page, the host nodes are also displayed in the tree (alternatively, you can use the **Show Hosts** item of the Database context menu, or the drop-down menu of the **View Mode** toolbar button for the same purpose).



DB Explorer displays all registered databases. Connected/disconnected databases can be easily distinguished in the tree: aliases of disconnected databases are grayed out.



To connect to a database, simply double-click its alias (or select the database alias in DB Explorer and press **Enter**). If the connection is successful, the database node expands into a tree of objects.

Now you can navigate within the database objects. Use SQL Assistant to get extended information about the currently selected object.

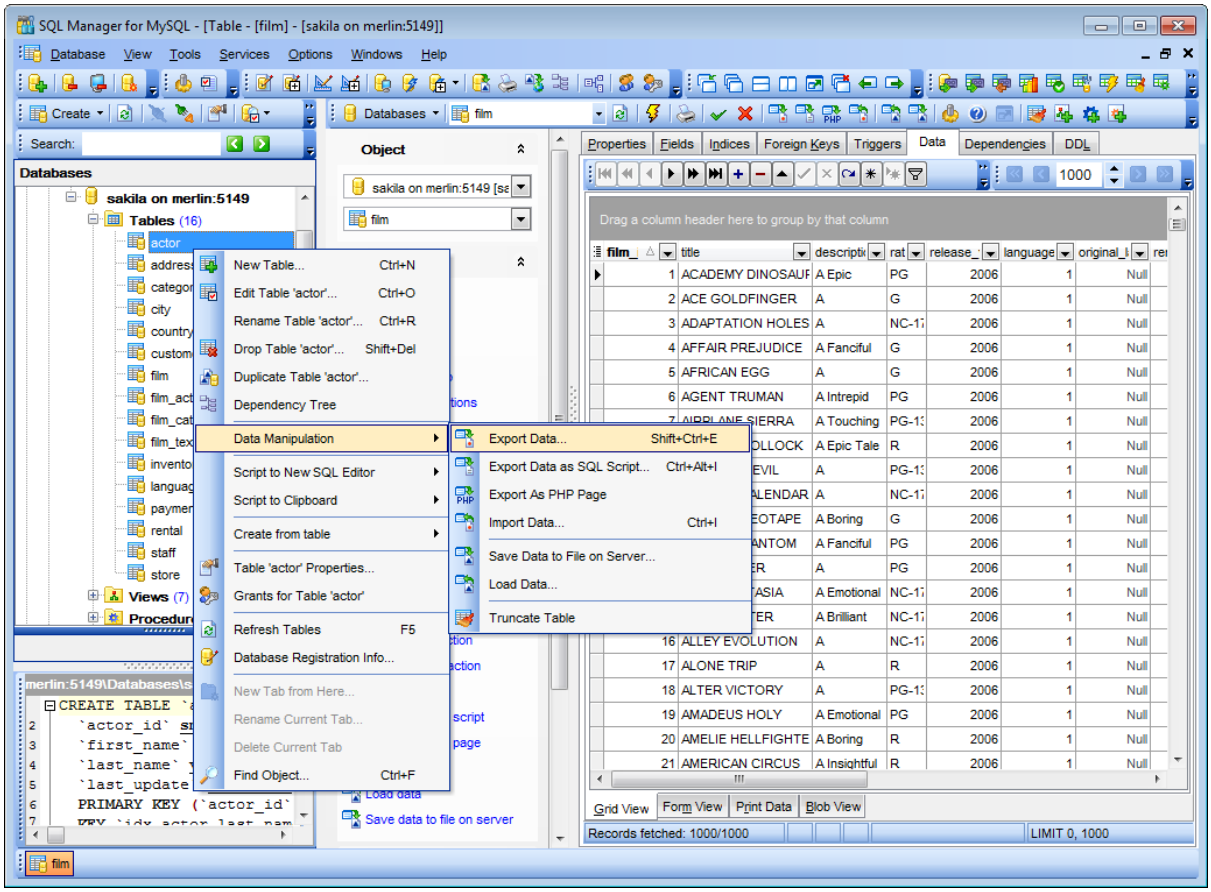
See also:

Selecting style and language
First time started
Using Desktop Panel
Working with database objects
Using context menus
Working with windows

2.5 Working with database objects

The nodes of the DB Explorer tree allow you to access objects of the selected database. If MySQL server you are connected to supports certain types of objects, their nodes will appear in the tree.

Double-click an object group *to expand/collapse the corresponding tree node*.
Double-click an object *to open it in the corresponding editor*.
Right-click an object to display its context menu which allows you to perform various *operations over the selected object or database*.



If you want to use the DB Explorer tree for working with **table subobjects** (columns, indexes, Foreign keys, etc.), check the **Show table subobjects** option which is available within the **General options** group of the Environment Options | DB Explorer page (you can also use the **Show Table Subobjects** menu item in the drop-down menu of the **View Mode** toolbar button for the same purpose.)

See also:

Selecting style and language
First time started
Using Desktop Panel
Database navigation
Using context menus
Working with windows

2.6 Using context menus

The **context menus** are aimed at facilitating your work with **SQL Manager for MySQL**: you can perform a variety of operations using context menu items.

Select an object in DB Explorer and right-click its alias to open the context menu.

- Host context menu
- Database context menu
- Object context menu

See also:

Selecting style and language

First time started

Using Desktop Panel

Database navigation

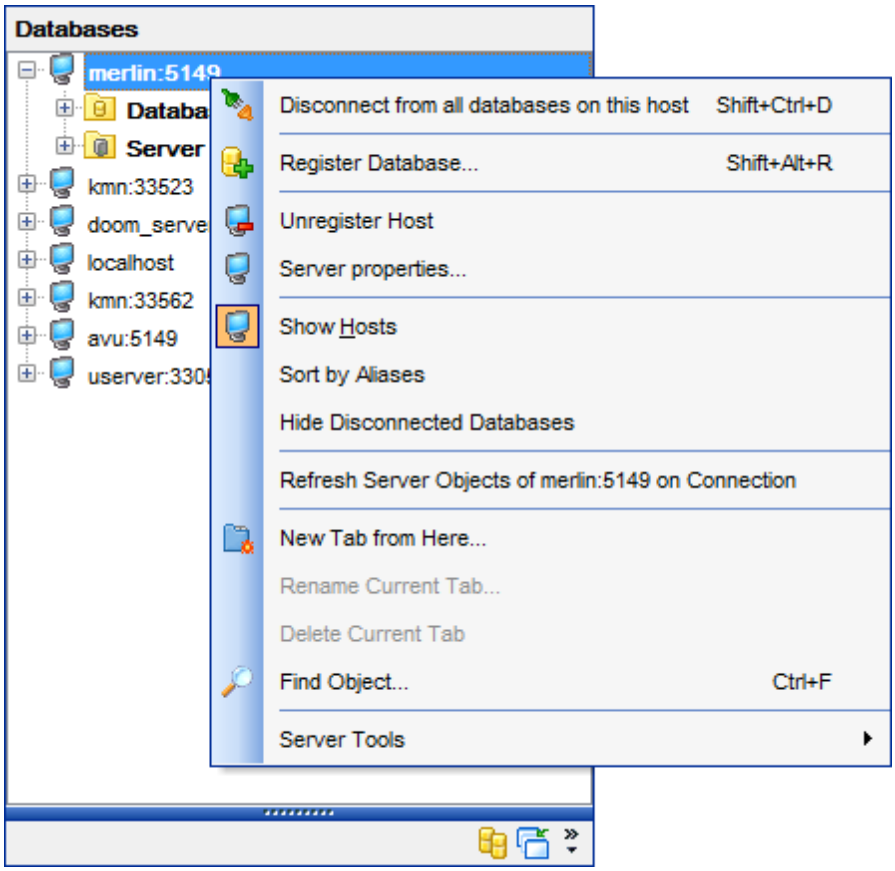
Working with database objects

Working with windows

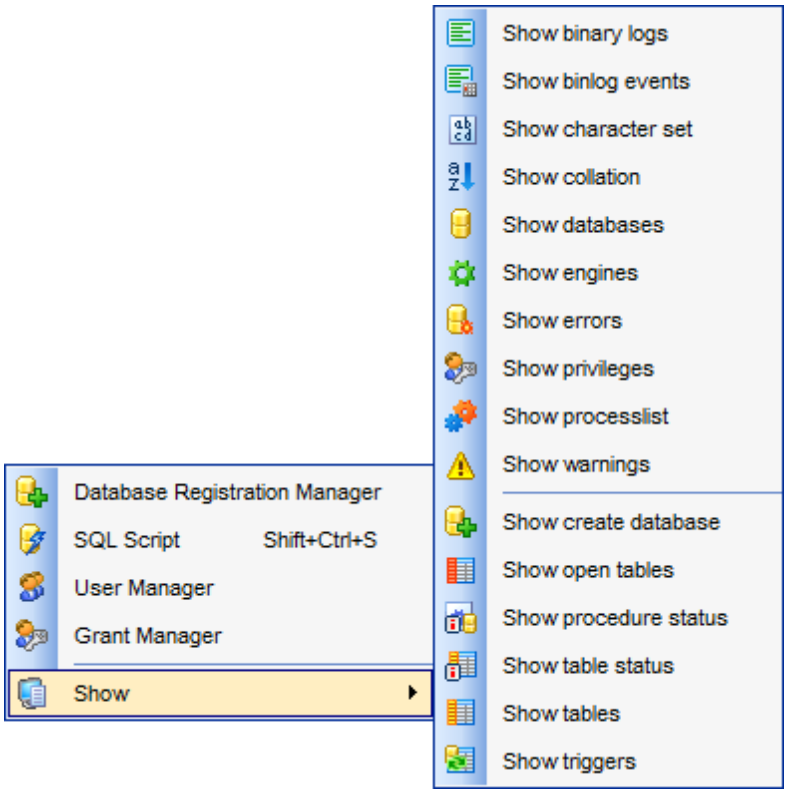
2.6.1 Host context menu

The **context menu of a Host** in the DB Explorer tree allows you to:

- disconnect from all databases on the selected host;
- register a new database using Register Database Wizard;
- unregister the selected host;
- configure server properties;
- configure representation of hosts and databases in Database Explorer;
- create a new tab for the selected host to access it through this tab quickly and/or manage the existing tab;
- search for an object within the tree.



The following features can be accessed through the **Server tools** submenu:



- Database Registration Manager;
- SQL Script Editor;
- User Manager;
- Grant manager;
- Information concerned server or database - **Show** submenu.

See also:

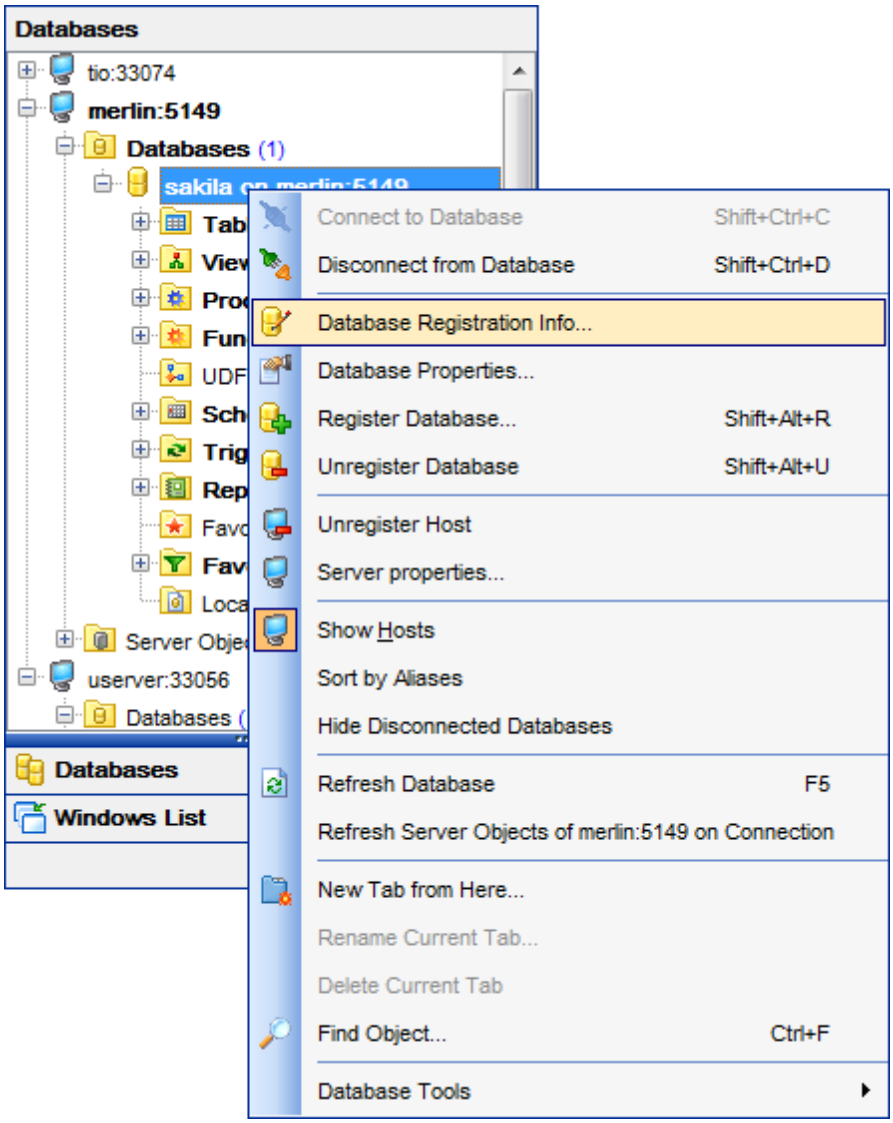
Database context menu

Object context menu

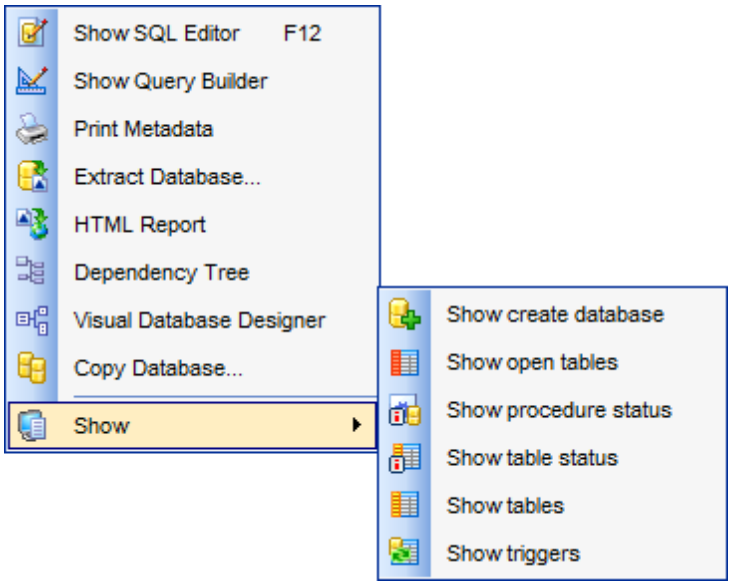
2.6.2 Database context menu

The **context menu of a registered database** in the DB Explorer tree allows you to:

- connect to the selected database (if connection to the database is not active yet);
- disconnect from the selected database (if connection to the database has been already activated);
- view/edit the selected database registration information within the Database Registration Info dialog;
- view/edit the Database properties;
- register a new database using Register Database Wizard;
- unregister the selected database;
- unregister the host where the selected database resides;
- configure server properties;
- configure representation of hosts and databases in Database Explorer;
- refresh the selected database or server objects;
- create a new tab for the selected database to access it through this tab quickly and/or manage the existing tab;
- search for an object within the tree.



Using the **Database tools** submenu you can do the following:



Open SQL Script Editor;
Open Visual Query Builder;
Use Print Metadata tool;
Extract Database;
Create HTML Report;
Browse Dependency Tree;
Open Visual Database Designer;
Copy Database;
View information concerning database - **Show** submenu.

See also:

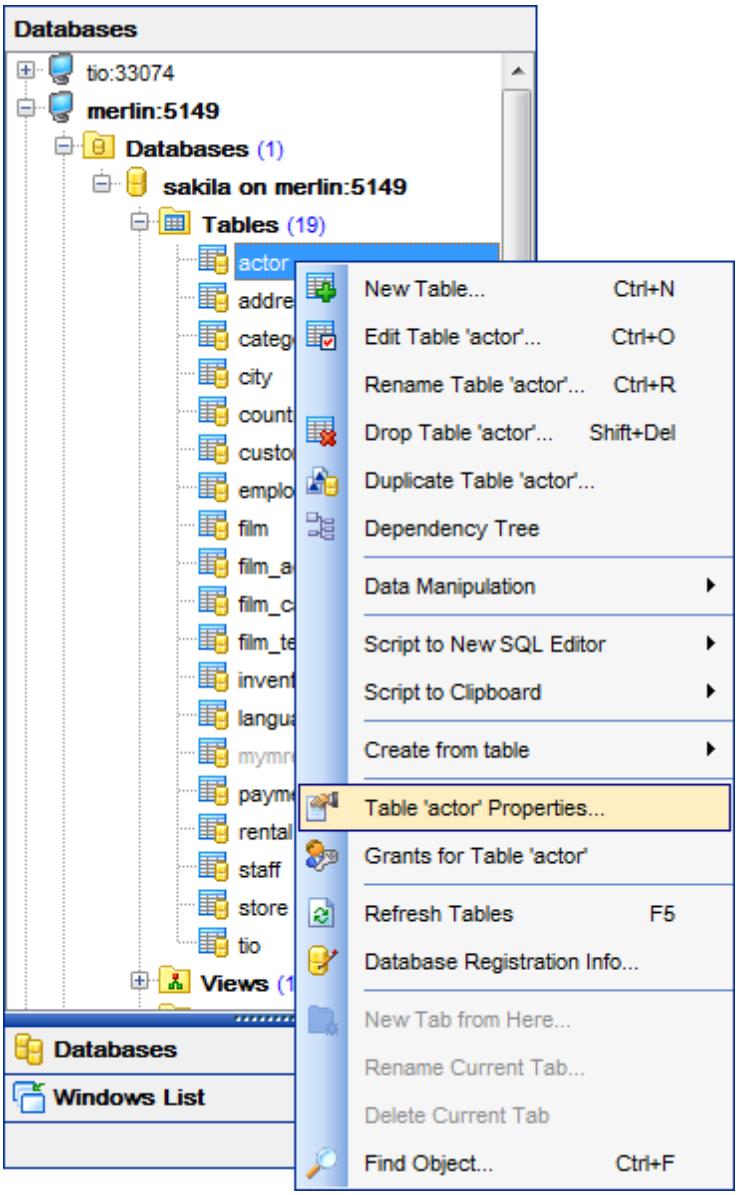
Host context menu

Object context menu

2.6.3 Object context menu

The **context menu of an object** (e.g. *table* or *view*) in the DB Explorer tree allows you to:

- create a new database object of the same type;
- edit the selected object in its editor;
- rename the selected object;
- drop the selected object from the database;
- duplicate the selected object (create a new object with the same DDL structure and properties as the selected object has);
- view Dependency Tree for the selected object;
- perform data manipulation operations (for tables and views);
- generate the object script and open it in SQL Editor;
- generate the object script and copy its text to Windows clipboard;
- create view/procedure/function from table (for tables);
- view properties (for tables);
- define grants (for tables);
- refresh all objects of the selected object type;
- view/edit the database registration information within the Database Registration Info dialog;
- create a new tab for the selected object to access it through this tab quickly and/or manage the existing tab;
- search for an object within the tree.



See also:

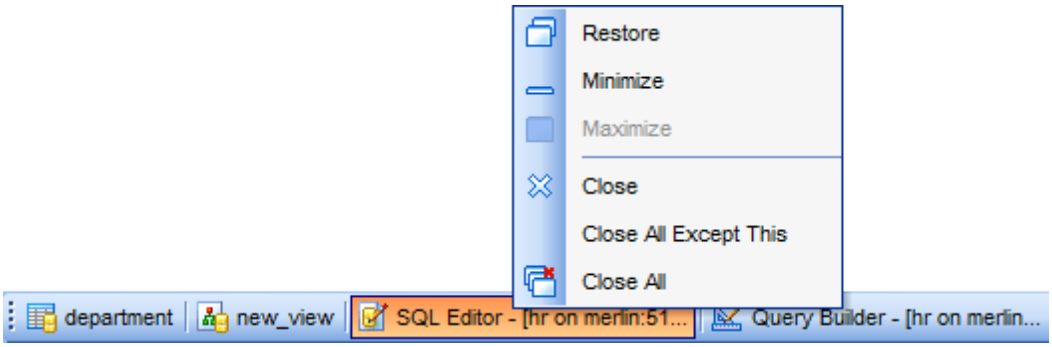
Host context menu

Database context menu

2.7 Working with windows

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

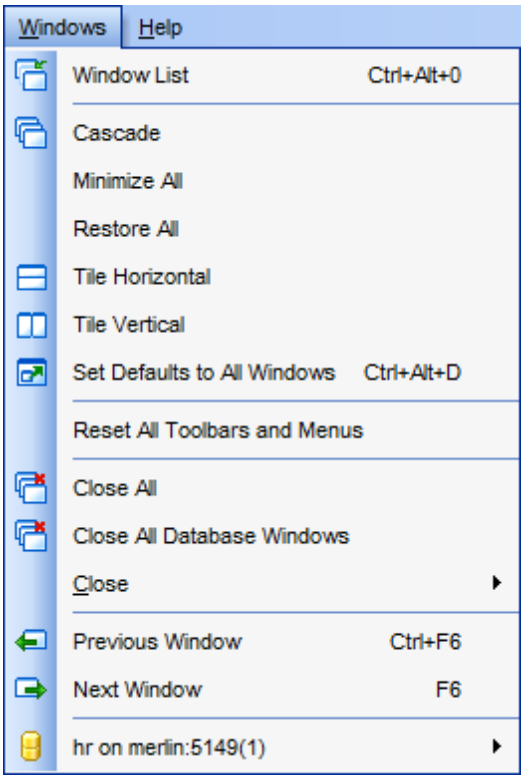
To activate the window you need, simply click one of the window buttons. To perform some additional actions with the window, right-click its tab and select the corresponding menu item from the popup menu.



If you have multiple windows opened, you can also switch between them using the *Ctrl+Tab* shortcut.

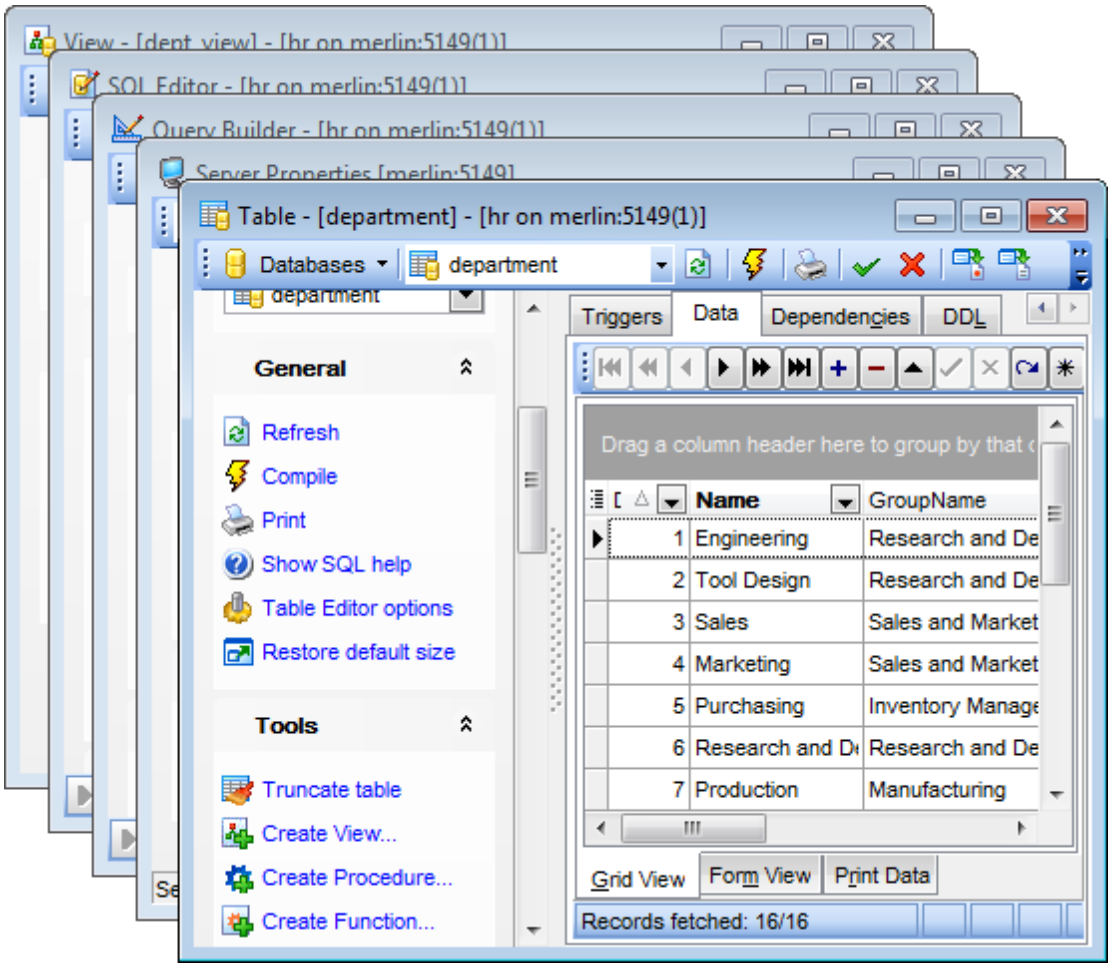
The **Number of open editors is restricted** option available in the Windows section of the Environment Options options dialog allows you to set the maximum number of editors that may be opened simultaneously. When the number of editors exceeds the specified value, the previously opened editors will be closed automatically.

The **Windows** menu facilitates your work with **SQL Manager** windows.

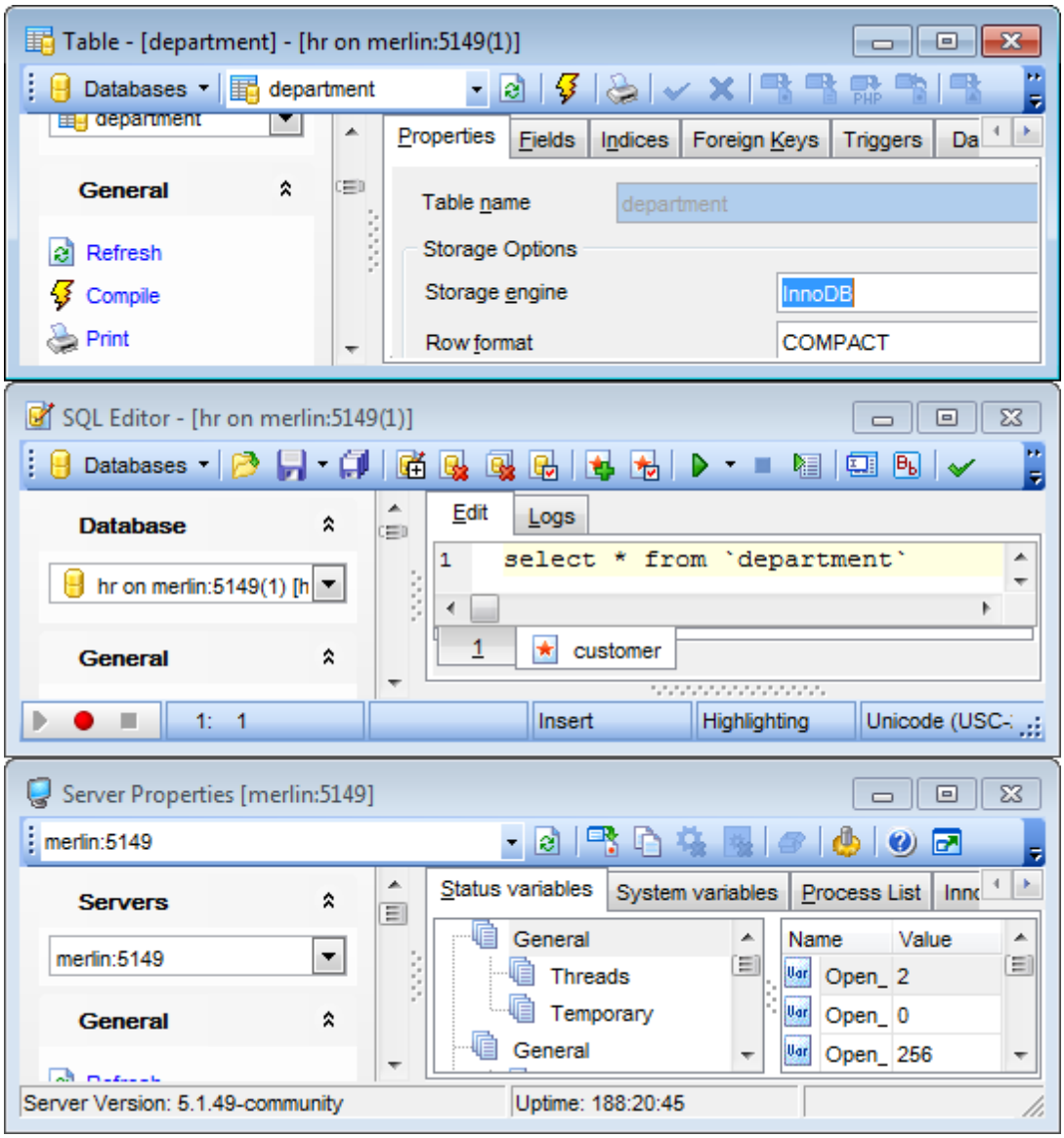


The **Windows** menu allows you to:

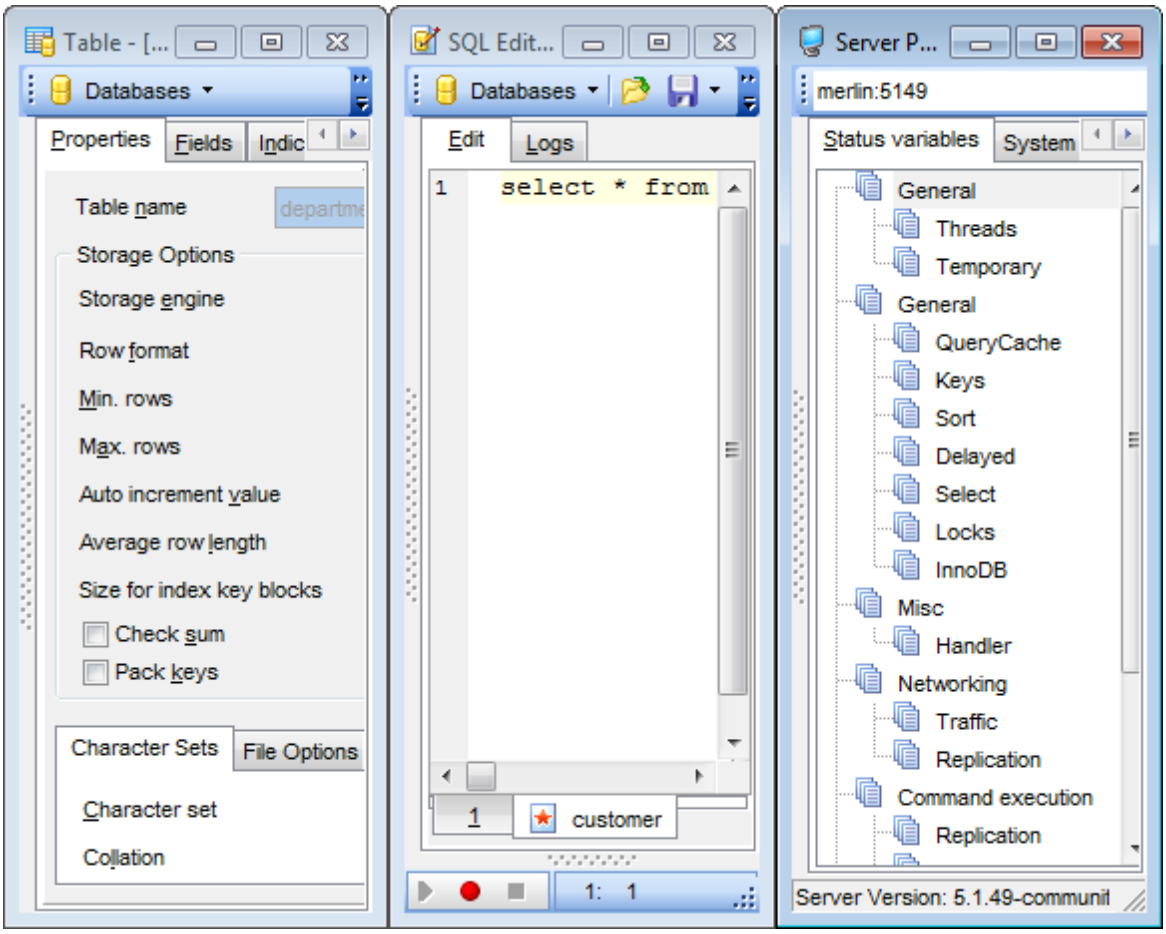
- view the Windows List within the corresponding tab of DB Explorer;
- set all current windows *cascade*:



- minimize all windows;
- restore all windows;
- tile all current windows *horizontally*:



- tile all current windows *vertically*:



- set defaults to all windows;
- reset all toolbars and menus;
- close all windows;
- close all editors of the specified object type (can be selected from the submenu);
- switch to the previous window;
- switch to the next window;
- activate one of currently opened windows.

See also:

Selecting style and language

First time started

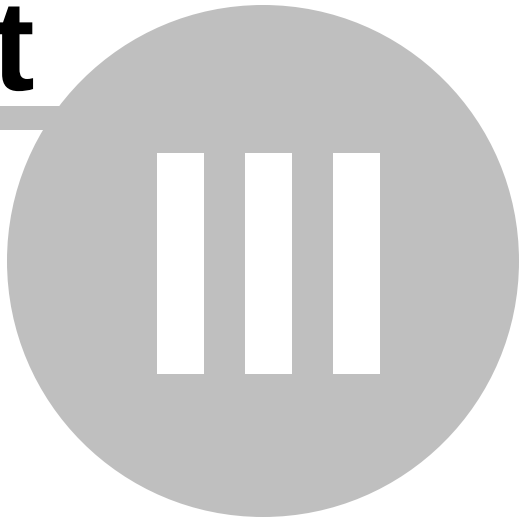
Using Desktop Panel

Database navigation

Working with database objects

Using context menus

Part



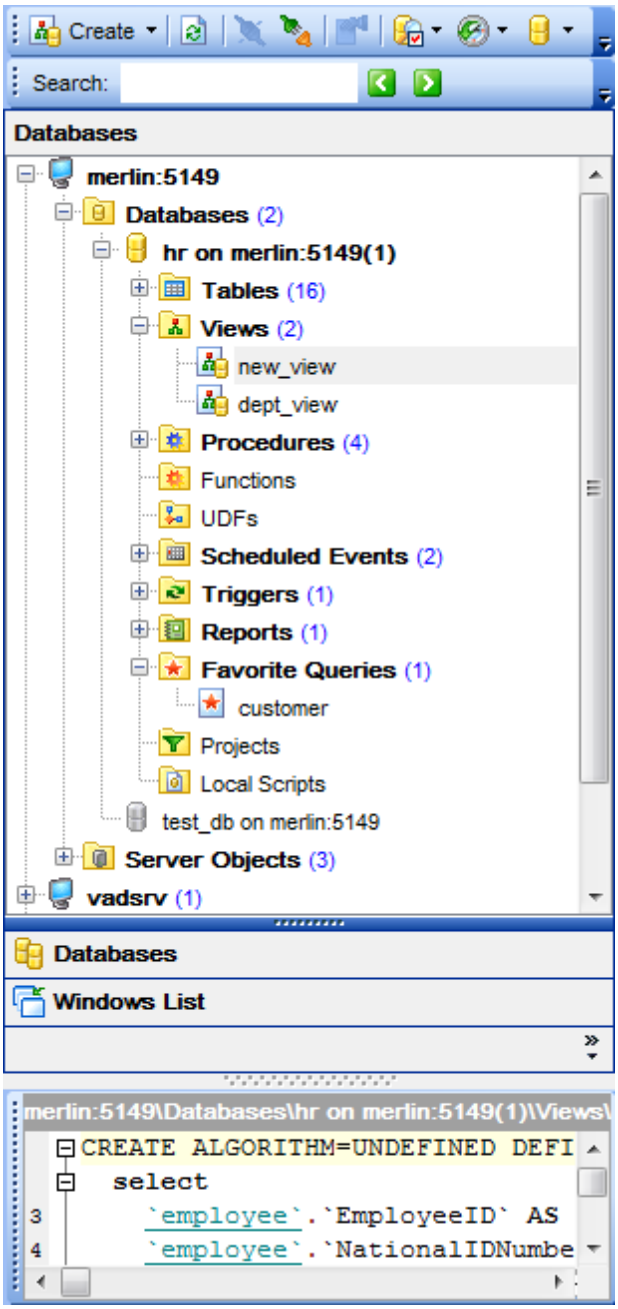
3 Database Explorer

Database Explorer (or **DB Explorer**) is the basic window of **SQL Manager for MySQL** for navigation within databases and working with database objects. The tree-like structure of DB Explorer allows you to manage the databases and database objects, and perform other everyday operations quickly and easily.

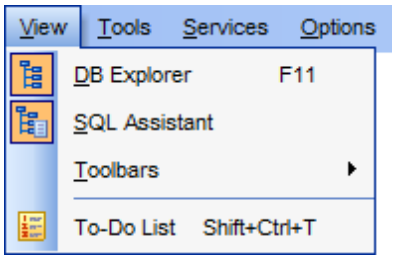
The following list contains the most frequently used features provided by Database Explorer.

- Managing database registration info
- Connecting to databases
- Performing basic operations upon database objects
- Selecting multiple objects
- Navigating database objects using multiple tabs
- Easy access to recently opened objects
- Managing Favorite objects
- Searching within the tree
- Viewing extended information about database objects
- Configuring Database Explorer
- Managing Favorite queries

All objects are structured by their types and are available within the corresponding nodes of the tree. The number of objects of each type is displayed in brackets after the node name denoting the object type. To expand/collapse a node, you can double-click it or use the +/- icons.



To view/hide the Database Explorer window, use the **View | DB Explorer** main menu item or press the **F11** key.



Use the *Ctrl+Shift+C* shortcut to collapse the current **DB Explorer** tree branch and switch to the parent node.

Note that you can change database aliases order by dragging them within the **DB Explorer** tree.

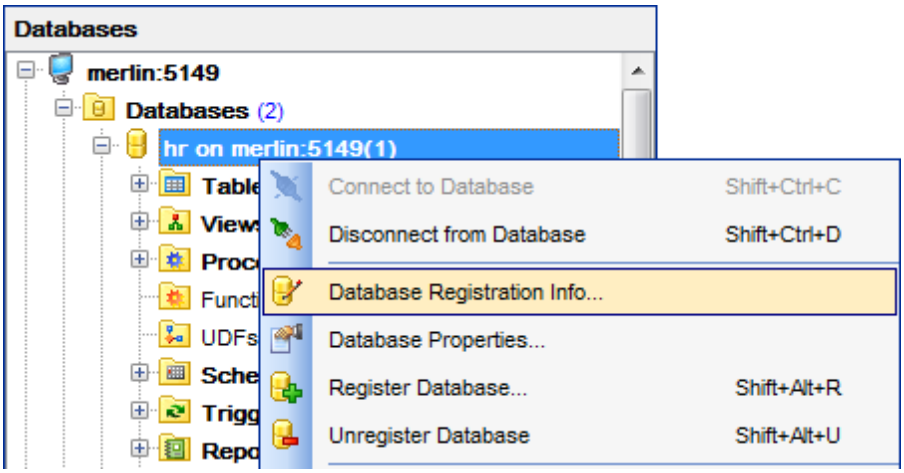
See also:

Getting Started
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools
How To...

3.1 Managing database registration info

After you have created and/or registered your database in **SQL Manager for MySQL**, you can perform a number of operations with the database using the context menu.

If you need to view/edit the registration information of a database, right-click the database alias in DB Explorer and select the **Database Registration Info...** context menu item to open the Database Registration Info dialog.

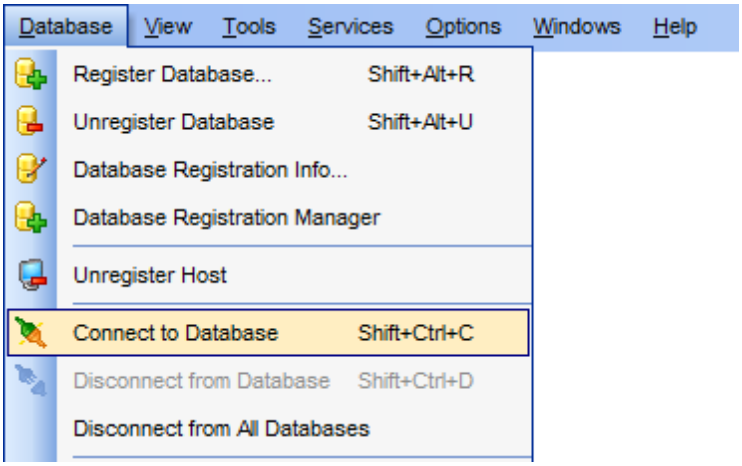


See also:

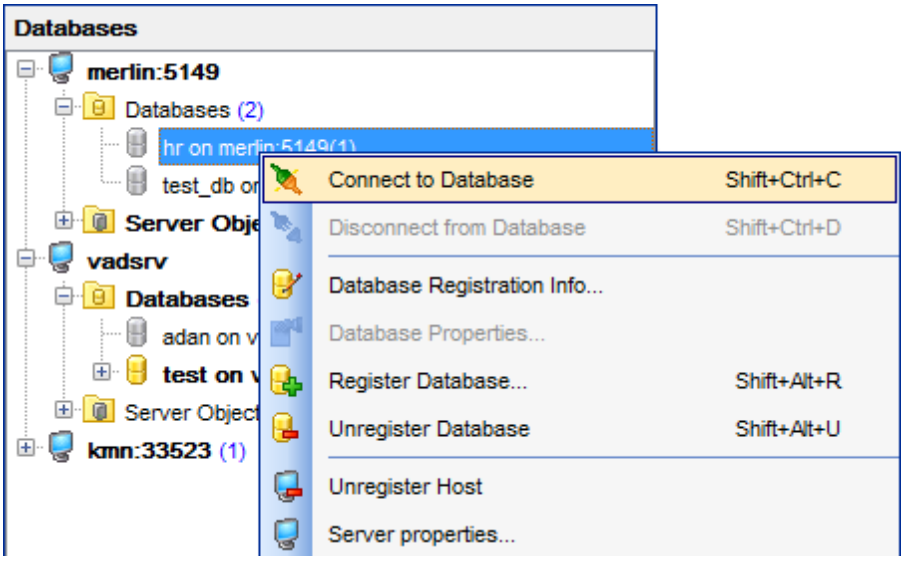
Register Database
Database Registration Info
Database Registration Manager

3.2 Connecting to databases

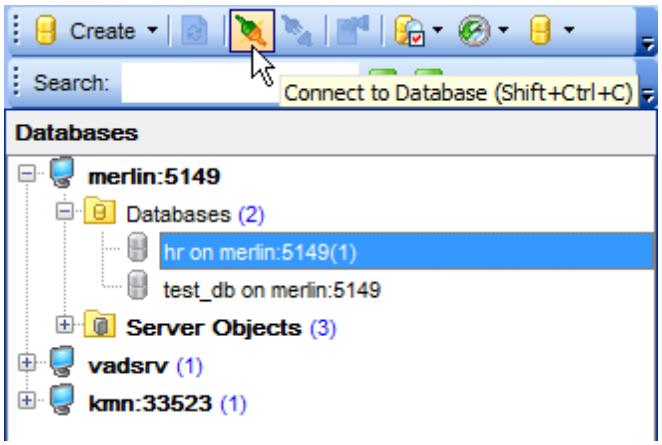
When the MySQL host is registered, and the database registration is complete, you can establish connection to your database.



The simplest way to connect to a database is to double-click its alias in the Database Explorer tree. The same operation can be performed by selecting the **Connect to Database** item of the database alias context menu, or by using the **Database | Connect to Database** main menu item.



Alternatively, you can use the *Shift+Ctrl+C* shortcut or the **Connect to Database** toolbar button.



See also:

Register Database

Database Registration Info

3.3 Operations with database objects

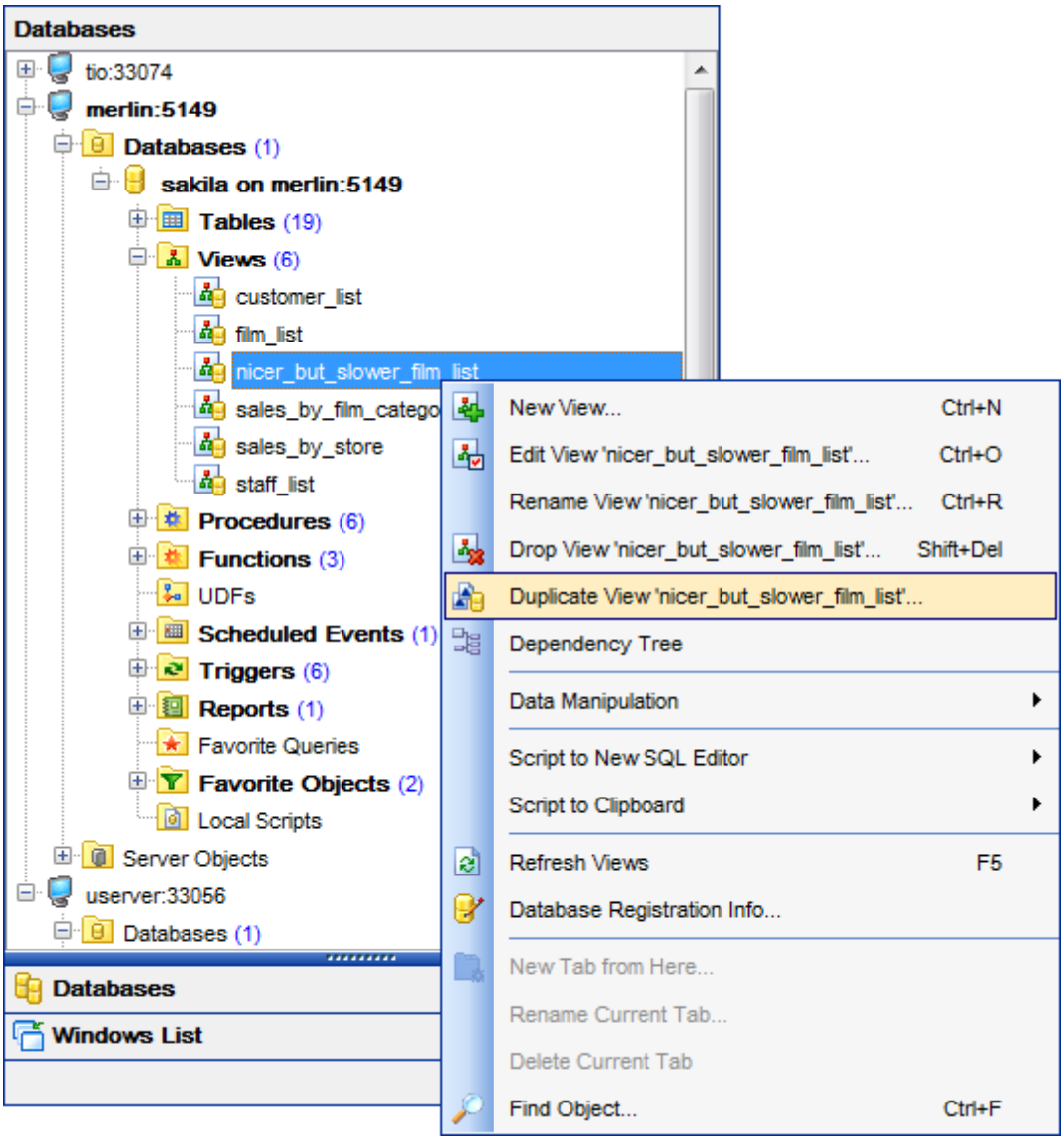
Database Explorer allows you to perform various operations with database objects.

To open an object in its editor, you can double-click the object in the **DB Explorer** tree.

You can also right-click an object within the **DB Explorer** tree and use its context menu to perform a number of operations:

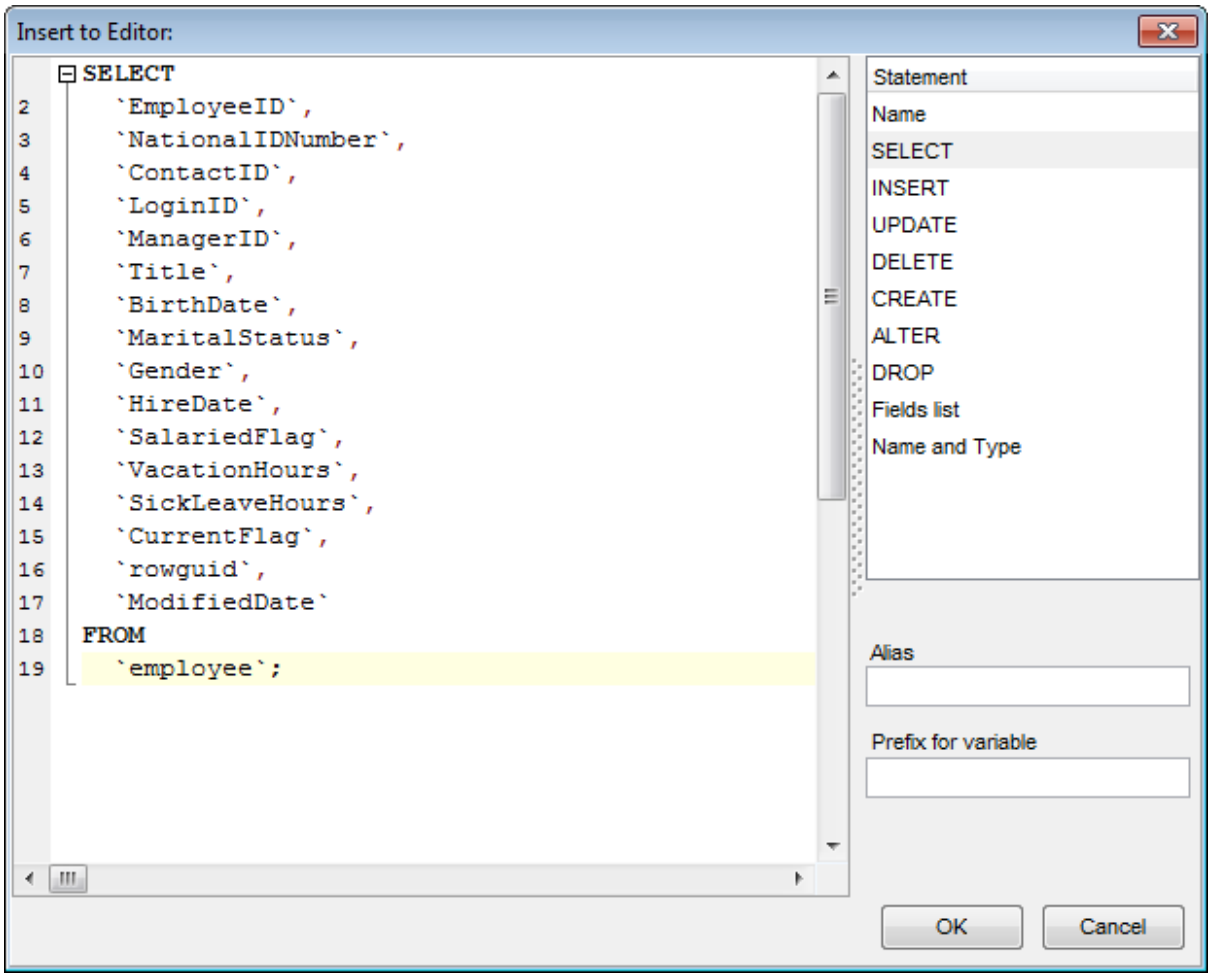
- create a new object (the **New <object>...** item);
- edit currently selected object (the **Edit <object_name>...** item);
- rename currently selected object (the **Rename <object_name>...** item);
- drop the selected object from the database (the **Drop <object_name>...** item);
- duplicate the selected object (the **Duplicate <object_name>...** item);
- view Dependency Tree for the selected object.

Note that the context menu contains object-specific items only when the object is currently selected in **DB Explorer**.



Using drag-and-drop operations you can add objects to SQL Editor, Visual Query Builder or SQL Script Editor. For your convenience the **Insert to editor** dialog is implemented. The dialog allows you to specify the **statement** to be inserted into the editor: *Name*, *SELECT*, *INSERT*, *UPDATE*, *DELETE*, *CREATE*, *ALTER*, *DROP*, *Columns list*, *Name and Type*. If necessary, set the **Alias** and **Prefix for variable**.

If more convenient, you can edit the generated statement manually (see Working with SQL Editor area).



See also:

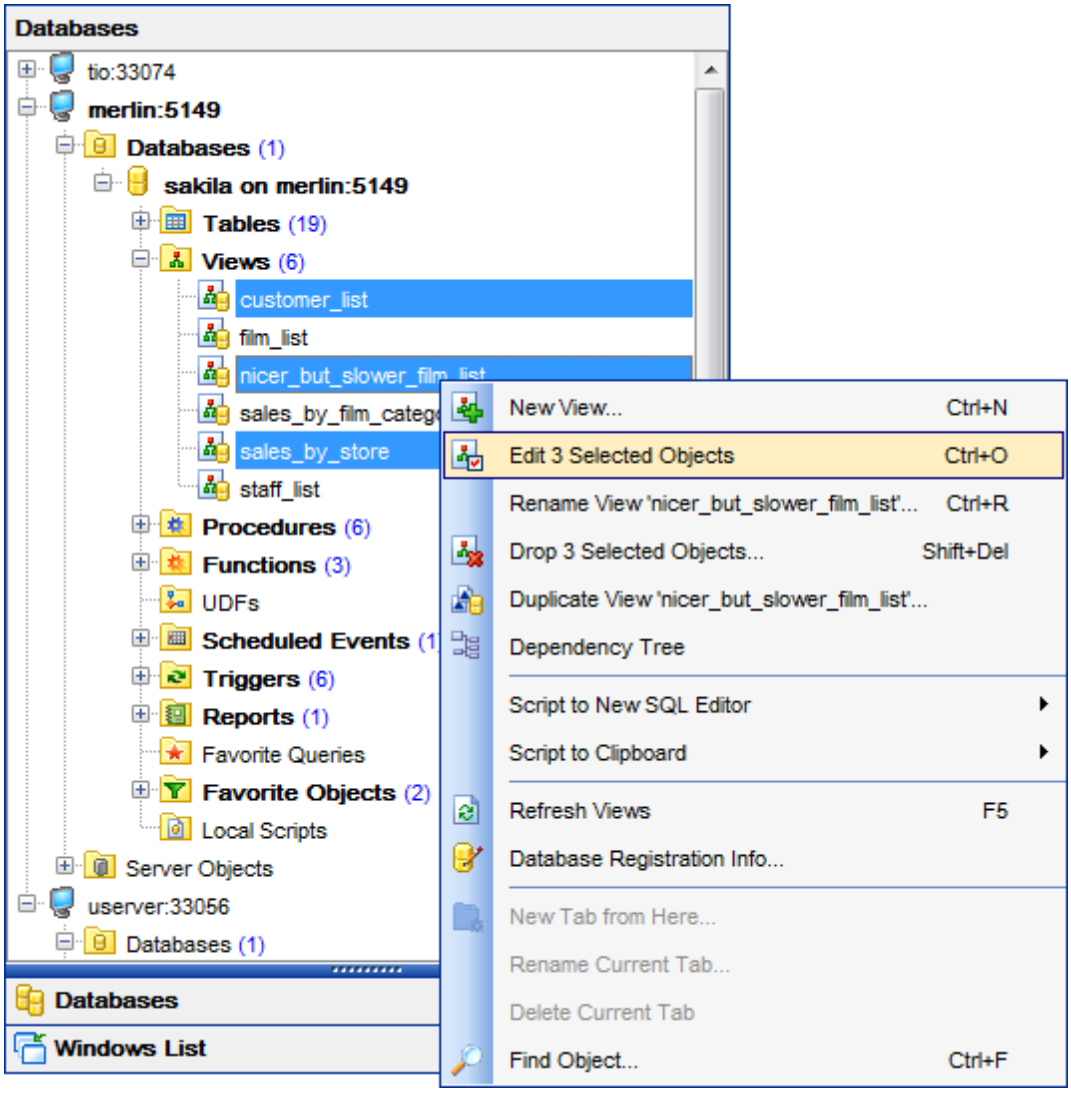
[Database/Server Objects Management]
[SQL Editor]
[Selecting multiple objects]

3.4 Selecting multiple objects

You can select more than one object in **Database Explorer** by pressing the *Ctrl* or the *Shift* key and selecting multiple objects one by one.

The **context menu** of several selected objects allows you to:

- create a new database object of the same type;
- edit the selected objects;
- drop the selected objects;
- perform other operations with the first of the selected objects (see Operations with database objects).



Hint: You can move several objects to your Favorite objects: just drag and drop the selected objects to the previously created subfolder within the **Favorite Objects** node of **DB Explorer**.

See also:

Operations with database objects
Database/Server Objects Management
Managing Favorite objects

3.5 Using tabs for database navigation

To make your work with **Database Explorer** even more convenient, the capability of **working with several tabs** is implemented.

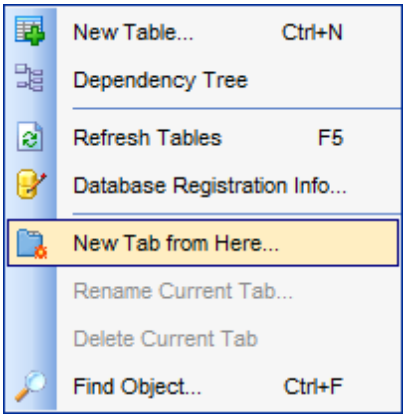
You can use tabs when you wish to work with a particular node of the DB Explorer tree only: with a group of objects, or with a specific database project. Creating such tabs will minimize scrolling within large trees, you only need to switch between them with a single click on the corresponding tab.

Creating tabs

In order to create a new tab:

- right-click the node (e.g. the **Tables** node) for which you wish to create a tab and select the **New Tab from Here...** context menu item.

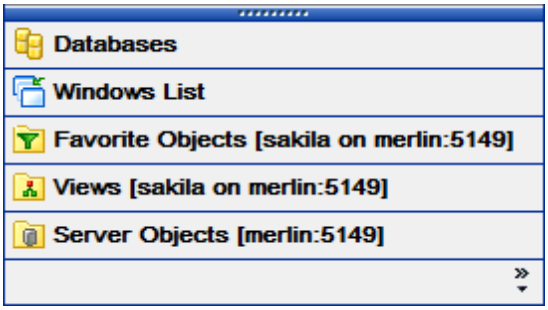
Note: A tab can be created only on the basis of a tree node. For example, if the **Show Table Subobjects** option is disabled in the View Mode menu, the **New Tab from Here...** item will not be available for tables, since none of them will be a tree node anymore.



The specified tabs can be displayed in either of the two views:

- as *icons* on the lower pane of DB Explorer:

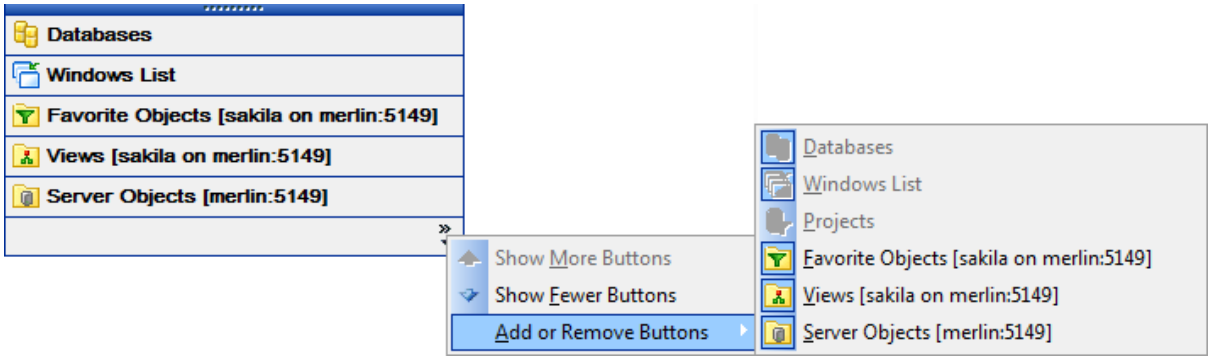
- as *tabs* with captions:



Hint: You can reorder items in the *tabs* view by dragging their captions up and down.

To add/remove items to/from the *tabs* view, you can drag the horizontal splitter up/down:

or click the **Configure buttons** icon available in the bottom right corner of the **DB Explorer** window, and select **Show More Buttons** / **Show Fewer Buttons** / **Add or Remove Buttons** items from the popup menu.



Note: Navigation through the tabs is also possible with the help of the following shortcuts :

- *Ctrl+Shift+N* - move to the next tab;
- *Ctrl+Shift+P* - move to the previous tab.

Renaming tabs

In order to rename a tab:

- switch to the tab by clicking its caption or icon (there can be only one active tab, and it is highlighted with a different color);
- right-click within the DB Explorer area and select the **Rename Current Tab...** context menu item.

Removing tabs

In order to remove a tab:

- switch to the tab by clicking its caption or icon (there can be only one active tab, and it is highlighted with a different color);
- right-click within the DB Explorer area and select the **Delete Current Tab** context menu item.

See also:

Managing Favorite objects

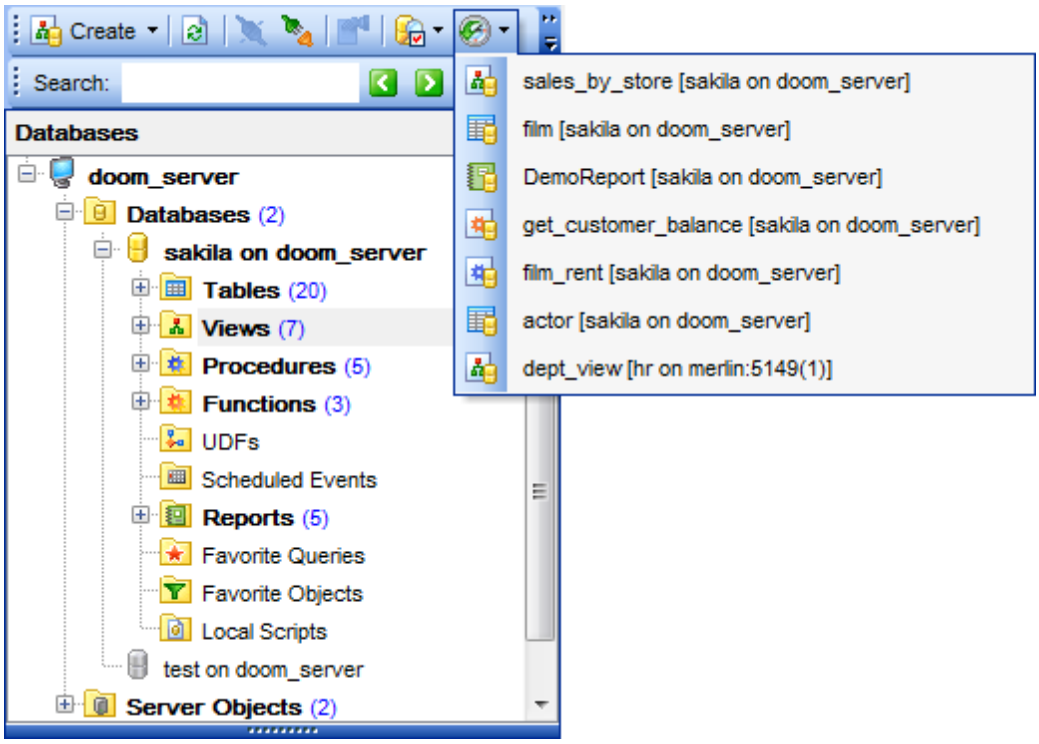
Windows List

Database/Server Objects Management

3.6 Recently opened objects

Use the **Recent Objects** button available on the DB Explorer toolbar to access the list of recently opened database objects (during the current session).

This list is common for all registered databases. Next to the object name the database name and the host/address are displayed. Select an object from this list to open it using its editor.



To change the number of objects that are considered 'recent', select the **Options | Environment Options** main menu item, proceed to the **Tools | DB Explorer** section within the **Environment Options** dialog, and set the **Recent objects count** option value (see Environment Options for details).

See also:

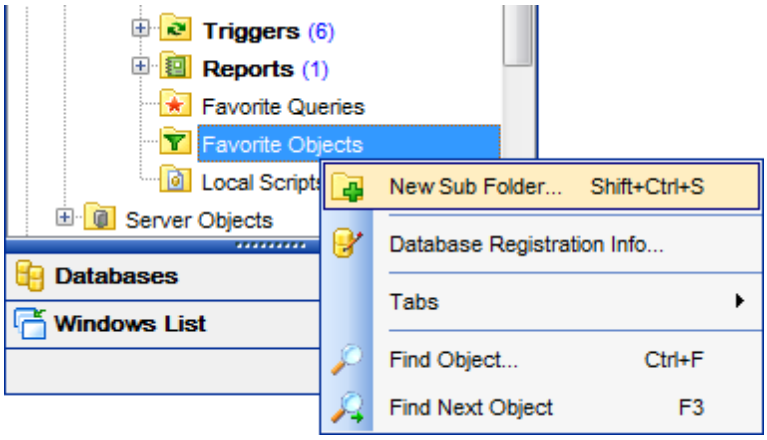
Database/Server Objects Management

Environment Options

3.7 Managing Favorite objects

Use the **Favorite objects** node for each database to work with the selected objects of this database only. You can place any object from the database tree here.

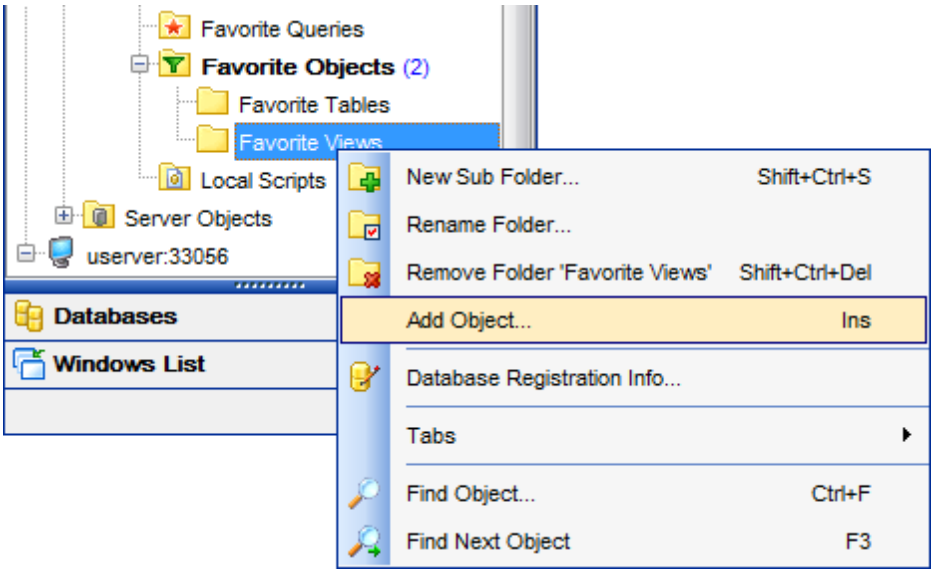
You can also create a separate tab for your **Favorite objects** folder. See Using tabs for database navigation section for details.



Creating Favorite objects folders

In order to create a new folder:

- right-click the **Favorite objects** node and select the **New Sub Folder...** context menu item;
- enter the folder name within the **New Folder** dialog.



Adding objects

In order to add a new object to the Favorite objects folder:

- expand the **Favorite objects** node in DB Explorer;
- drag an object (or multiple objects) from the database tree to the Favorite objects folder

or

- right-click the Favorite objects folder and select the **Add Object...** context menu item, or use the *Ins* key;
- use the Select Object dialog to specify objects to be added to the Favorite objects folder.

Removing objects from the Favorite objects folder

In order to remove an object from the Favorite objects folder:

- right-click the object and select the **Remove <object_name> from Favorite objects** context menu item, or use the *Shift+Ctrl+Del* shortcut;
- confirm removing in the dialog window.

Note: This operation does not drop the object from the database, but only removes its alias from the Favorite objects tree.

See also:

Using tabs for database navigation

Select Object dialog

Database/Server Objects Management

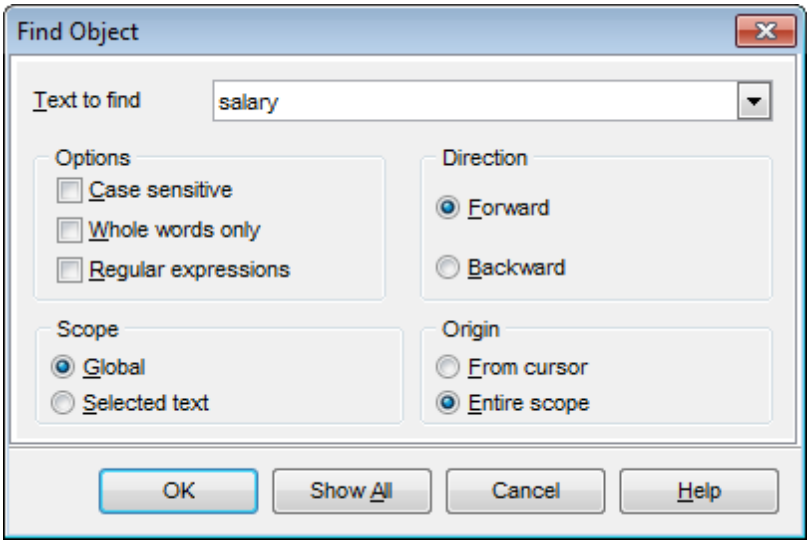
3.8 Searching within the tree

SQL Manager for MySQL provides an ability to search for items within the **DB Explorer** tree. Searching for items may be useful if you have a lot of database objects, and it may be sometimes hard to find the one you need.

There are two search facilities implemented in **SQL Manager** for your convenience. You can search for items within the **DB Explorer** tree in either of the following ways:

- using the **Find Item** dialog

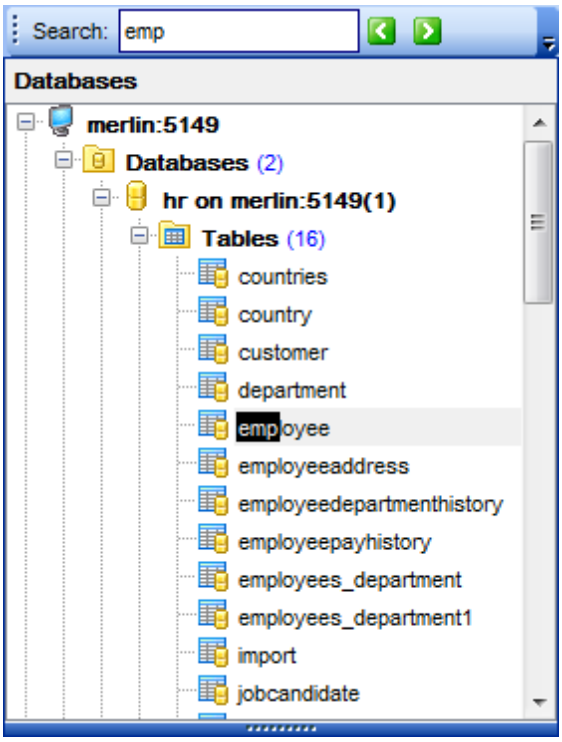
To call the **Find Item** dialog, right-click the **Database** alias or any of the database objects in the **DB Explorer** tree and select the **Find Object...** context menu item, or use the *Ctrl+F* key shortcut.



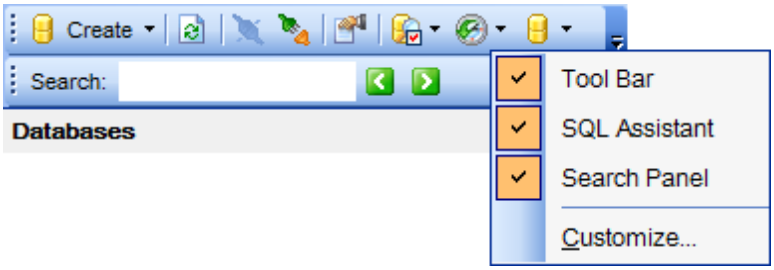
Note that you can specify whether the search will be performed within the entire tree or within the currently selected node only: use the **Search by categories** option available within the Tools | DB Explorer section of the Environment Options dialog.

- using the **Search Panel**

Type in the first letters in the edit-box, and the corresponding object will be highlighted in the tree, as displayed in the picture below. The buttons allow you to define the search direction.



By default, the **Search Panel** is activated in the upper area of DB Explorer. To disable the panel, right-click within the panel and deselect the checkbox at the corresponding popup menu item.



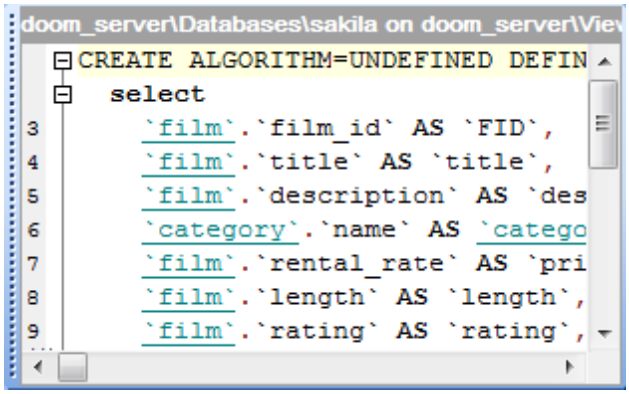
Hint: The **Search Panel** is dockable, i.e. you can drag it to any location within the **DB Explorer** form.

See also:

Find Text dialog

3.9 SQL Assistant

SQL Assistant which is located at the bottom of the **Database Explorer** window helps you to work with your database objects. Depending on the current selection in DB Explorer, the SQL Assistant area displays additional information pertaining to the selected object.

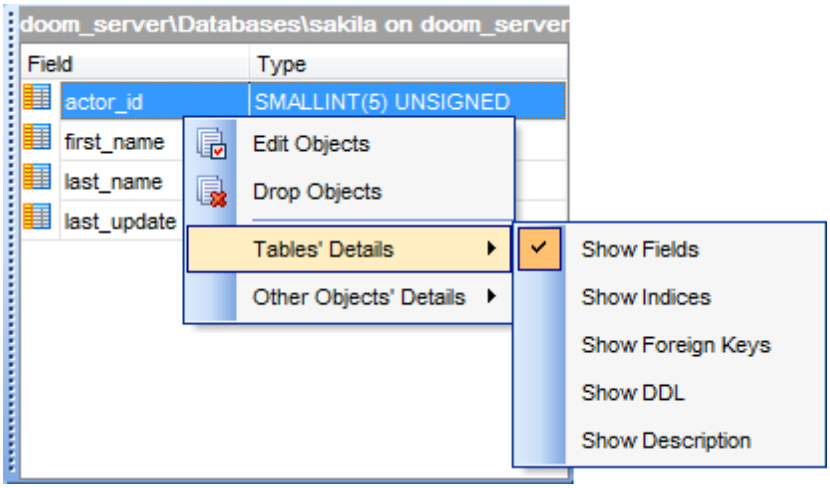


If you select a **database** in DB Explorer, SQL Assistant displays the list of the database *object groups* and *the number of objects* in each group.

Selecting an **object group** in DB Explorer displays the list of the *objects* in SQL Assistant. Double-clicking the object name in **SQL Assistant** makes the object available for editing in the appropriate editor. The context menu of the object or group of objects (selected with the *Ctrl* or *Shift* keys pressed) allows you to edit or drop the selected objects.

If you select a **table** in DB Explorer, SQL Assistant displays the list of the table subobjects (e.g. *columns* and their *types*) by default. What is displayed in **SQL Assistant** when a table is selected in DB Explorer depends on the **Table Details** selection. Click the **View Mode** toolbar button and select the **Table Details | Show...** drop-down menu item, or use the context menu of SQL Assistant. Possible values are: *Show Columns*, *Show Indexes*, *Show Foreign Keys*, *Show DDL*, *Show Description*.

Selecting other objects in **DB Explorer** displays the definition in **SQL Assistant** by default. Use the **Other Objects' Details | Show...** context menu item within the SQL Assistant area to define the content of SQL Assistant when an object is selected in DB Explorer. Possible values are: *Show DDL*, *Show Description*.



You can also use **SQL Assistant** to work with your queries quickly. You can drag-and-drop object aliases to the SQL Editor, Visual Query Builder or SQL Script Editor working area, in the same way as this operation is performed in **Database Explorer**.

See also:

Database Objects Management

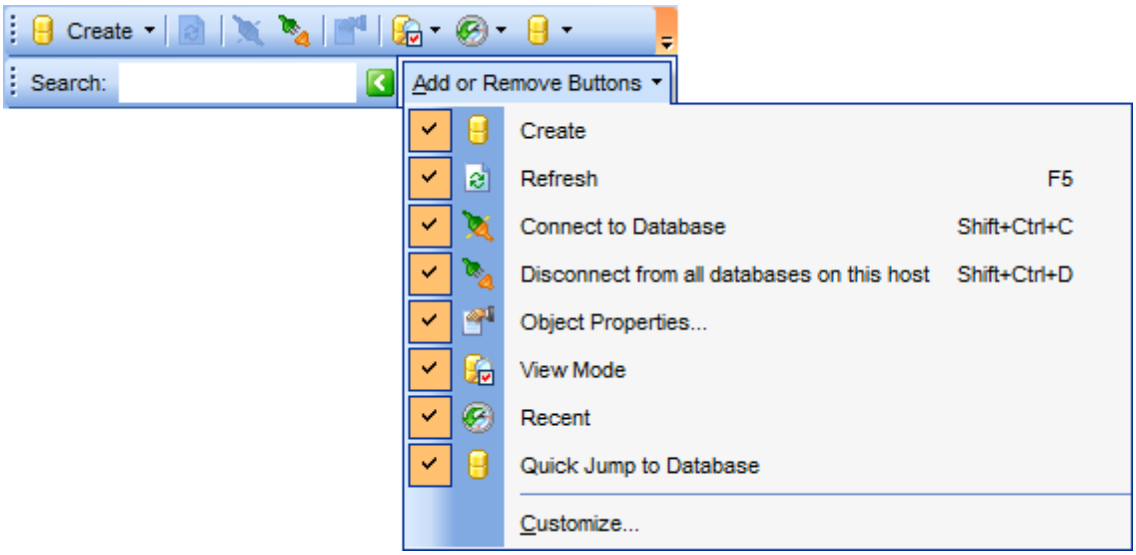
3.10 Configuring Database Explorer

Configuring DB Explorer toolbar

The toolbar of Database Explorer contains most frequently used tools for working with databases and database objects, and a tool for configuring DB Explorer. The following actions are available in the toolbar by default:

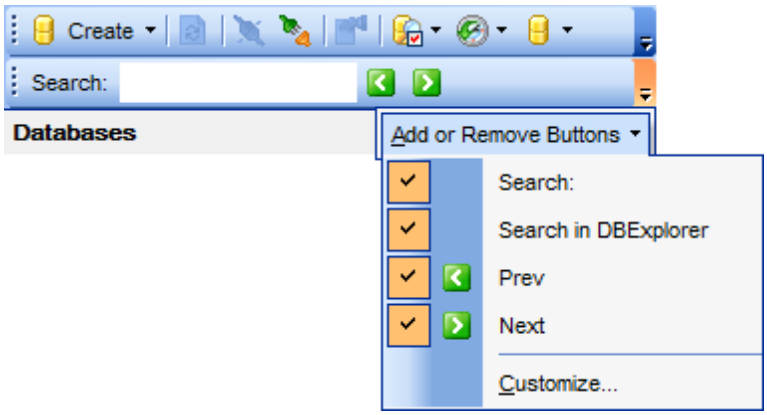
- create a new object;
- refresh the current tree branch;
- connect to a database;
- disconnect from a database;
- view the selected object properties;
- configure Database Explorer using the View Mode menu;
- view the list of recently opened objects;
- jump to any of registered databases quickly.

Click **More buttons...** on the right side of the toolbar and use the **Add or Remove Buttons** popup menu items to define the set of actions available in the toolbar. To customize the toolbar, select the **Add or Remove Buttons | Customize...** item from the popup menu.



Configuring the Search Panel

Click **More buttons...** on the right side of the Search Panel and use the **Add or Remove Buttons** popup menu items to define the set of the panel elements. To customize the panel, select the **Add or Remove Buttons | Customize...** item from the popup menu.

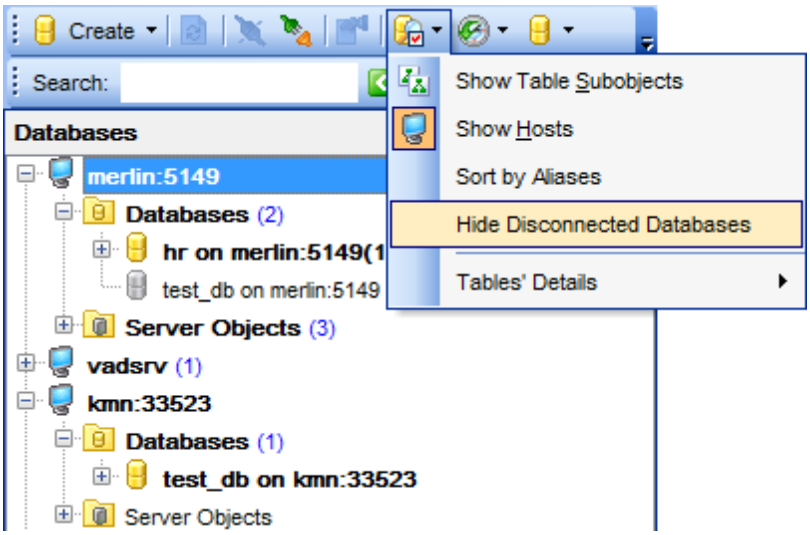


Using View Mode menu

Use the **View Mode** toolbar button to configure **Database Explorer** according to your needs.

The drop-down menu called upon clicking this button allows you to:

- show/hide table subobjects as child nodes of tables;
- show/hide host nodes for registered databases;
- sort the list of databases by their aliases in the DB Explorer tree;
- show/hide disconnected databases;
- configure tables' details for the SQL Assistant area;
- configure other objects' details for the SQL Assistant area.



Use the DB Explorer section of the Environment Options dialog (**Options | Environment Options...**) to see more options to configure **Database Explorer**.

See also:

Customize toolbars and menus

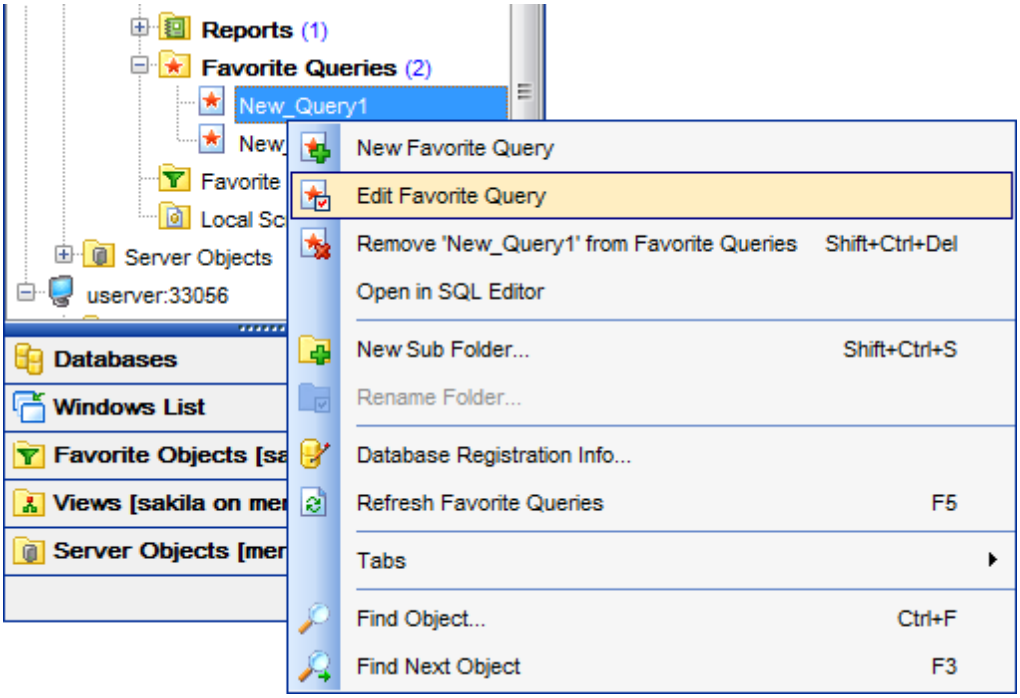
Environment Options

3.11 Managing Favorite queries

Favorite Queries is a new feature of **SQL Manager**. Now you are provided with an opportunity to save the most frequently used SQL queries as Favorite Queries.

Use the **Favorite Queries** node of DB Explorer to access the list of your Favorite queries quickly. Queries stored in the database and those stored in Windows registry can be easily distinguished by their icons.

Using the context menu you can create a new Favorite query or edit an existing one using Favorites editor, open any of the existing queries in SQL Editor or remove a query if you don't need it any longer.



You can also create a separate tab for your Favorite queries. See Using tabs for database navigation section for details.

See also:

Using tabs for database navigation

Favorites editor

Part

4 Database Management

SQL Manager for MySQL provides a number of tools you may need to manage your MySQL databases.
Find the list of common database management operations for working in **SQL Manager** below.

Unregistering Hosts

In order to unregister a host in **SQL Manager for MySQL**:
- select the host to unregister in the DB Explorer tree;
- select the **Database | Unregister Host** main menu item or use the corresponding  **Unregister Host** toolbar button

or
- right-click the host alias and select the **Unregister Host** context menu item in the DB Explorer tree;
- confirm unregistering in the corresponding dialog window.

Creating Databases

In order to create a database in **SQL Manager for MySQL**:
- select the **Database | Create Database** main menu item or use the corresponding  **Create Database** toolbar button;
- set all the necessary options using Create Database wizard which guides you through the entire process of creating a new database.

Dropping Databases

In order to drop a database in **SQL Manager for MySQL**:
- select the database to drop in the DB Explorer tree;
- select the **Database | Drop Database** main menu item;
- confirm dropping in the corresponding dialog window.

Registering Databases

In order to register a single database in **SQL Manager for MySQL**:
- select the **Database | Register Database...** main menu item or use the corresponding  **Register Database** toolbar button

or
- right-click any database alias and select the **Register Database...** context menu item in the DB Explorer tree;
- set all the necessary options using Register Database wizard which guides you through the entire process of database registration.

Unregistering Databases

In order to unregister a database in **SQL Manager for MySQL**:
- select the database to unregister in the DB Explorer tree;
- select the **Database | Unregister Database** main menu item or use the corresponding  **Unregister Database** toolbar button

or
- right-click the database alias and select the **Unregister Database** context menu item in the DB Explorer tree;
- confirm unregistering in the corresponding dialog window.

Connecting to Databases

In order to connect to a database in **SQL Manager for MySQL**:
- select the database to connect to in the DB Explorer tree;
- select the **Database | Connect to Database** main menu item or use the corresponding **Connect to Database** toolbar button

or
- right-click the database alias and select the **Connect to Database** context menu item in the DB Explorer tree.

Disconnecting from Databases

In order to disconnect from a database in **SQL Manager for MySQL**:
- select the database to disconnect from in the DB Explorer tree;
- select the **Database | Disconnect from Database** main menu item or use the corresponding **Disconnect from Database** toolbar button

or
- right-click the database alias and select the **Disconnect from Database** context menu item in the DB Explorer tree.

Viewing and Editing Database Registration Info

In order to view/edit database registration info in **SQL Manager for MySQL**:
- select the database or any of its objects in the DB Explorer tree;
- select the **Database | Database Registration Info...** main menu item

or
- right-click the database alias or any of its objects and select the **Database Registration Info...** context menu item in the DB Explorer tree.

Viewing and Editing Database Properties

In order to view/edit database properties in **SQL Manager for MySQL**:
- select the database in the DB Explorer tree;
- right-click the database alias and select the **Database Properties...** context menu item or use the corresponding **Properties** toolbar button.

See also:

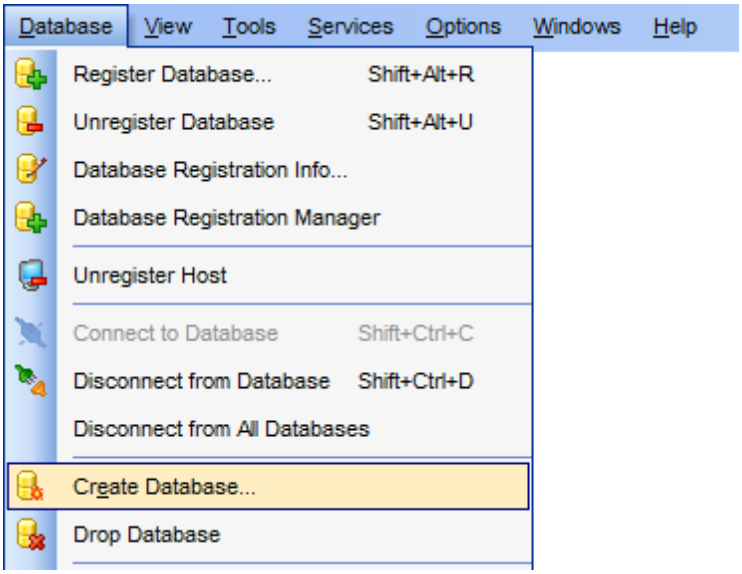
Getting Started
Database Explorer
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools

4.1 Create Database wizard

Create Database wizard allows you to create a new database on your MySQL host.

To start the wizard, select the **Database | Create Database...** main menu item, or use the **Create Database** button on the main toolbar.

- Setting database name
- Setting connection properties
- Viewing result SQL statement

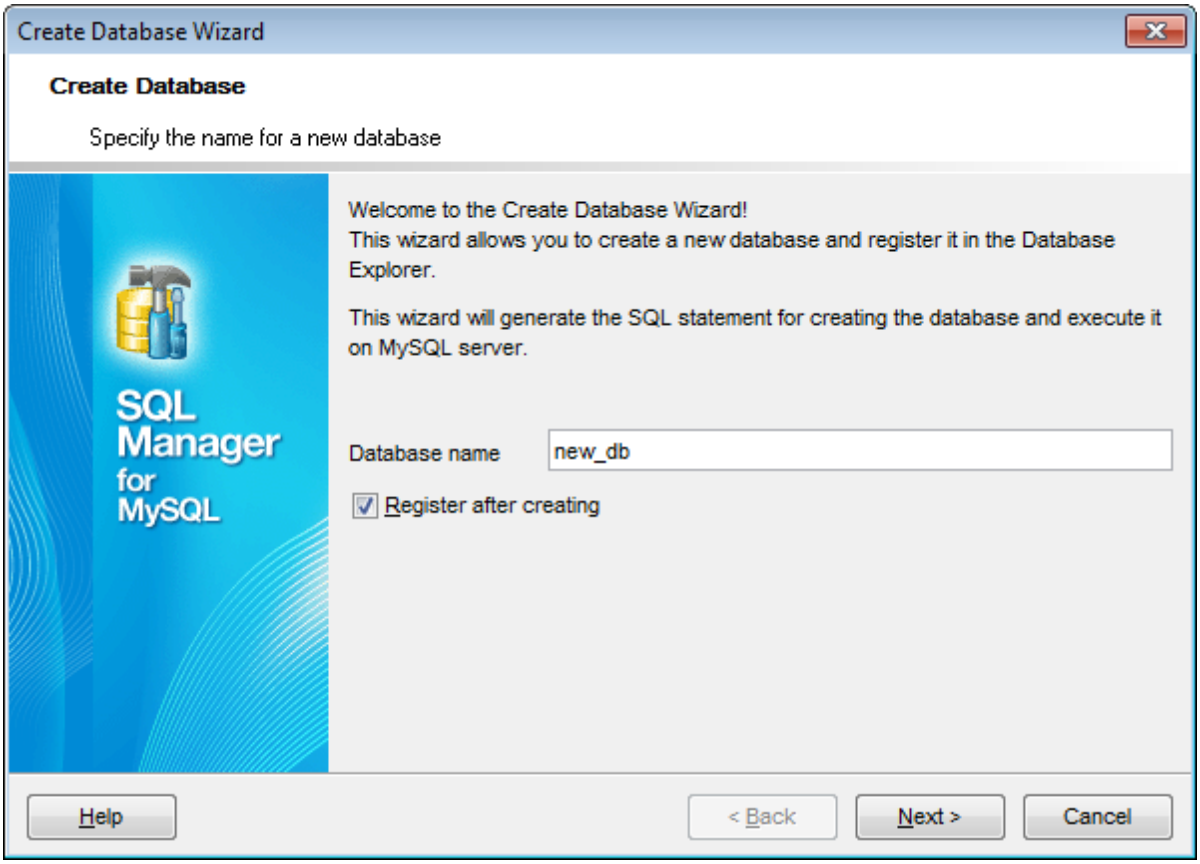


See also:

Register Database wizard
Database Registration Info
Database Properties

4.1.1 Setting database name

Use this step of the wizard to enter a **name** for the database being created.

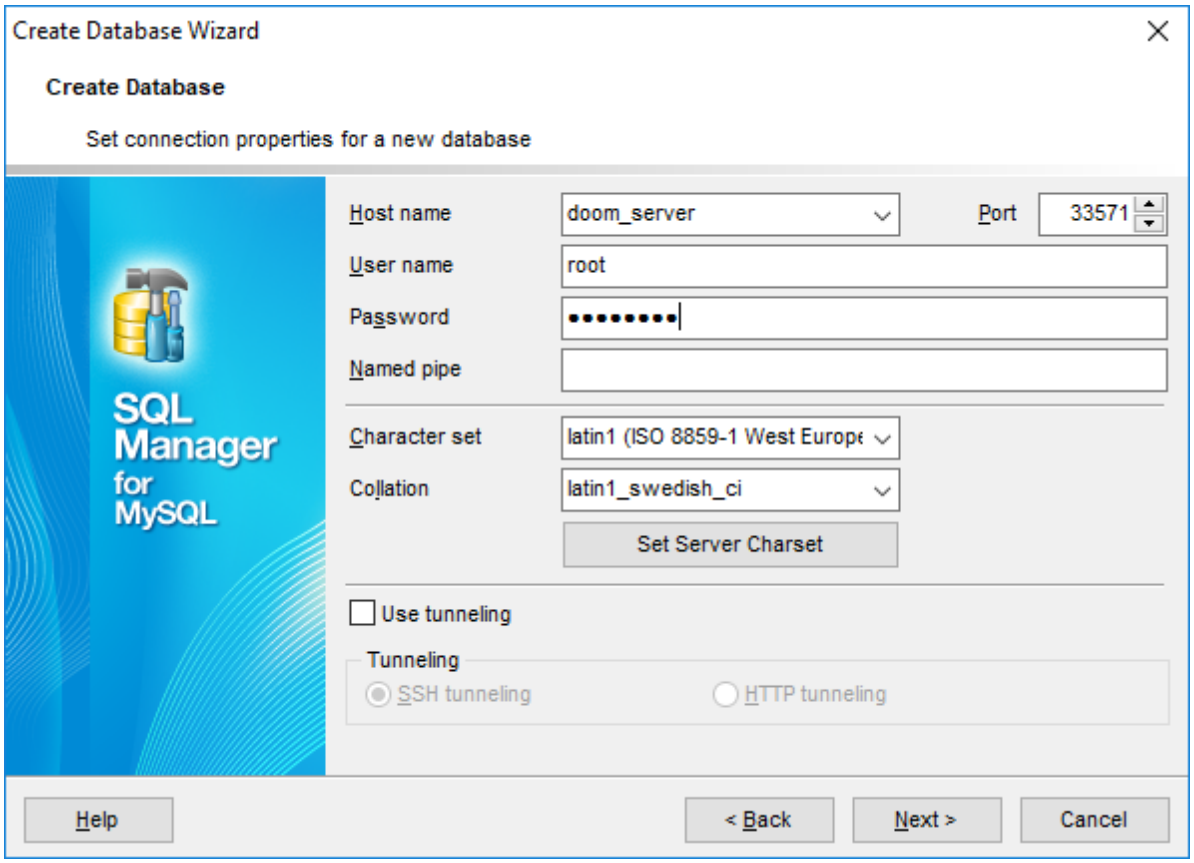


Register after creating
Check this option to register the newly created database in **SQL Manager** (the Database Registration Info dialog will be opened after database creation).

Click the **Next** button to proceed to the Setting connection properties step of the wizard.

4.1.2 Setting connection properties

Use this step of the wizard to set the necessary **connection parameters** for the database being created. Use the corresponding boxes and options: *Host name*, *Port*, *User name* and *Password*.



Specify the host where the database being created will reside: type in the host name in the **Host name** field or select one in the drop-down list.
Enter MySQL port to connect through in the **Port** field and provide *authorization* settings: **User name** and **Password**. If needed you can define the **Named pipe** in case of local MySQL. The named pipe value is stored in the MySQL server configuration file and it is 'MySQL' by default. Please note that only name of named pipe can be used, not a full path. The **Named pipe** field can be also used to specify a Unix socket in case of using HTTP-tunneling on *nix platforms. Unix socket value should start with '/' (Unix path delimiter) and its value is '/tmp/mysql.sock' by default.

You can select the character set from the **Character set** drop-down list, and the collation for string data from the **Collation** drop-down list. These rules define the page encoding and sort order for string data that will be applied to new string fields by default.

Click **Set server charset** button to apply server settings for the database.

☑ **Use tunneling**
If this option is checked, you should set tunneling parameters at the *Specifying tunneling*

parameters step of the wizard.

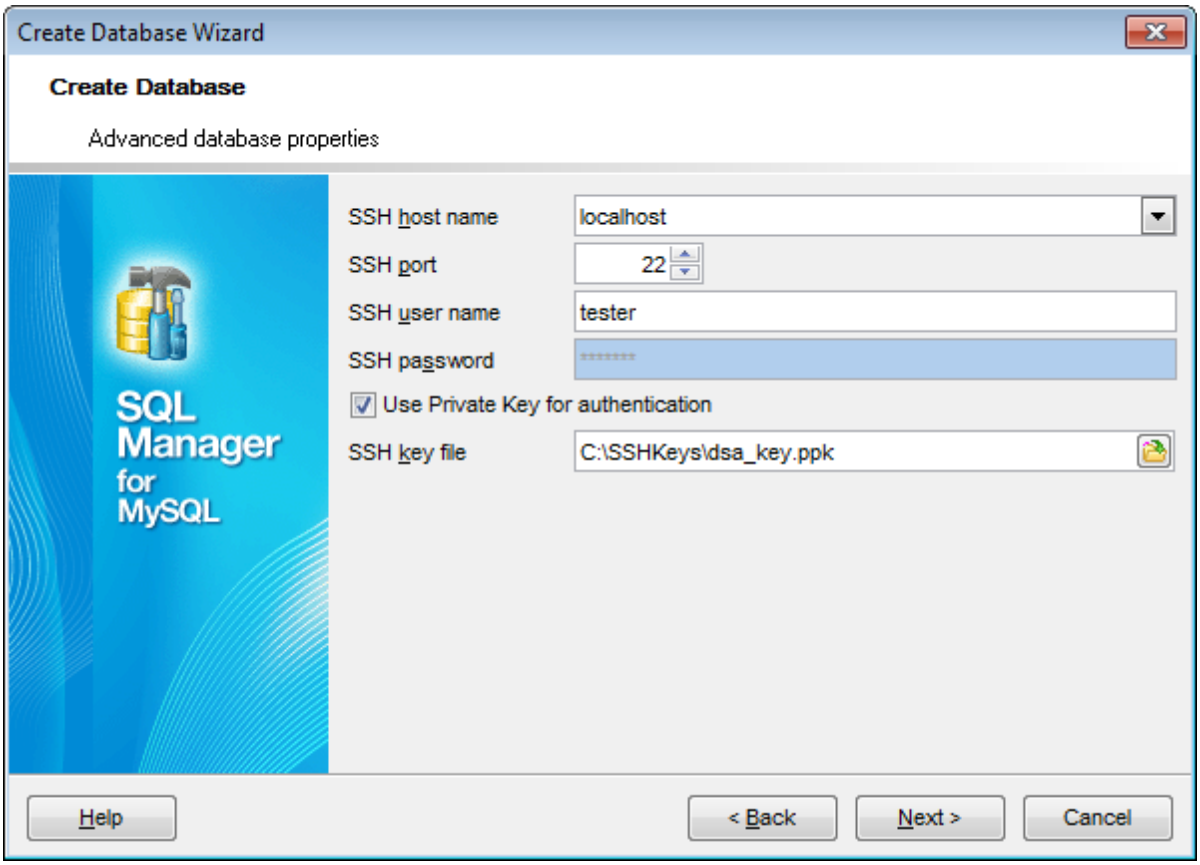
SSH tunneling
Select this option to establish connection to an intermediate SSH server and forward all MySQL commands through the secure tunnel. The next step of the wizard allows you to define the corresponding parameters for SSH tunneling.

HTTP tunneling
Select this option to access MySQL server through the HTTP protocol in case of Internet access through HTTP proxy only, or if the server does not allow direct connections to MySQL, but allows HTTP connections. The next step of the wizard allows you to define the corresponding parameters for HTTP tunneling.

SSH Tunneling parameters

Specify **SSH Host name**, **SSH port**, **SSH user name**, **SSH password**, the path to the **SSH key file** (if necessary) in the corresponding boxes.

See SSH connection properties for details.

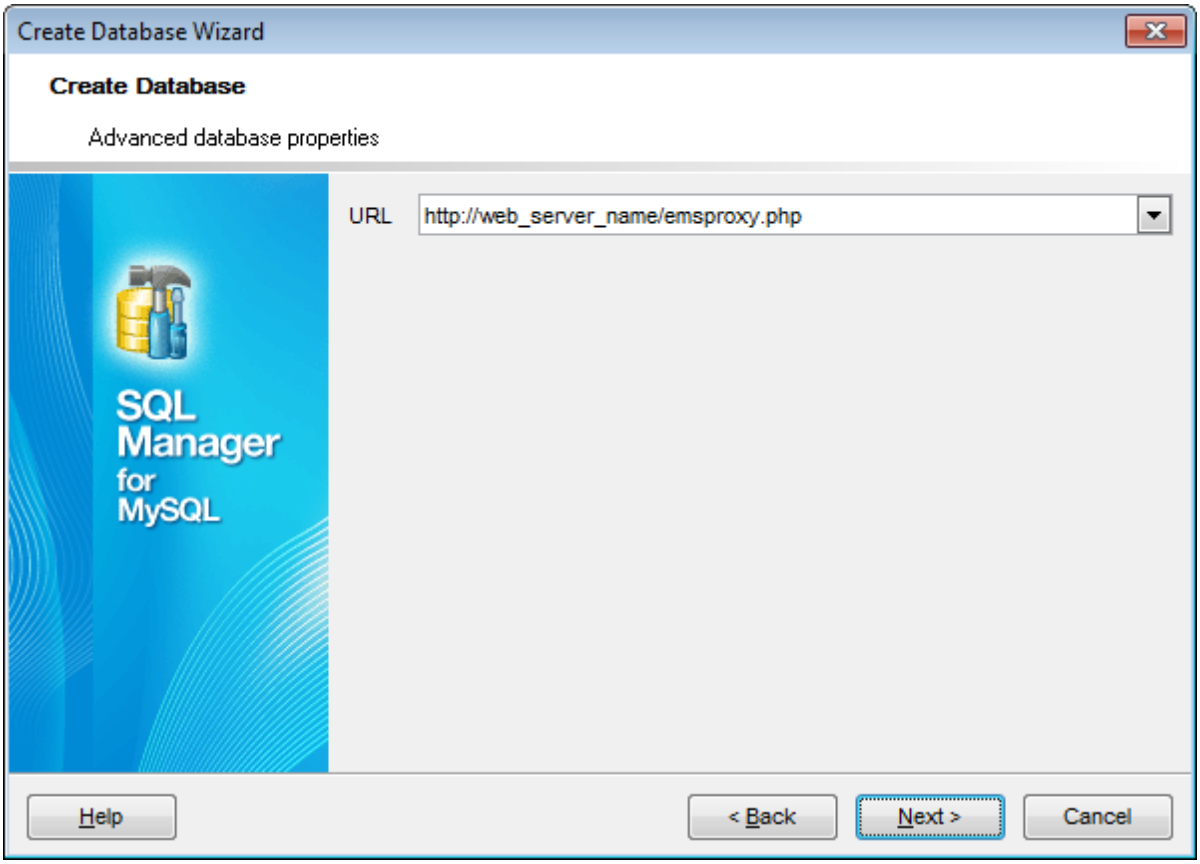


HTTP Tunneling parameters

If you have selected **HTTP tunneling**, you need to upload the tunneling *emsproxy.php*

script to the webserver and specify the **URL** in the corresponding box in the following format: http://webserver_address/emsproxy.php

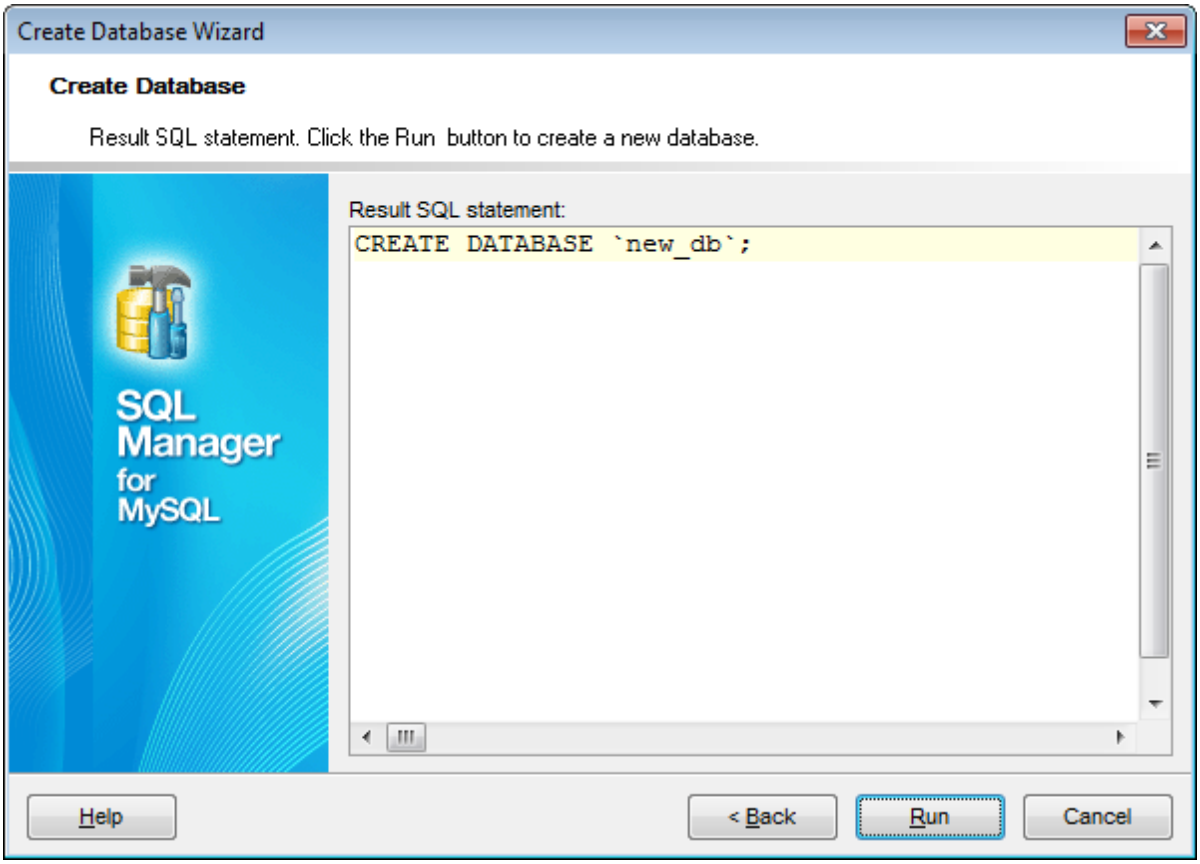
See HTTP connection properties for details.



When you are done, click the **Next** button to view the result SQL statement.

4.1.3 Viewing result SQL statement

View the result *CREATE DATABASE* statement issued for the new database creation. You can alter the script manually, if necessary.

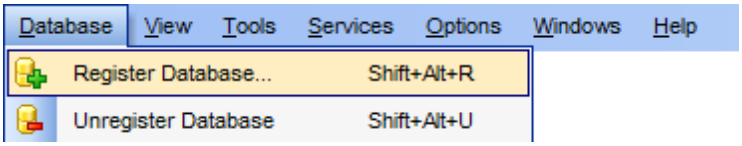


If the ☑ **Register after creating** option was checked at the Setting database name step of the wizard, the Database Registration Info dialog will appear.

4.2 Register Database wizard

Register Database Wizard allows you to register a single database.

To start the wizard, select the **Database | Register Database...** main menu item, or use the **Register Database** button on the main toolbar. You can also use the *Shift+Alt+R* shortcut for the same purpose.



- Setting connection parameters
- Specifying tunneling parameters
- Selecting databases
- Setting specific options

See also:

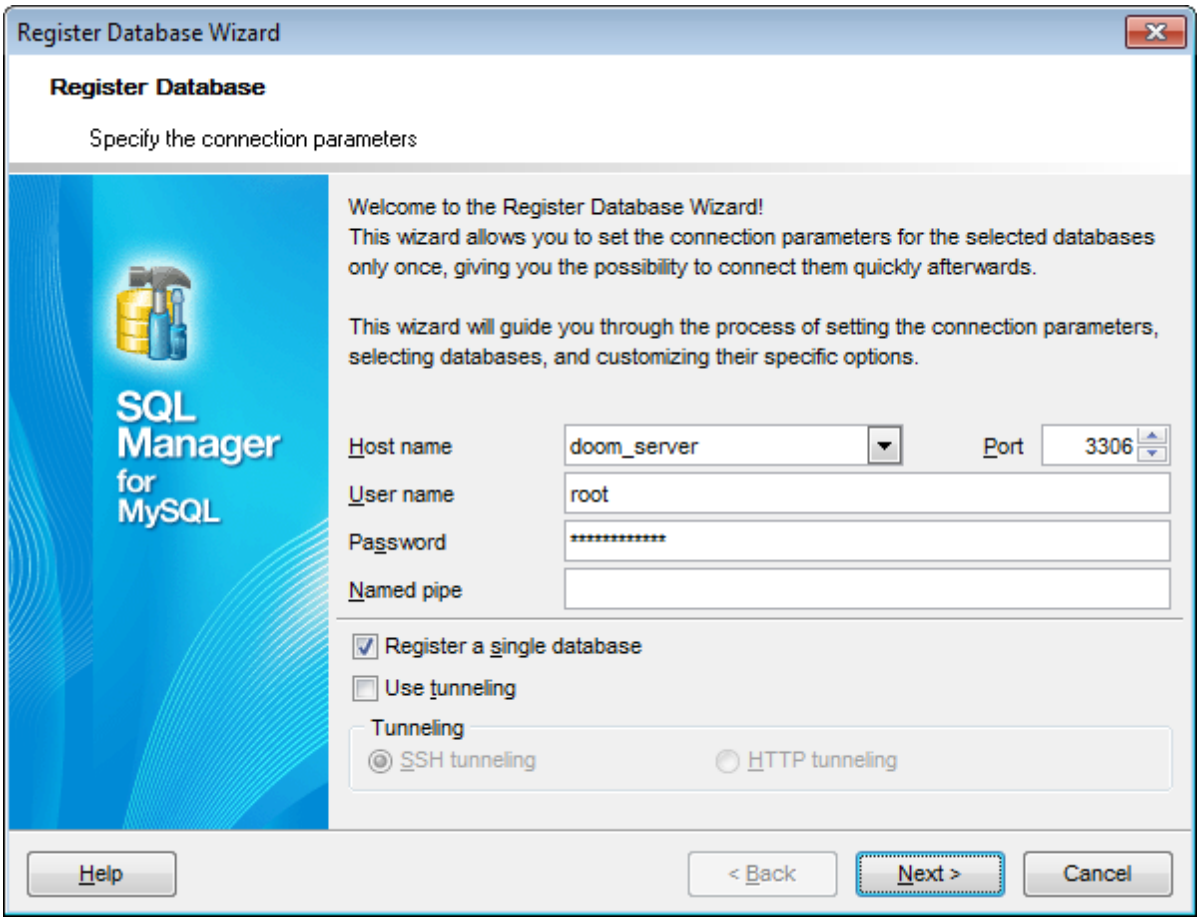
Create Database wizard

Database Registration Info

Database Properties

4.2.1 Setting connection parameters

Use this step of the wizard to set the necessary **connection parameters** for the new database using the corresponding boxes and options: *Host name*, *Port*, *User name* and *Password*.



Specify the host where the database being registered resides: type in the host name in the **Host name** field or select one in the drop-down list.
Enter MySQL port to connect through in the **Port** field and provide *authorization* settings: **User name** and **Password**. If needed you can define the **Named pipe** to connect to local MySQL. The named pipe value is stored in the MySQL server configuration file and it is 'MySQL' by default. Please note that only name of named pipe can be used, not a full path. The **Named pipe** field can be also used to specify a Unix socket in case of using HTTP-tunneling on *nix platforms. Unix socket value should start with '/' (Unix path delimiter) and its value is '/tmp/mysql.sock' by default.

☑ **Register a single database**
Check this option if you wish to register only one database at the host.

☑ **Use tunneling**
If this option is checked, you should set tunneling parameters at the *Specifying tunneling parameters* step of the wizard.

SSH tunneling
Select this option to establish connection to an intermediate SSH server and forward all MySQL commands through the secure tunnel. The next step of the wizard allows you to define the corresponding parameters for SSH tunneling.

HTTP tunneling
Select this option to access MySQL server through the HTTP protocol in case of Internet access through HTTP proxy only, or if the server does not allow direct connections to MySQL, but allows HTTP connections. The next step of the wizard allows you to define the corresponding parameters for HTTP tunneling.

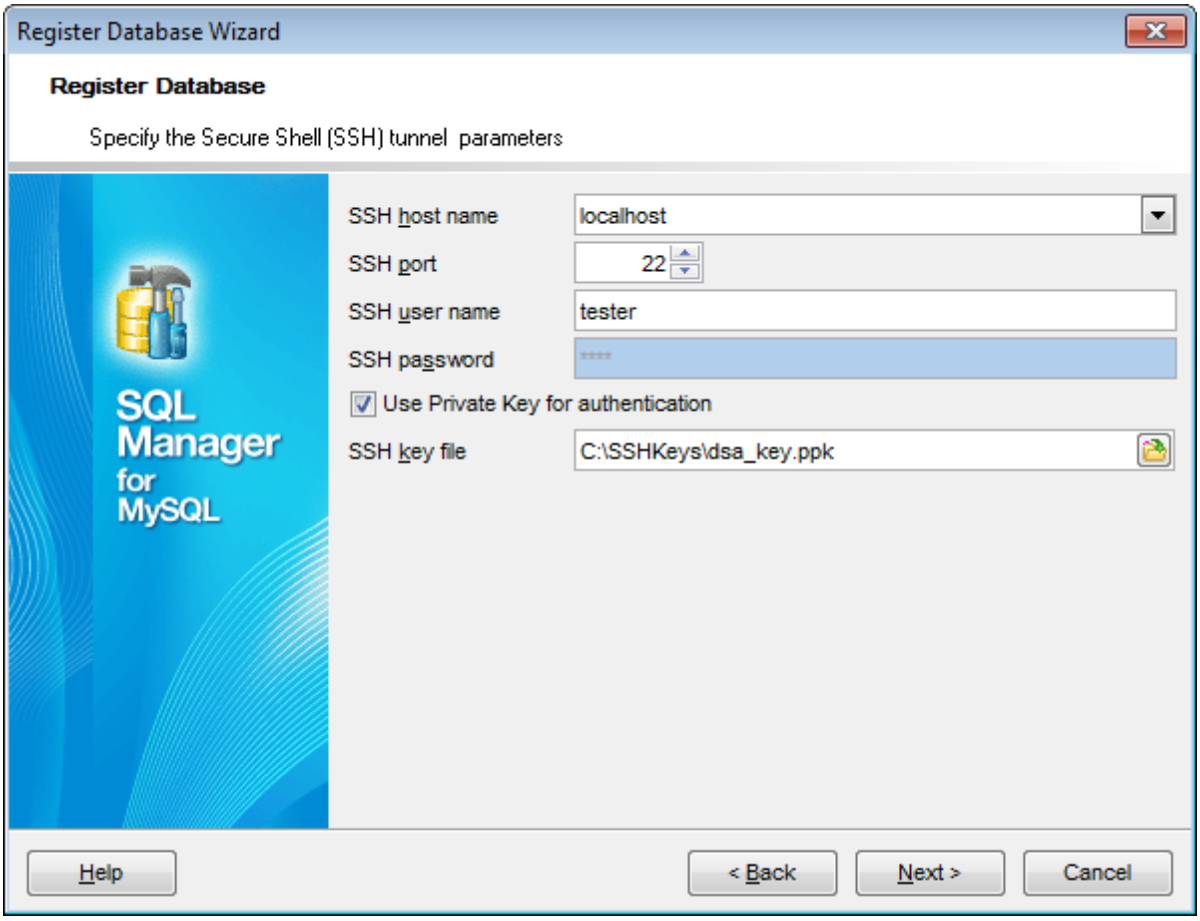
Click the **Next** button to proceed to the Setting specific options step or to the Selecting databases step of the wizard, depending on whether the ☑ **Register a single database** option has been selected or not. If SSH or HTTP tunneling is used, you will proceed to the Specifying SSH tunneling parameters step or Specifying HTTP tunneling parameters step first.

4.2.2 Specifying tunneling parameters

This step appears only when ☑ **Use tunneling option** is enabled in the first step. Set of options provided by this step depend on the tunneling type specified.

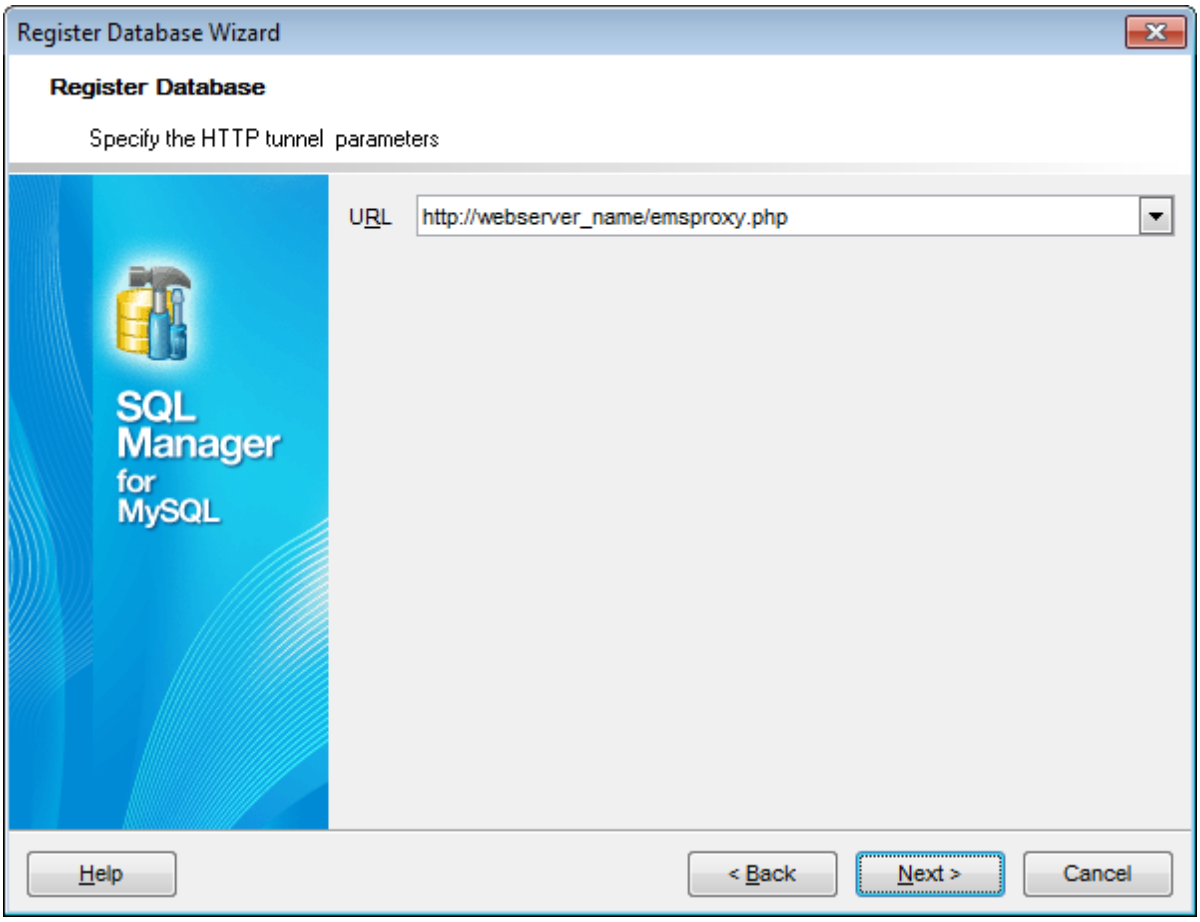
SSH tunneling parameters
Specify **SSH Host name**, **SSH port**, **SSH user name**, **SSH password**, the path to the **SSH key file** (if necessary) in the corresponding boxes.

See SSH connection properties for details.



HTTP tunneling parameters
You need to upload the tunneling *emsproxy.php* script to the webserver and specify the **URL** in the corresponding box in the following format: http://webserver_address/emsproxy.php

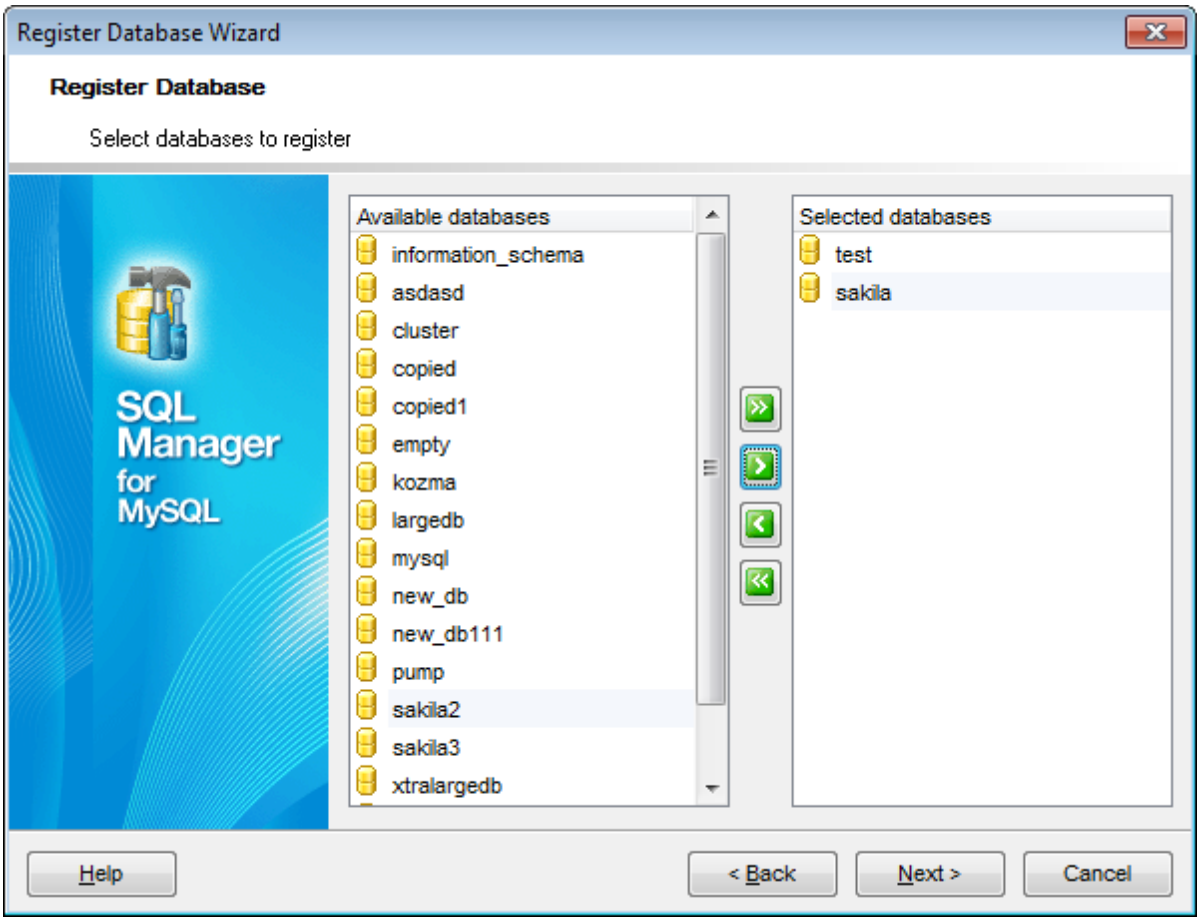
See HTTP connection properties for details.



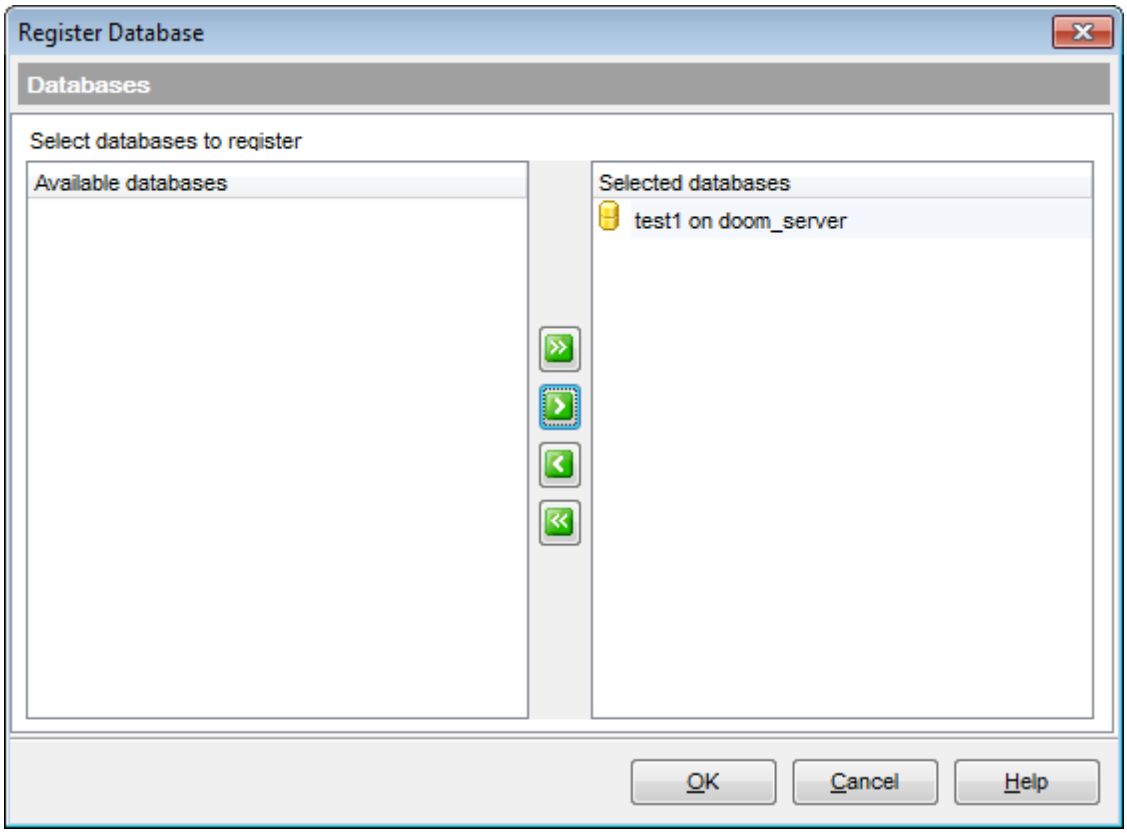
Click the **Next** button to proceed to the Setting specific options step or to the Selecting databases step of the wizard, depending on whether the ☑ **Register a single database** option has been selected or not.

4.2.3 Selecting databases

This step of the wizard allows you to select the database(s) that reside on the host for registration in **SQL Manager**.
To select a database, you need to move it from the **Available databases** list to the **Selected databases** list. Use the buttons or drag-and-drop operations to move the databases from one list to another.



If database is created by executing script in SQL Script editor then the **Register Database** dialog appears.
Move required databases to the *Selected databases* list of the window and click **OK** to register databases.



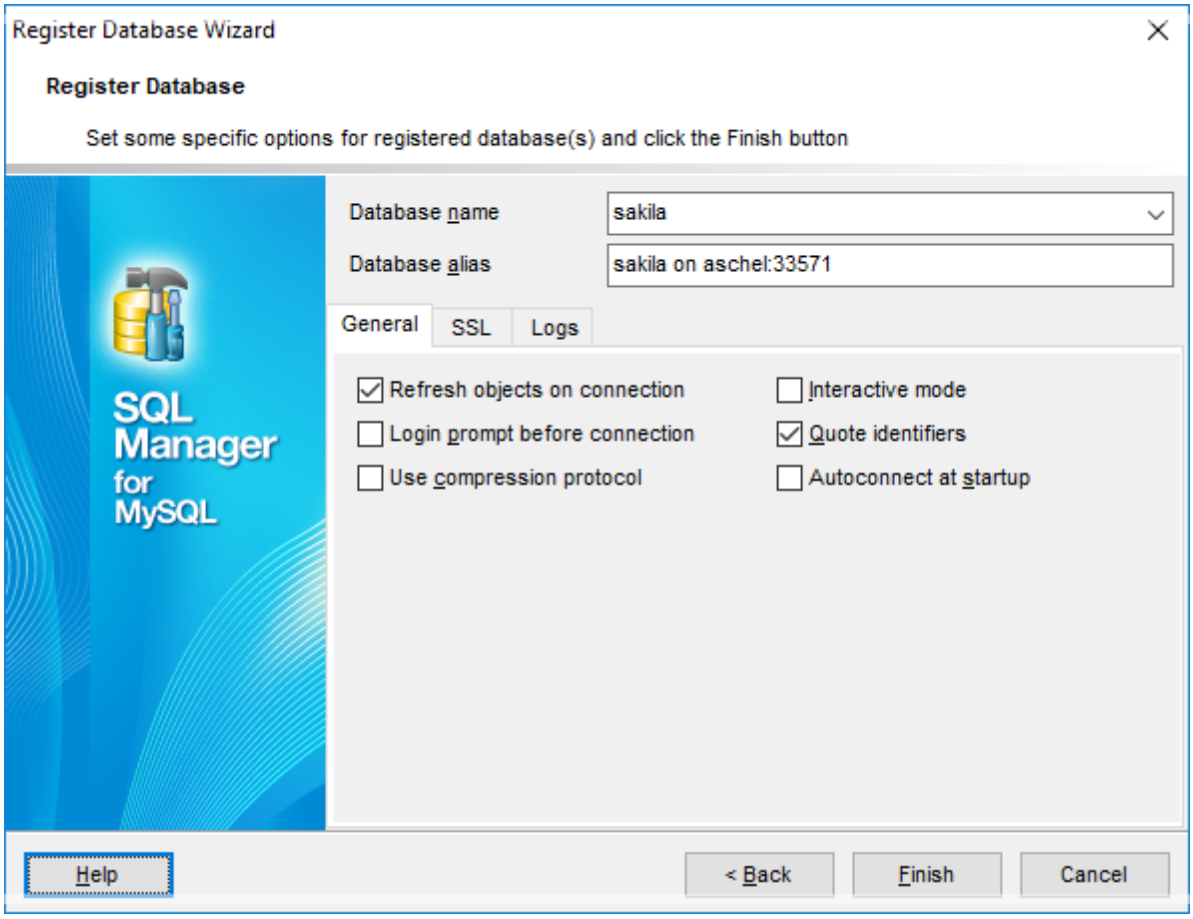
Note: This dialog appears only if the **Register newly created databases** option is enabled in the SQL Script section of Environment Options.

Note: In the **Lite version** you can register only five databases.

Click the **Next** button to proceed to the Setting specific options step of the wizard.

4.2.4 Setting specific options

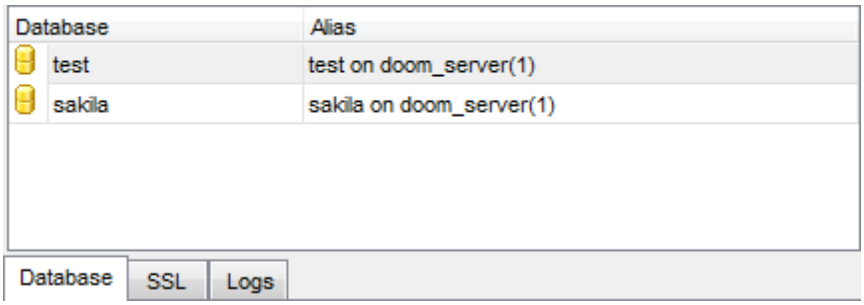
This step of the wizard allows you to set the **database name**, **database alias**, and **registration options** (using the *General* and *Logs* tabs).



General tab

Database name
Type in or use the drop-down list to select the database to be registered.

If several databases have been selected in the Selecting databases step of the wizard, the list of these databases will be displayed in top of the window. Select a database from the list to view/edit its registration information.



Database alias
Enter the alias to be used to display the database in DB Explorer and **SQL Manager** tools. By default, a database alias generated by the application has the following format: *<database_name> on <host_name>[:<port>]*

☑ **Refresh objects on connection**
This option allows you to enable/disable refreshing objects on connection to the database. It is highly recommended to uncheck this option if your database contains many objects or if connection to the database is slow.

☑ **Login prompt before connection**
Enables **SQL Manager for MySQL** to prompt for user name and password each time you connect to the database.

☑ **Use compression protocol**
Enables using the compressed data protocol when connecting to the database server.

☑ **Use SSL protocol**
Enables interchanging data with remote MySQL server via encrypted channel, not allowing intruders to intercept your data.
Note: Enabling this option indicates that SSL protocol should be used, if server supports SSL connections. If it doesn't, then despite the option is enabled, SSL protocol will not be used and no warnings will appear.

☑ **Interactive mode**
Enables using the *interactive_timeout* variable value from my.cnf file instead of *wait_timeout* for connection timeout.

☑ **Quote identifiers**
Enables quoting all the identifiers with the backquote symbol (''').
To make SQL scripts obtained using the Extract Database Wizard compatible with older versions of MySQL, uncheck this option.
Note: This option works only with servers that support quoting aliases.

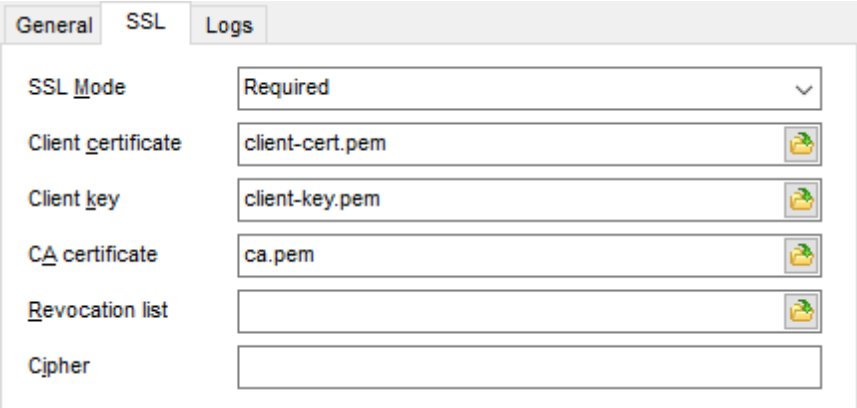
☑ **Autoconnect at startup**
With this option set, connection to the registered database is established automatically at application startup.

☑ **Create new tab for this database**
If this option is checked, the database will be displayed within a separate tab in DB Explorer.

SSL

The **SSL** tab allows you to connect to the server via encrypted channel for increased security. Only **.pem* files must be defined in the fields at this tab.

SSL mode
Select the required SSL mode from the dropdown menu: *Disabled, Preferred, Required, Verify CA or Verify Identity.*



Client certificate
Select the server client public key certificate file.

Client key
Select the path to the client private key file.

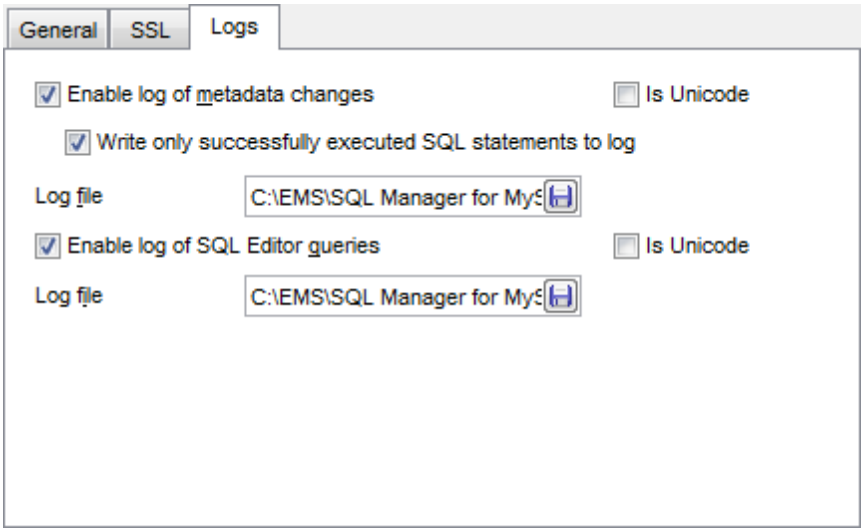
CA Certificate
Define the path to the certificate authority file.

Revocation list
Specify the file containing certificate revocation lists, if required.

Cipher
Specify permissible ciphers for SSL connection.

You can use the **Open** button to locate files using a standard dialog.

Logs



Enable log of metadata changes
Check this option if you wish to log metadata changes of your database in a file.

Write only successfully executed SQL statements to log
If this option is selected, only successfully executed SQL statements will be written to the specified log file.

Log file
This field is enabled if the **Enable log of metadata changes** option is selected. Type in or use the **Save as** button to specify the path to the **.sql* file to store the metadata logs.

Enable log of SQL Editor queries
Check this option if you wish to log your SQL Editor queries in a file.

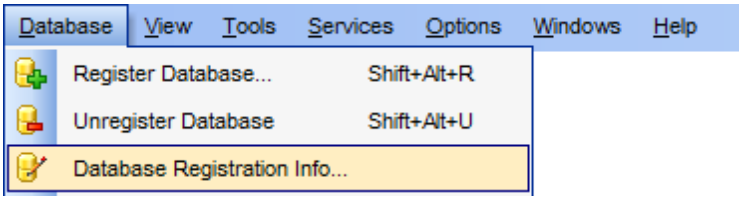
Log file
This field is enabled if the **Enable log of SQL Editor queries** option is selected. Type in or use the **Save as** button to specify the path to the **.sql* file to store the logs of SQL queries.

Click the **Run** button when done to start working with the newly registered database in **SQL Manager for MySQL**.

4.3 Database Registration Info

Use the **Database Registration Info** dialog to view and edit the registration properties of the database.

To open the dialog, select the database or any of its objects in the DB Explorer tree, then select the **Database | Database Registration Info...** main menu item, or right-click the database alias in DB Explorer and use the **Database Registration Info...** context menu item. You can also use the **Database Registration Info...** button on the main toolbar.



- Editing connection properties
- Setting database options
- Setting display options
- Setting default directories
- Setting log options
- Setting SSH tunneling options
- Setting HTTP tunneling options
- SSL
- Setting data options
- Find Option

See also:

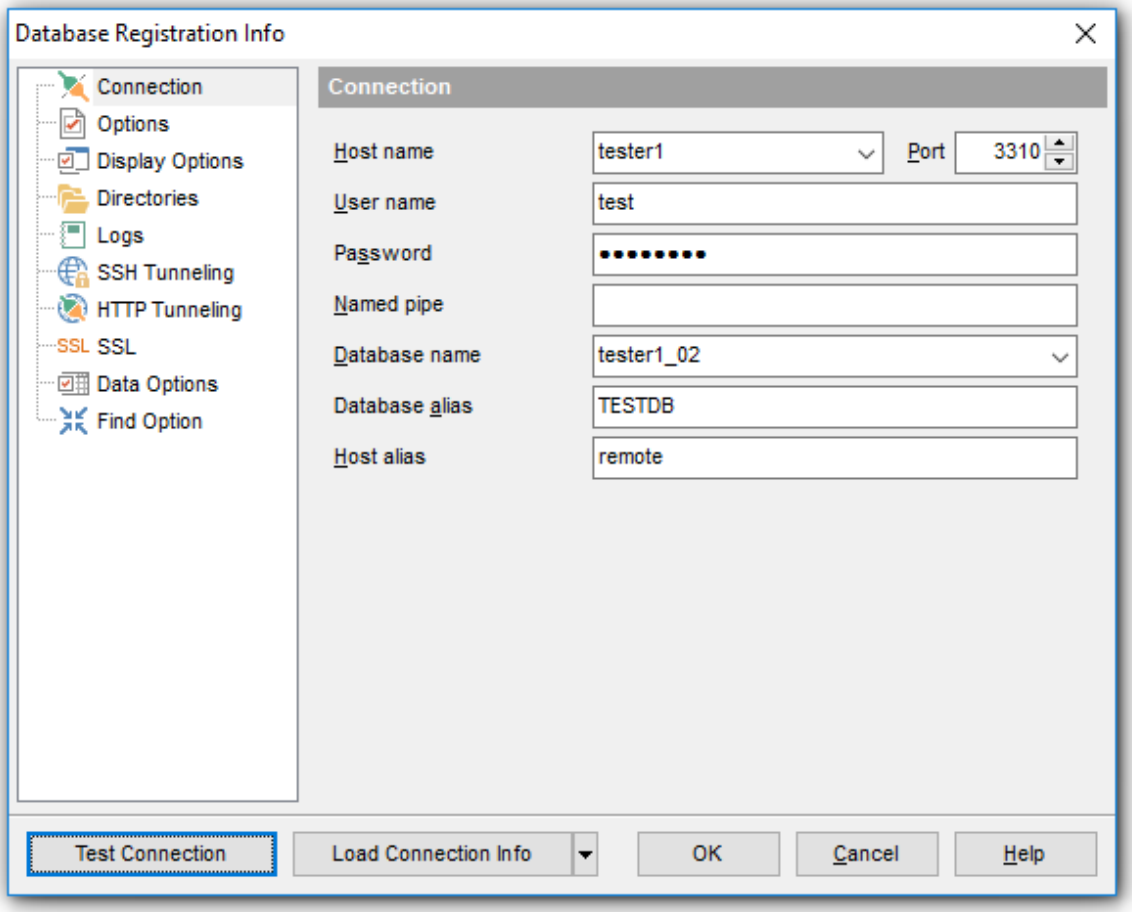
Create Database wizard

Register Database wizard

Database Properties

4.3.1 Connection

The **Connection** section of the **Database Registration Info** dialog allows you to view and/or edit the connection properties in the corresponding boxes: *Host name*, *Port*, *User name*, *Password*, *Database name*, *Database alias*, *Host alias*.



Host name
Stores the name of the Host where the database resides.

Port
Enter MySQL port to connect through.

User name
If necessary, edit the User name used to access the database.

Password
If necessary, edit the Password used to access the database.

Named pipe
The named pipe value is stored in the MySQL server configuration file and it is 'MySQL' by

default. Please note that only name of named pipe can be used, not a full path. The **Named pipe** field can be also used to specify a Unix socket in case of using HTTP-tunneling on *nix platforms. Unix socket value should start with '/' (Unix path delimiter) and its value is '/tmp/mysql.sock' by default.

Database name
Stores the name of the database.

Database alias
Stores the database alias which is displayed in the DB Explorer tree and **SQL Manager** tools. By default, a database alias generated by the application has the following format: *<database_name> on <host_name>[:<port>]*

Once you have specified the connection properties, you can check whether it is possible to establish connection to the database: click the **Test Connect** button for this purpose. If connection is successful, you will get the *'Connected!'* message; otherwise an error message will be returned.

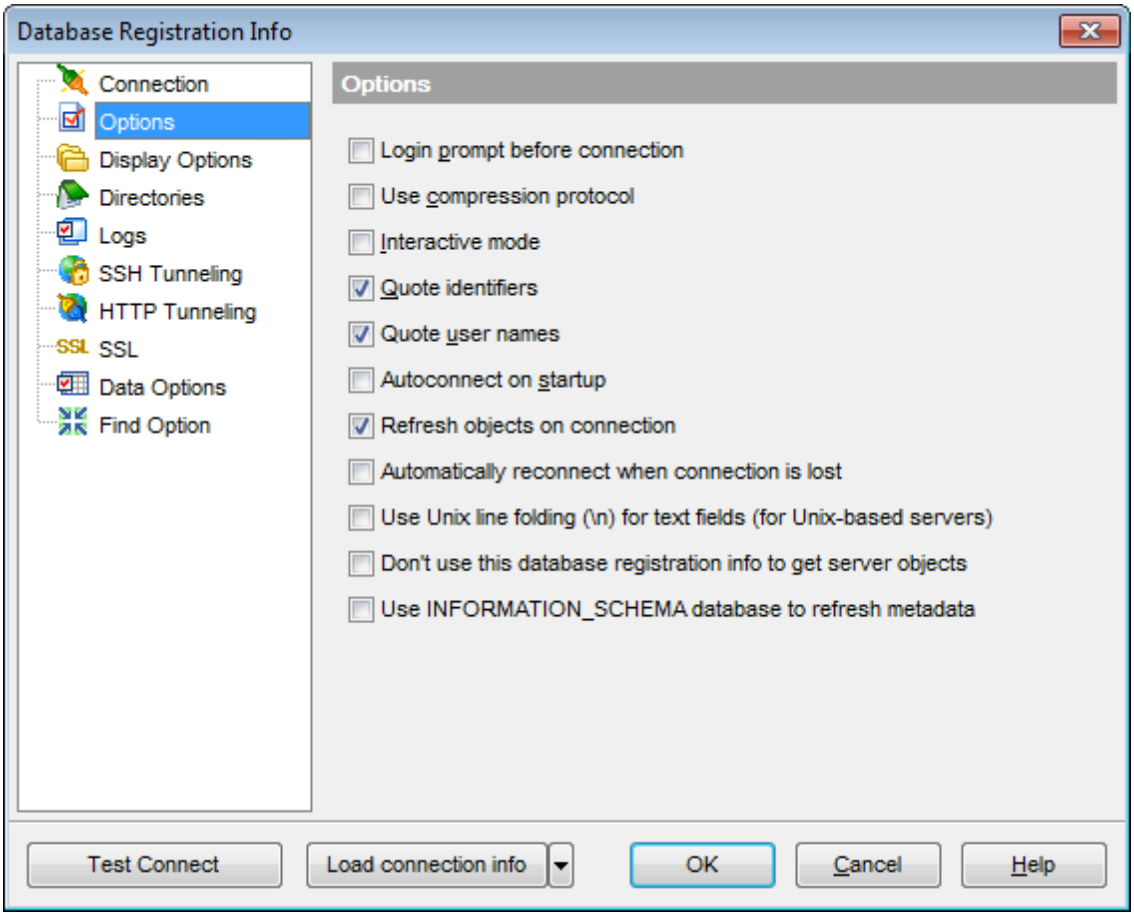
The **Load connection info** menu allows you to select the alias of a previously registered database and use it for the newly created/configured database.

Host alias
Set the alias for the current host to be displayed in the DB Explorer.

See also:
Common options
Display options
Default directories
Logs
SSH tunneling options
HTTP tunneling options
Data options
Find Option

4.3.2 Common options

The **Options** section of the **Database Registration Info** dialog allows you to set various options for the database.



Customize common database options according to your needs. The detailed description is given below.

Login prompt before connection
Enables **SQL Manager for MySQL** to prompt for user name and password each time you connect to the database.

Use compression protocol
Enables using the compressed data protocol when connecting to the database server.

Interactive mode
Enables using the *interactive_timeout* variable value from *my.cnf* file instead of *wait_timeout* for connection timeout.

Quote identifiers
Enables quoting all the identifiers with the backquote symbol (``).
To make SQL scripts obtained using the Extract Database Wizard compatible with older versions of MySQL, uncheck this option.

Note: This option works only with servers that support quoting aliases.

Quote user names
Enables quoting usernames with the backquote symbol (`` ` ``).

Autoconnect at startup
Check this option to specify that **SQL Manager for MySQL** automatically establishes connection to the registered database at application startup.

Refresh objects on connection
This option allows you to enable/disable refreshing objects on connection to the database. It is highly recommended to uncheck this option if your database contains many objects or if connection to the database is slow.

Automatically reconnect when connection is lost
If this option is selected, the application attempts to re-establish database connection upon disconnect.

Use Unix line folding (\n) for text fields (for Unix-based servers)
Check this option to use the "\n" to mark the line break when saving data. The default value is "\n\r".

Don't use this database registration info to get server objects
If this option is enabled, the registration info of this database will not be used to establish server connection and get server objects (when expanding the Server Objects node in DB Explorer).

Use INFORMATION_SCHEMA database to refresh metadata
If this option is not checked then metadata is refreshed on the basis of the *'mysql'* database.

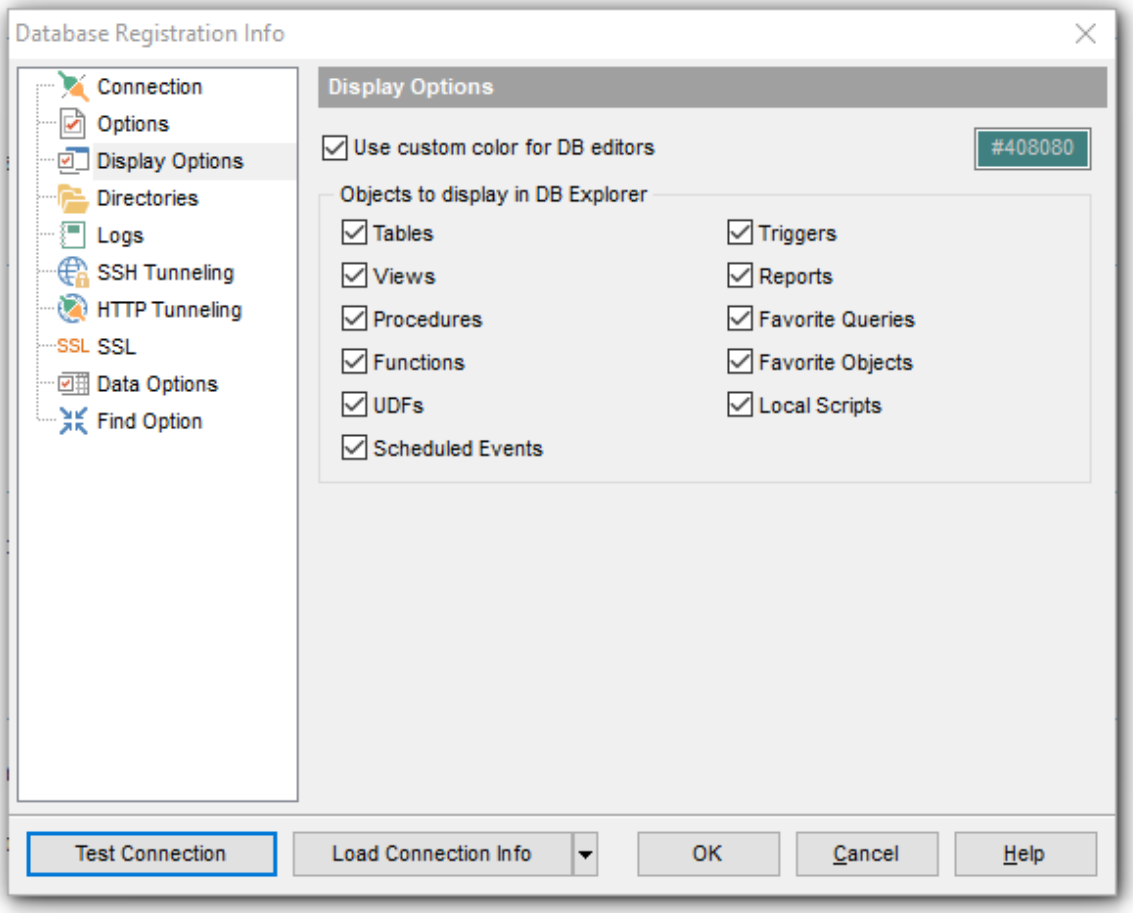
See also:

Connection
Display options
Default directories
Logs
SSH tunneling options
HTTP tunneling options
Data options
Find Option

4.3.3 Display options

The **Display Options** section of the **Database Registration Info** dialog allows you to specify objects to display in the Database Explorer.

Use custom color for DB editors
Check this option to use the selected color for the text on editor tabs opened for the current database

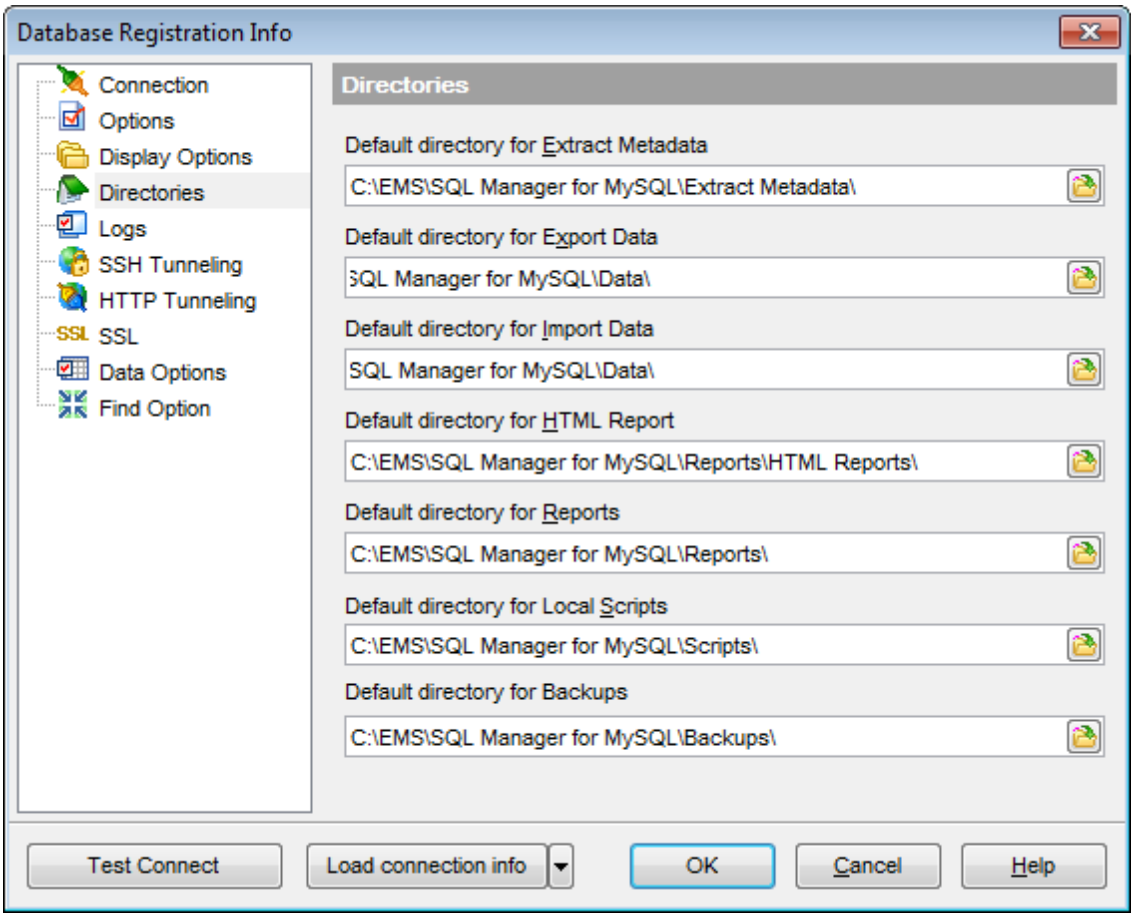


For your convenience the *Select All* and *Deselect All* functions are implemented in the **context menu** of the objects list area.

See also:
Connection
Common options
Default directories
Logs
SSH tunneling options
HTTP tunneling options
Data options
Find Option

4.3.4 Default directories

The **Directories** section of the **Database Registration Info** dialog allows you to set the directories to be used by default for database extract, backup tables, data export, data import, saving HTML reports, creating reports, saving scripts operations.



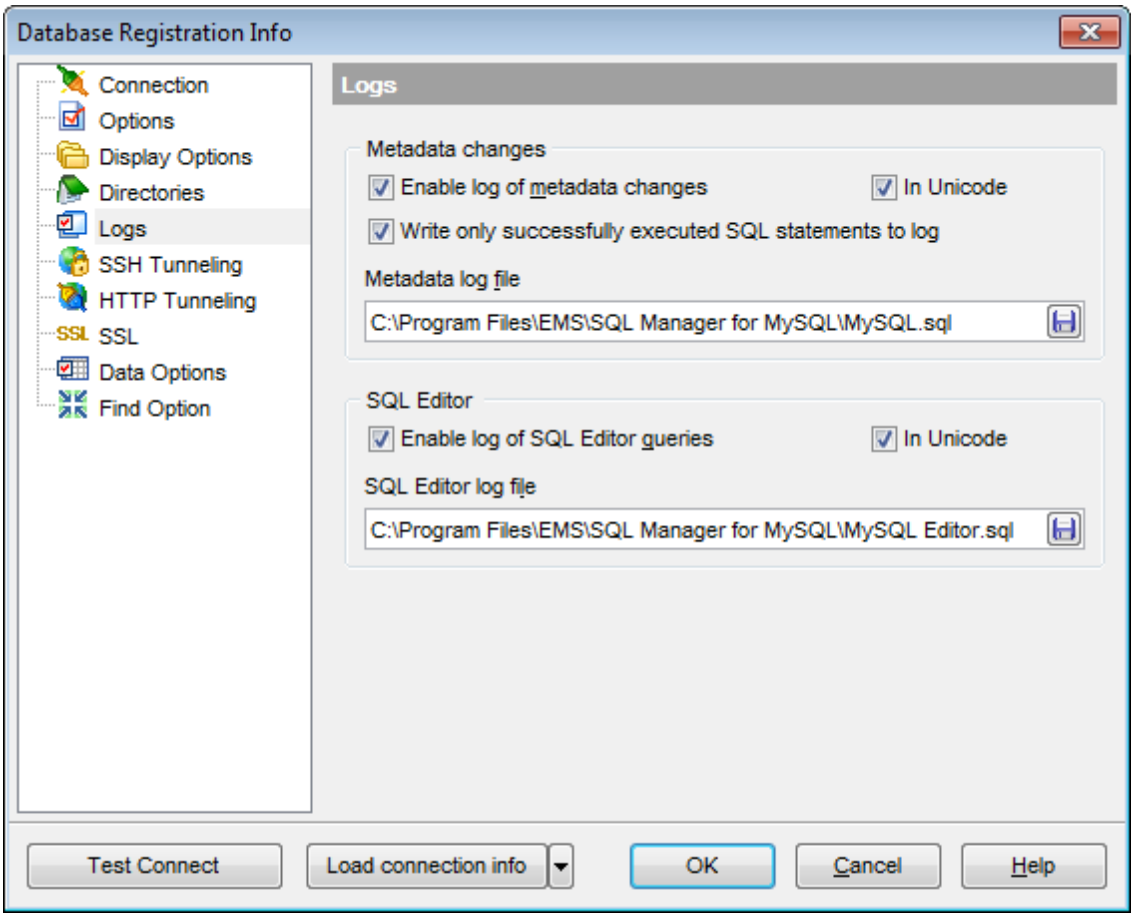
See also:

Connection
Common options
Display options
Logs
SSH tunneling options
HTTP tunneling options
Data options
Find Option

4.3.5 Logs

The **Logs** section of the **Database Registration Info** dialog allows you to specify log file names for metadata changes logging and SQL query logging, if necessary.

Logging can be useful when you are going to move the changes made in the development database to the production database.



Metadata changes

Enable log of metadata changes
Check this option if you wish to log metadata changes of your database in a file.

Write only successfully executed SQL statements to log
If this option is selected, only successfully executed SQL statements will be written to the specified log file.

Metadata log file
This field is enabled if the **Enable log of metadata changes** option is selected. Type in or use the **Save as** button to specify the path to the **.sql* file to store the metadata logs.

SQL Editor

Enable log of SQL Editor queries
Check this option if you wish to log your SQL Editor queries in a file.

SQL Editor log file
This field is enabled if the **Enable log of SQL Editor queries** option is selected. Type in or use the **Save as** button to specify the path to the **.sql* file to store the logs of SQL queries: date/time of query execution, SQL text, execution result or errors (if any).

In Unicode
Enable this option to save logs in Unicode. If the option is disabled, ANSI will be used.

See also:

Connection
Common options
Display options
Default directories
SSH tunneling options
HTTP tunneling options
Data options
Find Option

4.3.6 SSH tunneling options

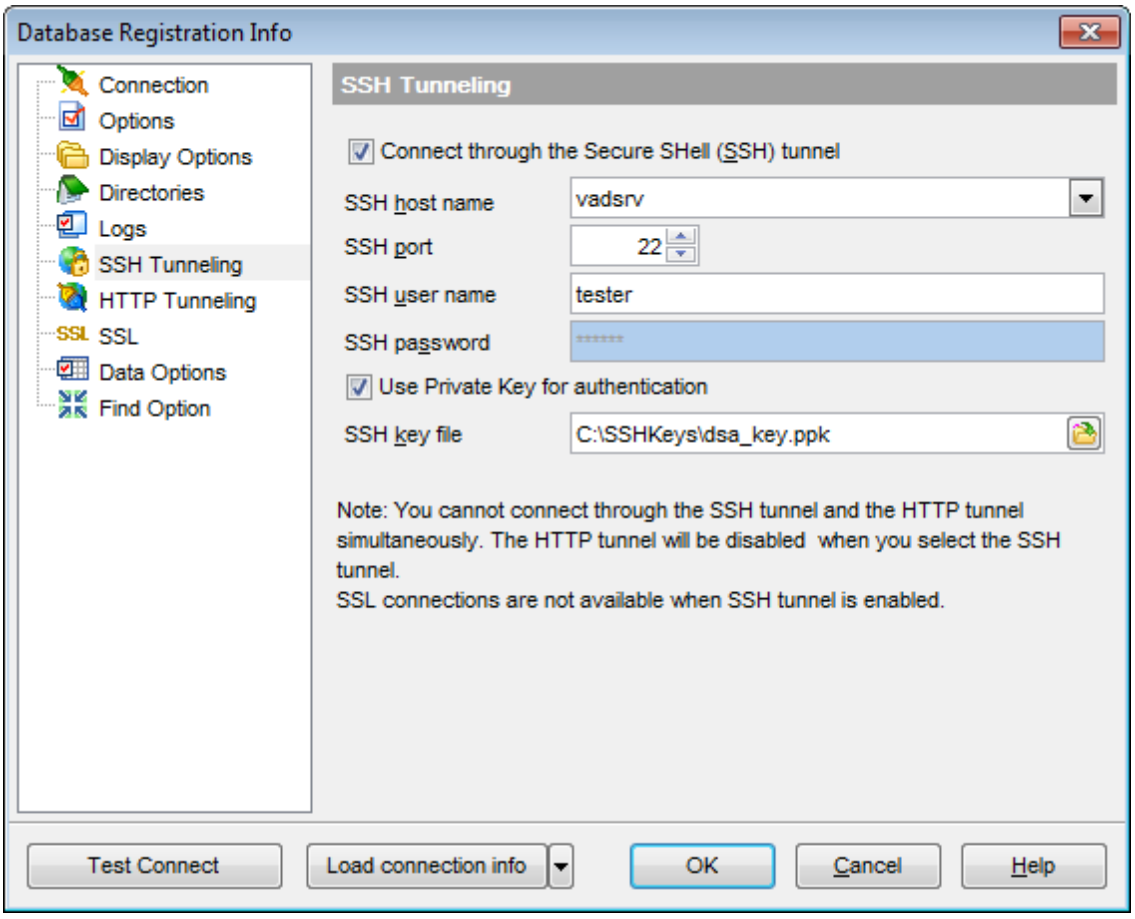
The **SSH Tunneling** section of the **Database Registration Info** dialog allows you to enable/disable SSH tunneling for connection to the database and set all the necessary SSH tunneling parameters.

Connect through the Secure Shell (SSH) tunnel
Select this option to establish connection to an intermediate SSH server and forward all MySQL commands through the secure tunnel.

Specify **SSH Host name**, **SSH port**, **SSH user name**, **SSH password**, the path to the **SSH key file** (if necessary) in the corresponding boxes.

See SSH connection properties for details.

Note: MySQL host name on the Connection page should be set relatively to the SSH server in this case. For example, if both MySQL and SSH servers are located on the same computer, you should specify *localhost* as **Host name** instead of the server's external host name or IP address.



Please note that either *SSH tunneling*, or *HTTP tunneling* can be used for one connection, but not both types simultaneously.

See also:

Connection
Common options
Display options
Default directories
Logs
HTTP tunneling options
Data options
Find Option

4.3.7 HTTP tunneling options

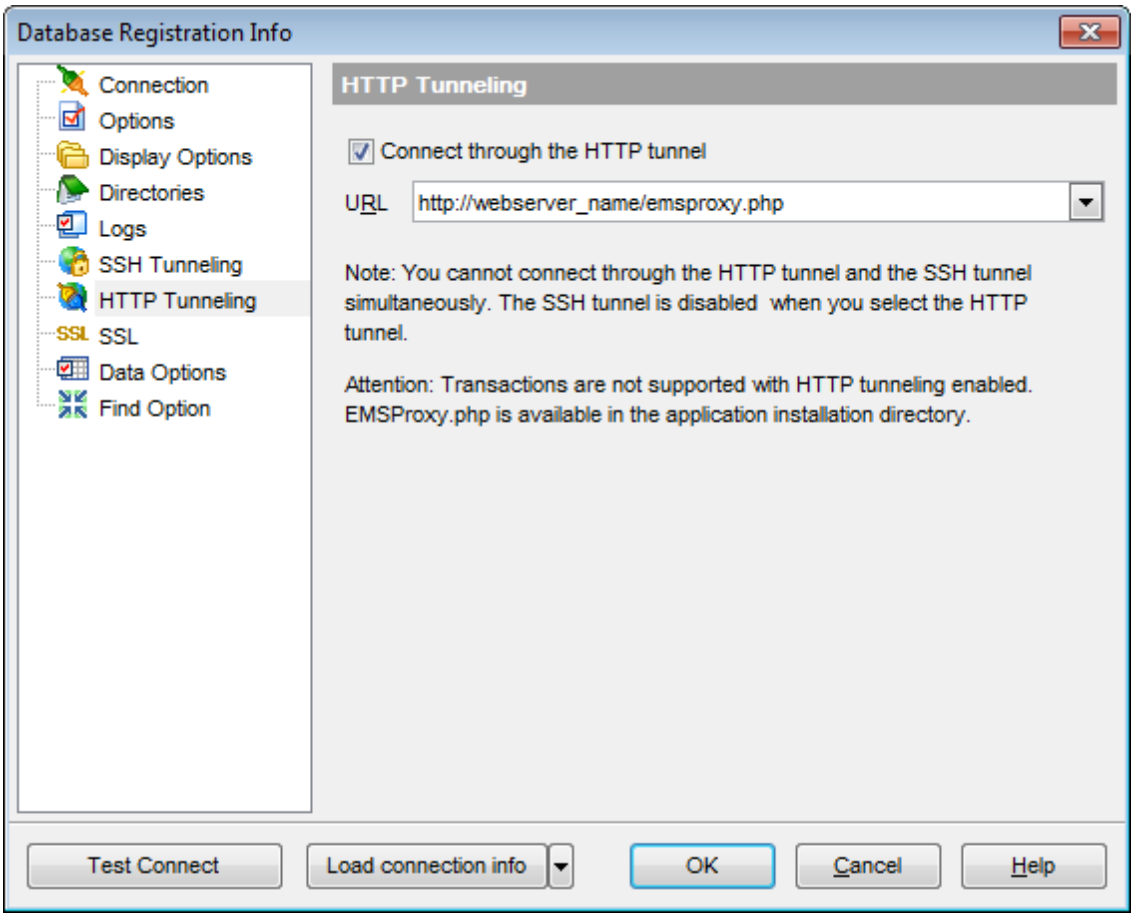
The **HTTP Tunneling** section of the **Database Registration Info** dialog allows you to enable/disable HTTP tunneling for connection to the database and set the necessary HTTP tunneling parameters.

Connect through the HTTP tunnel
Select this option to access MySQL server through the HTTP protocol in case of Internet access through HTTP proxy only, or if the server does not allow direct connections to MySQL, but allows HTTP connections.

In order to use HTTP tunneling for the connection, you need to upload the tunneling *emsproxy.php* script to the webserver and specify the **URL** in the corresponding box in the following format: http://webserver_address/emsproxy.php

See HTTP connection properties for details.

Note: In case of using this connection method, the response will be slower as compared to the direct connection or SSH Tunneling method, as the data are XML encoded and HTTP is stateless by nature.



Please note that either *SSH tunneling*, or *HTTP tunneling* can be used for one connection, but not both types simultaneously.

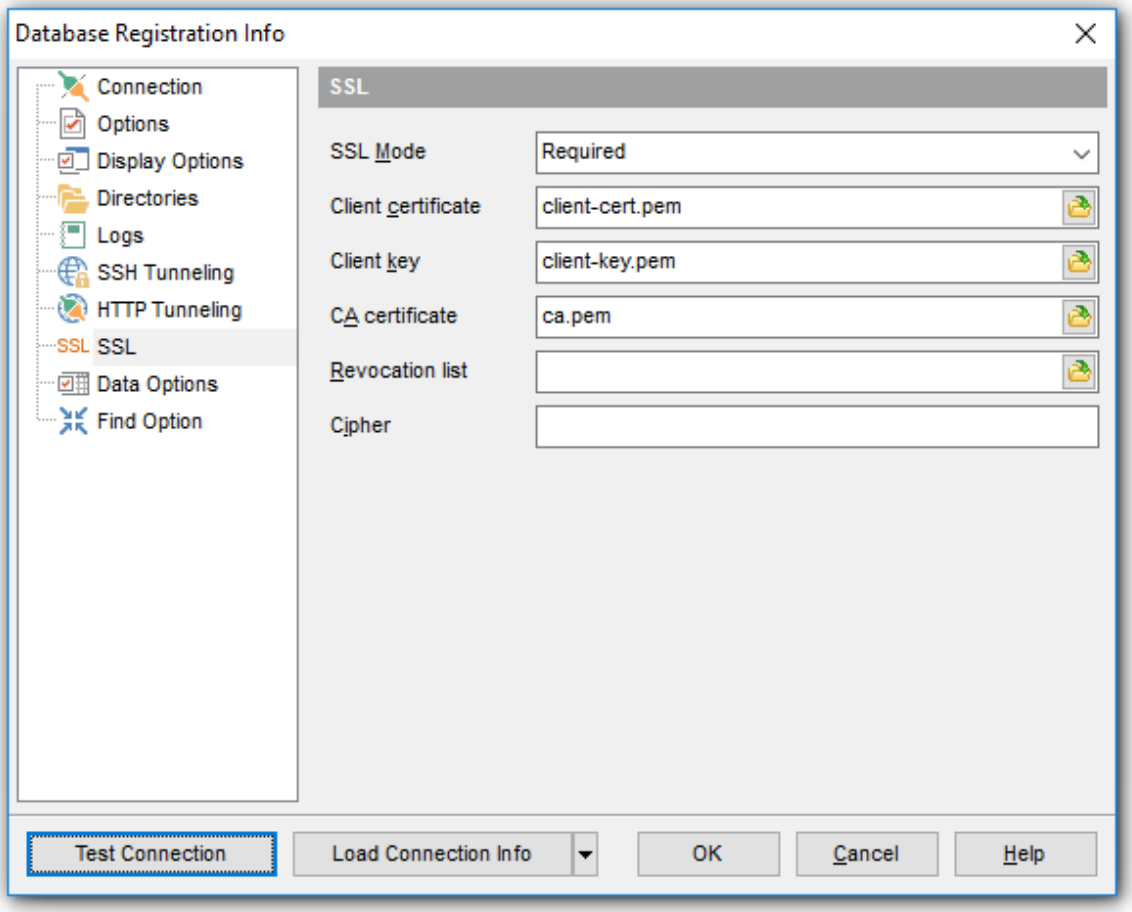
See also:

Connection
Common options
Display options
Default directories
Logs
SSH tunneling options
Data options
Find Option

4.3.8 SSL

The **SSL** tab allows you to connect to the server via encrypted channel for increased security. Only **.pem* files must be defined in the fields at this tab.

SSL mode
Select the required SSL mode from the dropdown menu: *Disabled, Preferred, Required, Verify CA or Verify Identity.*



Client certificate
Select the server client public key certificate file.

Client key
Select the path to the client private key file.

CA Certificate
Define the path to the certificate authority file.

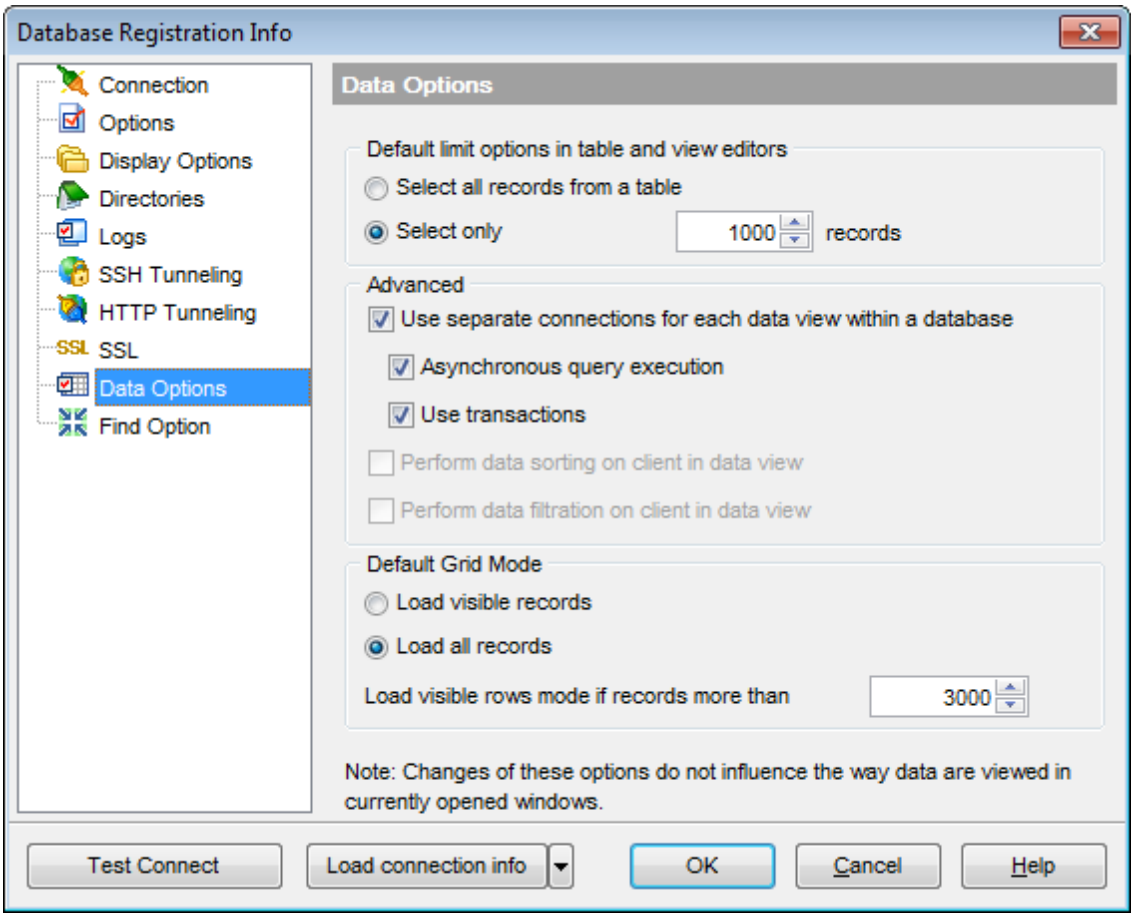
Revocation list
Specify the file containing certificate revocation lists, if required.

Cipher
Specify permissible ciphers for SSL connection.

You can use the  **Open** button to locate files using a standard dialog.

4.3.9 Data options

The **Data Options** section of the **Database Registration Info** dialog allows you to define options for data view. These options will be applied only to this database. Default settings for newly registered databases can be defined on the Grid | Data Options page of the Environment Options dialog.



Default limit options in table and view editors

Define the number of records to be selected on opening the **Data** tab of Table Editor and View Editor:
- *Select all records from a table*
- *Select only ... records* (you should set the number of records using the corresponding spinner control)

Advanced

Use separate connections for each data view within a database
Select this option to disable creation of a separated connection for each data view. Enabling this option is recommended if maximum allowed number of connections is too low.

Asynchronous query execution

Check this option to allow executing queries in background mode (asynchronously).

Use transactions
Check this option to enable transactions for data in a grid.

Perform data sorting on client in data view
If enabled, the data are sorted by **SQL Manager for MySQL** (on the client side). If this option is disabled, the data are sorted on MySQL server with the help of the *ORDER BY* clause used in SQL query.

Perform data filtration on client in data view
If enabled, the data are filtered by **SQL Manager for MySQL** (on the client side).
If disabled, SQL filter is used in data view. In this case filtering is performed on the MySQL server with the help of the *WHERE* clause used in SQL query.

With the **Perform data sorting on client in data view** option enabled, sorting is performed by means of the grid. Otherwise a click on the column header for sorting causes reloading all table data with the selected columns in the *ORDER BY* expression of the *SELECT* statement.
If the table contains a huge amount of records and the **Select only N records** mode (see the **Default limit options in table and view editors** group) is used, this mode is more preferable (e.g. all the records having values starting with "A" will be displayed, and not those which were in originally opened N records).

All above-mentioned is related to the **Perform data filtration on client in data view** option as well. If the filter is applied to a table containing a great number of records, it is strongly recommended to enable this option - in this case the filter will be applied to all table/view records, not only to those which are displayed at the present moment.

Default Grid Mode

Load all records
The grid loads all records from a dataset. This option increases the grid performance by reloading only changed dataset records when updating. In this mode all features (automatic sorting, filtering and summary calculations) are available.

Load visible records
The grid loads only a fixed number of dataset records into memory. This option minimizes dataset loading time. The automatic sorting, filtering, summary calculations are not supported in this mode.

The **Default grid mode** options allow you to define the grid mode which will be used by default.
With the **Load all rows** option enabled, when loading data, all the records are loaded into grid buffers. In this mode opening the tables with many records may take a considerable amount of time. But in this case you can make use of some advantages: in the filter drop-down list the column headers are displayed with the values for quick filtering; it is possible to open several sub-levels at the same time when viewing data in master-detail view, etc.
In case opening and other operations with an object consisting of many records takes sufficient time, the **Load visible rows** mode should be used instead. It can be set individually for each table and saved between sessions (can be set via the context menu

of the grid).

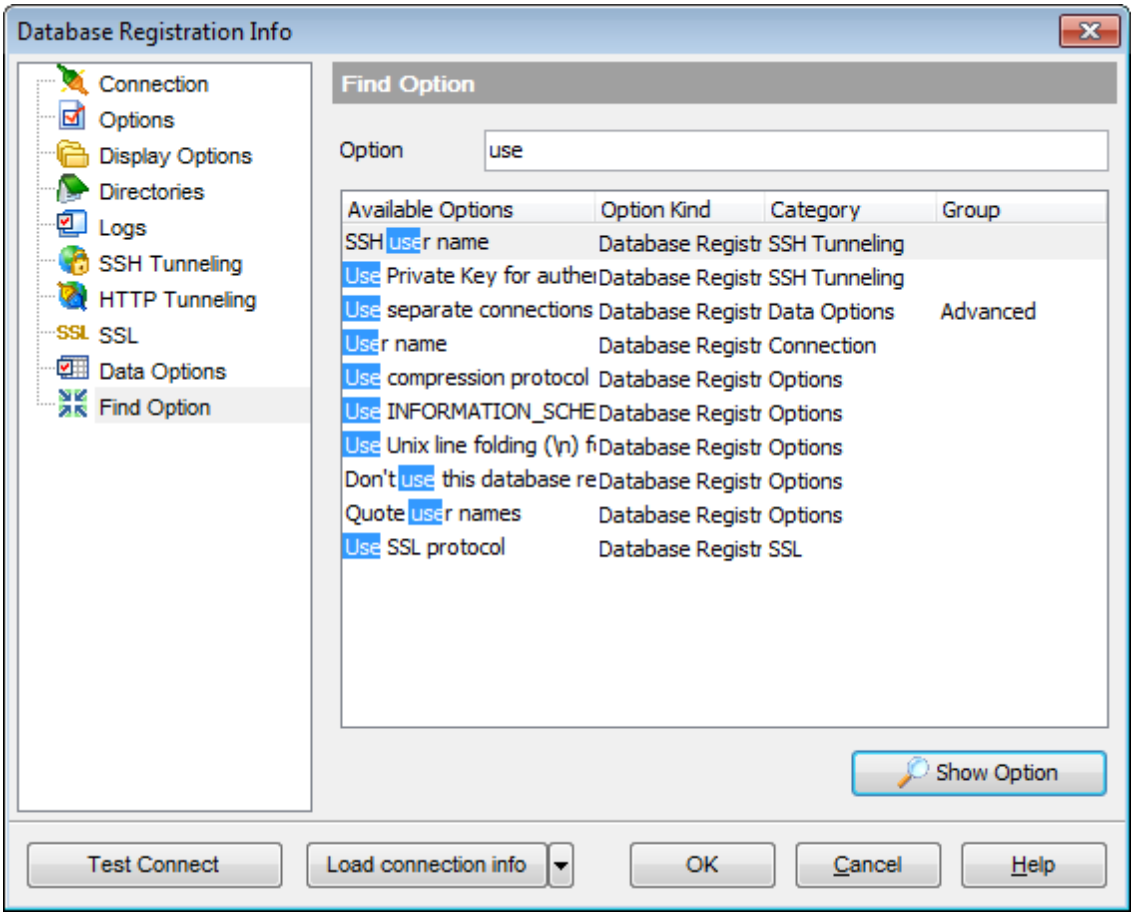
See also:

Connection
Common options
Display options
Default directories
Logs
SSH tunneling options
HTTP tunneling options
Find Option

4.3.10 Find Option

The **Find Option** section allows you to search for options available within the **Database Registration Info** dialog easily and quickly.

Option
In this field you can enter the name of the option to search for within the database registration options.



The **Available options** area lists all options of the Database Registration category according to the specified name. The **Option Kind**, **Category** and **Group** columns specify option type and location.
Select the required option in the list and click **Show Option** to open the corresponding section where you can view/edit the value of this option. For your convenience the required option is marked with an animated icon.

See also:
Connection
Common options
Display options

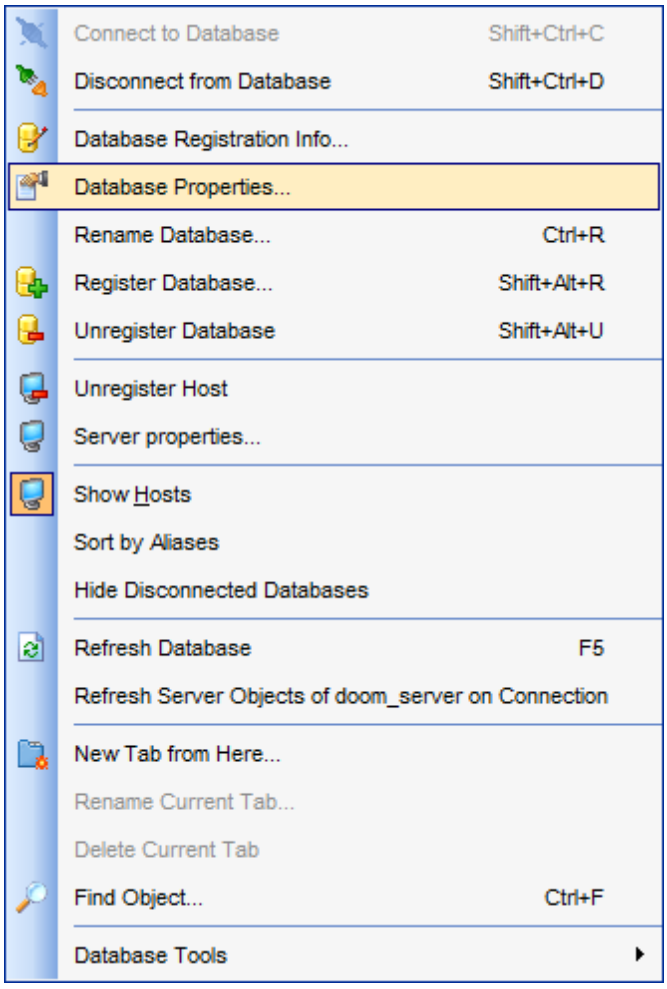
4.4 Database Properties

The **Database Properties** dialog allows you to view/edit a number of properties which can be changed to optimize database performance.

To open the dialog, right-click the database alias in DB Explorer and select the **Database Properties...** context menu item, or use the **Properties** button on the DB Explorer toolbar.

A number of database options that determine the characteristics of the database can be set for each database. These options are unique to each database and do not affect other databases.

- Options
- Objects summary
- DDL

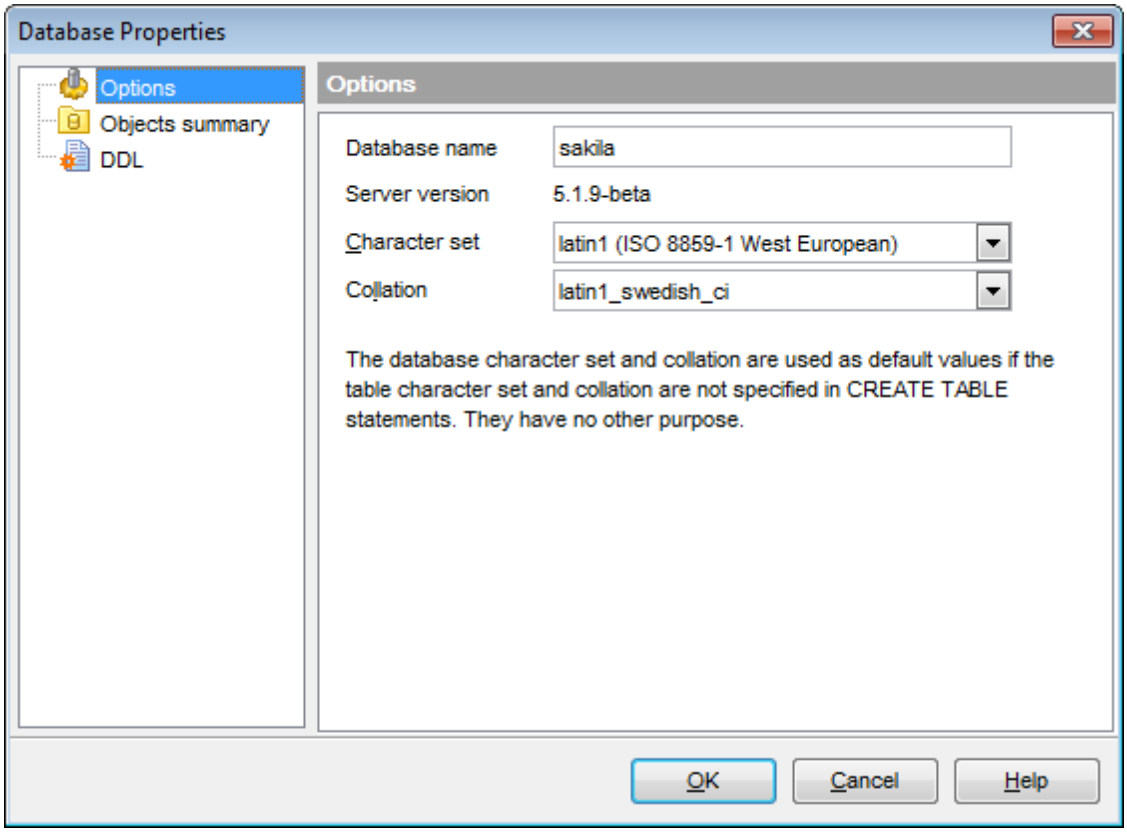


See also:
Create Database wizard

Register Database wizard
Database Registration Info

4.4.1 Options

The **Options** section of the **Database Properties** dialog allows you to view/edit general database properties: *Database name*, *Server version*, *Character set*, *Collation*.



A number of **character sets** can be used to store MySQL data, and the server allows comparisons according to a variety of **collations**. Character sets can be specified at the *server*, *database*, *table* and *column* levels.

Use the respective drop-down lists to specify **character set** and **collation** to be used to store data in the database.

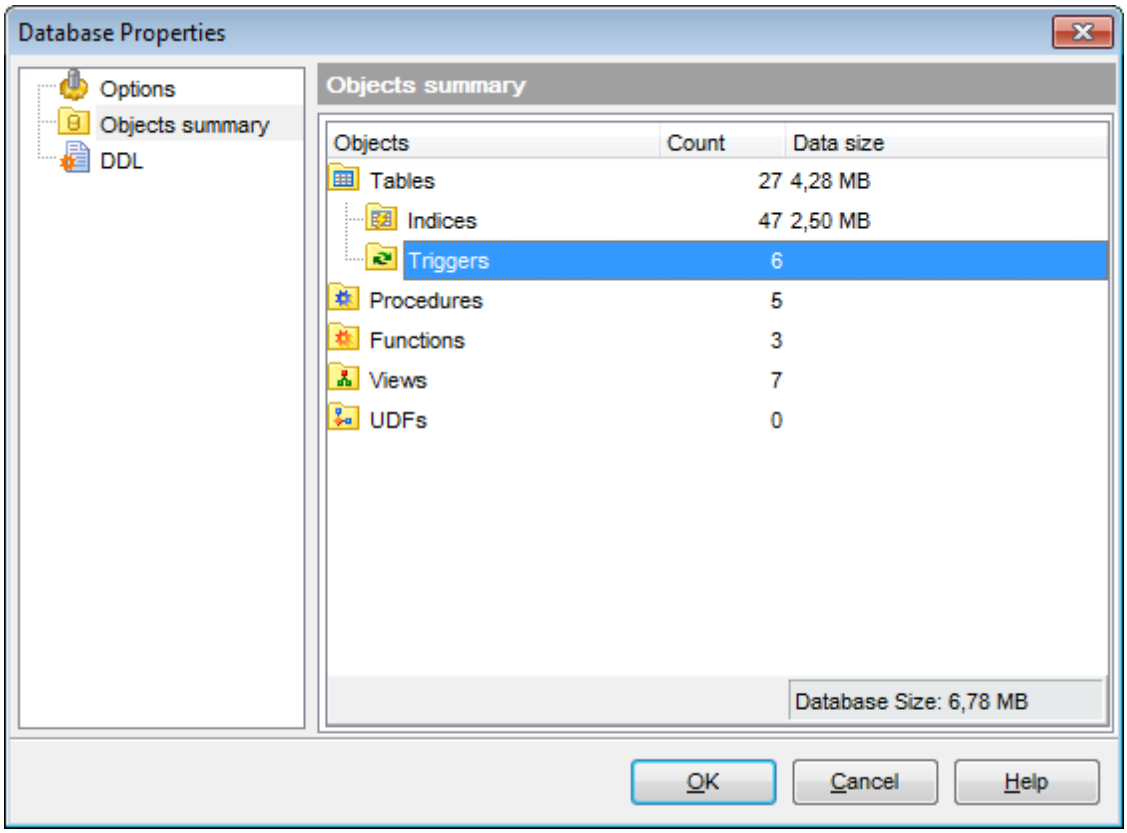
See also:

Objects summary

DDL

4.4.2 Objects summary

The **Objects summary** section of the **Database Properties** dialog displays summary of the objects contained within the current database (including objects count and their total size in groups).



Hint: The pane at the bottom displays the overall database size.

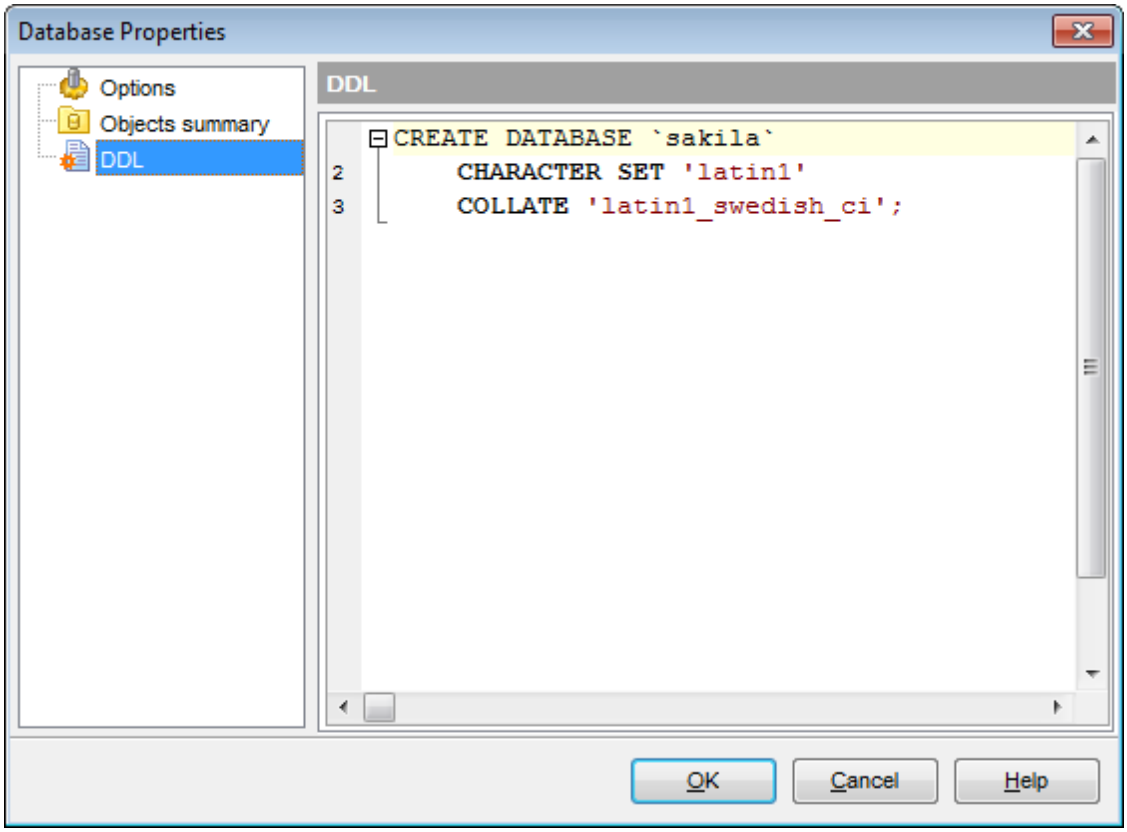
See also:

Options

DDL

4.4.3 DDL

The **DDL** section of the **Database Properties** dialog displays DDL of the selected database with current options set.



See also:

Options

Objects summary

4.5 Database Registration Manager

Database Registration Manager allows you to register new databases and delete the registration of non-existent databases.

To open **Database Registration Manager** use the corresponding item of the host context menu.

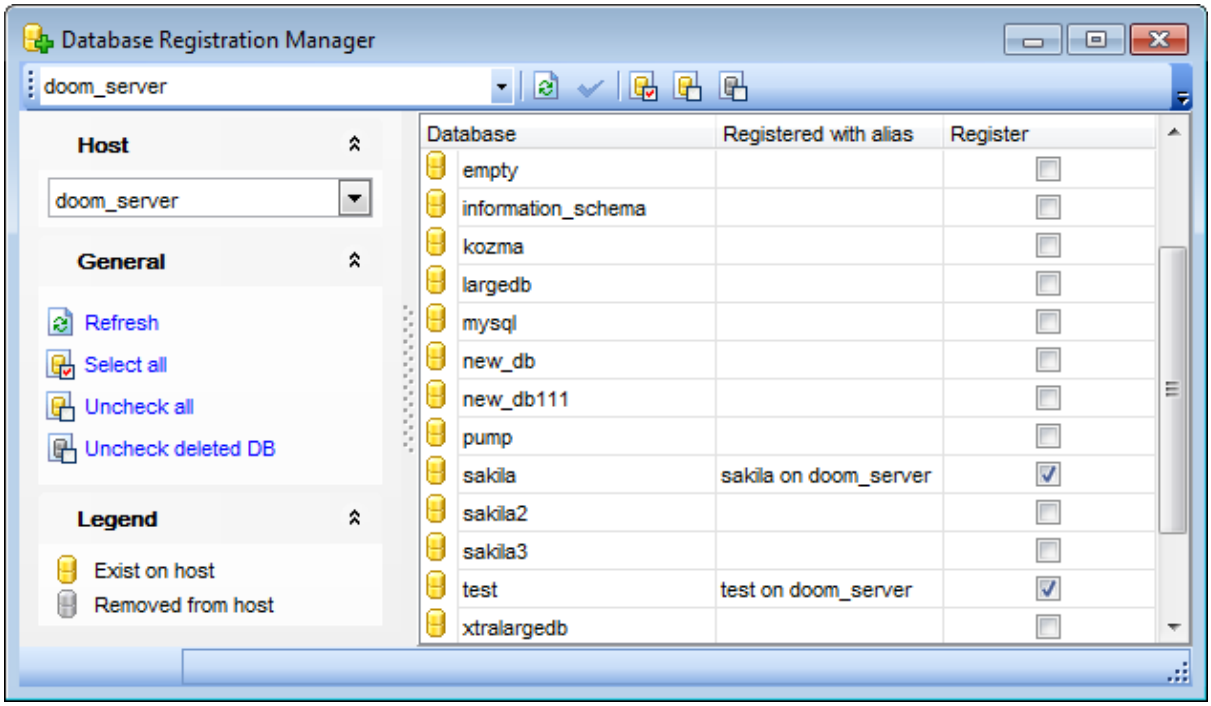


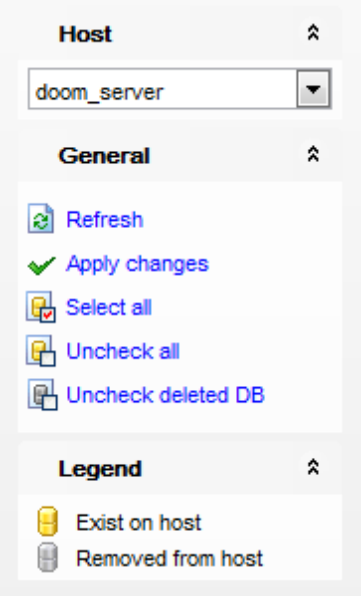
Table contains all databases located on the selected host. You can change **Host** selection using the appropriate drop-down list in the navigation bar.
Check all databases to be registered.
For automatic registration of selected databases click the **Apply changes button**.

See also:

Register Database wizard

4.5.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Database Registration Manager**.



The **Navigation bar** of **Database Registration Manager** allows you to:

Host group
select a host

General group
Refresh the list of databases
Apply changes - register selected databases
Select a database located on the host, but not registered in <PRODUCT_TITLE>
Uncheck all
Uncheck deleted DB

Legend group
indicates existing database
indicates removed from host database

Items of the **Navigation bar** are also available on the **ToolBar** of **Schema Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

Part V

5 Database/Server Objects Management

SQL Manager for MySQL provides powerful tools to manage **database objects**.

To obtain detailed information concerning MySQL database objects, refer to the official MySQL server documentation.

Note: Before working with database objects in **SQL Manager for MySQL** you should connect to the database first.

Creating Database Objects

To create a database object:
- select the **Database | New Object...** main menu item;
- select the type of object within the New Object dialog;
- follow the steps of the wizard which guides you through the entire process of creating the object, or set the object properties using its editor - depending on the selected object type.

Note that you can also create a database object by selecting the appropriate context menu item of the DB Explorer tree or using the *Ctrl+N* shortcut.

Editing Database Objects

To edit a database object:
- select the database object in the DB Explorer tree;
- right-click the object to call its context menu and select the **Edit <object type> <object name>** context menu item, or double-click the object to open it in its editor.

Renaming Database Objects

To rename a database object:
- select the object to rename in the DB Explorer tree;
- right-click the object and select the **Rename <object type> <object name>...** item from the context menu;
- edit the object name using the **Rename Object...** dialog.

Note: This operation is possible for all objects except for scheduled events.

Dropping Database Objects

To drop a database object:
- select the database object in the DB Explorer tree;
- right-click the object to call its context menu and select the **Drop <object type> <object name>** context menu item;
- confirm dropping in the dialog window.

When using an object editor, you can benefit from **tabs**. To switch between tab views, click on their respective tabs at the top of the main editor window. You can do it at any time, since the tab views are absolutely independent.

To compile a newly created or edited object, you can use the **Compile** item available within the Navigation bar or Toolbar of the object editor.

Note: If more convenient, you can also use the following shortcuts:
Ctrl+N to create a new object;
Ctrl+O to edit the selected object;
Ctrl+R to rename the object;
Shift+Del to drop the object from the database.

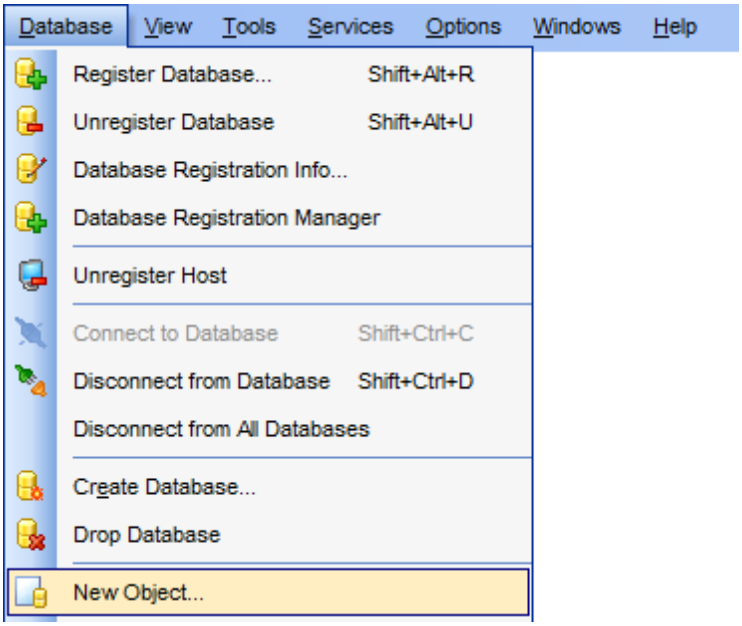
See also:

Getting Started
Database Explorer
Database Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools
How To...

5.1 New Object

The **Create New Object** dialog allows you to select the type of the object to be created and run the appropriate wizard or editor.

To open the dialog, select the **Database | New Object...** main menu item.



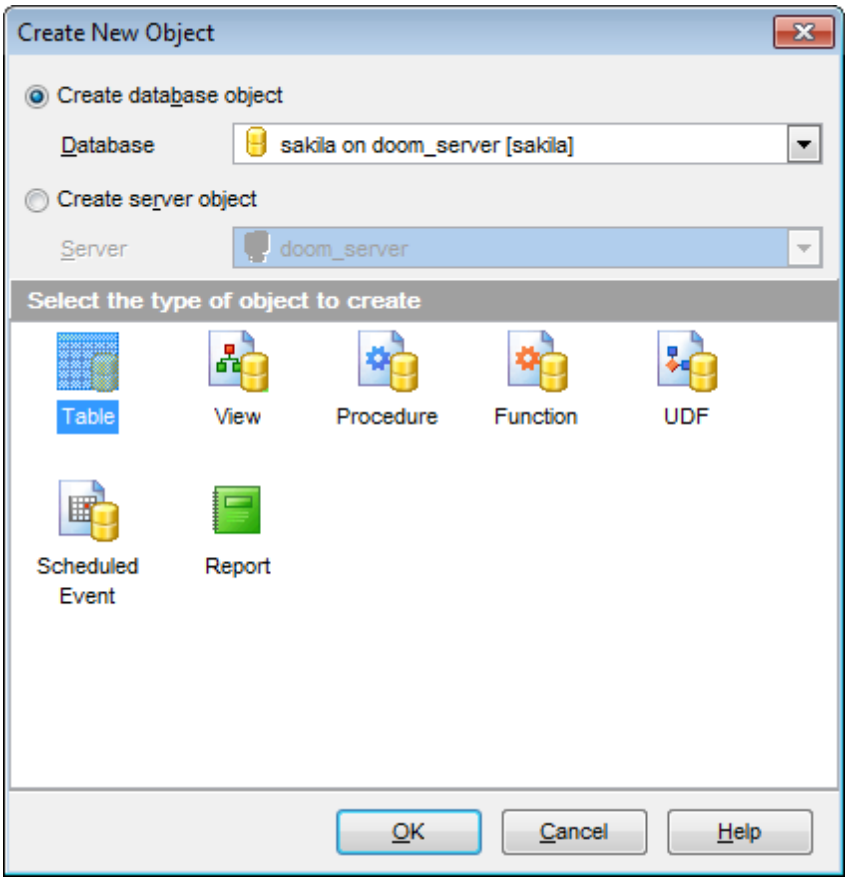
Define which object you need to create:

Create database object

Use the drop-down list to select the database where an object should be created. The list contains only database with active connection.

Create server object

Use the drop-down list to select the host to create object for.



Pick an object type icon and click **OK** to invoke the corresponding wizard or dialog.

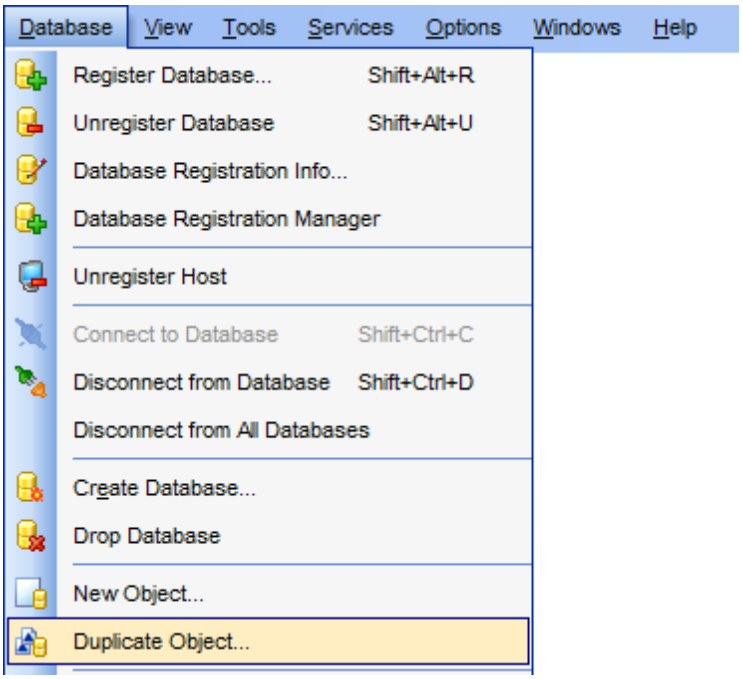
See also:

Operations with database objects
Duplicate Object Wizard
Database objects
Server objects

5.2 Duplicate Object Wizard

Use the **Duplicate Object Wizard** to create a new database object of the same type and having the same properties as one of the existing ones.

To run the wizard, select the **Database | Duplicate Object...** main menu item, or right-click an object of the desired type in the DB Explorer tree and use the **Duplicate <object type> <object name>...** context menu item.



- Selecting the source database
- Selecting object to duplicate
- Selecting destination database
- Specifying object details
- Modifying the new object's definition

See also:

Operations with database objects

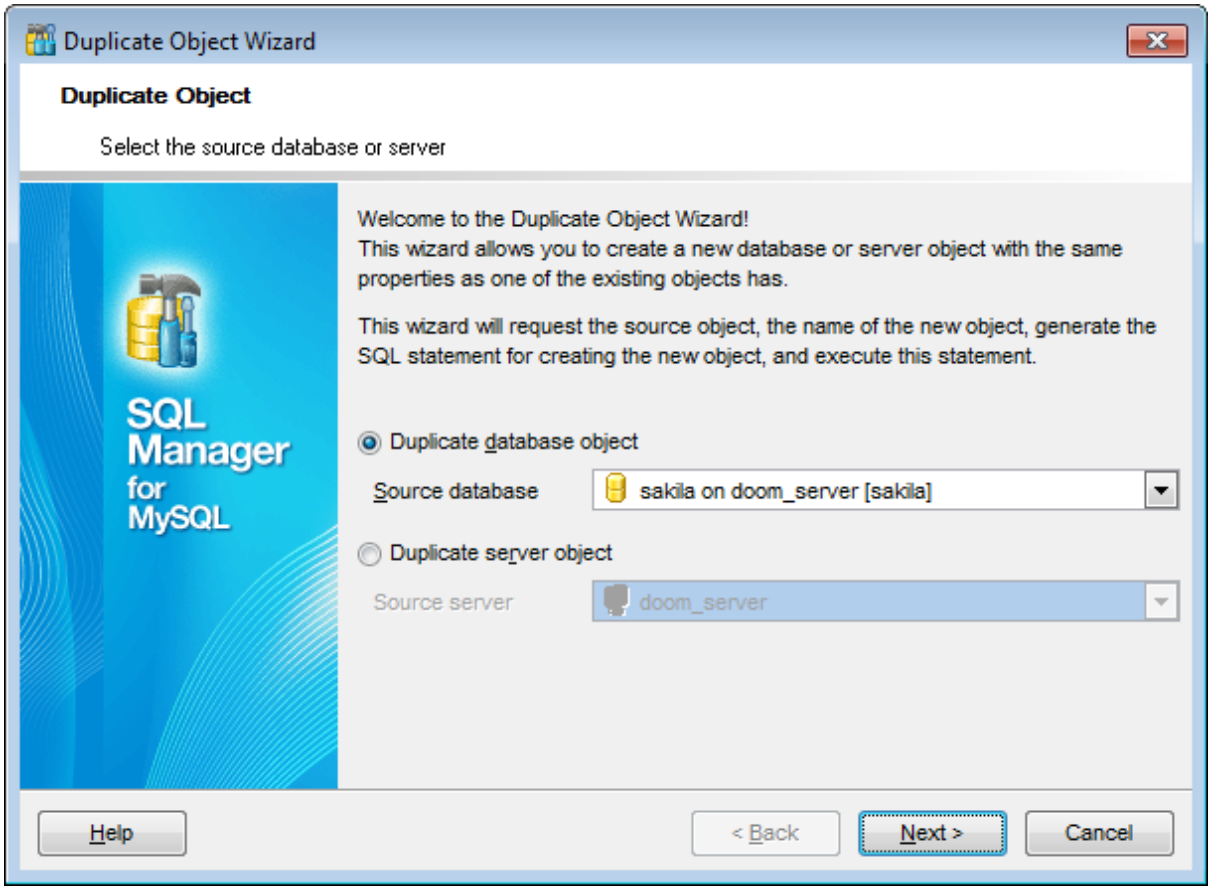
New Object

Database objects

Server objects

5.2.1 Selecting the source database

This step of the wizard allows you to select the **source database** containing the source object to be duplicated.



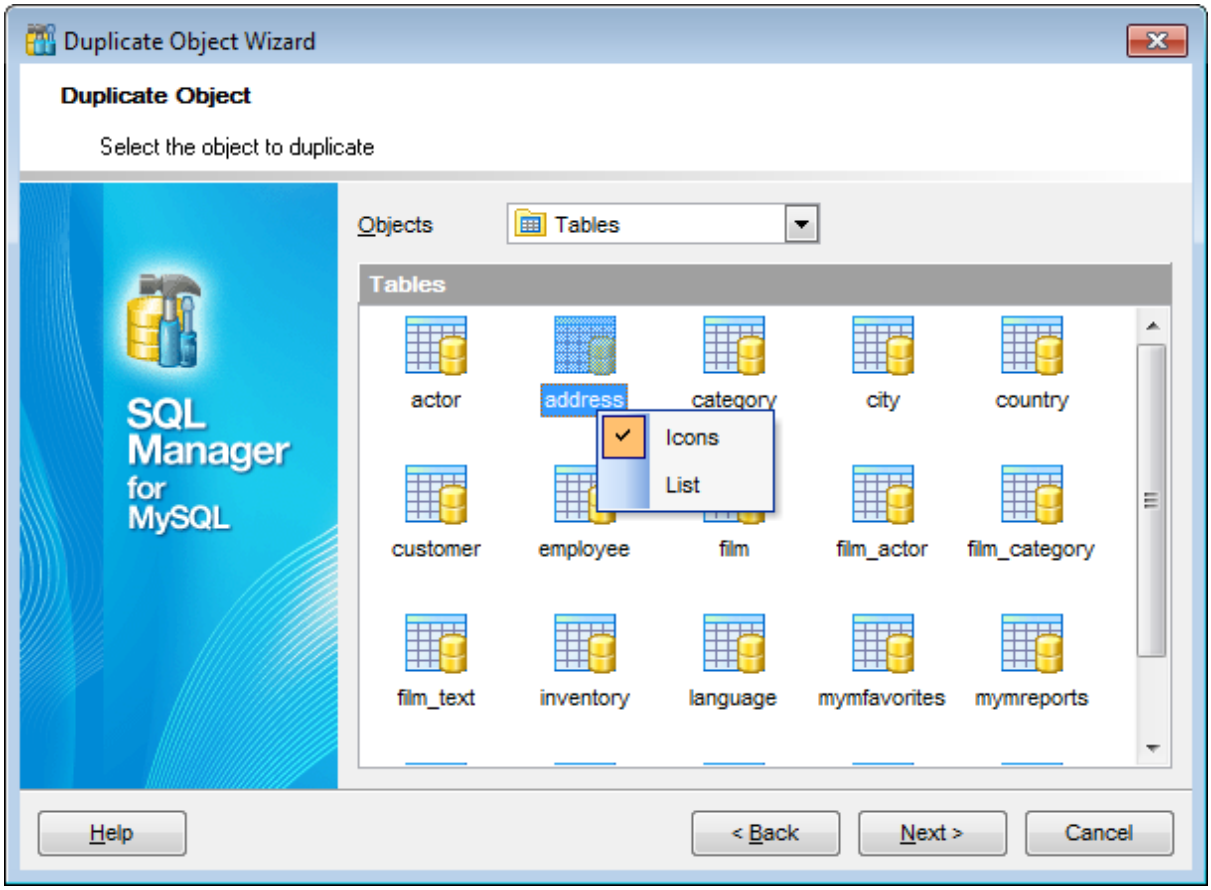
Click the **Next** button to proceed to the Selecting object to duplicate step of the wizard.

5.2.2 Selecting object to duplicate

Use the **Objects** drop-down menu to select the type of object you intend to duplicate.

Select a database object to copy its properties to the new object.

Hint: The **context menu** of the objects list area allows you to specify whether objects of the specified type should be displayed as *icons* or as *list*.



Click the **Next** button to proceed to the Selecting destination database step of the wizard.

5.2.3 Selecting destination database

Select the **target database** to create the new object in, set the **name** of the new database object.

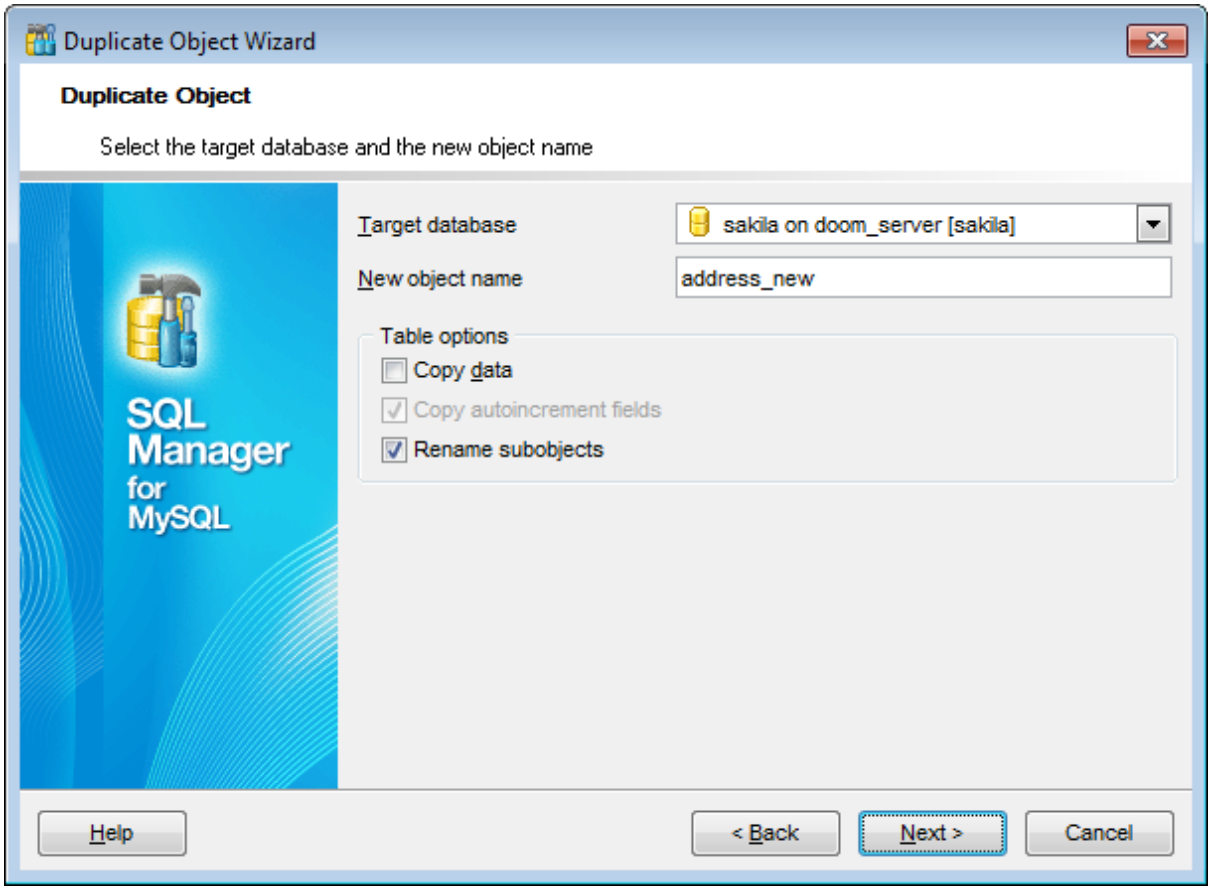


Table options
Check the **Copy data** option to copy data from the source table to the new one.

Copy autoincrement columns
This option determines whether autoincrement columns should be copied to the destination table or not (available for certain tables only).

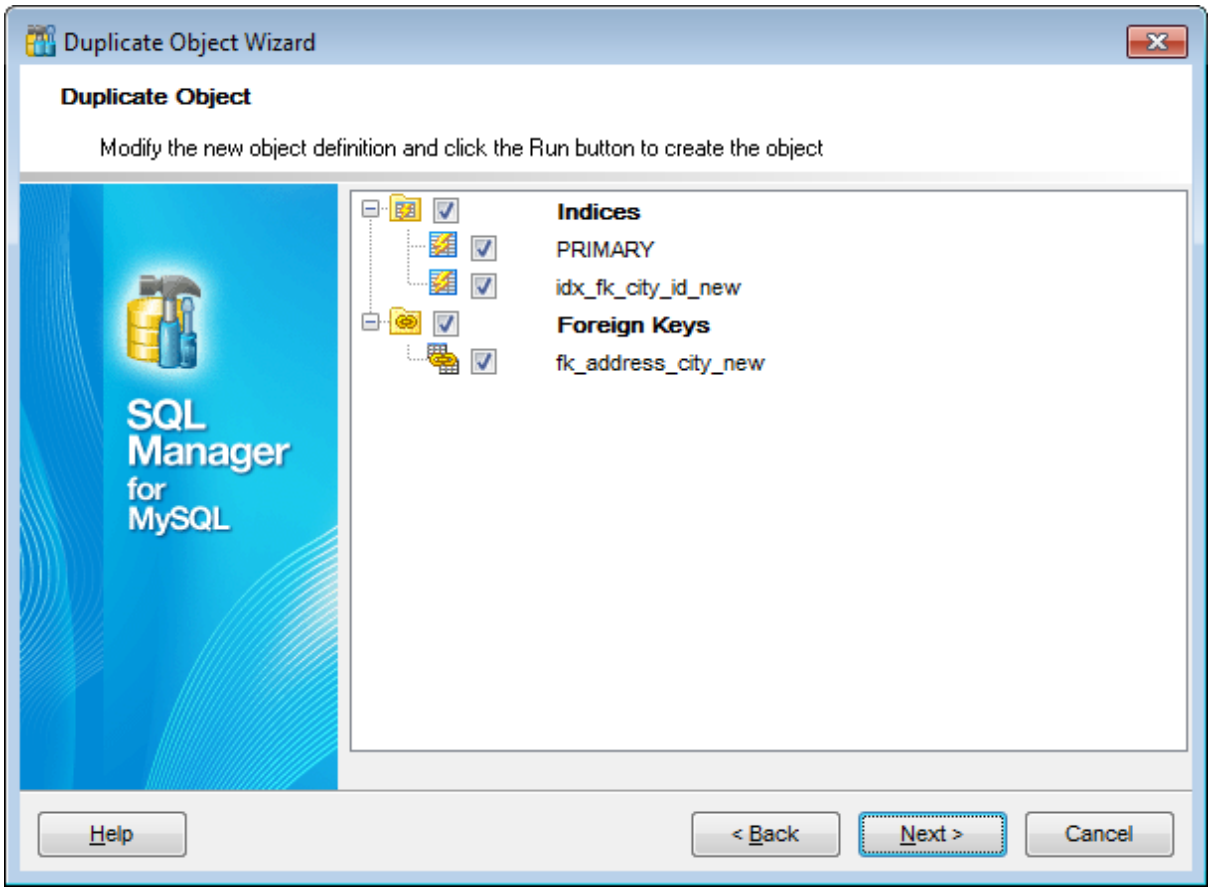
Rename subobjects
This option determines whether subobject names will be changed in accordance with the changes in the name of the object being copied.

Click the **Next** button to proceed to the Specifying object details step of the wizard.

5.2.4 Specifying object details

Specify **object details** (subobjects - Indices, Foreign Keys, Triggers, dependent objects) to be duplicated in the target object.

Note: Availability of this step depends on the type of object being duplicated.

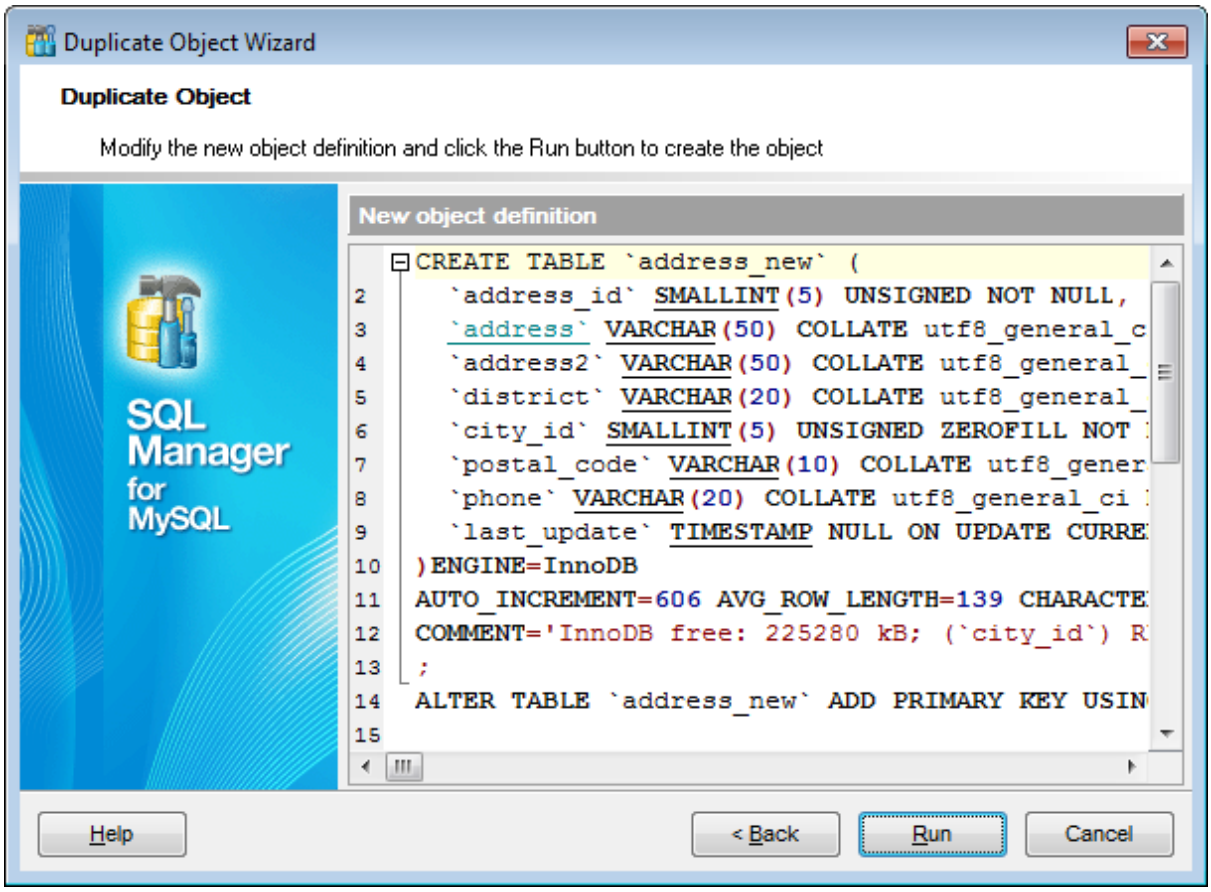


Click the **Next** button to proceed to the Modifying the new object's definition step of the wizard.

5.2.5 Modifying the new object's definition

This step of the wizard allows you to browse **the result SQL statement**.

If necessary, you can edit the definition of the new object.



Click the **Run** button to create the object.

5.3 Database objects

SQL Manager for MySQL provides user with all necessary tools for working with database objects.

Note: To start working with objects you need to connect to database first.

Tables
Views
Stored procedures
Stored functions
User defined functions
Scheduled events
Triggers

See also:

Operations with database objects
New Object
Duplicate Object Wizard
Server objects

5.3.1 Tables

Relational databases store all their data in **Tables**. A table is a data structure consisting of an unordered set of horizontal rows, each containing the same number of vertical columns. The intersection of an individual row and column is a field that contains a specific piece of information. Much of the power of relational databases comes from defining the relations among the tables.

Creating Tables

To create a new table:
- select the **Database | New Object...** main menu item;
- select **Table** in the Create New Object dialog;
- define table properties and fields using the appropriate tabs of Table Editor.

Hint: To create a new table, you can also right-click the **Tables** node or any object within this node in the DB Explorer tree and select the **New Table...** item from the context menu.

To create a new table with the same properties as one of existing tables has:
- select the **Database | Duplicate Object...** menu item;
- follow the instructions of Duplicate Object Wizard.

Alternatively, you can right-click a table in the DB Explorer tree and select the **Duplicate Table <table_name>...** context menu item.

Duplicate Object Wizard allows you to select the database to create a new table in, and to edit the result SQL statement for creating the table.

Editing Tables

To edit an existing table (manage its fields, indexes, data, etc.):
- select the table for editing in the DB Explorer tree (type the first letters of the table name for quick search);
- right-click the object and select the **Edit Table <table_name>** context menu item, or simply double-click the table;
- edit table subobjects and data using the appropriate tabs of Table Editor.

To change the name of a table:
- select the table to rename in the DB Explorer tree;
- right-click the table alias and select the **Rename Table <table_name>...** item from the context menu;
- edit the table name using the **Rename Object...** dialog.

Dropping Tables

To drop a table:
- select the table to drop in the DB Explorer tree;
- right-click the object and select the **Drop Table <table_name>...** context menu item;
- confirm dropping in the dialog window.

Note: If more convenient, you can also use the following shortcuts:
Ctrl+N to create a new table;

Ctrl+O to edit the selected table;
Ctrl+R to rename the table;
Shift+Del to drop the object from the database.

5.3.1.1 New Table

Relational databases store all their data in **Tables**. A table is a data structure consisting of an unordered set of horizontal rows, each containing the same number of vertical columns. The intersection of an individual row and column is a field that contains a specific piece of information. Much of the power of relational databases comes from defining the relations among the tables.

Creating Tables

To create a new table:
- select the **Database | New Object...** main menu item;
- select **Table** in the Create New Object dialog;
- define table properties using the appropriate tabs of Table Editor.

Hint: To create a new table, you can also right-click the **Tables** node or any object within this node in the DB Explorer tree and select the **New Table** item from the context menu.

Renaming Tables

To rename a table:
- select the **Rename Table <table_name>** item from the table context menu

or
- simply press *Ctrl+R*

Editing Tables

To edit table:
- double-click the table in DBExplorer to open it in the Table Editor;

or
- right-click the table in DBExplorer and select the **Edit Table <table_name>** item from the context menu.

Dropping Tables

To drop table:
- right-click the table in the DBExplorer and select the **Drop Table <table_name>** item;

or
- select the table and press *Ctrl+Del*.

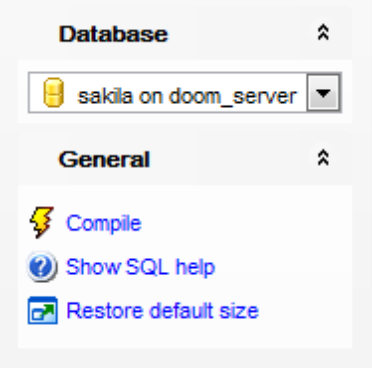
Duplicating table

There is a specific wizard for duplicating objects. To copy table use the **Duplicate Table <table_name>** item from the table context menu. Duplicate object wizard in this case will be opened at the Selecting destination database, as the previous ones provide selecting of source database and object to copy.

- Using Navigation bar and Toolbar
- Setting table properties
- Specifying table fields
- Viewing DDL definition

5.3.1.1.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Table Editor**.



The **Navigation bar** of **Table Editor** (in the *New table* mode) allows you to:

Database group
select a database to create a new table in

General group
compile the newly created table
view MySQL reference
restore the default size and position of the editor window

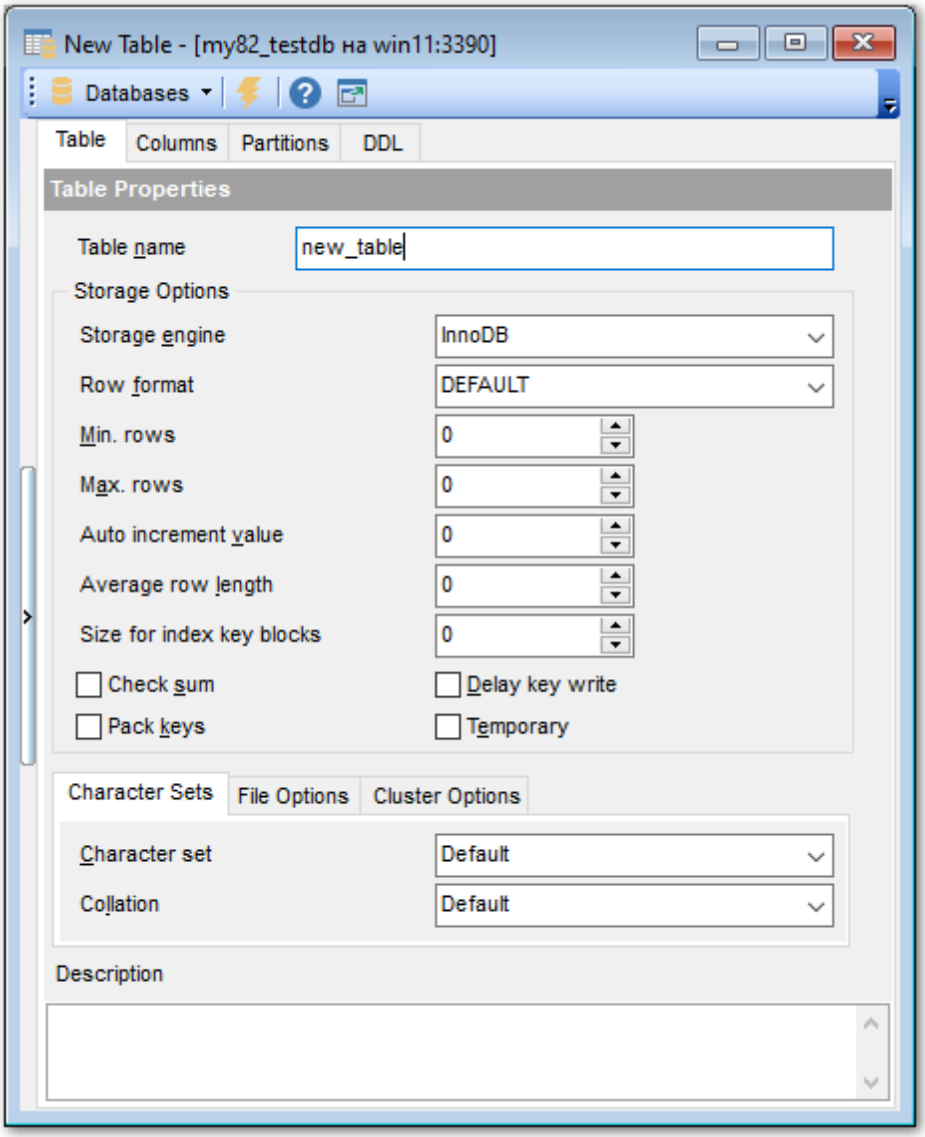
Note: Navigation bar items can vary for different tabs of the editor.

Items of the **Navigation bar** are also available on the **ToolBar** of **Table Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.1.1.2 Setting table properties

Use the **Table** tab of **Table Editor** to create a table and specify its properties.

Table name
Enter a name for the new table. Note that table names must comply with the rules for identifiers and must be unique within the database.



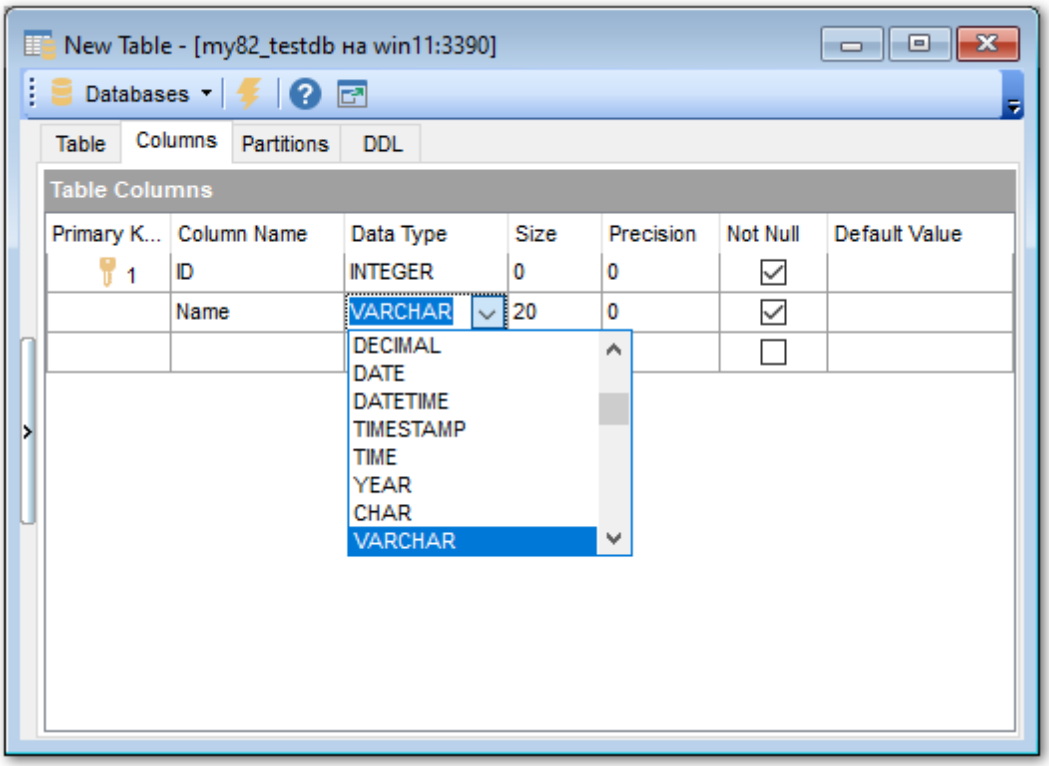
Optionally, you can specify Storage Options and view table status.

5.3.1.1.3 Specifying fields

The **Columns** tab is intended for setting up table columns. Double-click a column to open Column Editor for editing the column.

Right-click within the **Table Columns** area to display the context menu allowing you to *insert*, *edit* or *delete* columns.

Columns management tools are also available through the Navigation bar and toolbar of **Table Editor**.



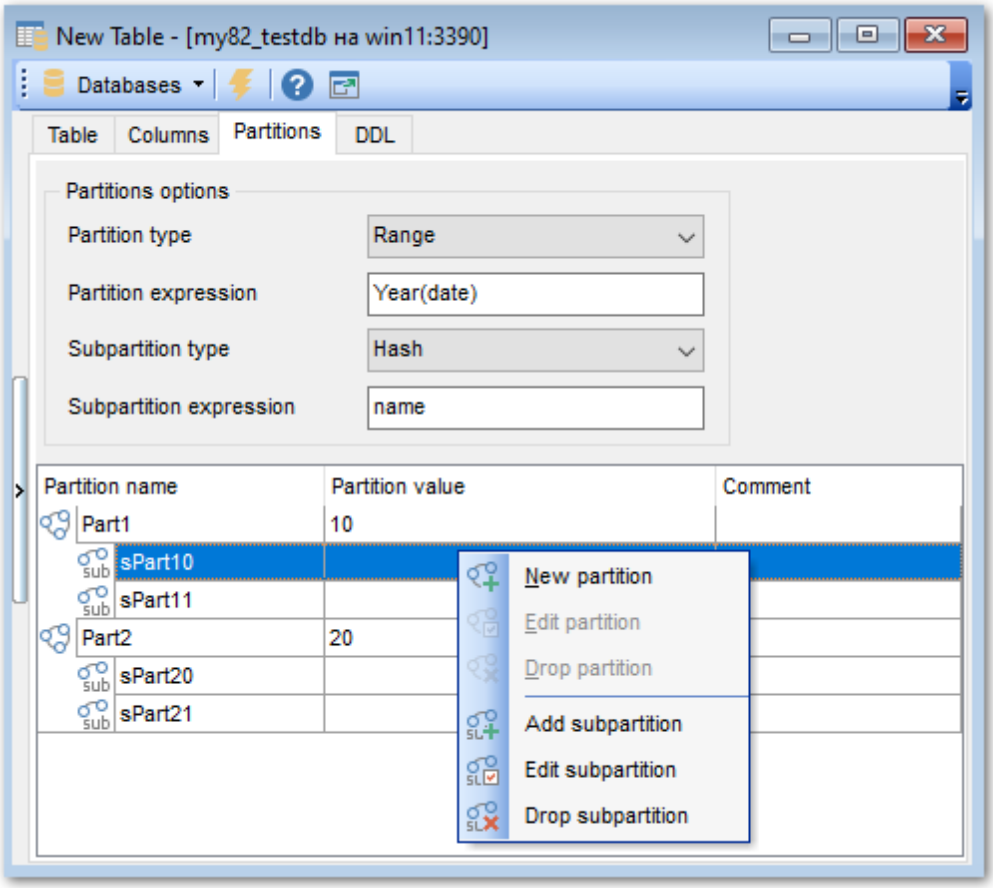
The **Table Columns** list provides the following attributes of each column of the new table:
Primary Key
Column Name
Data Type
Size
Precision
Not Null
Default Value

For details see Columns.

To compile the table, use the **Compile** item available within the Navigation bar or toolbar.

5.3.1.1.4 Partitions

Partitioning states for dividing big tables into logical parts due to the selected criteria. Partitions are available for server version 5.1 and higher. This feature cannot be applied to *federated* tables.
Use the respective tab of Table Editor to define **Partitioning** settings.



Partition type
Use the drop-down list to define data division method.

- **Range**

A table that is partitioned by range is partitioned in such a way that each partition contains rows for which the partitioning expression value lies within a given range.

Example:
PARTITION BY RANGE (store_id) (
PARTITION p0 VALUES LESS THAN (10),

- **List**

In list partitioning, each partition is defined and selected based on the membership of a column value in one of a set of value lists.

Example:
PARTITION BY LIST(store_id) (
PARTITION pNorth VALUES IN (3,5,6,9,17),

- **Hash**

Partitioning by HASH is used primarily to ensure an even distribution of data among a

predetermined number of partitions. You need only specify a column value or expression based on a column value to be hashed and the number of partitions into which the partitioned table is to be divided.

- **Linear hash**

Linear hashing differs from regular hashing in that linear hashing utilizes a linear powers-of-two algorithm whereas regular hashing employs the modulus of the hashing function's value.

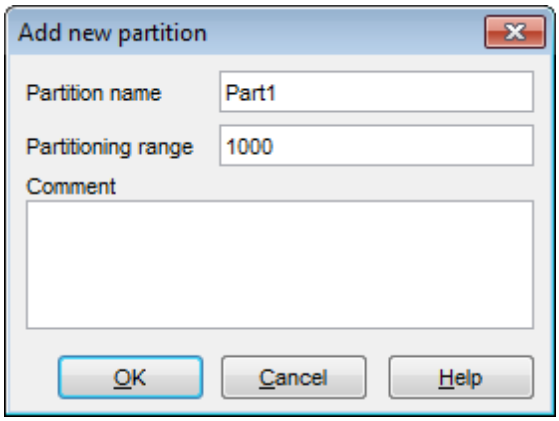
- **Key**

Partitioning by key is similar to partitioning by hash, except that where hash partitioning employs a user-defined expression, the hashing function for key partitioning is supplied by the MySQL server.

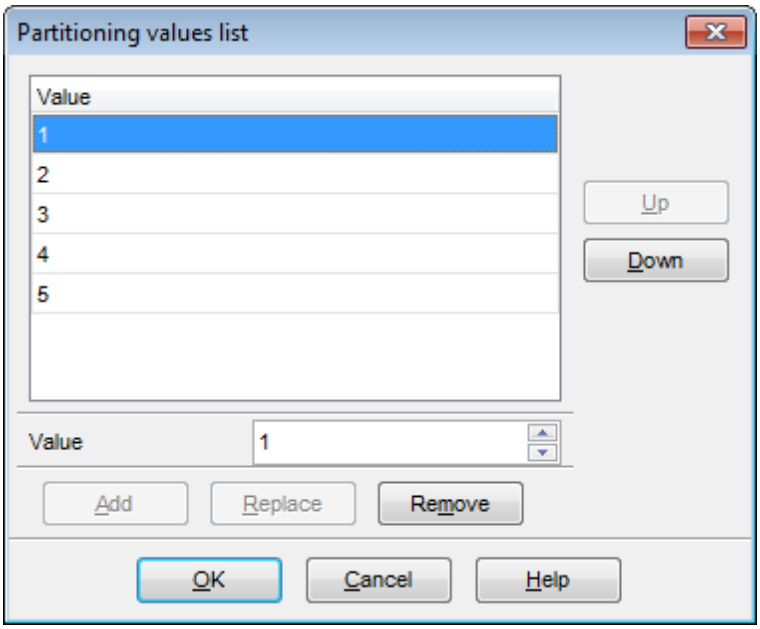
```
PARTITION BY KEY(s1)
PARTITIONS 10;
```

Note: Several partitions of different types can't be created. If you change **Partition type** then all partitions and subpartitions created before will disappear.

Partition expression
Column, expression, exact value or list of values which defines data division logic for partitions.



Specify **Partition name** and **Comment** for the created partition.
Partition value is used only in partitions by range. It defines range of values. All records that meet the 'LESS THAN<PARTITION VALUE' are included in partition.
List of values is available when creating partition by list. Press the ellipsis button to open dialog allowing you to define the list of values.



Specify value and click **Add** to include this value in list.
Select a value in the list and click **Replace** to insert new value instead of the selected one.
You can change position of the selected value using the **Up** and **Down** buttons.
When done, click **OK** to apply changes.

Subpartition type
It is the further division of each partition in a partitioned table. If **No partition** is selected no actions for subpartitions are enabled in the context menu. **Hash** and **Linear hash** types for subpartitions follow the same syntax rules as for partitions. The **Key** subpartitioning differs in the way that for subpartitions you need to specify field manually though for partitions it is defined automatically (if not specified).

Note: In MySQL version 5.5 it is possible to create subpartitions for only range or list partitions.

Subpartition expression
Field, expression or exact value which defines data division logic for subpartitions.

Note: Subpartition *type* and *expression* defined in these fields will be applied to all subpartitions of the table.

The context menu allows you to manage partitions and subpartitions. Right-click an element to:
create new partition;
edit partition;
delete partition;
add subpartition;
edit subpartition's name;
delete subpartition (subpartition will be deleted from all partitions).

For your convenience all the actions are duplicated on the navigation bar.

Note: Some actions can be unavailable depending on the element type selected.

5.3.1.2 Table Editor

Table Editor is the basic **SQL Manager** tool for working with tables. It opens automatically in the New table mode when you create a new table and is available on editing an existing one (see Create table and Edit table for details).

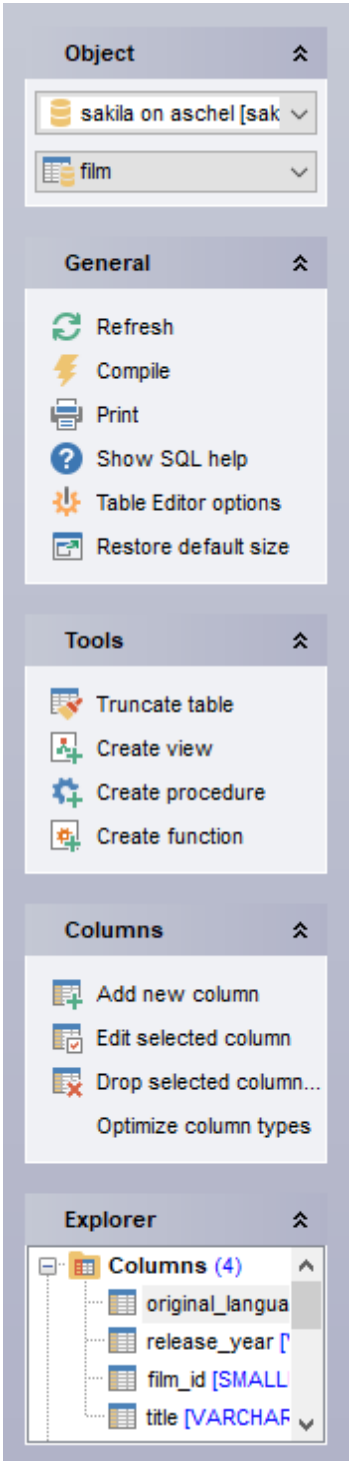
Table Editor allows you to create, edit and drop table's columns, indexes, foreign keys and other table subobjects, manage table data, properties and much more.

To open a table in **Table Editor**, double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Setting table properties
- Managing table columns
- Changing columns order
- Managing table indexes
- Managing table foreign keys
- Managing table triggers
- Managing table checks
- Working with table data
- Browsing object dependencies
- Viewing DDL definition

5.3.1.2.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Table Editor**.



The **Navigation bar** of **Table Editor** (in the *Edit table* mode) allows you to:

Object group
select a database
select a table for editing

General group
refresh the content of the active tab
compile the table (if it is being modified)
define grants on the table
print metadata of the table
view MySQL reference
adjust Table Editor options
restore the default size and position of the editor window

Tools group
truncate data of the table

Explorer group
browse the table subobjects using the Explorer tree

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the table:

Columns group
add a new column
edit selected column
drop selected column(s)
run Optimize column types wizard

Indices group
add a new index
edit selected index
drop selected index(-es)

Foreign keys group
add a new foreign key
edit selected foreign key
drop selected foreign key(s)

Triggers group
add a new trigger
edit selected trigger
drop selected trigger(s)

Data Management group
commit transaction
rollback transaction
export data

export as SQL script
import data
load data
save data to file on server

DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **Table Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.1.2.2 Managing fields

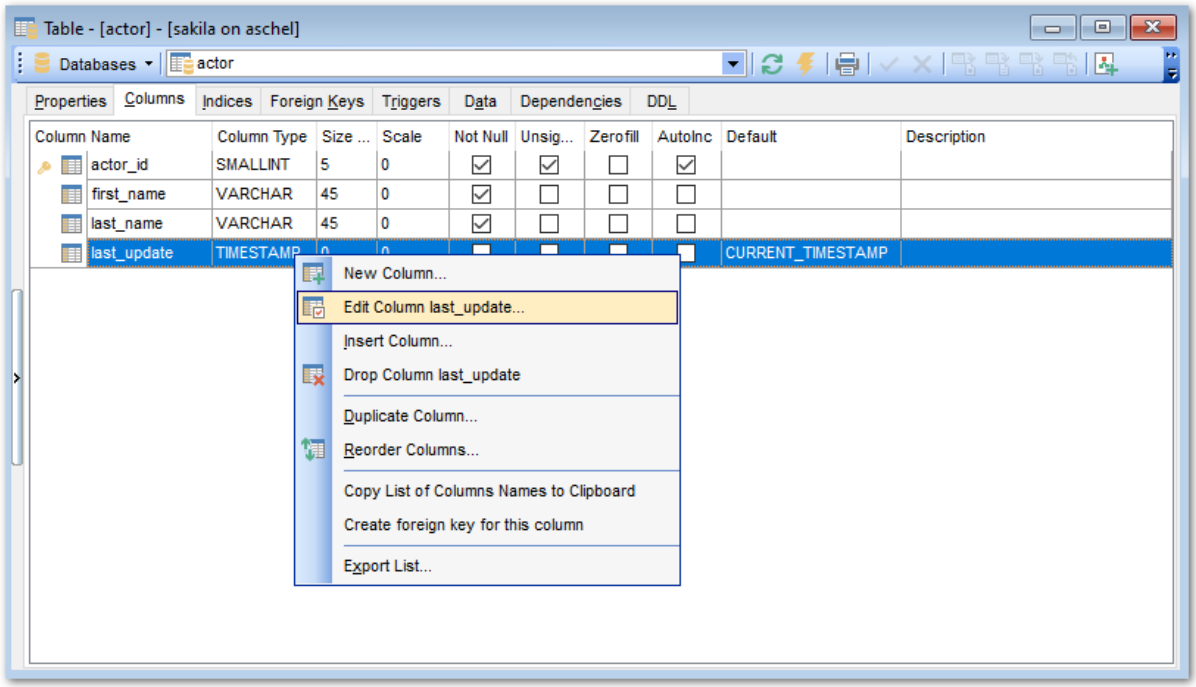
The **Columns** tab is intended for managing table columns.

Hint: This tab is selected by default upon opening **Table Editor** if the *Always open the Columns tab* option is enabled on the Tools | Table Editor page of the Environment Options dialog.

Double-click a column to open Column Editor for editing the column.

Right-click a column to display the context menu allowing you to *create* new, *insert*, *edit*, *drop*, *duplicate* the selected column, or reorder columns of the table. Using the menu you can also copy to clipboard or export the list of the table columns to any of supported formats.

Columns management tools are also available through the Navigation bar and toolbar of **Table Editor**.



The **Table Columns** list provides the following attributes of each column of the table:
Column Name
Column Type
Size
Precision
Not Null
Default
Description

For details see Columns.

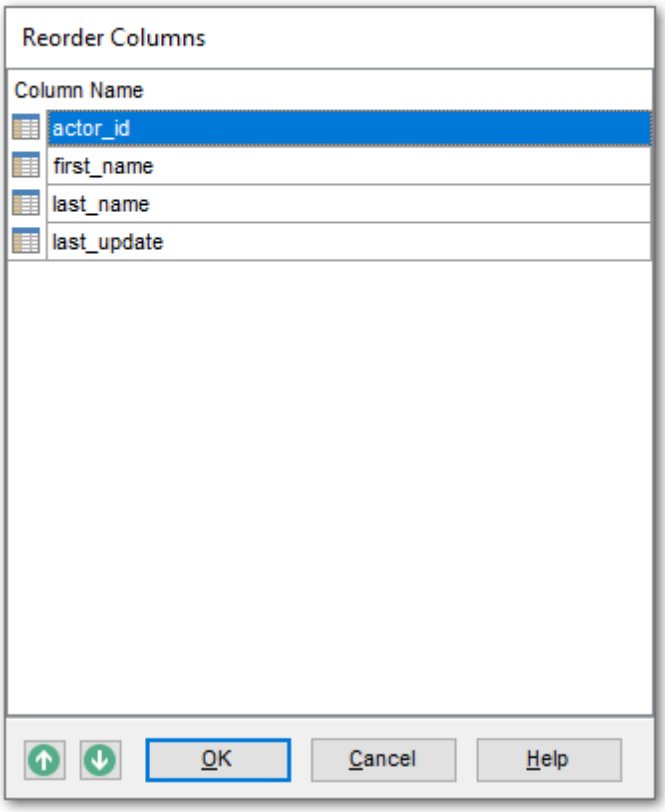
5.3.1.2.3 Changing fields order

The **Reorder Columns** dialog allows you to change the columns order in the table.

To open this dialog, open the table in **Table Editor**, proceed to the Columns tab there, right-click within the **Columns** list and select the **Reorder Columns** item from the context menu.

The columns are displayed in the **Column name** list in the current order.

To change the columns order, use the  buttons or drag-and-drop operations within the list. Click the **OK** button to apply changes.

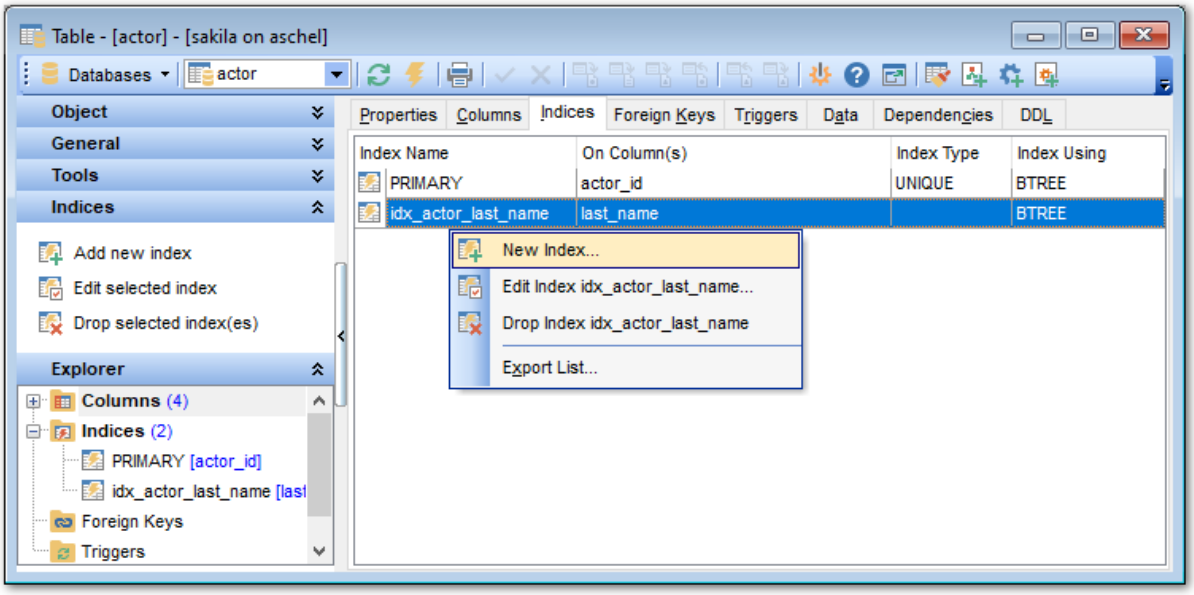


5.3.1.2.4 Managing indexes

The **Indices** tab is provided for managing table indexes. Double-click an index to open Index Editor for editing the index.

Right-click an index to display the context menu allowing you to *create* new, *edit*, *drop* the selected index. Using the menu you can also export the list of the table indexes to any of supported formats.

Indexes management tools are also available through the Navigation bar and toolbar of **Table Editor**.



The **Indexes** list provides the following attributes of each index of the table:
Index Name
On Column(s)
Unique
Fulltext

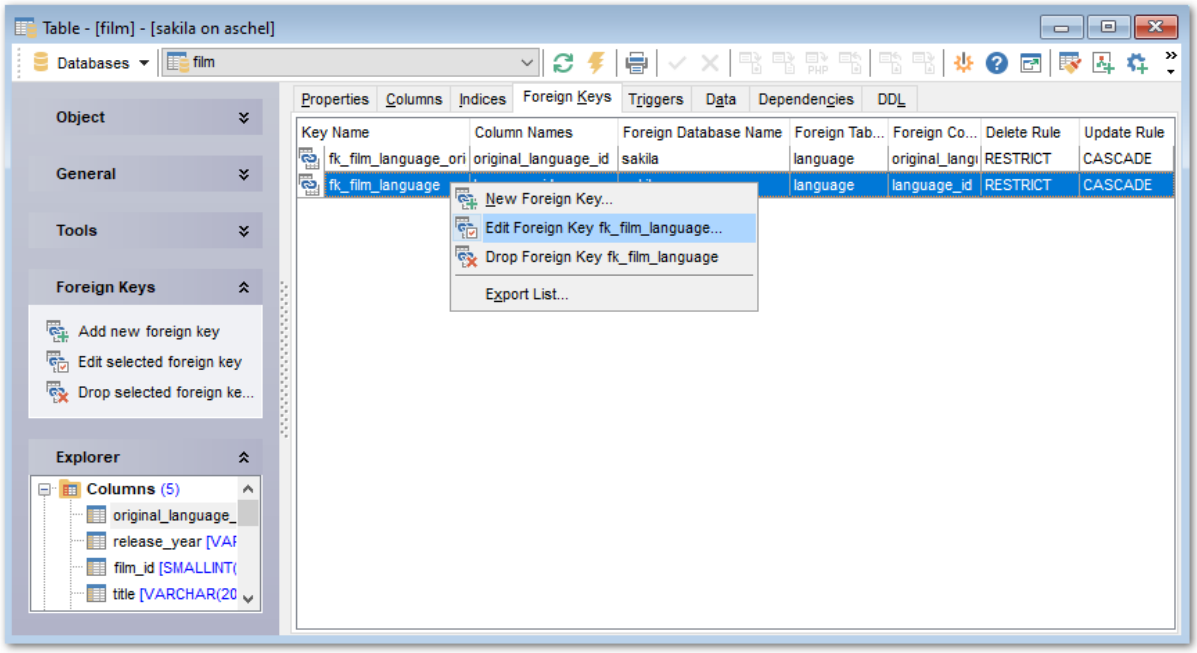
For details see Indexes.

5.3.1.2.5 Managing foreign keys

The **Foreign Keys** tab is provided for managing table foreign keys. Double-click a foreign key to open Foreign Key Editor for editing the foreign key.

Right-click a foreign key to display the context menu allowing you to *create* new, *edit*, *drop* a foreign key. Using the menu you can also export the list of the table foreign keys to any of supported formats.

Foreign keys management tools are also available through the Navigation bar and toolbar of **Table Editor**.



The **Foreign Keys** list provides the following attributes of each foreign key of the table:
Key Name
Column Names
Foreign Database Name
Foreign Table Name
Foreign Column Names
Delete Rule
Update Rule

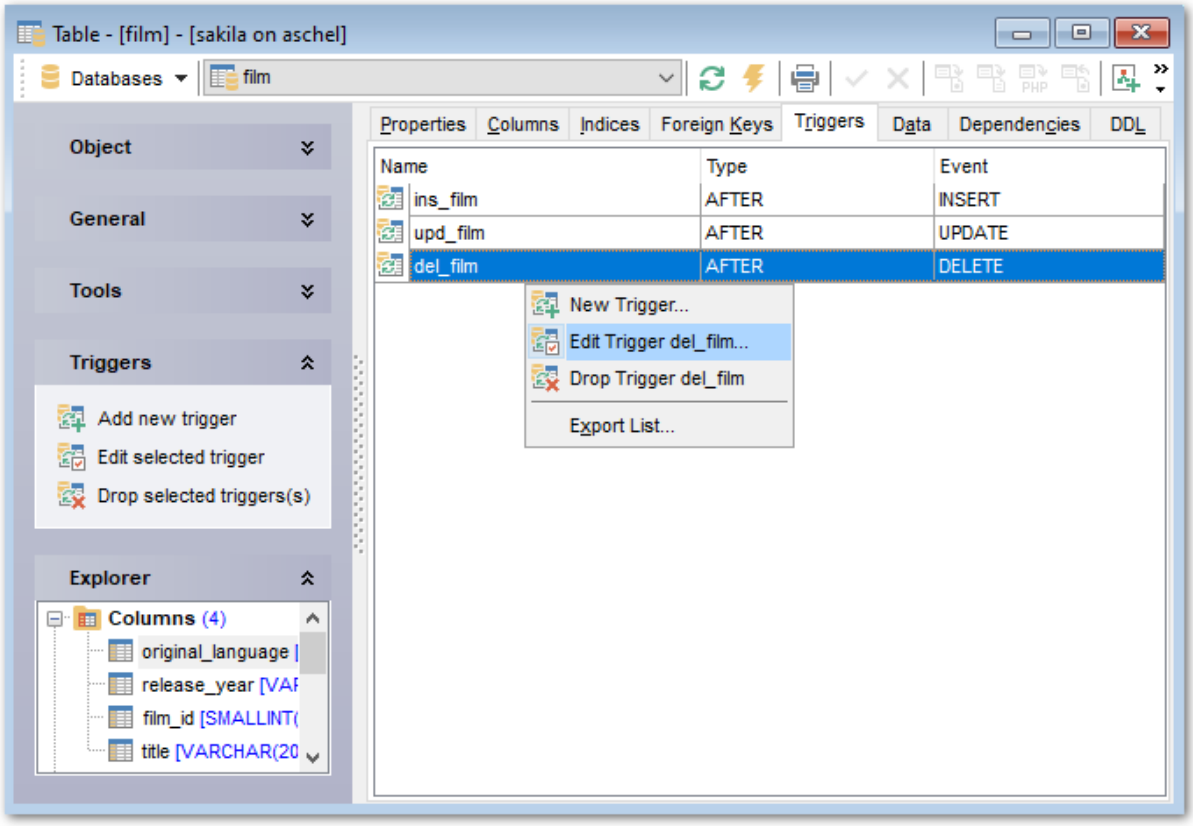
For details see Foreign Keys.

5.3.1.2.6 Managing triggers

The **Triggers** tab is provided for managing table triggers. Double-click a trigger to open Trigger Editor for editing the trigger.

Right-click the area to display the context menu allowing you to *create* new, *edit*, *drop* the selected trigger. Using the menu you can also export the list of the table triggers to any of supported formats.

Triggers management tools are also available through the Navigation bar and toolbar of **Table Editor**.



The **Triggers** list provides the following attributes of each trigger of the table:
Name
Type
Event

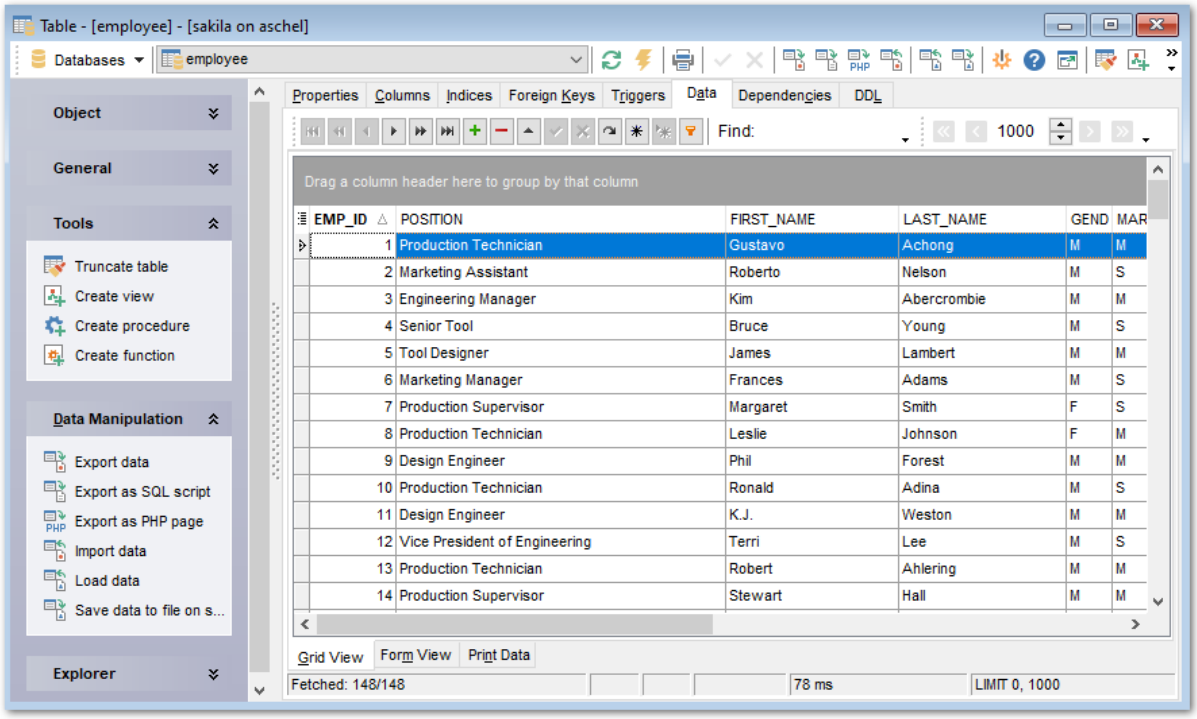
For details see Triggers.

5.3.1.2.7 Working with table data

The **Data** tab displays the table data as a grid by default (see Data View for details). The context menu of this tab allows you to Export Data, Import Data, Export as SQL Script, Save Data, Load Data.

Data management tools are also available through the Navigation bar and toolbar of **Table Editor**.

While working with data, you are provided with a number of filtering and grouping facilities.
If necessary, you can **group the data in grid** by any of the columns. This operation is performed by dragging the column header to the gray **"Group by" box** area at the top. When grouping by a column is applied to the grid, all the rows are displayed as subnodes to the grouping row value. To reverse grouping, just drag the column header back.



See also:

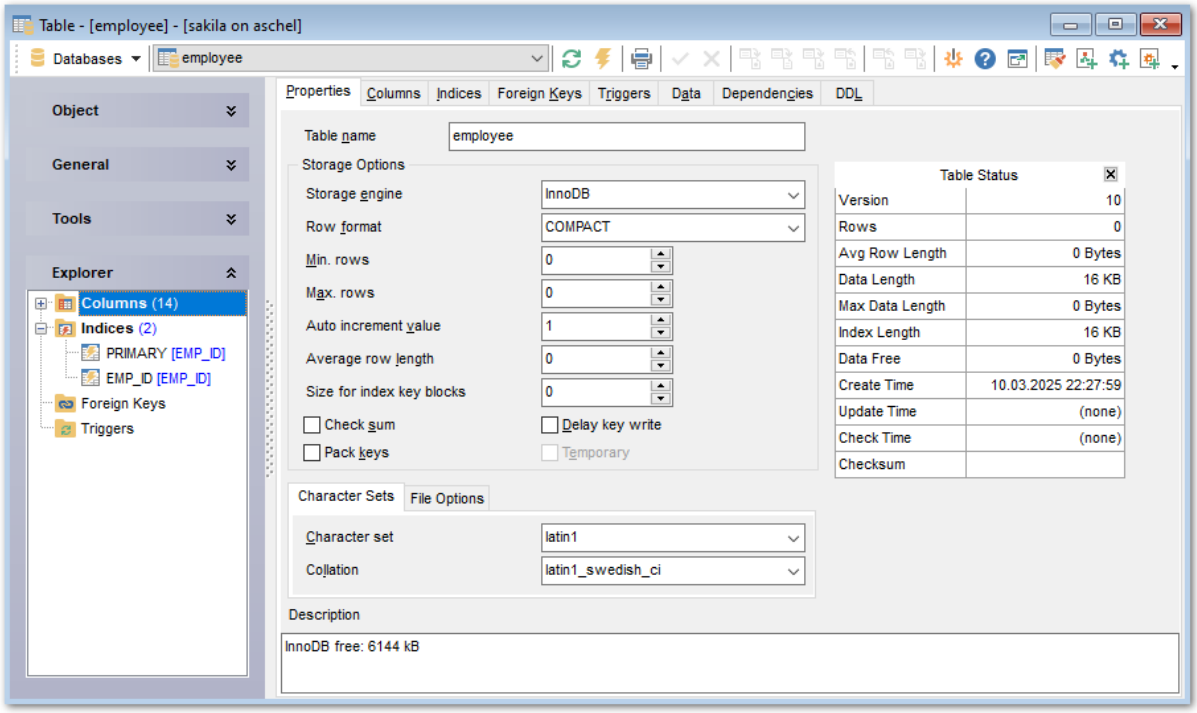
Working with view data

Data View

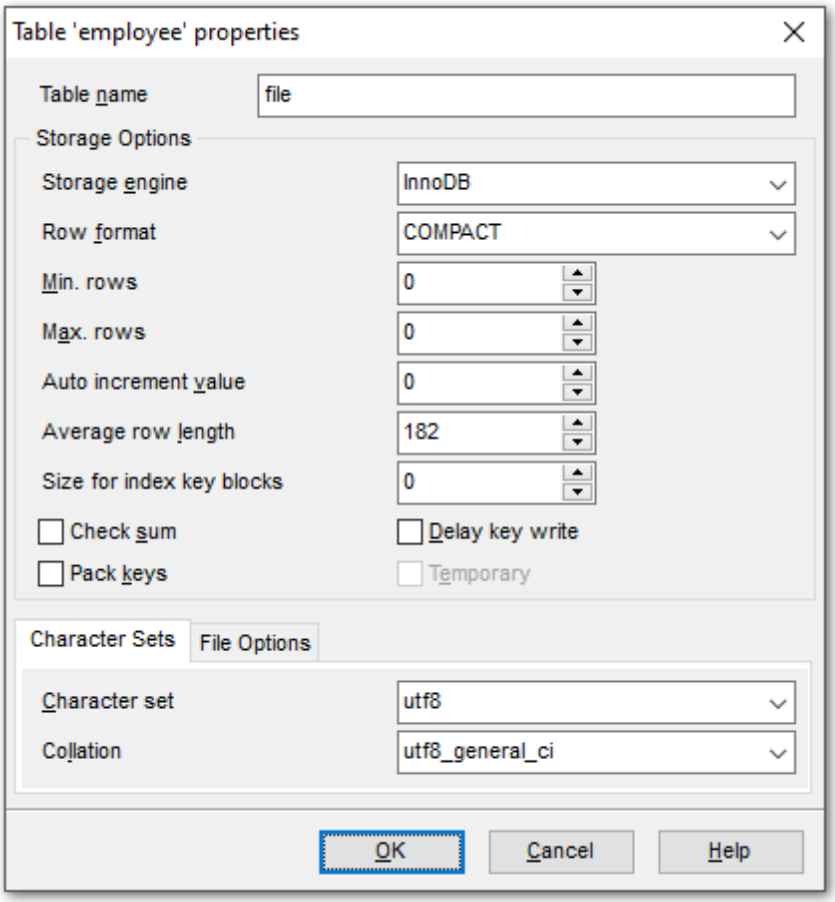
5.3.1.3 Table Properties

The **Properties** tab of Table Editor allows you to view/edit common properties of the table: *Table name*, *Storage options*, *Character sets*, *File options*, *Merge table options*, *Federated table options*.

- Setting storage options
- Viewing table status



Hint: These properties are also available within a modal dialog which is called through the **Table Properties...** context menu item of the table alias in DB Explorer.

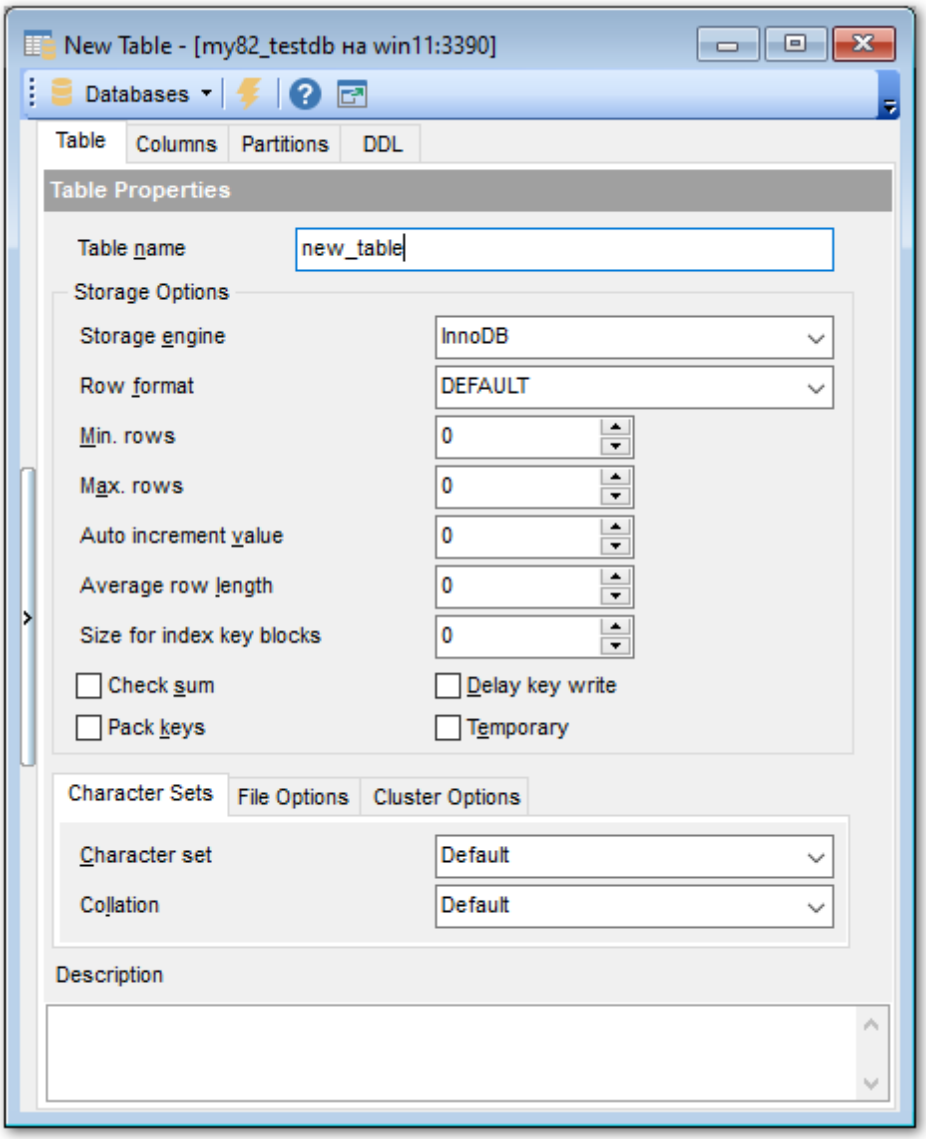


See also:

Table Editor

5.3.1.3.1 Setting storage options

The **Storage Options** group allows you to view/edit a number of MySQL table storage options.



Use the **Storage engine** drop-down list to define a MySQL storage engine to be applied to the table:
MyISAM
HEAP
MRG_MyISAM
InnoDB
FEDERATED
ARCHIVE
CSV
BLACKHOLE

FALCON

See Table types reference for details.

Use the **Row Format** drop-down list to define the way the rows should be stored in the table: *DEFAULT*, *FIXED*, *DYNAMIC*, *COMPRESSED*, *REDUNDANT*, *COMPACT*.

Min rows
Specifies the minimum number of rows that can be stored in the table.

Max rows
Specifies the maximum number of rows that can be stored in the table.

Auto increment value
Enter a value that will be used to generate a unique identity for new rows.

Average row length
Enter a value that serves as an approximation of the average row length for your table.

Size for index key blocks
This value optionally specifies the size in kilobytes to use for pages for compressed InnoDB tables.

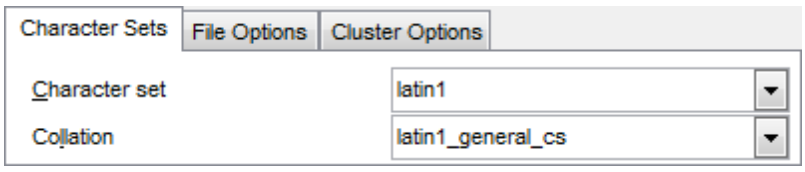
☑ **Check sum**
Maintains a checksum for all rows (**Hint:** this option slightly slows down the table updates but makes it easier to find corrupted tables).

☑ **Delay key write**
Delays key table updates until the table is closed.

☑ **Pack keys**
Decreases the size of table indexes (**Hint:** this option usually makes updates slower and reads faster).

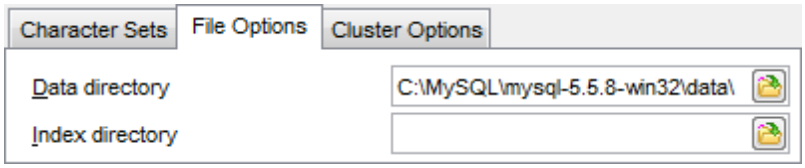
☑ **Temporary**
Specifies a temporary table declaration.

Using the **Character Sets** tab you can specify the *character set* and *collation* to be applied to the table. Use the corresponding drop-down lists to select the required values. These rules define the charset and sort order for string data that will be applied to the new string columns by default.



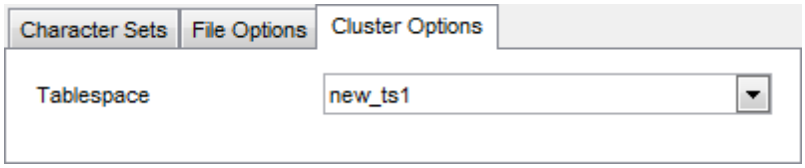
If necessary, you can also use the **Comment** area to supply a *description* for the table.

Using the **File Options** tab you can specify the paths to individual data files.



Define directories to store *data* and *index* files.

Using the **Cluster Options** tab you can select tablespace, where table will be stored.



Note: Tablespaces can be used only for clustered servers.

Set of options for *MyISAM* and *FEDERATED* is different. For detailed info concerned MyISAM and FEDERATED tables options see the topics listed below:

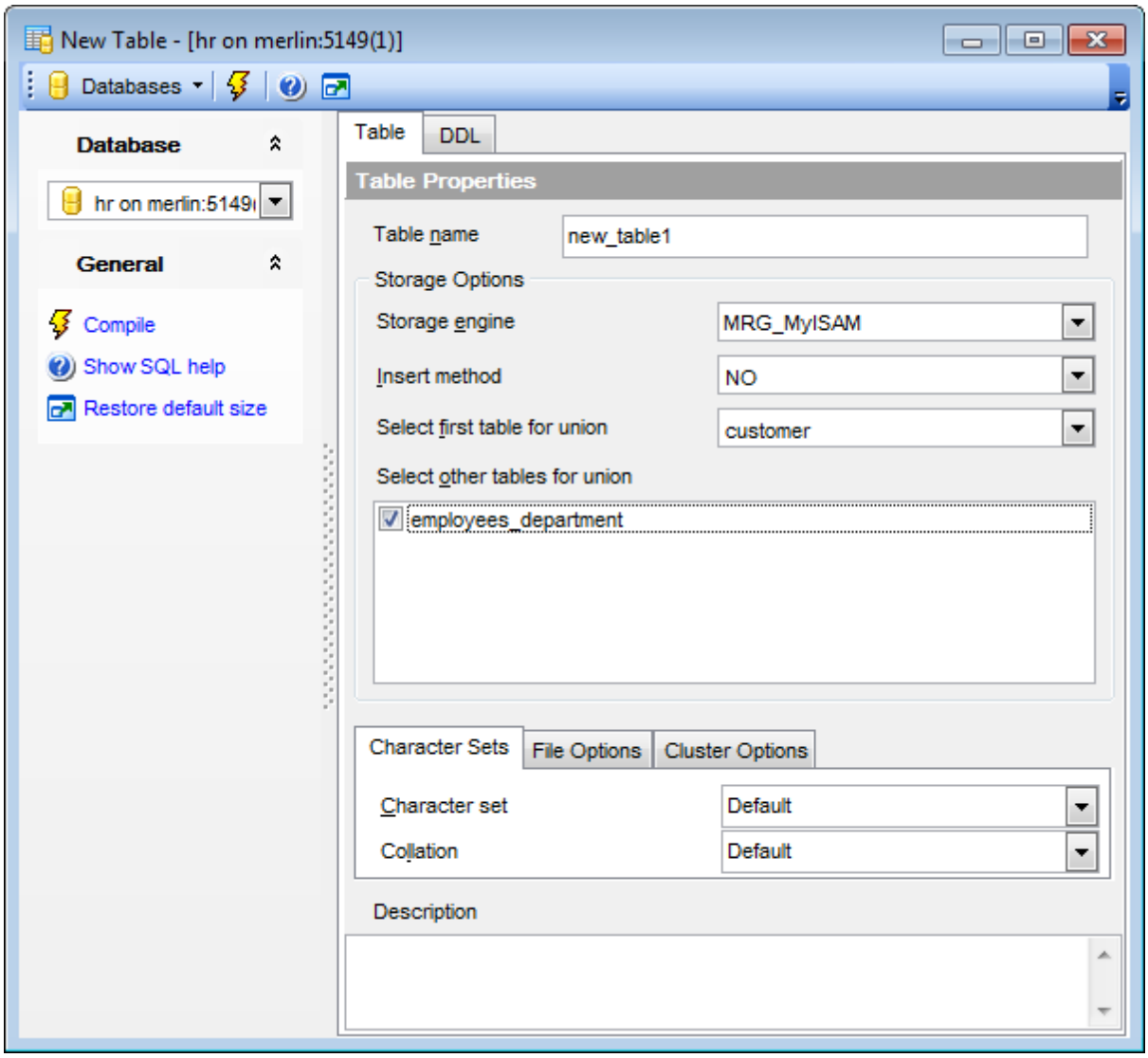
- MyISAM
- FEDERATED

See also:

Viewing table status

5.3.1.3.1.1 MRG_MyISAM

On the screenshot below you can see how table editor looks when you create a table with MRG_MyISAM storage engine.



Insert method
Select preferable method of inserting data.
First - inserts will be made in the first table.
Last - inserts will be made in the last underlying table.
No - no inserts to the table allowed.

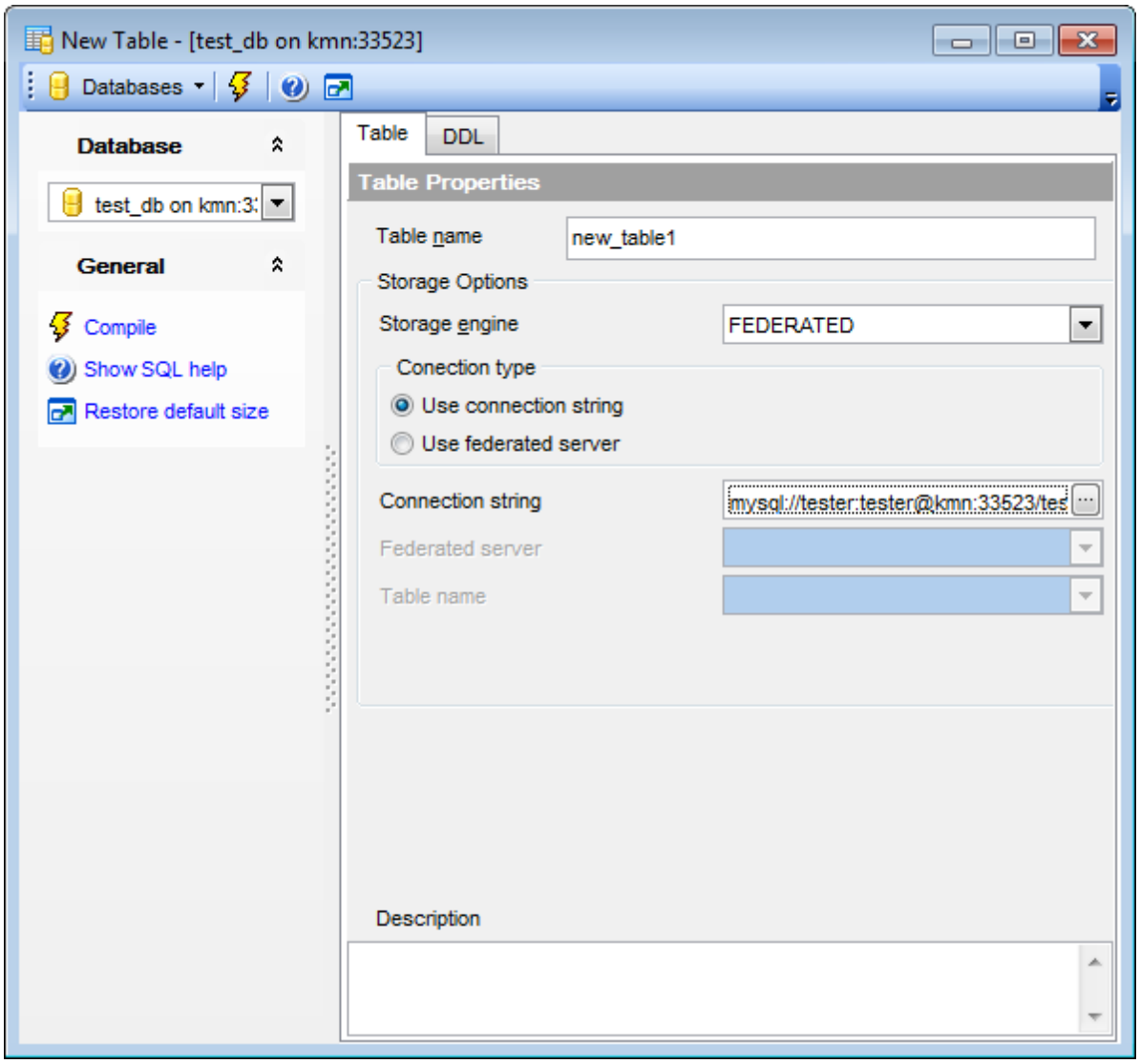
Select first table for union
Select a table from the drop-down list. This selection affects selection of other tables for union.

Select other tables for union
This section contains the list of tables identical to the first table. "Identical" means that all tables have identical column and index information. Mark tables you want to include in union.

For the description of common options refer to the Setting storage options page.

5.3.1.3.1.2 Federated

On the screenshot below you can see how table editor looks when you create a table with FEDERATED storage engine.



Connection type

Choose preferable connection type

Use connection string
Specified connection string will be used for connection to a remote table.

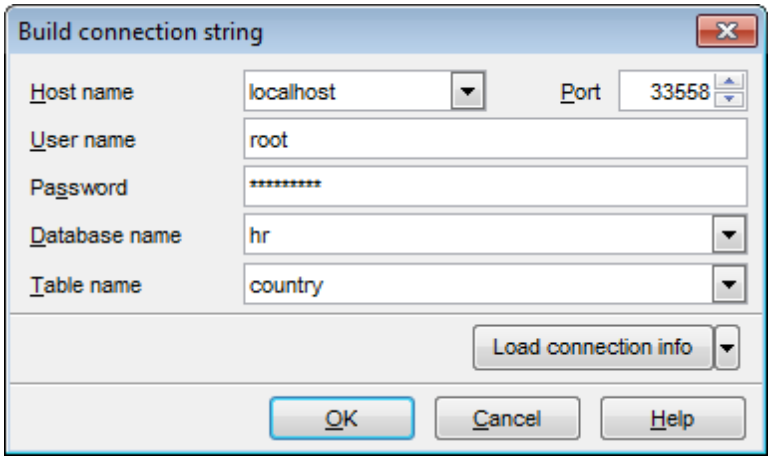
Use federated server
A table located on federated server will be used.

When using connection string

Connection string

Use the ellipsis button (available to the right of the editable area) to specify the connection parameters using the **Build connection string** dialog.

The **Build connection string** dialog allows you to specify the following parameters to be included into the connection string: remote MySQL *Host name*, the *Port* to connect through, *User name*, *Password*, remote MySQL *Database name*, remote *Table name*.



Use the **Load connection info** menu to get connection string from a registered database. You still need to select table manually in this case.

When using federated server

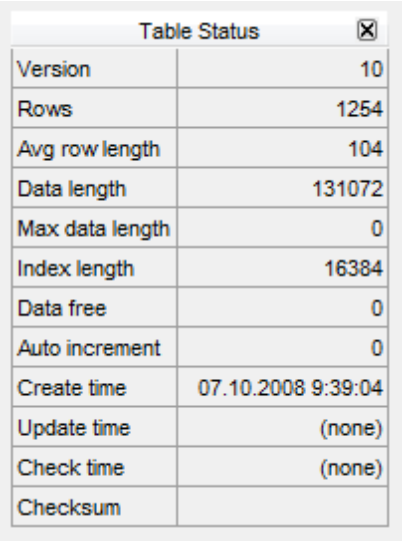
Federated server
Select an existing Federated server from the drop-down list.

Table name
Select a table on the specified federated server from the drop-down list.

For the description of common options refer to the Setting storage options page.

5.3.1.3.2 Viewing table status

The **Table Status** panel allows you to browse the properties and values pertaining to the table: *Version*, *Rows*, *Avg row length*, *Data length*, *Max data length*, *Index length*, *Data free*, *Auto increment*, *Create time*, *Update time*, *Check time*, *Checksum*.



Hint: To enable/disable this panel, you can use the **Show table status panel** option available in the Tools | Table Editor section of the Environment Options dialog.

See also:

Setting storage options

5.3.1.4 Columns

Table columns are managed within the **Columns** tab of Table Editor.

Creating Columns

To create a new table column:
- open the table in Table Editor;
- proceed to the **Columns** tab there;
- right-click the tab area and select the **New Column** context menu item, or press the *Ins* key;
- define the column properties using the Column Editor dialog.

Editing Columns

To edit an existing table column:
- open the table in Table Editor;
- proceed to the **Columns** tab there;
- right-click the column and select the **Edit Column <column_name>** context menu item, or simply double-click the column;
- edit the column properties using the Column Editor dialog.

To change the order of table columns:
- open the table in Table Editor;
- proceed to the **Columns** tab there;
- right-click a column and select the **Reorder Columns <column_name>** context menu item;
- edit columns' order using the Reorder Columns dialog.

Dropping Columns

To drop a table column:
- open the table in Table Editor;
- proceed to the **Columns** tab there;
- right-click the column and select the **Drop Column <column_name>** context menu item;
- confirm dropping in the dialog window.

5.3.1.4.1 Column Editor

Column Editor allows you to specify column definition and set column properties. It opens automatically when you create a new column and is available on editing an existing one (see Create column and Edit column for details).

To open a column in **Column Editor**, double-click it in the DB Explorer tree, or use the **Edit Column...** item of the context menu within the Columns tab of Table Editor.

- Setting column name and type
- Editing ENUM and SET columns

5.3.1.4.1.1 Setting field options

Column name
Enter a name for the new column, or modify the name of the column being edited. Note that the name of a column must be unique among all the column names in the table.

Description
Set the custom comment for the column.

The **Type** drop-down list defines the type of the column data.

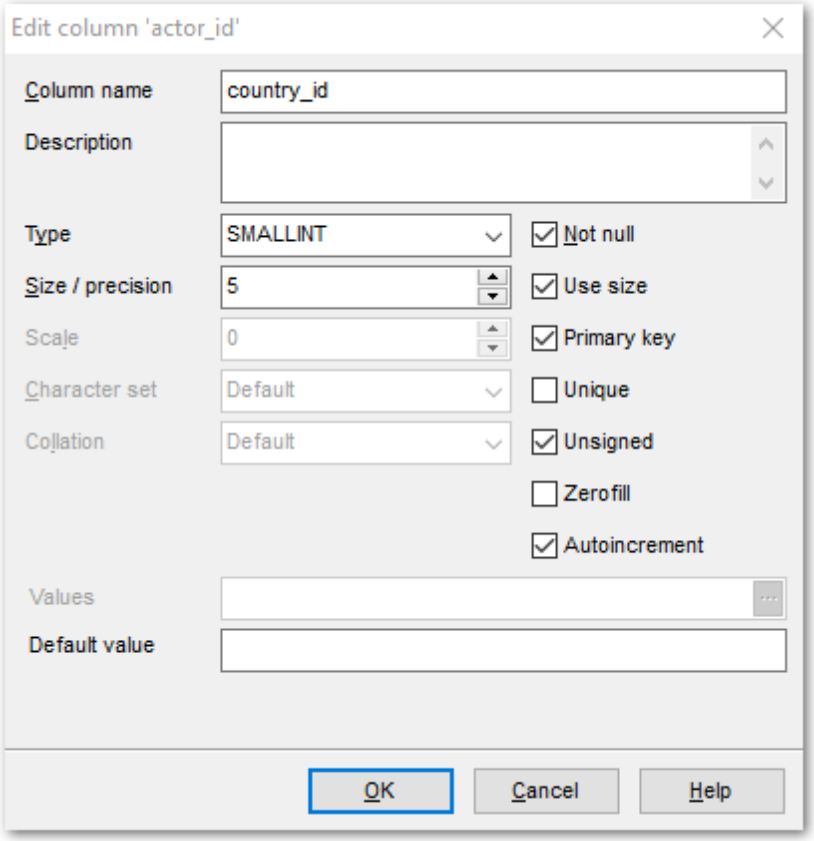
Use the **Size** spinner control to define the length of the column value (for *integer*, *float* and *char* data types). Check the ☑ **Use size** option to enable this control.

Use the **Scale** spinner control to define the precision of the column value (for *float* data types). The scale indicates the number of significant digits. Check the ☑ **Use size** option to enable this control.

Select the **Character set** and **Collation** for character data types.

Note: MySQL supports the use of character sets for the *MyISAM*, *MEMORY*, *NDBCluster* and *InnoDB* storage engines.
The column character set and collation are treated by the server in the following way:

- If both **Character Set** *X* and **Collation** *Y* are specified, then character set *X* and collation *Y* will be applied
- If **Character Set** *X* is specified without **Collation**, then character set *X* and its default collation will be applied
- Otherwise, the table character set and collation are used (see Table properties)



Select the appropriate value in the **Generated Type** combo to setup a generated column. **VIRTUAL** - column values are not stored, but are evaluated when rows are read, immediately after any BEFORE triggers. A virtual column takes no storage; **STORED** - column values are evaluated and stored when rows are inserted or updated. A stored column does require storage space and can be indexed. **NONE** - column values are not generated.
Values of a generated column are computed from an expression that is set in the **Expression** field.

Not null
Select this option to specify that the values for the column should never contain a null value.

Use size
Check this option to set the size properties for field types having dimension properties (e. g. *integer*, *float*, or *timestamp* data types). This option activates the **Size** and **Scale** options.

Primary key
Check this option to include the field into the primary key. Note that if you include a field to a primary key, you should also make it *Not Null*.
A table typically has a column or combination of columns that contain values that uniquely identify each row in the table. This column, or columns, is called the primary key (PK) of the table and enforces integrity of the table.

Note: With this option checked, this field becomes the only field within a primary key. If you check this field, you will not be able to set this attribute for any other field in the table. Hence if you want to create a compound primary key, do not check this field, but create a primary key using the **Indexes** tab of Table Editor.

☑ **Unique**
Includes the field into the unique key (index).

☑ **Unsigned**
Assigns the *UNSIGNED* attribute to the field: integer data will be displayed unsigned.

☑ **Zerofill**
Assigns the *ZEROFILL* attribute to the field: for columns of the numeric data type, MySQL will automatically add zeros before the first significant digit of the number stored in this column.

☑ **Autoincrement**
Assigns the *AUTO_INCREMENT* attribute to the field: values of the unique identifier will be automatically generated for new rows.

Values

When creating/editing a field of the **ENUM** or **SET** data type, you need to specify the list of values implied by these data types. The **Values** box allows you to define a set of necessary values. Click the ellipsis button at the right to create/edit the list of field values using the Values List dialog.

Use the **Default value** field to set the default value for the current field.

Insert Mode

When adding a new field, you can also specify the preferable **Insert mode** which defines the position of the field among other table fields:
- *Insert first*
- *Insert last*
- *Insert after field* (use the **Insert after** drop-down list to select the field after which the new field should be inserted).

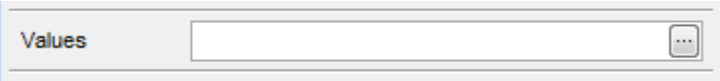
5.3.1.4.1.2 Editing ENUM and SET fields

Having specified the column name and type, you can proceed to setting *options pertaining to columns of particular types*.

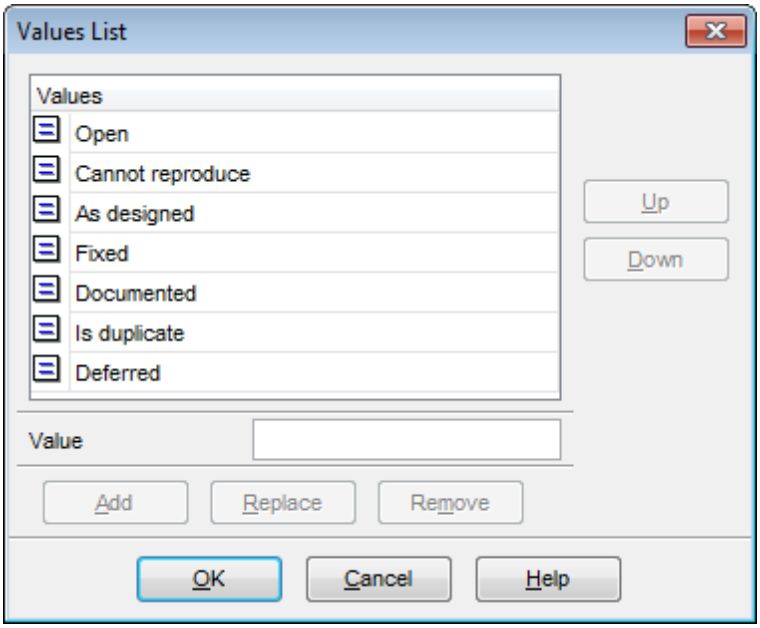
ENUM is defined as a string object with a value chosen from a list of allowed values that are enumerated explicitly in the column specification at table creation time.
SET is defined as a string object that can have zero or more values, each of which must be chosen from a list of allowed values specified when the table is created.

When creating/editing a column of the **ENUM** or **SET** data type, you need to specify the list of values implied by these data types. The **Values** box allows you to define a set of necessary values. Click the ellipsis button at the right to create/edit the list of column

values using the **Values List** dialog.



The **Values List** dialog allows you to create/edit the list of values for ENUM and SET fields.



To *add* a value to the value list:
- type the value to add in the **Value** box;
- click **Add** to add the value to the end of the list.

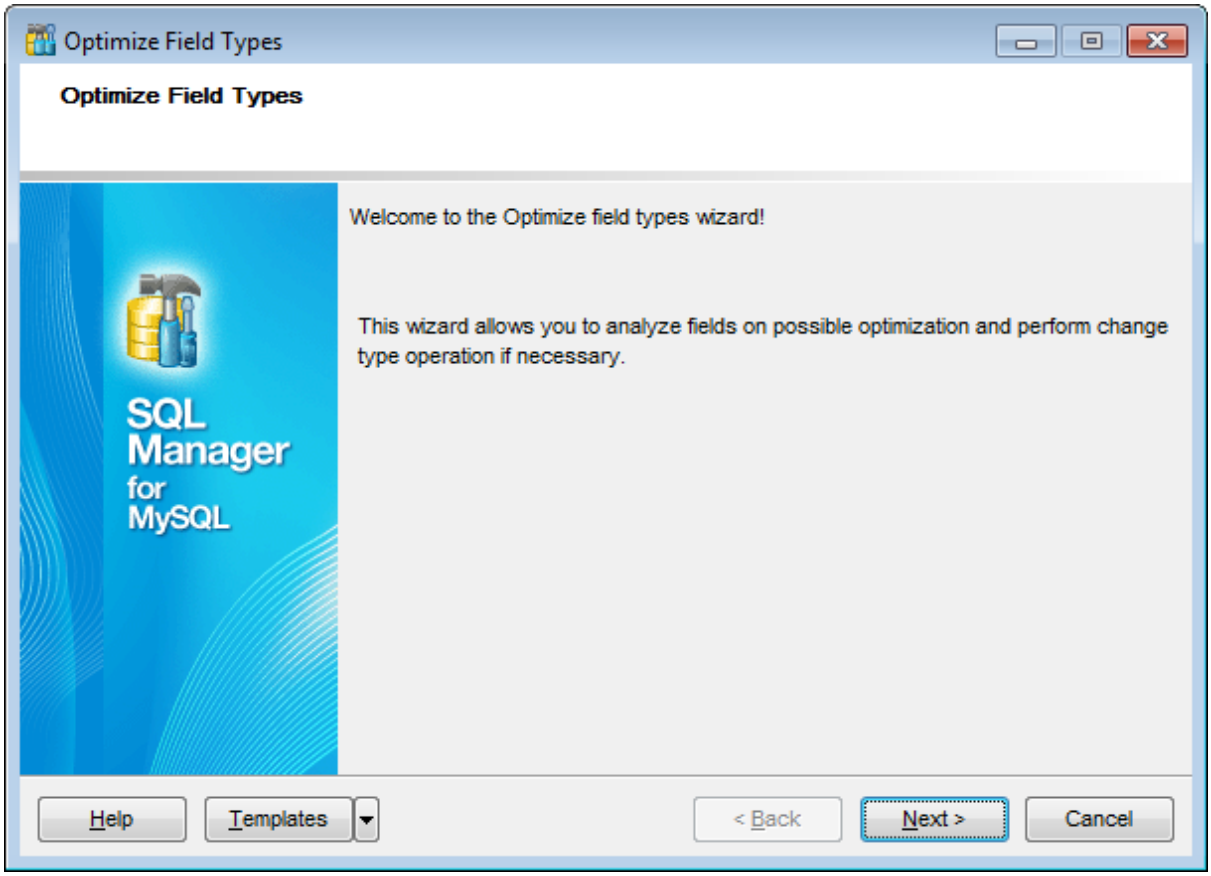
To *remove* a value from the value list:
- select the value to remove in the **Values** list box;
- click **Remove** to remove the value from the list.

To *replace* a value with another one:
- select the value to replace in the **Values** list box;
- type the new value in the **Value** box;
- click **Replace** to replace the selected value in the list with the new one.

To *change the order* of the list values:
- select the value to move in the **Values** list box;
- click **Up** / **Down** to move the value up or down within the list.

5.3.1.4.2 Optimize Column Types Wizard

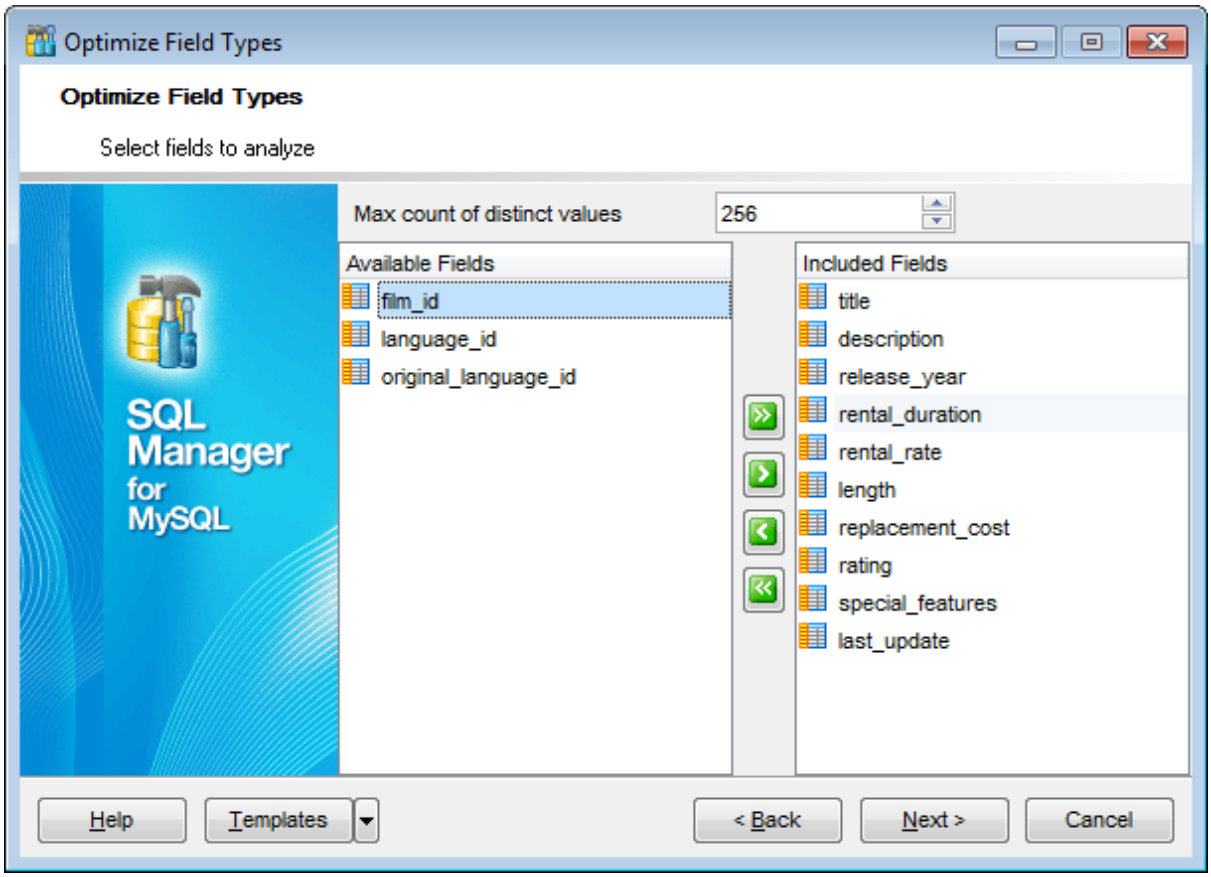
Optimize Column Types Wizard is provided for analyzing table columns on possible optimization and changing their types if necessary. This operation may help reduce table sizes.
To launch this wizard proceed to the **Columns** tab of the Table Editor and click the *Optimize column types* item on the Navigation bar.



See also:
Table Editor

5.3.1.4.2.1 Selecting columns for analyzing

This step of the wizard allows you to select columns of the table being edited for analyzing them.

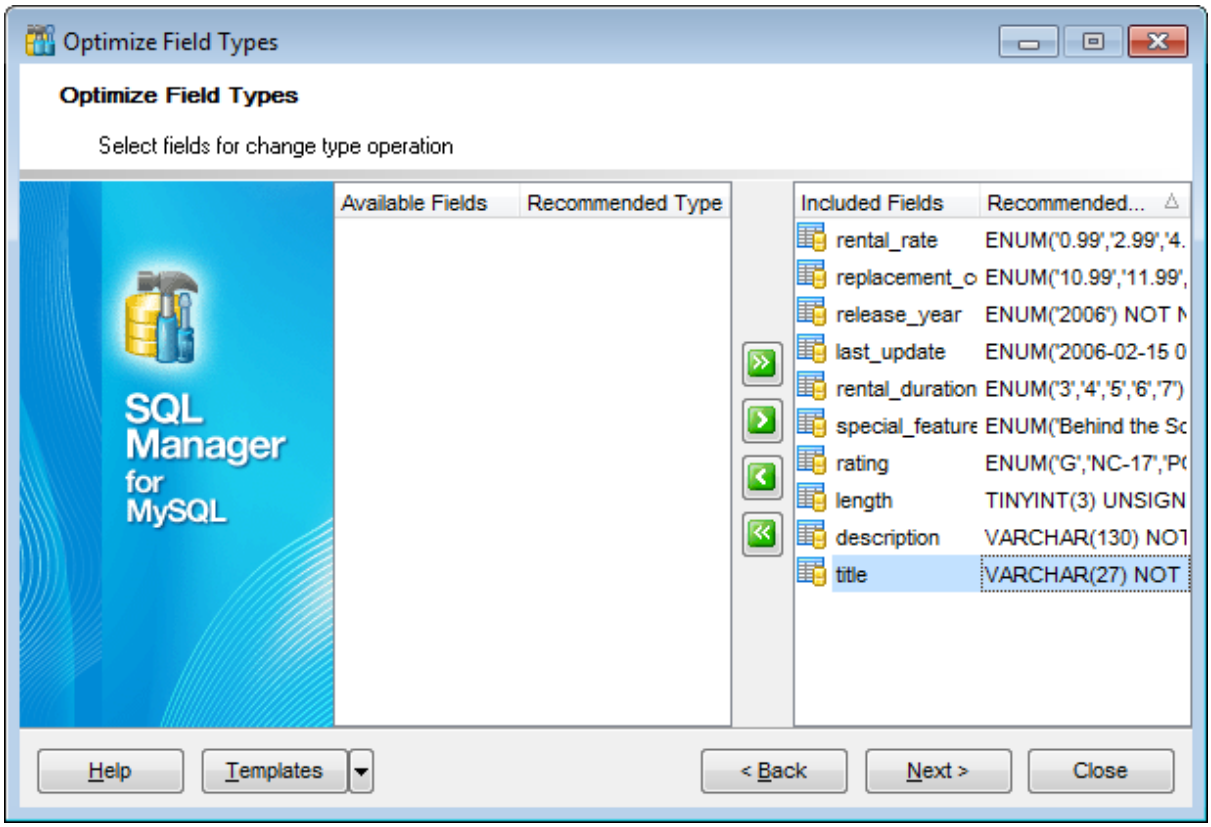


Max count of distinct values
Use this field to set the maximum number of distinct values per column that will be analyzed. This value is used to check whether the optimal data type should be of type ENUM; if there are more than defined value of distinct values, then ENUM is not a suggested type.

To select a field, you need to move it from the **Available Columns** list to the **Included Columns** list. Use the buttons or drag-and-drop operations to move the fields from one list to another.

5.3.1.4.2.2 Selecting columns for type changing

On this step of the wizard you can view the suggested types for selected columns after they were analyzed.



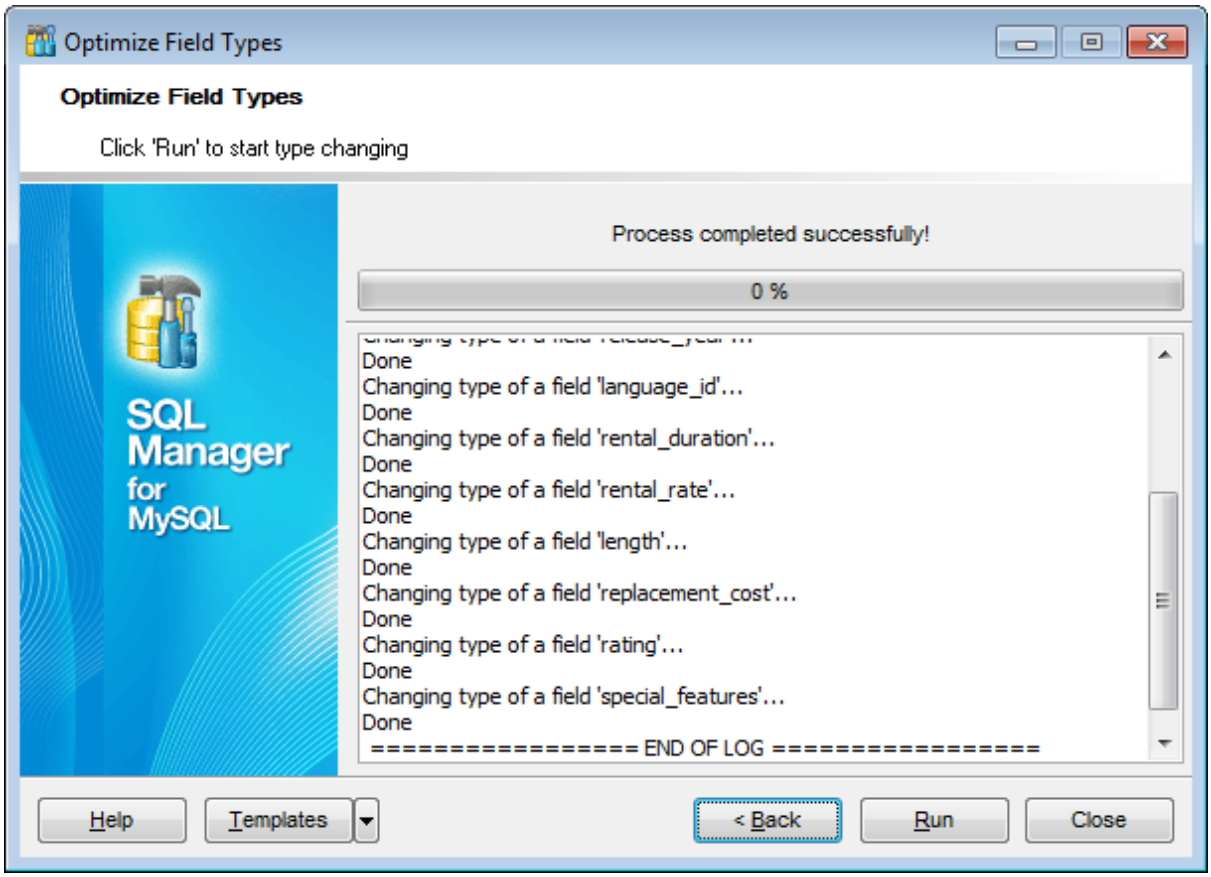
All columns are automatically included in the **Included Columns** list. If you do not want to change a type of a column use the buttons or drag-and-drop operations to move the columns from this list to the **Available Columns** list.

In the **Recommended Type** column you can see the suggested column type for optimizing.

5.3.1.4.2.3 Performing operation

This step of the wizard is intended to inform you that all options have been set, and you can start the optimizing clumn types process.

The log area allows you to view the log of operations and errors (if any).



If necessary, you can save a template for future use.

Click the **Run** button to run the type changing process.

5.3.1.5 Indices

Indices are objects used to find rows with specific column values quickly. If a table has an index for the columns in question, MySQL can quickly determine the position to seek to in the middle of the data file without having to look at all the data.

Table indexes are managed within the **Indices** tab of Table Editor.

Creating Indices

To create a new table index:
- open the table in Table Editor;
- proceed to the **Indices** tab there;
- right-click the tab area and select the **New Index** context menu item, or press the *Ins* key;
- define the index properties using the Index Editor dialog.

Editing Indices

To edit an existing table index:
- open the table in Table Editor;
- proceed to the **Indices** tab there;
- right-click the index and select the **Edit Index** context menu item, or simply double-click the index;
- edit the index properties using the Index Editor dialog.

Dropping Indices

To drop a table index:
- open the table in Table Editor;
- proceed to the **Indices** tab there;
- right-click the index and select the **Drop Index** context menu item;
- confirm dropping in the dialog window.

5.3.1.5.1 Index Editor

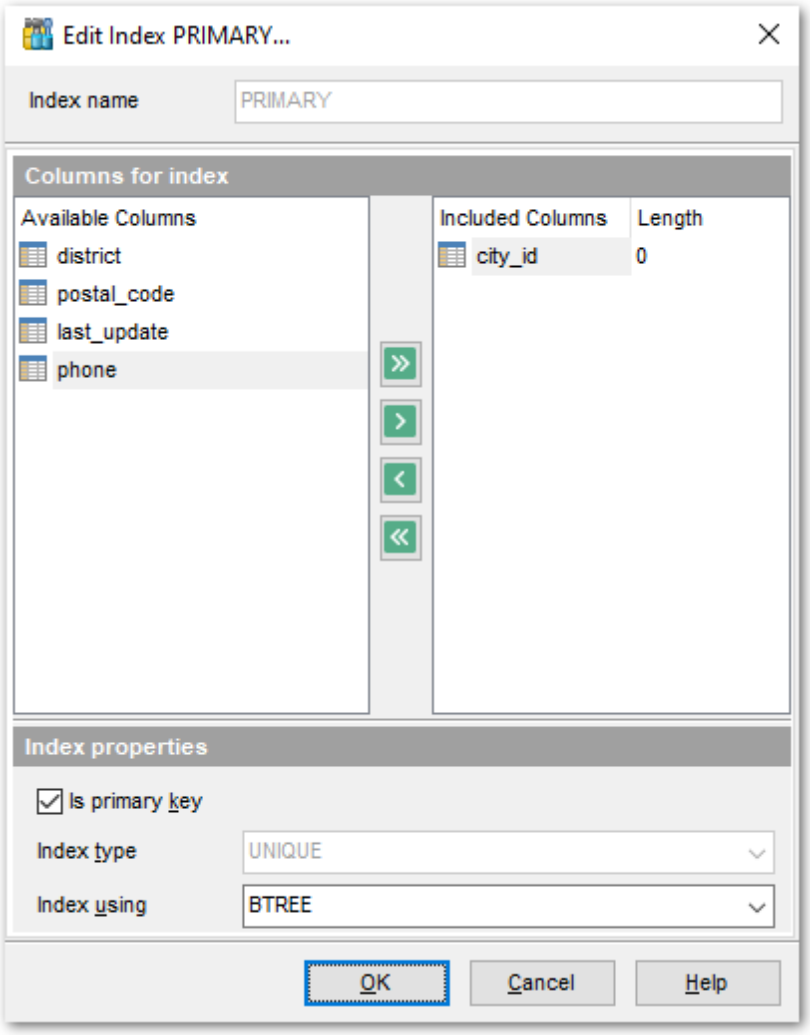
Index Editor allows you to specify index definition and set index properties. It opens automatically when you create a new index and is available on editing an existing one (see Create Index and Edit Index for details).

To open an index in **Index Editor**, double-click it in the DB Explorer tree, or use the **Edit Index...** item of the context menu within the Indices tab of Table Editor.

Use the **Index Editor** dialog to create/edit an index on a specified table, and specify index properties.

Index name
Set the index name (or leave it without changes to assign the default name to the index).

Columns for index
To include column(s) in the index, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.



Index properties

☑ **Is Primary key**
This selection indicates that the primary key index is created.

Index type
- **Fulltext**. Makes the index fulltext. Like regular indexes, full-text indexes can be automatically updated as data are modified in the associated tables.
- **Unique**. Makes the index unique, causes the system to check for duplicate values in the table when the index is created (if data already exist) and each time data are added.
- **Spatial** - you can create SPATIAL indexes on spatial data types. Spatial types are only supported by MyISAM tables and indexed columns must be declared as NOT NULL.

Index using
From this drop-down list, select your index data structure. This can be BTREE or HASH.

Size of index block (KEY_BLOCK_SIZE)
Here you can set the size in bytes to use for index key blocks. For InnoDB tables the KEY_BLOCK_SIZE option specifies the page size in kilobytes to use for compressed InnoDB tables. The KEY_BLOCK_SIZE value is treated as a hint; a different size could be used by InnoDB if necessary. Valid KEY_BLOCK_SIZE values include 0, 1, 2, 4, 8, and 16. A value of 0 represents the default compressed page size, which is a half of the InnoDB page size. It is recommended to enable innodb_strict_mode when specifying KEY_BLOCK_SIZE for InnoDB tables.

Fulltext parser (PARSER)
This option can be used only with FULLTEXT indexes. It associates a parser plugin with the index if full-text indexing and searching operations need special handling

At the **Comment** tab you can set an optional comment of up to 1024 characters.

5.3.1.6 Foreign Keys

A **Foreign key** constraint (also called a *referential integrity constraint*) designates a column as the Foreign key and establishes a relationship between that foreign key and a specified *Primary* or *Unique* key called the *referenced key*.

Foreign keys are available for InnoDB storage engine tables only and are supported since MySQL version 3.23.44 (3.23.50 or higher recommended). Editing and dropping foreign keys is available since MySQL version 4.0.13. To view or change the table type, use the Table Properties dialog.

Table Foreign keys are managed within the **Foreign Keys** tab of Table Editor.

Creating Foreign Keys

To create a new Foreign key:
- open the table in Table Editor;
- proceed to the **Foreign Keys** tab there;
- right-click the tab area and select the **New Foreign Key** context menu item, or press the *Ins* key;
- define the Foreign key properties using the Foreign Key Editor dialog.

Editing Foreign Keys

To view/edit an existing Foreign key:
- open the table in Table Editor;
- proceed to the **Foreign Keys** tab there;
- right-click the Foreign key to edit and select the **Edit Foreign Key <foreign_key_name>** context menu item, or simply double-click the Foreign key;
- edit the Foreign key properties using the Foreign Key Editor dialog.

Dropping Foreign Keys

To drop a Foreign key:
- open the table in Table Editor;
- proceed to the **Foreign Keys** tab there;
- right-click the Foreign key and select the **Drop Foreign Key <foreign_key_name>** context menu item;
- confirm dropping in the dialog window.

5.3.1.6.1 Foreign Key Editor

Foreign Key Editor allows you to specify foreign key definition and set foreign key properties. It opens when you create a new foreign key or edit an existing one (see Create Foreign Key and Edit Foreign Key for details).

To open a foreign key in **Foreign Key Editor**, double-click it in the DB Explorer tree, or use the **Edit Foreign Key...** item of the context menu within the Foreign Keys tab of Table Editor.

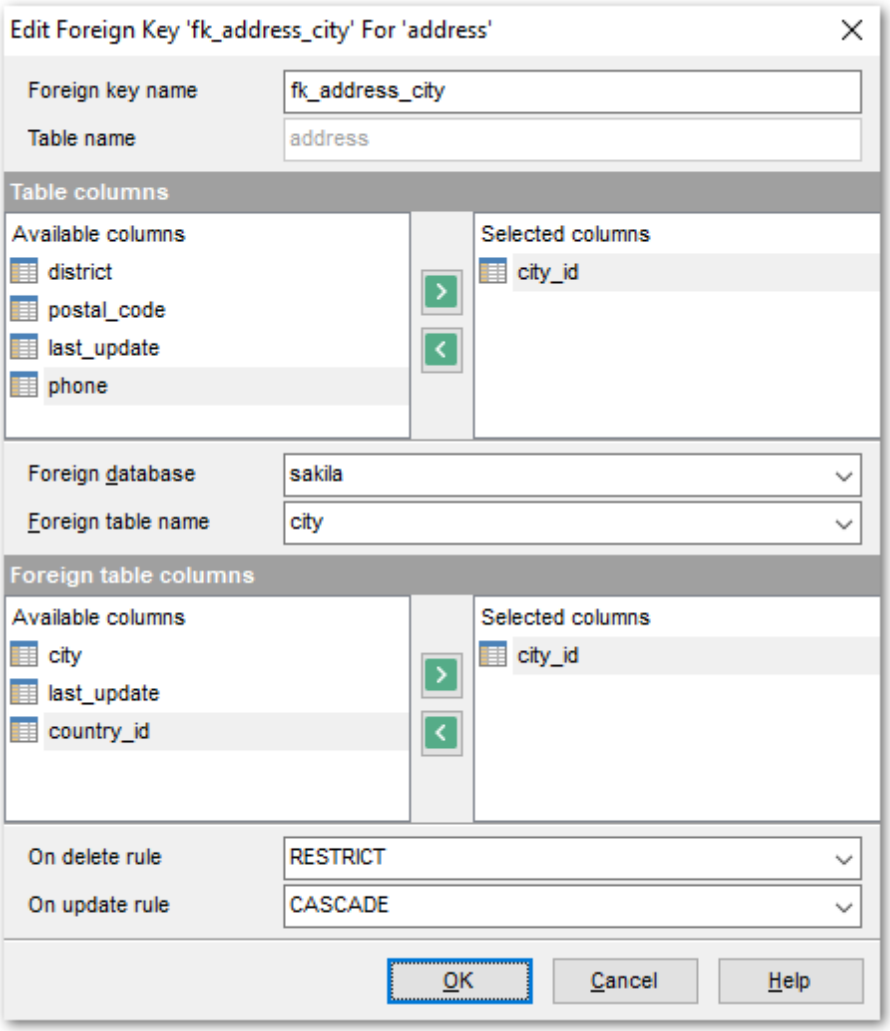
- Editing foreign key definition

5.3.1.6.1.1 Editing foreign key definition

Use the **Foreign Key Editor** dialog to create/edit a foreign key constraint and specify its properties.

Foreign key name
Enter a name for the new foreign key, or modify the name of the foreign key being edited.

Table name
View the name of the table for which the foreign key is created.



The **Table Columns** area allows you to select Foreign key column(s).
To select a column, you need to move it from the **Available columns** list to the **Selected columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.

Foreign database / **Foreign table**
Use the drop-down lists to select the foreign database and table.

The **Foreign table columns** area allows you to select the column(s) of the Foreign table.
To select a column, you need to move it from the **Available columns** list to the **Selected columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.

If the referenced column(s) are changed frequently, it might be reasonable to add an index to the foreign key column so that referential actions associated with the foreign key column were performed more efficiently. See Indexes for details.

On Update rule / On Delete rule

- *NO ACTION*
  Does not change the foreign key; may cause the primary key update/delete to fail due to referential integrity checks.
- *RESTRICT*
  Produce an error indicating that the deletion or update would create a foreign key constraint violation.
- *CASCADE*
  Delete any rows referencing the deleted row, or update the value of the referencing column to the new value of the referenced column, respectively.
- *SET NULL*
  Set the referencing column(s) to null.

5.3.1.7 Triggers

A **trigger** is a special kind of stored procedure that automatically executes when an event occurs in the database.
Data manipulation language triggers are executed in response to user's attempts to change data with the help of DML. DML events include *INSERT*, *UPDATE* and *DELETE* operations which can be applied to a table.

Table triggers are managed within the **Triggers** tab of Table Editor.

Trigger Editor allows you to specify trigger definition and set trigger properties. It opens automatically when you create a new trigger and is available on editing an existing one.

To open a trigger in **Trigger Editor**, double-click it in the DB Explorer tree, or use the **Edit Trigger...** item of the context menu within the Triggers tab of Table Editor.

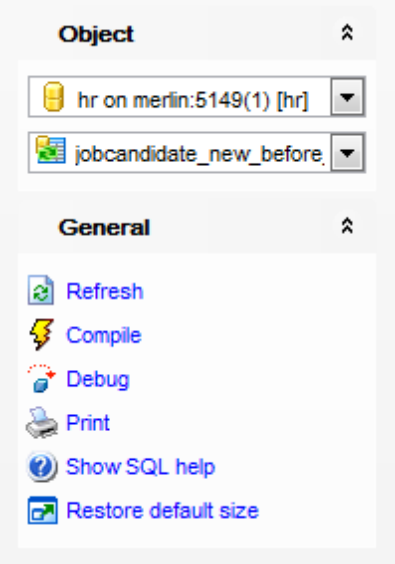
- Using Navigation bar and Toolbar
- Editing trigger definition
- Viewing DDL definition

See also:

Debugger

5.3.1.7.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Trigger Editor**.



The **Navigation bar** of **Trigger Editor** allows you to:

Object group
select a database
select a trigger for editing

General group
refresh the content of the active tab
compile the trigger (if it is being created/modified)
debug a trigger
print metadata of the trigger
view MySQL reference
restore the default size and position of the editor window

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the trigger:

DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **Trigger Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

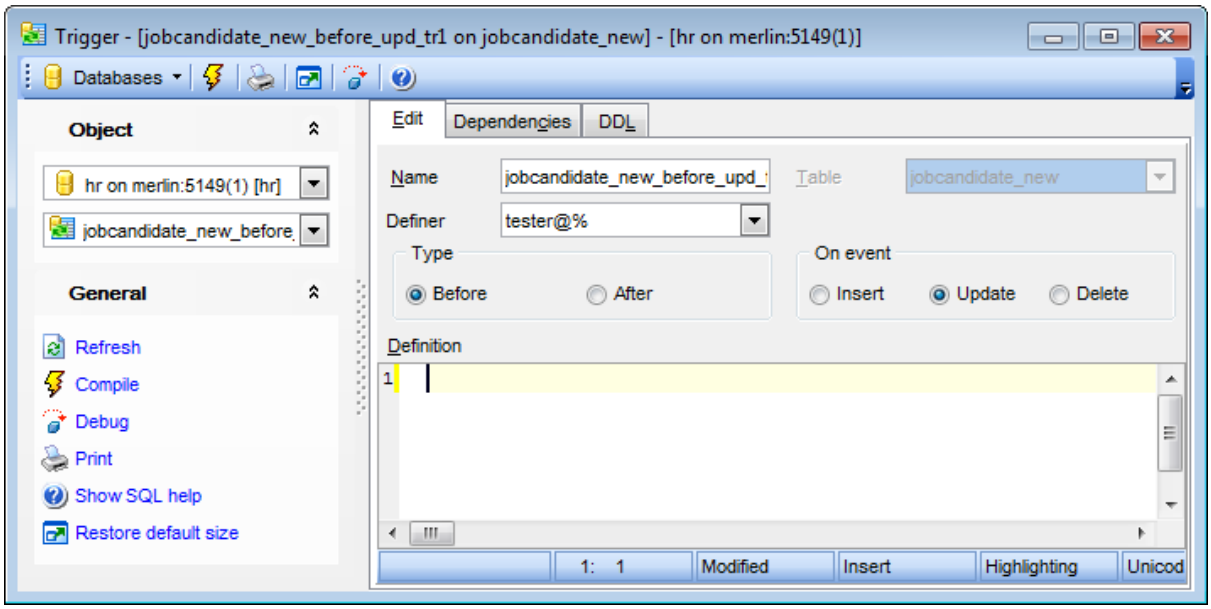
5.3.1.7.2 Editing trigger definition

Use the **Edit** tab of **Trigger Editor** to create/edit a table trigger and specify its properties.

Name
Enter a name for the new trigger, or modify the name of the trigger being edited.

Definer
Specifies the MySQL account to be used when checking access privileges at the trigger fire-time.
Hint: You should either follow the 'user_name'@'host_name' format, or select the *CURRENT_USER* value to use the current MySQL user as the trigger definer.

Table
Use the drop-down list of tables to select the table on which the trigger will be executed, or view the name of the table if the trigger is being edited.



Type
Select the trigger behaviour type:
Before
Specifies that the trigger is fired before the event.
After
Specifies that the trigger is fired after the event.

On event
Specify the data modification statements that activate the trigger when it is tried against this table: *Insert*, *Update* or *Delete*. At least one option must be specified.

Definition
This area allows you to set the trigger conditions and actions. Trigger conditions specify

additional criteria that determine whether the tried DML statements cause the trigger actions to be performed.
The trigger actions take effect when the DML operation is performed.

For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

5.3.2 Views

Views are available in 5.x and later versions of MySQL server. A **View** is a logical table based on one or more tables or views. A view contains no data itself. The tables upon which a view is based are called *base tables*.

Views are useful for allowing users to access a set of relations (tables) as if it were a single table, and limiting their access to just that. Views can also be used to restrict access to rows (a subset of a particular table).

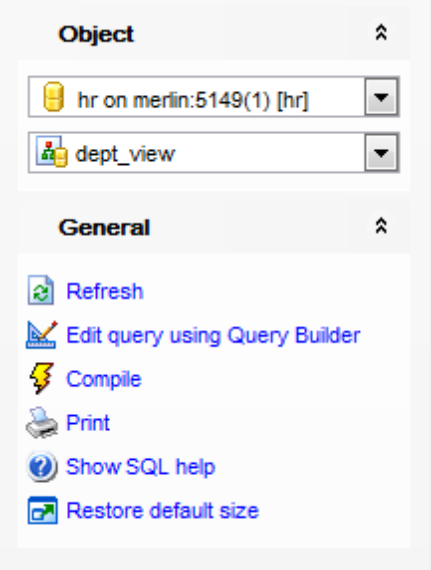
View Editor allows you to create new views and define their properties (view name and the SELECT statement it implements). It opens automatically when you create a new view and is available on editing an existing one.

To open a view in **View Editor**, double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/editing view
- Managing columns
- Working with data
- Browsing object dependencies
- Viewing DDL definition

5.3.2.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **View Editor**.



The **Navigation bar** of **View Editor** allows you to:

Object group
select a database
select a view for editing

General group
refresh the content of the active tab
edit the view query using Query Builder
compile the view (if it is being created/modified)
print metadata of the view
view MySQL reference
restore the default size and position of the editor window

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the view:

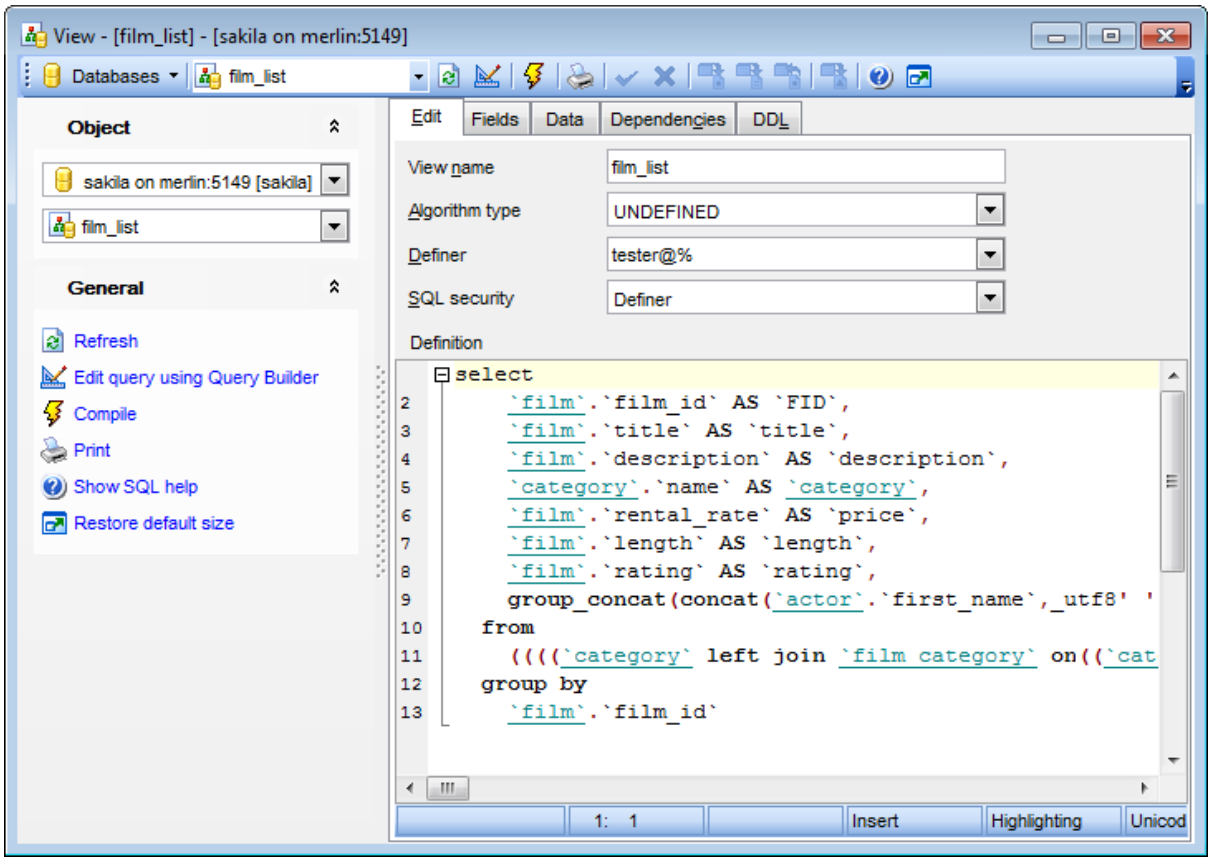
DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **View Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.2.2 Creating/editing view

Use the **Edit** tab of **View Editor** to create/edit a view and specify its definition.

View name
Enter a name for the new view, or modify the name of the view being edited.



Algorithm type
Use the drop-down list to specify the way MySQL will process the view:
MERGE (the text of a statement that refers to the view and the view definition are merged, so that parts of the view definition replace corresponding parts of the statement);
TEMPTABLE (the results from the view are retrieved into a temporary table which is then used to execute the statement);
UNDEFINED (MySQL chooses which algorithm to use).

Definer
Specifies the MySQL account to be used when checking access privileges for the view when a statement is executed that references the view (if **Definer** is selected in the **SQL security** group).
Hint: You should either follow the 'user_name'@'host_name' format, or select the *CURRENT_USER* value to use the current MySQL user as the routine definer.

SQL security
Specify whether a statement that references the view will be executed using the

permissions of:
- *Definer* (the user that creates the routine), or
- *Invoker* (the user that invokes the routine)

Definition
This area allows you to specify the view definition as SQL statement. When editing the view, you can edit the definition using the editor area to make appropriate changes, and recompile the view.

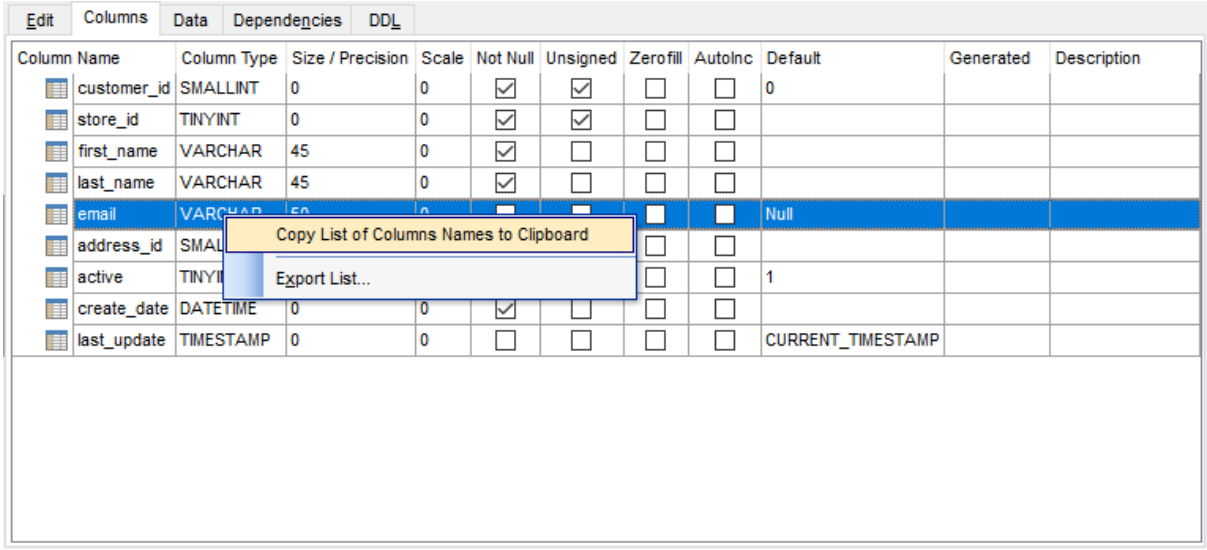
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

To compile a view, you can use the **Compile** item available within the Navigation bar or toolbar.

5.3.2.3 Managing columns

The **Columns** tab is provided for viewing columns represented in the view.

Right-click a column to display the context menu allowing you to export column name list or copy it to clipboard.



The **Columns** list provides the following attributes of each column of the view:
Column Name
Column Type
Size
Precision
Not Null
Default
Comment

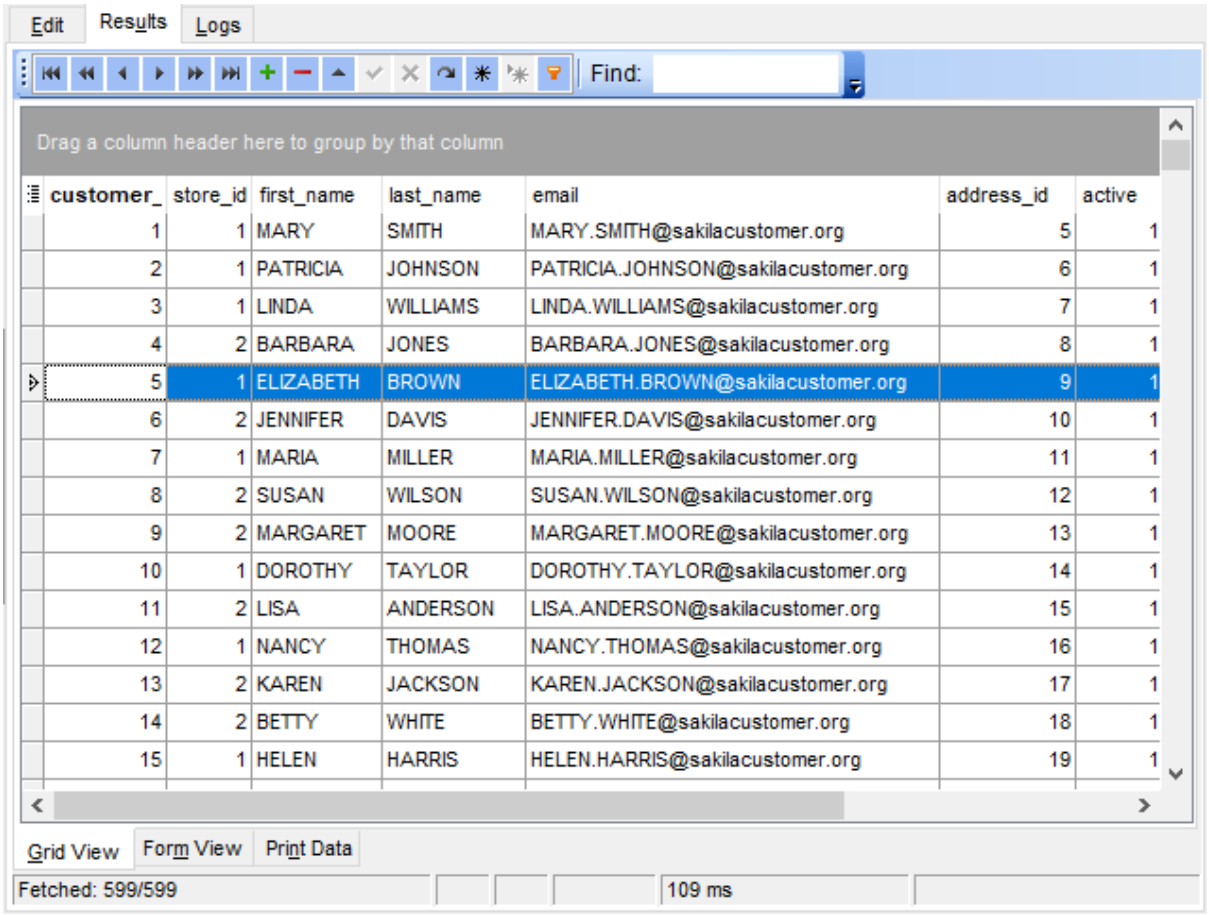
For details see Columns.

5.3.2.4 Working with data

The **Data** tab displays the view data as a grid by default (see Data View for details). The context menu of this tab and the Navigation bar allow you to Export Data, Import Data, Export as SQL Script, Save Data.

While working with view data, you are provided with a number of filtering and grouping facilities.
If necessary, you can **group the data in grid** by any of the columns. This operation is performed by dragging the column header to the gray **"Group by" box** area at the top. When grouping by a column is applied to the grid, all the rows are displayed as subnodes to the grouping row value. To reverse grouping, just drag the column header back.

Data management tools are also available through the Navigation bar and toolbar of **View Editor**.



See also:
Working with table data
Data View

5.3.3 Stored Procedures

Stored procedures are available in 5.x and later versions of MySQL server. A **Stored procedure** is a set of SQL commands that can be stored in the server. Once this is done, clients do not need to keep re-issuing the individual commands but can refer to the stored procedure instead.

Procedure Editor allows you to create new procedure, execute the existing procedure or edit its definition. It opens automatically when you create a new procedure and is available on editing an existing one.

To open a stored procedure in **Procedure Editor**, double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/editing procedure
- Browsing object dependencies
- Editing procedure description
- Specifying input parameters
- Executing procedure
- Viewing DDL definition

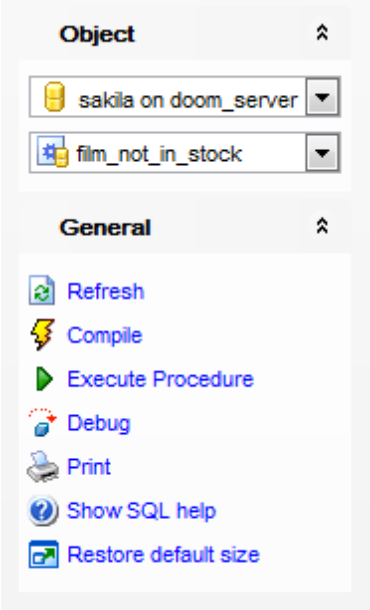
See also:

Debugger

Function Editor

5.3.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Procedure Editor**.



The **Navigation bar** of **Procedure Editor** allows you to:

Object group
select a database
select a procedure for editing

General group
refresh the content of the active tab
compile the procedure (if it is being created/modified)
save the procedure description (if it has been modified)
execute the procedure
debug a procedure
print metadata of the procedure
view MySQL reference
restore the default size and position of the editor window

Transaction group
commit transaction
rollback transaction

Data Management group
export data
export as SQL script

Depending on the current tab selection, the **Navigation bar** expands to one or more

additional panes with tab-specific actions that can be useful for working with the procedure:

Description group
save object description to file
copy description to clipboard

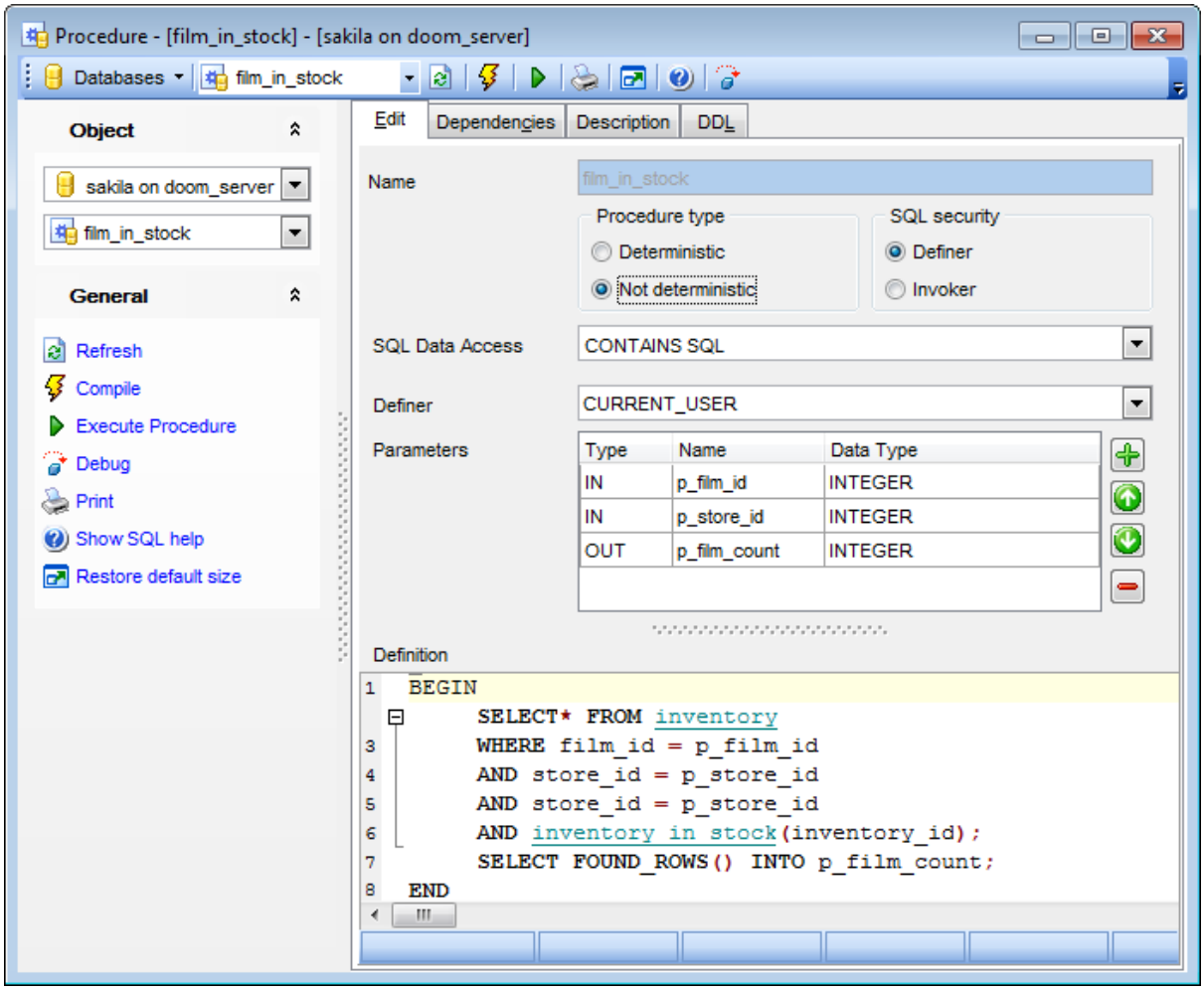
DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **Procedure Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.3.2 Creating/editing procedure

Use the **Edit** tab of **Procedure Editor** to create/edit a stored procedure and specify its definition.

Name
Enter a name for the new procedure, or view the name of the procedure being edited.



Procedure type
- *Deterministic* (indicates that the procedure always produces the same result for the same input parameters)
- *Not deterministic* (indicates that the procedure does not produce the same result for the same input parameters)

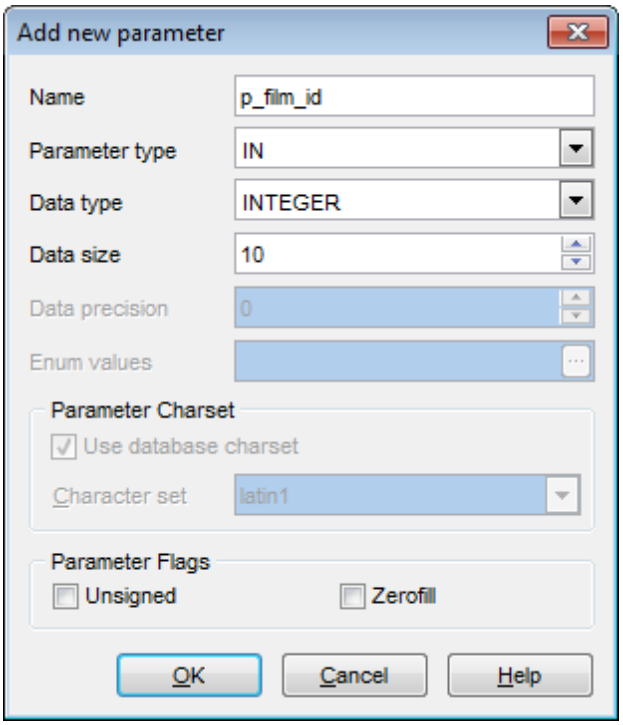
SQL security
Specify whether the procedure should be executed using the permissions of:
- *Definer* (the user that creates the routine), or
- *Invoker* (the user that invokes the routine)

SQL Data Access

Use the drop-down list to specify the nature of data use by the procedure:
CONTAINS SQL (i.e. the routine does not contain statements that read or write data)
NO SQL (i.e. the routine contains no SQL statements)
READS SQL DATA (i.e. the routine contains statements that read data (e.g. *SELECT*), but not statements that modify data)
MODIFIES SQL DATA (i.e. the routine contains statements that may write data, e.g. *INSERT*, *DELETE*)

Definer
Specifies the MySQL account to be used when checking access privileges at the procedure execution time (if **Definer** is selected in the **SQL security** group).
Hint: You should either follow the 'user_name'@'host_name' format, or select the *CURRENT_USER* value to use the current MySQL user as the routine definer.

The **Parameters** list provides the following attributes of each parameter used in the procedure:
Set the procedure parameters by right-clicking within the list and selecting **Add Parameter**. Set all necessary settings for the parameter in the opened dialog window.



Name
Parameter Type (*IN*, *OUT*, *INOUT*)
Data Type - the type of the parameter data.
Use the *Data size* spinner control to define the size of the parameter value.
Use the *Precision* spinner control to define the precision of the parameter value (for *float* data types). The precision indicates the number of significant digits.
Enum values - values of the ENUM datatype.

☑ *Use database charset.*

If you need different charset, you can select it from the *Character set* drop down list.

Unsigned
Assigns the *UNSIGNED* attribute to the column: integer data will be displayed unsigned.

Zerofill
Assigns the *ZEROFILL* attribute to the column: for columns of the numeric data type, MySQL will automatically add zeros before the first significant digit of the number stored in this column.

To delete the existing parameter, select **Delete Parameter** from the popup menu. To edit parameter double-click it.
Hint: You can reorder parameters in the list using the **Move Up** and **Move Down** popup menu items.

Definition
This area allows you to set the procedure definition (body).

For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

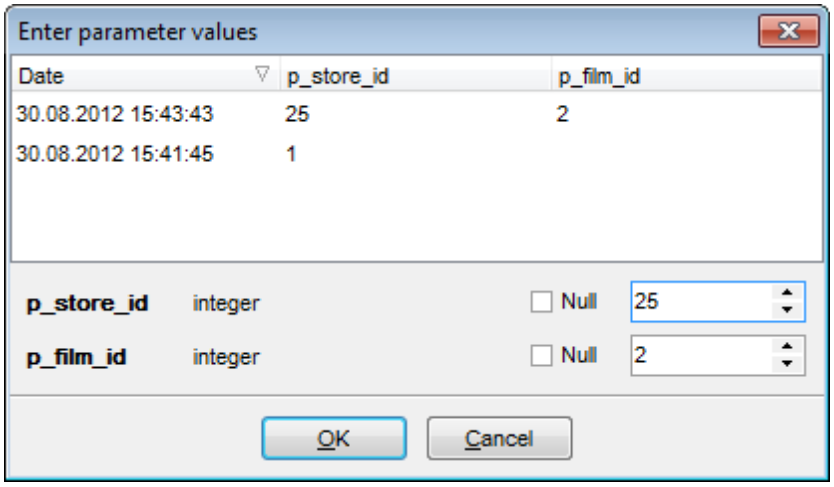
To execute the procedure, you can use the **Execute procedure** item available within the Navigation bar.

5.3.3.3 Specifying input parameters

If the stored procedure has parameters marked as *IN* or *INOUT*, the **Enter parameter values** dialog appears before the procedure execution. It allows you to specify the values for all procedure input parameters.

Controls of this dialog correspond to the procedure parameters:
- the number of columns coincides with the number of parameters;
- the names of parameters are the names of the columns where these parameters should be specified;
- the column data type is defined by the parameter data type.

If the **Null** box next to the parameter name is checked, the parameter value will take *NULL* irrespective of the data entered in the column for editing.



After changes are done, click the **OK** button to execute the stored procedure, or the **Cancel** button to abort the execution.

Note: Parameters list stores history of parameters that have been used. You can remove a single item from this list or clear entire parameters history using respective context menu items.

See also:

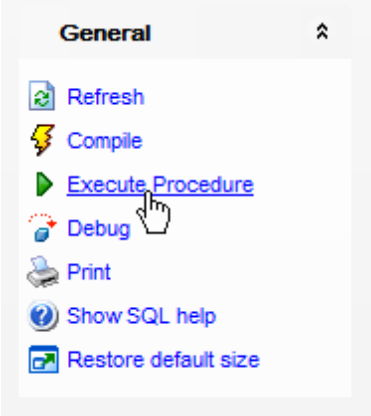
Executing procedure/function

5.3.3.4 Executing procedure/function

Procedure Editor / **Function Editor** provide an ability to execute procedures and functions. Click the **Execute** item of the Navigation bar or use the corresponding toolbar button to execute the procedure/function.

If the procedure has input parameters, **SQL Manager** allows you to specify the values for these parameters in the Input Parameters dialog which appears just before execution.

The result of the successfully executed procedure/function, as well as the error message in case of execution failure, appears in the message panel at the bottom of the **Procedure Editor** / **Function Editor** window.
Note: If the procedure is supposed to return a dataset, the dataset will be displayed within the **Results** tab.



Note: If any unsaved changes are applied to the stored procedure/function being currently edited, the execution of the procedure/function is impossible unless changes are saved through the **Compile procedure** / **Compile function** item of the **Navigation bar**.

See also:
Specifying input parameters
Procedure Editor
Function Editor

5.3.4 Stored Functions

Stored functions are routines that are available in 5.x and later versions of MySQL server. A **Stored function** is a set of SQL commands that returns the result and can be stored in the server. Once this is done, clients do not need to keep re-issuing the individual commands but can refer to the stored function instead.

Function Editor allows you to define function properties. It opens automatically when you create a new function and is available on editing an existing one.

To open a function in **Function Editor**, double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/editing function
- Browsing object dependencies
- Editing function description
- Viewing DDL definition
- Executing function

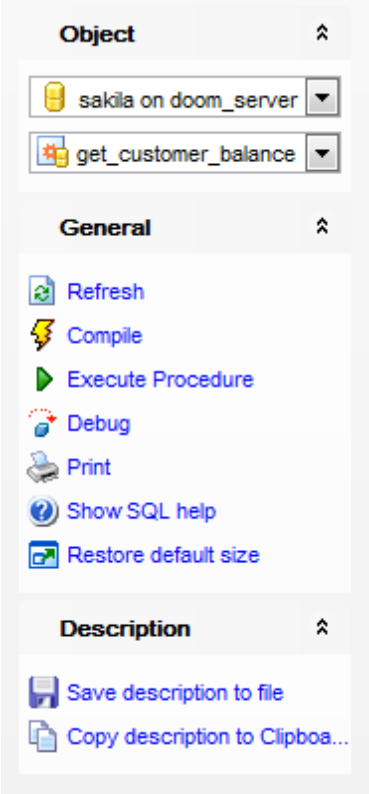
See also:

Debugger

Stored Procedures

5.3.4.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Function Editor**.



The **Navigation bar** of **Function Editor** allows you to:

Object group
select a database
select a function for editing

General group
refresh the content of the active tab
compile the function (if it is being created/modified)
save the function description (if it has been modified)
execute the function
debug a function
print metadata of the function
view MySQL reference
restore the default size and position of the editor window

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the function:

Description group
save object description to file
copy description to clipboard

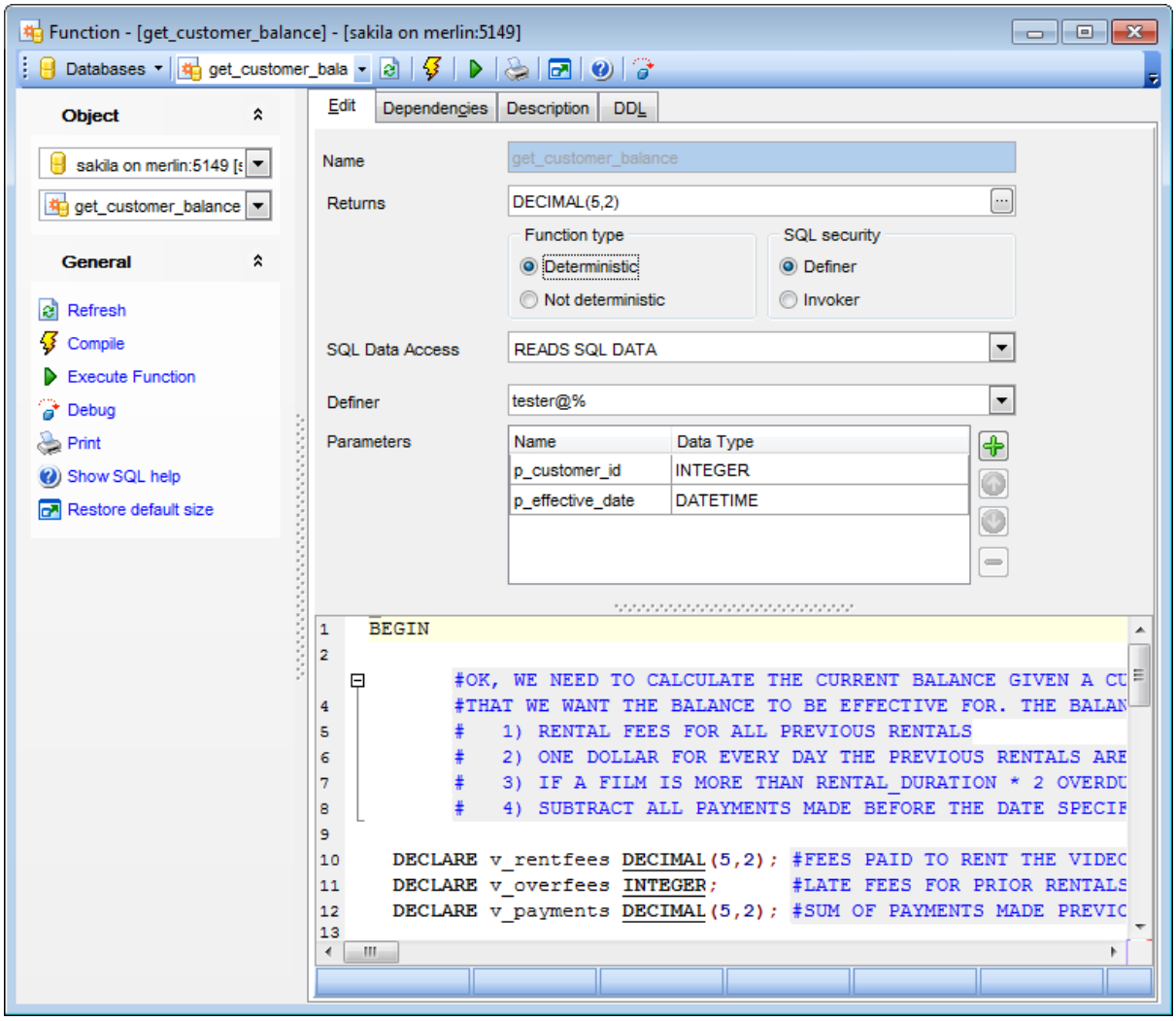
DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **Function Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.4.2 Creating/editing function

Use the **Edit** tab of **Function Editor** to create/edit a stored function and specify its definition.

Name
Enter a name for the new function, or view the name of the function being edited.



Returns
Use the drop-down list to select the return type of the function. Note that the function body must contain a *RETURN* statement.

Definer
Specifies the MySQL account to be used when checking access privileges at the function execution time (if **Definer** is selected in the **SQL security** group).
Hint: You should either follow the 'user_name'@'host_name' format, or select the *CURRENT_USER* value to use the current MySQL user as the routine definer.

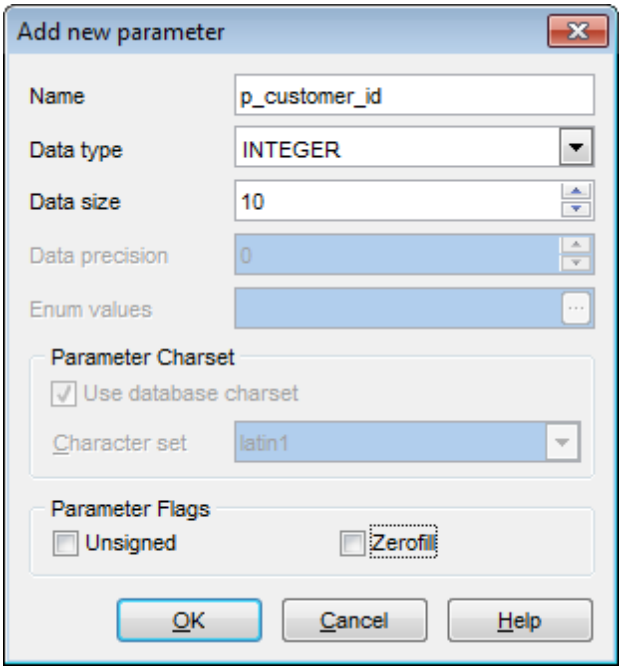
Function type

Deterministic (indicates that the function always produces the same result for the same input parameters)
Not deterministic (indicates that the function does not produce the same result for the same input parameters)

SQL security
Specify whether the function should be executed using the permissions of:
Definer (the user that creates the routine), or
Invoker (the user that invokes the routine)

SQL Data Access
Use the drop-down list to specify the nature of data use by the function:
CONTAINS SQL (i.e. the routine does not contain statements that read or write data)
NO SQL (i.e. the routine contains no SQL statements)
READS SQL DATA (i.e. the routine contains statements that read data (e.g. *SELECT*), but not statements that modify data)
MODIFIES SQL DATA (i.e. the routine contains statements that may write data, e.g. *INSERT*, *DELETE*)

The **Parameters** list provides the following attributes of each parameter used in the procedure:
Set the procedure parameters by right-clicking within the list and selecting **Add Parameter**. Set all necessary settings for the parameter in the opened dialog window.



Name
Data Type - the type of the parameter data.
Use the *Data size* spinner control to define the size of the parameter value.
Use the *Precision* spinner control to define the precision of the parameter value (for *float* data types). The precision indicates the number of significant digits.
Enum values - values of the ENUM datatype.

☑ *Use database charset.*

If you need different charset, you can select it from the *Character set* drop down list.

☑ **Unsigned**
Assigns the *UNSIGNED* attribute to the column: integer data will be displayed unsigned.

☑ **Zerofill**
Assigns the *ZEROFILL* attribute to the column: for columns of the numeric data type, MySQL will automatically add zeros before the first significant digit of the number stored in this column.

To delete the existing parameter, select **Delete Parameter** from the popup menu. To edit parameter double-click it.
Hint: You can reorder parameters in the list using the **Move Up** and **Move Down** popup menu items.

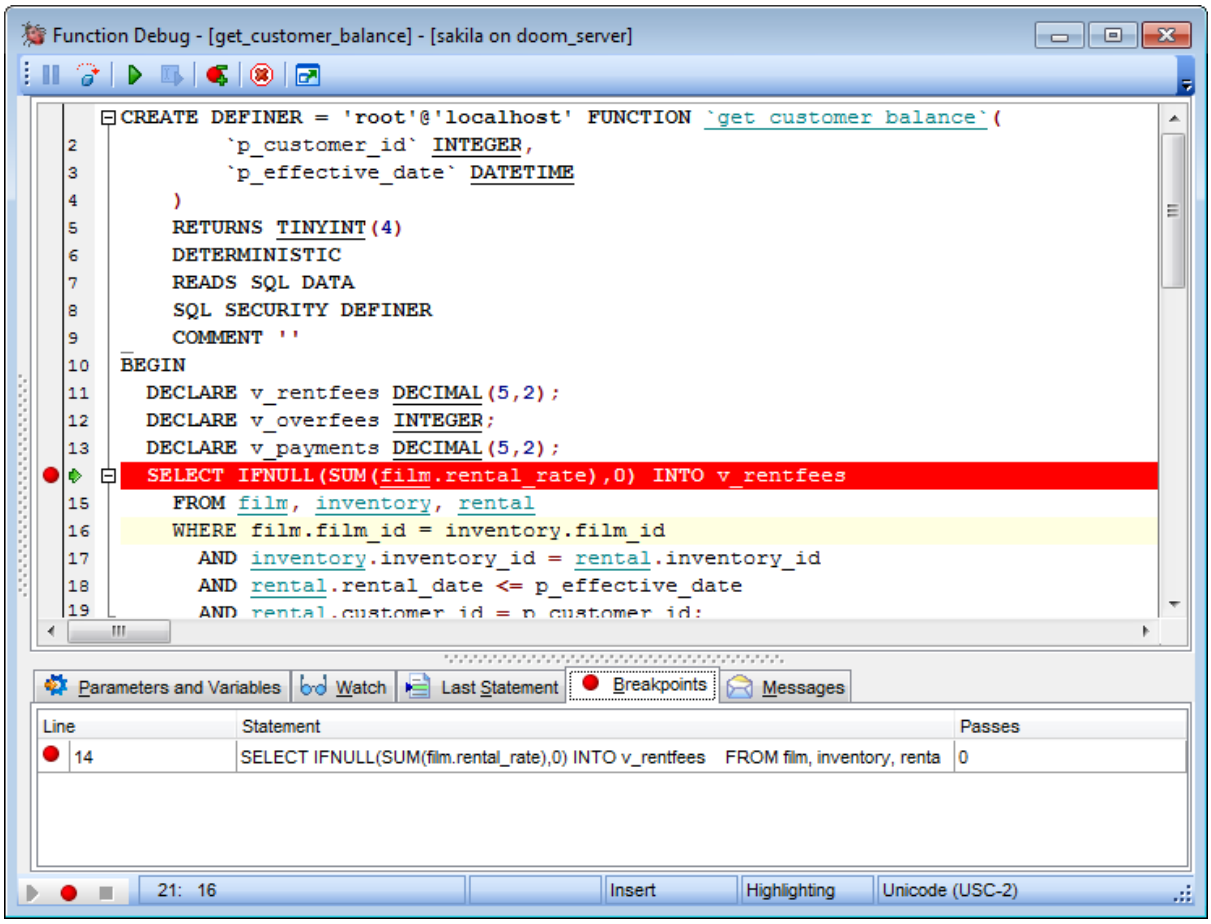
Definition
This area allows you to set the function definition (body).

For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

To execute the function, you can use the **Execute function** item available within the Navigation bar.

5.3.5 Debugger

Function Debugger is a tool for correcting errors and optimizing routine text in SQL Manager for MySQL. To open routine text in debugger, open it in the respective editor first and press the **Debug** button.



- Using Navigation bar and Toolbar
- Debugging
- Viewing info

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

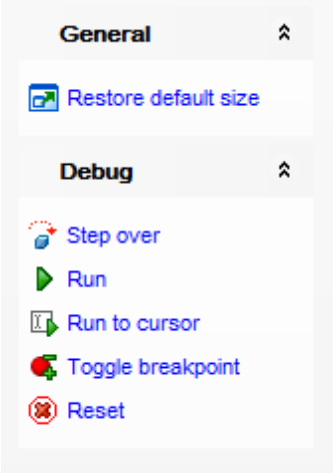
Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Function Editor
Stored Procedures
Triggers
Scheduled events

5.3.5.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Debugger**.



The **Navigation Bar** of **Function Debugger** allows you to:

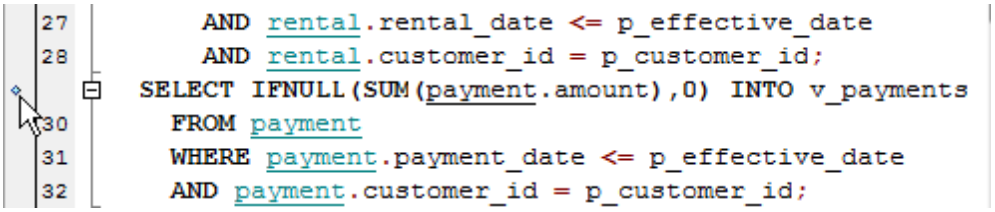
General group
restore default size of the window

Debug group
commit retaining changes
start single-stepping/proceed to the next step
execute routine text
execute routine text up to cursor position
set/remove breakpoint
return to start position

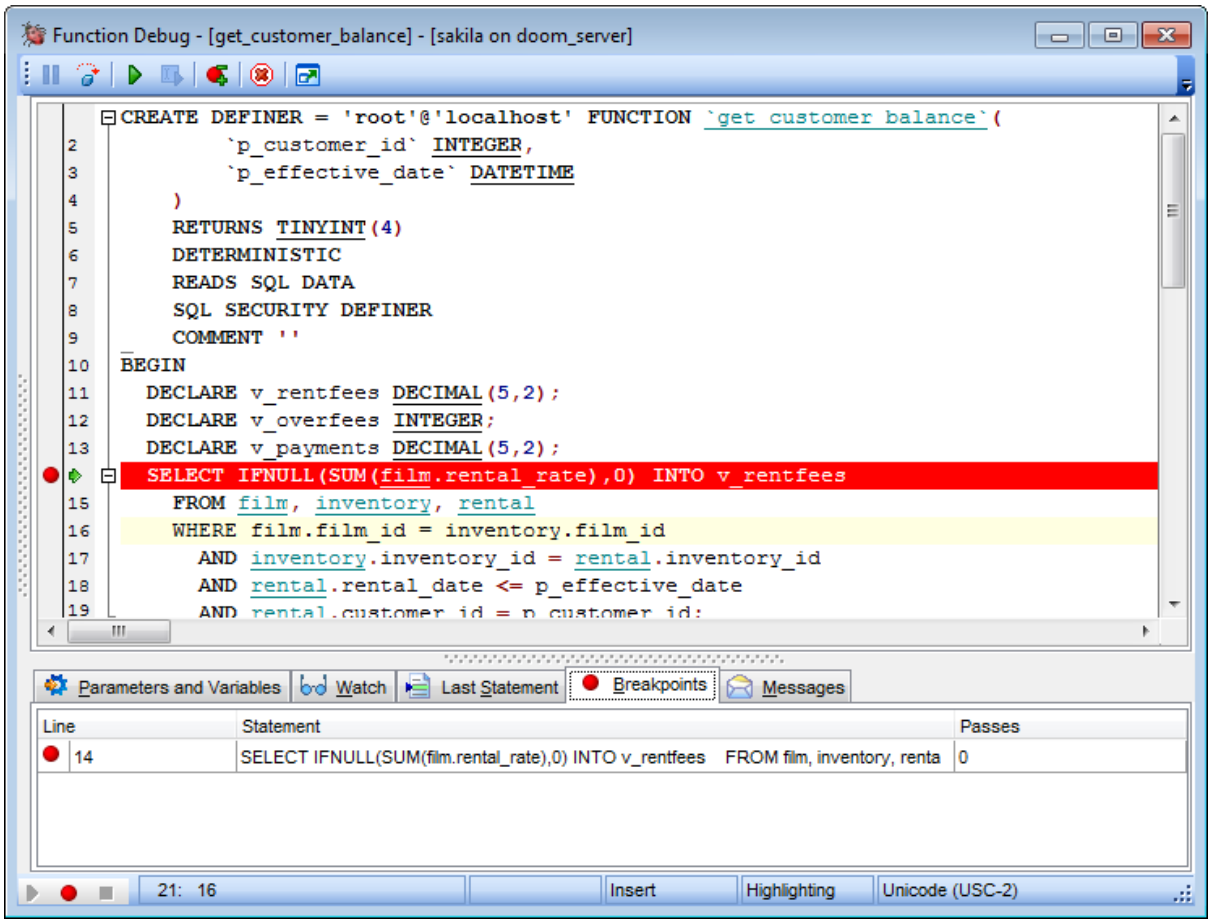
Items of the **Navigation bar** are also available on the **ToolBar** of **Debugger**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.5.2 Debugging

In the main window you can debug routine text. Editing of the routine text is not allowed in debugger.
Current statement is highlighted with blue.
Breakpoint is highlighted with red. You can toggle breakpoints by clicking the diamond mark to the left from the statement. To clear the breakpoint which is not needed anymore click the red circle mark to the left from the statement.



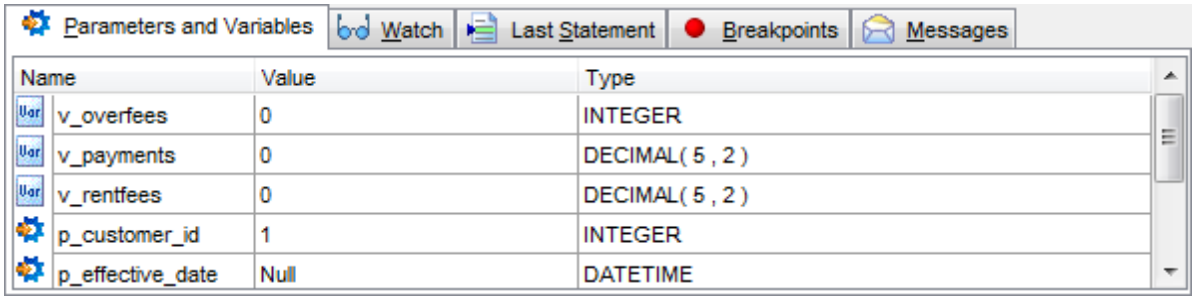
Shortcuts that can be used when debugging:
- **F8** - begin single-stepping;
- **Ctrl+F2** - break execution;
- **Ctrl+F8** - add breakpoint to the current statement;
- **F9** - execute function (till next breakpoint or till the end).



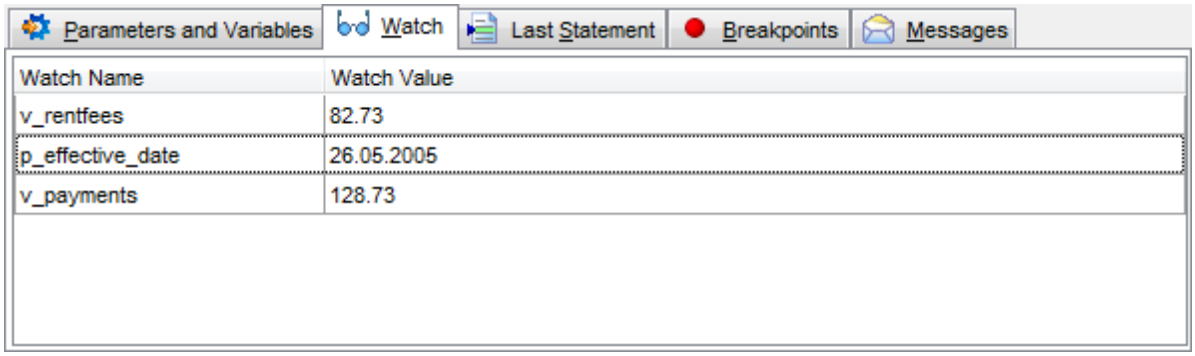
5.3.5.3 Viewing info

Tabs located in the bottom area of **Debugger** contain various information concerning routine text and its debugging process.

Parameters and **Variables tab** displays all variables and parameters with their *types* and *values* that are used in routine text.

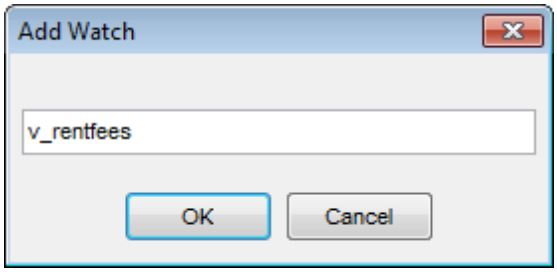


Watches tab displays variables and parameters that have been selected for tracing. Values of the selected variables are changed after each executed statement. Current value can be found in the *Watch Value* column.

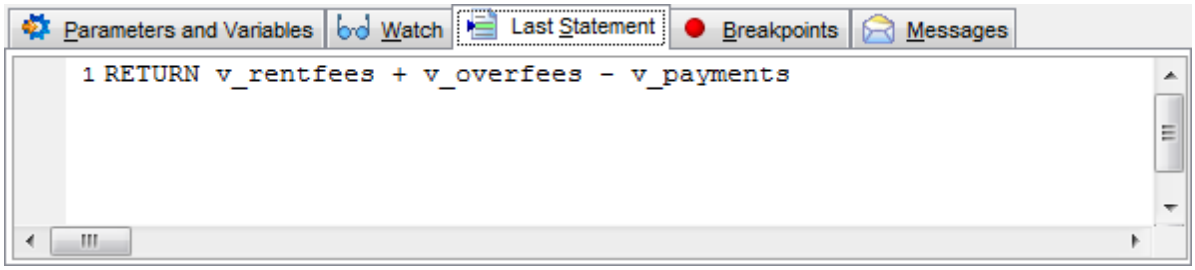


Watch Name can store variable names and statements calculated via MySQL means e. g.: *CONCAT (str1, ';')*

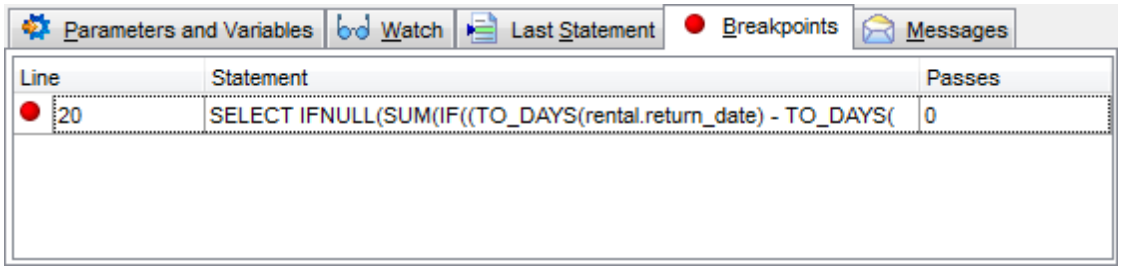
Use the context menu to manage variables and parameters. You can:
Add new variable or parameter to trace - **New Watch**
Change selected watch - **Edit Watch**
Remove variable or parameter from the watch list - **Delete Watch**
Remove all items from the list - **Delete All Watches**.



Recent executed statement can be found at the **Last Statement** tab.

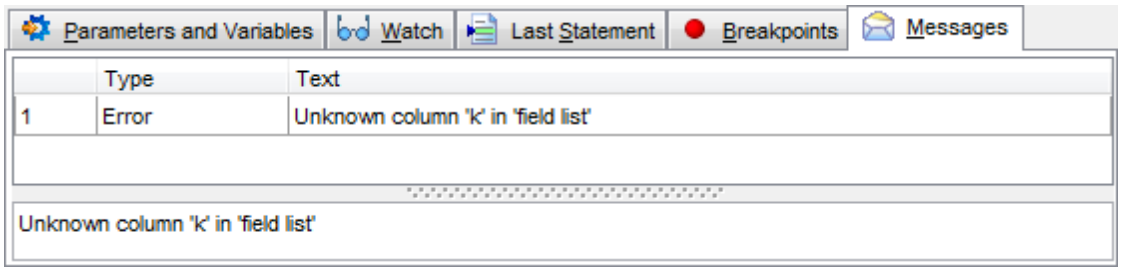


Breakpoints tab contains the complete list of breakpoints for this routine text.



For each breakpoint the following info is provided:
- **Line** number where the breakpoint is set
- The returned **Statement**
- **Passes** - how many times debugger stopped in this point during current session.

Statements returned by MySQL can be found at the **Messages** tab. You can view message *type* and *text* here.



5.3.6 UDFs

A **Function** is a mapping embodied as a program (the function *body*) that can be invoked by using zero or more input values (*arguments*) to a single value (the *result*). A **User-defined function** (UDF) is a way to extend MySQL with a new function that works like native (built-in) MySQL functions such as *ABS()* and *CONCAT()*. UDFs must be created on the server machine.

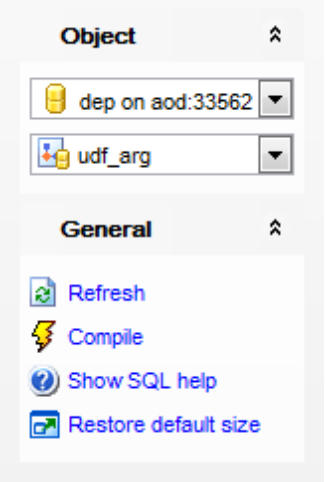
UDF Editor allows you to define user-defined function properties. It opens automatically when you create a new user-defined function and is available on editing an existing one.

To open a user-defined function in **UDF Editor**, double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/editing user-defined function
- Viewing DDL definition

5.3.6.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **UDF Editor**.



The **Navigation bar** of **UDF Editor** allows you to:

Object group
select a database
select a user-defined function for editing

General group
refresh the content of the active tab
compile the UDF (if it is being created/modified)
execute the UDF
print metadata of the UDF
view MySQL reference

restore the default size and position of the editor window

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the UDF:

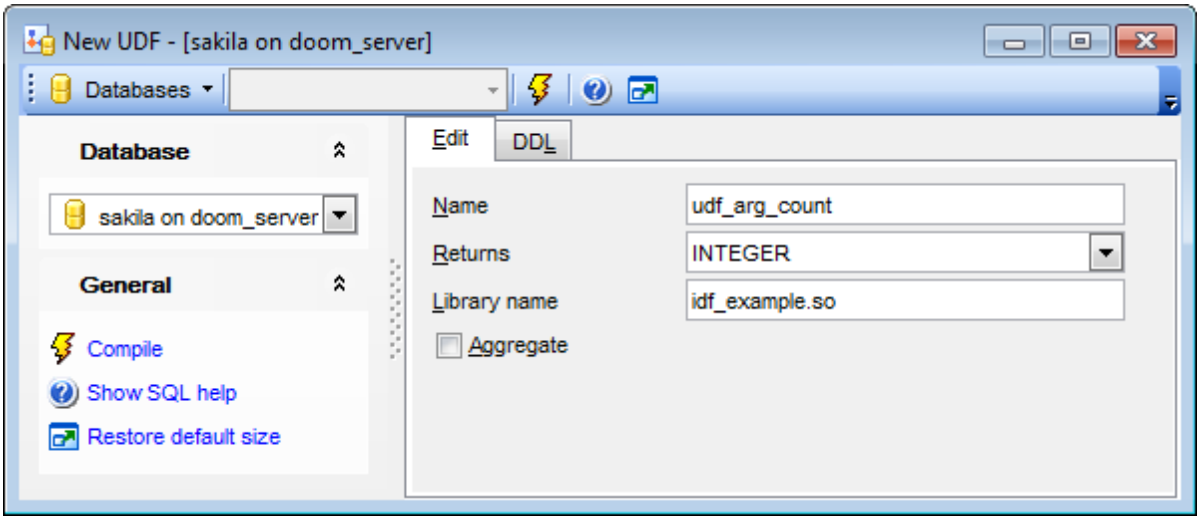
DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **UDF Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.6.2 Creating/editing UDF

Use the **Edit** tab of **UDF Editor** to add/edit a user-defined function and specify its definition.

Name
Enter a name for the new UDF, or view the name of the UDF being edited.



Returns
Use the drop-down list to select the return type of the UDF.

Library name
Set the name of the file containing the function that will be used by the UDF.

Check the ☑ **Aggregate** option to make the function an aggregate one.

Note: For the UDF mechanism to work, functions must be written in C or C++ and your operating system must support dynamic loading.

5.3.7 Scheduled events

MySQL **Events** are tasks that run according to a schedule. Therefore, they are often referred to as **Scheduled events**. In fact, an event is a named database object containing one or more SQL statements to be executed at one or more regular intervals, beginning and ending at a specific date and time. Conceptually, this is similar to the idea of the Unix *crontab* (also known as a "cron job") or the Windows Task Scheduler.

Scheduled tasks of this type are also sometimes known as "temporal triggers", implying that these are objects that are triggered by the passage of time. Events should more specifically not be confused with "temporary triggers". Whereas a trigger is a database object whose statements are executed in response to a specific type of event that occurs on a given table, a scheduled event is an object whose statements are executed in response to the passage of a specified time interval.

Scheduled Event Editor allows you to define scheduled event properties. It opens automatically when you create a new scheduled event and is available on editing an existing one.

To open a scheduled event in **Scheduled Event Editor**, double-click it in the DB Explorer tree.

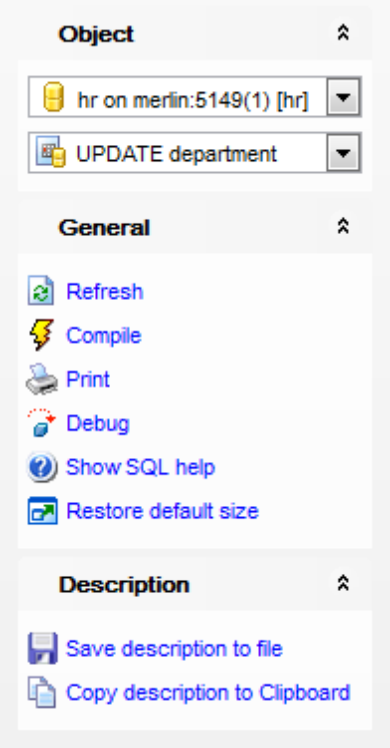
- Using Navigation bar and Toolbar
- Creating/editing scheduled event
- Browsing object dependencies
- Editing event description
- Viewing DDL definition

See also:

Debugger

5.3.7.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Scheduled Event Editor**.



The **Navigation bar** of **Scheduled Event Editor** allows you to:

Object group
select a database
select a scheduled event for editing

General group
refresh the content of the active tab
compile the scheduled event (if it is being created/modified)
save the scheduled event description (if it has been modified)
print metadata of the scheduled event
debug a scheduled event
view MySQL reference
restore the default size and position of the editor window

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with the scheduled event:

Description group
save object description to file

copy description to clipboard

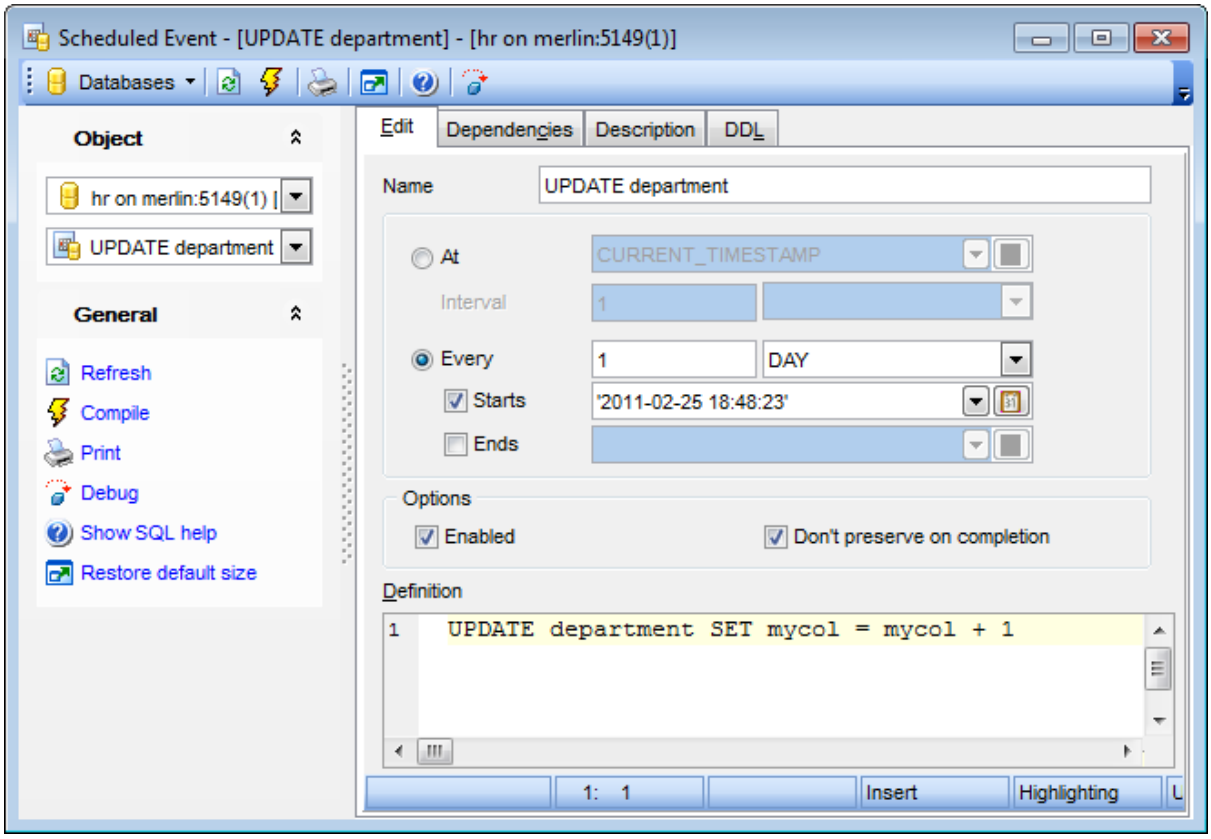
DDL group
save DDL to file
open DDL in SQL Editor

Items of the **Navigation bar** are also available on the **ToolBar** of **Scheduled Event Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.3.7.2 Creating/editing scheduled event

Use the **Edit** tab of **Scheduled Event Editor** to add/edit a scheduled event and specify its definition.

Name
Enter a name for the new event, or modify the name of the event being edited.



Schedule

This group determines when and how often the SQL statement defined for the event is executed (*ON SCHEDULE* clause). Specify the preferable execution type:

At (implies a one-time event)
A one-time event executes one time only at the specified date and time.
Set the **Interval** value to indicate a point in the future relative to the current date and time (*+ INTERVAL* clause). The interval value consists of two parts (a *quantity* and a *unit of time*: in *n* **years**/**months**/**weeks**/**days**/**hours**/etc.)

Every (recurrent execution)
A recurrent event repeats its action at a regular interval, and the schedule for a recurring event can be assigned a specific start day and time, end day and time, both, or neither.

Set the *recurrence rule* (a *quantity* and a *unit of time*: every *n* **years**/**months**/**weeks**/**days**/**hours**/etc.) and the **Starts** / **Ends** threshold values:

Starts
Check the box to specify the start date and time for the recurring event - a timestamp value which indicates when the action should begin repeating.
If the box is unchecked, no start date and time are defined for the event (**Note:** Prior to MySQL 5.1.8, it defaulted to '0000-00-00 00:00:00' in such cases).

Ends
Check the box to specify the end date and time for the recurring event - a timestamp value which tells MySQL when the event should stop repeating.
If the box is unchecked, the event continues executing indefinitely (**Note:** Prior to MySQL 5.1.8, it defaulted to '0000-00-00 00:00:00' in such cases).

Options

Enabled
Enables/disables the event immediately after it is created. A disabled event still exists as an object in the current database, but it does not execute any SQL statements.

Don't preserve on completion
Normally, once an event has expired, it is immediately dropped. To override this behavior, you can disable this option. Enabling the option merely makes the default non-persistent behavior explicit.

Definition
This area allows you to specify the SQL statement to be executed by the event (*DO* clause).

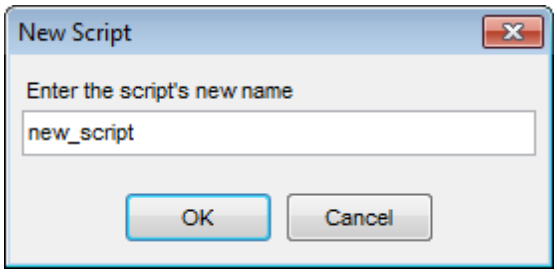
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

Note: In order to use scheduled events, you must set the *event_scheduler* server system variable value to ON.

5.3.8 Local scripts

Local scripts are the scripts that are stored locally and can be easily accessed from the DB Explorer.

To create new local script right-click the appropriate branch in the DB Explorer tree and select the **New Script** item. You will be asked for the script name. When the name is assigned the script appears in the DB Explorer tree.



It is also possible to create subfolders in the Local scripts branch. To create a subfolder use the **New Script Folder** item of the context menu of a script or a group of scripts. Folders created there are created physically as subfolders to the folder assigned as default for local scripts in the DB Registration info | Directories.

To change directory where local scripts to be stored use the **Select Directory...** item of the **Local Scripts** context menu.

Script opens in the SQL Script where it can be edited or executed.

See also:
SQL Script
DB Explorer
Database registration info

5.4 Server objects

SQL Manager for MySQL provides all necessary tools for working with server objects.

Note: To start working with server objects you need first to connect to server.

Server objects:
Log file groups
Tablespaces
Federated server

See also:
Operations with database objects
New Object
Duplicate Object Wizard
Database objects

5.4.1 Log file groups

Note: Creation of log file groups is possible only when cluster server is installed.

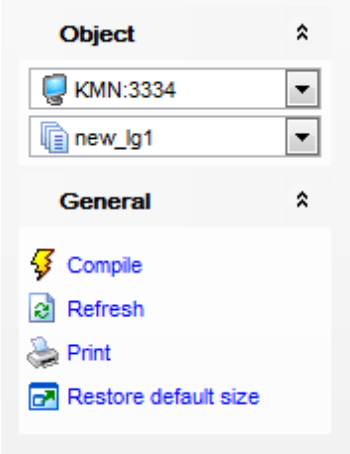
This editor allows you to create or edit log file groups. It opens automatically when you create a new log file group and is available on editing an existing one.

To open a log file group in **Log file group Editor** double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/Editing log file group
- Viewing object DDL definition

5.4.1.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Log file group Editor**.



The **Navigation Bar** of **Log file group Editor** allows you to:

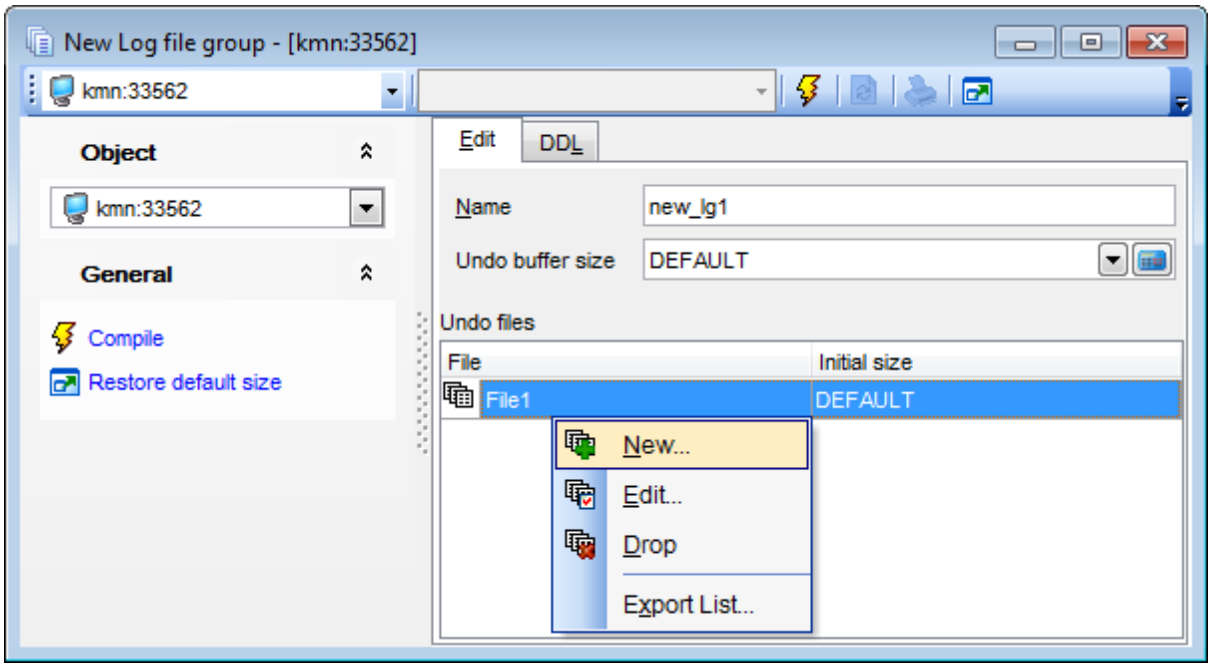
Object group
select host;
select log file group to edit.

General group
compile the log file group (if it's being changed/modified);
refresh the content of the active tab;
print metadata of the log file group;
restore the default size and position of the editor window.

Items of the **Navigation bar** are also available on the **ToolBar** of **Log file group Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.4.1.2 Creating/Editing log file group

Use the **Edit** tab of **Log file group Editor** to create/edit a log file group and specify its definition.



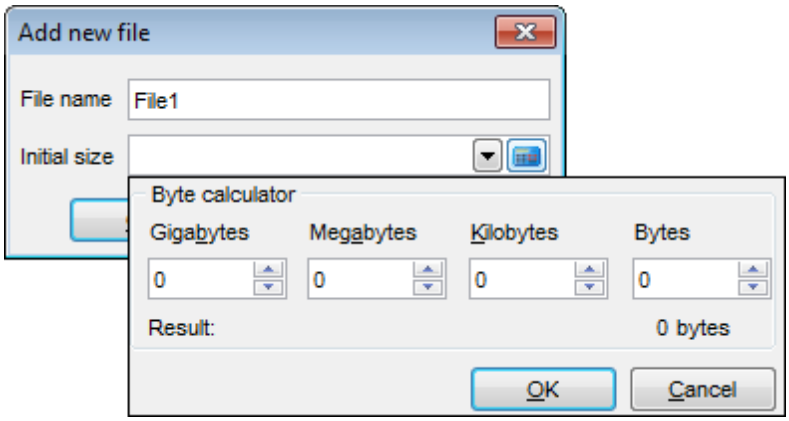
Name
Field displays name of the object. Value can't be modified in edit mode.

Undo buffer size

Undo files
Define the undo files in the bottom area. You can set specific initial size, *default* - 128mb, or '*0*' - value will be linked with the **Undo buffer size** one.

Context menu allows you to:
- create **New** undo file;
- **Edit** selected undo file;
- **Drop** undo file;
- **Export List** of objects to an external file.

If you choose the **New...** popup menu item the following dialog for setting undo file options appears.



Here you are to provide file name and file initial size (default value is 128Mb).

5.4.2 Tablespaces

Tablespaces are objects used for providing disk space to store tables. Tablespace can store one or several files.
Note: Tablespace can be created only on a cluster server.
Note: Log file groups and Tablespaces share the same namespace. This means that each object must be uniquely named to avoid name conflict.

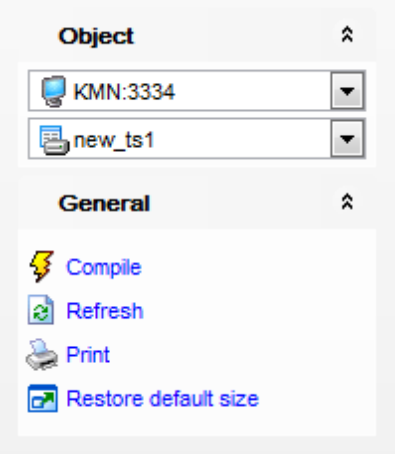
This editor allows you to create or edit tablespaces.

To open a tablespace in **Tablespace Editor** double-click it in the DB Explorer tree.

- Using Navigation and Toolbar
- Creating/Editing Tablespace
- Viewing object DDL definition

5.4.2.1 Using Navigation and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Tablespace Editor**.



The **Navigation Bar** of **Tablespace Editor** allows you to:

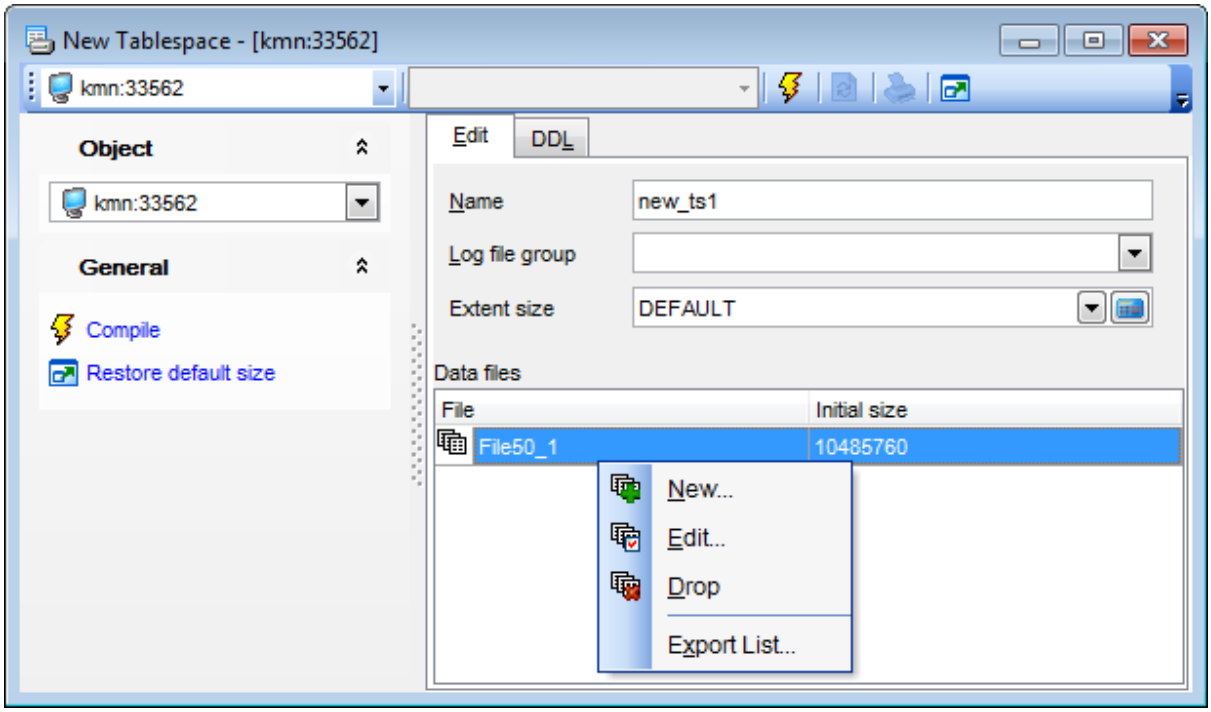
Object group
select host;
select tablespace to edit.

General group
refresh the content of the active tab;
compile the tablespace (if it's being changed/modified);
print metadata of tablespace;
restore the default size and position of the editor window.

Items of the **Navigation bar** are also available on the **ToolBar** of **Tablespace Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.4.2.2 Creating/Editing Tablespace

Use the **Edit** tab to view/edit basic parameters of a tablespace.



Name
Displays object name. Can be modified until object is created.

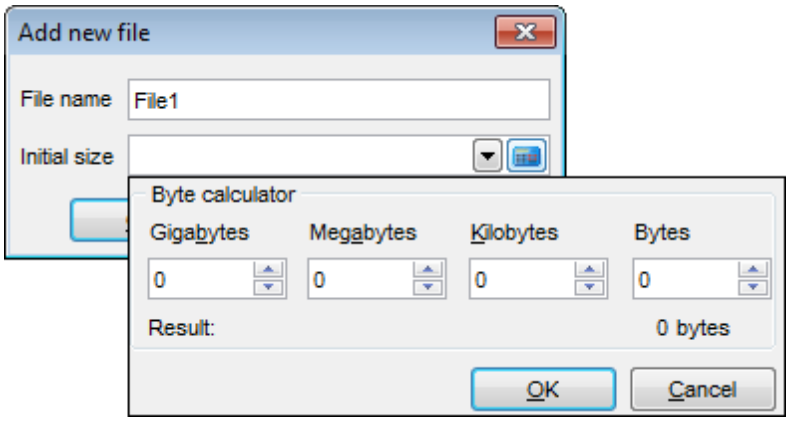
Log file group
Use the drop-down list to select an existing log file group.

Extent size
Define size of tablespace files. The default value is 1Mb. Minimum size allowed - 32Kb.

Data files
Use this area to specify tablespace data files.

Context menu allows you to:
- create **New** log file;
- **Edit** selected log file;
- **Drop** log file;
- **Export List** of objects to an external file.

If you choose the **New...** popup menu item the following dialog for setting data file options appears.



Here you are to provide file name and file initial size (default value is 128Mb).

5.4.3 Federated servers

Federated server is used for working with FEDERATED storage engine. SUPER privilege is required for creating server of this type.
Note: This object is available from MySQL server version 5.0.3.

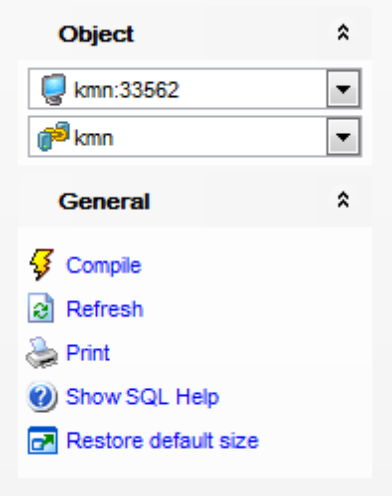
Use this editor to create or edit federated servers.

To open a federated server in editor double-click it in the DB Explorer tree.

- Using Navigation bar and Toolbar
- Creating/editing federated server
- Viewing object DDL definition

5.4.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Federated Server Editor**.



The **Navigation Bar** of **Federated Server Editor** allows you to:

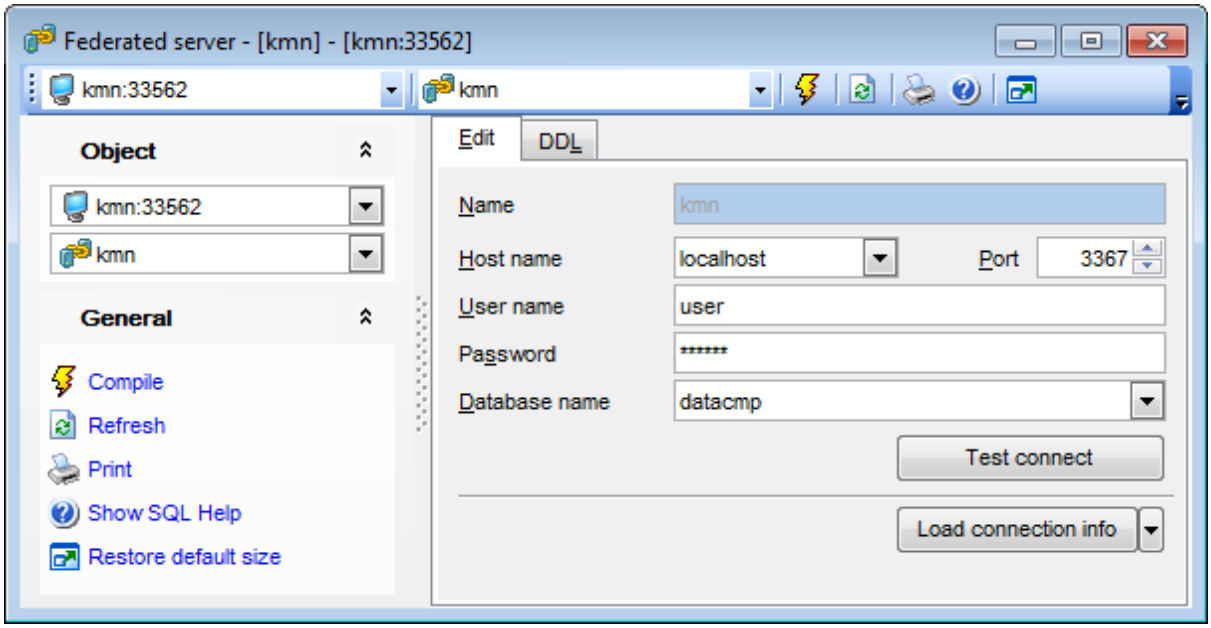
Object group
select database;
select federated server to edit.

General group
refresh the content of the active tab;
compile federated server (if it's being changed/modified);
show native MySQL help;
restore the default size and position of the editor window.

Items of the **Navigation bar** are also available on the **ToolBar** of **Federated Server Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

5.4.3.2 Creating/editing federated server

Use the **Edit** tab to define settings required for connection to federated server.



Name
Displays object name. Value can be modified until object is created.

Host name
Use this drop-down list to specify host which you want to connect to. This list contains names of the registered servers.

Port
Define port on the remote host to connect through.

Provide authorization information in the **User name** and **Password** fields.

Database name
Select an existing database from the drop-down list.

Press **Test connect** to check whether provided connection settings are valid.

You can select any of the registered servers from the **Load connection info** list.

Part

6 Query Management Tools

When using **SQL Manager for MySQL**, you are provided with two basic tools you may need to manage your SQL queries: SQL Editor for editing SQL query text directly and Visual Query Builder for building queries visually. Find the list of common SQL query management operations below.

Creating New Queries

In order to create a new query in *SQL Editor*:
- select the **Tools | New SQL Editor** main menu item or use the corresponding  toolbar button;
- click the **Add new query** item of the Navigation bar;
- edit the query text within the **Edit** tab of SQL Editor.

In order to create a new query in *Query Builder*:
- select the **Tools | New Query Builder** main menu item or use the corresponding  toolbar button;
- build the query visually within the **Builder** tab of Visual Query Builder.

Editing Queries

In order to open a query in *SQL Editor*:
- select the **Tools | Show SQL Editor** main menu item or use the corresponding  toolbar button;
- use the numbered tabs at the bottom of the editor window to switch between previously edited queries. The last edited query is displayed automatically on opening the editor;
- edit the query text within the **Edit** tab of SQL Editor.

In order to open a query in *Query Builder*:
- select the **Tools | Show Query Builder** main menu item or use the corresponding  toolbar button;
- the last edited query is displayed automatically on opening Query Builder;
- to load a previously saved diagram, click the **Load diagram** item of the Navigation bar ;
- to load a query from an **.sql* file, open the **Edit** tab and click the **Load SQL** button of the Navigation bar;
- edit the query visually within the **Builder** and/or the **Edit** tabs of Visual Query Builder.

In order to load a query from an **.sql* file:
- select the **Tools | New SQL Editor** main menu item or use the corresponding  toolbar button;
- click the **Load from file** item of the Navigation bar;
- browse for the query file using the **Open SQL File** dialog;
- edit the query text within the **Edit** tab of SQL Editor.

Executing Queries

In order to execute a query:
- *create a new query* or *open an existing one*;

- click the **Execute** item of the Navigation bar or use the *F9* hot-key to execute the query;
- view/edit the returned data within the **Results** tab of SQL Editor.

Saving Queries

In order to save a query:

- *create a new query* or *open an existing one*;
- click the **Save to file** Navigation bar item (in *SQL Editor*) or the **Save SQL** Navigation bar item (in *Query Builder*), or use the *Ctrl+S* shortcut to save the query using the **Save as...** dialog;
- click the **Save diagram** Navigation bar item in Visual Query Builder to save the designed diagram;

or

- use the **Save all** Navigation bar item in SQL Editor if you need to save all the queries to one file.

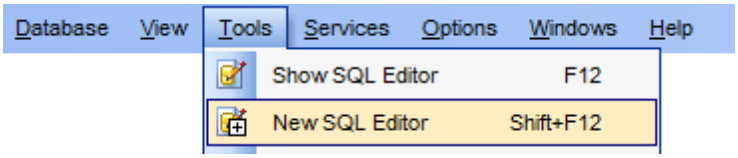
See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools
How To...

6.1 SQL Editor

SQL Editor is the basic tool of **SQL Manager for MySQL** for creating and executing queries. The tool allows you to create and edit the SQL text of a query, prepare and execute queries and view the results of query execution.

To open SQL Editor, select the **Tools | New SQL Editor** / **Tools | Show SQL Editor** main menu items or use the corresponding / toolbar buttons. You can also use the *Shift+F12* / *F12* shortcuts for the same purpose.



- Using Navigation bar and Toolbar
- Working with SQL Editor area
- Using the context menu
- Viewing query plan
- Using object links
- Executing queries and viewing results
- Viewing query logs
- Favorites editor
- Merging queries

See also:

Visual Query Builder

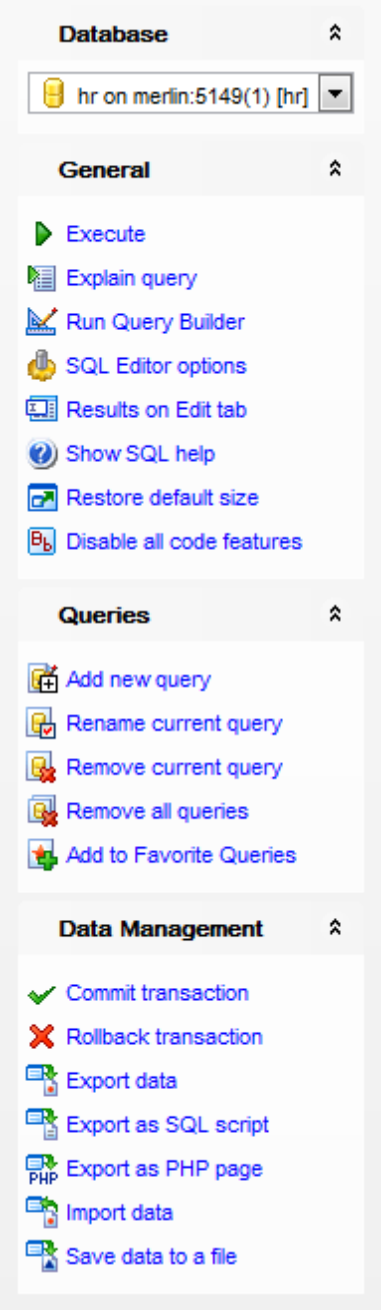
Query parameters

SQL Script Editor

Editor Options

6.1.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **SQL Editor**.



The **Navigation bar** of **SQL Editor** allows you to:

Database group
select a database for the query

General group
- execute the current query
- view estimated query execution plan
- run Visual Query Builder to design the query as a diagram
- configure SQL Editor within the Tools | SQL Editor page of the Environment Options dialog
- switch the results representation mode: *on Edit tab* or *on separate tab*
- view MySQL reference
- restore the default size and position of the editor window
- enables/disables syntax highlight, code completion and code folding

Queries group
- add a new query (note that the current query text will not be lost)
- rename the current query
- remove the query
- remove all queries from the editor
- edit the query text using Favorites editor and add the query to the Favorite Queries list

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with queries:

Edit group
- activate the Find Text dialog
- load a query from an **.sql* file using the **Open SQL File** dialog
- save the query to an **.sql* file
- save the query to an **.sql* file using the **Save as...** dialog
- save all queries to an **.sql* file

Logs group
- activate the Find Text dialog
- save the query log to a file
- clear logs

Data Management group
- commit transaction
- rollback transaction
- export the returned dataset using Export Data Wizard
- export the returned dataset as SQL Script using the Export as SQL Script wizard
- save data to a file

Items of the **Navigation bar** are also available on the **ToolBar** of **SQL Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

See also:

Working with SQL Editor area
Viewing query plan
Executing queries
Viewing query logs
Favorites editor

6.1.2 Working with SQL Editor area

The **Editor area** of SQL Editor is available within the **Edit** tab and is provided for working with SQL queries in text mode.

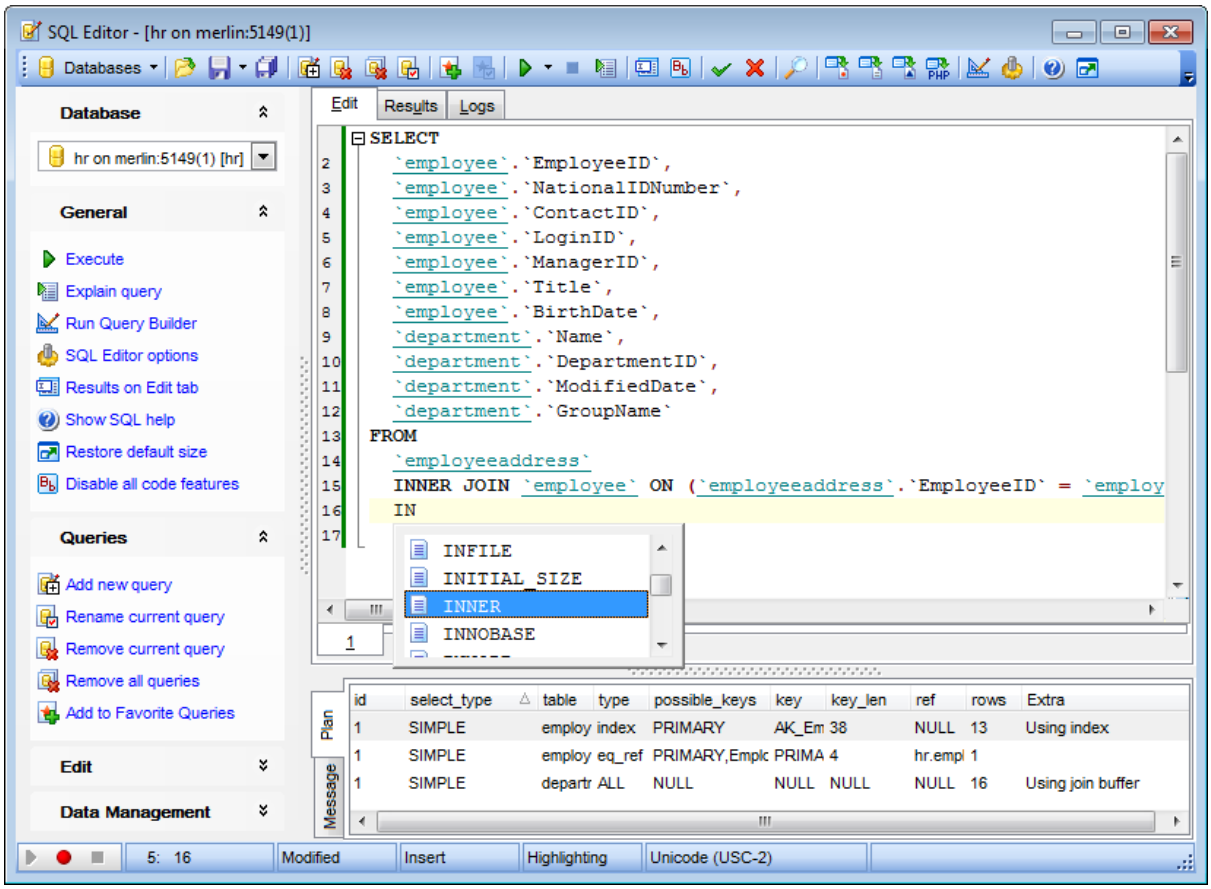
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented:

- using object links allowing you to open the object in the associated editor;
- ability to display line numbers;
- code folding for statements and clauses;
- customizable margins and gutters;
- formatting code for better representation

and more.

If necessary, you can enable/disable or customize most of SQL Editor features using the Editor Options dialog.

The example of code completion is illustrated in the picture below. You can set the delay within the Quick code section of the Editor Options dialog or activate the completion list manually by pressing the *Ctrl+Space* shortcut.



Hint: To use a keyboard template, type the template name and press the *Ctrl+J* shortcut: the text associated with the template will be inserted automatically.

Implementation of the Find Text / Replace Text dialogs and Incremental search bar contributes to more efficient work with the SQL code.

If necessary, you can **print** the SQL text of your query using the corresponding item of the context menu.

See also:

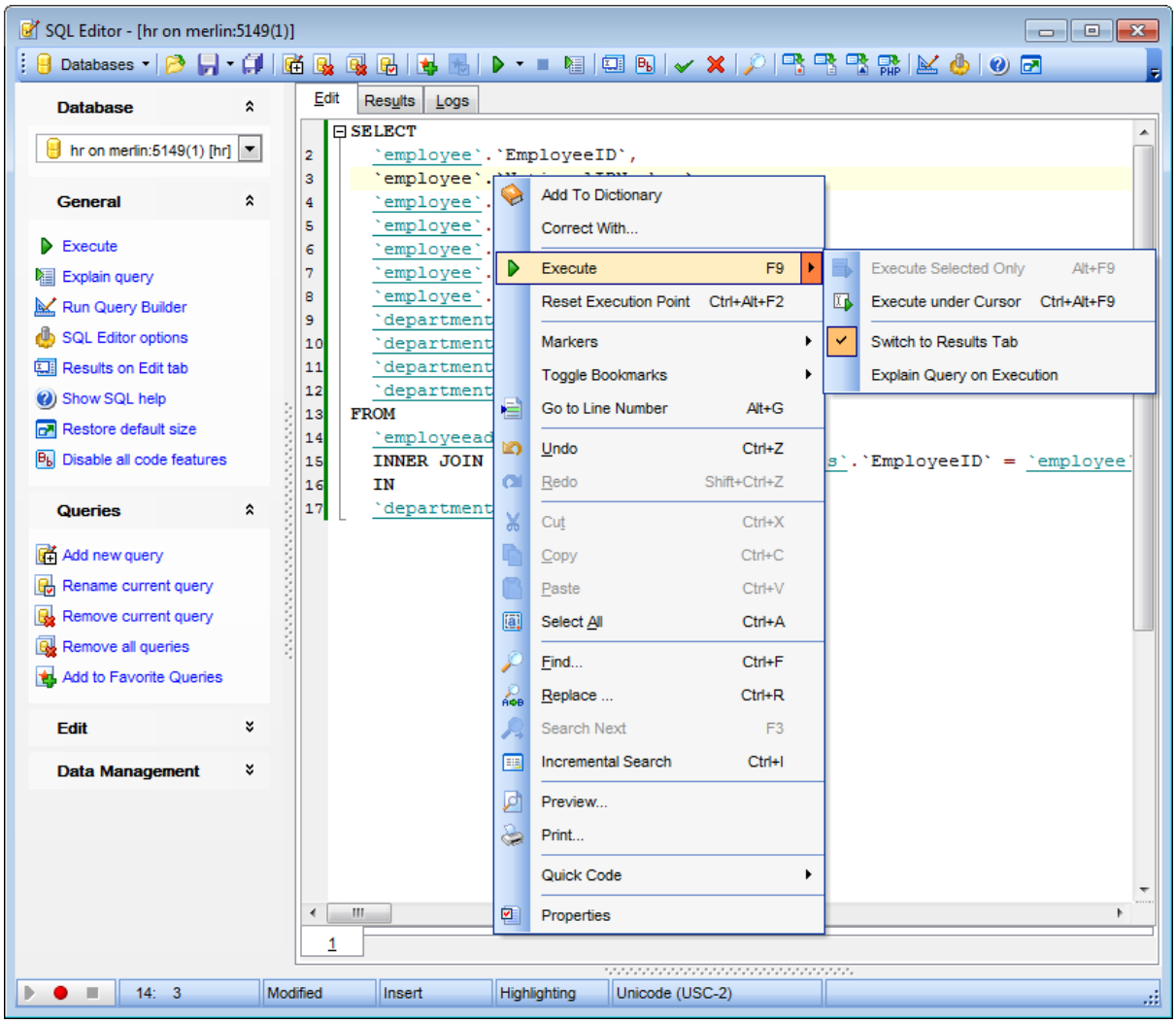
Using Navigation bar and Toolbar
Using the context menu
Editor Options
Keyboard Templates
Favorites editor
Find Text dialog
Replace Text dialog

6.1.3 Using the context menu

The **context menu** of SQL Editor area contains execution commands, most of the standard text-processing functions (*Cut*, *Copy*, *Paste*, *Select All*) and functions for working with the query as a whole, e.g. you can *move the cursor to a particular line*, *change the case* of selected text, view the query *properties* or *print* the text of the query. Each of these operations can be also performed with the corresponding hot keys used.

Find the complete list of **SQL Editor** context menu items below. The context menu allows you to:

- add the selected text to dictionary or correct text (see Spell checking for details);
- execute the query/selected text/text under cursor, and reset execution point (if necessary);
- manage markers: *Drop Marker*, *Collect Marker*, *Swap Marker*;
- toggle bookmarks allowing you to navigate through the query text and jump to a line with a particular number;
- perform editing operations: *Undo/Redo*, *Cut*, *Copy*, *Paste*, *Select all*;
- perform search and replace operations;
- save/load a query to/from an external **.sql* file;
- perform preview/print operations;
- use the *Quick code* group allowing you to format the selected code using *SQL Formatter* to make the code easier to read, toggle comments for code fragments, change case of the selected text, indent/unindent code lines;
- add the query to the Favorite Queries list;
- open the Editor Options dialog.



See also:

Working with SQL Editor area

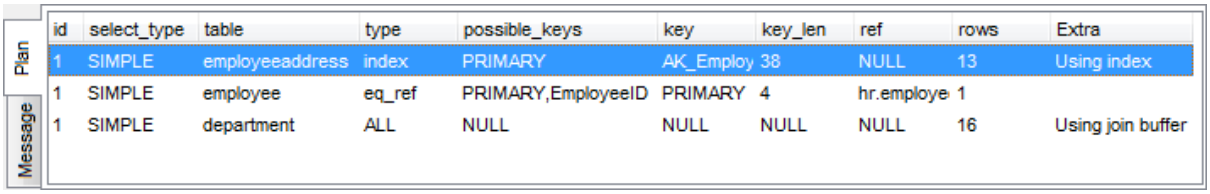
Executing queries

6.1.4 Viewing query plan

Using **SQL Manager for MySQL**, you can view **the plan** for each of the queries created and executed in the application. The query plan is available within the corresponding **Plan** tab.

To view the **Plan** of a query, open the query in **SQL Editor** and use the **Explain query** item of the Navigation bar or toolbar.

The **Plan** tab allows you to view the sequence of actions performed by the database server in the process of the query execution, and the amount of system resources used for the query execution.



The **Plan** panel displays the operations as a list with the following columns: *id*, *select_type*, *table*, *type*, *possible_keys*, *key*, *key_length*, *ref*, *rows*, *Extra*.
Click a column caption to **sort** items by values of this column in the ascending or the descending mode.
Right-click within the panel to display the **context menu** allowing you to configure the set of *visible columns* or export the plan to any of supported formats.

If necessary, you can specify that the **Plan** tab appears automatically upon query execution in SQL Editor: select the **Explain query on execution** option available within the Tools | SQL Editor section of the Environment Options dialog.

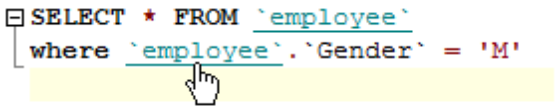
See also:

SQL Editor options

Executing queries

6.1.5 Using object links

Objects that exist in the database are highlighted in the text as hyperlinks. You can open an object in the appropriate editor by clicking the object name in the text with the *Ctrl* key pressed.



Please note that you can change the way highlighted objects look in the editor: use the Color section of the Editor Options dialog.

See also:

Working with SQL Editor area

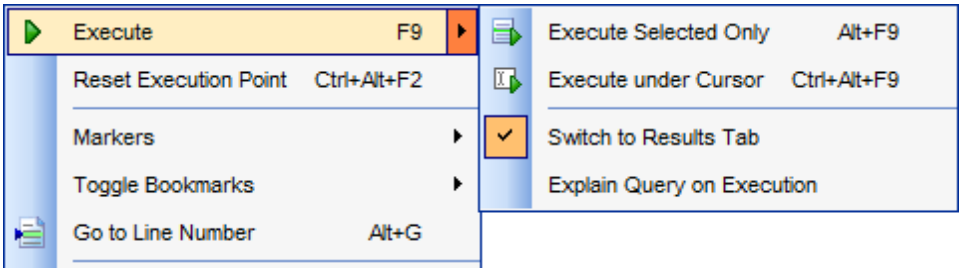
Editor Options

6.1.6 Executing queries

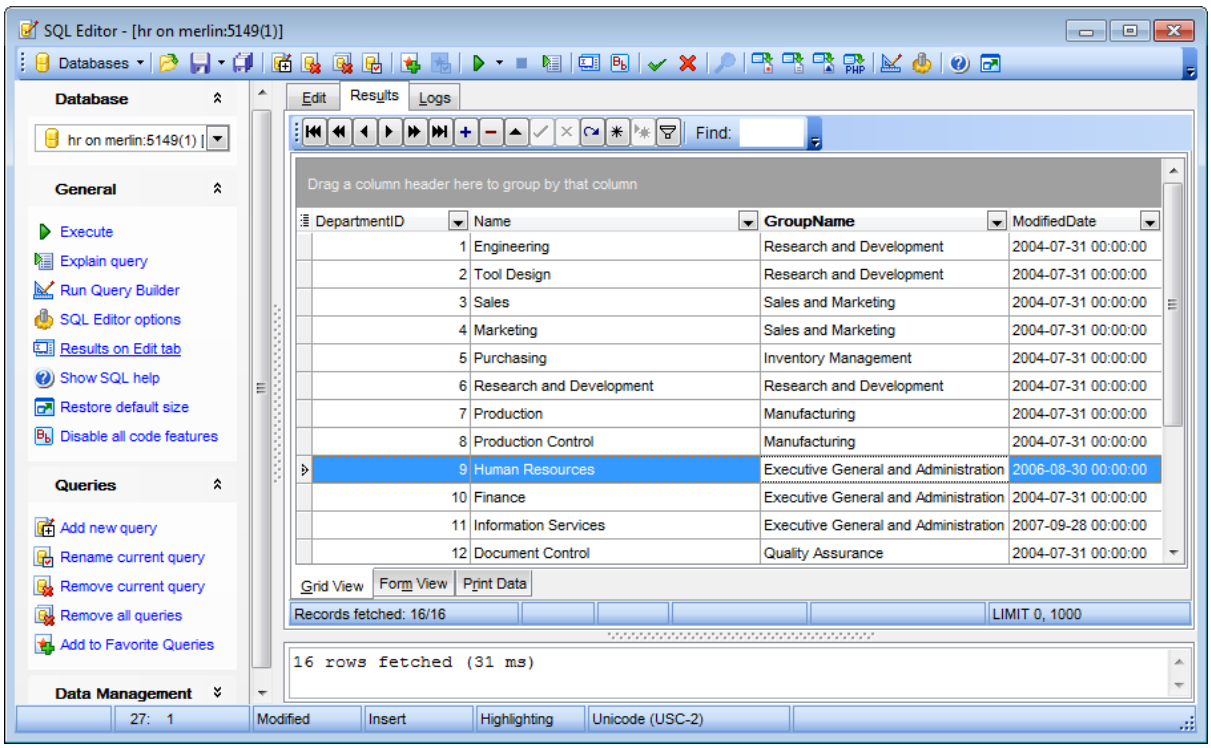
When all the query parameters are set, you can immediately **execute the query** in **SQL Editor**.

To execute a query, click the **Execute** item of the Navigation bar. You can also use the context menu or *F9* hot key for the same purpose.

If the SQL syntax is correct, the query is executed and, in case the query statement is supposed to return data (e.g. as SELECT statement), the returned dataset appears within the **Results** tab. The position of the tab depends on the **Results on Edit tab / Results on separate tab** selection in the Navigation bar.
If SQL syntax of the query contains any errors, the query execution is stopped and the corresponding error message is displayed in the status bar area at the bottom of the editor window.



By default, data returned by a query are displayed as a grid (see Data View for details). The context menu of the grid allows you to Export Data, Export as SQL Script, Save data to a file.



See also:
Data View
Export Data
Export as SQL Script

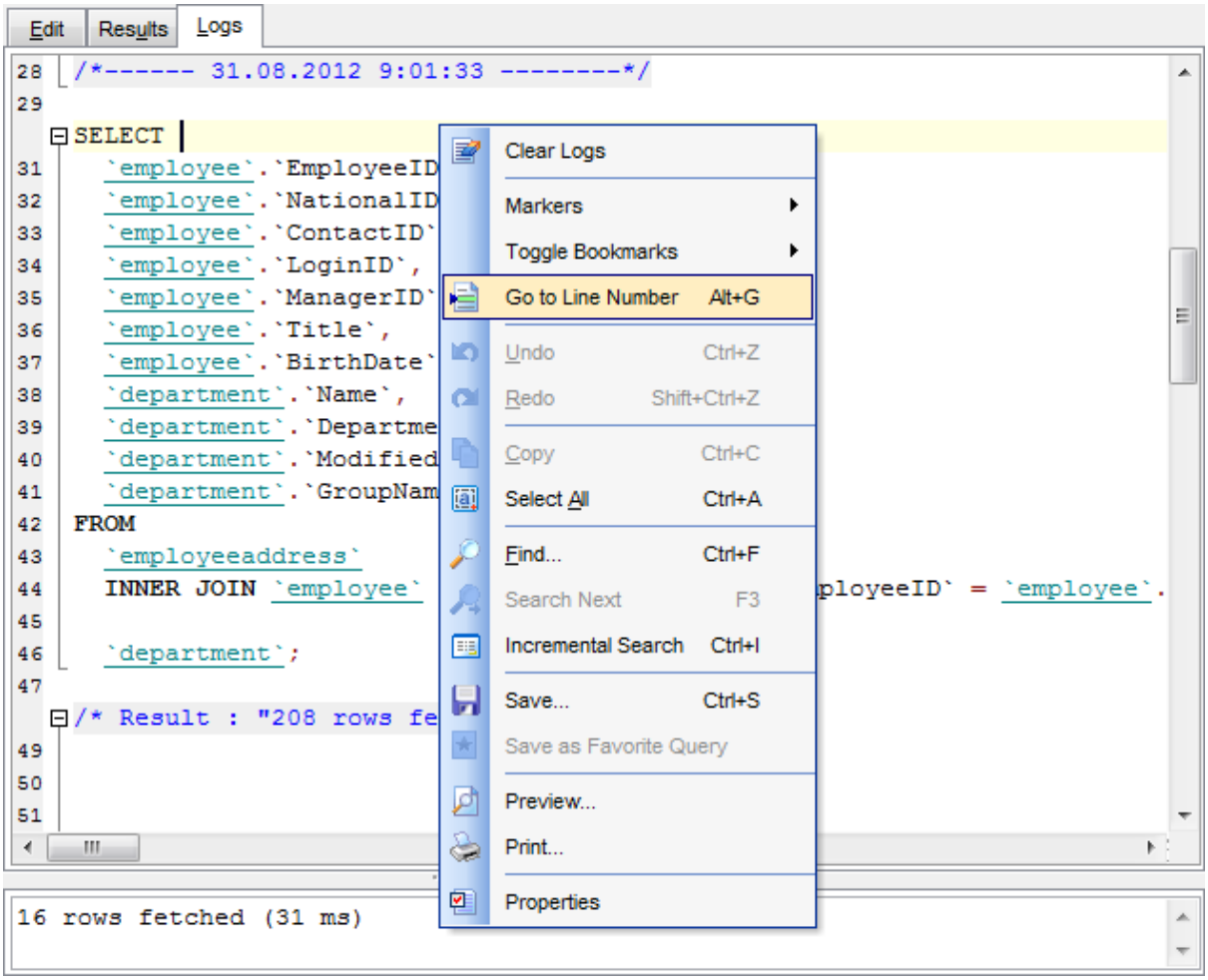
6.1.7 Viewing query logs

This tab allows you to view the query **log**. The log is available within the **Logs** tab of **SQL Editor**.

Using this tab you can view *log entries* containing the following details:
- date and time of the query execution;
- text of the query;
- number of rows fetched and fetch time, or the text of the error (if any).

Date/time and the execution result information are embedded as code comments conforming with the rules of SQL.

With the help of the **context menu** the log can be *printed*, *saved* to file or *cleared*. You can also use a number of SQL Editor context menu generic functions.



See also:

Executing queries

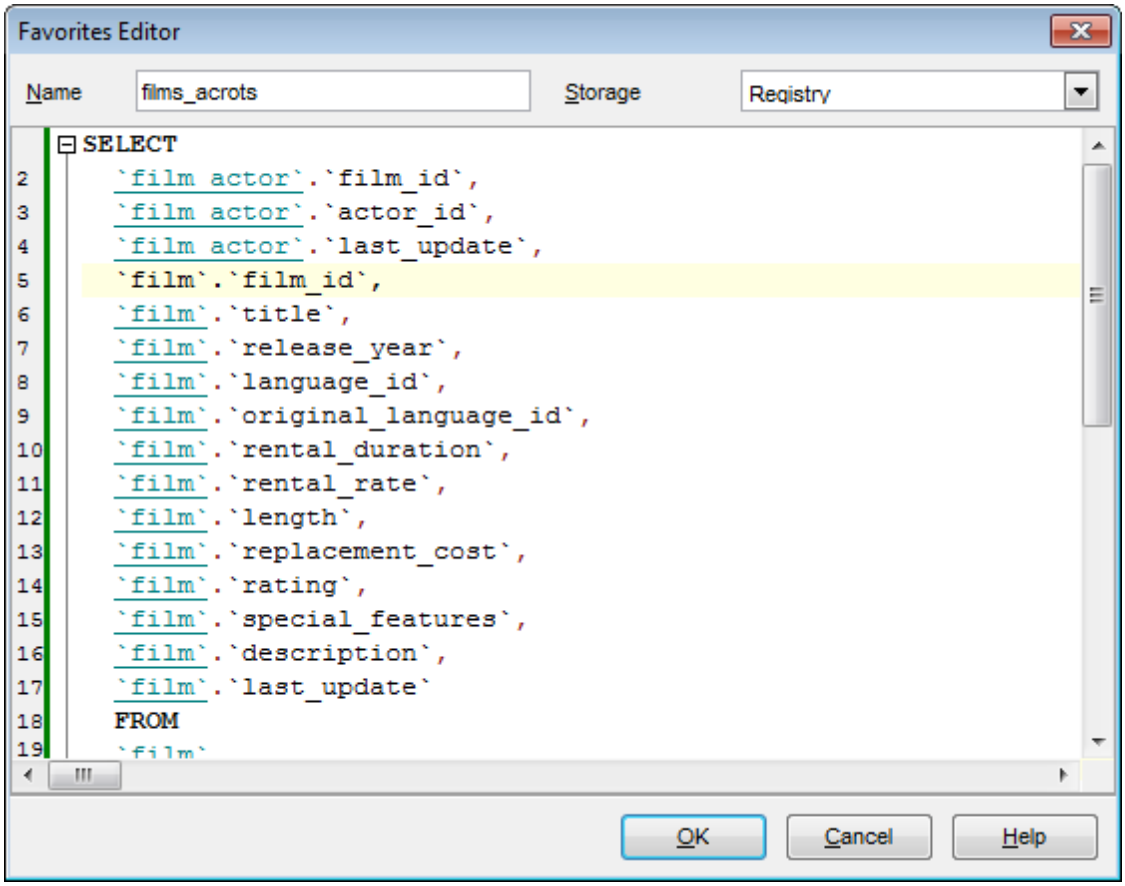
Using the context menu

6.1.8 Favorites editor

For your convenience the **Favorite Queries** list is implemented in **SQL Manager for MySQL**. This list is available within the **Favorite Queries** node of Database Explorer and allows you to store the most frequently used SQL queries in one location.

To add a query to the **Favorite Queries** list, use the **Add to Favorite Queries** Navigation bar item in **SQL Editor**. The corresponding item is also available in the context menu of SQL Editor working area.

You can edit any of your Favorite Queries using **Favorites editor**.



Name
Set the name of the Favorite query.

Storage
Specify where the Favorite query will be stored: in *Windows Registry* or in the *Database*.

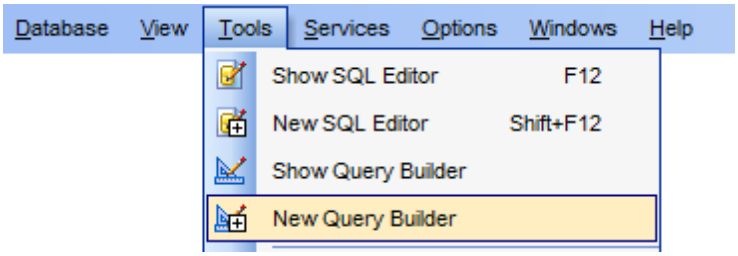
Note: If you store Favorite queries in the Windows Registry then they can be lost after the Windows reinstall. To avoid this problem save the registry branch or store Favorite queries in a database.

See also:
Managing Favorite queries
Working with SQL Editor area

6.2 Visual Query Builder

Visual Query Builder is implemented in **SQL Manager for MySQL** for building queries visually. The tool allows you to create and edit queries without deep knowledge of SQL. You can also prepare and execute queries, and view the results of their execution.

To open Visual Query Builder, select the **Tools | New Query Builder** / **Tools | Show Query Builder** main menu items or use the corresponding / toolbar buttons.



- Using Navigation bar and Toolbar
- Working with diagram area
- Joining two database objects by columns
- Setting the selection criteria
- Setting output columns for selection
- Setting the grouping criteria
- Setting parameters of sorting
- Working with editor area
- Executing queries and viewing results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

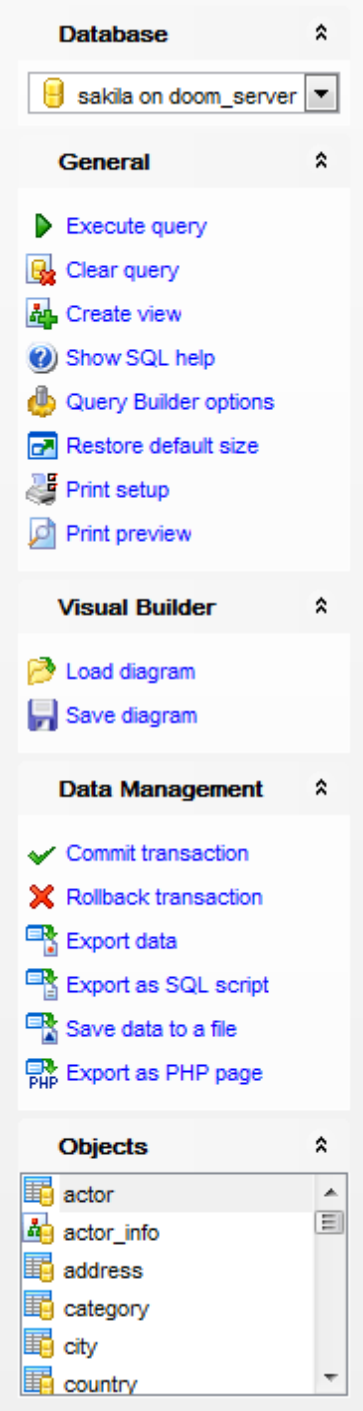
See also:

SQL Editor

Query parameters

6.2.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Query Builder**.



The **Navigation bar** of **Query Builder** allows you to:

Database group
select a database for the query

General group
execute the current query
clear the query
create a view
view MySQL reference
configure Query Builder using the Query Builder Options page of the Environment Options dialog
restore the default size and position of the builder window
set printing options using the **Print Setup** dialog
preview the diagram

Objects group
browse objects of the database; you can also add tables and views to the diagram using drag-and-drop operations

Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with queries:

Visual Builder group
load a diagram from a **.vqb* file using the **Open diagram** dialog
save the diagram to a **.vqb* file using the **Save diagram as...** dialog

Edit group
load a query from an **.sql* file using the **Open SQL File** dialog
save the query to an **.sql* file

Data Management group
commit transaction
rollback transaction
export the returned dataset using Export Data Wizard
export the returned dataset as SQL Script using the Export as SQL Script wizard
save data to a file
export data as PHP page

Items of the **Navigation bar** are also available on the **ToolBar** of **Query Builder**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

See also:

Working with diagram area
Query execution

6.2.2 Working with diagram area

The main working area of **Visual Query Builder** is the diagram area available within the **Builder** tab. Here you can create a query by placing the database tables and views onto the area, and edit it by selecting the required data columns and setting links between objects.

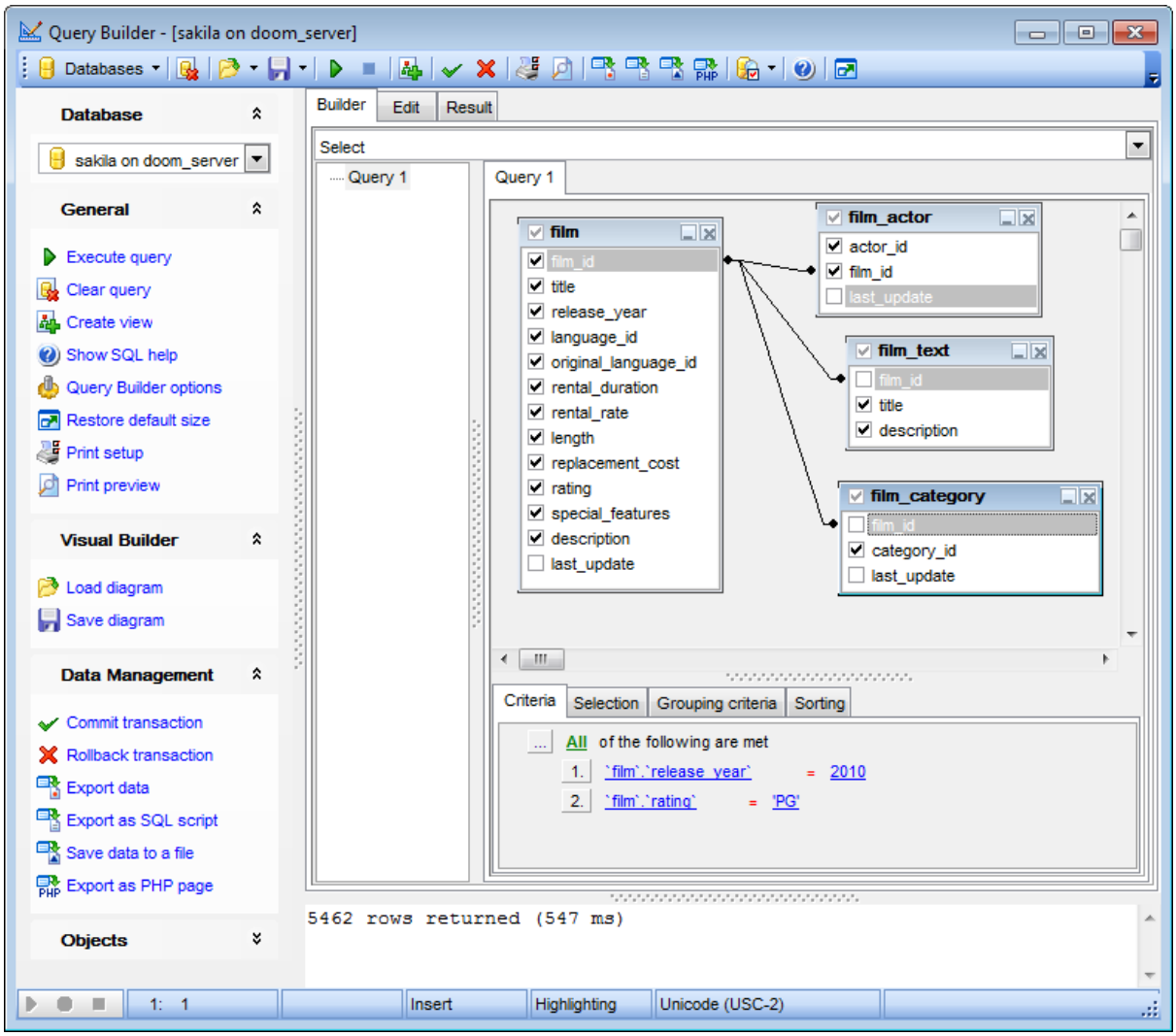
To add an object to the query, you can simply drag it from the DB Explorer tree to the diagram area.

To include a column in the query, check the corresponding box located to the left from the column name in the list, or just double-click it. To include all columns of the table/view, check the box located to the left of the table/view caption. If you do not check any columns, the SQL statement is generated as *SELECT * FROM <table/view_name>*, i.e. all the columns are included in the query.

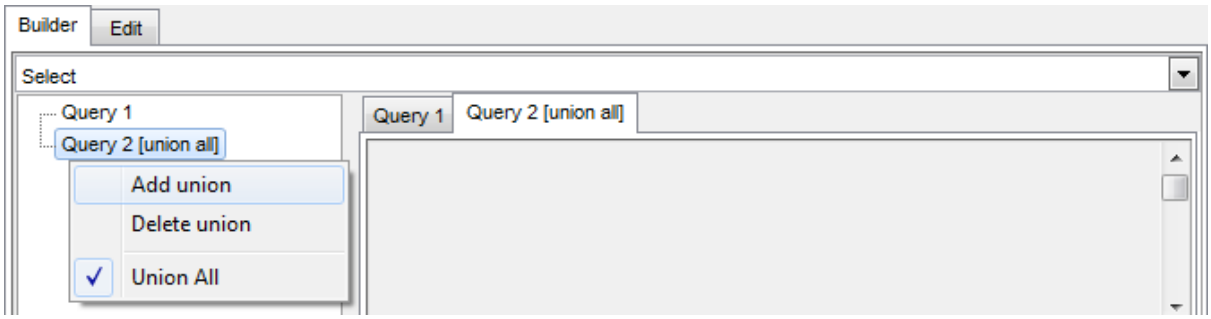
To *collapse/expand* the list of table/view columns, click the minimize/maximize button at the object caption.

To exclude a column from the query, uncheck the respective box. In order to remove the entire table/view from the query, close it by clicking the corresponding cross-button at the object caption, or right-click the object and select **Delete** from the context menu. You can also select the object and press the **Del** key.

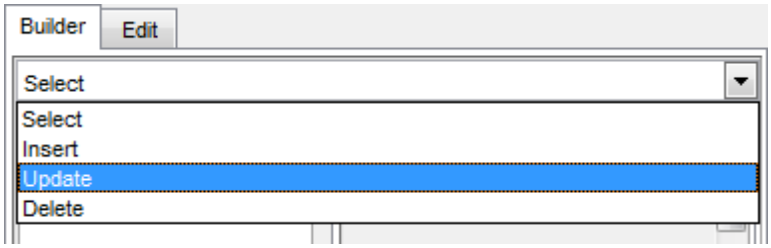
To edit the alias of a table/view, double-click the object caption and enter the new name, or right-click the object and select **Rename** from the context menu.



Visual Query Builder allows you to create complex queries consisting of two or more queries combined in one with the *UNION* operator, or add nested queries. The panel to the left of the diagram area displays the **tree of subqueries**.
To add a query, right-click within the **tree of subqueries** area and select **Add union** from the context menu. A tab for the new query will appear in the diagram area.
To remove a query from the tree, right-click the query and select **Delete union** from the context menu.
To add the *UNION ALL* operator to the query, right-click the newly added query and select the corresponding context menu item.



Note: Depending on which query type you need to execute, you can select one from the drop-down list above the tree of subqueries: *Select*, *Insert*, *Update*, or *Delete*.



See also:

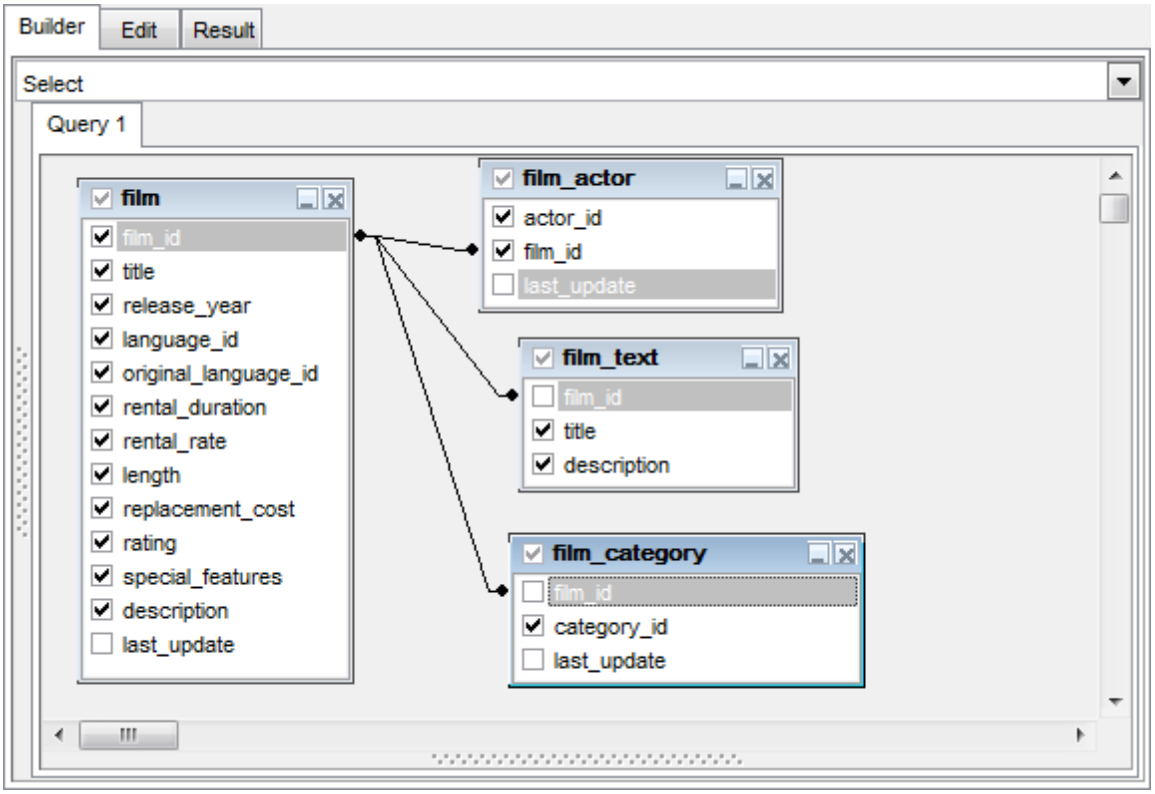
Joining two objects

Working with the editor area

Query execution

6.2.3 Joining two objects

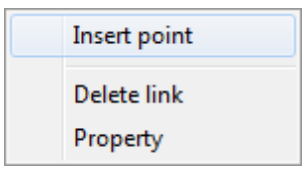
The **diagram area** allows you to associate two objects by their columns: this operation is performed by dragging a column from one object list to another. This will set a link between these objects by the selected columns. It is indicated by a bidirectional arrow between the linked columns.



You can *view the link properties* of objects association: set the mouse cursor over the linking arrow, and a hint containing the association condition will popup after a short delay.

To remove a link between objects, right-click the linking arrow and select the **Delete link** popup menu item.

To add a point to the link line, right-click the linking arrow and select the **Insert point** popup menu item. Using the point you can move the link line easily. The point does not cause any changes to the query, it is only used for the diagram representation and makes visual building handy and more comprehensible.



See also:

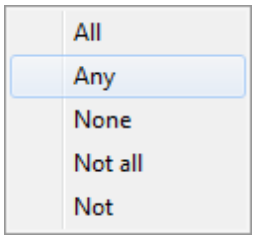
Working with diagram area

Setting criteria

6.2.4 Setting criteria

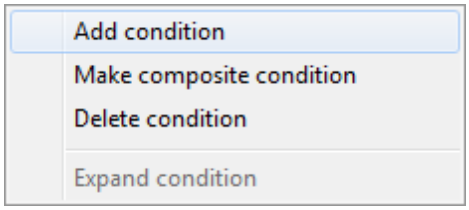
Use the **Criteria** tab to set the selection conditions.

The way the conditions are used is set in the upper string of the area (*All*, *Any*, *None* or *Not all of the following are met*). Click the green link to change it.



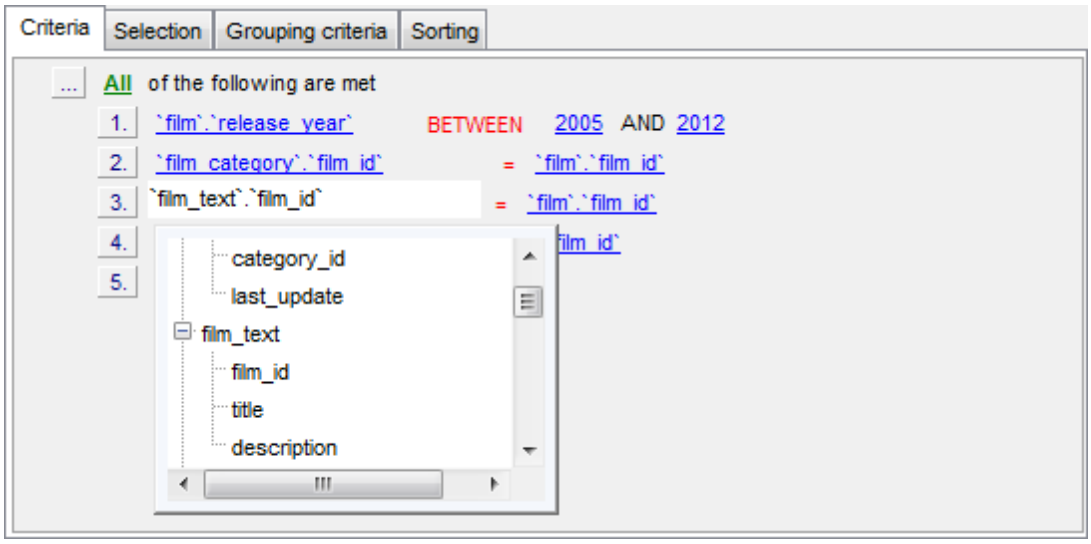
To add a condition, click the ellipsis button on the left, and select the **Add condition** popup menu item.

Edit the condition by clicking the elements of the condition pattern and setting the necessary values. Clicking the numbered button to the left of the condition string activates the popup menu which allows you to *add a new condition* at the same enclosure level, *make composite condition* by adding a new enclosure level, *delete the current condition*, *expand* or *collapse* enclosure levels of the condition (if the condition is composite).

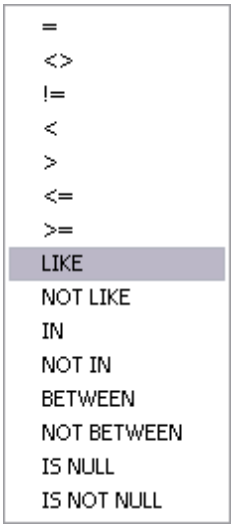


A simple condition pattern contains three elements: *an argument*, *a condition operator* and *a second argument* (if required for the condition).

Clicking each element column allows you to set its value. You can add a column by drag-and-dropping it from the working area to Criteria, Selection, Grouping criteria or Sorting tabs. When clicking an argument column, you can edit the argument as a text string: set an object name or a certain value in this column. Right-clicking the column in the edit mode activates the popup menu with the **Insert column** (also called by the *Shift+Enter* shortcut; this item allows you to select a column from the list of all the table columns) and **Insert query** (this item adds a nested query) items.



Clicking the condition operator column activates the popup menu from which you can select the operator you need.



See also:

Setting output fields

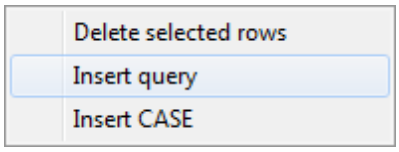
Setting grouping criteria

Setting sorting parameters

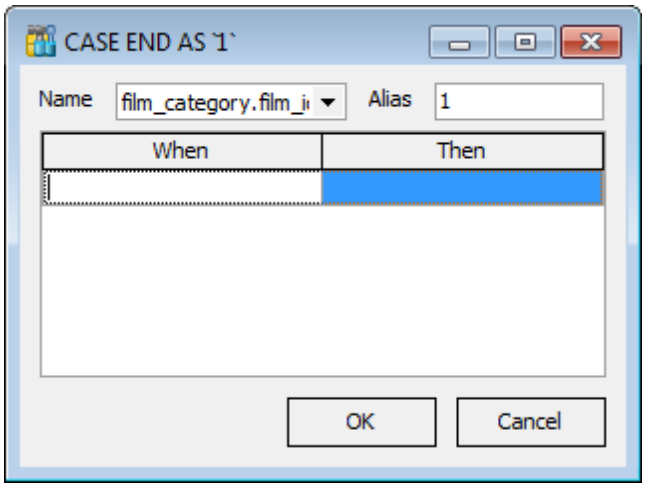
6.2.5 Setting output fields

The **Selection** tab displays the output columns of the query as a grid.

The grid allows you to edit the names of the query output columns, specify their display order and set the aggregate functions for each column. To remove a column from the list, right-click the column row and select the **Delete current row** popup menu item.

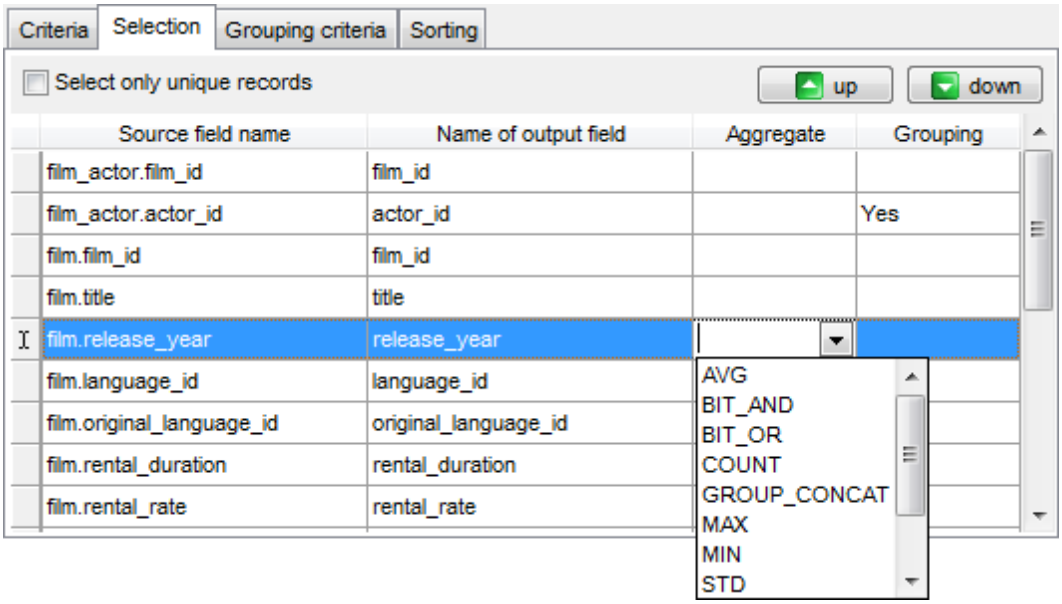


The popup menu also allows you to *insert a nested query* and add a *CASE* clause. To edit the CASE clause, use the **CASE END AS** dialog.



To change the *input query* column, click it and then type the column name or select it from the drop-down list.
To change the *output query field* name, set the cursor at the corresponding column and type the required field name.

To reorder fields in the list, use the buttons.



To set an aggregate function for a field, click the field row within the **Aggregate** column, and then type in the function name or select one from the drop-down list (*SUM*, *MIN*, *MAX* , *AVG*, or *COUNT*).

The **Grouping** column displays the grouping state for each of the output fields.

☑ **Select only unique records**
If you check this option, the duplicate records (if any) are not included into the query result (i.e. the *DISTINCT* keyword is added to the SQL query text).

See also:

Setting criteria

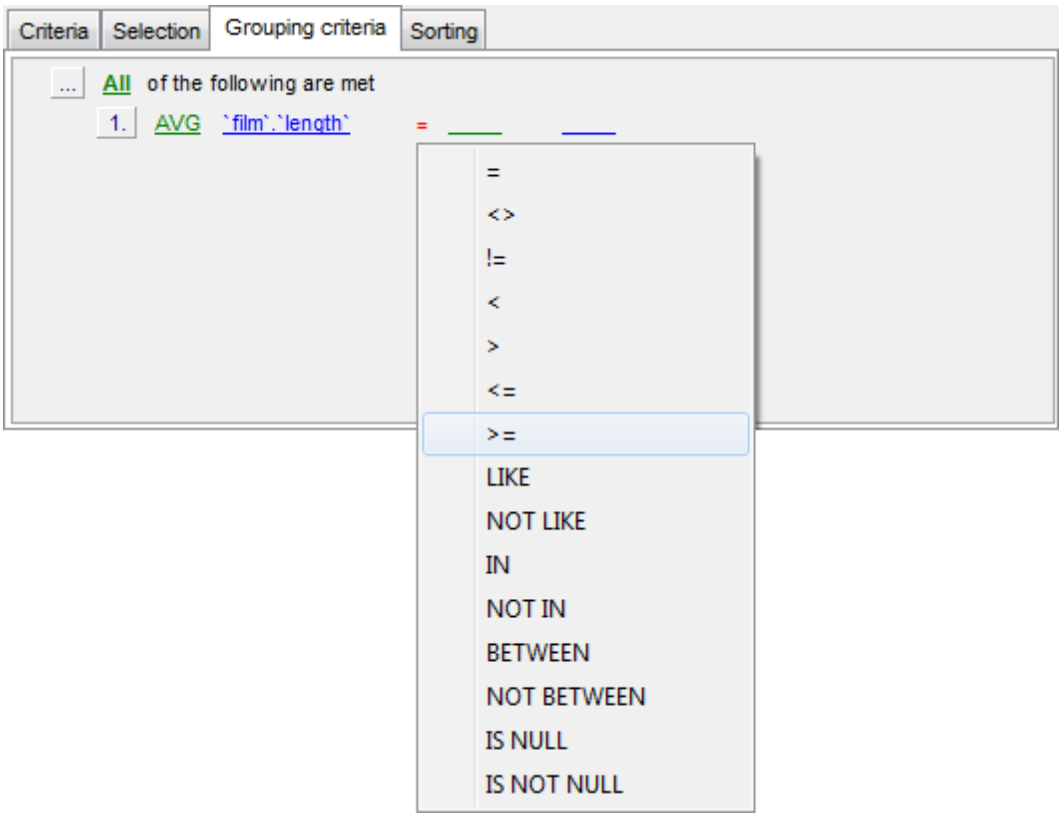
Setting grouping criteria

Setting sorting parameters

6.2.6 Setting grouping criteria

The **Grouping criteria** tab allows you to set conditions for grouping query records.

The grouping condition pattern columns are set in the same way as those of the Criteria pattern.



These conditions will be included in the *HAVING* statement of the generated SQL query.

See also:

Setting criteria

Setting output columns

Setting sorting parameters

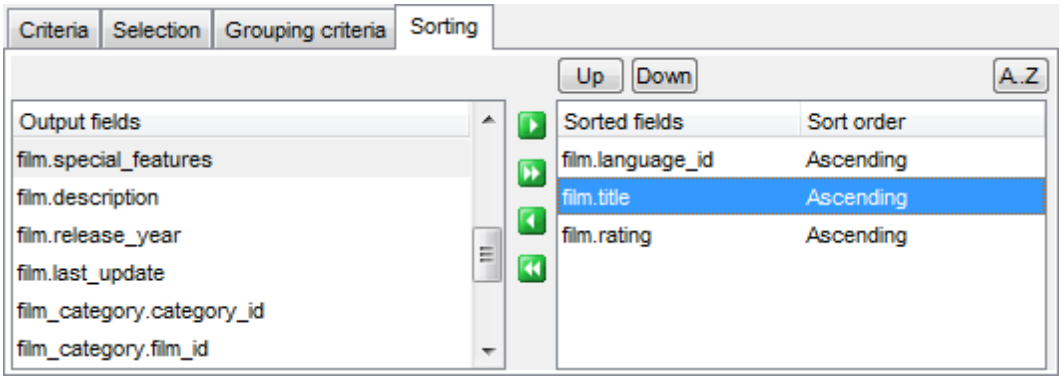
6.2.7 Setting sorting parameters

The **Sorting** tab allows you to set sorting parameters for the records returned by the query.

The working area contains the **Output columns** list (at the left) which represents all columns of the objects used in the query, and the **Sorted columns** list (at the right) which contains the columns to sort records by.
To move a column from one list to another, drag the selected column or use the **Add** and **Remove** buttons:  .

To change the sorting order for a sorted column, select the column in the **Sorted column s** list and move it using the **Up** and **Down** buttons.

To change the sorting direction, select the column in the **Sorted Columns** list and switch the direction (*Ascending*, *Descending*) using the corresponding **A..Z**/**Z..A** button.



See also:

Setting criteria

Setting output columns

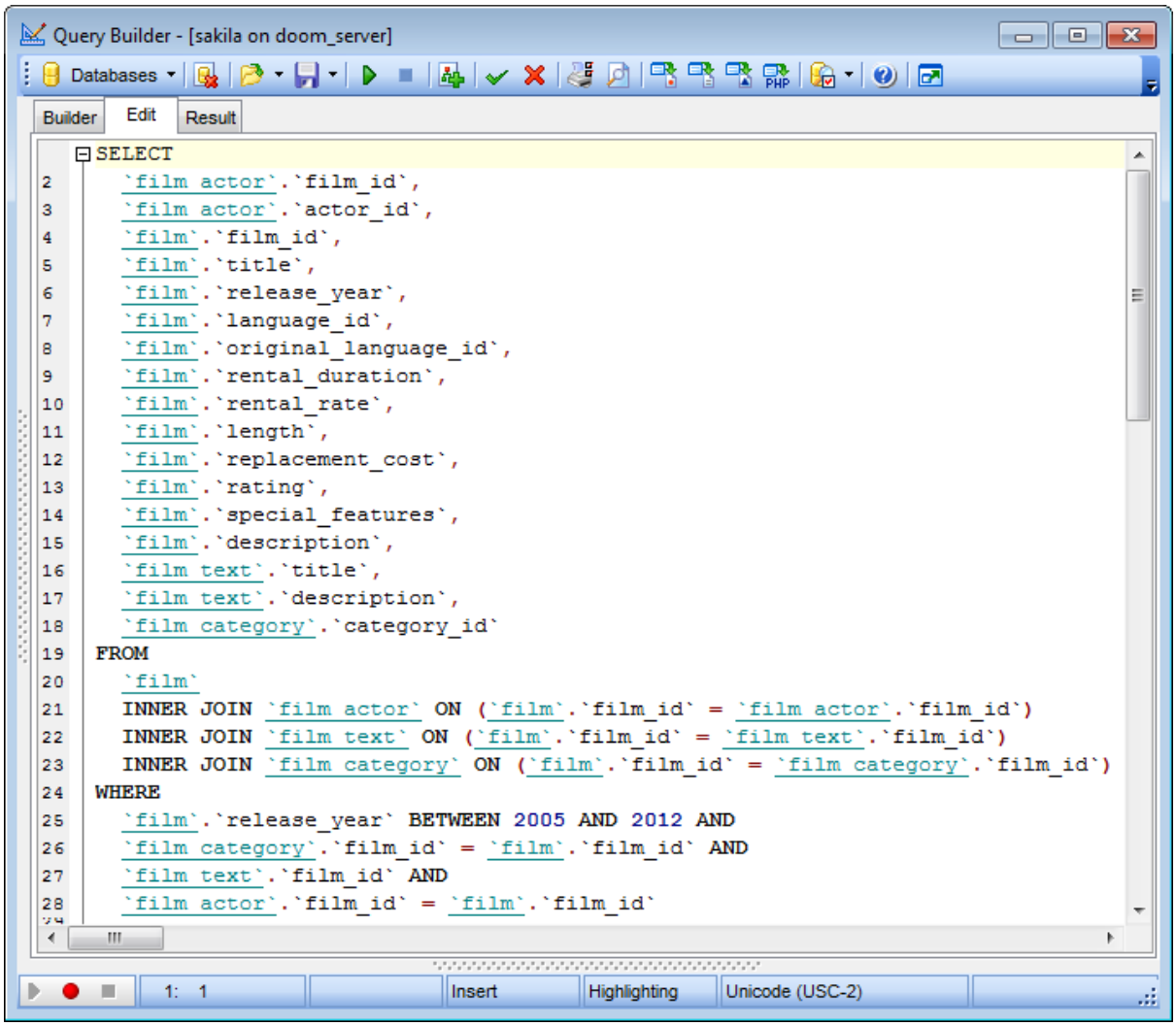
Setting grouping criteria

6.2.8 Working with the editor area

The **Editor area** of **Visual Query Builder** is available within the **Edit** tab and is provided for working directly with the SQL query text which is generated automatically while you build the query visually.

You can edit this text according to the rules of SQL, and all the changes will be displayed within the **Builder** tab respectively.

To learn more about the SQL Editor features available within the **Edit** tab, see Working with SQL Editor area.



See also:

Working with diagram area

Query execution

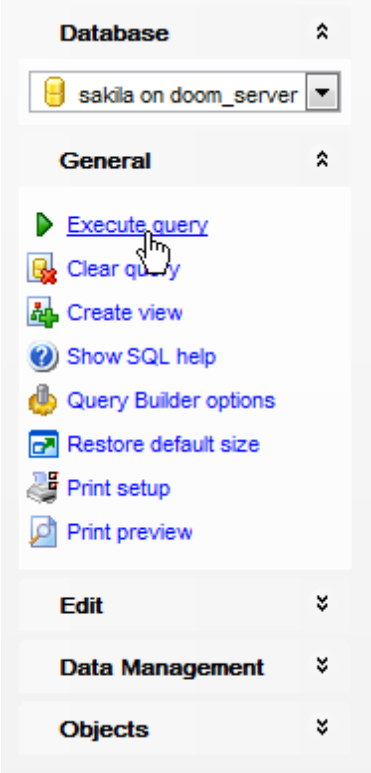
SQL Editor

6.2.9 Query execution

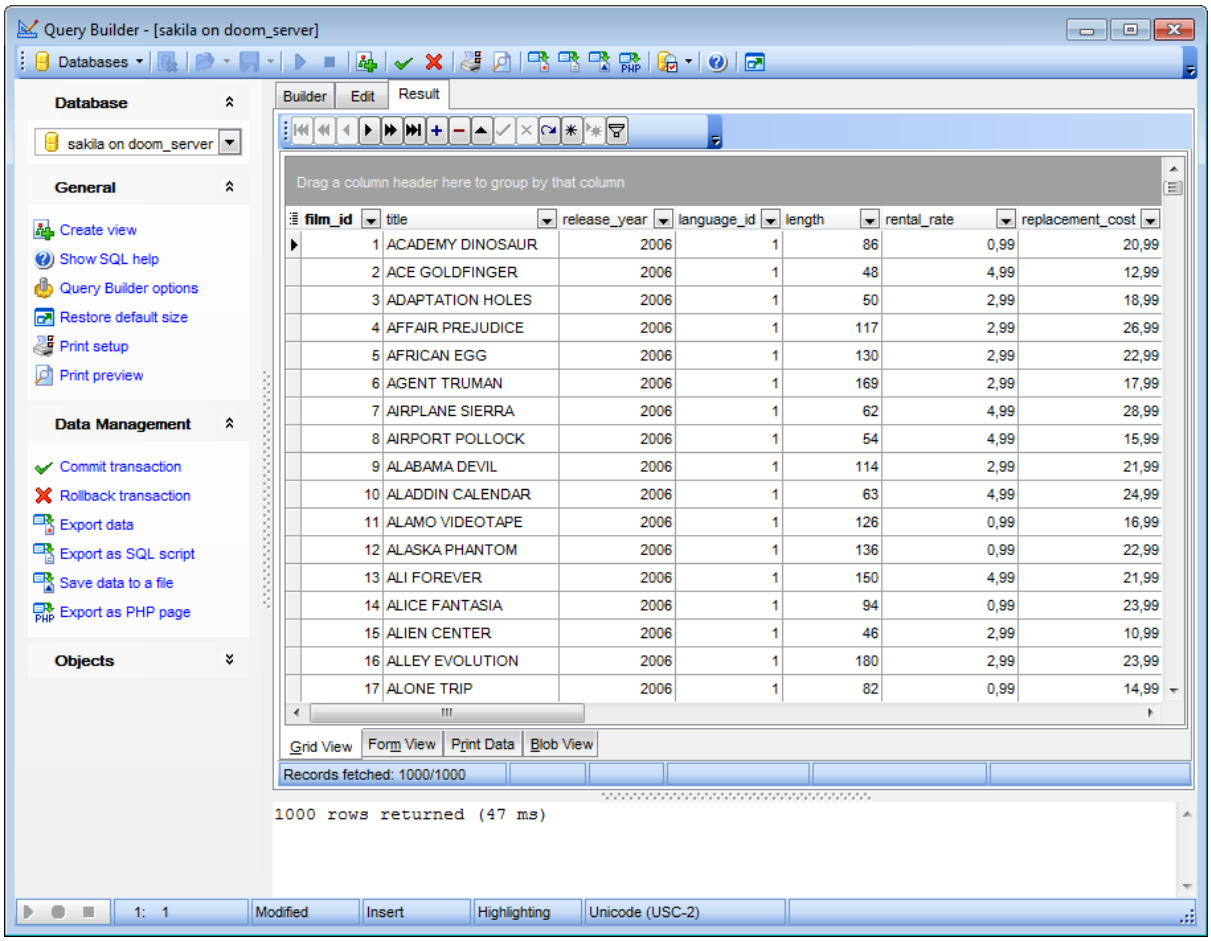
When all the query parameters are set, you can immediately **execute the query** in **Visual Query Builder**.

To execute a query, click the **Execute query** item of the Navigation bar. You can also use the *F9* hot key for the same purpose.

If the query parameters are specified correctly, the query is executed and, in case the query statement is supposed to return data (e.g. as *SELECT* statement), the returned dataset appears within the **Result** tab.
If SQL syntax of the query contains any errors, the query execution is stopped and the corresponding error message is displayed in the status bar area at the bottom of the Query Builder window.



By default, data returned by a query are displayed as a grid (see Data View for details). The context menu of the grid allows you to Export Data, Export as SQL Script.



See also:

[Working with diagram area]

[Working with the editor area]

[Data View]

6.3 Query parameters

Both SQL Editor and Visual Query Builder support parameters usage inside the query text. A parameter is a kind of variable for which a value can be specified just before the query execution. In the query text the parameter should appear as an identifier with a colon (':') at the beginning, e.g.

```
SELECT * FROM MYTABLE WHERE ID = :param1;
```

Note: The **Allow using of parameters in query text** option should be checked on the Tools page of the Environment Options dialog for this feature to be enabled.

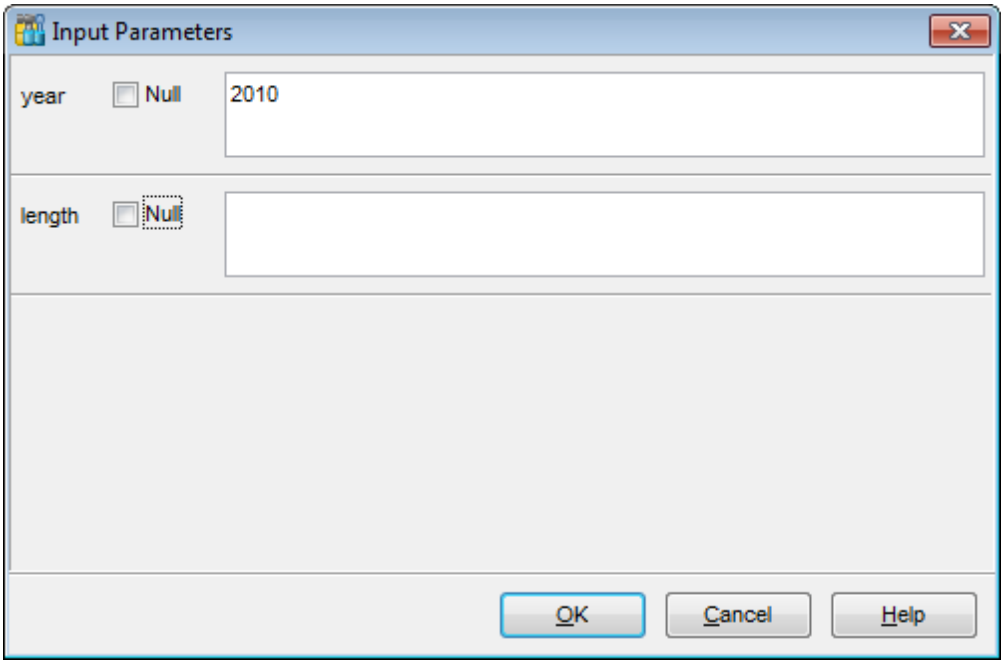
See also:

SQL Editor

Visual Query Builder

6.3.1 Input parameters dialog

The **Input Parameters** dialog is used to specify the query parameters as well as values of the input parameters of the query before execution.



Click **OK** button to apply the values and execute the query or click **Cancel** button to abort execution.

Part VII

7 Data Management

Table data and query results are displayed on the **Data** or **Results** tab of Table Editor, SQL Editor, Visual Query Builder, etc.

Data can be displayed in one of the following modes: **Grid View**, **Form View**, **Print Data**, **BLOB View**. See Data View to learn more about these modes. You are also provided with a number of filtering tools when working with your data.

- Data View
- Custom Filter
- Filter Builder dialog

See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools
How To...

7.1 Data View

SQL Manager for MySQL provides you with powerful tools for **viewing, editing and printing data** from tables and queries:

- table / view data are available within the **Data** tab of Table Editor / View Editor correspondingly;
- upon a query execution the returned dataset appears within the **Result(s)** tab of SQL Editor / Query Builder (in SQL Editor the position of the tab depends on the **Results on Edit tab / Results on separate tab** selection in the Navigation bar).

The data can be displayed in one of four available **modes**: *Grid View*, *Form View*, *Print Data* and *BLOB View*. The **status bar** at the bottom displays the number of records in the current dataset, the time the records were fetched by the application and the status of the records (whether the data are read-only or editable).

Please see the succeeding chapters to learn how to work with your data in the simplest and most efficient way.

- Using Navigation bar and Toolbars
- Grid View
- Form View
- Print Data
- BLOB View
- Applying changes

See also:

Custom Filter

Filter Builder dialog

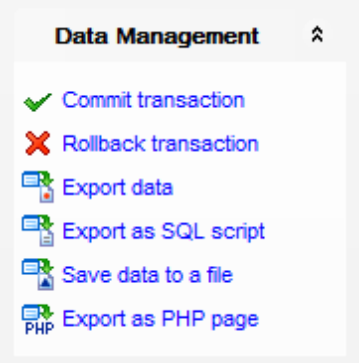
Table Editor

View Editor

7.1.1 Using Navigation bar and Toolbars

When the **Data** tab (in Table Editor, View Editor) or the **Result(s)** tab (in SQL Editor, Query Builder) is selected, the Navigation bars of these tools contain the **Data Management** group which allows you to:

- commit transaction
- rollback transaction
- export data
- export data as SQL script
- import data (in *Table Editor*, *View Editor* only)
- load data (in *Table Editor* only)
- save data to a file on the server



Items of the **Navigation bar** are also available on the **ToolBar**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

The **Navigation pane** contains toolbars allowing you to:

- go to the first record of the dataset;
- go to the previous page;
- go to the previous record;
- go to the next record;
- go to the next page;
- go to the last record of the dataset;
- insert a new record (in *Table Editor* only);
- delete the selected record (in *Table Editor* only);
- edit the selected record (in *Table Editor* only);
- post edit (in *Table Editor* only);
- cancel edit (in *Table Editor* only);
- refresh data;
- set bookmark;
- go to saved bookmark;
- call the Filter Builder dialog;
- search for a string in the currently selected column data;
- specify the maximum number of records (record limit) for displaying data (in *Table Editor*, *View Editor* only);
- navigate within the dataset using the specified record limit (in *Table Editor*, *View*

Editor only).

The **Toolbar** of the Print Data mode allows you to:

- customize the report using Report Formatter and the Report Options dialog;
- load a report from an external **.rps* file;
- save the current report to an external **.rps* file;
- print the report using the default printer;
- set printing options using the standard Print dialog;
- call the Page Setup dialog;
- show/hide report thumbnails;
- customize the Report Title;
- add Date and Time, Page Numbering, show/hide empty pages;
- shrink the report to the page;
- specify background color;
- zoom in/out, setup zoom, zoom page width, whole page, two/four/multiple pages;
- select the active page of the report;
- go to first/previous/next/last page of the report.

The **Toolbar** of the BLOB View mode allows you to:

- select a BLOB column;
- select encoding (*ANSI*, *UTF-8*, *UNICODE-16*);
- load BLOB content from an external file;
- save the BLOB column content to an external file;
- cut/copy/paste selected text to/from clipboard (enabled for the *Text* and *Rich Text* tabs only);
- undo changes;
- print the text (enabled for the *Text*, *Rich Text* and *HTML* tabs only);
- select font to be applied to the selected text (enabled for the *Rich Text* tab only);
- select font size to be applied to the selected text (enabled for the *Rich Text* tab only);
- make the selected text bold/italic/underlined (enabled for the *Rich Text* tab only);
- align left/center/right (enabled for the *Rich Text* tab only);
- add/remove list bullets (enabled for the *Rich Text* tab only).

See also:

Grid View
Form View
Print Data
BLOB View
Applying changes

Customize toolbars and menus

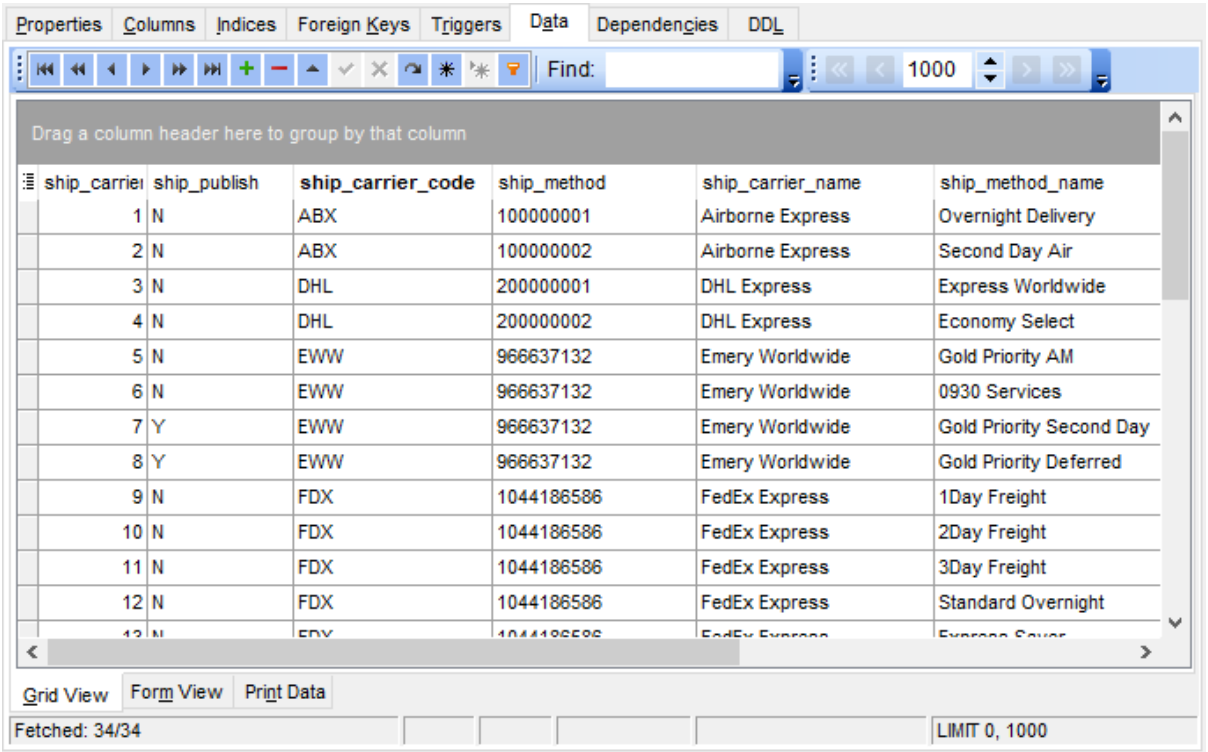
7.1.2 Grid View

By default, data returned by a query are displayed as a grid. It is indicated by the **Grid View** tab selected on the View mode panel at the bottom of the **Results** area of the window.

When in the **Grid View** mode, the columns correspond to the columns and the rows correspond to the records.
If more convenient, you can change the order of the columns by dragging their headers horizontally. Clicking the column caption sorts data by the values of this column in the ascending or the descending mode. The navigation pane at the top of the grid allows you to browse the data quickly, to insert, update and delete records, and to set a filter for the records using the Filter Builder dialog and other tools.

The Navigation bar of the parent window, toolbars and the context menu of the grid provide you with a number of data management functions: Export Data, Import Data, Export as SQL Script and more.

- Customizing columns
- Grouping data within the grid
- Filtering records
- Using the context menu
- Working in multi-level mode
- Browsing data in card view
- Column Summary
- Copying records



Hint: To increase the speed of opening tables and views with extremely large number of

records, you can use options of the **Limit options in table and view editors** group available in the Grid | Data Options section of the Environment Options dialog.

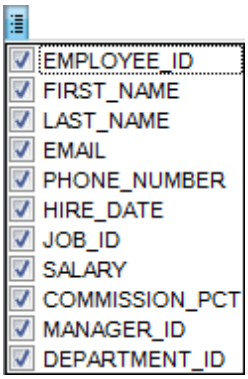
See also:

Using Navigation bar and Toolbars
Form View
Print Data
BLOB View
Applying changes

7.1.2.1 Customizing columns

Selecting visible columns

When working in the **Grid View** mode, you can specify which columns of the current dataset will be visible. Click the  button available in the top left corner of the data grid and select/deselect columns in the drop-down list to specify their visibility/invisibility.



Changing columns order

For your convenience the possibility to *change the order* of the columns in the data grid is available. To reorder columns, drag a column header horizontally to a place in between two other column headers indicated with green arrows.

See also:

Grouping data
Filtering records
Working in multi-level mode
Working in card view mode
Column Summary

7.1.2.2 Grouping and sorting data

In order to **sort data**, do the following:
open data at the **Data** or **Results** tab, choose the column by which you need to sort data and click the column title.
If the column was not sorted, the first click will sort it in the ascending order and the second one - in the descending order.

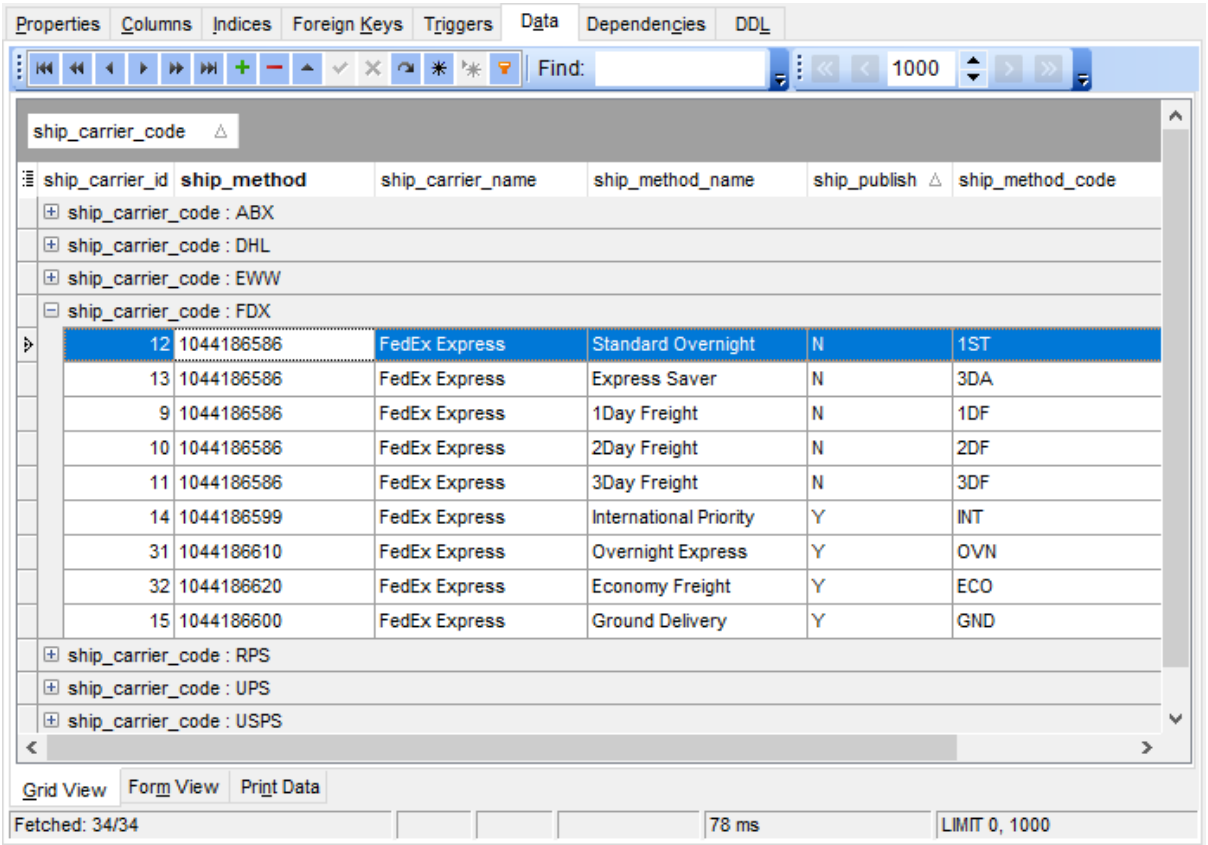
Clear Sorting
To cancel the sorting, open the context menu by right-clicking the necessary column and choose the **Clear Sorting** item, or press the *Ctrl* button and click the column title.

If necessary, you can **group the data in grid** by any of the columns.

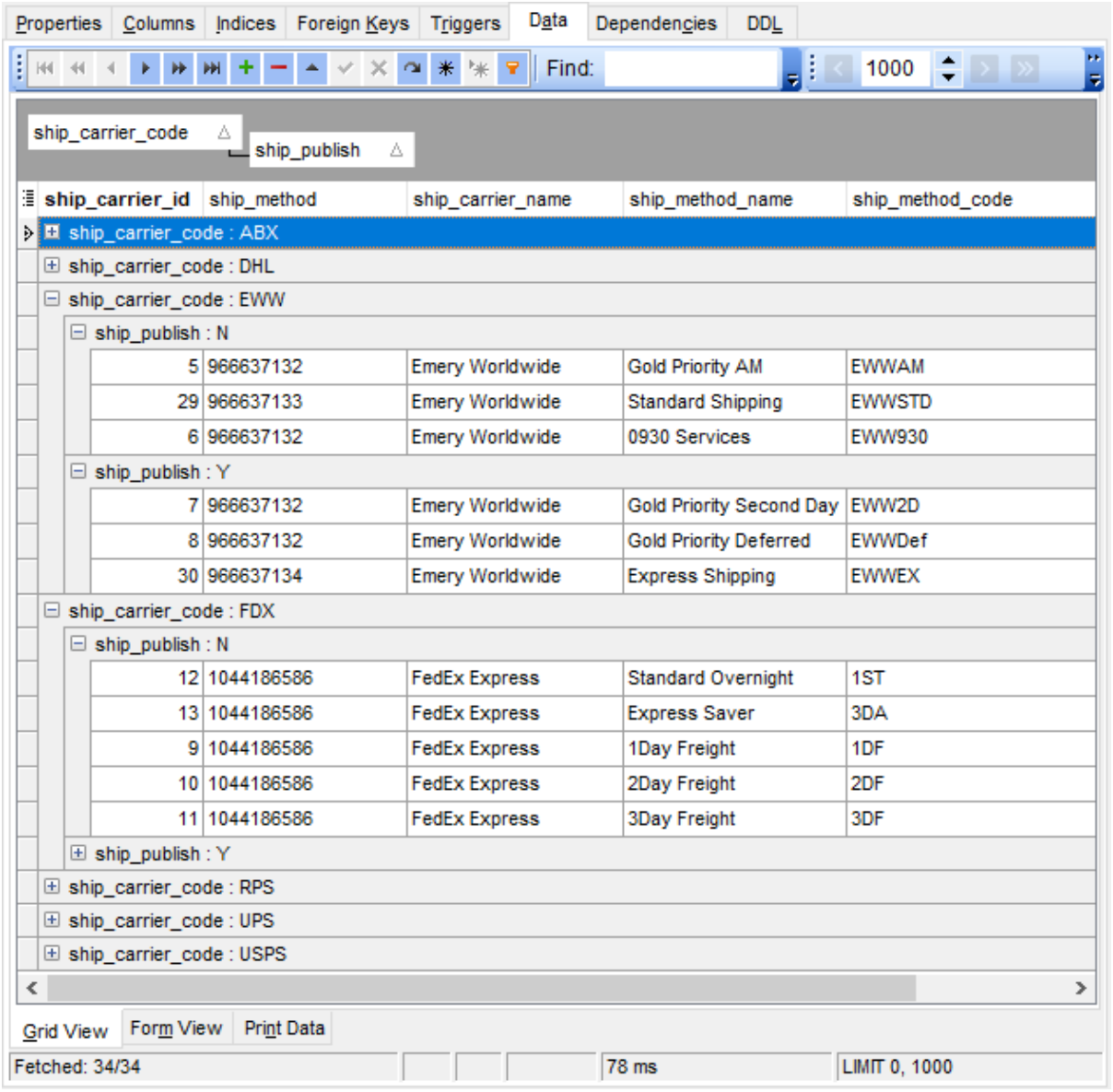
This operation is performed by dragging the column header to the gray **"Group by" box** area at the top. In order to display this area, select the ☑ **Show "Group by" box** option available in the Grid section of the Environment Options dialog.

When grouping by a column is applied to the grid, all the records are displayed as subnodes to the grouping row value as displayed in the screenshot below. The grouping row can contain the column summary information specified in the **Group header** group of the Column Summary dialog.

To reverse grouping, just drag the column header back.
Hint: While dragging the column header back, you can also change the column position.



If necessary, you can group data by two or more columns. In this case column headers are displayed hierarchically, and data are grouped by these columns in the order the column headers appear in the **"Group by"** area.



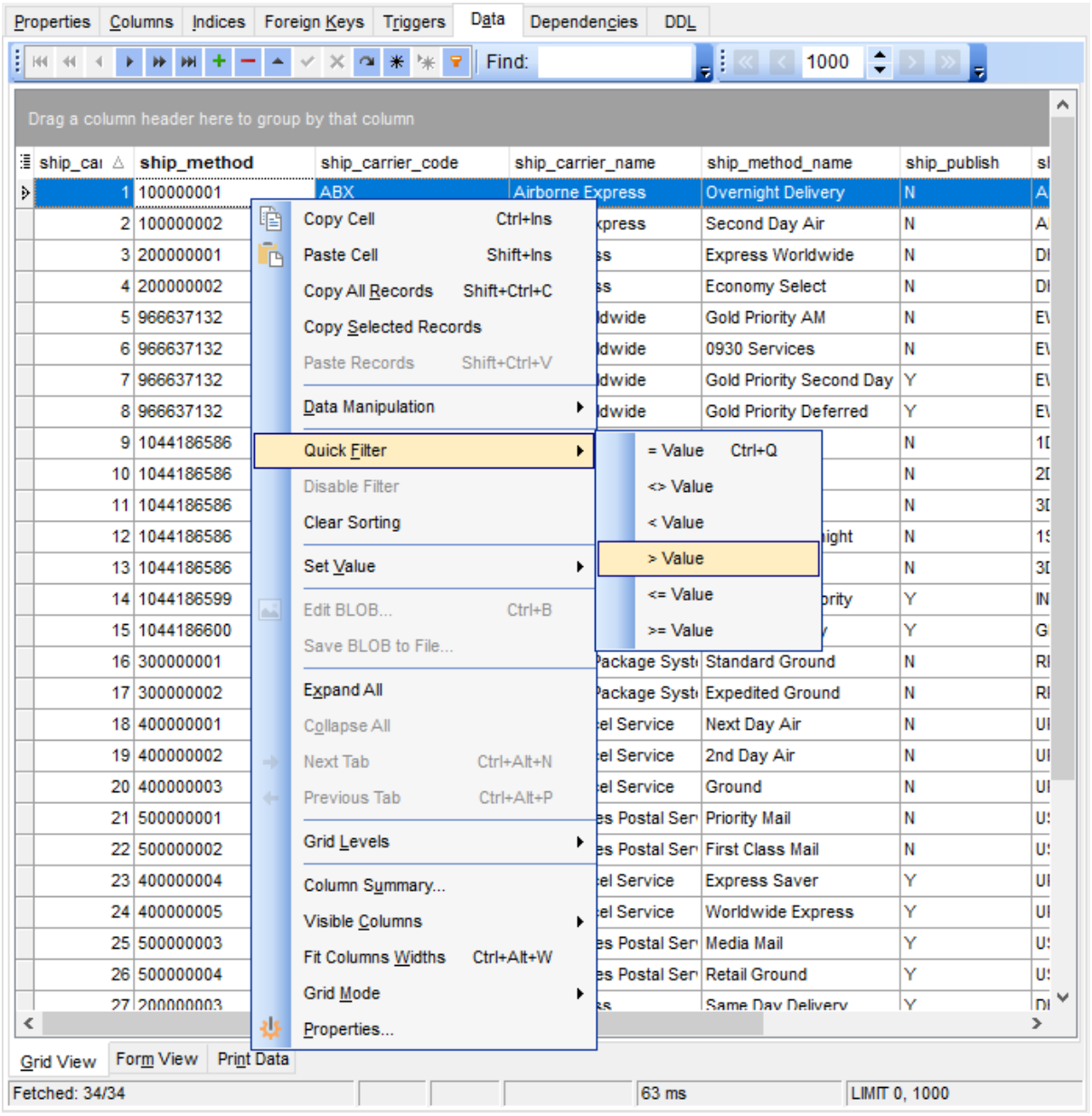
See also:

[Customizing columns](#)
[Filtering records](#)
[Working in multi-level mode](#)
[Working in card view mode](#)
[Column Summary](#)

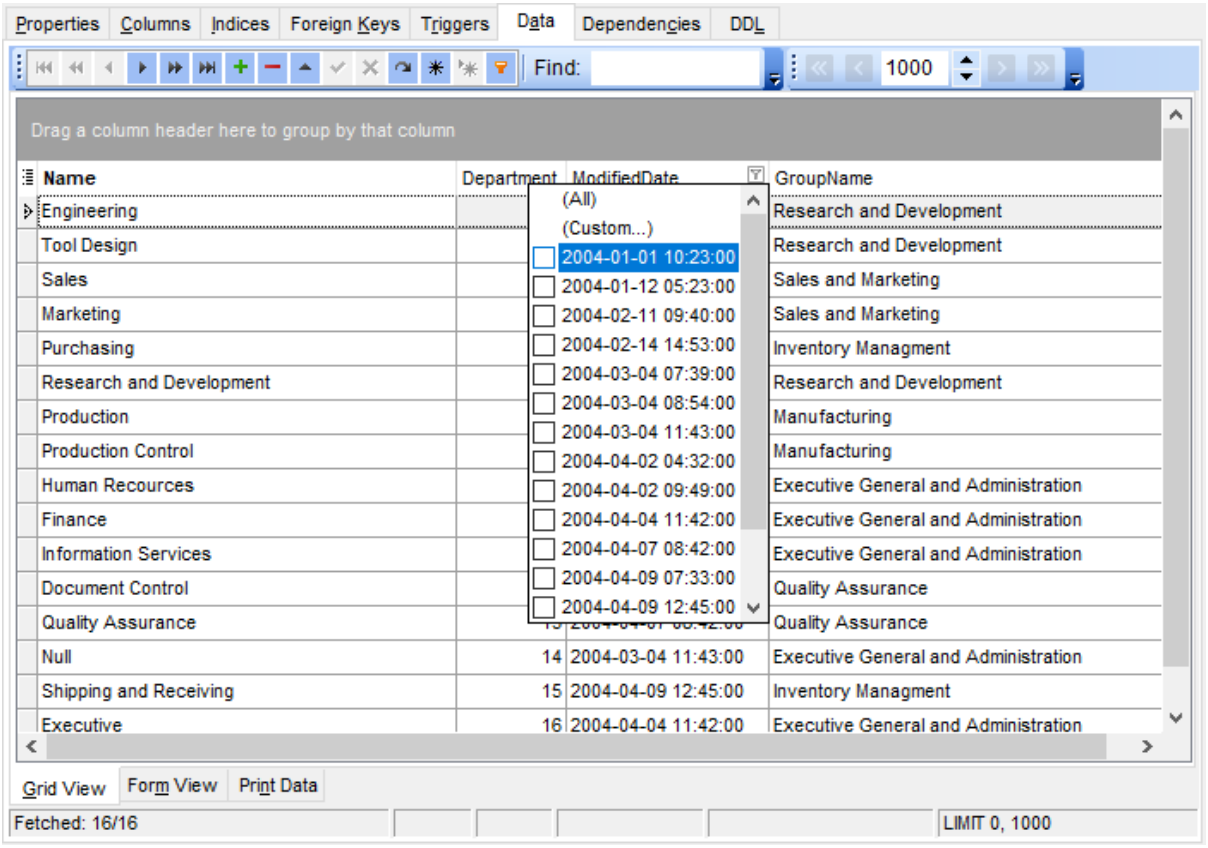
7.1.2.3 Filtering records

A number of **filtering** facilities are implemented in the grid for your convenience. You can filter records in the grid in either of the following ways:

- right-click a row and select the **Quick Filter** context menu item to filter records by the current value of the selected column;



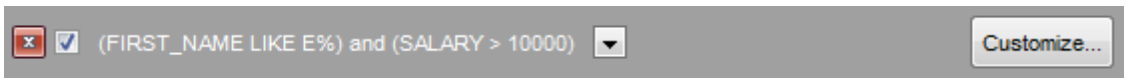
- click the Arrow-Down button next to the column caption to display the drop-down list and select any of the column values to filter records by this value of the selected column;



or

- click the Arrow-Down button next to the column caption to display the drop-down list, then select the **Custom** item and build a simple filter using the Custom Filter dialog;
- use the **Set filter** button on the navigation pane to invoke the Filter Builder dialog and create a composite filter using the dialog.

After the filter is set, the gray **filtering panel** becomes visible at the bottom of the grid. This panel allows you to see the active filtering condition and easily enable or disable it using the checkbox on the left. The Arrow-down button opens the drop-down menu which allows you to browse the filter history for this dataset.
If necessary, you can click the **Customize...** button on the right to customize your filter and add more complicated filtering conditions within the Filter Builder dialog.



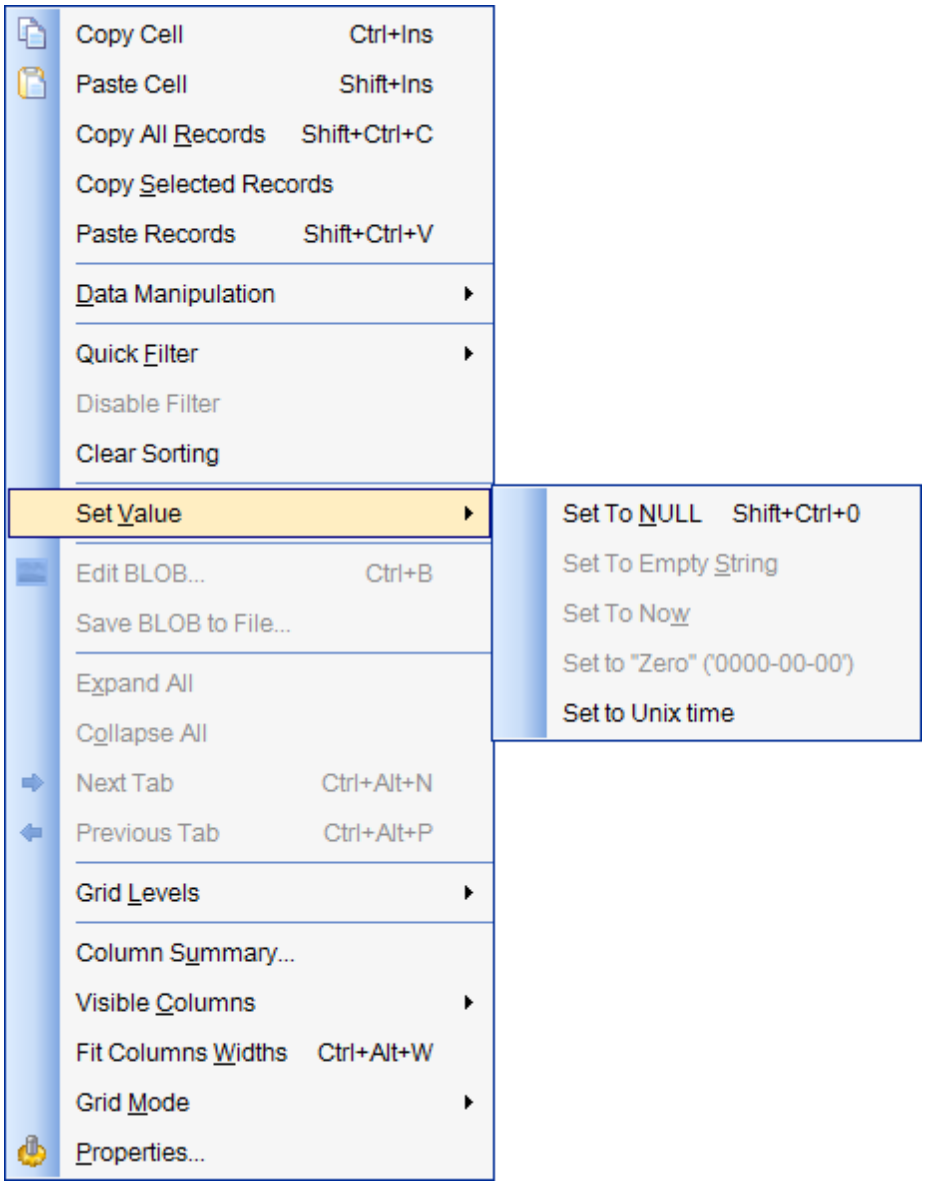
To remove the current filter, click the **Close** button.

See also:
Customizing columns
Grouping data

7.1.2.4 Using the context menu

The **context menu** of the grid is aimed at facilitating your work with data: you can perform a variety of operations using the context menu items:

- copy the selected cell value to Windows clipboard;
- paste the clipboard content to the currently selected cell;
- copy/paste multiple records;
- data manipulation: Export Data from the table, Import Data to the table, Export Data as SQL Script, Save Data to a file, Load Data, Export as PHP page;
- set/disable Quick Filter;
- clear sorting;
- set a value for the selected cell: *NULL*, *Empty string* (for string fields), *Now* (for TIME fields), *"Zero"* (for DATE fields), *Set to Unix time* - defines date value for a cell using unix_timestamp function (Value can be defined manually or picked up from calendar dialog).
- edit the BLOB value or save the BLOB to file using BLOB viewer/editor;
- expand/collapse grid levels and navigate within the tabs;
- manage grid levels: add a new grid level, delete the current grid level (this item is enabled only when the detail level exists and is currently focused);
- switch to the Card View mode;
- view Column Summary;
- select visible/invisible columns of the dataset;
- fit column width for better representation;
- specify the grid mode: *Load All Rows*, *Load Visible Rows*, *Default*;
- view/edit grid properties.



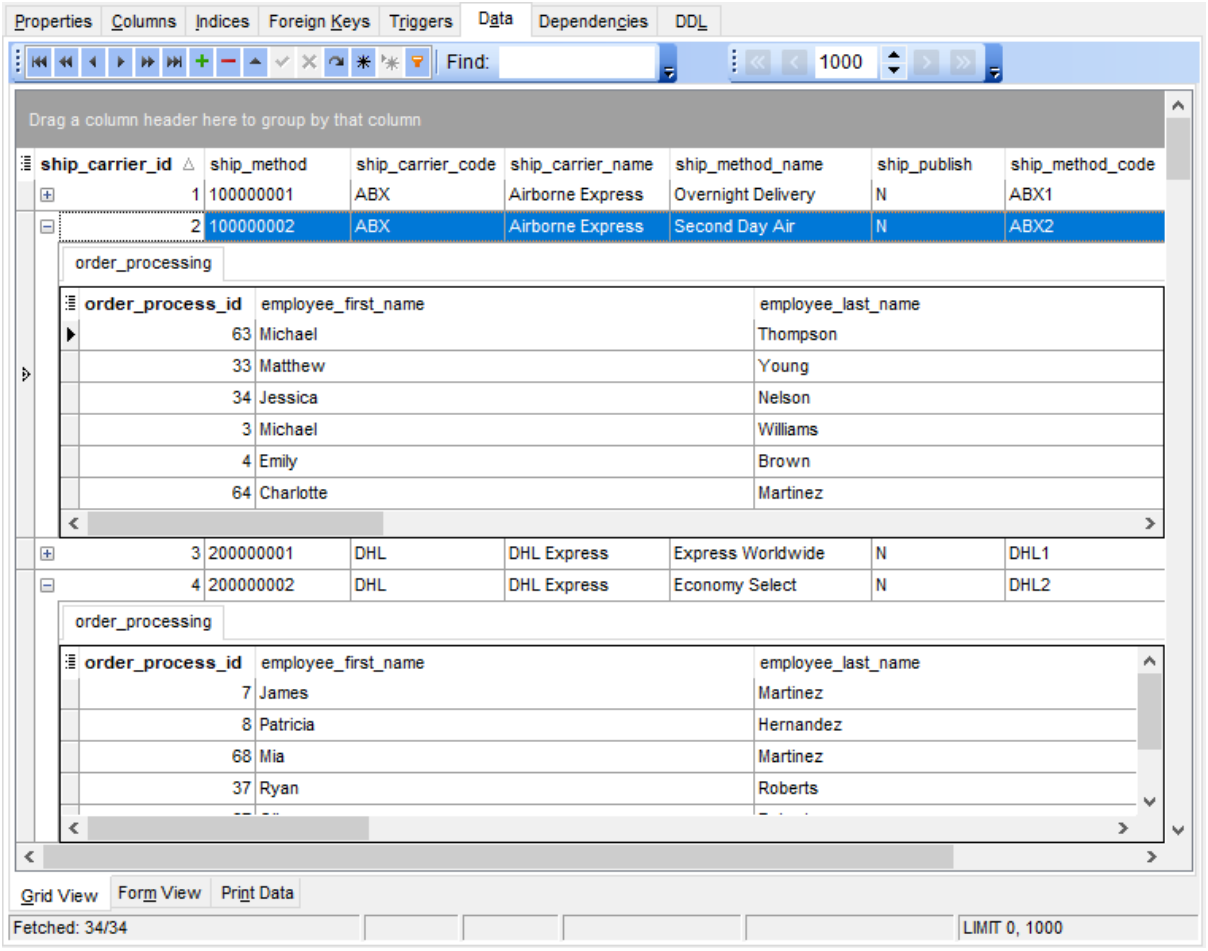
Note: If the ☑ **Show editor immediately** and ☑ **Always show editor** options on the Environment options | Grid tab are checked then the context menu of a grid can be evoked by selecting the necessary cell and right-clicking the table header. Otherwise, right-clicking the cell evokes the cell editing menu.

7.1.2.5 Working in multi-level mode

One of unique features of **SQL Manager for MySQL** is the ability to work with data in multi-level mode to view and modify data in several related tables simultaneously.

To manage grid levels, right-click the grid and select the **Grid Levels** context menu group. Items of this group allow you to:

- add a new grid level using Create Grid Level Wizard;
- delete the current grid level;
- switch between the ordinary *Table View* and the Card View modes.



See also:

Using the context menu

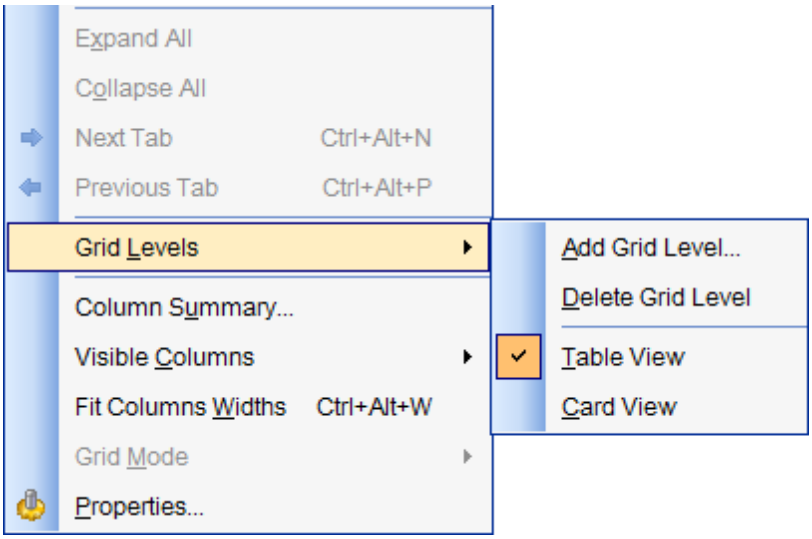
Create Grid Level wizard

7.1.2.5.1 Create Grid Level wizard

Create Grid Level Wizard allows you to add a new detail level to the grid in order to get master-detail representation of your data.

To start the wizard, right-click the grid, select the **Grid Levels** context menu group and proceed to the **Add Grid Level...** item within this group.

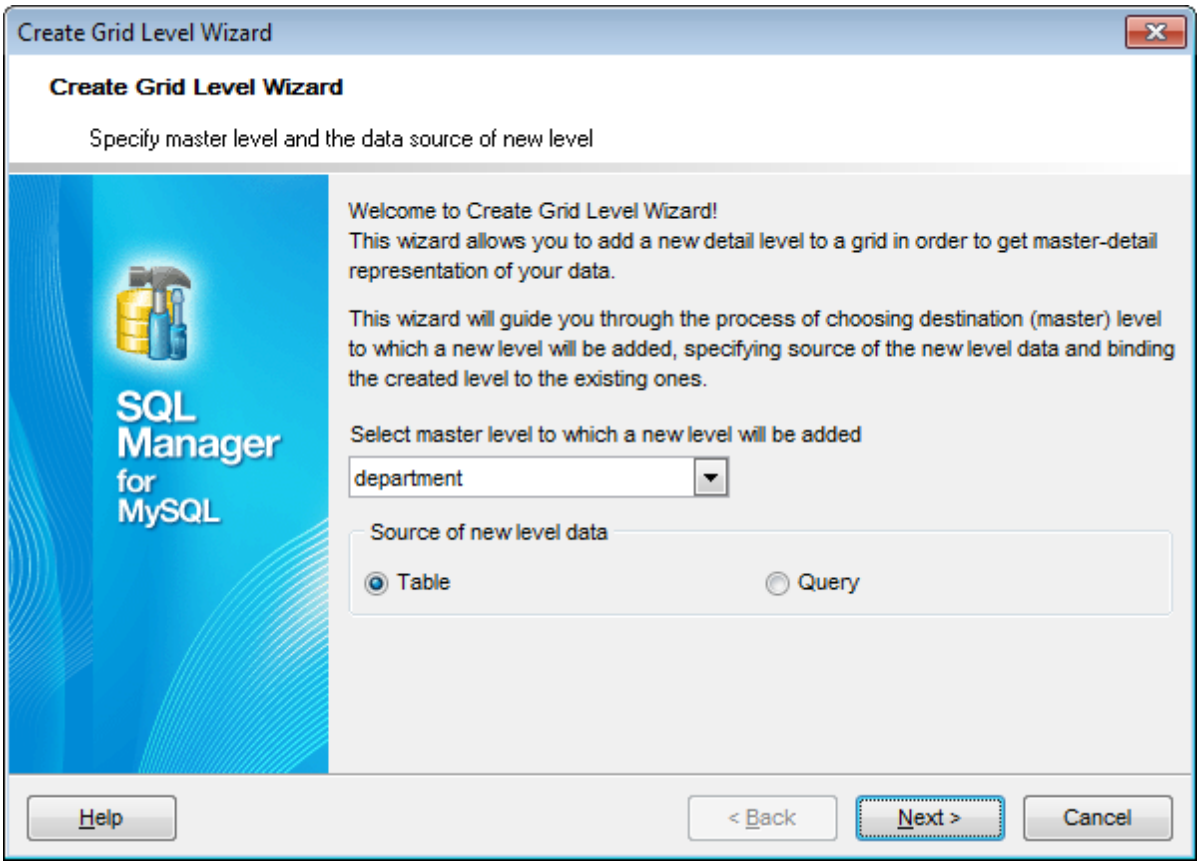
- Specifying master level
- Selecting source table
- Binding master and detail levels
- Query parameterization
- Setting additional parameters



7.1.2.5.1.1 Specifying master level

Use the drop-down list to select the table of the **master level** to which a new level will be added.

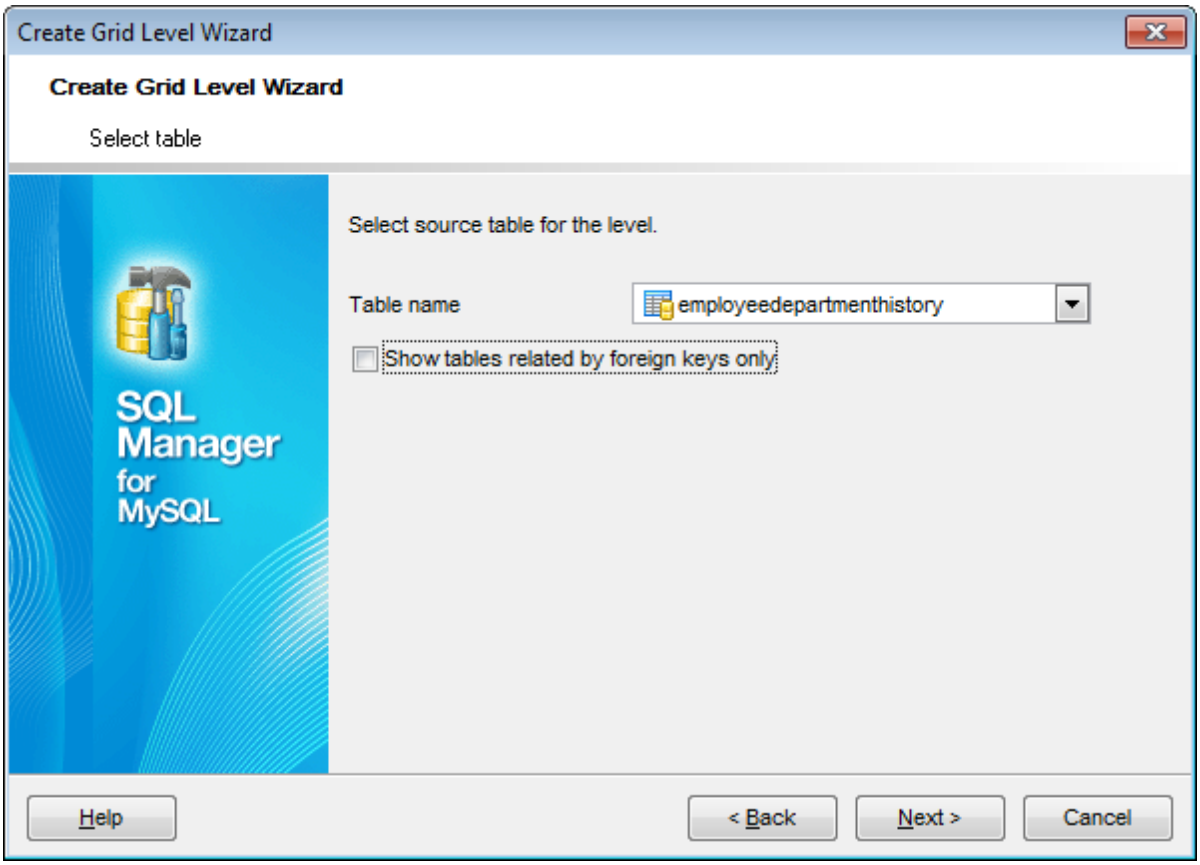
Source of new level data
Select the source type of the new level data: *Table* or *Query*.



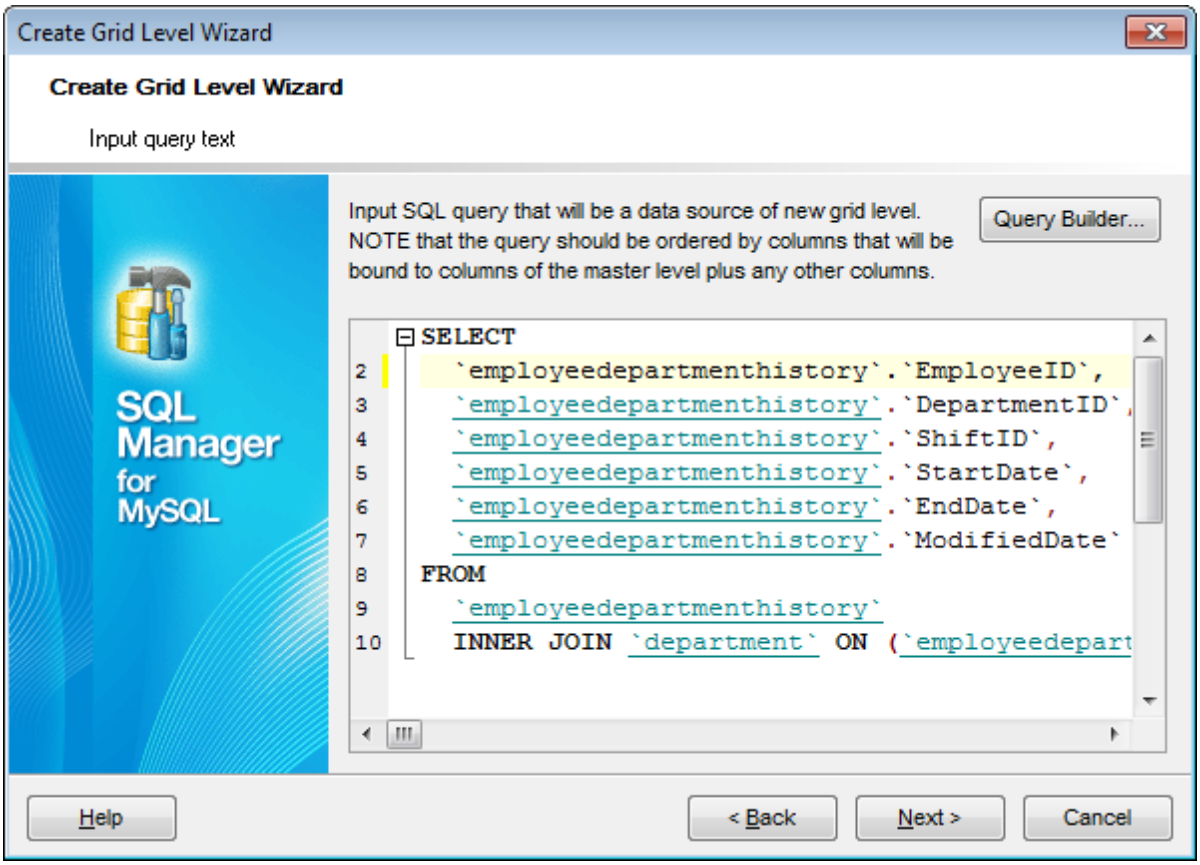
Click the **Next** button to proceed to the Defining source for detail level step to select a table for the detail level or input a query, depending on whether the **Table** or the **Query** option has been selected.

7.1.2.5.1.2 Defining source for detail level

If the **Table** option has been selected at the previous step, you should now specify a table for the detail view using the **Table name** drop-down list. Set the **Show tables related by foreign keys only** option to narrow the list of tables by including only tables linked by Foreign keys.



If the **Query** option has been selected at the previous step, you should now enter a query that will be used as the source of the new grid level. If necessary, you can use Query Builder to build the SQL query visually.



Click the **Next** button to proceed to the Binding master and detail levels step of the wizard.

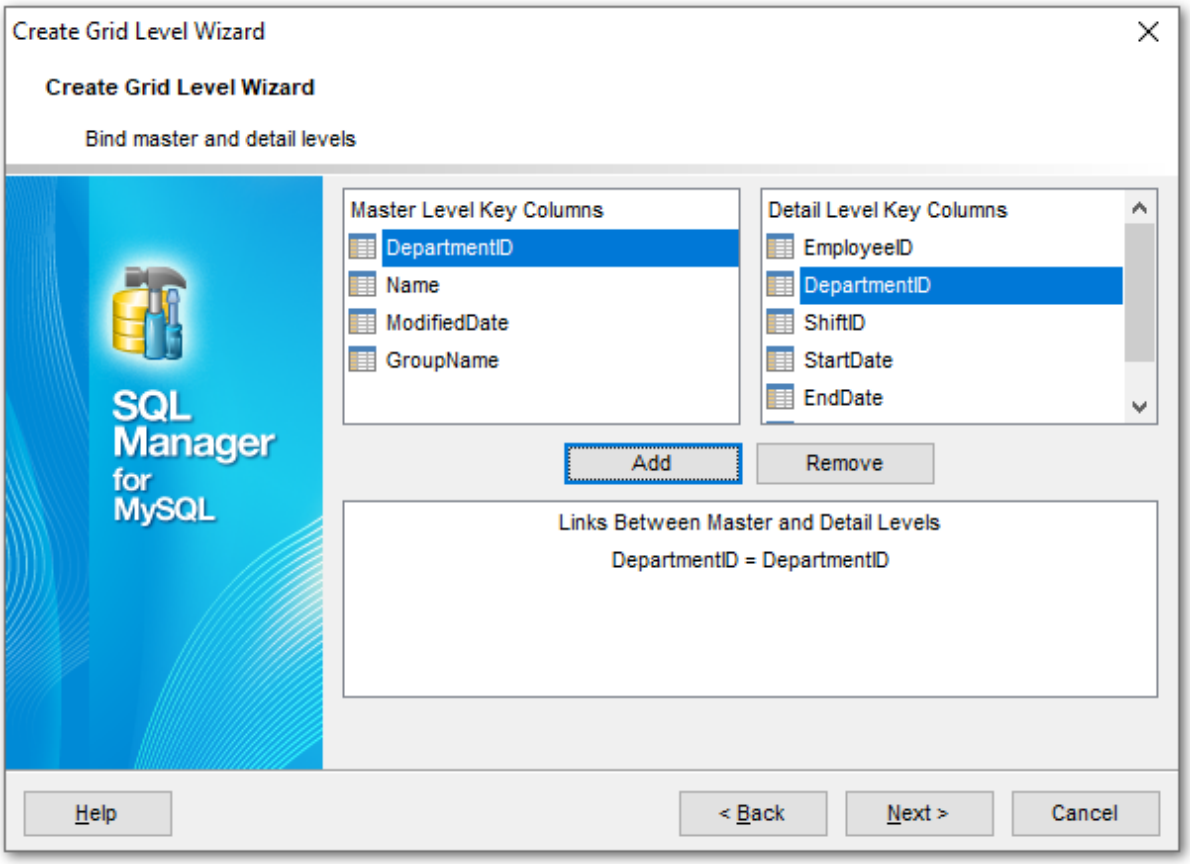
7.1.2.5.1.3 Binding master and detail levels

Define pairs of columns to link the Master Level and the Detail Level data sources:

- select a column in the **Master Level Key Fields** list;
- select a corresponding field in the **Detail Level Key Fields** list;
- click **Add** to set correspondence between the selected fields.

The newly created correspondences are listed in the **Links Between Master and Detail Levels** area. If necessary, you can delete any correspondence using the **Remove** button.

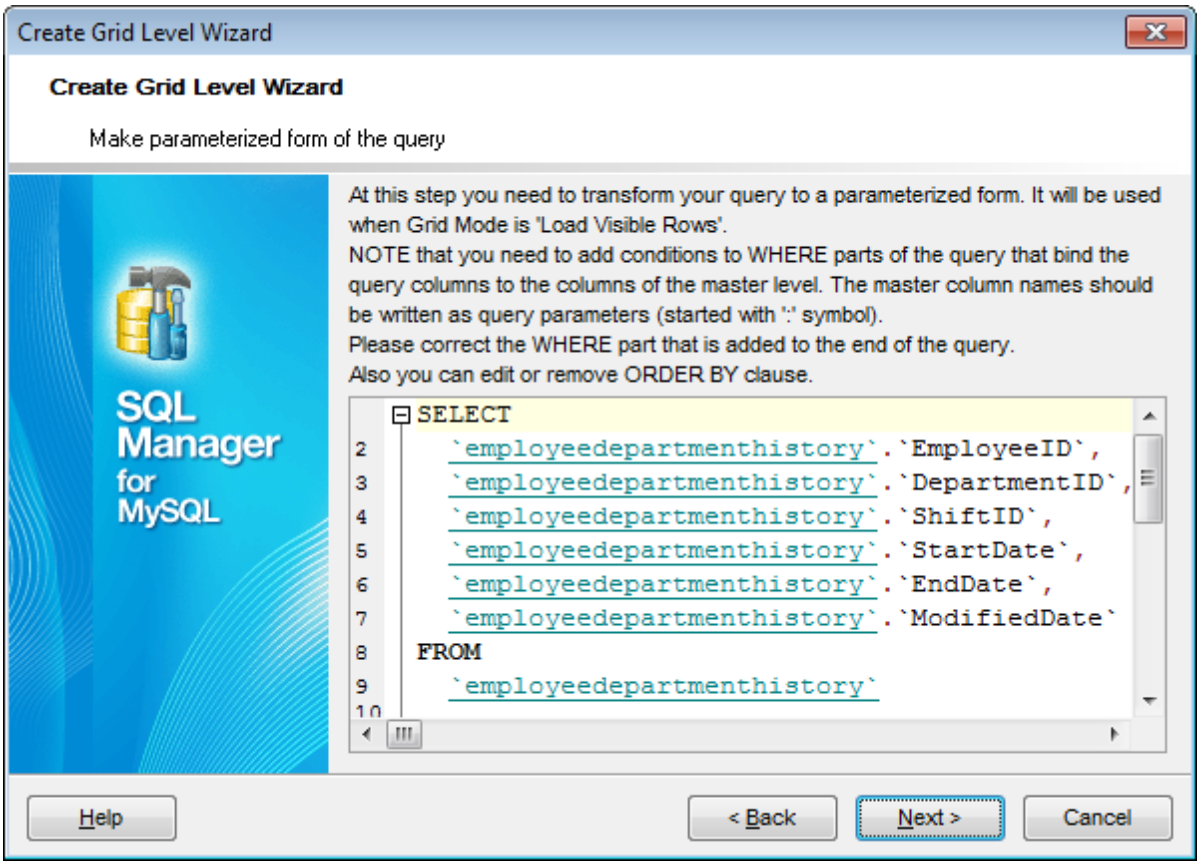
The **From Foreign Key...** menu is available if the ☑ **Show tables related by foreign keys only** option has been selected at the previous step. This menu allows you to select the foreign key to be used for identifying master-detail levels (if the table has more than one foreign key relation).



Click the **Next** button to proceed to the Setting additional parameters step or to the Query parameterization step of the wizard if **Query** was selected at the Specifying master level step of the wizard.

7.1.2.5.1.4 Query parameterization

If **Query** was selected at the Specifying master level step of the wizard, you should now transform the query to a parameterized form that will be used in the 'Load visible rows' Grid Mode (see the Grid | Data Options section of the Environment Options dialog to get more information about grid modes offered by **SQL Manager**).

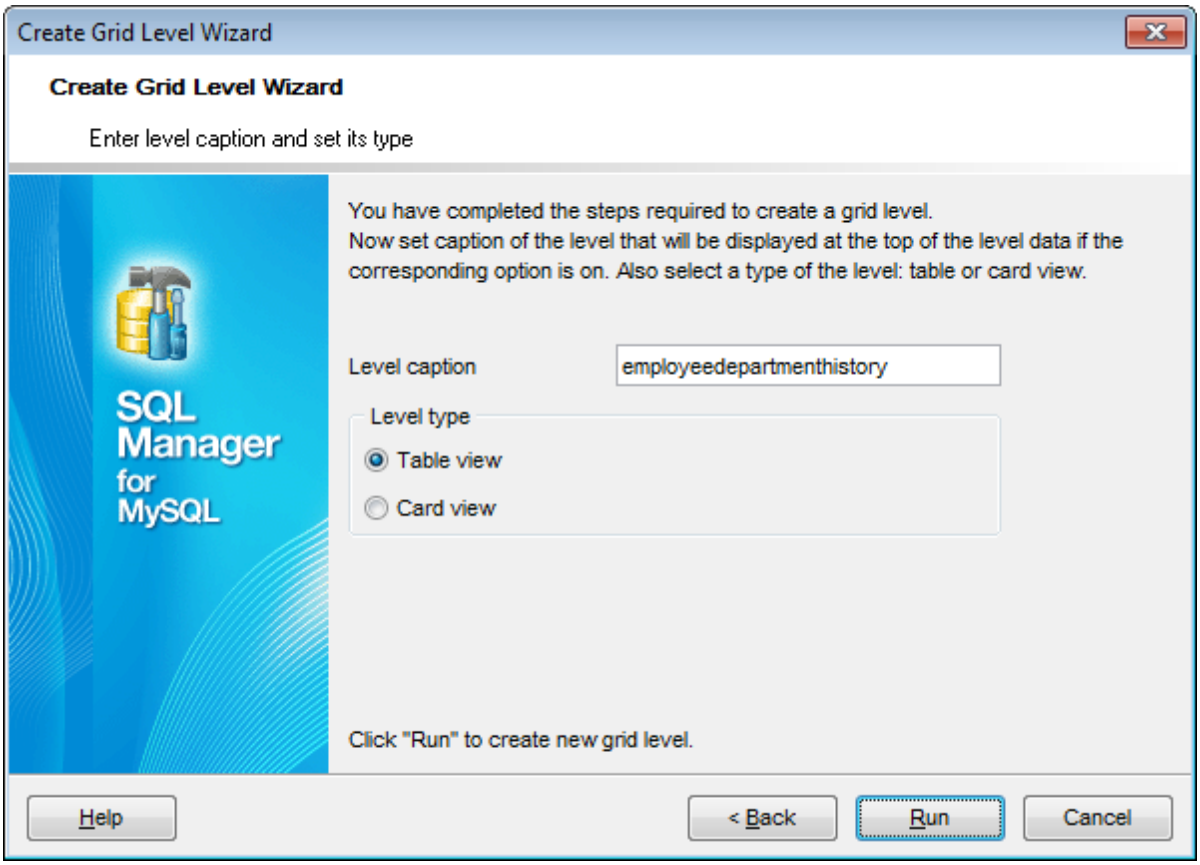


Click the **Next** button to proceed to the Setting additional parameters step of the wizard.

7.1.2.5.1.5 Setting additional parameters

Level caption
Set the caption to be used for the new level in the grid.

Level type
Select the type of view you wish to be applied to the grid level: ◉ *Table view* or ◉ *Card view*.

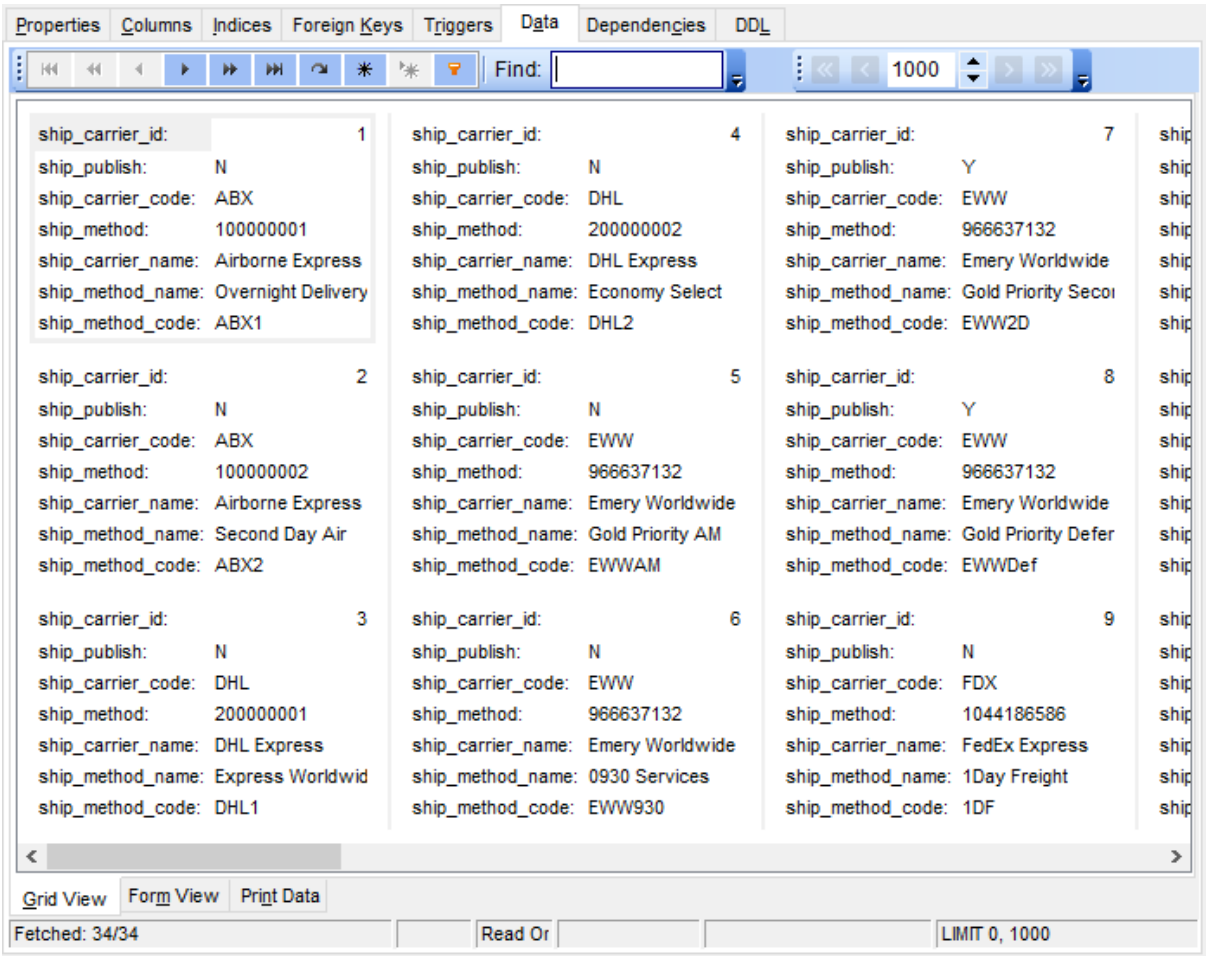


When you are done, click the **Run** button to complete the operation.

7.1.2.6 Working in card view mode

Depending on your preferences, you can represent data in the **Table View** or in the **Card View** modes.

To switch to the **Card View** mode of data representation, right-click the grid, expand the **Grid Levels** context menu group and select the **Card View** item within this group.

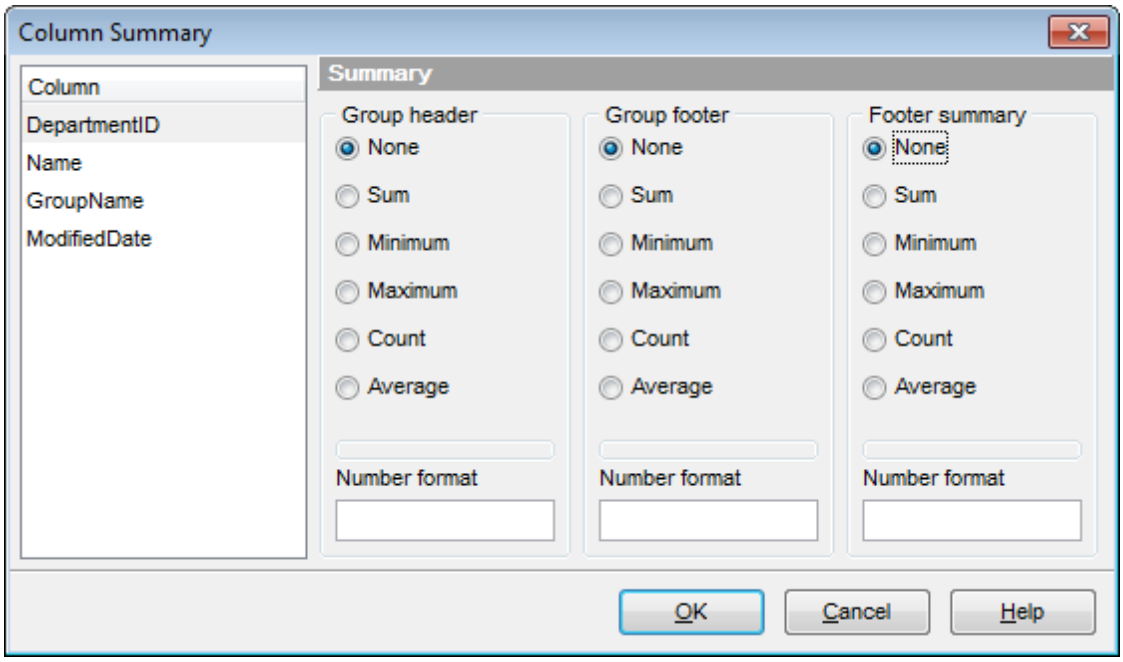


See also:

Using the context menu

7.1.2.7 Column Summary

If necessary, you can select the **Column Summary...** context menu item to open the **Column Summary** dialog which allows you to set the summary for each particular column that will be displayed in the grid *footer*, *group header* and *group footer* areas.



The **Column** list displays all columns of the dataset. Select a column and specify which information should be displayed in the grid as summary for this column:

- *None*
- *Sum* (for numeric types only)
- *Minimum* (for numeric and date/time types only)
- *Maximum* (for numeric and date/time types only)
- *Count*
- *Average* (for numeric types only)

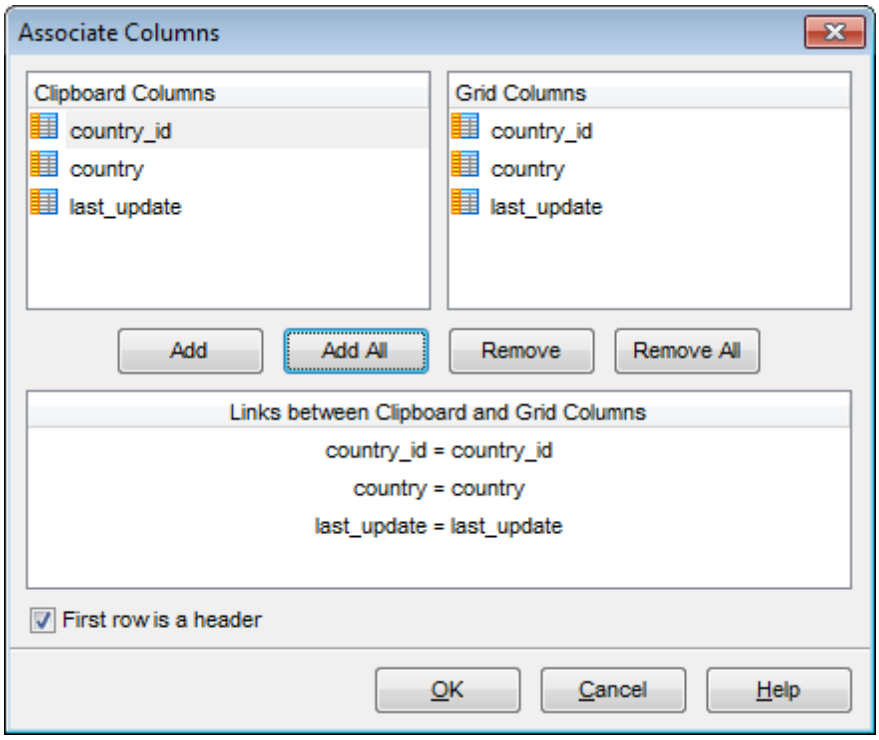
Use the **Number format** edit boxes in each group to specify the preferable format for summary info representation.

See also:

Using the context menu

7.1.2.8 Copying records

When you copy several records to clipboard and paste them into the grid, you are offered to set correspondence between columns of the clipboard and columns of the target MySQL table using the **Associate Columns** dialog.



The **Clipboard Columns** and **Grid Columns** lists display the source and target dataset columns respectively. Set correspondence between the source clipboard columns and the table columns:

- select a source clipboard column in the **Clipboard Columns** list;
- select the corresponding column the target table in the **Grid Columns** list;
- click the **Add** button to set correspondence between the selected columns;
- the pair of columns appears in the **Links between...** list below;
- repeat the operation for all the columns you need copy.

Use the **Add All** button to add all columns to the **Links between...** list on the basis of their order.

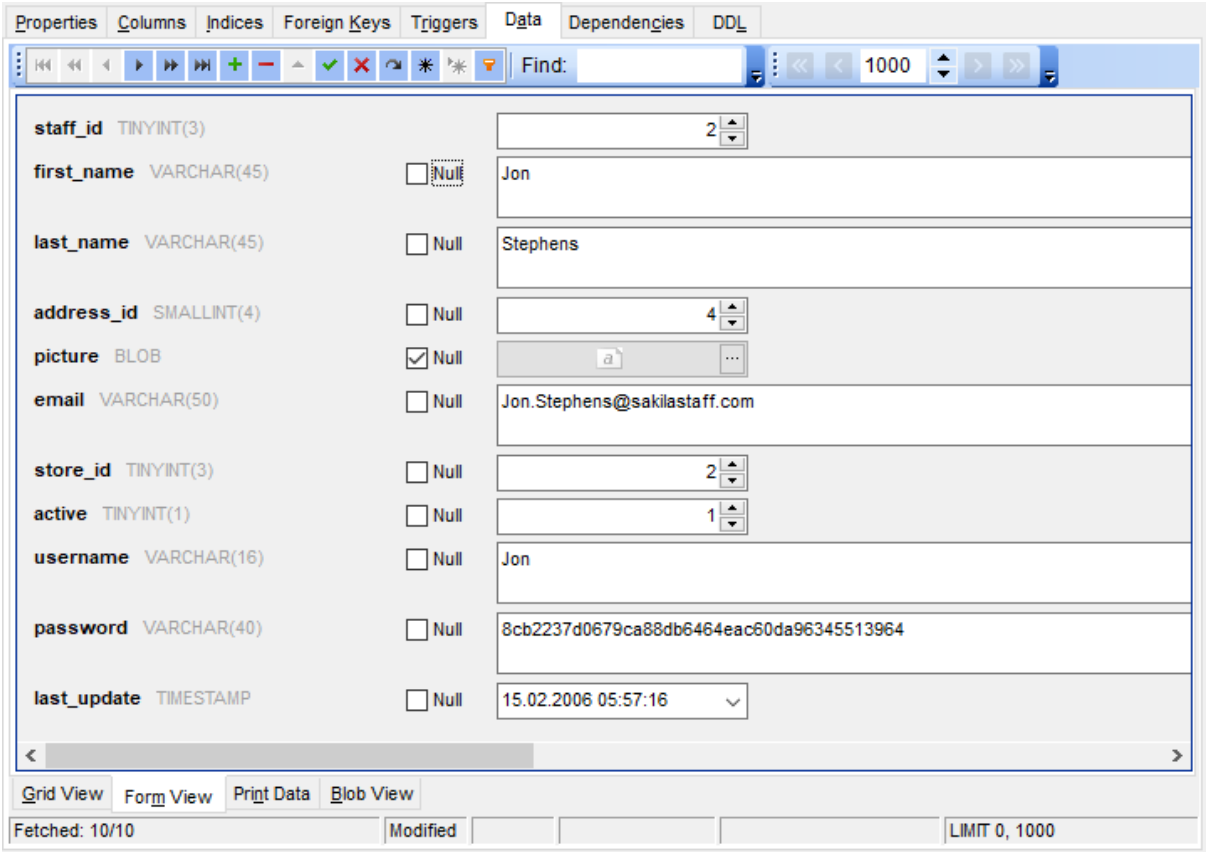
To remove a correspondence, select the pair of columns in the **Links between...** list and press the **Remove** button.
To remove all correspondences, press the **Remove All** button.

☑ **First row is a header**
This option specifies that the first row of the associated columns will be taken as the column header.

7.1.3 Form View

The **Form View** tab allows you to view data as a form. To activate this type of data view, select the **Form View** tab on the View mode panel at the bottom of the window.

The form displays the current record: column names on the left and the corresponding values on the right. If the columns are available for editing, you can edit the record directly on this form. The navigation pane at the top of the form allows you to browse the data quickly, to insert, update and delete records, and to set a filter for the records using the Filter Builder dialog.



Each column has a **Null** checkbox which allows you to clear the column value and set it to NULL (if the column is nullable).

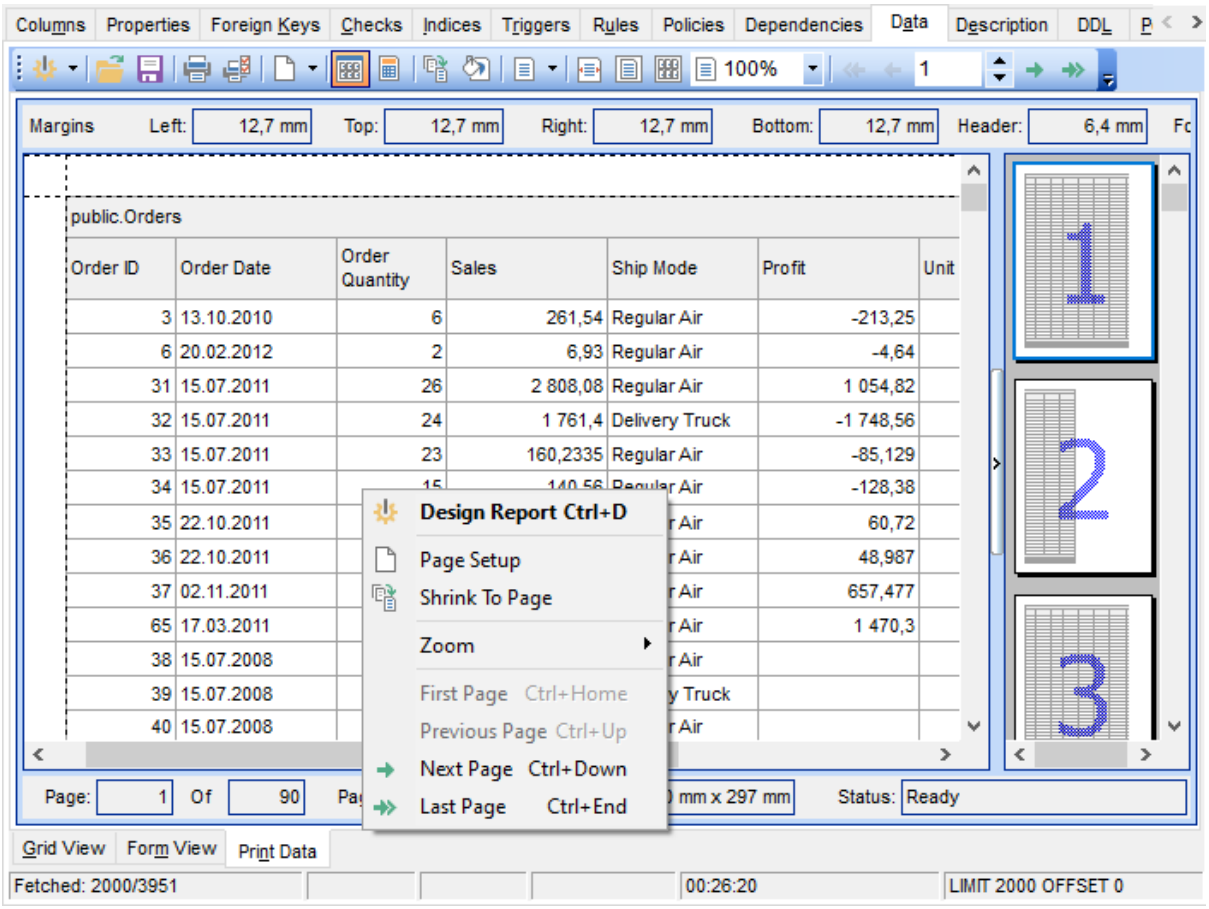
See also:

Using Navigation bar and Toolbars
Grid View
Print Data
BLOB View
Applying changes

7.1.4 Print Data

Using the **Print Data** tab you can view data in the way they are printed, in WYSIWYG mode.

When in **Print Data** mode, you are provided with a powerful *context menu* and toolbar allowing you to design a report, change the view scope, save reports and load previously saved ones, set report options, and specify a number of printing parameters using Report Formatter and the Page Setup dialog.



Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Using Navigation bar and Toolbars

7.1.4.1 Page Setup

The **Page Setup** dialog allows you to specify a number of settings pertaining to the report page.

To open the dialog, use the **Page Setup** button available on the toolbar.

Use the following tabs of the **Page Setup** dialog:

- Page
- Margins
- Header/Footer
- Scaling

When you are done, you can click the **Print...** button at the bottom to call the Print dialog.

See also:

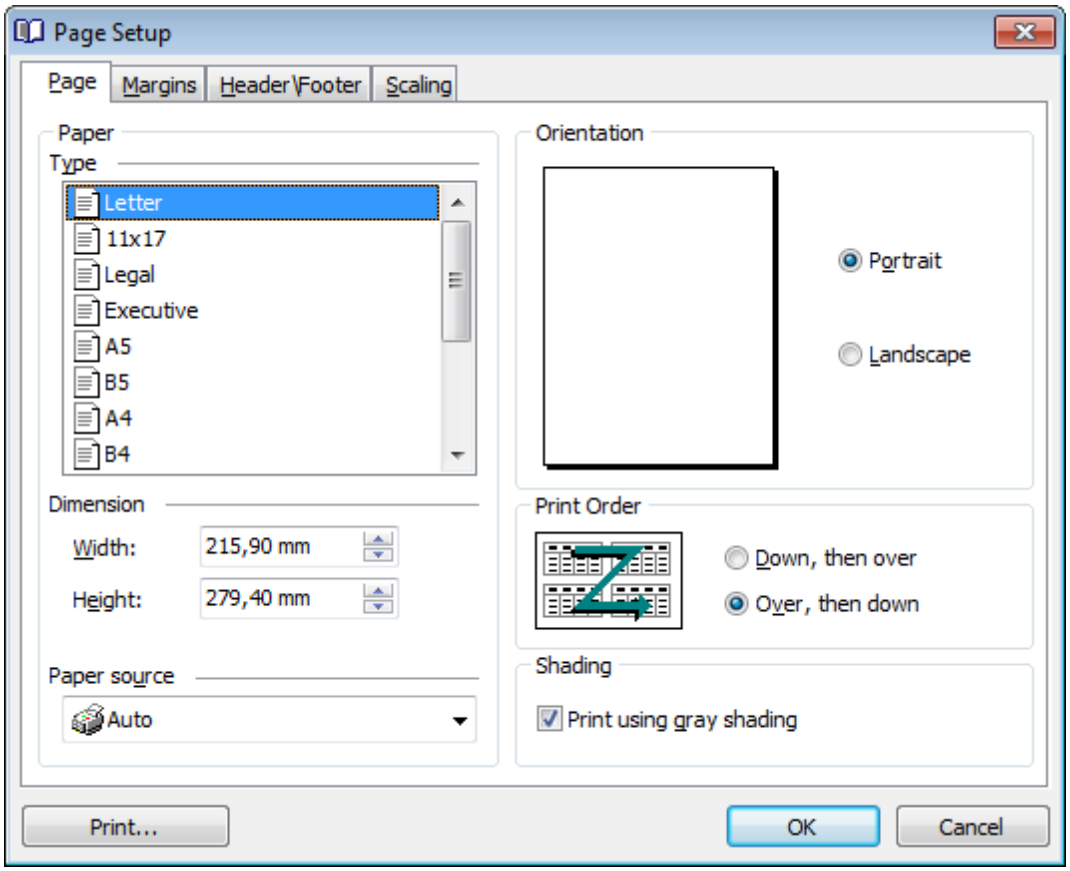
Report Formatter

Setting report options

Print dialog

7.1.4.1.1 Page

The **Page** tab of the **Page Setup** dialog allows you to specify the *paper*, page *orientation*, *print order* and *shading* settings.



Paper

Select one of the standard paper types in the **Type** list, or specify custom *width* and *height* using the **Dimension** group (in inches or millimeters, depending on the *unit of measure* specified in the Options dialog).

Use the **Paper source** drop-down list to select the paper feed type.

Orientation

Select the preferable page orientation (your selection is illustrated in the chart on the left):
- *Portrait*
- *Landscape*

Print Order

Select the preferable order for printing report pages (your selection is illustrated in the chart on the left):

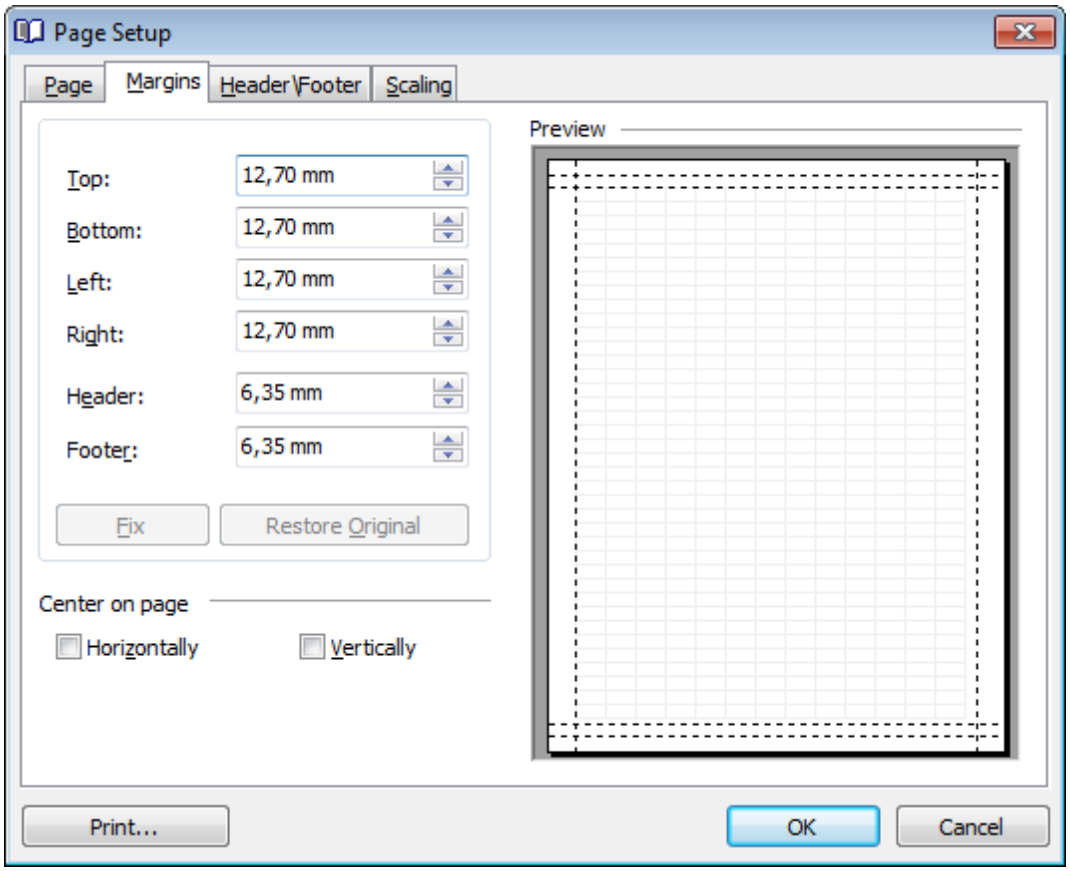
- *Down, then over*
- *Over, then down*

Shading

Print using gray shading
If this option is selected, gray shading (along with black and white) will be used for printing the report.

7.1.4.1.2 Margins

The **Margins** tab of the **Page Setup** dialog allows you to specify the size of the *margins* and *running titles*.



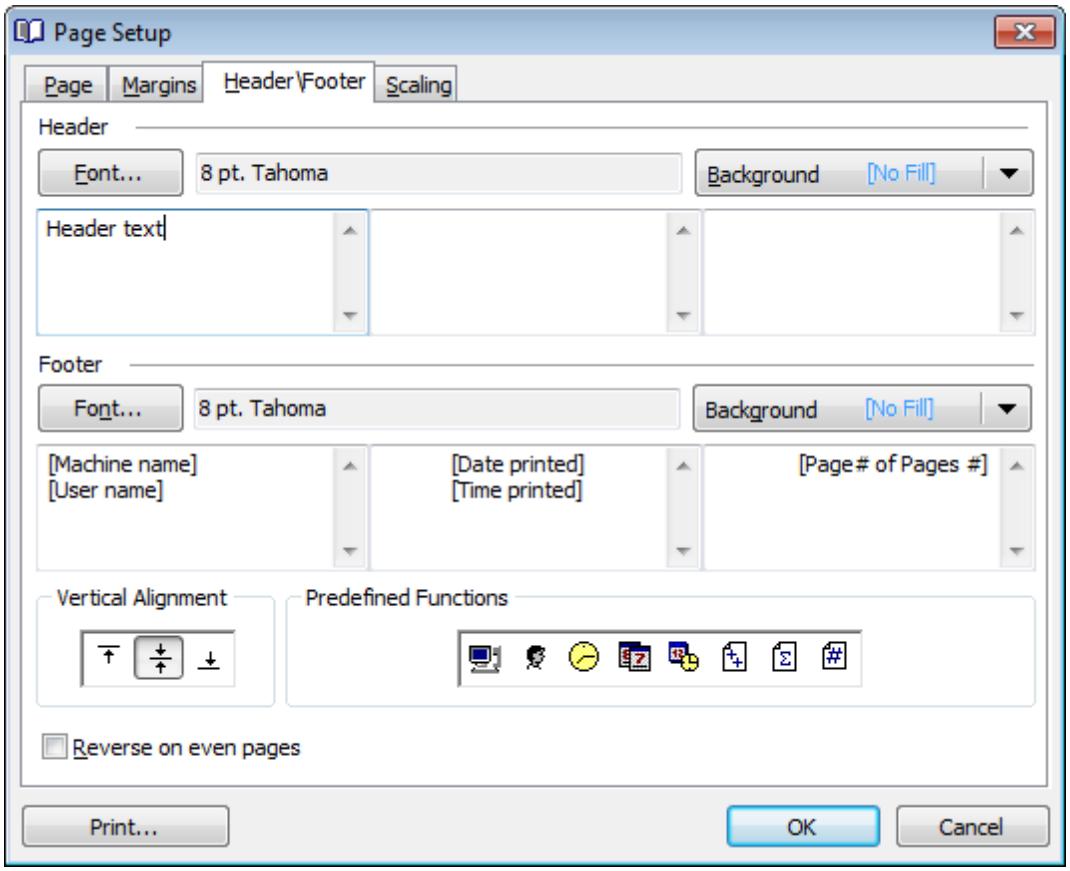
Use the spinner controls to specify the size of **top** / **bottom** / **left** / **right** margins and **header** / **footer** (in inches or millimeters, depending on the *unit of measure* specified in the Options dialog). The **Preview** area on the right illustrates the changes you have made.

If you have specified an improper value, you can click the **Fix** button to correct it.
To restore the default size values, click the **Restore Original** button.

Center on page
This group allows you to specify whether the text should be centered **horizontally** and/or **vertically** on the page.

7.1.4.1.3 Header/Footer

The **Header/Footer** tab of the **Page Setup** dialog allows you to specify properties of the *header* and *footer* running titles.



Header / Footer

Click the **Font...** button to specify font properties using the standard **Font** dialog. The font name and size are displayed in the gray area next to the **Font...** button.
Use the **Background** drop-down list to select the background color that will be applied to the page header/footer, or to customize the color using the **Color** and **Fill Effects** dialogs.

For each of the running titles you are provided with three separate text editing columns. You can use any, all or none of the columns to enter the header and footer text.

The **Vertical Alignment** group allows you to specify vertical alignment for the header/footer text according to any of the three available patterns.

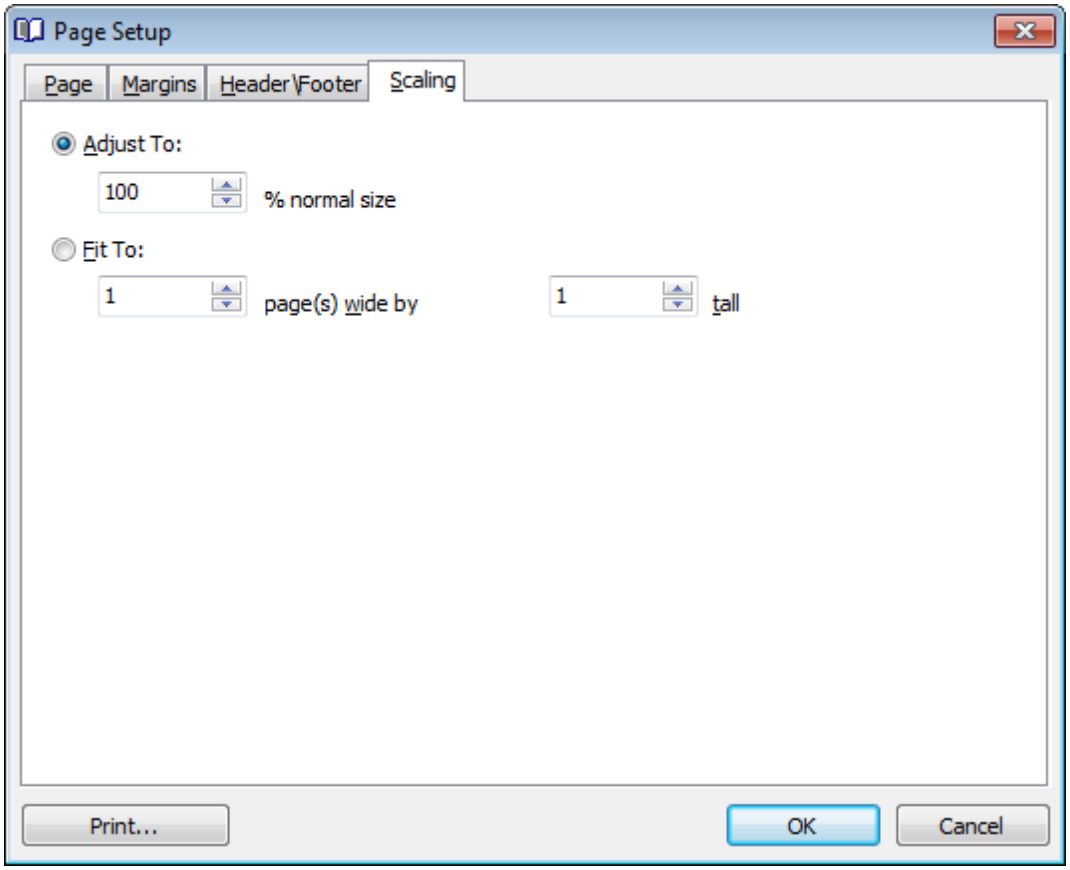
Predefined Functions
This group allows you to add the following standard functions to the header and footer:
[Machine Name]
[User Name]
[Time Printed]

[Date Printed]
[Date & Time Printed]
[Page # of Pages #]
[Total Pages]
[Page #]

Reverse on even pages
If this option is selected, the header and footer text will be reversed on even pages of the printing report.

7.1.4.1.4 Scaling

The **Scaling** tab of the **Page Setup** dialog allows you to specify the page *scaling* options.



Select the preferable scaling mode:

Adjust to ... % normal size
Use the spinner control to set the percentage of the regular page size to which the page size will be adjusted.

Fit to ... page(s) wide by ... tall
Use the spinner controls to set the maximum number of pages (by width and by height) on one page to fit its size.

7.1.4.2 Report Formatter

Report Formatter allows you to specify a number of settings pertaining to the printing form of the report.

To open the tool, click the **Design Report** button available on the toolbar, or use the *Ctrl+D* shortcut.

Use the following tabs of the **Format Report** dialog:

- View
- Behaviors
- Formatting
- Styles
- Preview
- Cards
- Charts

The **Title Properties...** button allows you to customize the report title using the Report Title dialog.

See also:

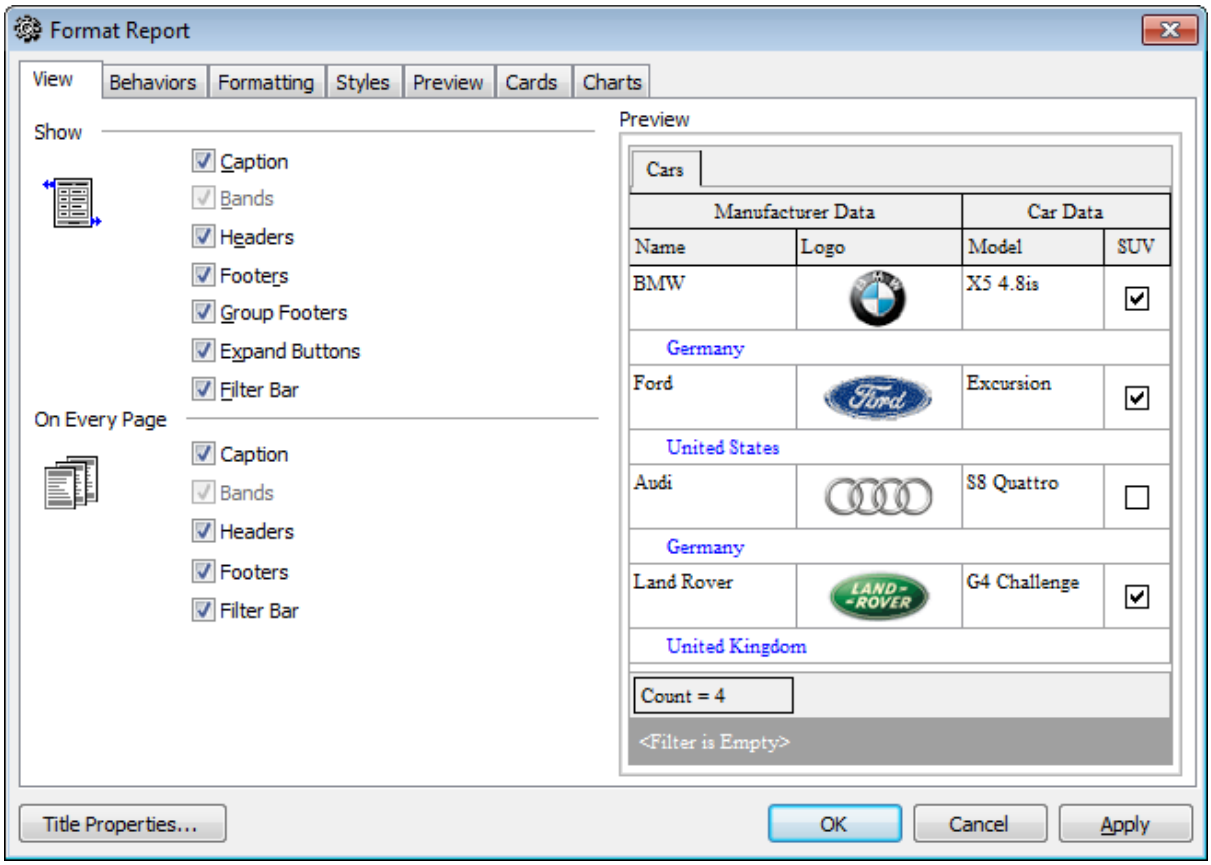
Page Setup

Setting report options

Print dialog

7.1.4.2.1 View

The **View** tab of the **Format Report** dialog allows you to specify report elements to be shown in the report.

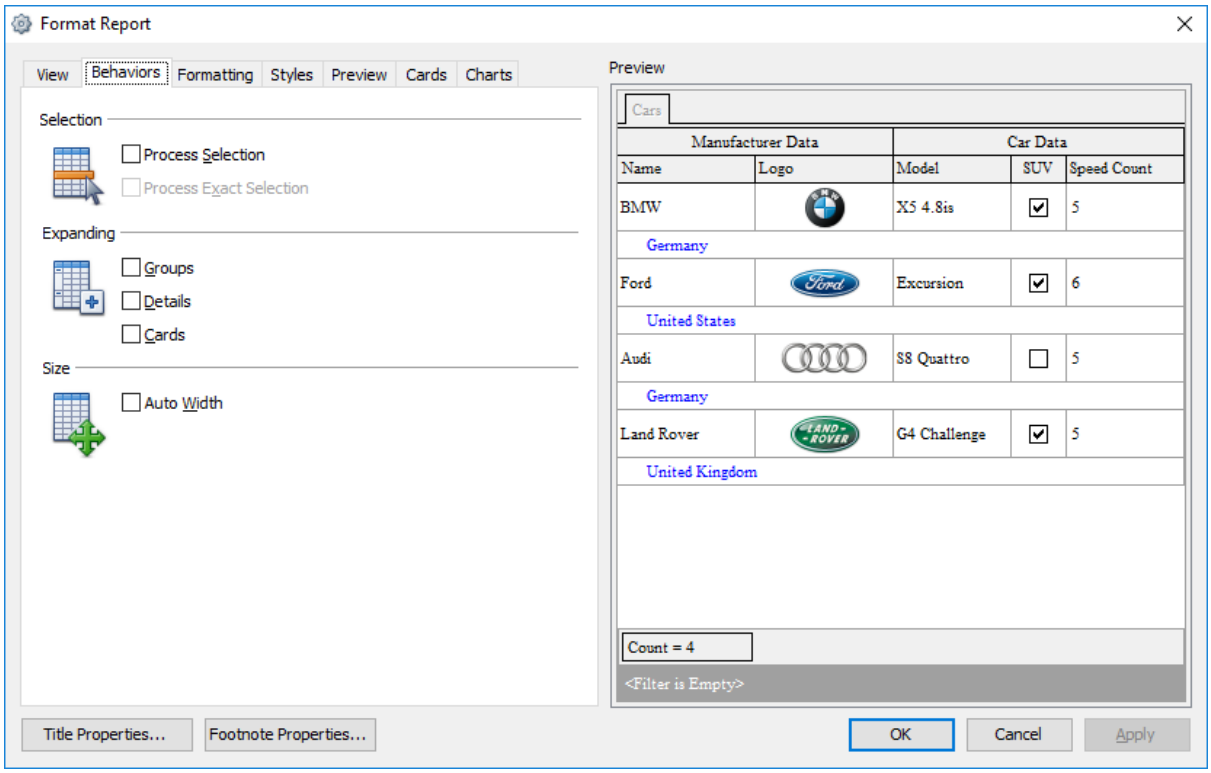


Tick off the elements to **show** in the report (*caption*, *bands*, *headers*, *footers*, *group footers*, *expand buttons*, *filter bar*) and **on every page** of the report (*caption*, *bands*, *headers*, *footers*, *filter bar*).

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.2 Behaviors

The **Behaviors** tab of the **Format Report** dialog allows you to specify the way (behavior) the report elements will appear on the printing form.



Selection

Process selection / **Process exact selection**
Specify whether the text selection should or should not be processed (precisely) for the printing form.

Expanding

Tick off the elements to expand in the report: *groups*, *details*, *cards*.

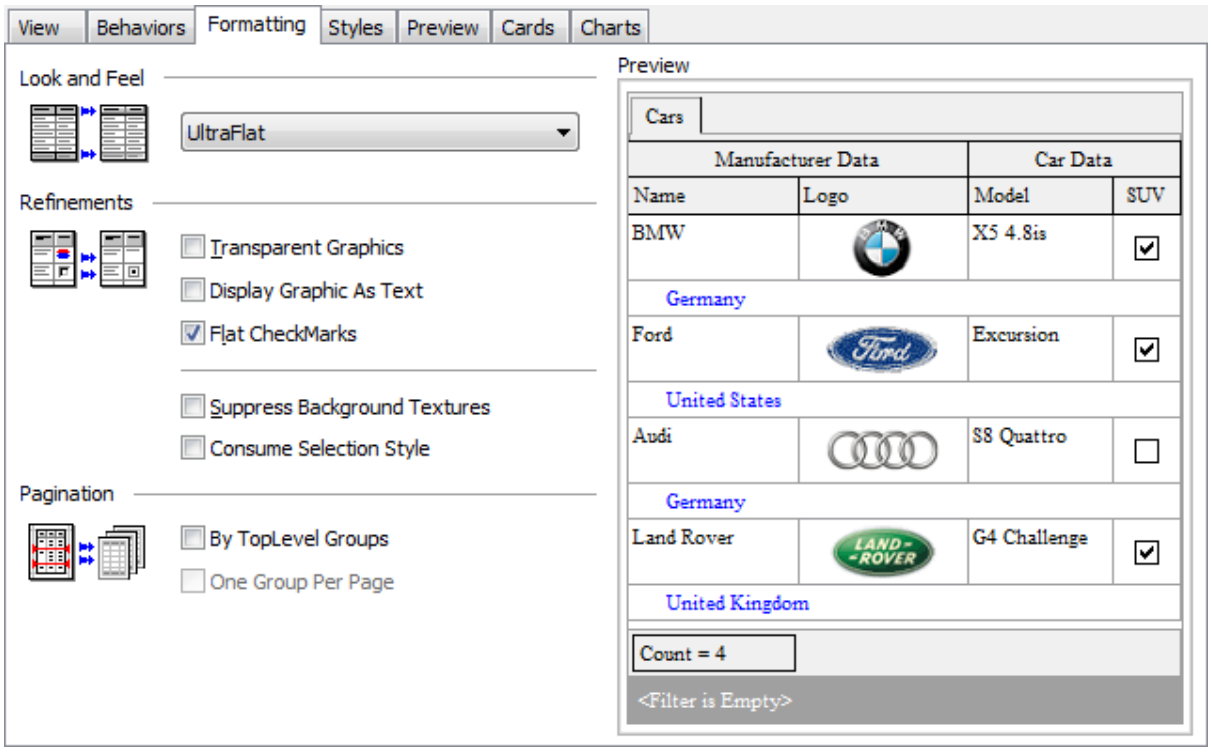
Size

Auto Width
If this option is selected, the table will be resized automatically to fit the page by width.

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.3 Formatting

The **Formatting** tab of the **Format Report** dialog allows you to specify *Look and Feel*, *Refinements* and *Pagination* options.



Look and Feel
This setting determines the manner in which the cells are painted. Use the drop-down list to select the painting style that will be applied to the cells on the printing form:
Flat
Standard
UltraFlat

Refinements
Options of this group allow you to reduce the report size.

☑ **Transparent graphics**
If this option is selected, the images will be drawn transparent in the report.

☑ **Display graphic as text**
If this option is selected, text will be displayed instead of the images.

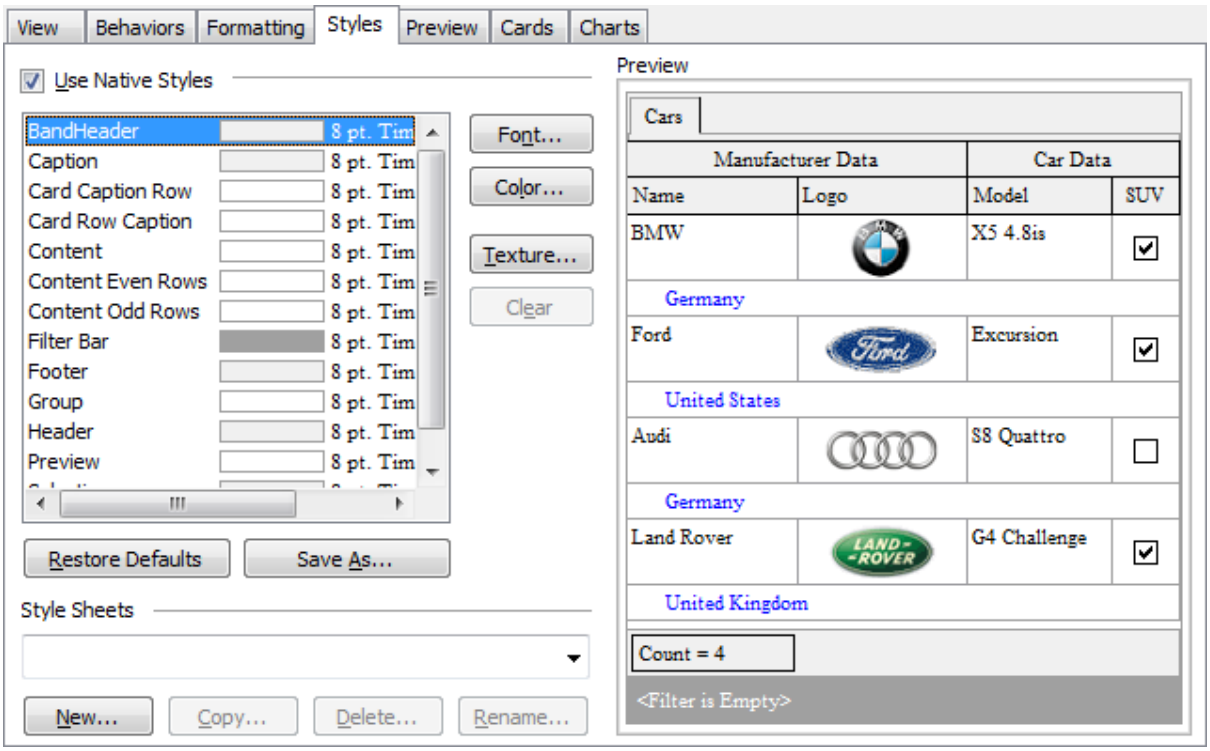
☑ **Flat CheckMarks**
If this option is selected, the checkboxes will be drawn flat.

Pagination
Specify the way pagination will be performed for the report: **By TopLevel groups** or **One group per page**.

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.4 Styles

The **Styles** tab of the **Format Report** dialog allows you to specify styles to be applied to the report elements.



Use native styles
This option determines whether the native Windows style will be applied to the report elements.

Note: The **Native style** option is currently supported for the Windows® XP operating system only.

The elements list displays the names of all report elements, with background color and font properties specified by default. You can **Use native styles** for them or customize them according to your preferences.

To edit an element, select it in the list and use the buttons to the right to edit the style for it.
Click the **Font...** button to specify font properties using the standard **Font** dialog.
Click the **Color...** button to customize the background color using the standard **Color** dialog.
Click the **Texture...** button to load an image that will be used as the texture for the element.
To rollback the changes, click the **Clear** button.
To restore the default stylesheet properties, click the **Restore Defaults** button.
If you need to save the current style sheet, you can click the **Save as...** button.

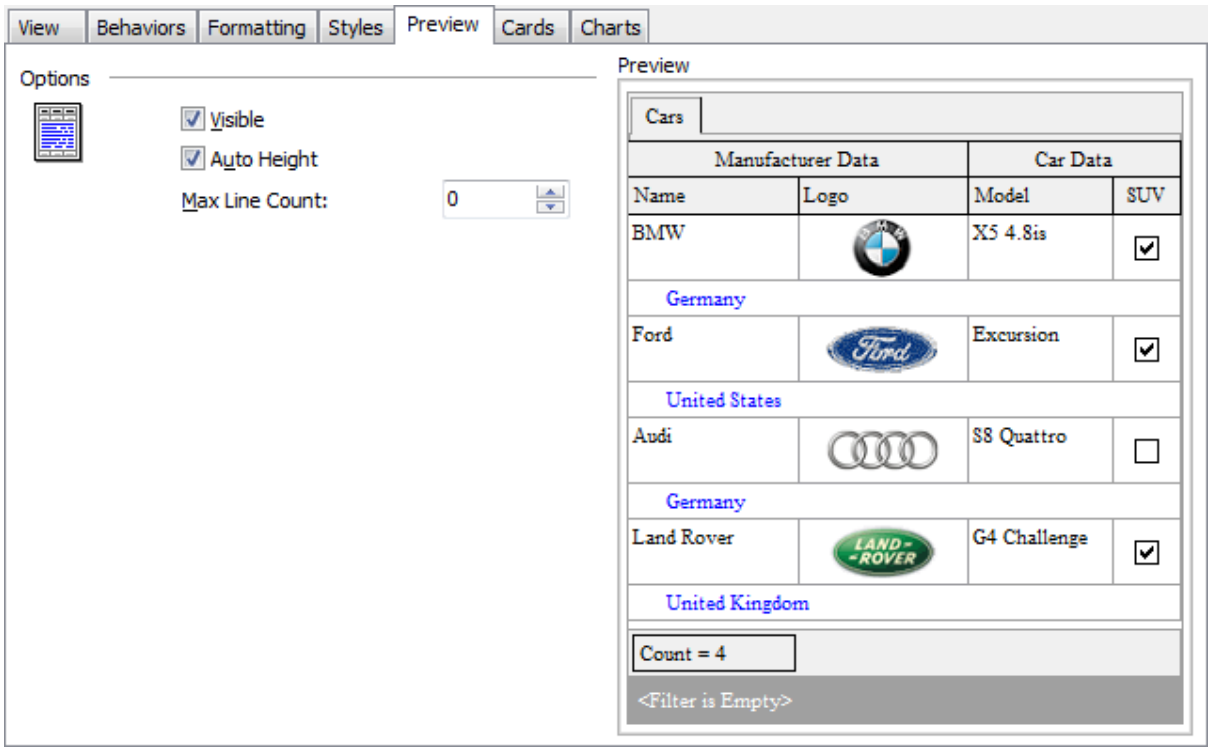
These items are also available through the **context menu** of the elements list.

Style Sheets
Use the drop-down menu to select the style sheet you need. To manage the style sheets, use the corresponding buttons below: **New...**, **Copy...**, **Delete...**, **Rename...**

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.5 Preview

The **Preview** tab of the **Format Report** dialog allows you to specify report preview options.



Visible
This option specifies visibility of the grouping rows.

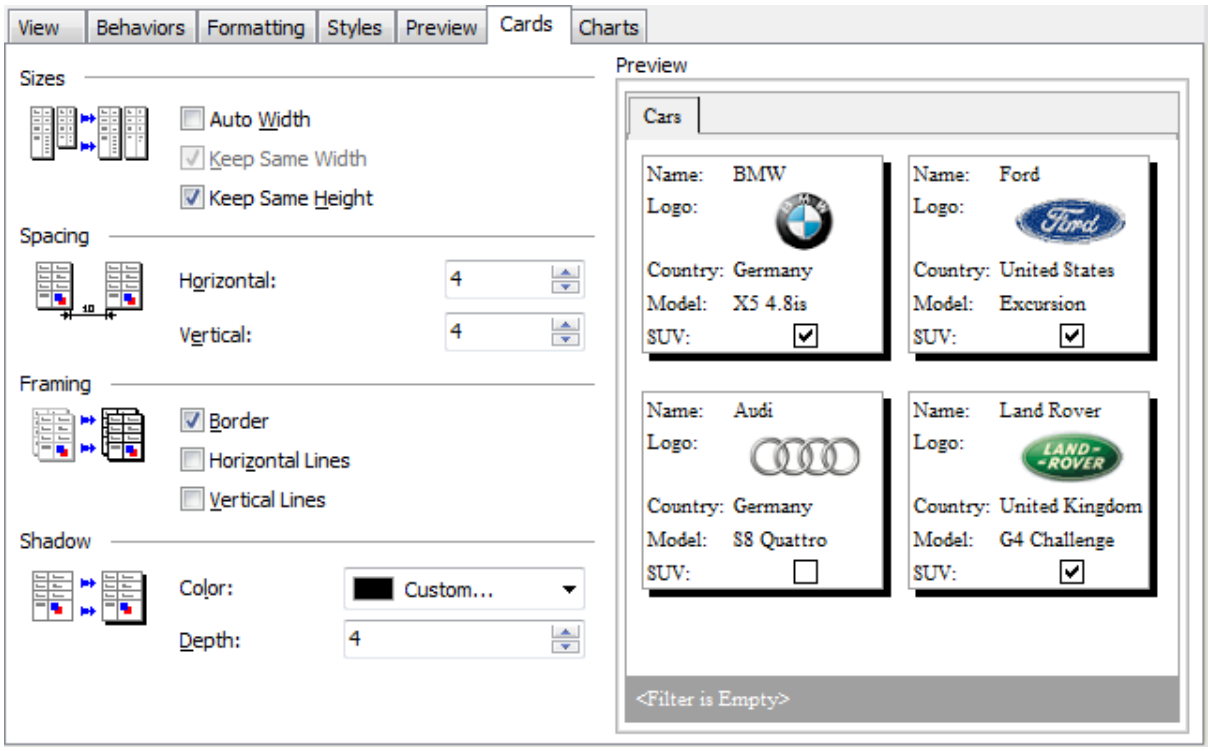
Auto height
If this option is selected, the table will be resized automatically to fit the page by height.

Max line count
Use the spinner control to specify the maximum possible number of lines.

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.6 Cards

The **Cards** tab of the **Format Report** dialog allows you to specify properties for the card view.



Sizes

Auto Width
If this option is selected, the cards will be resized automatically to fit the page by width.

Keep same width
Select this option to keep the card width fixed.

Keep same height
Select this option to keep the card height fixed.

Spacing

This group allows you to specify **horizontal** and **vertical** spacing between cards.

Framing

Border
This option specifies visibility of the card borders.

Horizontal lines
This option specifies visibility of the horizontal lines (row delimiters) within cards.

Vertical lines
This option specifies visibility of the vertical lines (column delimiters) within cards.

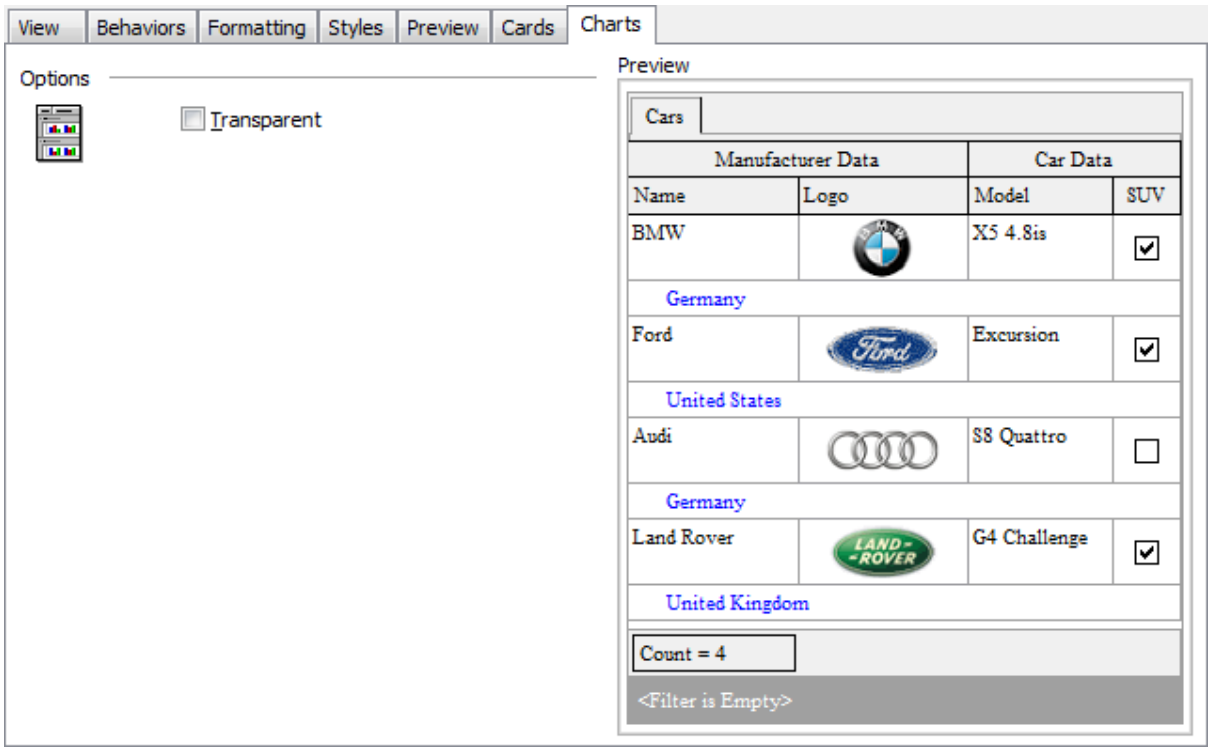
Shadow

Use the **Color** drop-down list to select the color that will be applied to the card shadows. If necessary, specify the color **depth** using the corresponding spinner control.

The **Preview** area on the right illustrates the changes you have made.

7.1.4.2.7 Charts

The **Charts** tab of the **Format Report** dialog allows you to specify options for the charts used in the report.



Transparent
If this option is selected, the charts will be drawn transparent in the report.

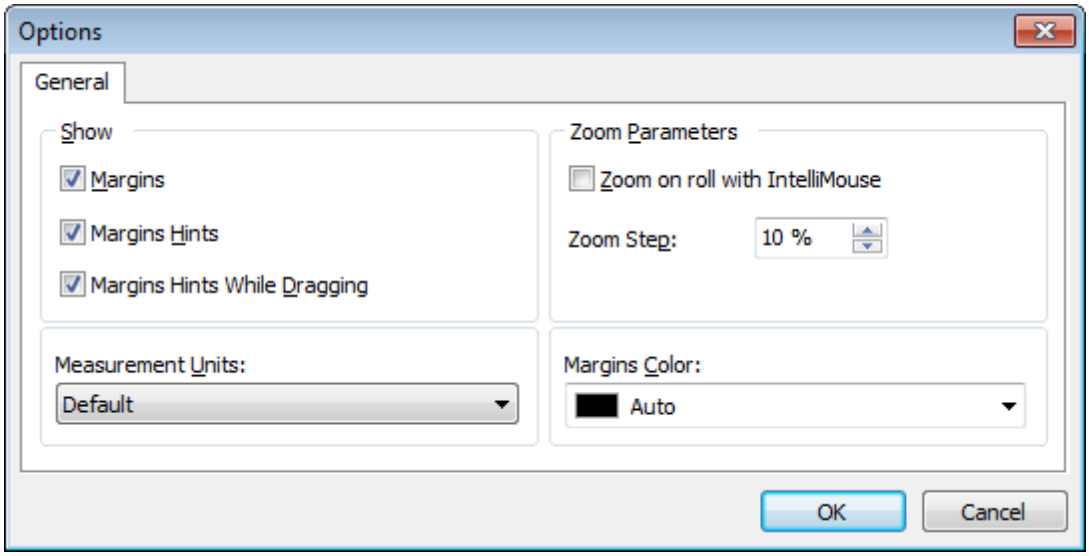
The **Preview** area on the right illustrates the changes you have made.

7.1.4.3 Setting report options

Options dialog

The **Options** dialog allows you to specify a number of settings pertaining to the printing report.

To open the dialog, open the **Design Report** menu available on the toolbar and select the **Preferences** item.



Show
Tick off the elements to **show** in the printing report (*margins*, *margins hints*, *margins hints while dragging*).

Use the **Measurement Units** drop-down list to select the unit of measure that will be used in report settings: *default*, *inches*, or *millimeters*.

Zoom Parameters

Zoom on roll with IntelliMouse
If this option is selected, you can zoom in/out by scrolling up/down (with a Microsoft® mouse or a compatible mouse used).

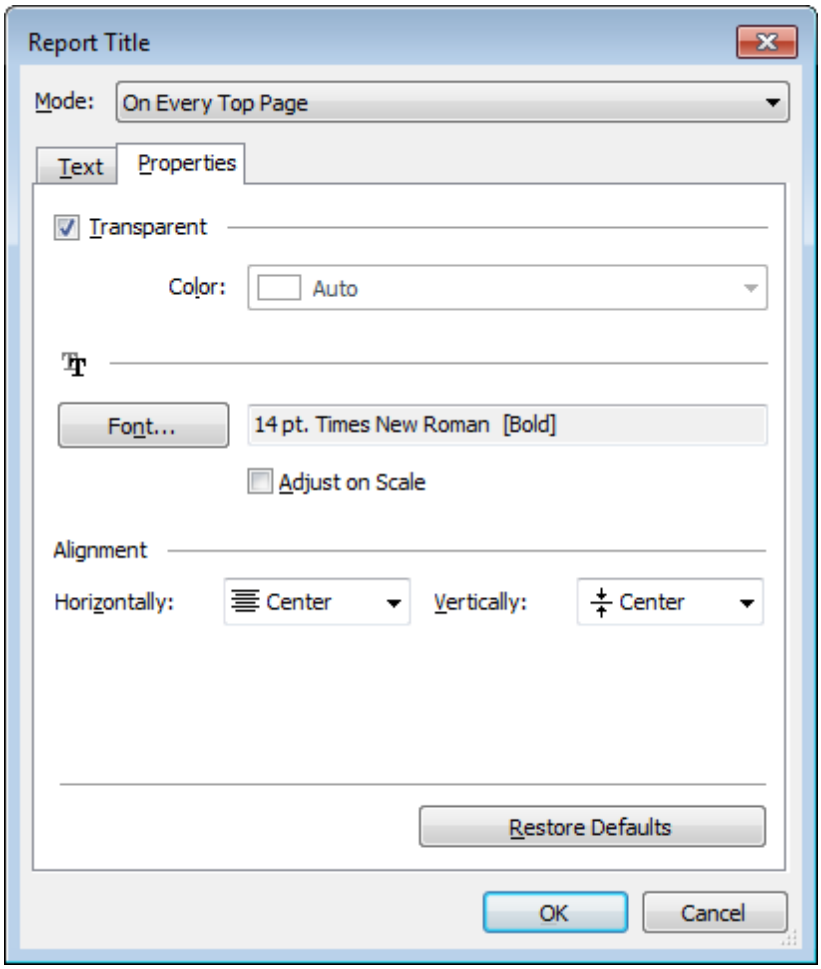
Zoom Step
Use the spinner control to specify the percentage of the original page size to be considered as one zoom step.

Use the **Margins Color** drop-down list to select the color that will be applied to the report margins.

Report Title dialog

The **Report Title** dialog allows you to specify the report title text and properties.

To open the dialog, use the **Title...** button available on the toolbar.



Mode
Use the drop-down list to select where the report title should be displayed *on the first page*, *on every top page*, or *not displayed* at all.

Text
Use the edit box to enter the text of the report title.

Properties

Transparent
If this option is selected, the report title will be drawn transparent.

Use the **Color** drop-down list to select the color that will be applied to the report title (enabled if the **Transparent** option is not selected).

Click the **Font...** button to specify title font properties using the standard **Font** dialog. The font name and size are displayed in the gray area next to the **Font...** button.

Adjust on scale
If this option is selected, the title can be adjusted on scale.

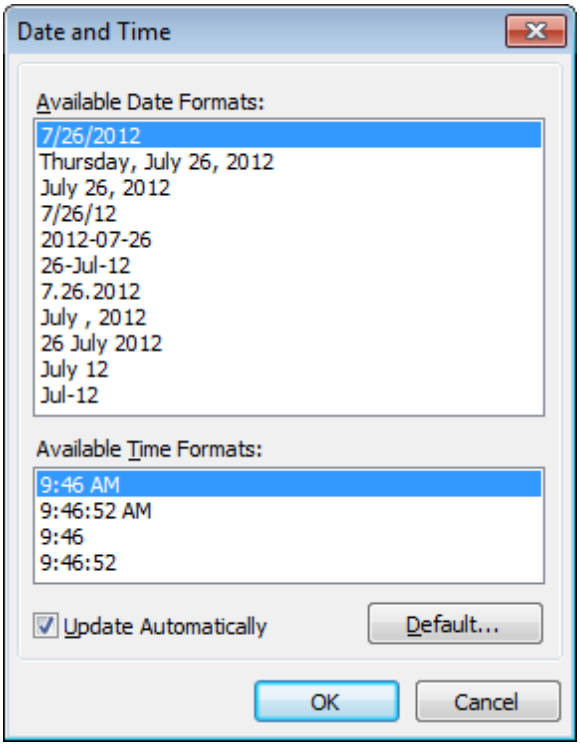
Alignment
Use the **Horizontally** drop-down list to select the type of horizontal alignment to be applied to the report title: *Left*, *Center*, or *Right*.
Use the **Vertically** drop-down list to select the type of vertical alignment to be applied to the report title: *Top*, *Center*, or *Bottom*.

To restore the default title properties, click the **Restore Defaults** button.

Date and Time dialog

The **Date and Time** dialog allows you to specify the date/time formats to be used in the report.

To open the dialog, open the **Title...** menu available on the toolbar and select the **Date and Time...** item.



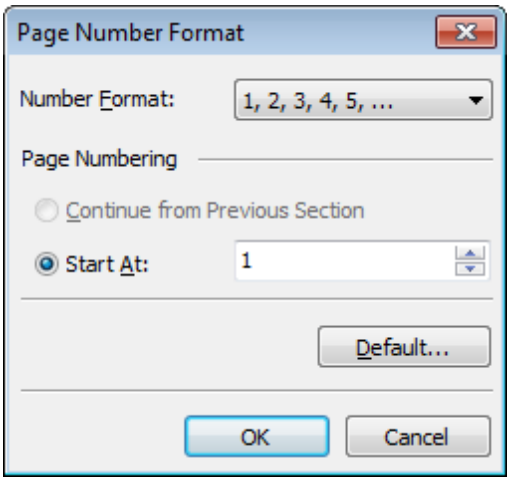
Select the preferable values from the **Available Date Formats** and the **Available Time Formats** lists. If necessary, you can specify that the date/time will be *updated automatically*.

To apply the default date/time format, click the **Default...** button.

Page Number Format dialog

The **Page Number Format** dialog allows you to specify the formats for page numbers to be used in the report.

To open the dialog, open the **Title...** menu available on the toolbar and select the **Page Numbering...** item.



Select the preferable number format from the **Number Format** drop-down list.

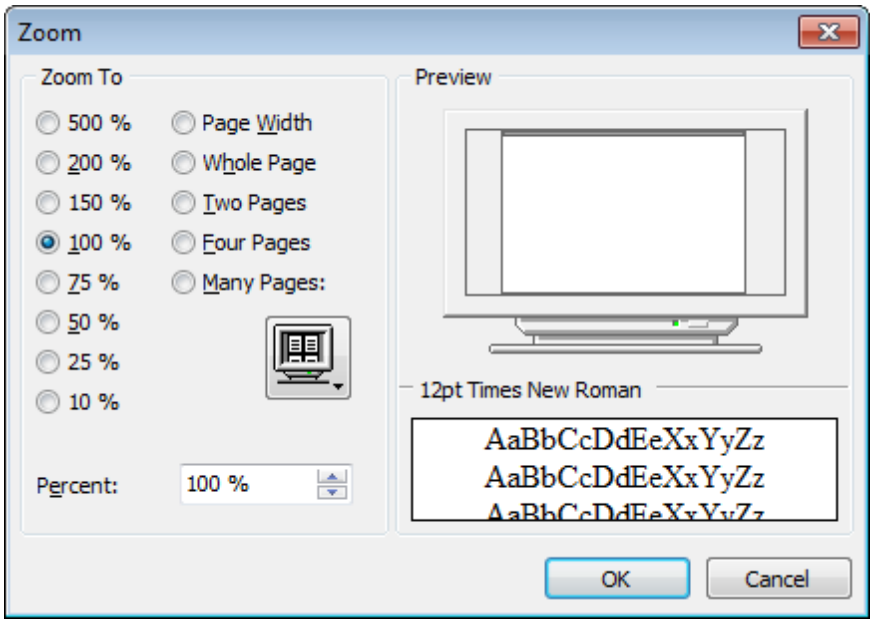
Use the **Page Numbering** section to specify whether page numbering should *continue from the previous section* (if any) or *start at the specified number*.

To set the default numbering values, click the **Default...** button.

Zoom dialog

The **Zoom** dialog allows you to zoom the report page more better representation.

To open the dialog, open the **Zoom** menu available on the toolbar and select the **Setup zoom...** item.



Select the preferable percentage of zoom value (*500%*, *200%*, *150%*, *100%*, *75%*, *50%*, *25%*, *10%*) or specify one of frequently used values:

- *Page Width*
- *Whole Page*
- *Two Pages*
- *Four Pages*
- *Many Pages* (click the chart below and select the item you need)

If necessary, you can set a custom percent value using the **Percent** spinner control below.

The **Preview** area on the right illustrates the changes you have made.

See also:

Page Setup

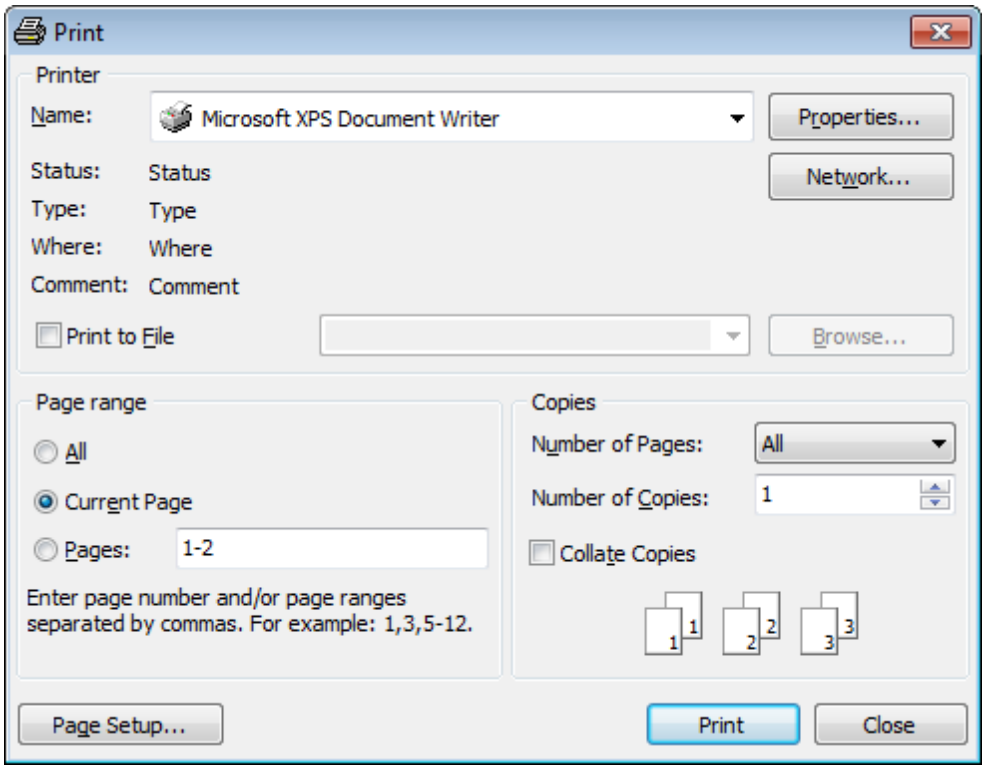
Report Formatter

Print dialog

7.1.4.4 Print dialog

The standard **Print** dialog allows you to specify printing settings for the report in groups: *printer*, *page range*, *copies*.

To open the dialog, click the **Print dialog** button available on the toolbar, or use the *Ctrl+P* shortcut.



When you are done, click the **Print** button to start printing.

If you need to change any page settings before printing, you can click the **Page Setup...** button at the bottom to call the Page Setup dialog.

See also:

Page Setup

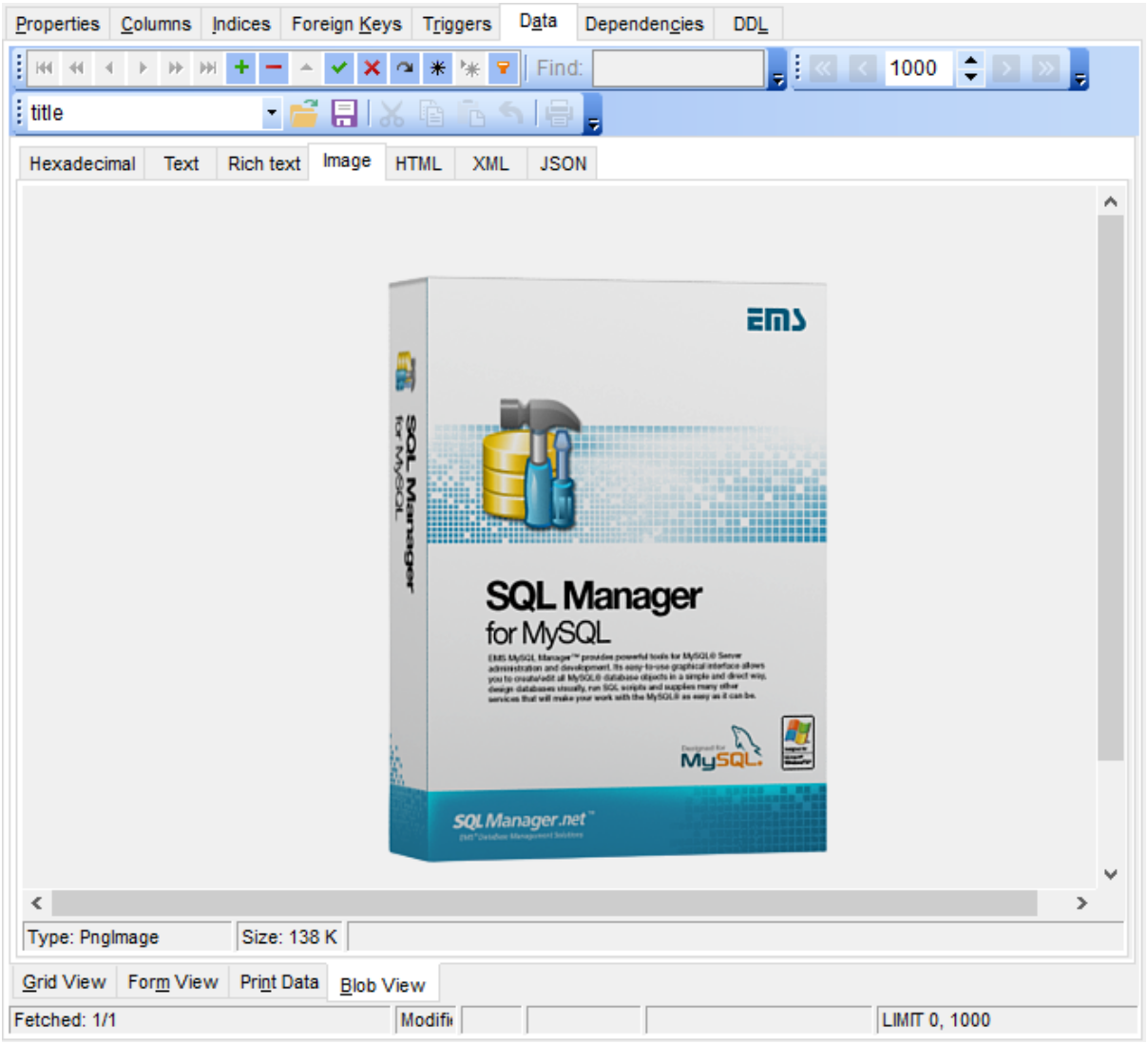
Report Formatter

Setting report options

7.1.5 BLOB View

SQL Manager for MySQL provides BLOB Viewer/Editor to view and edit BLOB (Binary Large Object) columns content. The BLOB Viewer/Editor can be invoked from the data grid within Table Editor, SQL Editor, Visual Query Builder, etc.

- Navigation within the BLOB Viewer/Editor
- Viewing/Editing BLOB column as Hexadecimal dump
- Viewing/Editing BLOB column as plain Text
- Viewing/Editing BLOB column as Rich Text (RTF)
- Viewing/Editing BLOB column as Image
- Viewing/Editing BLOB column as HTML
- Viewing/Editing BLOB column as XML
- Viewing/Editing BLOB column as JSON



Availability:
Full version (for **Yes**

Windows)	
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Using Navigation bar and Toolbars

Grid View

Form View

Print Data

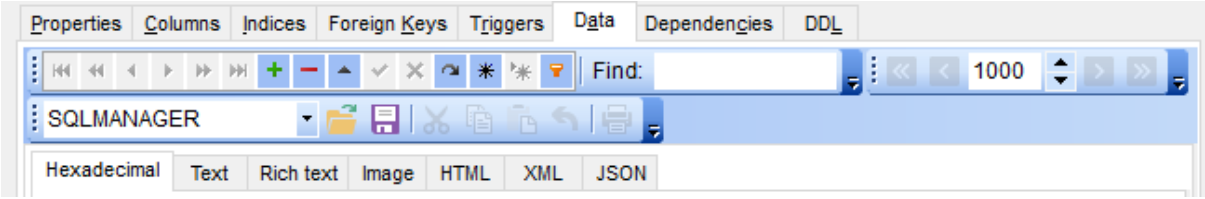
Applying changes

7.1.5.1 Navigation within BLOB Editor

The **BLOB Viewer/Editor** provides an ability to navigate within the records using **DB Navigation** buttons on the navigation pane at the top of the viewer window.

Using items of the navigation pane and the drop-down menu you can browse the data quickly, insert, update and delete records, set a filter for the records using the Filter Builder dialog, load new BLOB content and save the current content to files.

The toolbar allows you to switch the column and perform a number of editing operations. The set of toolbar items depends on the current selection and view mode.



See also:

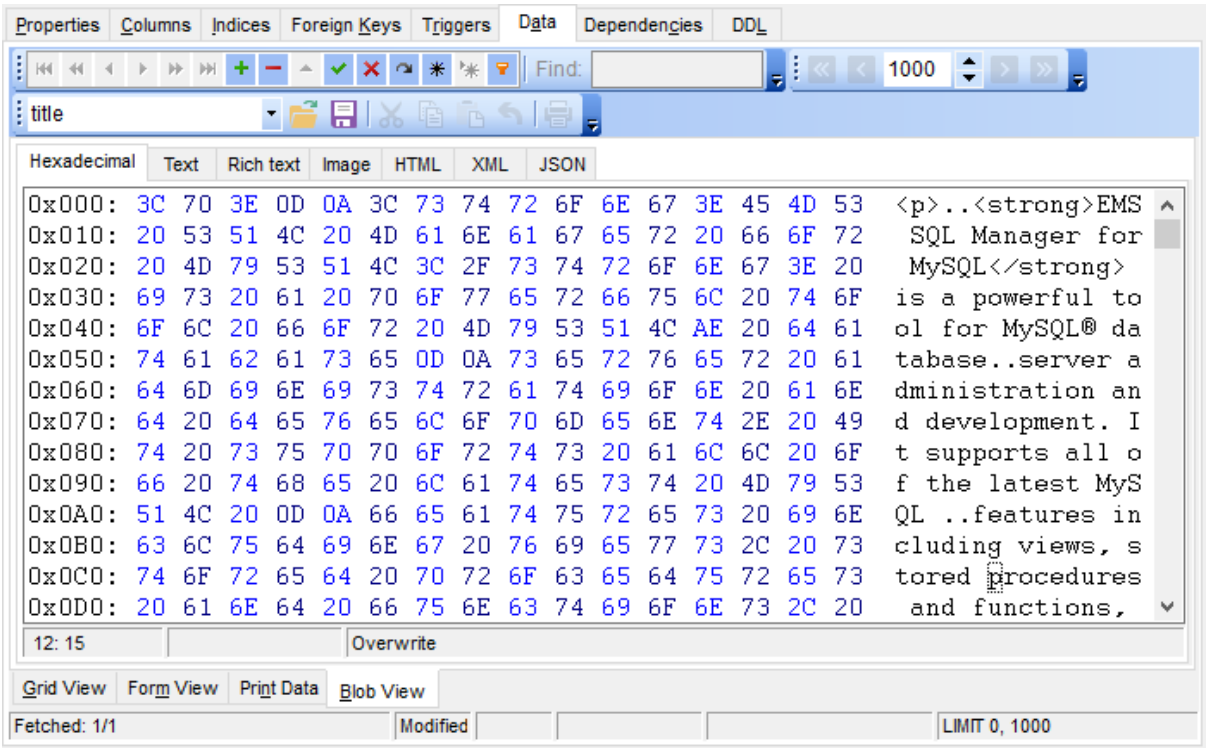
Editing as Hexadecimal
Editing as Text
Editing as Rich Text
Editing as Image
Editing as HTML
Editing as XML
Editing as JSON

7.1.5.2 Editing as Hexadecimal

The **Hexadecimal** tab allows you to view/edit the BLOB data as hexadecimal.

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the hexadecimal data to a file, or load data from a file.

Use the *Ins* key to switch between the Insert and Overwrite modes.



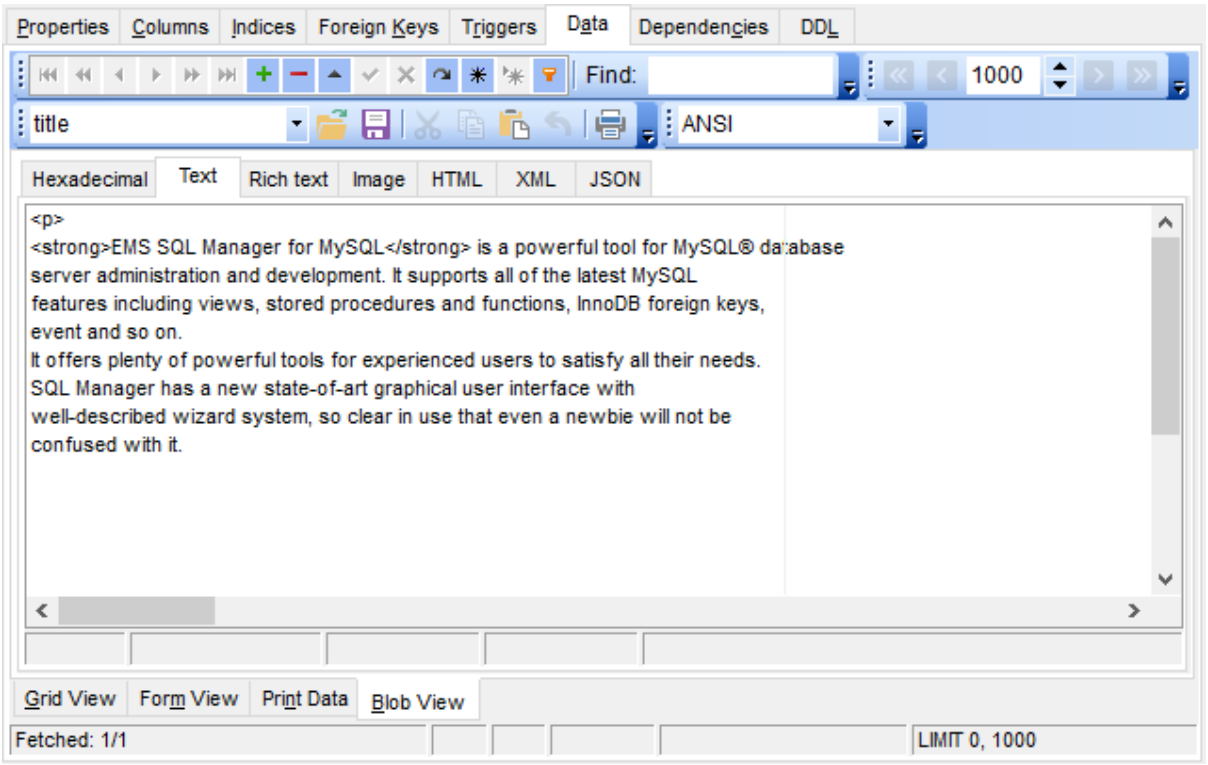
See also:

Navigation within BLOB Editor
Editing as Text
Editing as Rich Text
Editing as Image
Editing as HTML
Editing as XML
Editing as JSON

7.1.5.3 Editing as Text

The **Text** tab allows you to view/edit the BLOB data as plain text.

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the text to a **.txt* file, or load text from a file. Additionally, you can use the *Cut*, *Copy*, *Paste*, *Select All*, *Undo*, *Word Wrap* context menu items for editing the text efficiently, and the **Print** context menu item to print the content of the **Text** tab.



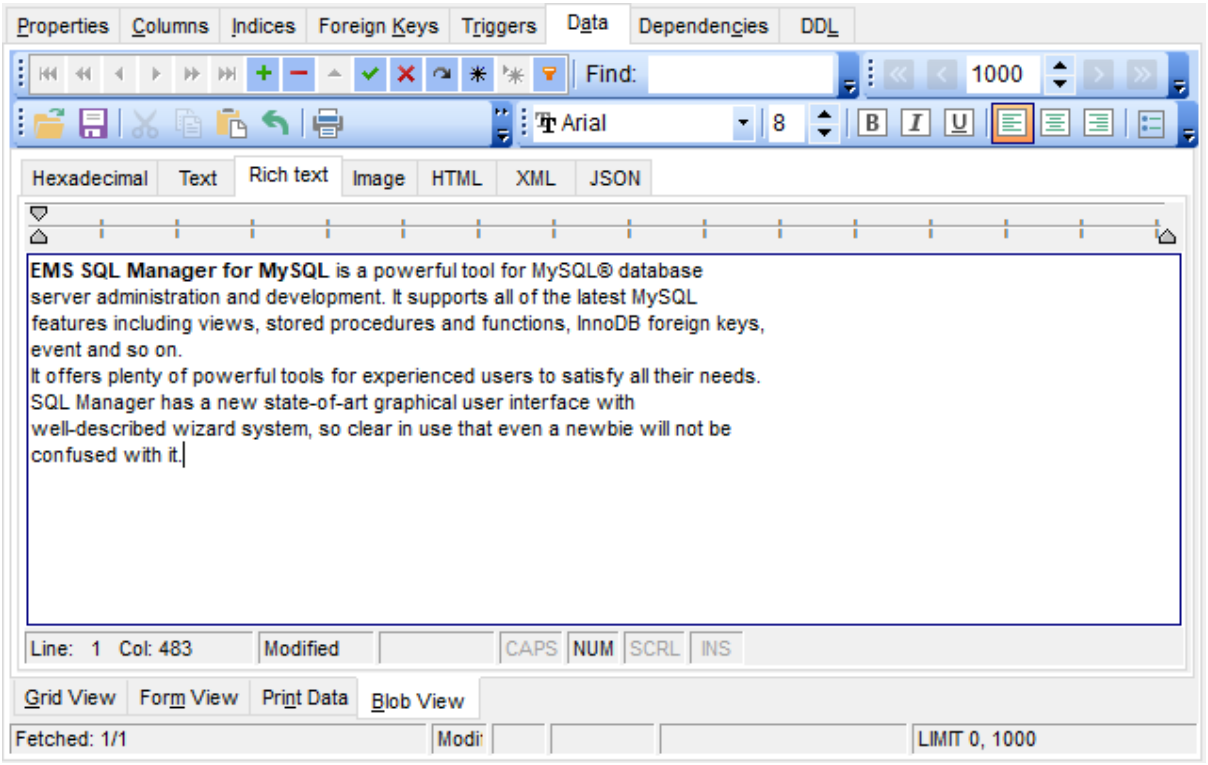
See also:

Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Rich Text
Editing as Image
Editing as HTML
Editing as XML
Editing as JSON

7.1.5.4 Editing as Rich Text

The **Rich Text** tab allows you to view/edit the BLOB data in Rich Text format (RTF).

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the Rich Text to a **.rtf* file, or load text from a file. Additionally, you can use the *Cut*, *Copy*, *Paste*, *Select All*, *Undo* context menu items for editing the text efficiently, and the **Print** context menu item to print the content of the **Rich Text** tab.



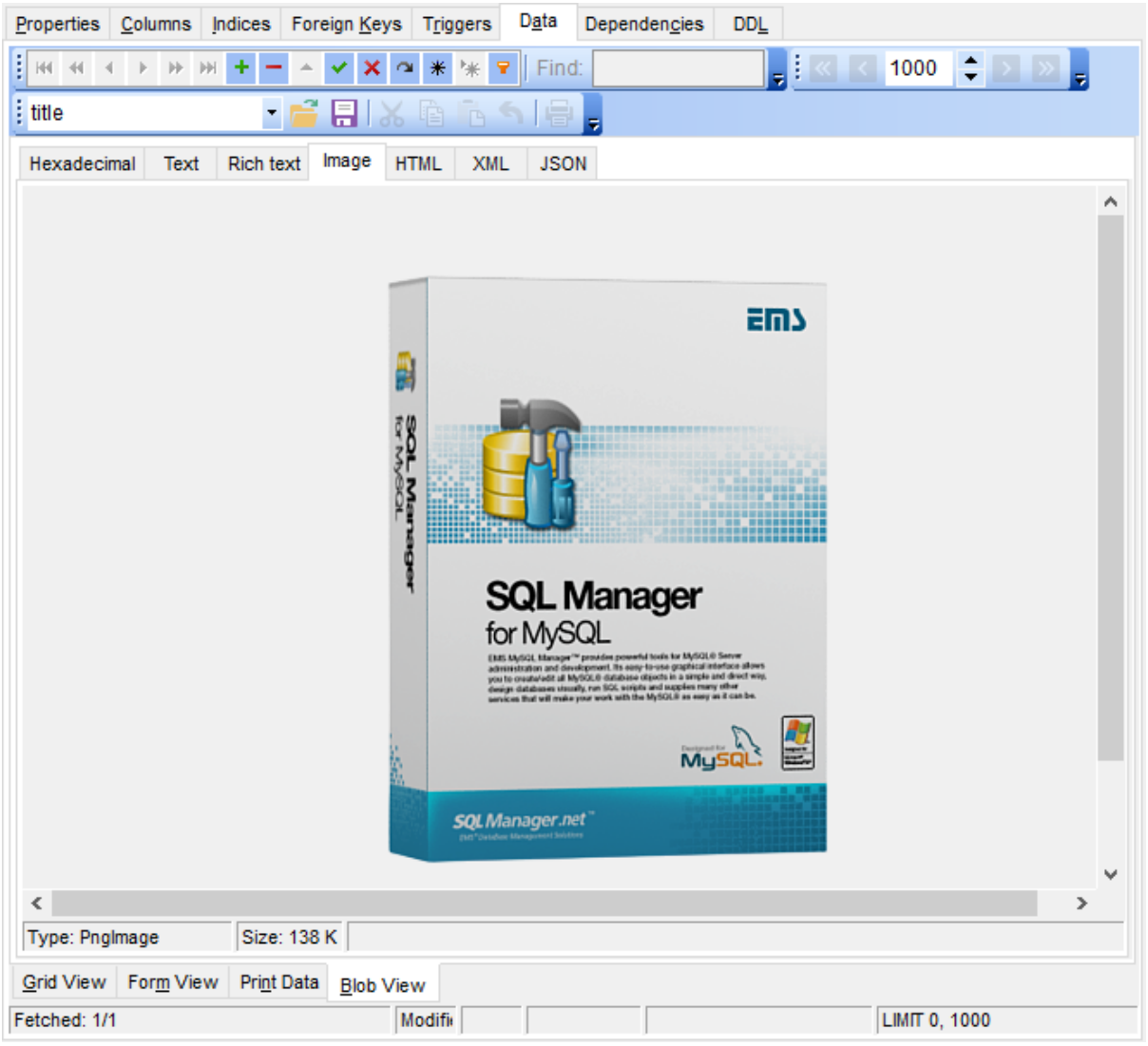
See also:

Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Text
Editing as Image
Editing as HTML
Editing as XML
Editing as JSON

7.1.5.5 Editing as Image

The **Image** tab allows you to view the BLOB data as image.

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the image to a **.png*, **.wmf*, **.ico* or **.jpg* file, or load an image from a file.



See also:

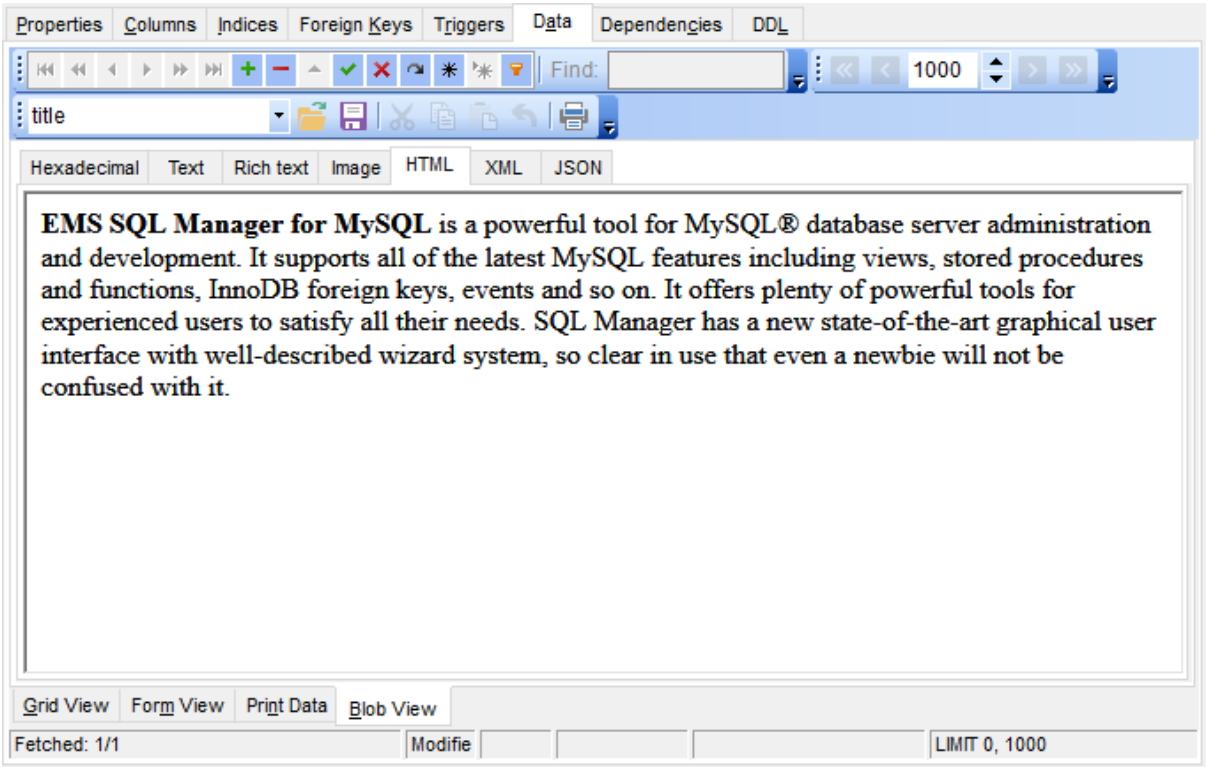
Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Text
Editing as Rich Text
Editing as HTML
Editing as XML

Editing as JSON

7.1.5.6 Editing as HTML

The **HTML** tab allows you to view the BLOB data as HTML (Hyper-Text Markup Language format) - in the way this data would be displayed by your Internet browser.

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the content as a **.html*, or **.htm* file, or load content from a file.



See also:

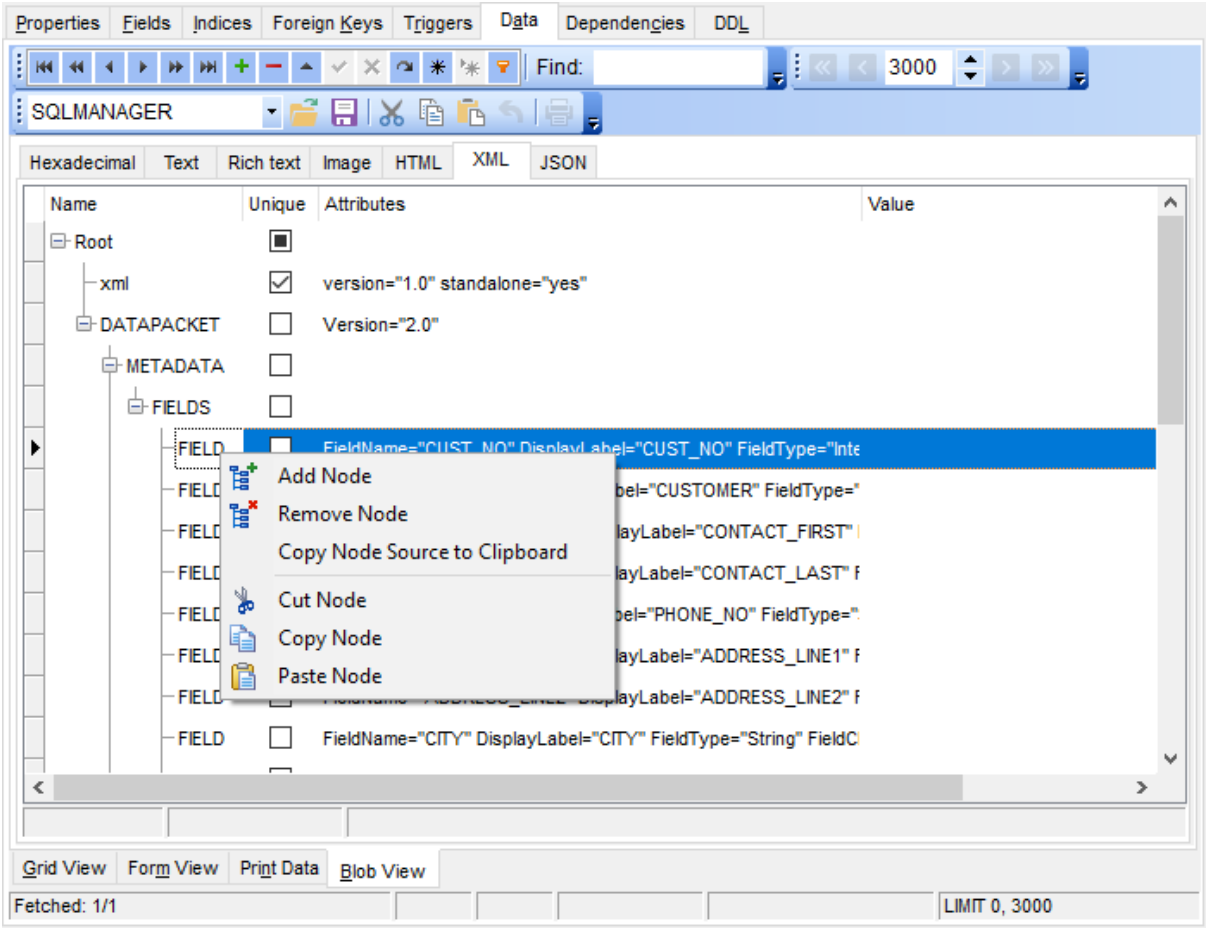
Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Text
Editing as Rich Text
Editing as Image
Editing as XML
Editing as JSON

7.1.5.7 Editing as XML

The XML tab allows you to view/edit BLOB data as XML (Extensible Markup Language).

For navigation between records use the standard navigation pane of the viewer. This pane also allows saving changes, cancelling changes, adding and removing records.

Buttons for working with BLOB data can be found on the navigation pane of the BLOB View tab.



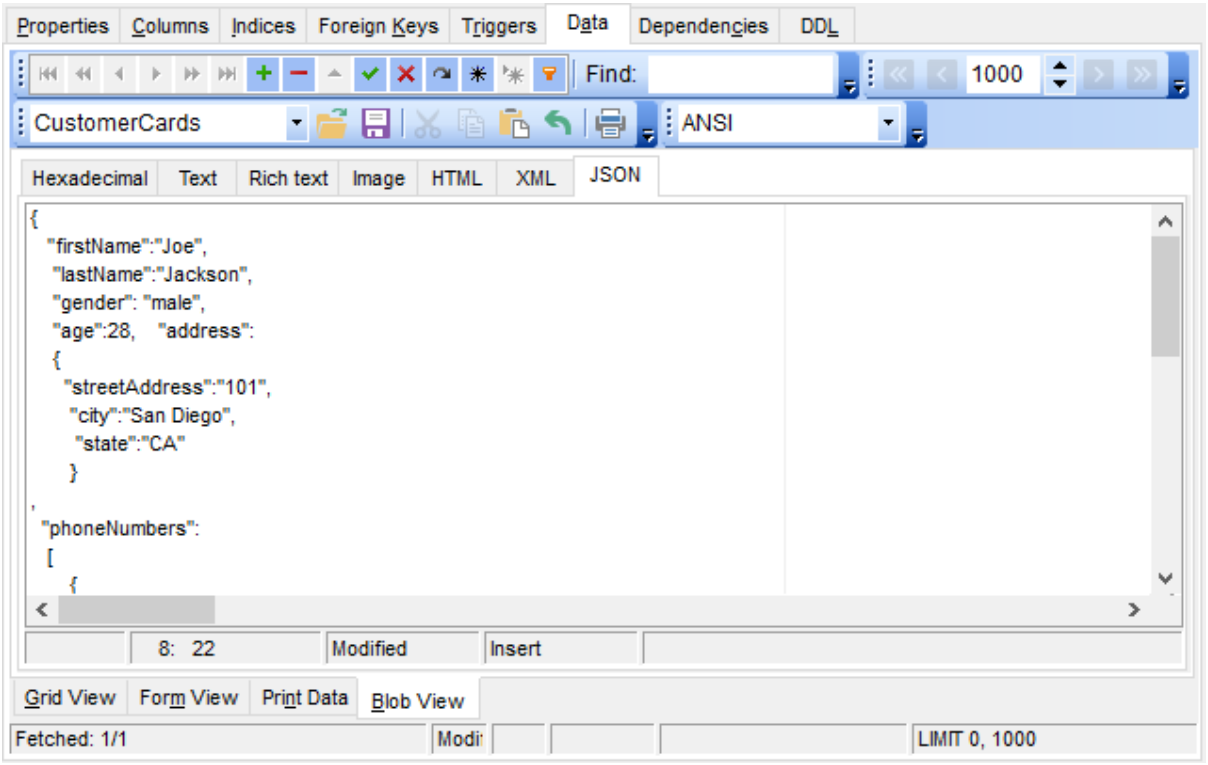
See also:

Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Text
Editing as Rich Text
Editing as Image
Editing as HTML
Editing as JSON

7.1.5.8 Editing as JSON

The JSON tab allows you to view/edit JSON data. Click on the Load Data button, it will open the dialog box, click on Upload File, which will open the file explorer of the operating system. Select the JSON file and click open/select.

The toolbar provides additional functionality for BLOB Viewer/Editor: use the **Save to file** and the **Load from file** toolbar buttons to save the content as a file, or load content from a file.

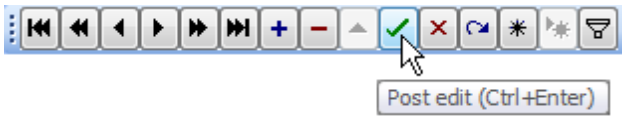


See also:

Navigation within BLOB Editor
Editing as Hexadecimal
Editing as Text
Editing as Rich Text
Editing as Image
Editing as HTML
Editing as XML

7.1.6 Applying changes

After changes are done, click the **Post Edit** button on the navigation pane to apply the changes or the **Cancel Edit** button to discard the changes.



See also:

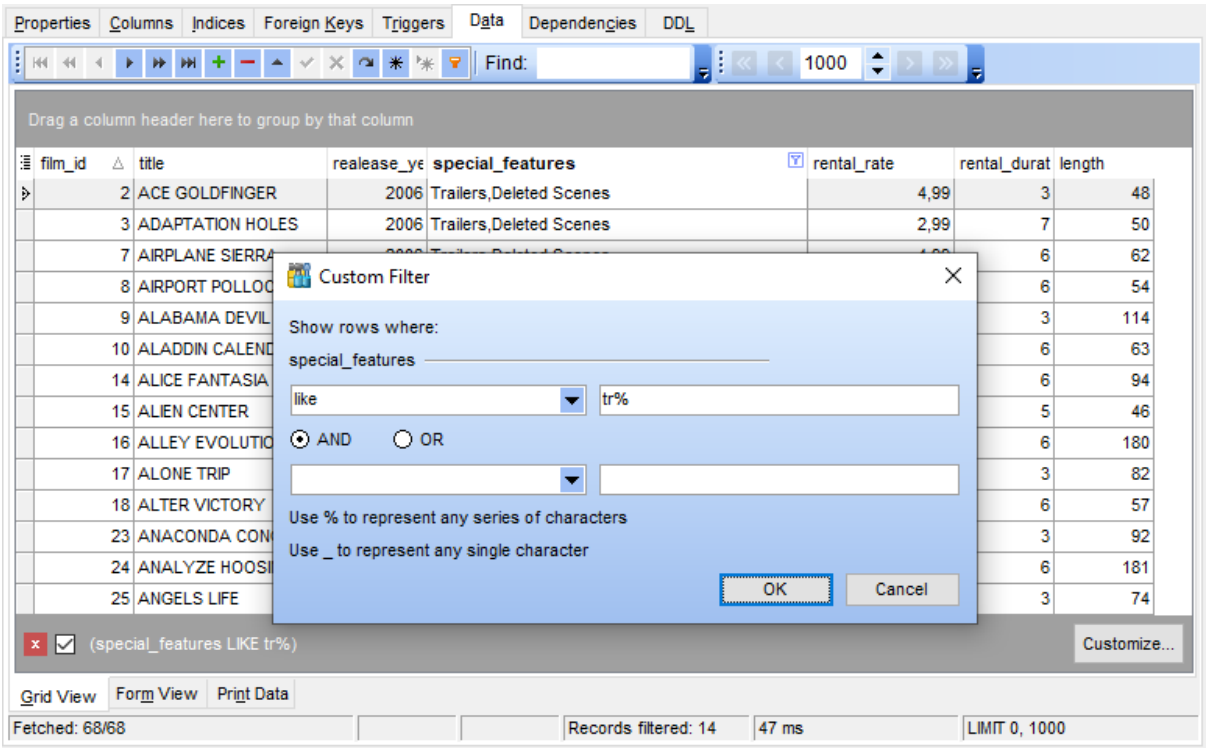
Using Navigation bar and Toolbars
Grid View
Form View
Print Data
BLOB View

7.2 Custom Filter

The **Custom Filter** dialog is one of the filtering facilities implemented in Data View for your convenience.

To open the dialog, click the Arrow-Down button next to the column caption, and select the **Custom** item from the drop-down list.

Select a logical operator for checking the column values (*like*, *is less than*, *is greater than* , etc.) and set a value to be checked by this operator in the corresponding box on the right.



If necessary, you can set the second condition and specify the relation between the two conditions: whether both of them should be satisfied (*AND*) or just any of them (*OR*). Use the '_' character to represent any single symbol, and use the '%' character to represent any series of symbols in the condition string.

See also:

Data View

Filter Builder dialog

7.3 Filter Builder dialog

The **Filter Builder** dialog is a powerful filtering tool implemented in Data View for your convenience.

The dialog is aimed at facilitating the procedure of creating and applying complex filter criteria for data. In addition, the tool allows you to save filter criteria to an external **.flt* file for future use.

To open the **Filter Builder** dialog, use the **Set filter** button on the navigation pane available within the Data tab of Table Editor and the **Result(s)** tabs of SQL Editor and Query Builder.

- Invoking the Filter Builder dialog
- Adding a new condition to the filter
- Setting filter criteria
- Setting filter operator
- Setting filter criteria values
- Adding a new group
- Setting group operator
- Applying filter conditions

See also:

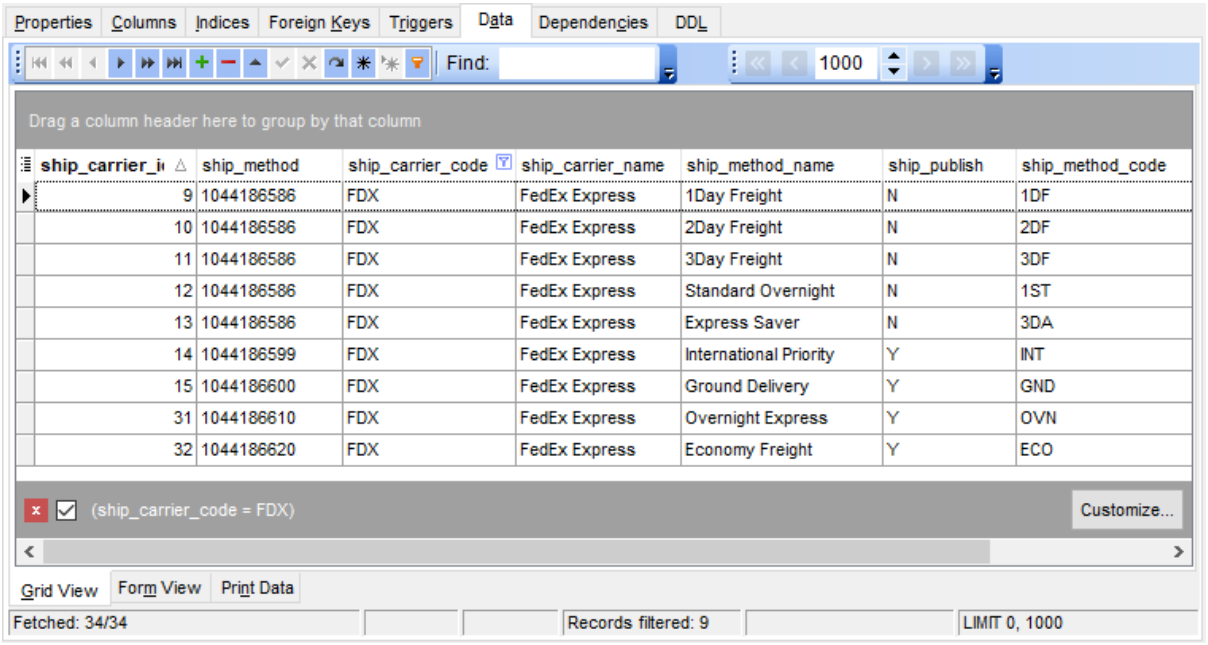
Data View

Custom Filter

7.3.1 Invoking the Filter Builder dialog

The **Filter Builder** dialog can be invoked in either of the following ways:

- if a simple filter or the Custom Filter is being used, click the **Customize...** button on the gray **filtering panel**;



- use the **Set filter** button on the navigation pane and create a composite filter using the dialog.

The succeeding pages of this chapter are intended to illustrate usage of the **Filter Builder** dialog. Please see the instructions below to learn how to perform various operations in the easiest way.

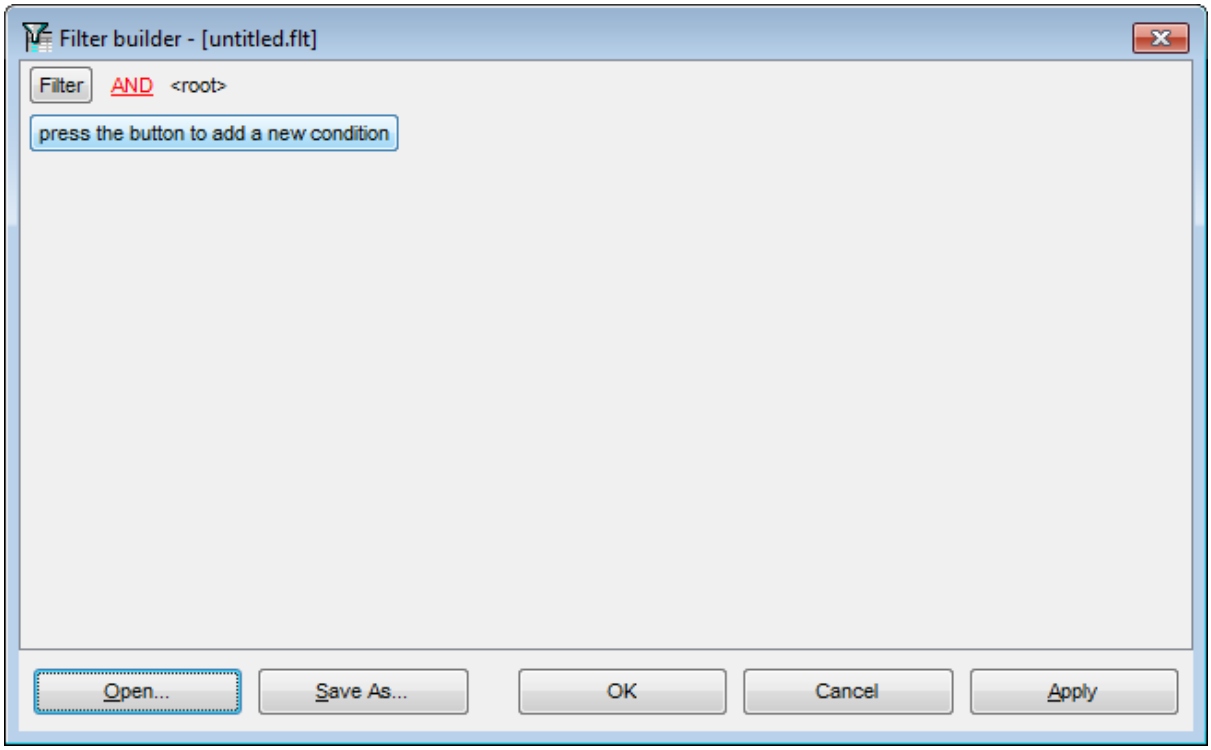
See also:

Adding a new condition
Setting filter criteria
Setting filter operator
Setting filter criteria values
Adding a new group
Setting group operator
Applying filter conditions

7.3.2 Adding a new condition

Suppose we need to select data from the sample table *Employee* to view the list of male engineers belonging to the *Engineering* and *Tool Design* departments that were hired after *10/1/2007*. These criteria are applied to the *Gender*, *HireDate*, *Position* and the *DepID* columns.

Click **press the button to add a new condition** - this will add a new condition to the criteria. Alternatively, you can click the **Filter** button and select the **Add Condition** popup menu item.

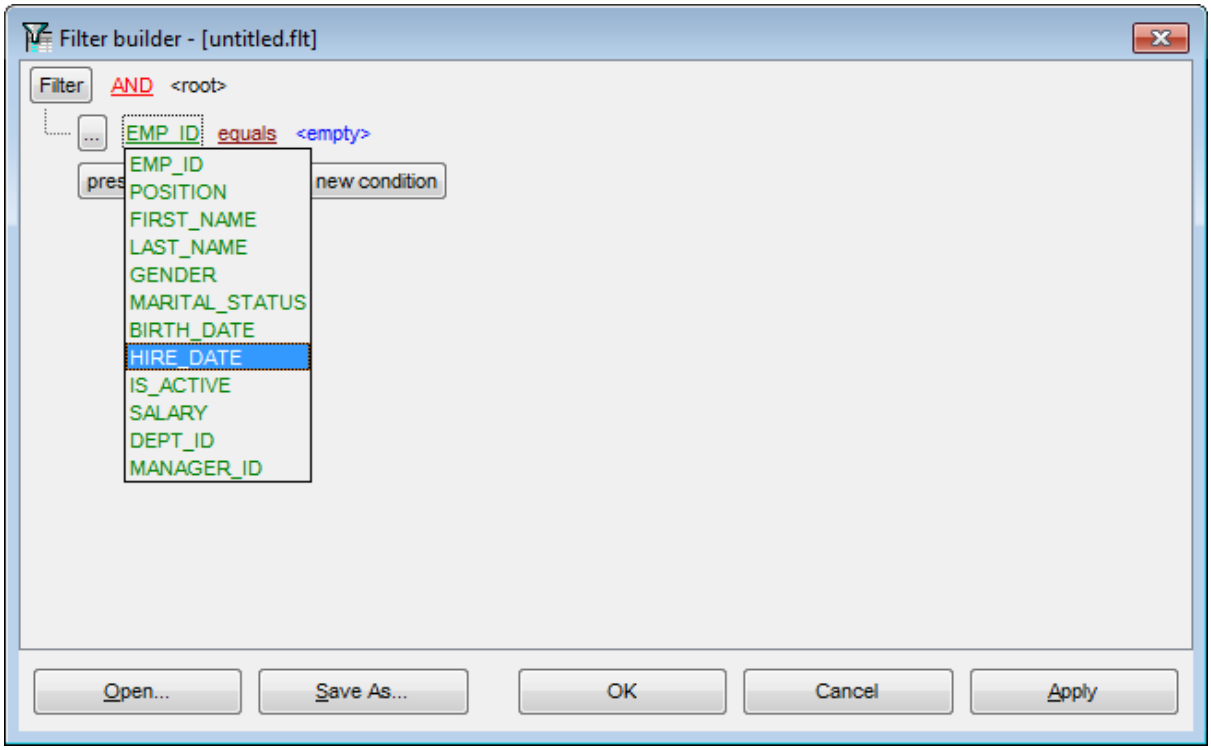


See also:

Invoking the Filter Builder dialog
Setting filter criteria
Setting filter operator
Setting filter criteria values
Adding a new group
Setting group operator
Applying filter conditions

7.3.3 Setting filter criteria

As we need to apply the filter criteria to the *HireDate* column, we click the column box (next to the ellipsis button) to open the drop-down list displaying the available column names and select the *HireDate* item.

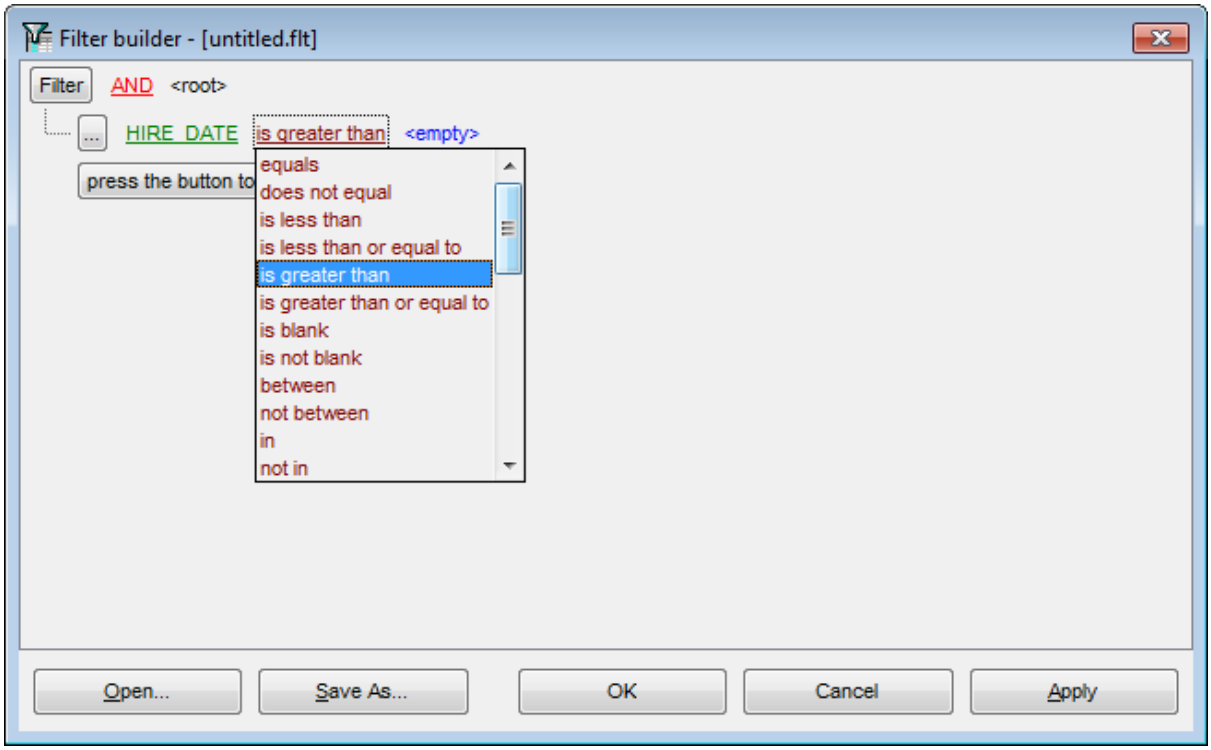


See also:

Invoking the Filter Builder dialog
Adding a new condition
Setting filter operator
Setting filter criteria values
Adding a new group
Setting group operator
Applying filter conditions

7.3.4 Setting filter operator

Since we need the list of employees hired after *10/1/2007*, we need to select the *IS GREATER THAN* operator from the corresponding drop-down list.



See also:

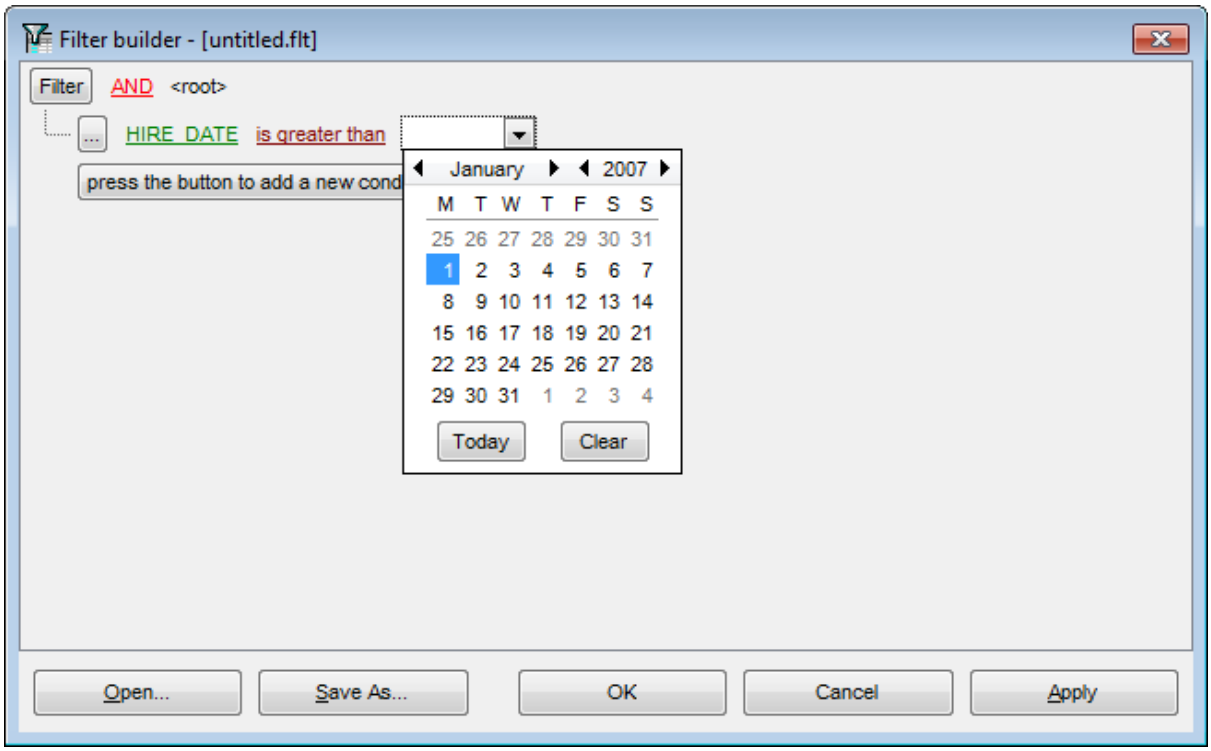
Invoking the Filter Builder dialog
Adding a new condition
Setting filter criteria
Setting filter criteria values
Adding a new group
Setting group operator
Applying filter conditions

7.3.5 Setting filter criteria values

Next, we need to specify value *'10/1/2007'* for the *IS GREATER THAN* operator.

Similarly, if, for example, we need to get the list of employees hired during the *9/1/2007 - 10/1/2007* term, we set the *BETWEEN* filter operator (this will add two empty value boxes to specify the inclusive range for the *BETWEEN* condition) and specify the range for the operator, i.e. the *'9/1/2007'* and the *'10/1/2007'* values in the corresponding value boxes.

It is possible to set the date value **manually** by typing it in, or using the **date editor** which is activated when you click the value box.



Editors used in value boxes are determined by the **data type** assigned to the corresponding columns.

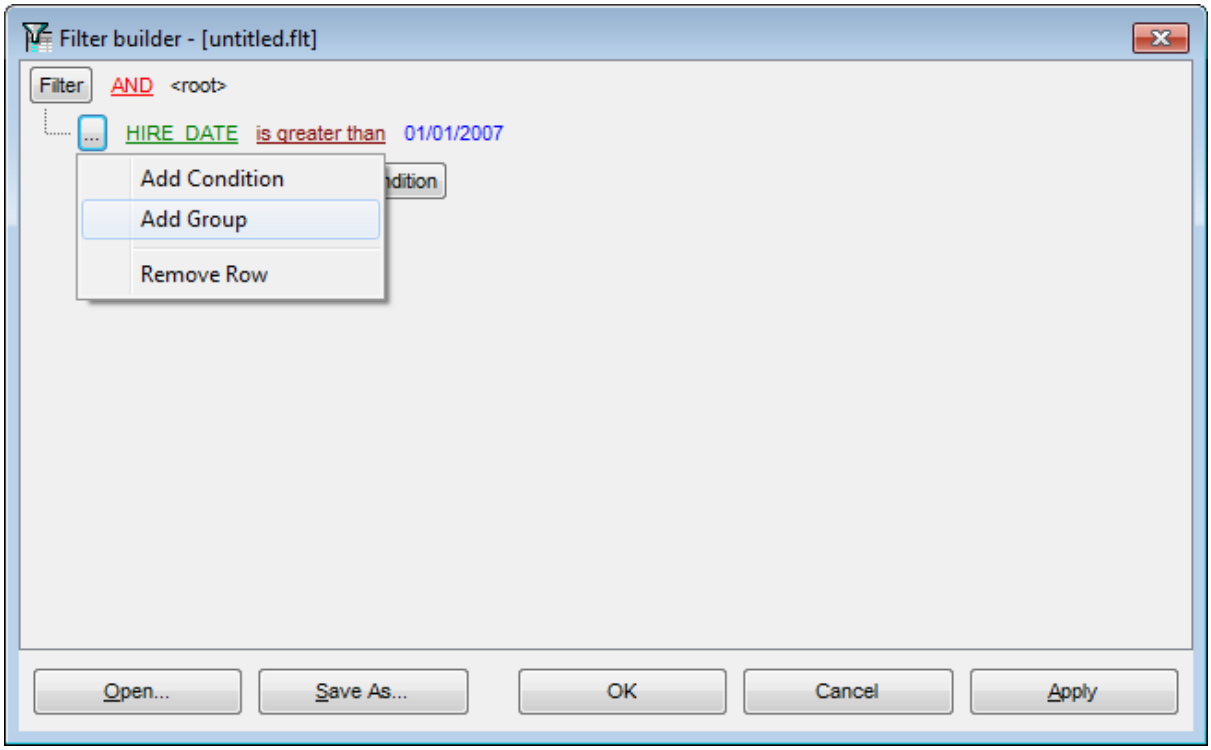
See also:

Invoking the Filter Builder dialog
Adding a new condition
Setting filter criteria
Setting filter operator
Adding a new group
Setting group operator
Applying filter conditions

7.3.6 Adding a new group

Since we also need to get the list of male specialists-engineers (i.e. those registered in the *Engineering* and *Tool Design* departments and having an engineering-oriented position), we can add a complex filter condition combining simple conditions with the *AND* operator. (However, in this particular case we can just add them at the same root level as for the existing condition).

If you need to add a group of conditions, click the ellipsis button for the *HIRE_DATE* condition and select the **Add Group** popup menu item.



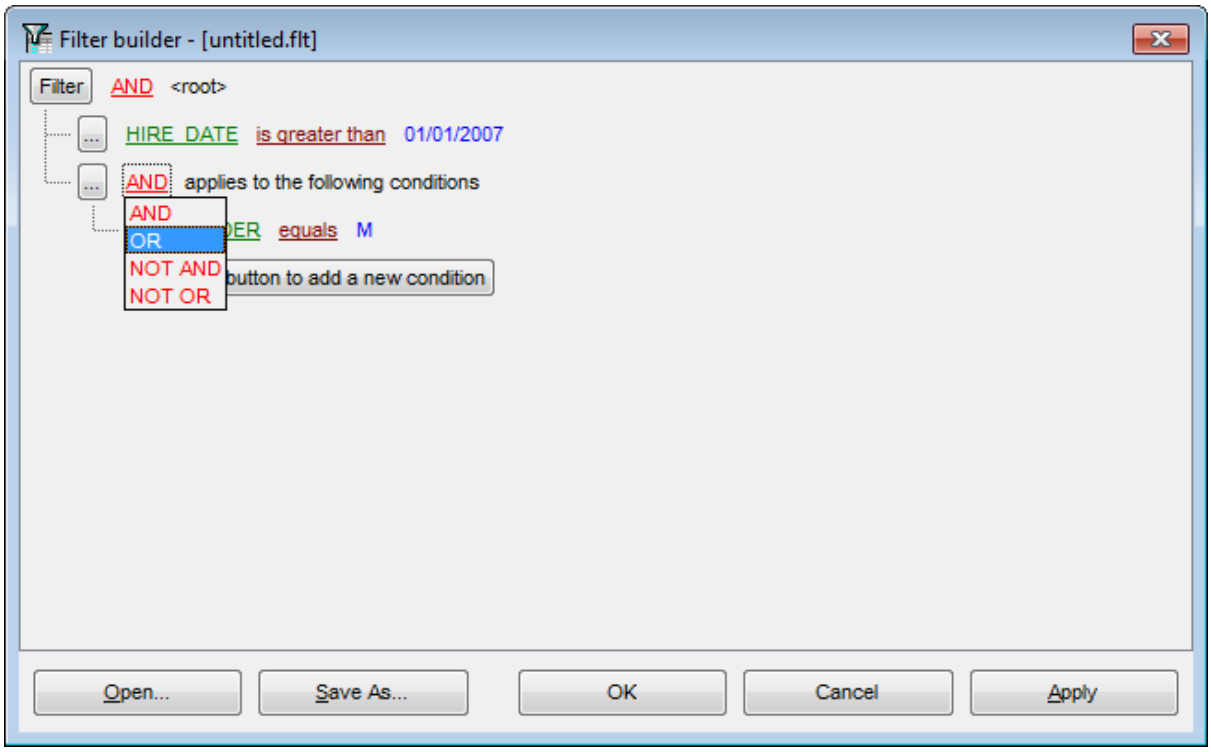
See also:

Invoking the Filter Builder dialog
Adding a new condition
Setting filter criteria
Setting filter operator
Setting filter criteria values
Setting group operator
Applying filter conditions

7.3.7 Setting group operator

Conditions of complex criteria can be combined with any of the four logical operators used: *AND*, *OR*, *NOT AND*, *NOT OR*.

In our case it is enough to click the **group operator** box and select the *AND* item from the drop-down menu.



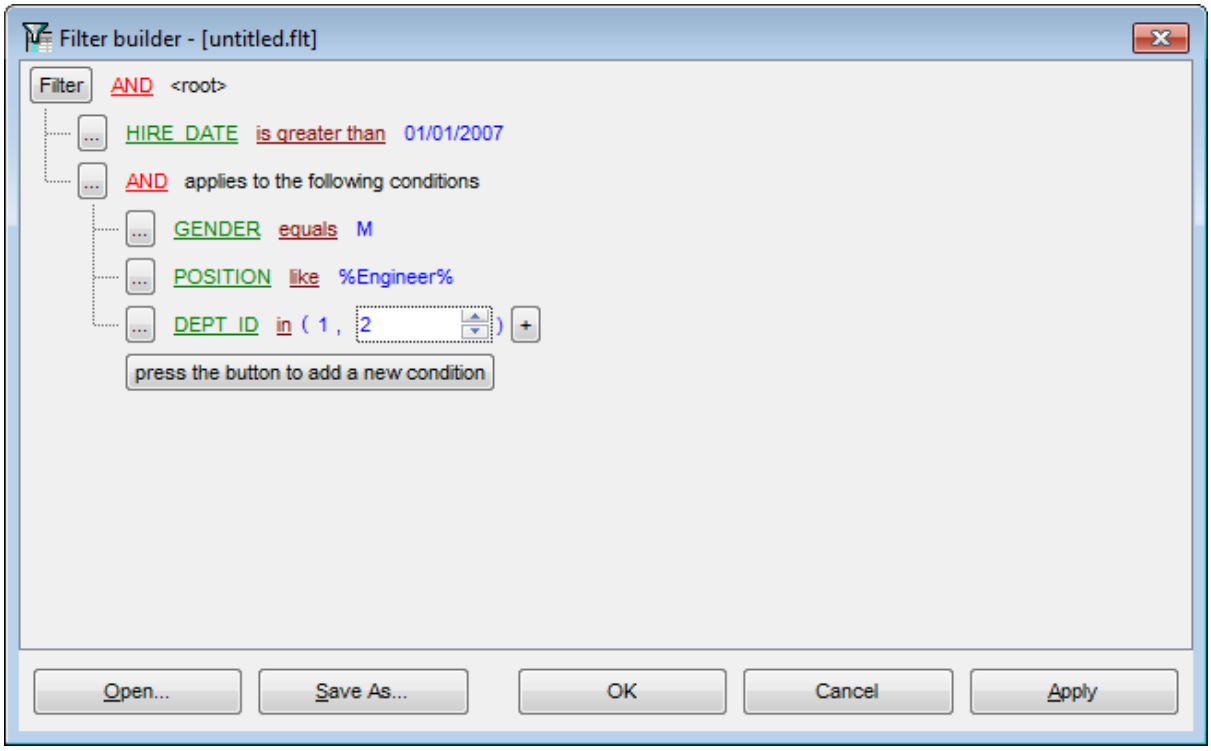
See also:

[Invoking the Filter Builder dialog]
[Adding a new condition]
[Setting filter criteria]
[Setting filter operator]
[Setting filter criteria values]
[Adding a new group]
[Applying filter conditions]

7.3.8 Applying filter conditions

Suppose we have created a condition within the new group. If we need, we can add more conditions at the same level and specify the required values using the value boxes. When the operation is completed, the **Filter Builder** dialog will look like in the screenshot below.

Click the **Apply** button to see the result of the filtering you have made, and click **OK** or **Cancel** to close the dialog with or without saving your filter conditions respectively.



The **Filter Builder** dialog allows you to save filter criteria to and load them from external files. Clicking the **Save As...** or the **Open...** buttons activates the corresponding dialogs. Filter settings are stored in **.flt* files.
Please be informed that a column in the file is referenced by its position within a view, hence filter settings cannot be correctly restored if columns have been deleted from the view after saving the filter to a file.

See also:

Invoking the Filter Builder dialog
Adding a new condition
Setting filter criteria
Setting filter operator
Setting filter criteria values
Adding a new group
Setting group operator

Part

8 Import/Export Tools

Using **SQL Manager for MySQL** you are provided with powerful tools to import and export data to/from your MySQL database.

Export Data Wizard
Exports data to various supported formats including *MS Excel*, *MS Access*, *RTF*, *HTML*, *PDF*, *CSV*, *XML*, *MS Excel 2007* and more.

Import Data Wizard
Imports data from any of supported formats: *MS Excel*, *MS Access*, *DBF*, *TXT*, *CSV*, *XML*, *MS Excel 2007*, *MS Word 2007* and more.

Export Data as SQL Script
Exports data to an SQL script as a number of INSERT statements.

Save Data Wizard
Saves data to an external file with the SELECT ... INTO OUTFILE statement used.

Load Data Wizard
Loads data from an external file with the LOAD DATA INFILE statement used.

Export as PHP
Creates PHP script allowing connecting to a database, displaying data of the selected table, and providing forms and procedures for adding/editing/dropping data.

Using templates
Facilitates using import/export/save/load wizards.

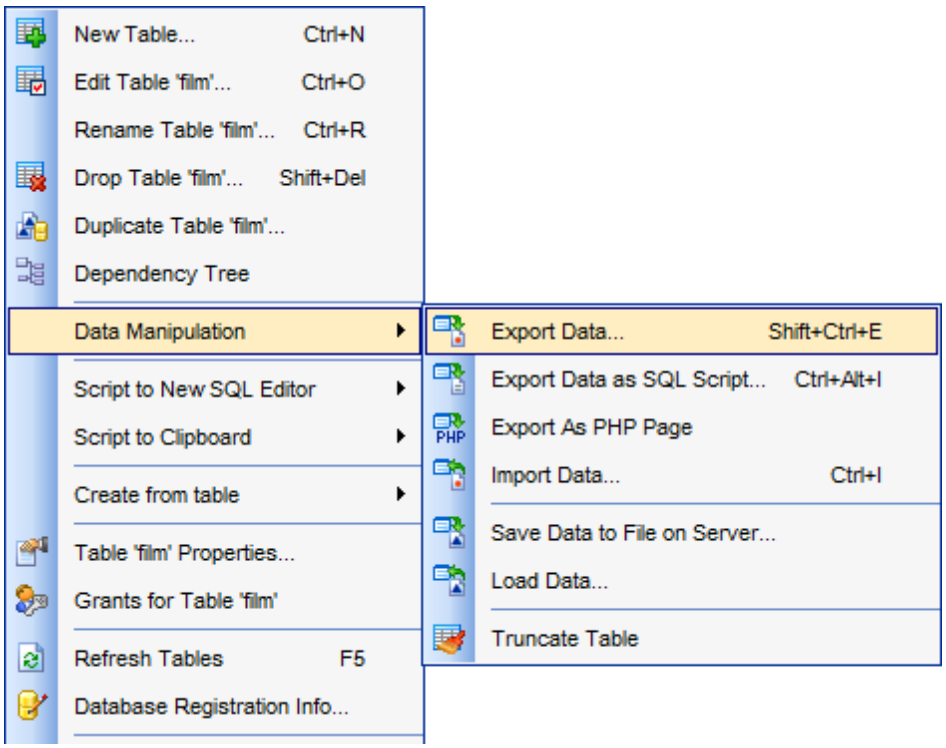
See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Database Tools
Server Tools
Personalization
External Tools
How To...

8.1 Export Data Wizard

Export Data Wizard allows you to export data from a table / view or from a query result to any of supported formats (*MS Excel*, *MS Access*, *MS Word*, *RTF*, *HTML*, *PDF*, *TXT*, *CSV*, *XML*, *DBF*, *MS Excel 2007*, *MS Word 2007*, etc.). You can save your settings as a template any time for future use.

To start the wizard, right-click the object in DB Explorer and select the **Data Manipulation | Export Data...** context menu item.
Alternatively, you can open the **Data** tab of Table Editor / View Editor or the **Result(s)** tab of SQL Editor / Query Builder, right-click the grid there and select the **Data Manipulation | Export Data of <object_name>...** context menu item.



- Setting name and format for the destination file
- Selecting columns for export
- Adjusting formats applied to exported data
- Setting header and footer text for the destination file
- Setting format-specific options
- Setting common export options
- Exporting data

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

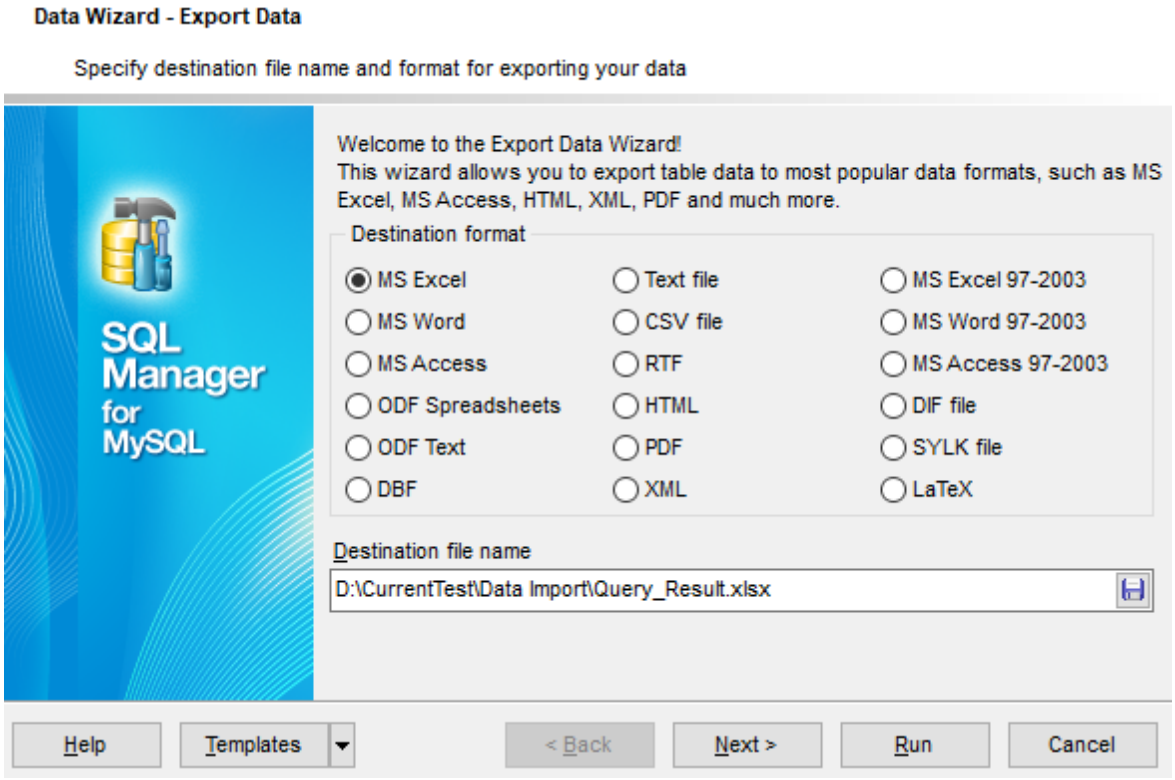
Import Data Wizard
Export as SQL Script
Save Data Wizard
Load Data Wizard
Using templates

8.1.1 Setting destination file name and format

This step of the wizard allows you to select the destination file format you need to export data into.

Destination file name
Type in or use the button to specify the path to the file using the **Save as...** dialog. The file name extension changes automatically according to the selected **Destination format**.

Note: If the target file already exists, the application will show a warning dialog where you can choose the action you need.

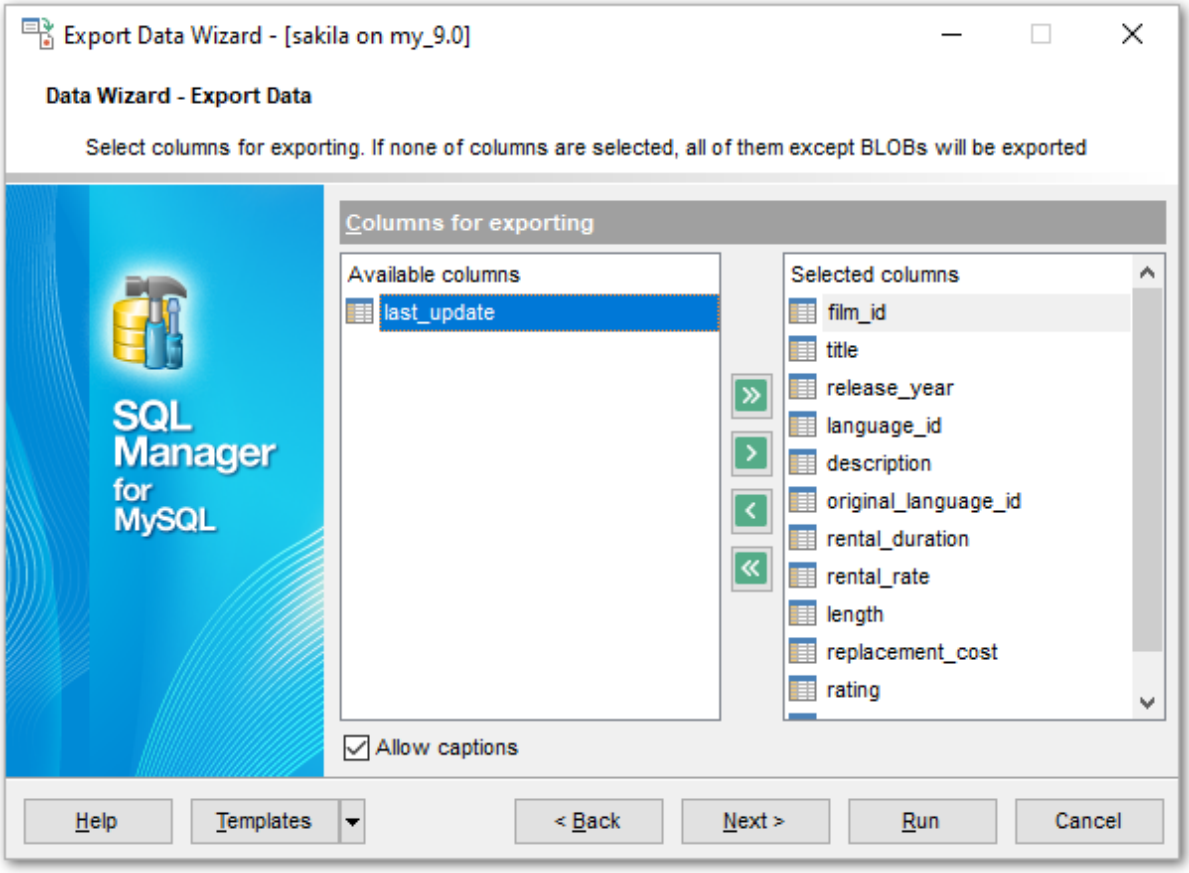


Destination format
Specify the format of the destination file. For details refer to Supported file formats.

Click the **Next** button to proceed to the Selecting columns for export step of the wizard.

8.1.2 Selecting columns for export

This step of the wizard allows you to select the table column(s) to be exported. To select a column, you need to move it from the **Available Columns** list to the **Selected columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.



If you leave all the columns in the **Available columns** list, all columns of the table (except BLOBs) will be exported.

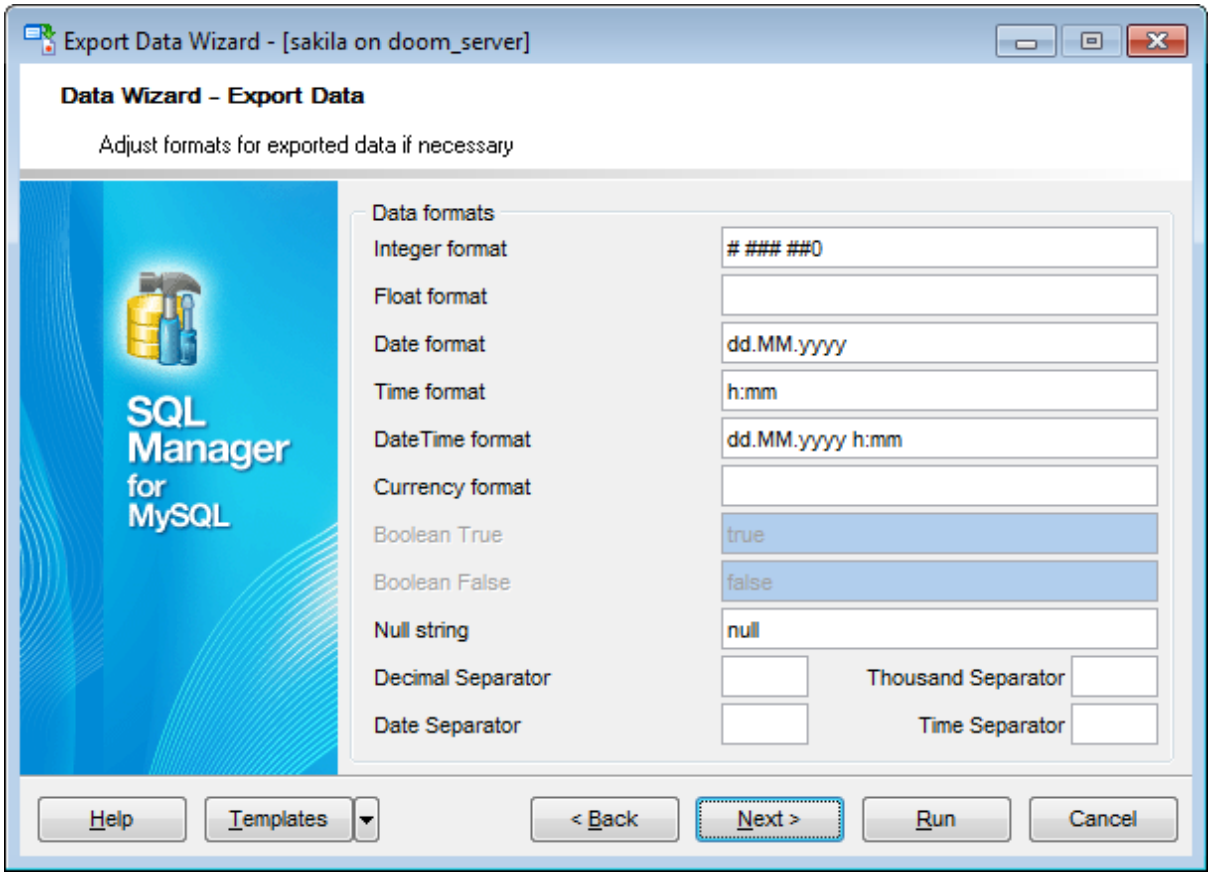
Allow captions
Check this option if you need to export the column captions as well.

Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.1.3 Adjusting data formats

This step allows you to customize formats applied to exported data.

Data formats
Edit the format masks to adjust the result format in the way you need: *Integer*, *Float*, *Date*, *Time*, *DateTime*, *Currency*, *Boolean True*, *Boolean False*, *NULL string*, *Decimal separator*, *Thousand separator*, *Date separator*, *Time separator*.



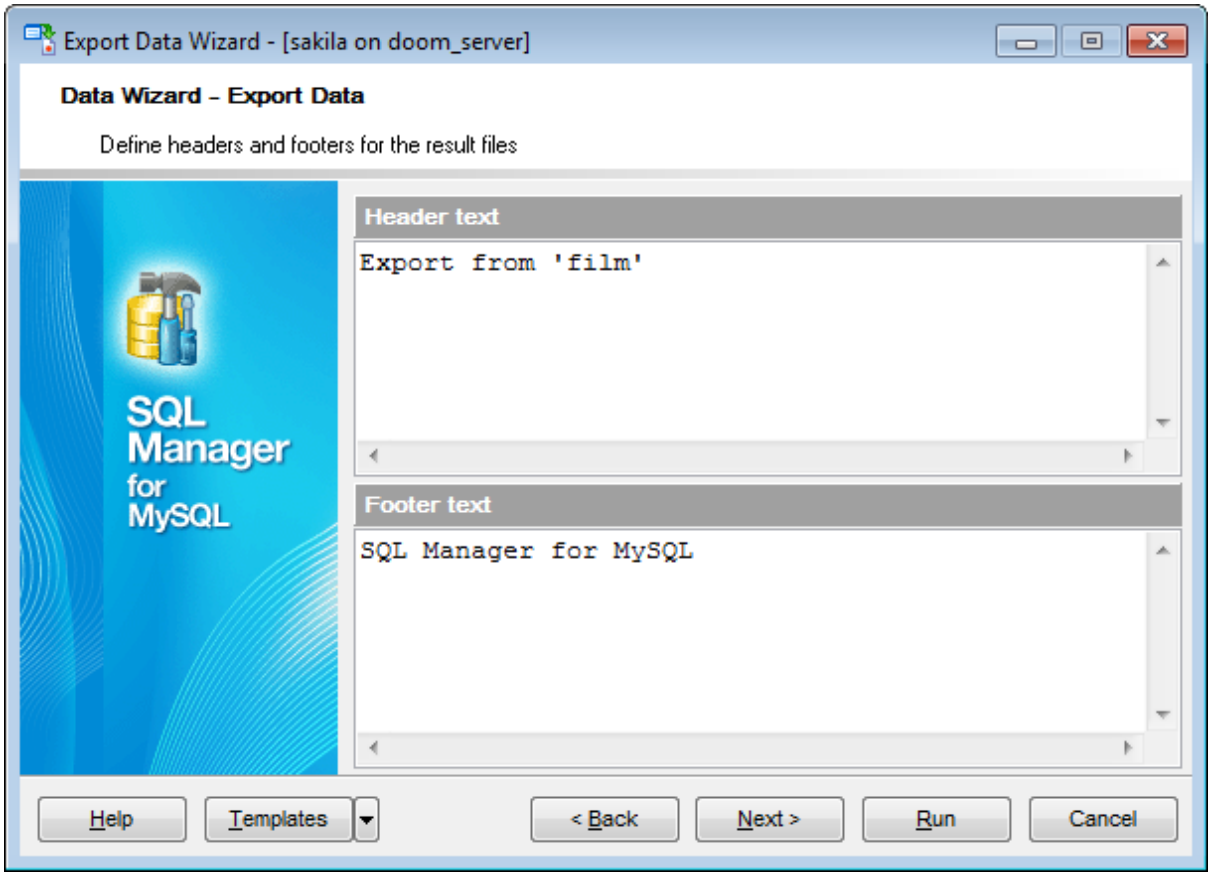
Hint: The formats used by default are specified in the Data Export section of the Environment Options dialog.

For more details refer to Format specifiers.

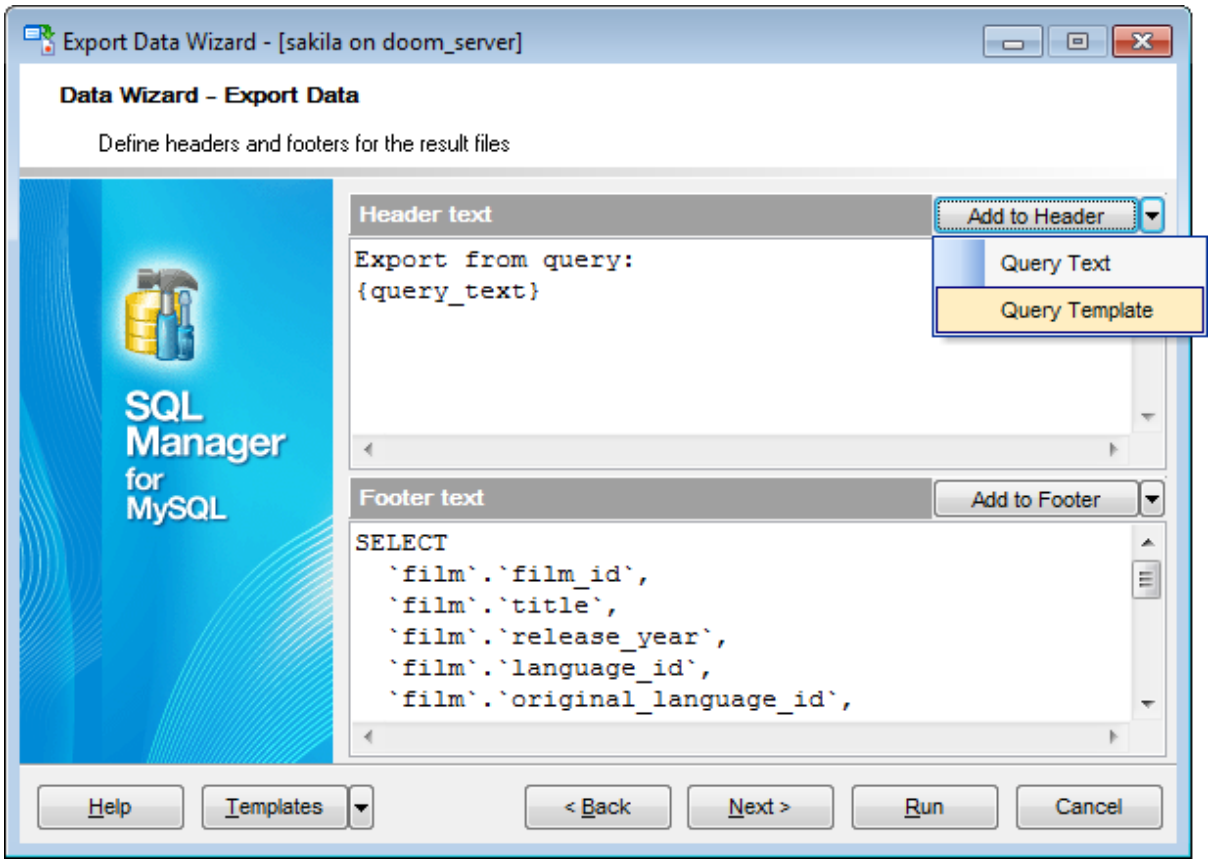
Click the **Next** button to proceed to the Setting header and footer step of the wizard.

8.1.4 Setting header and footer

Set **Header text** and **Footer text** for the result file. This text will appear at the beginning and at the end of the result file respectively.



If you are exporting the result of a query, it is possible to add the text of the query to the header and/or to the footer of the output file. Use the corresponding **Add to Header** / **Add to Footer** buttons to add the *query text* or the *query template* to the header/ footer of the output file.



Click the **Next** button to proceed to Setting format-specific options.

8.1.5 Setting format-specific options

This step of the wizard allows you to customize **Format-specific options**:

- Excel 97-2003 options
- Access options
- Word 97-2003 / RTF options
- HTML options
- PDF options
- TXT options
- CSV options
- XML options
- MS Excel / ODS options
- MS Word / ODT options

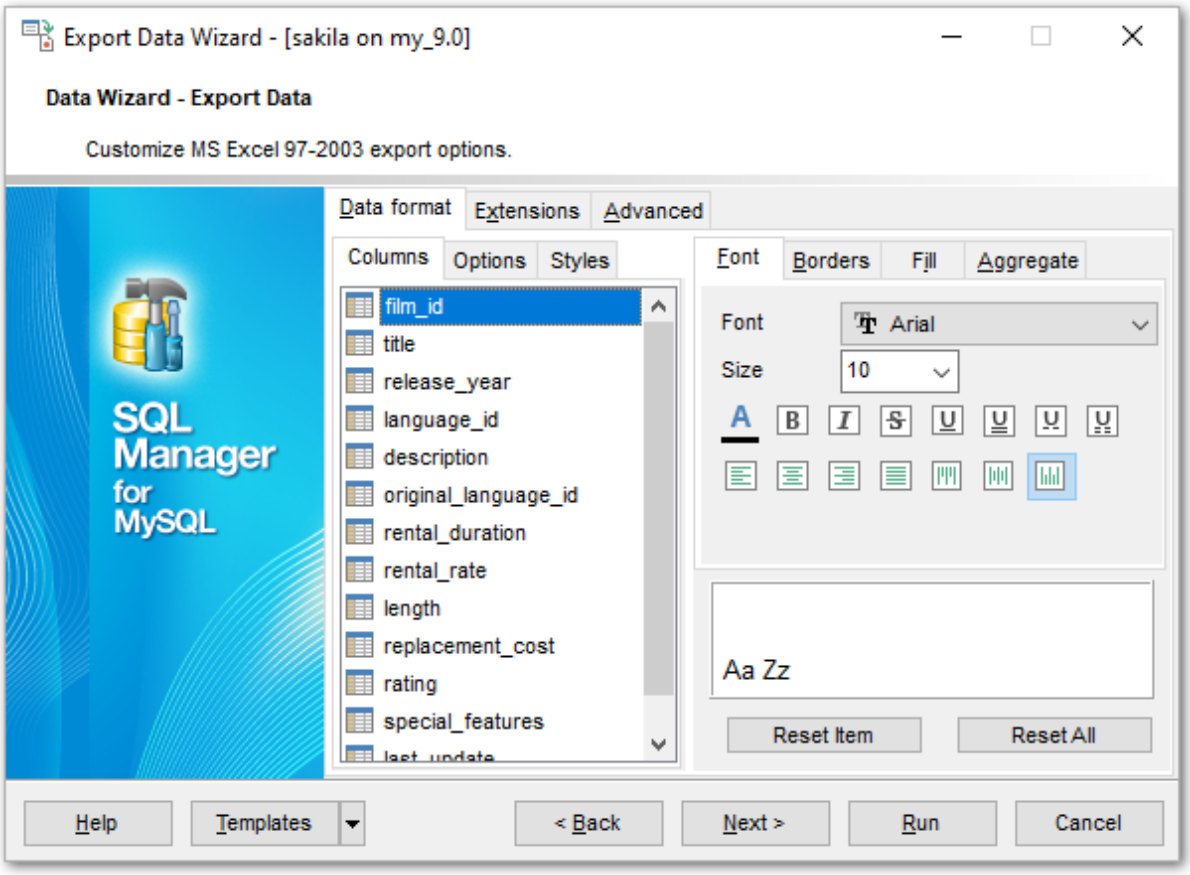
To get more information about the file formats, see the Supported file formats page.

8.1.5.1 Excel 97-2003 options

This step allows you to set options for the target **MS Excel** (*.xls) file.

You can customize **Data format**, **Extensions** and set **Advanced** options available within the corresponding tabs:

- Data format
- Extensions
- Advanced



When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.1.1 Data format

The **Data Format** tab contains general options which allow you to adjust the format for each kind of Excel cells. This means that you can specify such parameters as *font*, *borders*, *filling color* and *method*, etc. for each entity (such as *data field*, *header*, *footer*, *caption*, *data*, *hyperlink* and so on) separately. Also it is possible to create *styles* to make the target Excel file striped by columns or rows.

- Fields
- Options
- Styles

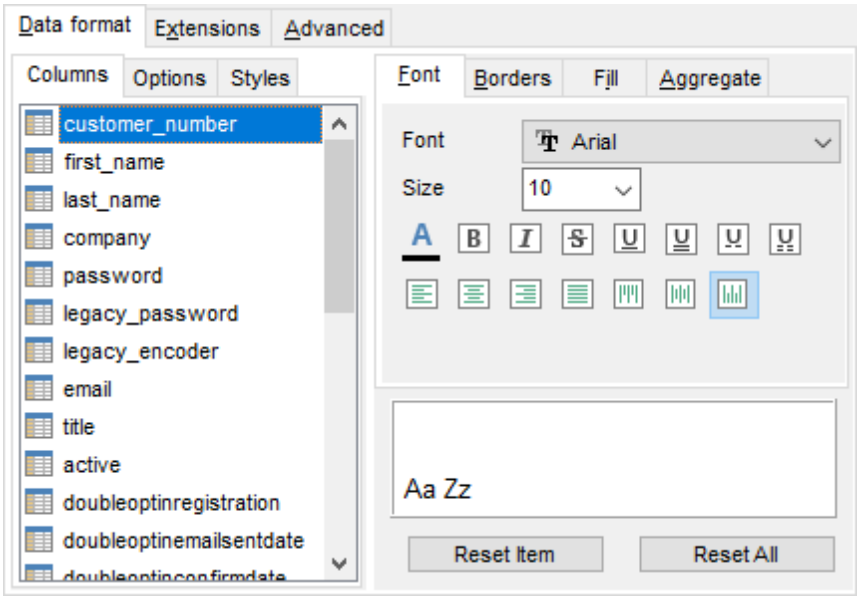
For your convenience the previews illustrating the changes are displayed in the **Sample Group** area on each page of **Data Format** tab.

8.1.5.1.1.1 Fields

Using the **Columns** tab you can set *font* options, *border* and *fill* options and *aggregate functions* for all the **columns** you want to export.

The **Font** tab allows you to specify properties of the font that will be used in the output Excel file cells.

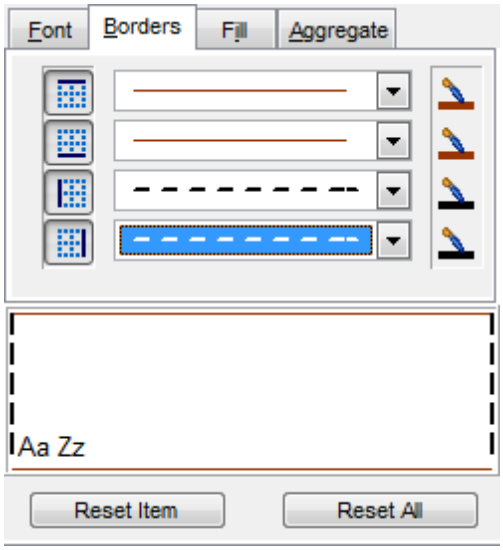
Use the **Font** and **Size** drop-down lists to select the *font* and *size* to be applied to the output text.
Use the buttons below to set *font color*, make text *bold*, *italicized*, *strikethrough* text, set *underline* effects, specify text *horizontal* and *vertical align*.



The **Borders** tab allows you to specify properties of the borders of the output Excel file cells.

Press the  buttons on the left to show/hide the borders they indicate.

Use the drop-down list for each border to select the *line type* and the  button on the right to select the *line color* for each border.

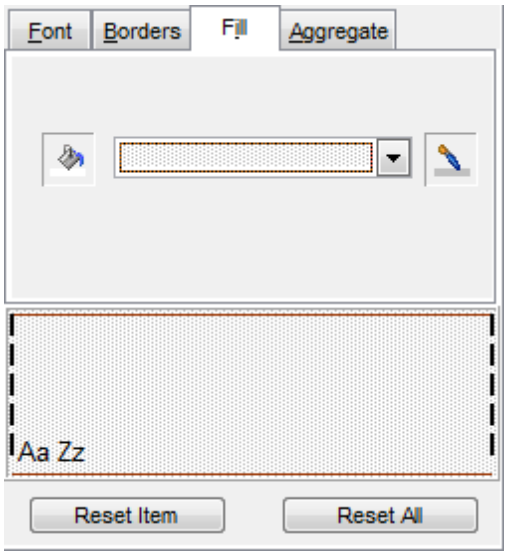


The **Fill** tab allows you to specify the fill pattern for the output Excel file cells.

Use the drop-down list to select the preferable fill pattern type.

Press the  button on the left to set the background color for the fill pattern.

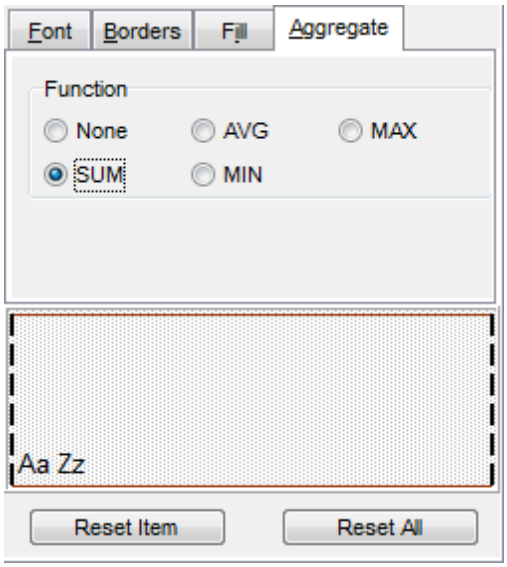
Press the  button on the right to set the foreground color for the fill pattern.



The **Aggregate** tab allows you to specify an aggregate function for the column in the

output Excel file.

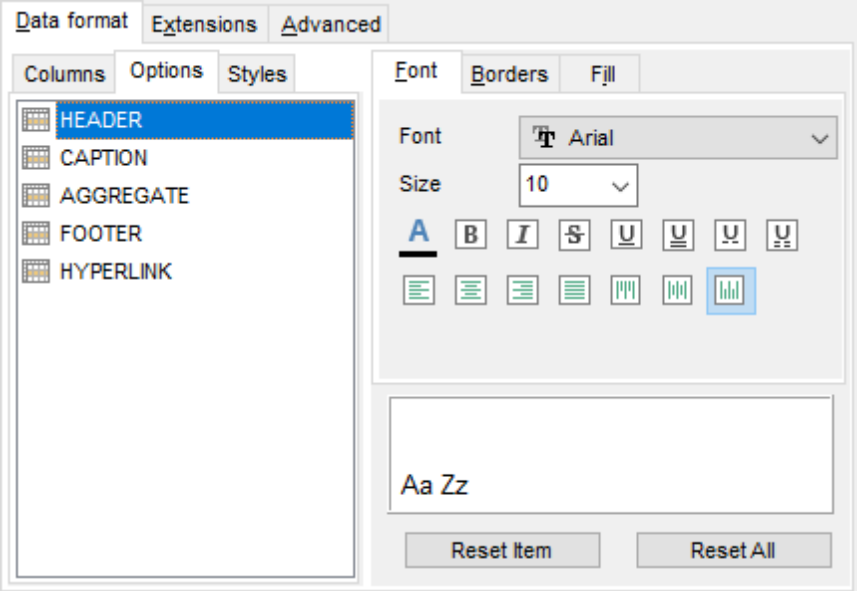
Select a **function** that will be applied to the column:
- *None*
- *AVG*
- *MAX*
- *SUM*
- *MIN*



You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.1.1.2 Options

Using the **Options** tab you can set *font* options, *border* and *fill* options for all **elements** of the Excel sheet (*header*, *caption*, *footer*, *aggregates* and *hyperlinks*).



The **font**, **borders** and **fill** options are specified in the same way as for output **Columns**. For details refer to the Columns page.

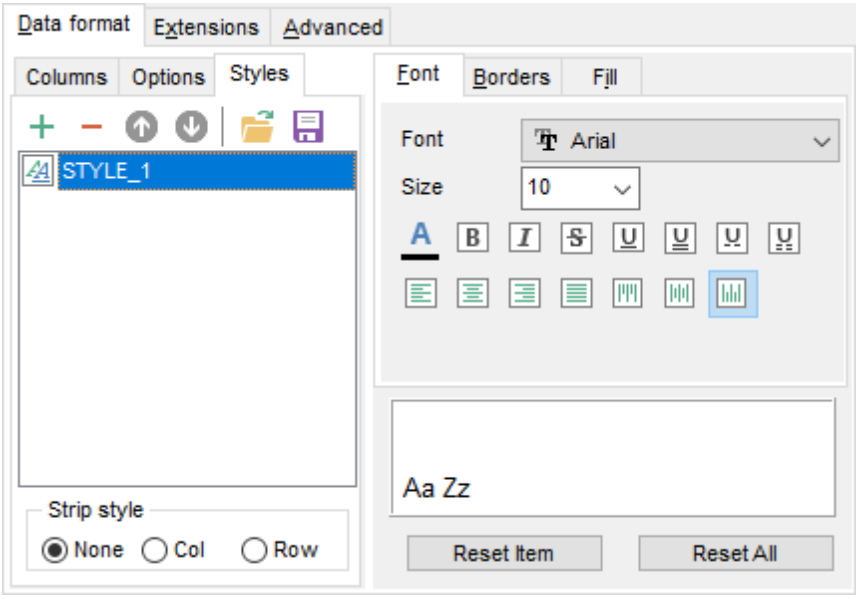
You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.1.1.3 Styles

Using the **Styles** tab you can make a style template: set *font* options, *border* and *fill* options and save them.

To add a style template, click the **Plus** button.
To delete a style template, select it and click the **Minus** button.
To reorder style templates in the list, use the buttons.
To load a style template, click the button.
To save the current style template, click the button.

If you have created or loaded more than one style template, they can be ignored, or used *column-by-column* or *row-by-row* (it depends on the **Strip type** selection).



The **font**, **borders** and **fill** options are specified in the same way as for output **Columns**. For details refer to the Columns page.

You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.1.2 Extensions

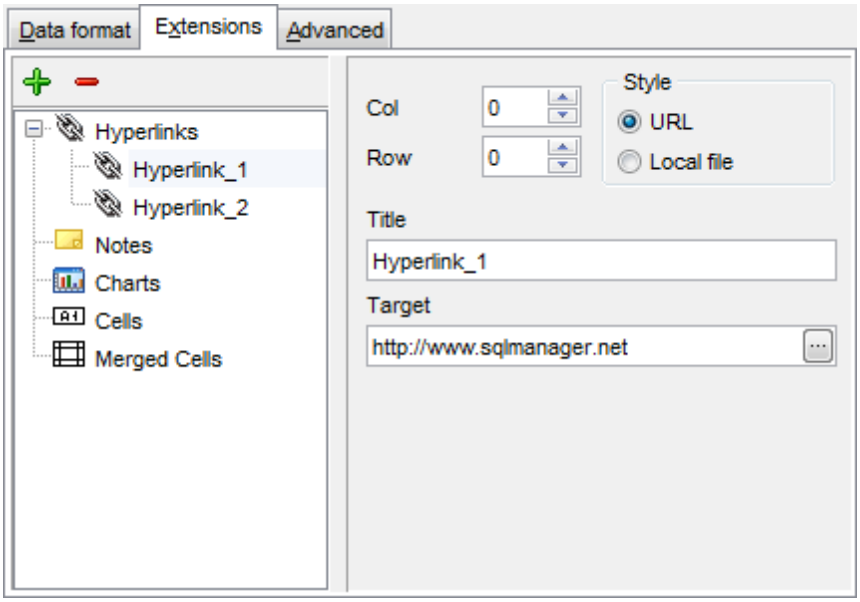
The **Extensions** tab provides an ability to add hyperlinks and notes and to any cell of the target file, to specify a value of a cell, to create a chart and to merge cells.

Click the **Plus** button to add an element;
click the **Minus** button to delete an element.

- Hyperlinks
- Notes
- Charts
- Cells
- Merged Cells

8.1.5.1.2.1 Hyperlinks

If you need to create a **hyperlink**:
- set the cell coordinates (*Col* and *Row*);
- specify whether this is a *local* link or *URL*;
- enter the *title* of the hyperlink;
- specify the *target* file location or address.



Use the **Col** and **Row** spinner controls to specify the column and row for the hyperlink in the output file.

The **Style** group allows you to select the preferable hyperlink style:
- *URL*
- *Local file* (i.e. the file is located on your local machine or on a machine in the LAN)

Use the **Title** box to specify the hyperlink name.

The **Target** box lets you enter the path to the target file or URL. Use the button to

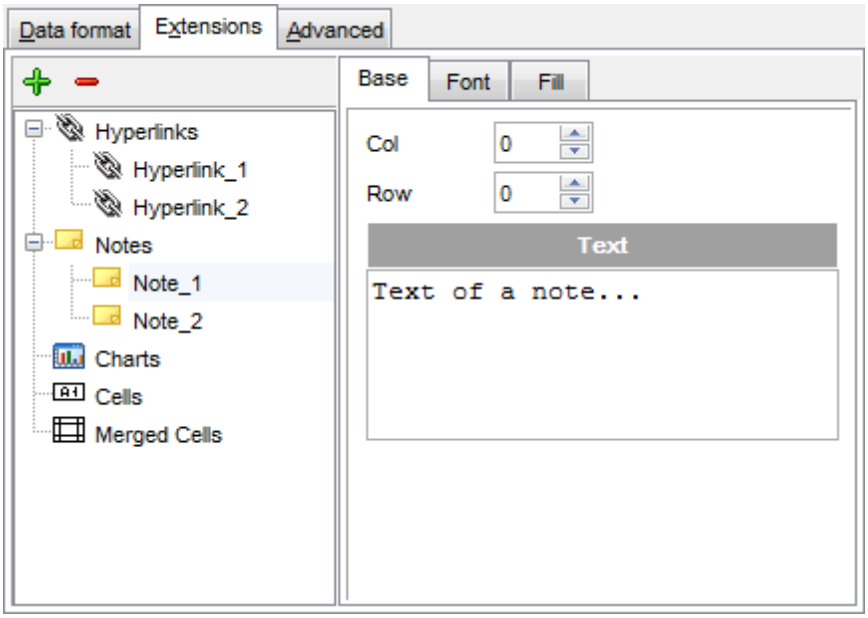
check whether the specified location is available.

8.1.5.1.2.2 Notes

If you need to create a **note**:
- set the cell coordinates (*Col* and *Row*);
- enter *text* of a note for the cell;
- set the *font* and *fill* properties using the corresponding tabs.

The **Base** tab allows you to specify basic properties of the note to be added to the output Excel file.

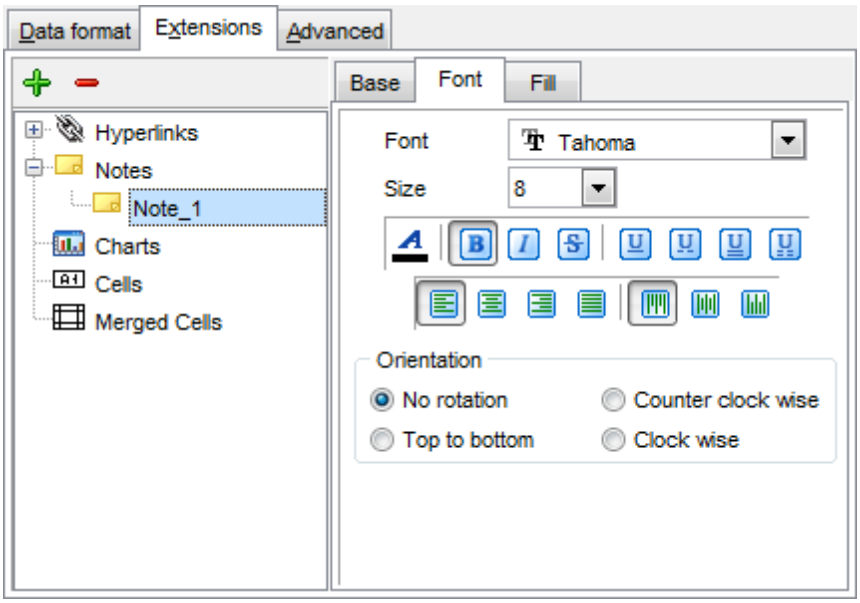
Use the **Col** and **Row** spinner controls to specify the column and row for the note in the file.
Use the edit-box below to enter the text of the note.



The **Font** tab allows you to specify properties of the font that will be used for the note.

Use the **Font** and **Size** drop-down lists to select the *font* and *size* to be applied to the output text.
Use the buttons below to set *font color*, make text *bold*, *italicized*, *strikethrough* text, set *underline* effects, specify text *horizontal* and *vertical align*.

The **Orientation** group allows you to select the note text orientation:
- *No rotation*
- *Top to bottom*
- *Counterclockwise*
- *Clockwise*



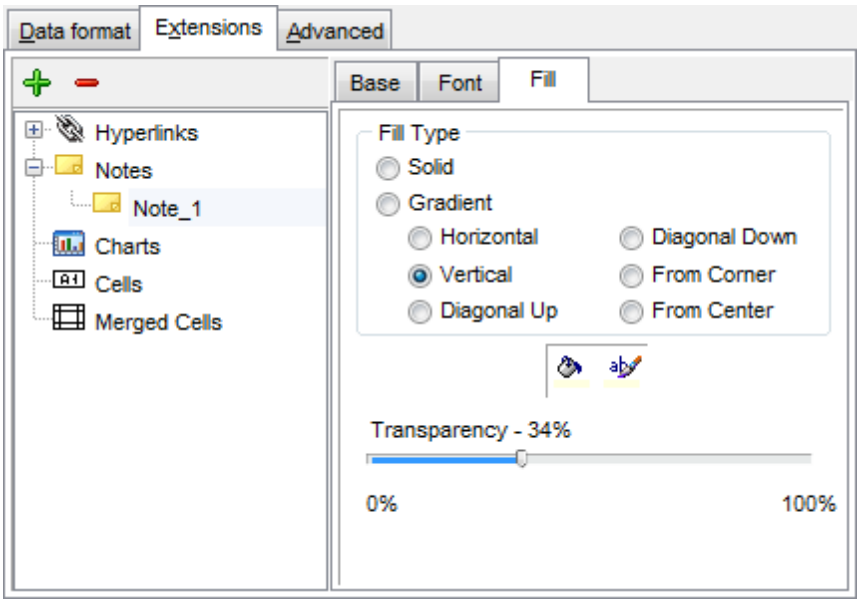
The **Fill** tab allows you to specify the fill type and transparency for the note.

The **Fill Type** group allows you to select whether the fill color will be **solid** or **gradient**:
- *Horizontal*
- *Vertical*
- *Diagonal up*
- *Diagonal down*
- *From corner*
- *From center*

Press the button to set the background color for the fill pattern.

Press the button to set the foreground color for the fill pattern.

The **Transparency** control allows you to set the transparency degree for the note. Move the slider between the **0%** and **100%** threshold values to select the required transparency value within this scope.



8.1.5.1.2.3 Charts

If you need to create a **chart**:
- enter the chart *title*;
- select the chart style;
- set the legend position;
- specify if you want to show the legend;
- specify if you want to set the chart color automatically;
- define the chart *position* and *category labels* using the corresponding tabs.

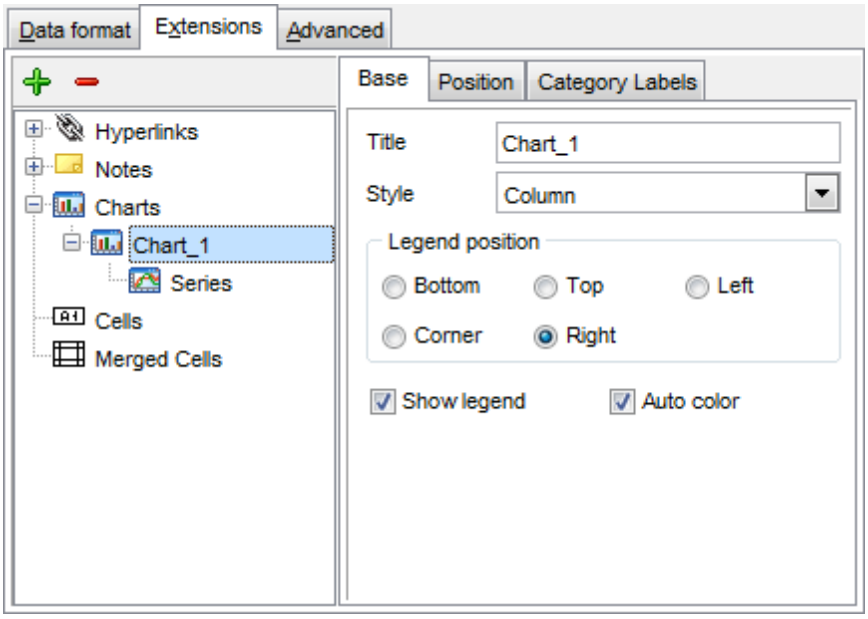
The **Base** tab allows you to specify basic properties of the chart to be added to the output Excel file.

Use the **Title** box to specify the chart name.
Use the **Style** drop-down list to select the preferable chart style (*Column*, *Column 3D*, *Bar*, *Bar 3D*, *Line*, *Line Mark*, *Line 3D*, etc.).

The **Legend position** group allows you to specify position of the chart legend:
- *Bottom*
- *Top*
- *Left*
- *Corner*
- *Right*

Show legend
This options specifies whether the chart legend will be visible or not.

Auto color
If this option is selected, each series will be automatically differentiated with different colors on the chart, otherwise one color will be applied for all series.



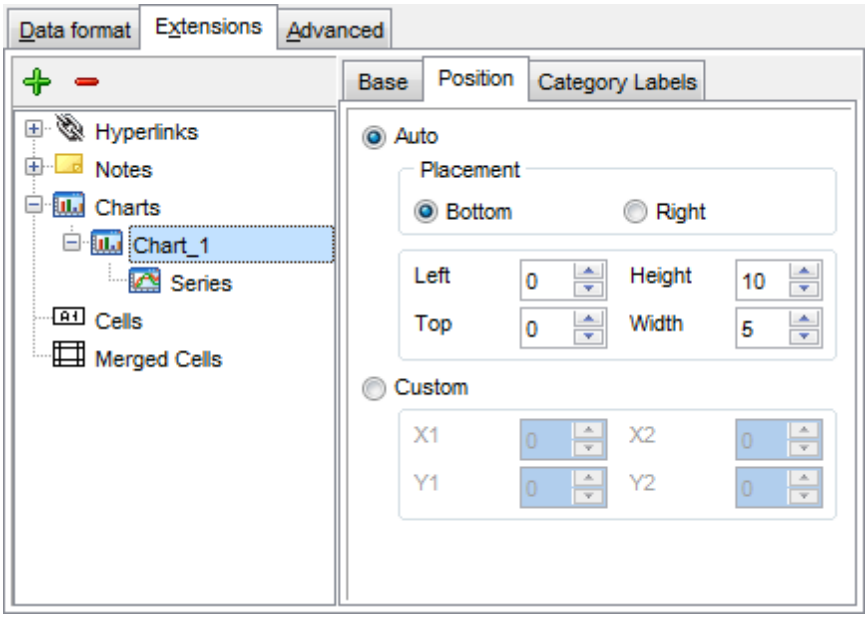
The **Position** tab allows you to specify properties pertaining to the chart position on the output file sheet.

Auto
Specifies automatic position of the chart.

The **Placement** group allows you to specify the chart position relative to the data:
Bottom
Right

Use the **Left** and **Top** spinner controls to specify the spacing between the chart and data at the left and at the top respectively.
Use the **Height** and **Width** spinner controls to specify the chart *height* and *width* respectively.

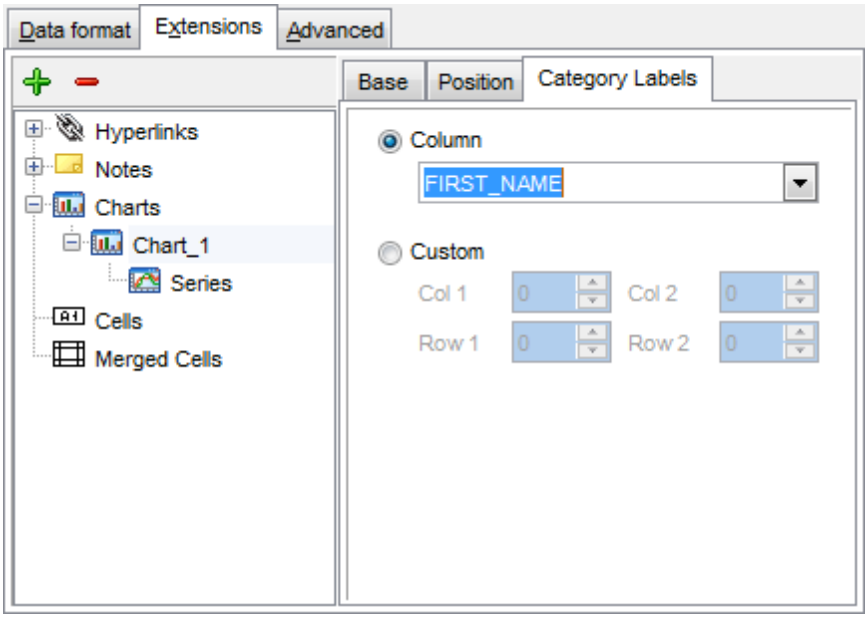
Custom
Specifies absolute position of the chart (irrelative to the data). Use the spinner controls to set the coordinates you need.



The **Category Labels** tab allows you to specify in which rows and columns the chart will be built.

Column
Use the drop-down list to select the column that will be used to take values for x-axis.

Custom
Specify the range of cells from which x-axis values will be taken. Use the spinner controls to set the range you need.



To build a chart, you also need to create **series** that will be used to take values for y-

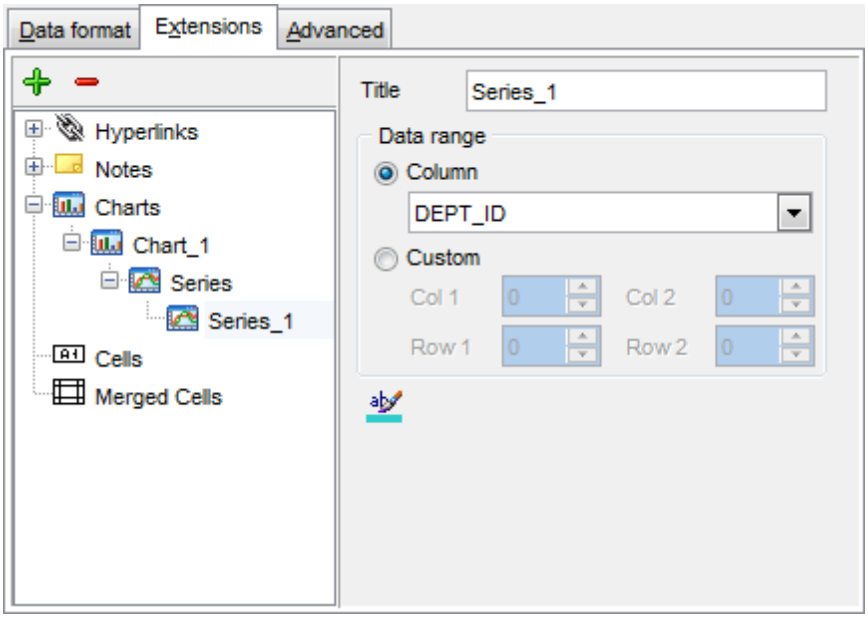
axis. To add **series** for the chart:
- add one or more series using the + button;
- enter the *titles*;
- set data ranges (select a column from the drop-down list or set the custom range);
- define colors for all the graphs.

Use the **Title** box to specify the series name.

Data range

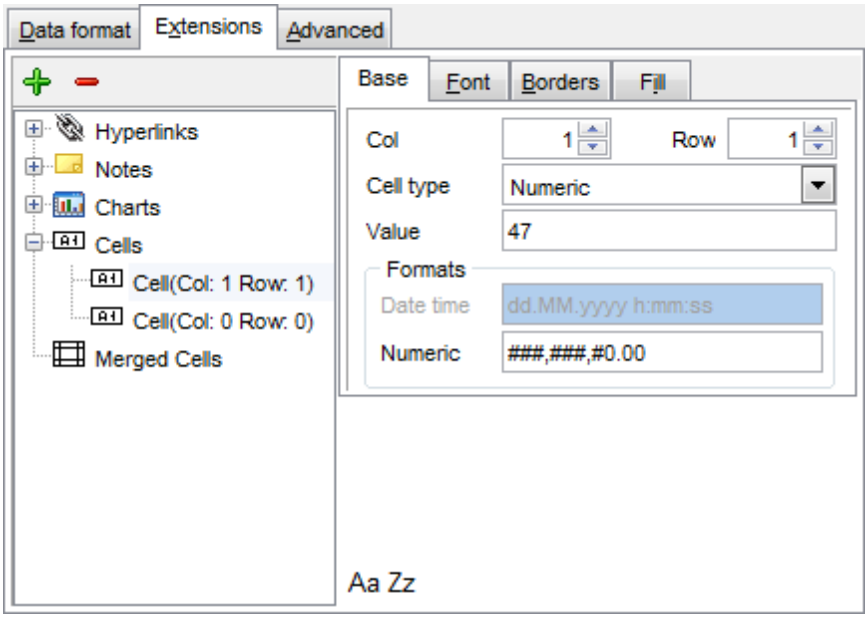
Column
Use the drop-down list to select the column that will be used to take values for the series.
Custom
Specify the range of cells from which the series will be formed. Use the spinner controls to set the range you need.

Press the button to set the color for the series.



8.1.5.1.2.4 Cells

If you need to add a value in a specific cell:
- set the cell coordinates (*Col* and *Row*);
- select the cell type;
- enter a *value*;
- if you are adding a numeric or a date/time value, you can set the cell *format;*
- set the *font*, *borders* and *fill* properties using the corresponding tabs.



The **Base** tab allows you to specify basic properties of the cell.

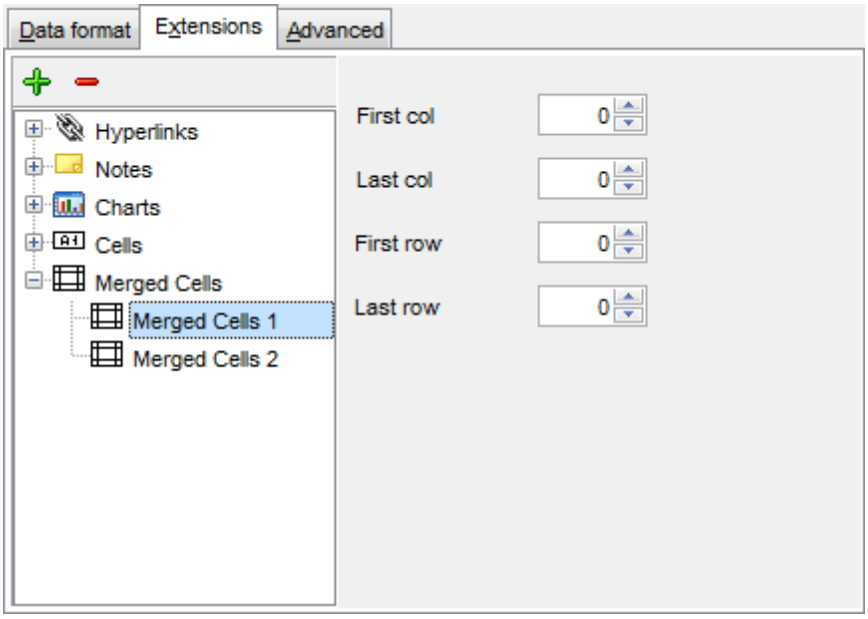
Use the **Col** and **Row** spinner controls to specify the column and row denoting the cell.
Use the **Cell type** drop-down list to select the data type for the cell (*Boolean*, *DateTime*, *Numeric* or *String*).
Set the required value in the **Value** edit box.

The **Formats** group allows you to specify data format for numeric or a date/time types.

The **font**, **borders** and **fill** options are specified in the same way as for output **Columns**. For details refer to the Columns page.

8.1.5.1.2.5 Merged Cells

If you want to merge two or more cells, set the range of cell coordinates: *First col*, *Last col*, *First row*, *Last row*. Use the spinner controls to set the range you need.



8.1.5.1.3 Advanced

The **Advanced** tab allows you to set a number of advanced options to be applied to the result MS Excel file.

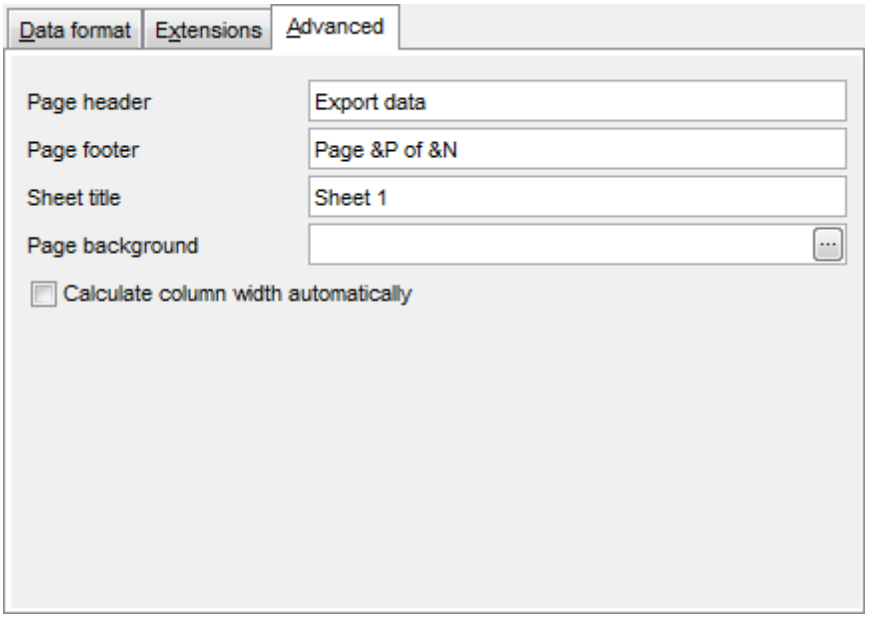
Page header
If necessary, enter some text for the page header.

Page footer
If necessary, enter some text for the page footer.

Hint: It is also possible to set macros in the **Page header** and **Page footer** fields:
&N stands for the quantity of pages;
&P - the number of the current page.

Sheet title
Specify the sheet title for the target file.

Page background
If necessary, use the **Ellipsis** button to browse for a graphical file to be applied as the page background.

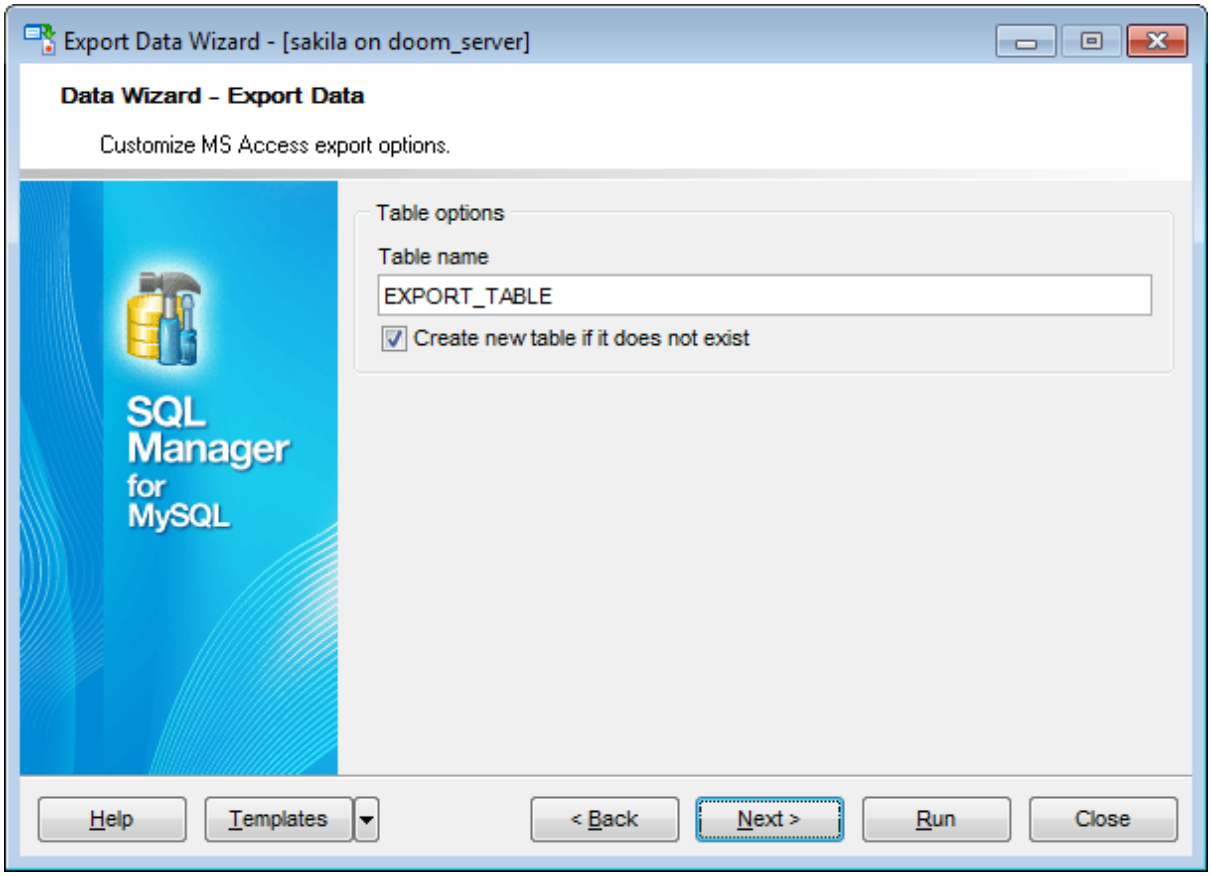


Calculate column width automatically
This option allows the wizard to determine column width in the target file automatically according to column size.

8.1.5.2 Access options

This step allows you to set options for the target **MS Access** (**.mdb, *accdb*) file.

Set the name for the target table and specify whether the wizard should **create a new table** in the MS Access database if it does not exist yet, or use the existing table to export data into.



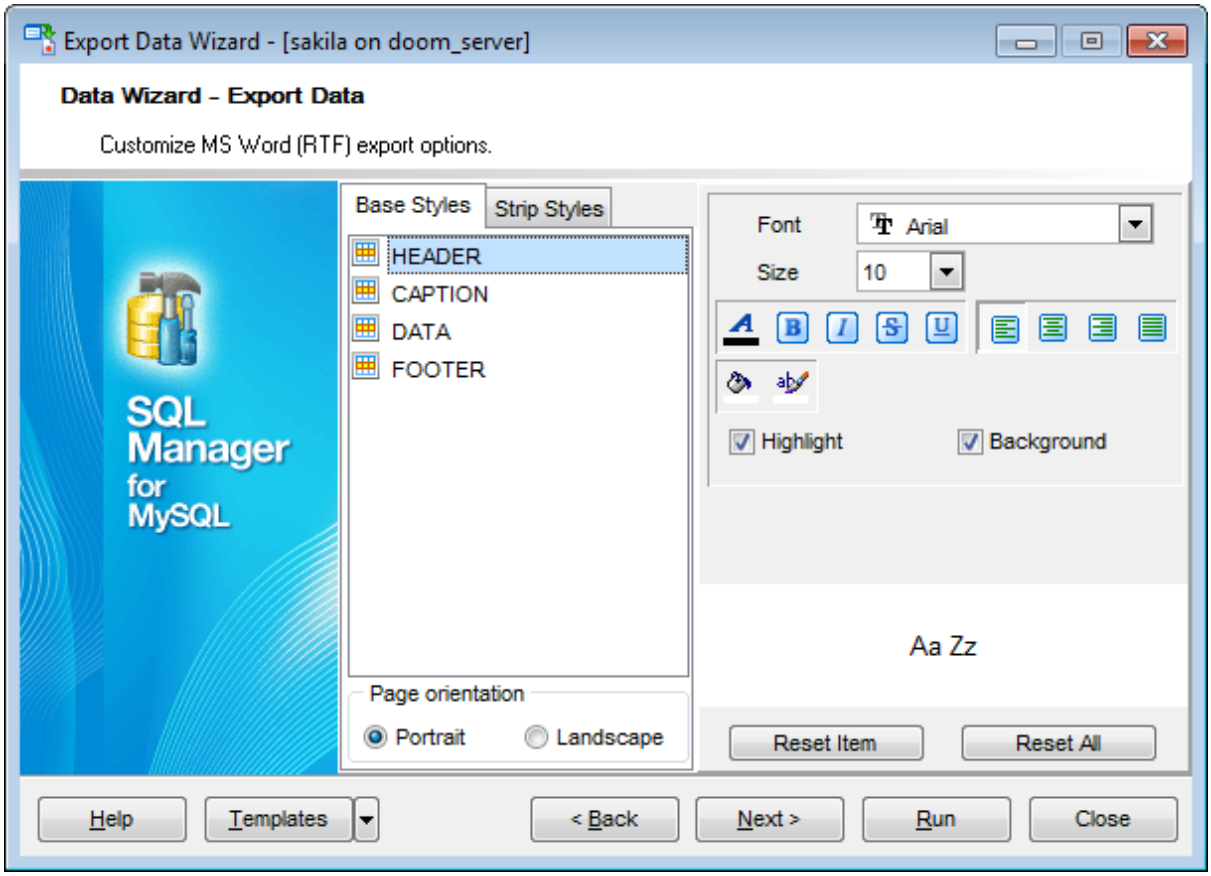
When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.3 Word 97-2003 / RTF options

This step allows you to set options for the target **MS Word** (**.doc*) and **Rich Text Format** (**.rtf*) files.

- Base styles
- Strip styles

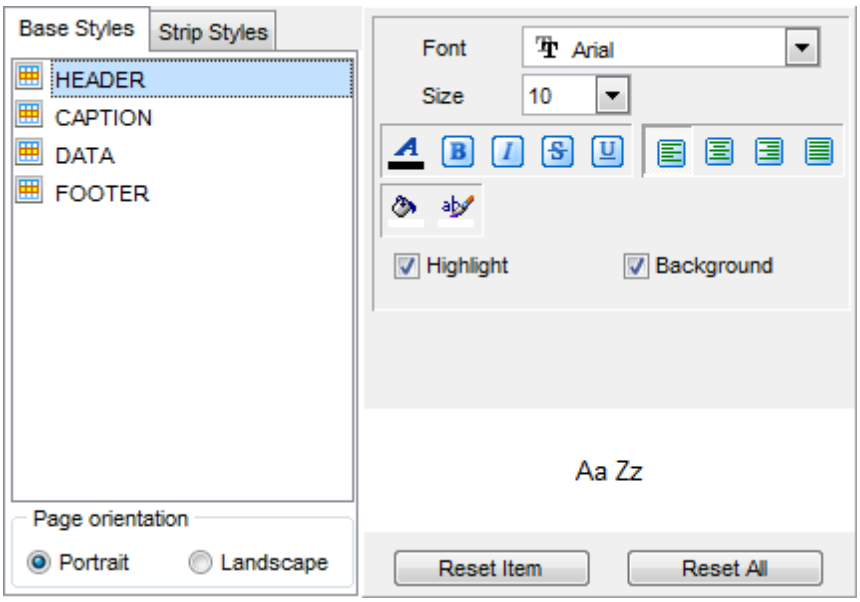
For your convenience the previews illustrating the changes are displayed in the **Sample Group** area within the *Base Styles* and the *Strip Styles* tabs.



When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.3.1 Base styles

The **Base Styles** tab contains the list of target file entities: *HEADER*, *CAPTION*, *DATA*, *FOOTER*. You can customize style options, such as *font* and *size*, *background* and *foreground colors*, *text alignment*, etc. for each of them by clicking the corresponding item in the list and setting the options in the right-side panel. You can also switch **page orientation** for the target Word/RTF file using this tab.



Use the **Font** and **Size** drop-down lists to select the *font* and *size* to be applied to the text.
Use the buttons below to set *font color*, make text *bold*, *italicized*, *underlined*, *strikethrough* text, specify *horizontal align*.

Highlight
Enables/disables text highlight.

Background
Enables/disables background for text.

Press the button to set the background color for the text.
Press the button to set the highlight color for the text.

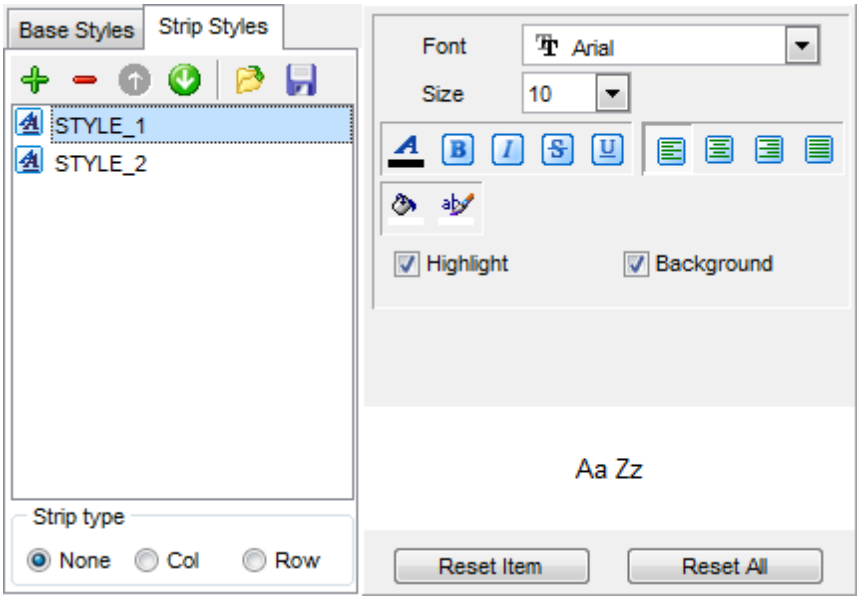
You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.3.2 Strip styles

Using the **Strip Styles** tab you can create a style template: set *font*, *size*, *background* and *foreground colors*, *text alignment*, *highlight* and save them.

To add a style template, click the **Plus** button.
To delete a style template, select it and click the **Minus** button.
To reorder style templates in the list, use the buttons.
To load a style template, click the button.
To save the current style template, click the button.

If you have created or loaded more than one style template, they can be ignored, or used *column-by-column* or *row-by-row* (it depends on the **Strip type** selection).

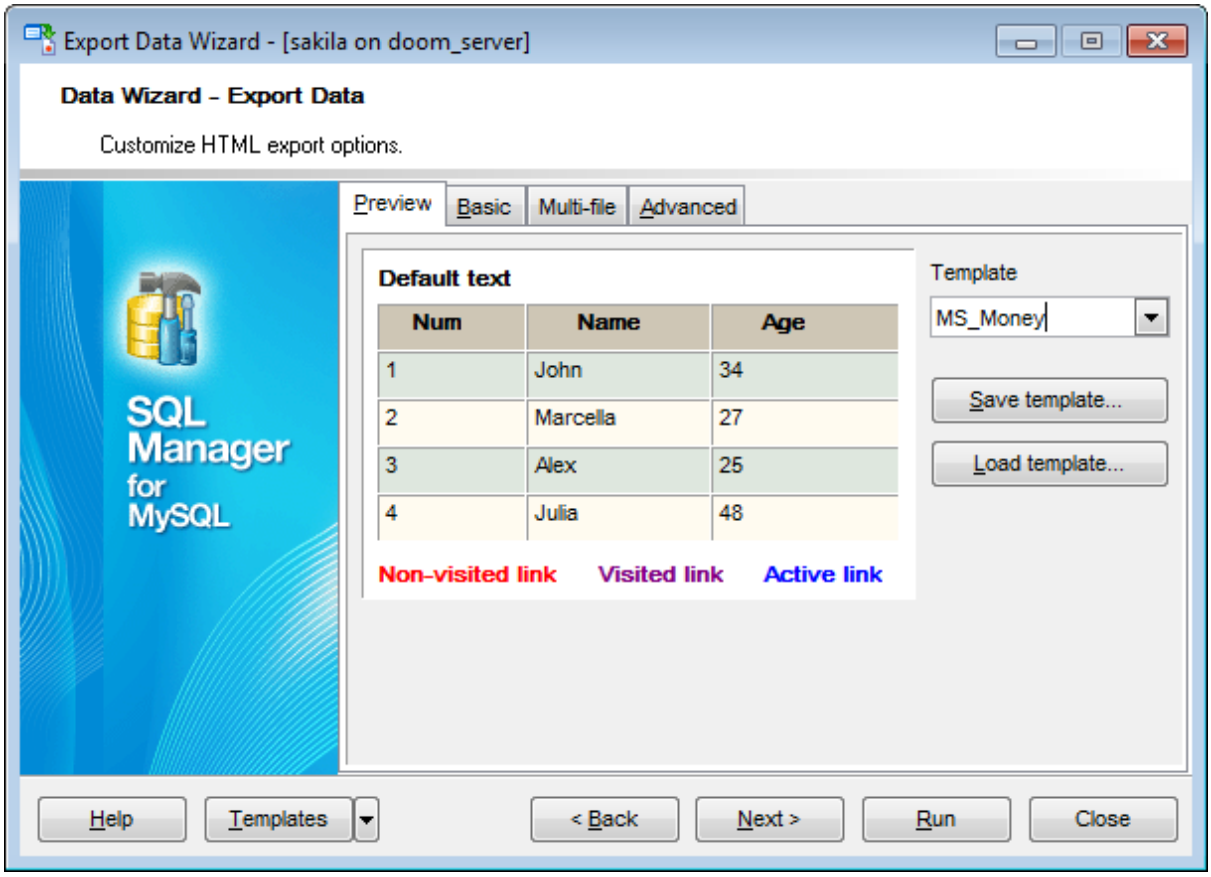


You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.4 HTML options

This step allows you to set options for the target **HTML** (*.html) file.

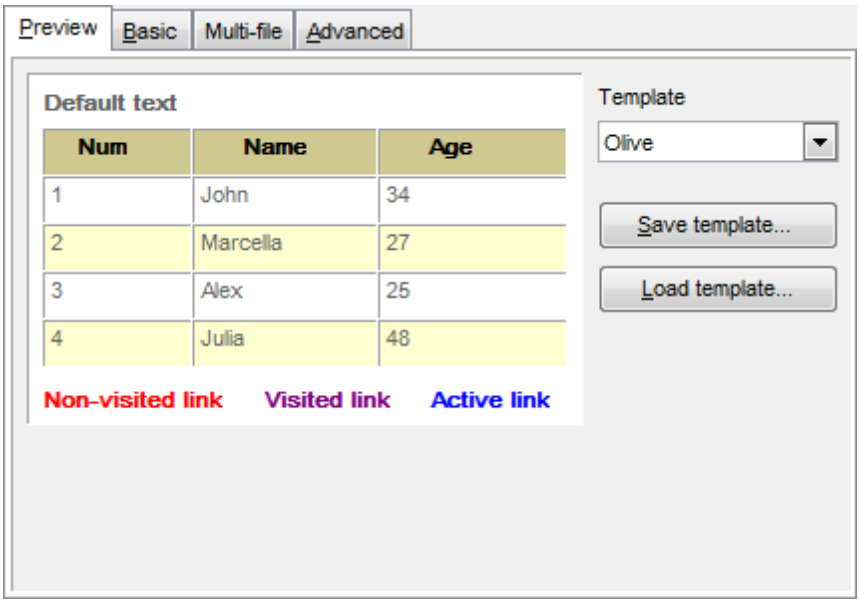
- Preview
- Basic
- Multi-file
- Advanced



When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.4.1 Preview

The **Preview** tab allows you to customize the style that will be applied to the target HTML file using a number of built-in templates provided in the **Templates** drop-down list.



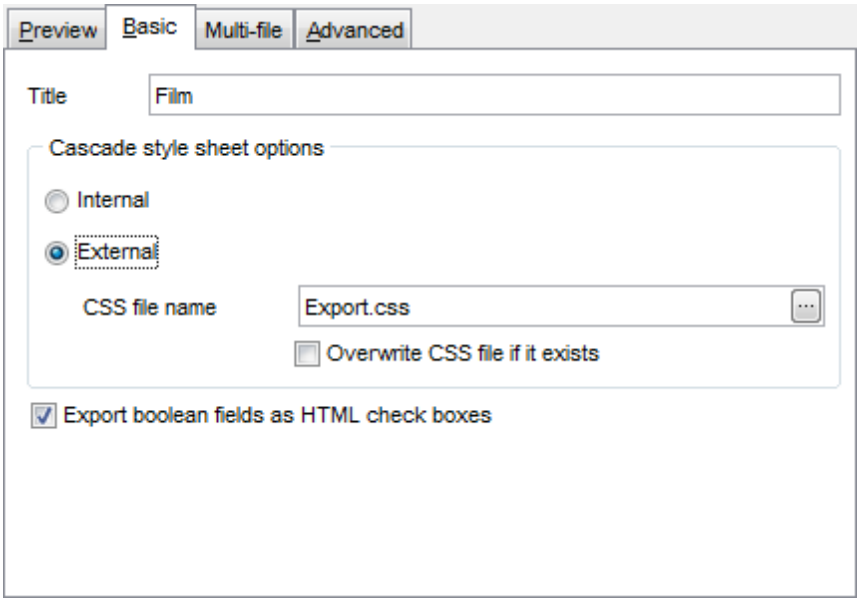
You can select any of the pre-defined templates and customize it by clicking objects in the preview panel, and save the settings as a custom template using the **Save template...** button. Use the **Load template...** button to load a previously saved custom template from your hard disk.

Click on an element of the table to select the color that will be applied for this element (*background*, *font*, *header row*, *odd row*, *even row*, *non-visited link*, *visited link*, *active link*).

8.1.5.4.2 Basic

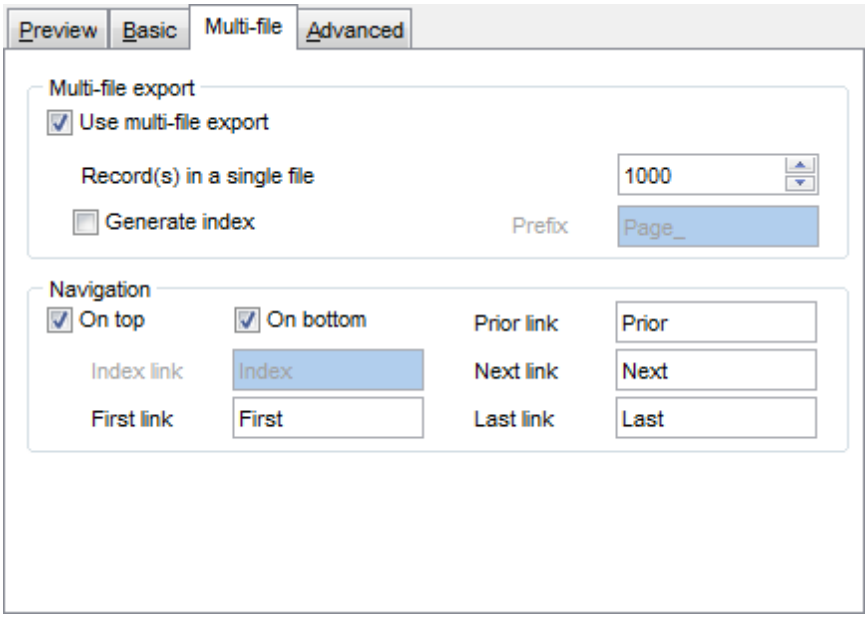
The **Basic** tab allows you to specify the basic parameters of target HTML file:

- specify the title of the result file;
- select whether the cascade style sheet (CSS) should be internal or external (the **Ellipsis** button to browse for a **.css* file);
- determine whether boolean columns of the table should be exported as HTML check boxes.



8.1.5.4.3 Multi-file

The **Multi-file** tab provides you with an ability to split the target HTML file into several separate files. This tab allows you to specify the *record count* for a single file, set an option *to generate an index HTML file*, and add an ability to navigate between the exported files.



Multi-file export

Use multi-file export
Enables/disables the multi-file export feature.

Record(s) in a single file
Use the spinner controls to specify the number of records to be exported into each of the files.

Generate index
Specifies that an index file containing links to all the data files will be generated. Use the edit-box next to the checkbox to set a name for the index file.

Navigation
This group allows you to specify properties for navigation elements, i.e. the elements that provide quick access to pages of the multi-file document. Navigation is implemented as a set of hyperlinks.

On top
Specifies that the hyperlinks will be placed at the top of the page.

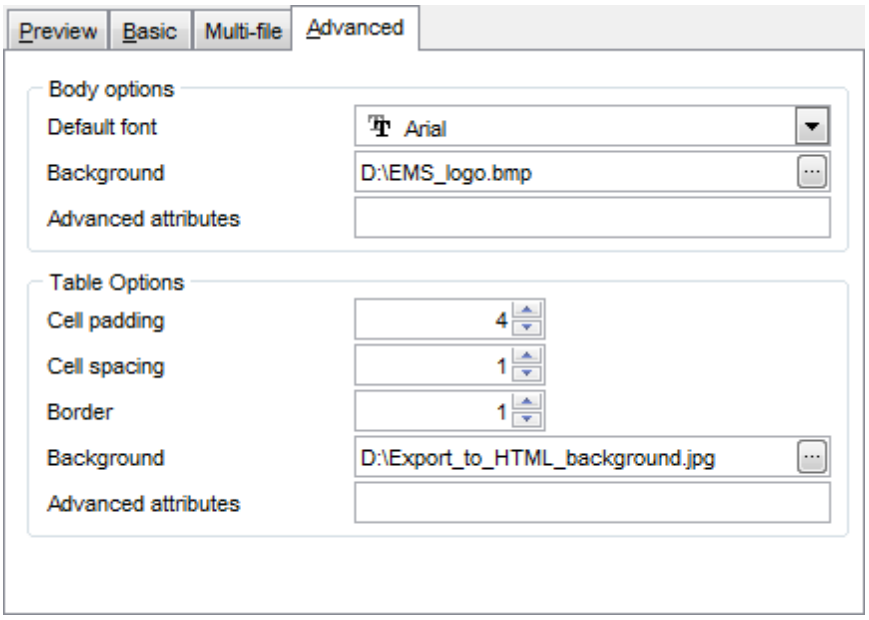
On bottom
Specifies that the hyperlinks will be placed at the bottom of the page.

Use the **Index link**, **First link**, **Prior link**, **Next link** and **Last link** boxes to specify

captions for the corresponding navigation elements.

8.1.5.4.4 Advanced

The **Advanced** tab allows you to set a number of advanced options to be applied to the result HTML file.



Body options

Default font
Use the drop-down list to select the font that will be used in the result file by default.

Background
If necessary, use the **Ellipsis** button to browse for a graphical file to be applied as the page background.

Table options

Use the spinner controls to specify common table options: **cell padding**, **cell spacing**, **border**.

Background
If necessary, use the **Ellipsis** button to browse for a graphical file to be applied as the table background.

It is also possible to define **advanced attributes** for both the HTML body and table.

8.1.5.5 PDF options

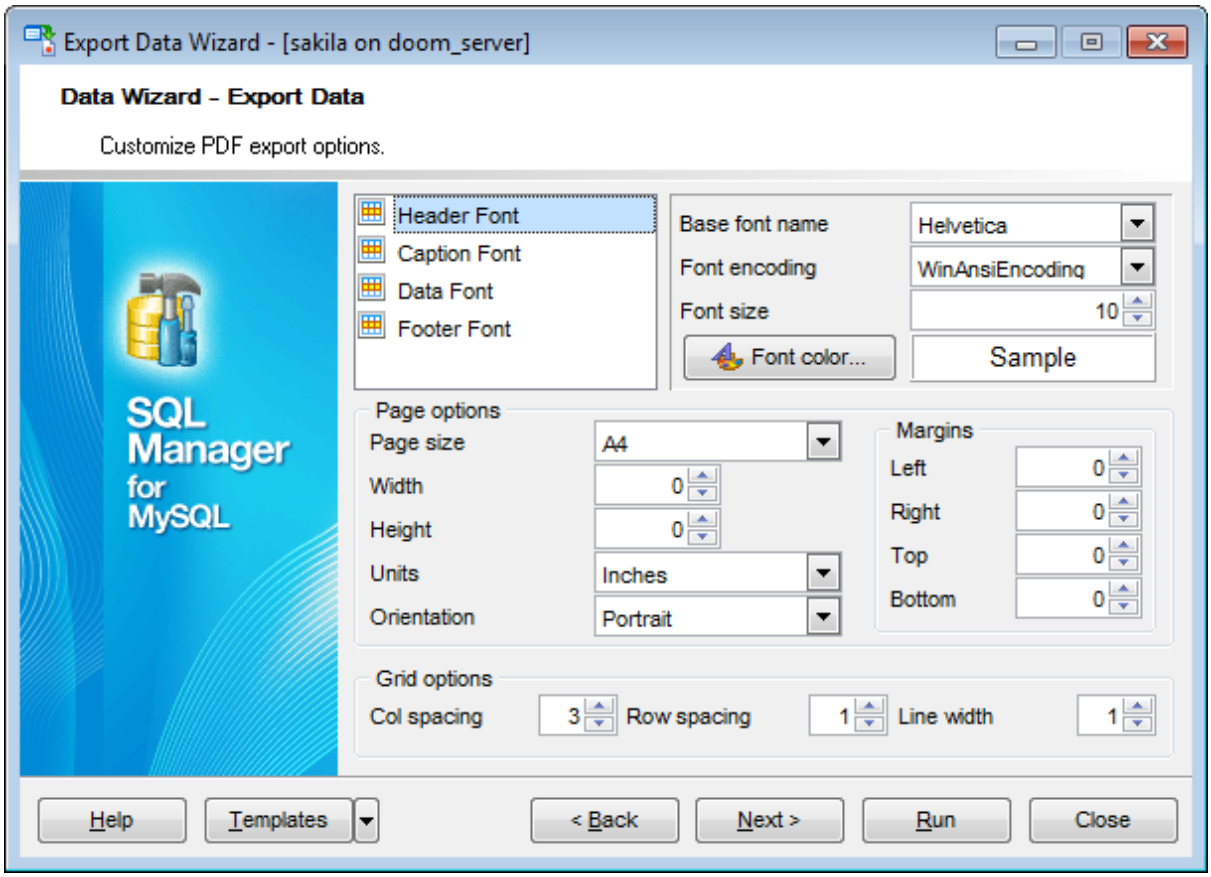
This step allows you to set options for the target **PDF** (**.pdf*) file.

Fonts
This group of options allows you to customize fonts for the *header*, *caption*, *data*, *footer* of the result file.

Use the **Base font name** and **Font encoding** drop-down lists to select the preferable font (*Helvetica*, *Courier*, *Times Roman*, etc.) and encoding (*Standard*, *WinANSI*, *MacRoman*, *PDFDoc*) respectively, and the **Font size** spinner control to specify the font size.

Click the **Font color...** button to select the color to be applied to the font.

For your convenience the preview illustrating the changes is displayed in the **Sample** area.



Page options

Use the **Page size** drop-down list to select one of the standard page formats (*Letter*, *Legal*, *A3*, *A4*, etc.).
Use the **Width** and **Height** spinner controls to specify the page *width* and *height* respectively.

Use the **Units** drop-down list to select the unit of measure that will be used in report settings: *inches*, *millimeters*, or *dots*.
Use the **Orientation** drop-down list to select the preferable page orientation: *portrait* or *landscape*.

Margins
Use the **Left**, **Right**, **Top**, **Bottom** spinner controls to specify the corresponding page margins for the output PDF file.

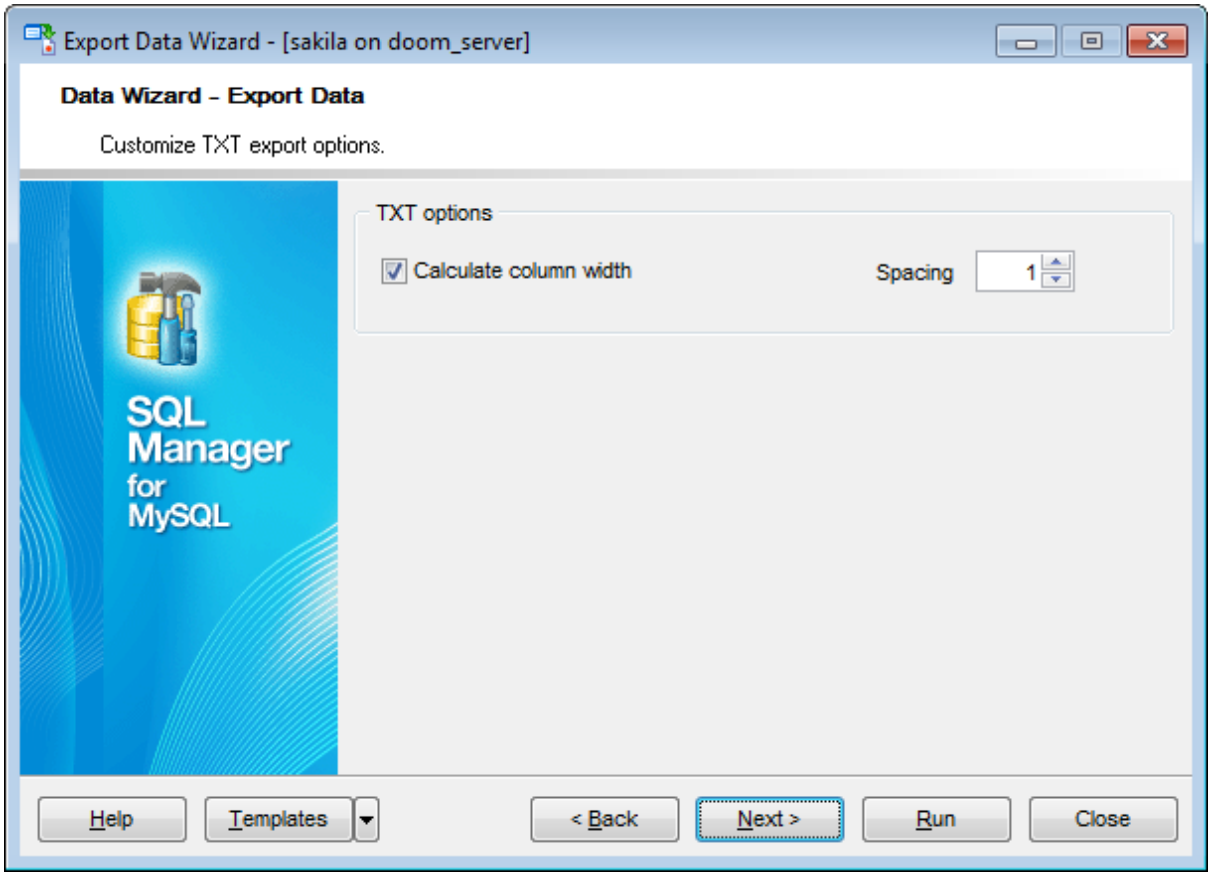
Grid options
Use the **Col spacing**, **Row spacing**, **Line width** spinner controls to specify spacing for grid columns, rows, and grid line width respectively.

When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.6 TXT options

This step allows you to set options for the target **text** (**.txt*) file.

Set the **Calculate column width** option on if you want each column of the target file to be adjusted to the maximum number of characters in it. The **Spacing** option specifies the number of spaces between columns in the target file.



When you are done, click the **Next** button to proceed to Setting common export options.

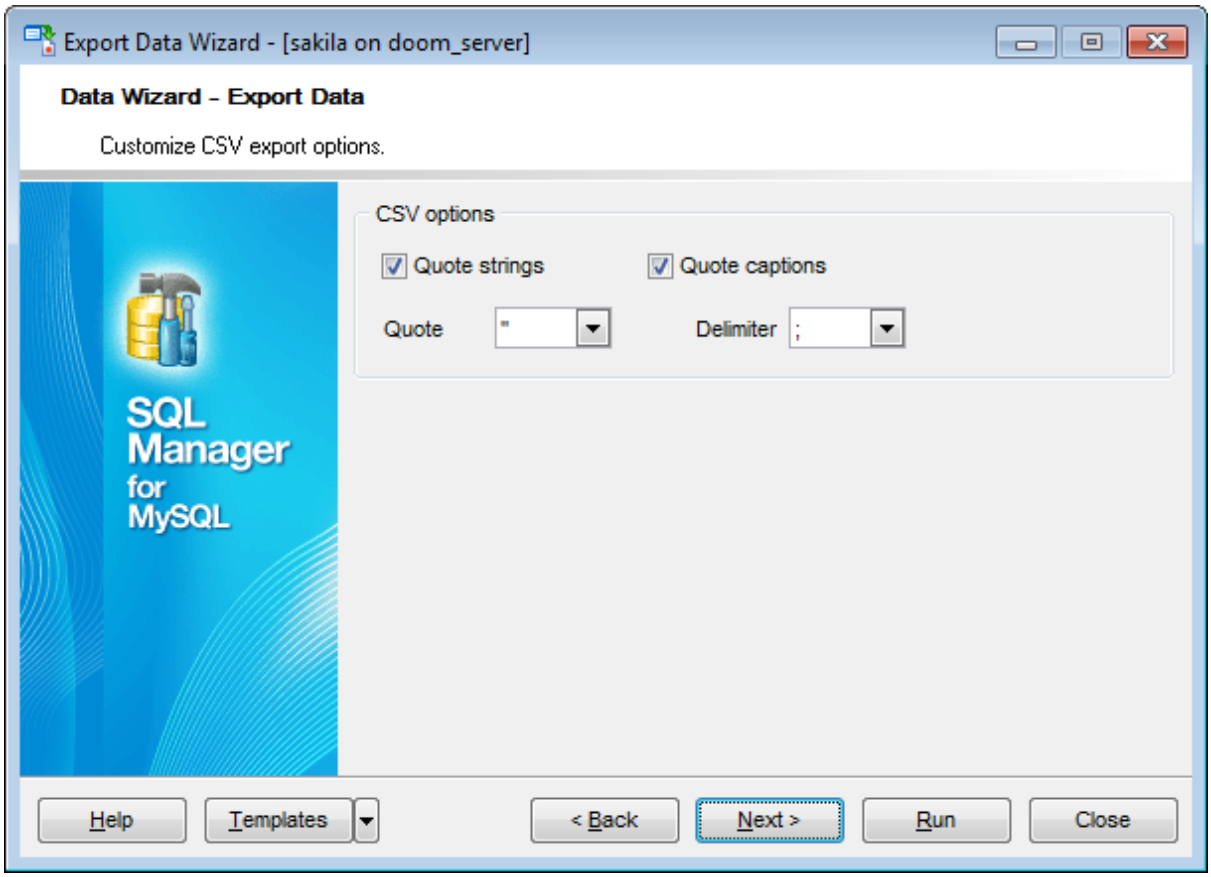
8.1.5.7 CSV options

This step allows you to set options for the target **CSV** (**.csv*) file.

Quote strings
Check this option to apply quoting for string values in the target file.

Quote captions
Use the option to enable quoting for captions in the target file.

Specify the column separator using the **Comma** drop-down list and the preferable quote character using the **Quote** drop-down list.



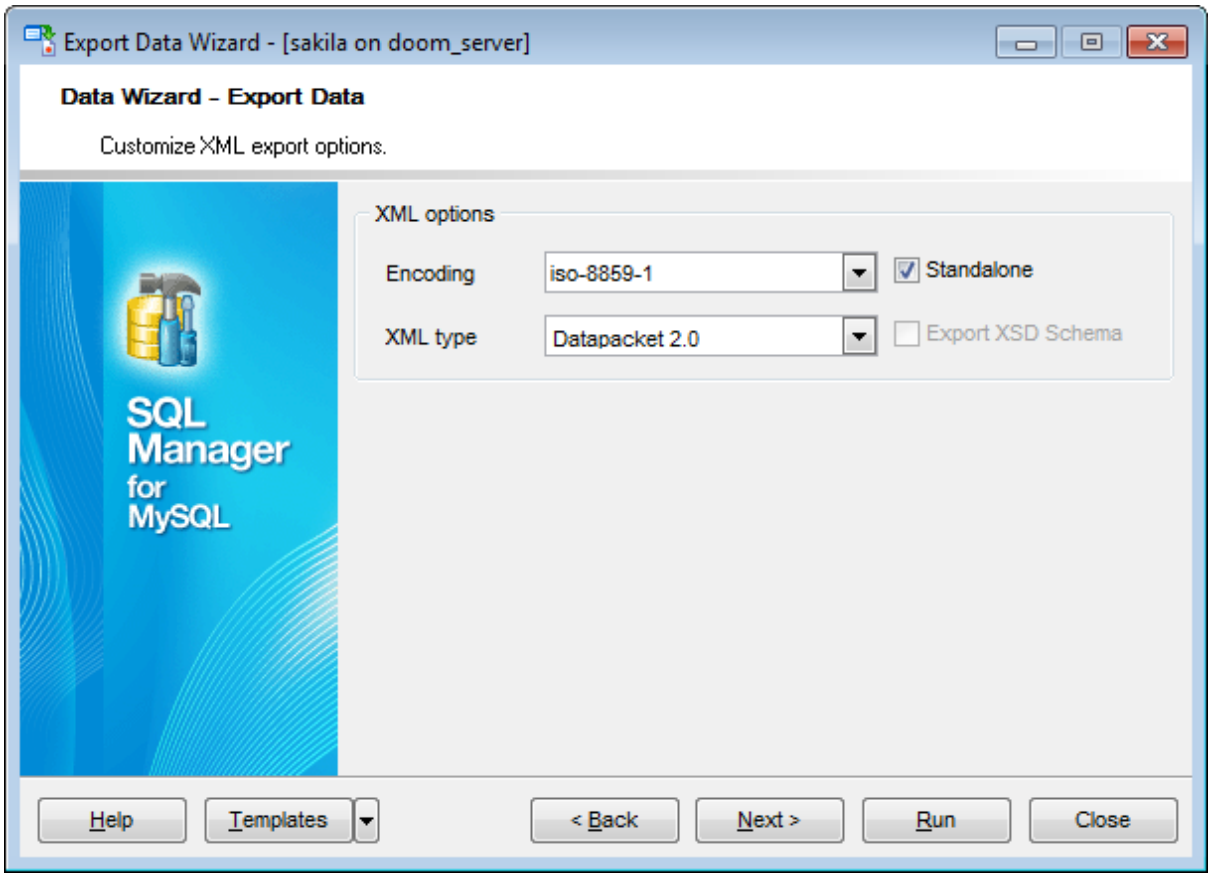
When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.8 XML options

This step allows you to set options for the target **XML** (**.xml*) file.

Specify XML document encoding in the **Encoding** edit box and set the **Standalone** option on if you intend to create a standalone XML document (*standalone="yes"*).

XML type
Select the type of the result XML document: *Datapacket 2.0* or *Access*.
Conversion between generic XML documents and documents of the *XML-Datapacket (CDS)* format can be performed with the help of XML Mapper by Borland®.



When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.9 MS Excel / ODS options

This step allows you to set options for the target **MS Excel 2007** (*.xlsx) or **ODF Spreadsheets** (*.ods) file.

Using the **Base Styles** tab you can set *font* and *border* options for all **elements** of the Excel 2007 / ODS sheet (*HEADER*, *CAPTION*, *DATA*, *FOOTER*). You can customize style options, such as *font* and *size*, *background* and *foreground colors*, *text alignment*, etc. for each of them by clicking the corresponding item in the list and setting the options in the right-side panel.

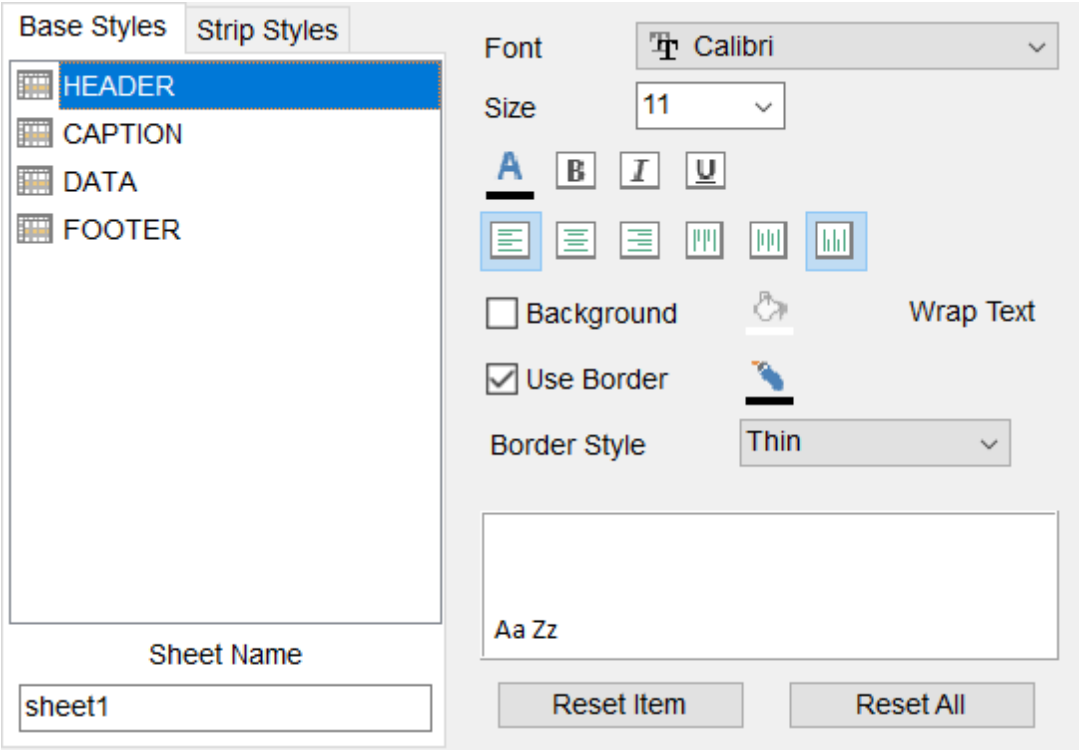
If necessary, you can also specify the **sheet name** for the target Excel 2007 / ODS file.

Use the **Font** and **Size** drop-down lists to select the *font* and *size* to be applied to the text.
Use the buttons below to set *font color*, make text *bold*, *italicized*, *underlined*, specify *horizontal* and *vertical align*.

Background
Enables/disables background for text.

Press the  button to set the background color for the text.
Press the **Wrap Text** button to enable/disable the text wrapping feature.

For your convenience the previews illustrating the changes are displayed in the **Sample Group** area within the *Base Styles* and the *Strip Styles* tabs.

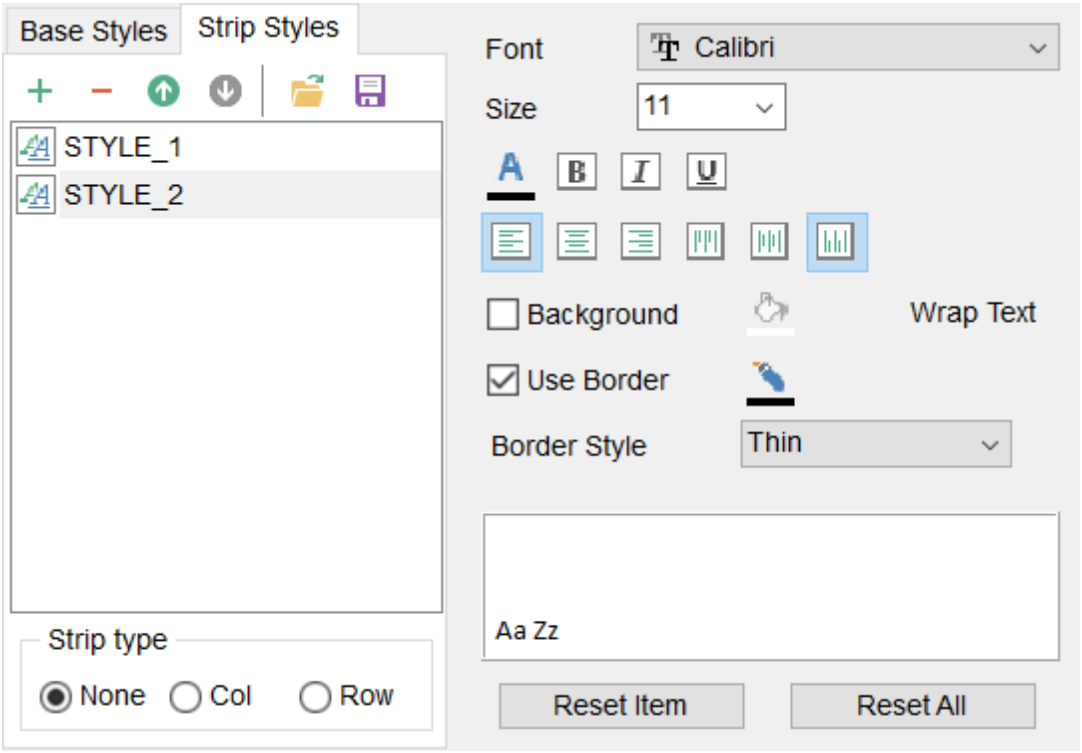


Using the **Strip Styles** tab you can create a style template: set *font*, *size*, *background*

color, *text alignment*, *wrap text* options and save them.

To add a style template, click the **Plus** button.
To delete a style template, select it and click the **Minus** button.
To reorder style templates in the list, use the buttons.
To load a style template, click the button.
To save the current style template, click the button.

If you have created or loaded more than one style template, they can be ignored, or used *column-by-column* or *row-by-row* (it depends on the **Strip type** selection).



You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

Use border
Enables/disables borders in the output file.

Press the button to set the color to be applied to the borders.
Use the **Border Style** drop-down list to select the preferable style that will be used for borders (*thin*, *dashed*, *dashdot*, *dotted*, etc.).

When you are done, click the **Next** button to proceed to Setting common export options.

8.1.5.10 MS Word / ODT options

This step allows you to set options for the target **MS Word 2007** (**.docx*) or **ODF text** (**.odt*) file.

Using the **Base Styles** tab you can set *font* options for all **elements** of the Word 2007 / ODT document (*HEADER*, *CAPTION*, *DATA*, *FOOTER*). You can customize style options, such as *font* and *size*, *background* and *foreground colors*, *text alignment*, text *highlight*, etc. for each of them by clicking the corresponding item in the list and setting the options in the right-side panel.

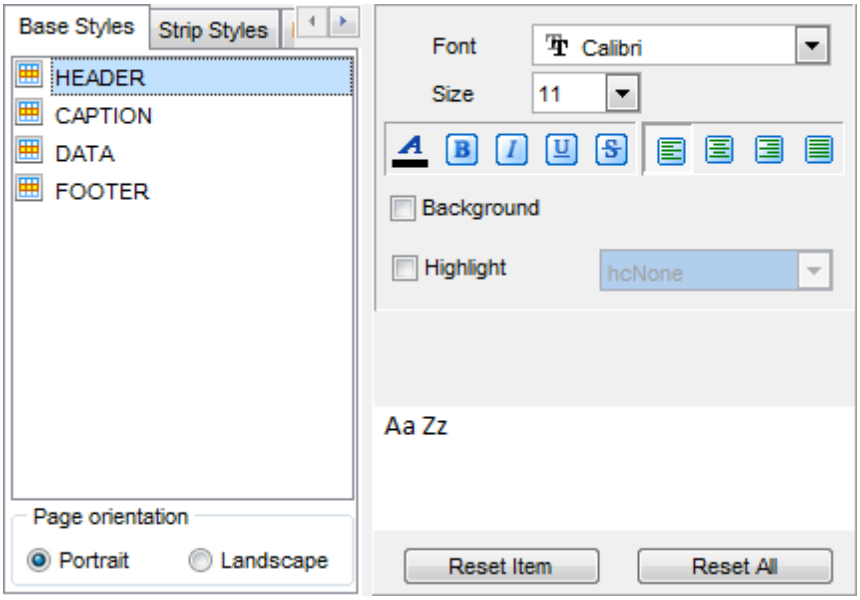
Use the **Font** and **Size** drop-down lists to select the *font* and *size* to be applied to the text.
Use the buttons below to set *font color*, make text *bold*, *italicized*, *underlined*, *strikethrough* text, specify *horizontal align*.

☑ **Background**
Enables/disables background for text.

Press the  button to set the background color for the text.

☑ **Highlight**
Enables/disables text highlight.
If this option is enabled, you should select the preferable highlight color from the drop-down list.

For your convenience the previews illustrating the changes are displayed in the **Sample Group** area within the *Base Styles* and the *Strip Styles* tabs.

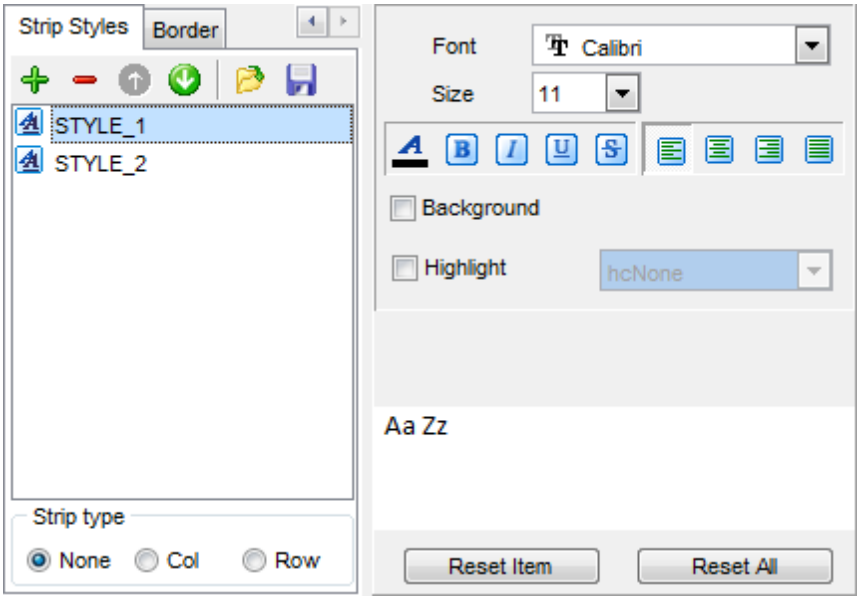


Using the **Strip Styles** tab you can create a style template: set *font*, *size*, *background color*, *text alignment*, *highlight* options and save them.

To add a style template, click the **Plus** ✚ button.
To delete a style template, select it and click the **Minus** ▬ button.

To reorder style templates in the list, use the buttons.
To load a style template, click the button.
To save the current style template, click the button.

If you have created or loaded more than one style template, they can be ignored, or used *column-by-column* or *row-by-row* (it depends on the **Strip type** selection).

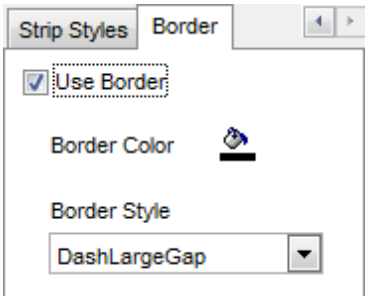


You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

Using the **Border** tab you can enable borders in the result Word 2007 / ODT document and customize them.

Use border
Enables/disables borders in the output file.

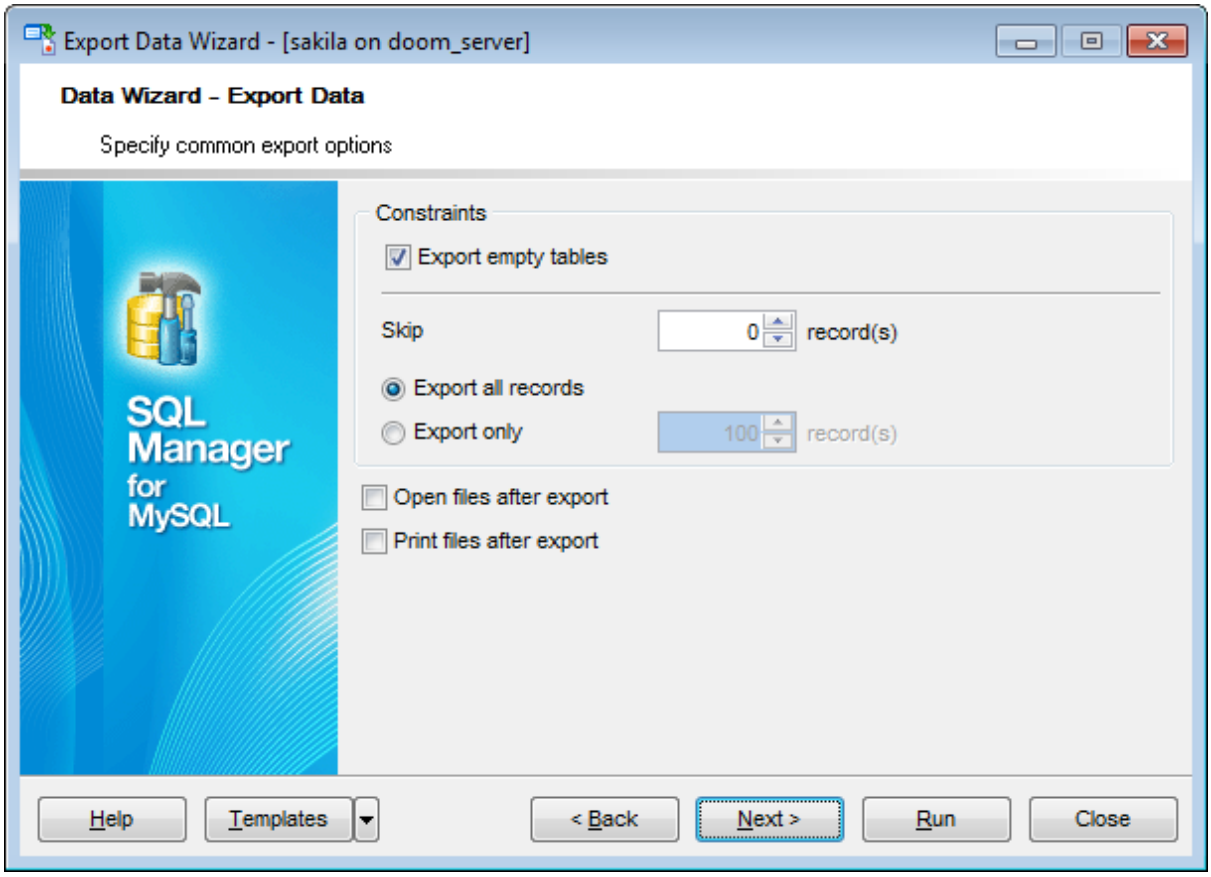
Press the button to set the color to be applied to the borders.
Use the **Border Style** drop-down list to select the preferable style that will be used for borders (*single*, *thick*, *double*, *hairline*, etc.).



When you are done, click the **Next** button to proceed to Setting common export options.

8.1.6 Setting common export options

Use this step of the wizard to set common export options. The detailed description of these options is given below.



Constraints

Export empty tables
If checked, you can export the table even if it does not contain any data.

Skip ... record(s)
Specifies the number of records to be skipped before export starts.

Export all records
Specifies that all records of the table will be exported.

Export only ... record(s)
Specifies the number of records to be exported.

Open files after export
If this option is checked, the result file will be opened with the currently associated program after the export operation is completed.

Print files after export

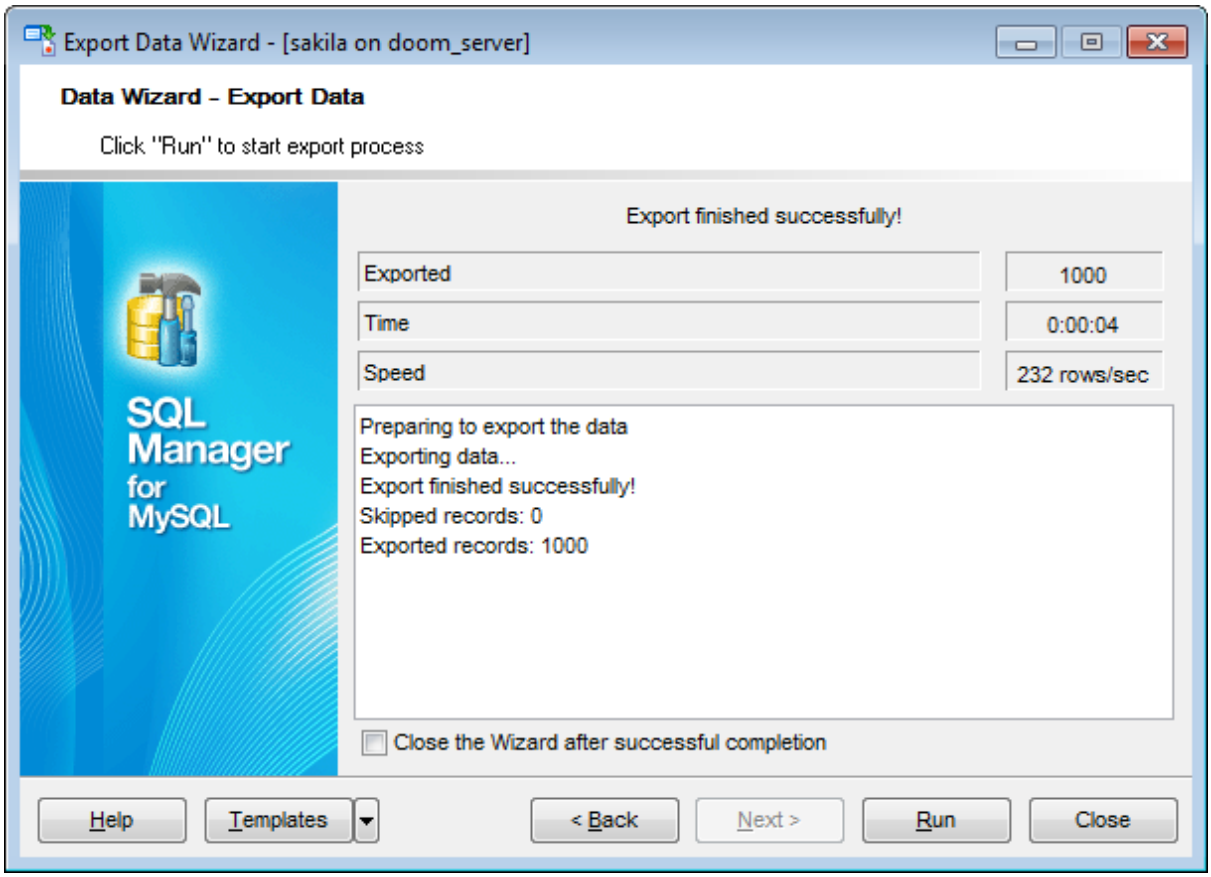
If this option is checked, the result file will be sent to the default printer after the export operation is completed.

When you are done, click the **Next** button to proceed to the last step of the wizard.

8.1.7 Exporting data

This step of the wizard is intended to inform you that all export options have been set, and you can start the export process.

The log area allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the export process is completed.

If necessary, you can save a template for future use.

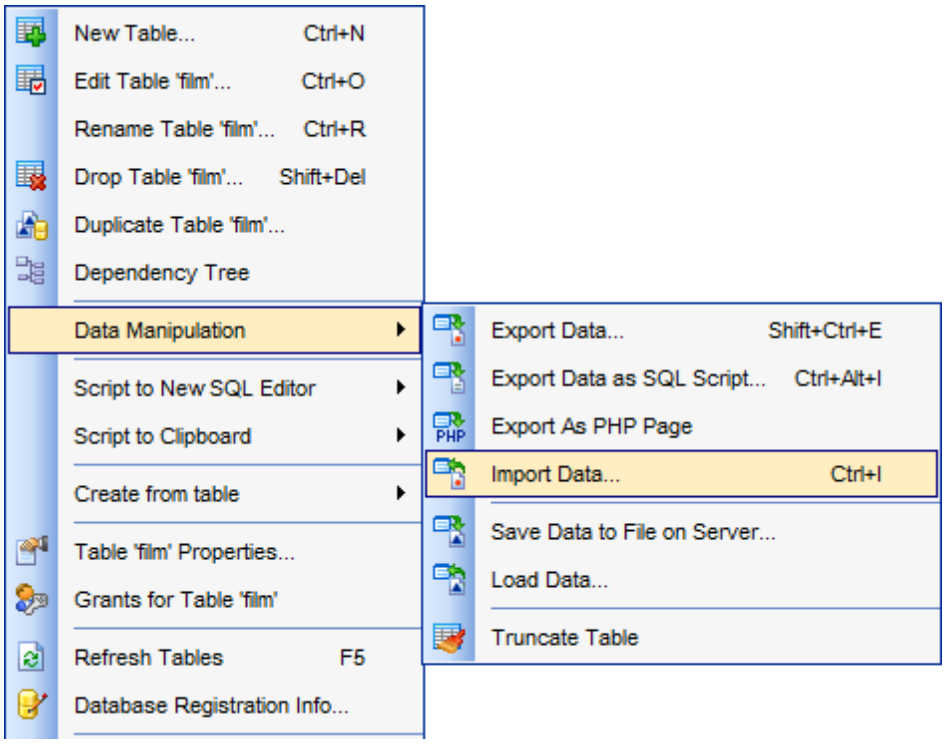
Click the **Run** button to run the export process.

After the operation is completed, you can view the number of *exported* records, elapsed *time*, estimated export *speed*, and the *log* of operations and errors (if any).

8.2 Import Data Wizard

Import Data Wizard allows you to import data to a table / view from any of supported formats (*MS Excel*, *MS Access*, *DBF*, *XML*, *TXT*, *CSV*, *HTML*, *MS Excel 2007*, *MS Word 2007* , *ODF*). You can save your settings as a template any time for future use.

To start the wizard, right-click the table/view in DB Explorer, select the **Data Manipulation | Import Data...** context menu item.
Alternatively, you can open the **Data** tab of Table Editor / View Editor, right-click the grid there, then select the **Data Manipulation | Import Data to <object_name>...** context menu item.



- Setting source file name and format
- Selecting the source to import data from
- Setting correspondence between the source and target columns
- Adjusting common data formats
- Setting advanced column formats
- Setting import mode and data write type
- Customizing common import options
- Importing data

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

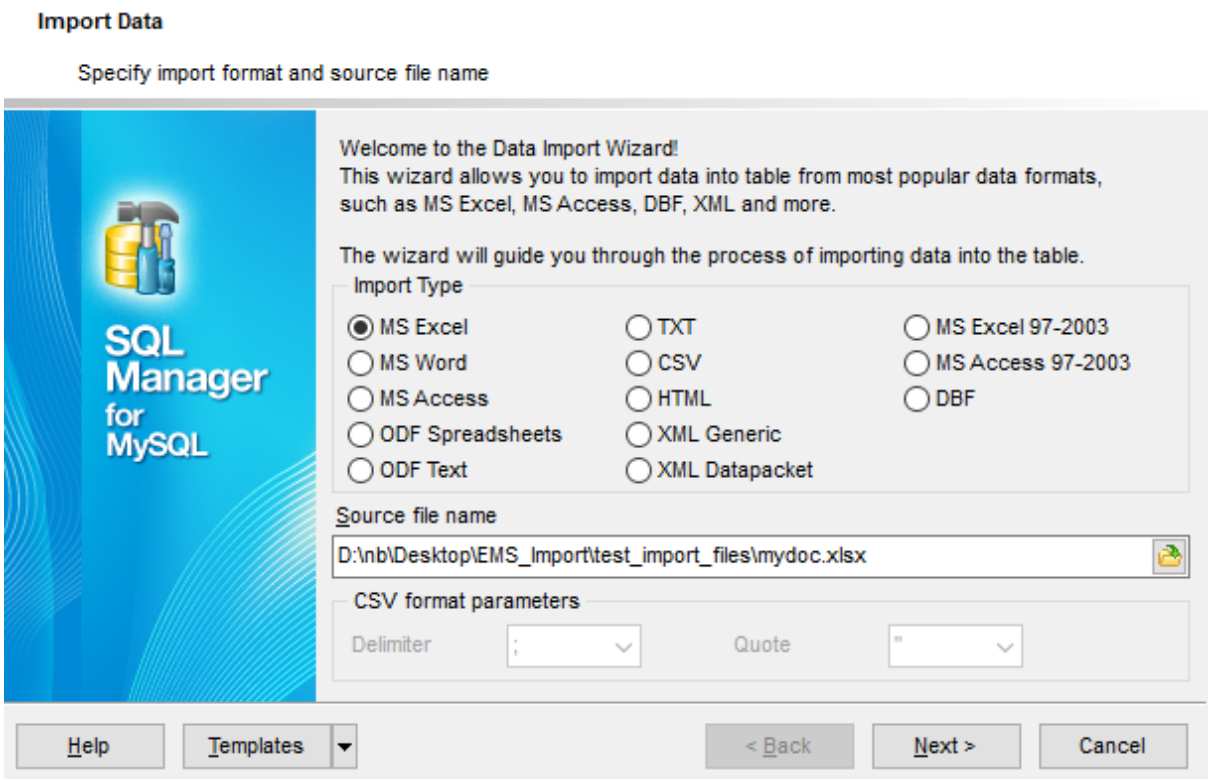
See also:

Export Data Wizard
Export as SQL Script
Save Data Wizard
Load Data Wizard
Using templates

8.2.1 Selecting source file name and format

This step of the wizard allows you to select the source file format you need to import data from.

Source file name
Type in or use the button to specify the path to the file using the **Open file...** dialog. The file name extension changes automatically according to the selected **Import Type**.



Import Type
Specify the format of the source file. For details refer to Supported file formats.

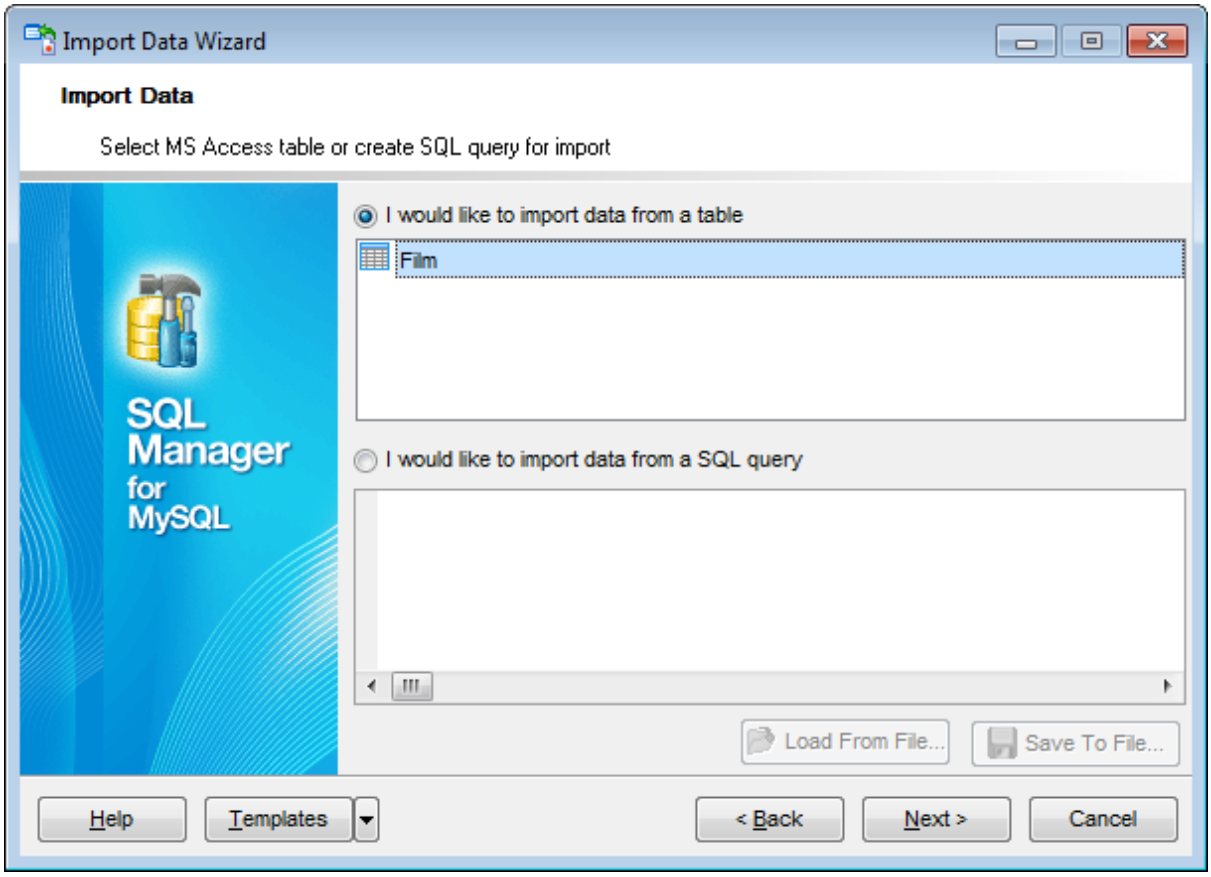
CSV format parameters
For CSV import you should define **Delimiter** and **Quote** settings using the corresponding drop-down lists.

Click the **Next** button to proceed to the Setting columns correspondence step or to the Selecting data source step of the wizard if you have selected **MS Access** as the source file format.

8.2.2 Selecting data source

This step of the wizard is only available when you are importing data from *MS Access*. Select a **table** from the table list or input a **query** in the corresponding text boxes to specify the data source.

If you choose a query as the data source, you also can load a SQL query from a **.sql* file or save the current query text to a file using the **Load from File...** and the **Save to File...** buttons correspondingly.



Click the **Next** button to proceed to the Setting fields correspondence step of the wizard.

8.2.3 Setting fields correspondence

This step of the wizard allows you **to set correspondence** between columns of the source file and columns of the target MySQL table.

- MS Excel
- MS Access
- DBF
- XML Datapacket
- TXT
- CSV
- HTML
- XML Generic
- MS Excel/Word 2007, ODF

To get more information about the file formats, see the Supported file formats page.

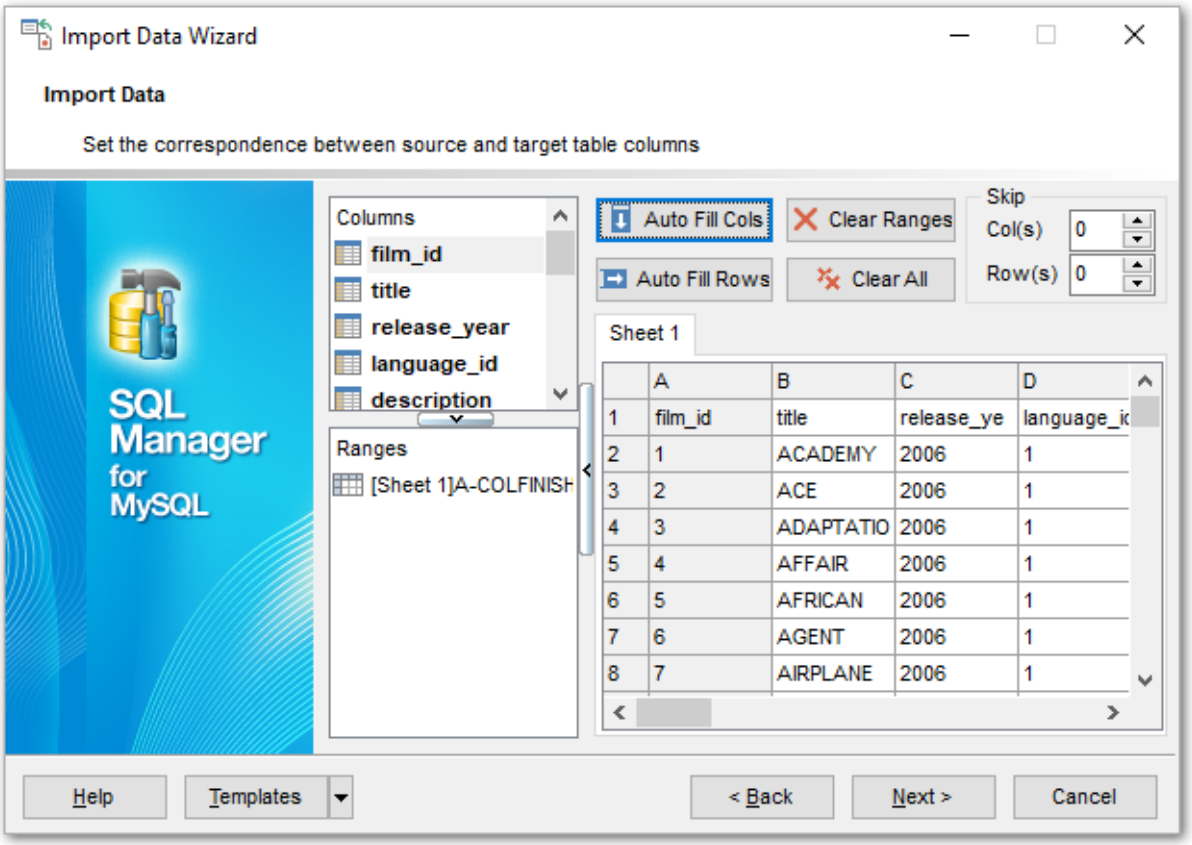
8.2.3.1 Excel

Specify ranges in the grid for the target and source columns:

- select a column of the target MySQL table in the **Columns** list;
- proceed to the **Sheet** grid: click a column caption to select the whole column or click the row number to select the whole row;
- the selected column/row of the source file gets green highlight, and a new range indicating the source and target columns correspondence appears in the **Ranges** list;
- repeat the operation for all the columns you need to be included in the import process.

If the source Excel file and the destination MySQL table have the same order of columns or rows, you can use the **Auto Fill Cols** or the **Auto Fill Rows** buttons to set correspondence between them automatically.

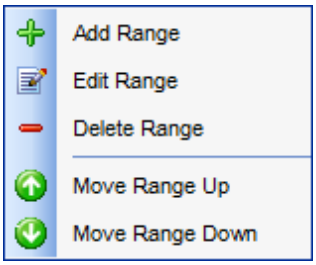
If necessary, you can choose to **skip** a defined number of the source file columns and/or rows using the **Col(s)** and **Row(s)** spinner controls of the **Skip** group (e.g. if you need to exclude column headers from the imported data range).



To clear ranges for a column, select the column in the **Columns** list and press the **Clear Ranges** button.
To clear all ranges specified for the target table columns, press the **Clear All** button.

Right-click a range in the **Ranges** list to call its popup menu. Using the popup menu you

can *add* or *edit* ranges manually, *remove* them or change their *order*.



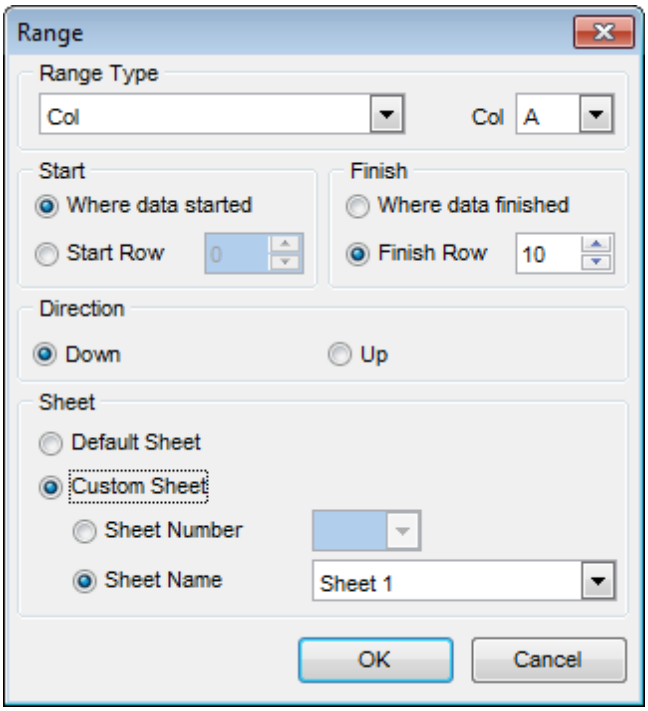
The **Range** dialog allows you to edit the data range for import manually.

Range Type
Use the drop-down list to select whether a *column*, a *row*, or a *cell* of the source Excel file will be mapped to the target table column.
Depending on the selected range type you should specify the column (e.g. *B*), the row (e.g. *2*) or the cell (e.g. *A2*).

Start / **Finish**
These groups allow you to set the precise data range for import: select **Where data started** / **finished** or use the spinner control to specify the **start**/**finish row** (or **start**/**finish column**).

Direction
Use this group to select the direction for importing data of the specified range: *Down* or *Up*.

Sheet
Use this group to define whether the specified range will be taken from the **default** Excel sheet or from a **custom** sheet (select **sheet number** or **sheet name** using the corresponding drop-down lists).



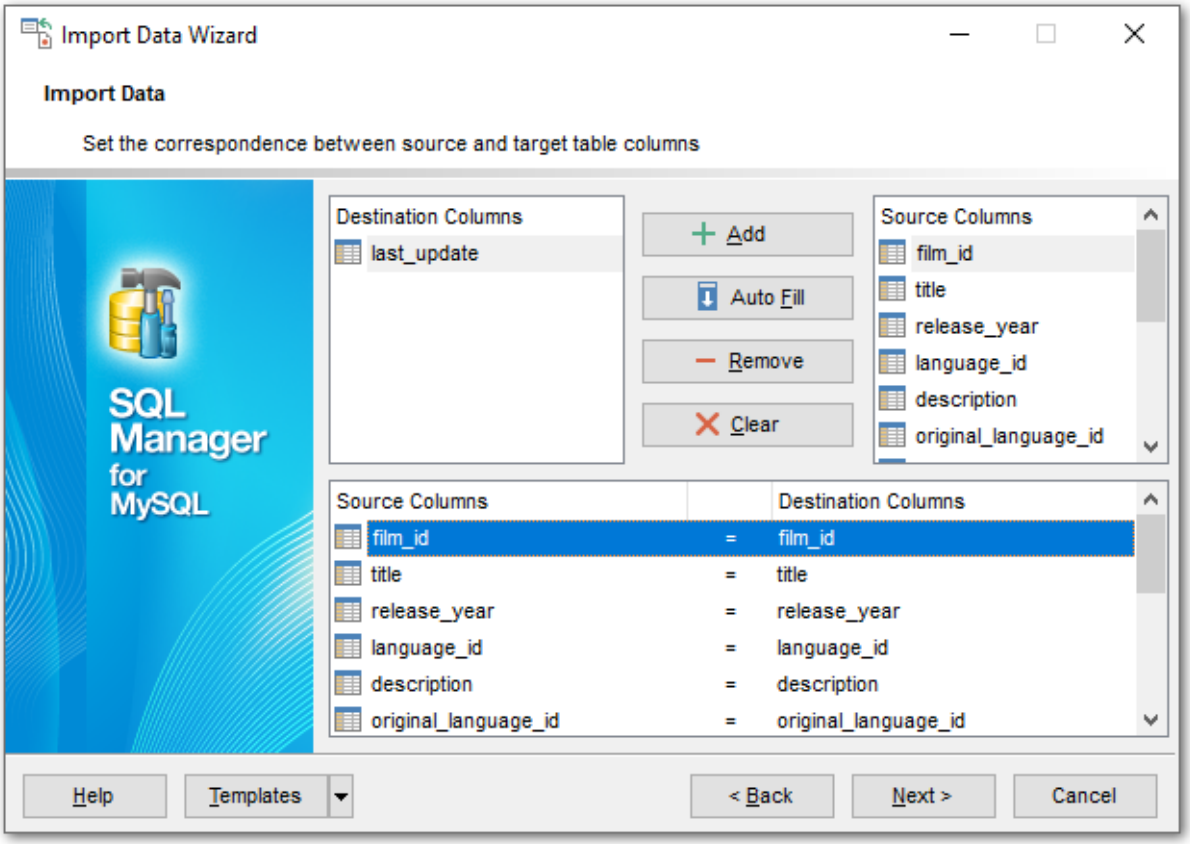
Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.2 Access, DBF, XML

Set correspondence between the source MS Access columns and the target MySQL table columns:

- select a column of the target MySQL table in the **Destination Columns** list;
- select the corresponding column of the source MS Access table in the **Source Columns** list;
- click the **Add** button to set correspondence between the selected columns;
- the pair of columns appears in the list below;
- repeat the operation for all the columns you need to be included in the import process.

Use the **Auto Fill** button to set correspondence between the source and target columns automatically on the basis of their order.



To remove a correspondence, select the pair of columns in the list below and press the **Remove** button.
To remove all correspondences, press the **Clear** button.

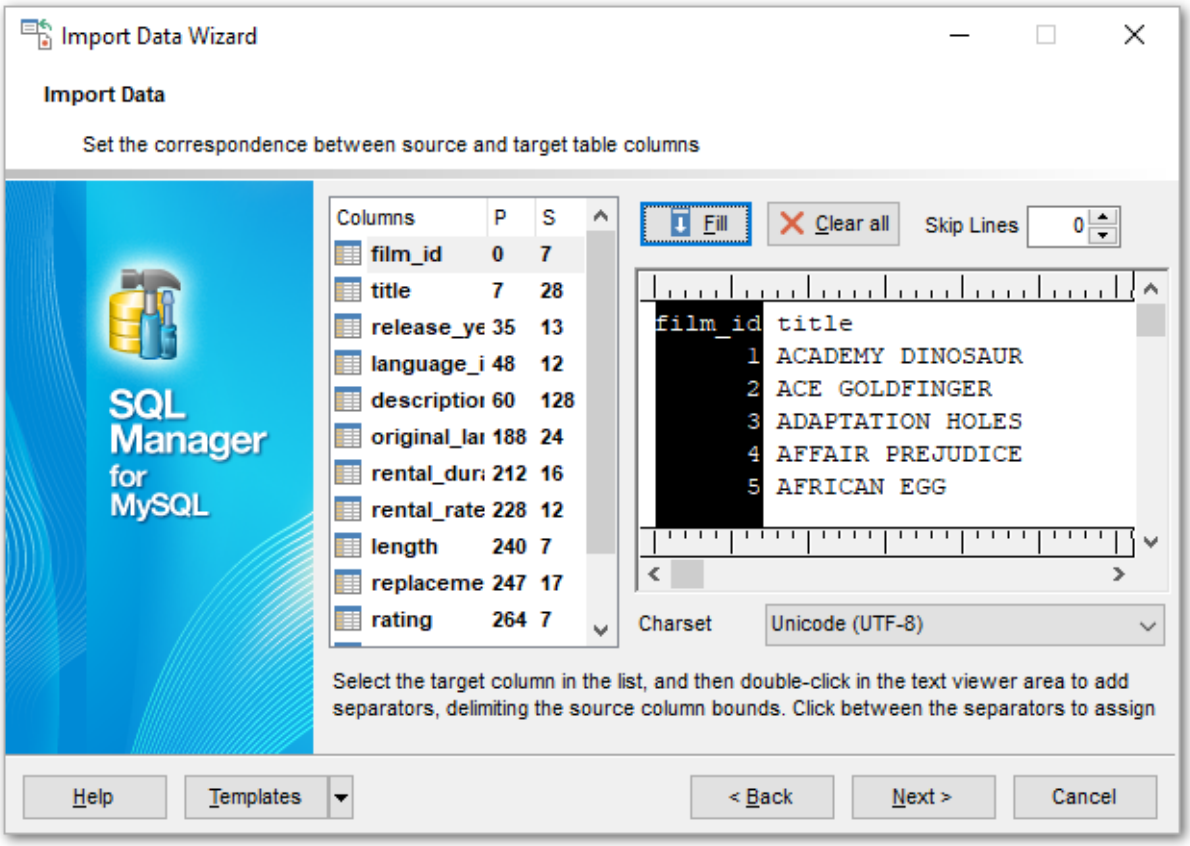
Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.3 TXT

Set correspondence between the source text file columns and the target MySQL table columns:

- select a column of the target MySQL table in the **Columns** list;
- double-click in the text viewer area to add vertical separators delimiting the source column bounds;
- click the area between the separators to assign the column to the selected target table column - the selected source column gets black highlight;
- repeat the operation for all the columns you need to be included in the import process.

If necessary, you can choose to **skip** a defined number of the source file lines using the **Skip Lines** spinner control (e.g. if you need to exclude column headers from the imported data range).



To clear all correspondences, press the **Clear** button.

Note: if you cannot see the content of the source text file properly, you should select the appropriate **Charset** to be used for processing data.

Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.4 CSV

Set correspondence between the target table columns and the source CSV file columns:

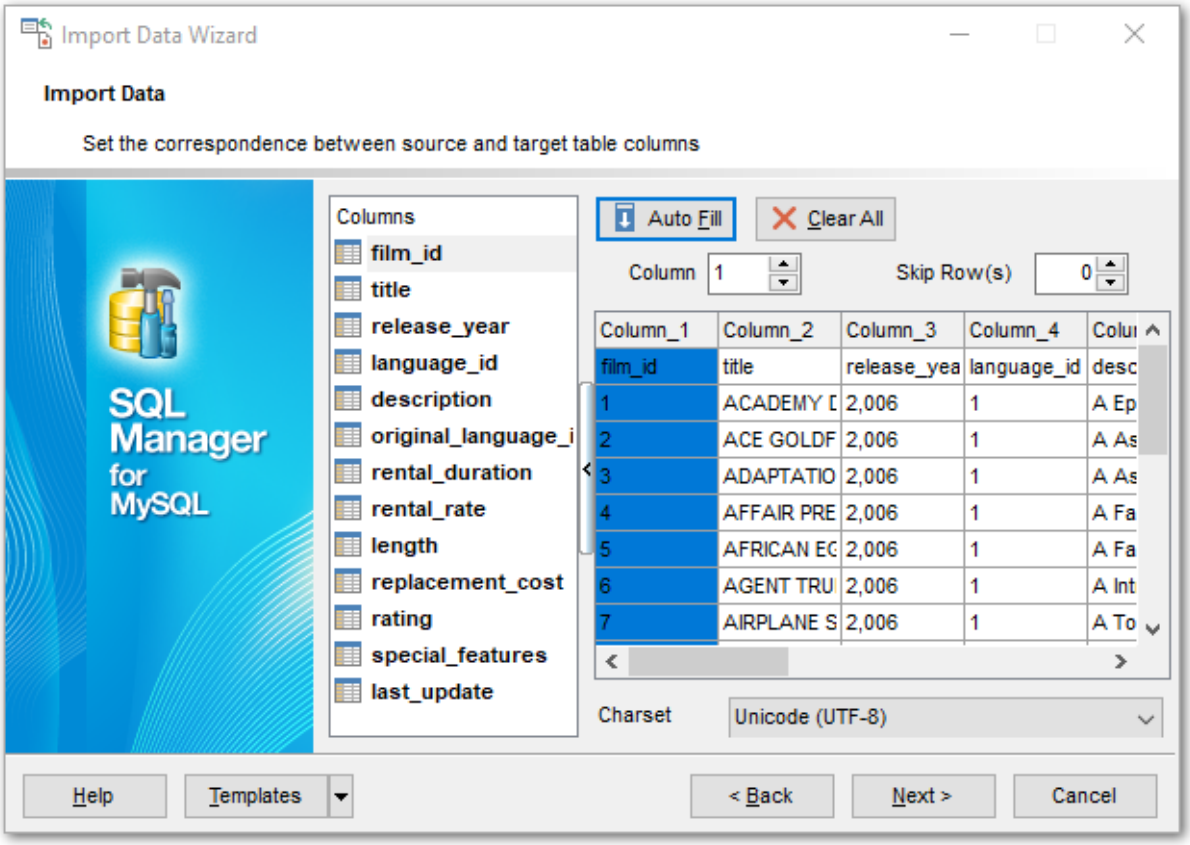
- select a column of the target MySQL table in the **Columns** list;
- proceed to the source grid viewer area: click a caption to assign the column to the selected target table column;
- the selected column of the source file gets gray highlight;
- repeat the operation for all the columns you need to be included in the import process.

If the source CSV file and the destination MySQL table have the same order of columns, you can use the **Auto Fill** button to set correspondence between them automatically.

Note that the CSV delimiter is specified at the Selecting source file name and format step of the wizard.

The **Col(s)** control indicates the currently selected source file column. You can also use this spinner control for quick column selection.

If necessary, you can choose to **skip** a defined number of the source file rows using the **Row(s)** spinner control of the **Skip** group (e.g. if you need to exclude column headers from the imported data range).



To remove a correspondence, select the field in the **Fields** list and press the **Clear**

button.

Note: if you cannot see the content of the source text file properly, you should select the appropriate **Charset** to be used for processing data.

Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.5 HTML

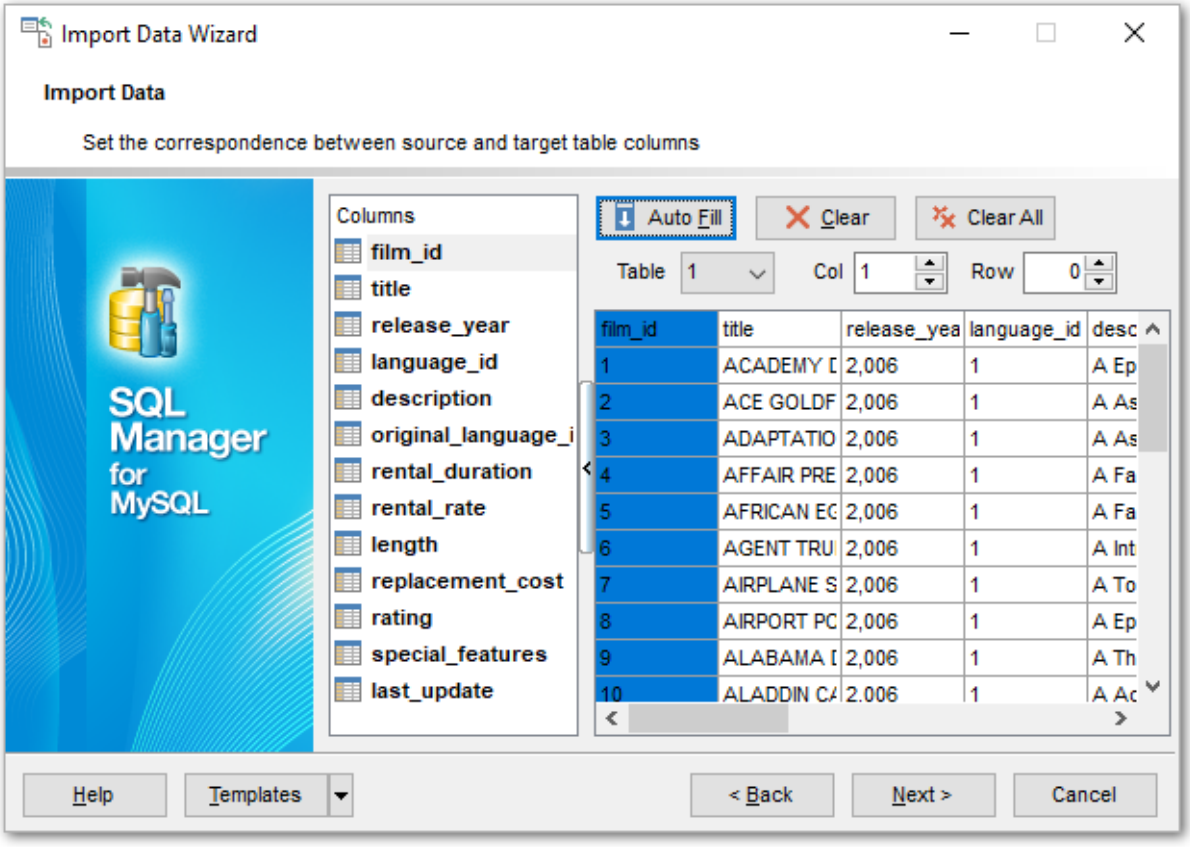
Set correspondence between the target table columns and the source HTML file columns:

- select a column of the target MySQL table in the **Columns** list;
- proceed to the source grid viewer area: select the **Table** from which you intend to import data and click a column to assign the column to the selected target table column;
- the selected column of the source file gets green highlight;
- repeat the operation for all the fields you need to be included in the import process.

If the source HTML file and the destination MySQL table have the same order of columns, you can use the **Auto Fill** button to set correspondence between them automatically.

The **Col** control indicates the currently selected source file column. You can also use this spinner control for quick column selection.

If necessary, you can choose to **skip** a defined number of the source file rows using the **Row** spinner control of the **Skip** group (e.g. if you need to exclude column headers from the imported data range).



To remove a correspondence, select the field in the **Fields** list and press the **Clear** button.
To remove all correspondences, press the **Clear All** button.

Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.6 XML Generic

In order to set mapping of a Generic XML document, you should enter the relative **XPath** (the path must be specified in the XPath format). Press the **Fill Grid** button to get the grid filled with text and attribute values of the selected node.

Note: if the source XML document contains huge amount of data, building the tree may take a long time.

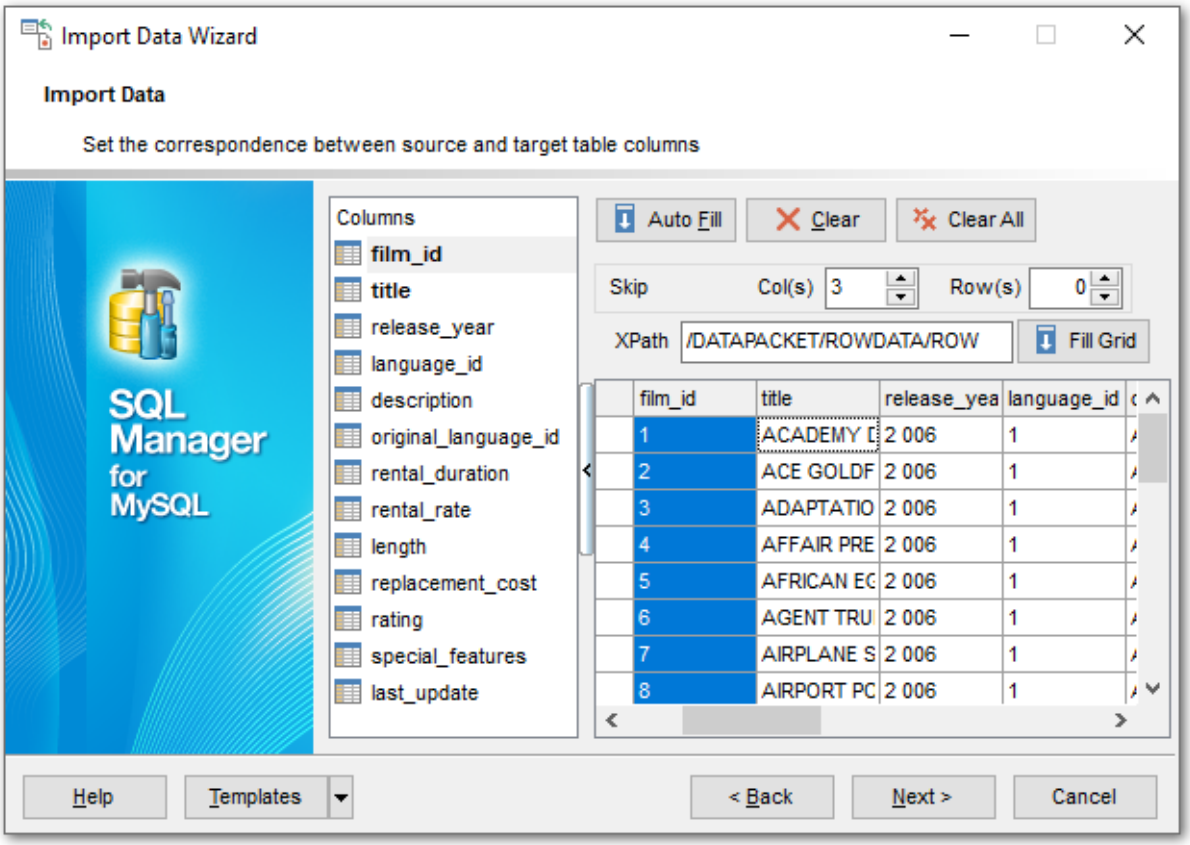
Set correspondence between the source XML file columns and the target MySQL table columns:

- select a column of the target MySQL table in the **Columns** list;
- proceed to the source grid viewer area: click a column to assign the column to the selected target table column;
- the selected column of the source file gets gray highlight;
- repeat the operation for all the columns you need to be included in the import process.

You can use the **Auto Fill** button to set correspondence between the source and target columns automatically according to their order (mapping is started from the first attribute value in this case).

The **Col(s)** control indicates the currently selected source file column. You can also use this spinner control for quick column selection.

If necessary, you can choose to **skip** a defined number of the source file lines using the **Row(s)** spinner control of the **Skip** group (e.g. if you need to exclude node headers from the imported data range).



To remove a correspondence, select the field in the **Fields** list and press the **Clear** button.
To remove all correspondences, press the **Clear All** button.

Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.3.7 MS Excel/Word 2007, ODF

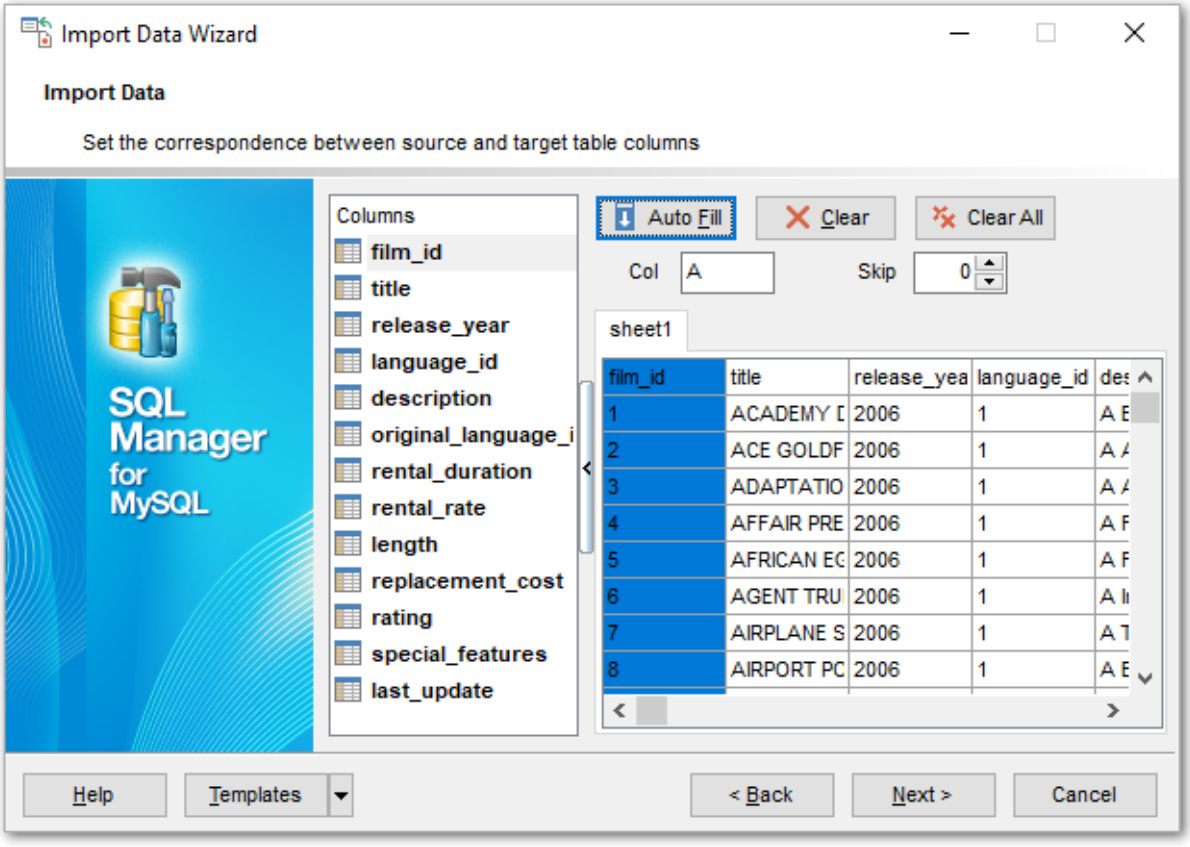
Specify ranges in the grid for the target and source columns:

- select a column of the target MySQL table in the **Columns** list;
- proceed to the **Sheet** grid: click a column to assign the column to the selected target table column;
- the selected column of the source file gets green highlight;
- repeat the operation for all the columns you need to be included in the import process.

If the source file and the destination MySQL table have the same order of columns, you can use the **Auto Fill** button to set correspondence between them automatically.

The **Col** control indicates the currently selected source file column. You can also use this control for quick column selection.

If necessary, you can choose to **skip** a defined number of the source file rows using the **Skip** spinner control (e.g. if you need to exclude column headers from the imported data range).



To remove a correspondence, select the column in the **Columns** list and press the **Clear** button.
To remove all correspondences, press the **Clear All** button.

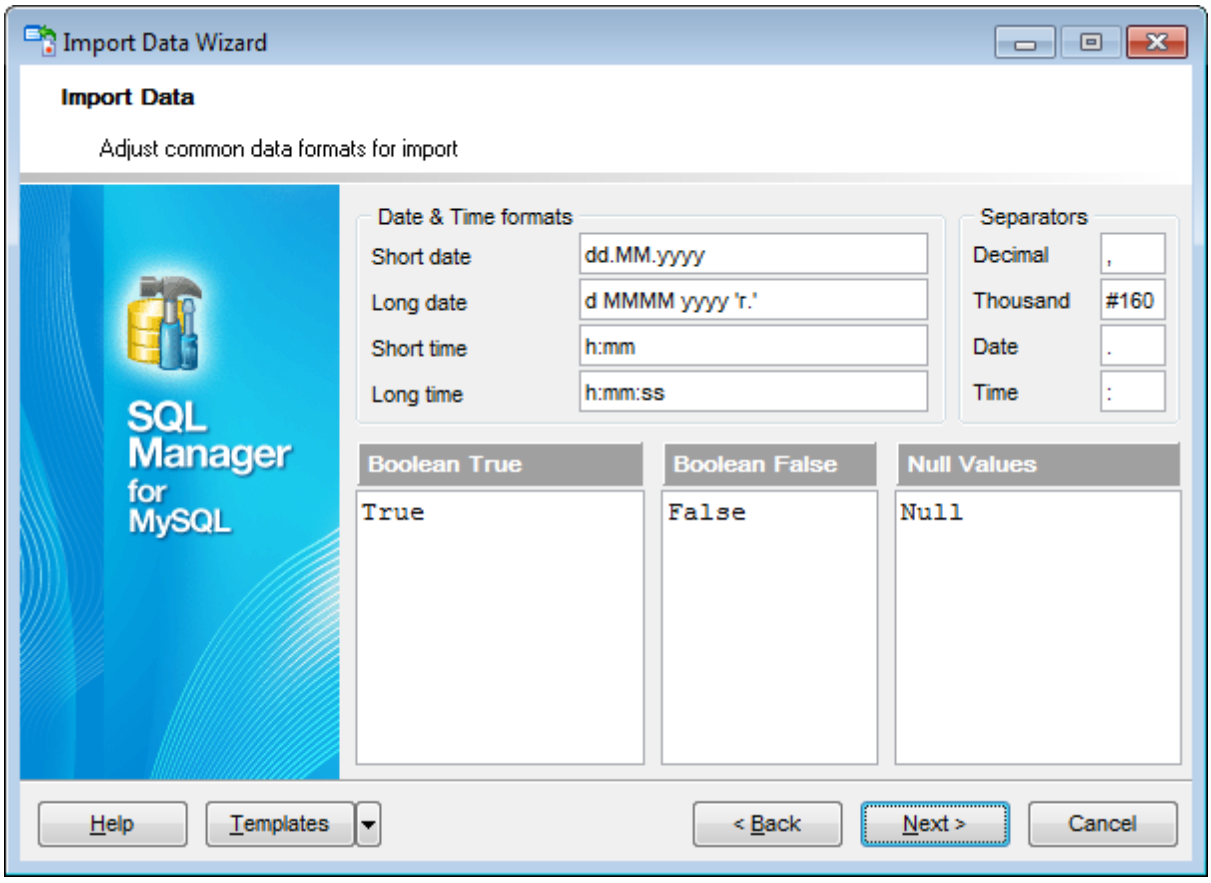
Click the **Next** button to proceed to the Adjusting data formats step of the wizard.

8.2.4 Adjusting data formats

This step of the wizard provides a number of options for setting common formats for all imported data:

Date & Time formats: *Short date*, *Long date*, *Short time*, *Long time*;
Separators: *Decimal*, *Thousand*, *Date*, *Time*;
Boolean True (specify the text that will be displayed for the boolean *TRUE* values);
Boolean False (specify the text that will be displayed for the boolean *FALSE* values);
NULL values (specify the text that will be displayed for the *NULL* values).

For more information refer to the Format specifiers page.

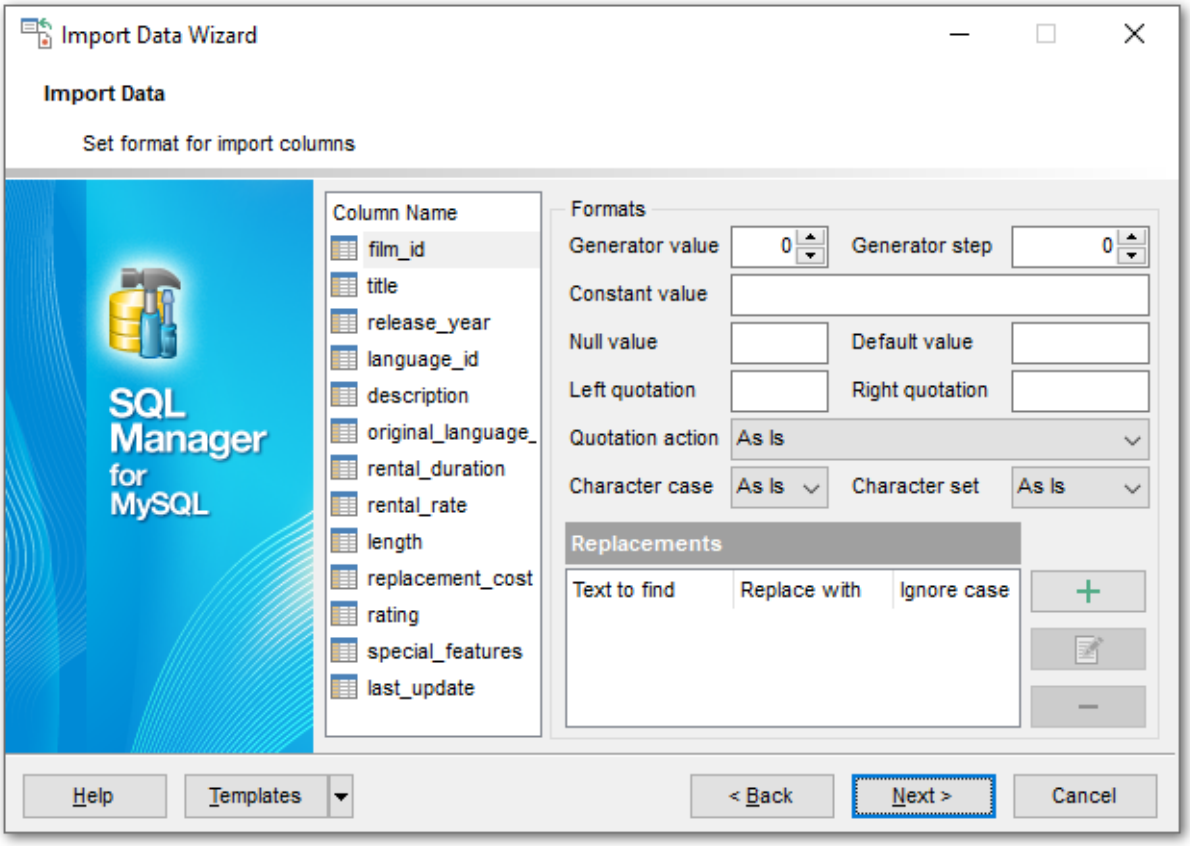


Click the **Next** button to proceed to the Setting advanced column formats step of the wizard.

8.2.5 Setting advanced field formats

This step of the wizard allows you to set **formats** each column separately.

Select a column in the list and adjust **format options** that will be applied to this column only.



Specify **Generator value** and **Generator step** for incremental data generation into the specified column, or enter a **Constant value** which will be set for all records in the column.

Specify the **NULL value** which will be used for the records where the value is NULL.

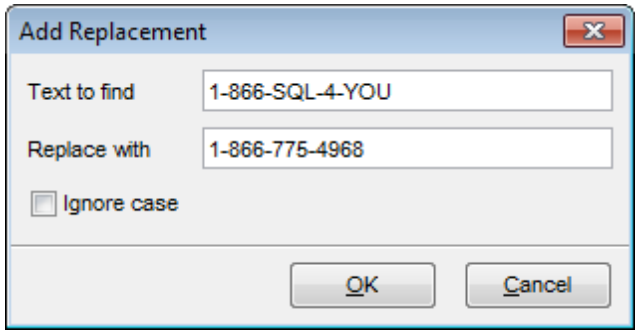
If necessary, specify the **default value**.

Use the **Left** / **Right quotation** edit boxes to specify left/right quotation marks.
Use the **Quotation action** drop-down list to select whether the quotation marks should be *added*, *removed*, or left *'As is'*.

Use the **Character case** drop-down list to select the case that will be used for string values of the column: *Upper*, *Lower*, *UpperFirst*, *UpperFirstWord*, or *'As is'*.

Use the **Character set** drop-down list to select which charset will be used for string data in the column: *ANSI*, *OEM*, or *As is*.

The **Replacements** area allows you to set the text you need to be replaced during data import into the selected column. Press the **Plus** button to specify a new replacement options using the **Add Replacement** dialog.



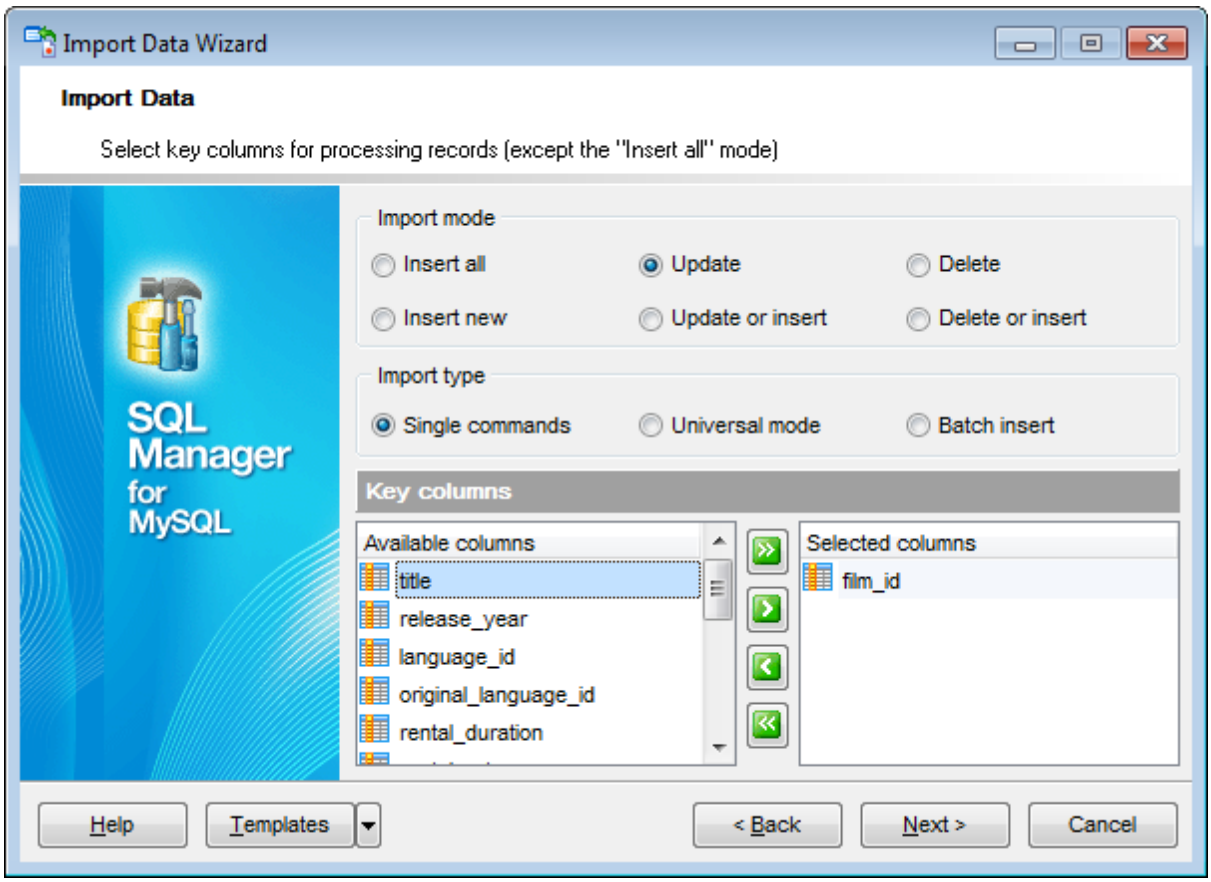
To edit a replacement, click the **Edit** button.
To remove a replacement, click the **Minus** button.

When you are done, click the **Next** button to proceed to the Setting import mode step of the wizard.

8.2.6 Setting import mode

This step of the wizard allows you to define the records processing mode as *Insert All*, *Insert New*, *Update*, *Update or Insert*, *Delete*, *Delete or Insert* mode:

- **Insert all**: all records from the source file are inserted into the tables irrespective of whether any records exist in the destination table or not
- **Insert new**: already existing records are skipped, and new records are inserted into the destination table
- **Update**: all existing records are updated from the source file
- **Update or insert**: already existing records are updated and new records are inserted into the destination table
- **Delete**: already existing records are deleted
- **Delete or insert**: existing records are deleted and new records are inserted into the destination table



Here is an **example** of some import modes offered by Import Data Wizard:

All import modes (except for the **Insert All** mode) are based on key values information. In order to perform import operations with these modes used, you need to have matches between the source file key column(s) and the destination table key column(s).
For example, your source file contains three rows with the key values *1*, *2*, *3*, and your destination table contains three rows with the key values *1*, *2*, *4*.

Destination table

ID	DATA
1	a
2	b
4	f

Source file data

	A	B
1	1	c
2	2	d
3	3	e

If you use the **Insert new** import mode, in this case only the row with key value *3* will be inserted into the destination table.
If you use the **Update** import mode, then the rows with key values *1*, *2* will be updated.
If you use the **Update or insert** import mode, then rows *1*, *2* will be updated and the row with key value *3* will be inserted.
It is applied to all other import modes, except for the **Insert all** mode. For all these modes (except for the **Insert all** mode) it is obligatory to select the primary key columns. This column (or columns) is used as key column to identify specific data in the target database.

Insert new

ID	DATA
1	a
2	b
3	e
4	f

Update

ID	DATA
1	c
2	d
4	f

Update or insert

ID	DATA
1	c
2	d
3	e
4	f

Delete

ID	DATA
4	f

Delete or insert

ID	DATA
3	e
4	f

The key columns for these operations are defined in the **Key columns** area.

Single commands / **Universal mode** / **Batch insert** type
The *Single commands* import mode is performed with the Single Commands method used and serves to generate and execute single SQL commands on the server, whereas the *Batch insert* mode uses native MySQL commands to import a data set as a batch. With the help of the *Single commands* import mode your data can be imported considerably faster as compared to the *Universal* mode which is used for backward compatibility.

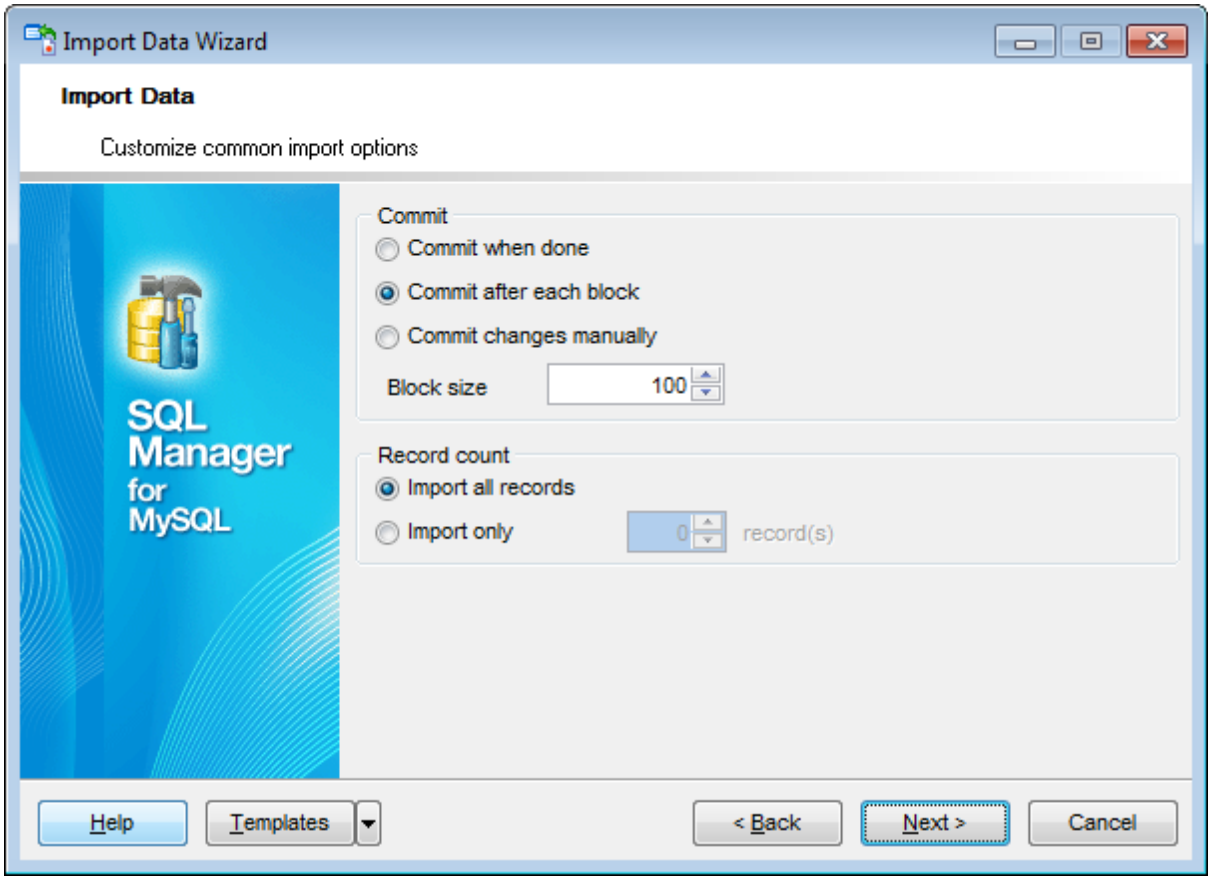
Use **Import mode** to select whether to insert all records, or to update/delete existing ones. Note that for updating/deleting existing records in the target table you should move its key columns from the **Available columns** list to the **Selected columns** list.

The **Key columns** area allows you to select the columns of the table to be used as the key columns for the import process.
To select a column, you need to move it from the **Available columns** list to the **Selected columns** list. Use the  buttons or drag-and-drop operations to move the columns from one list to another.

When you are done, click the **Next** button to proceed to the Customizing common options step of the wizard.

8.2.7 Customizing common options

Use this step of the wizard to set common import options. The detailed description of these options is given below.



Commit

Commit when done
Commits the transaction when all records are imported.

Commit after each block
Inserts the *COMMIT* statement after a defined number of records.

Commit changes manually
Select this option if you intend to commit the transaction manually.

Block size
Use the spinner control to define the number of records in each committed block.

Record count

Import all records
Specifies that all records of the source file will be imported.

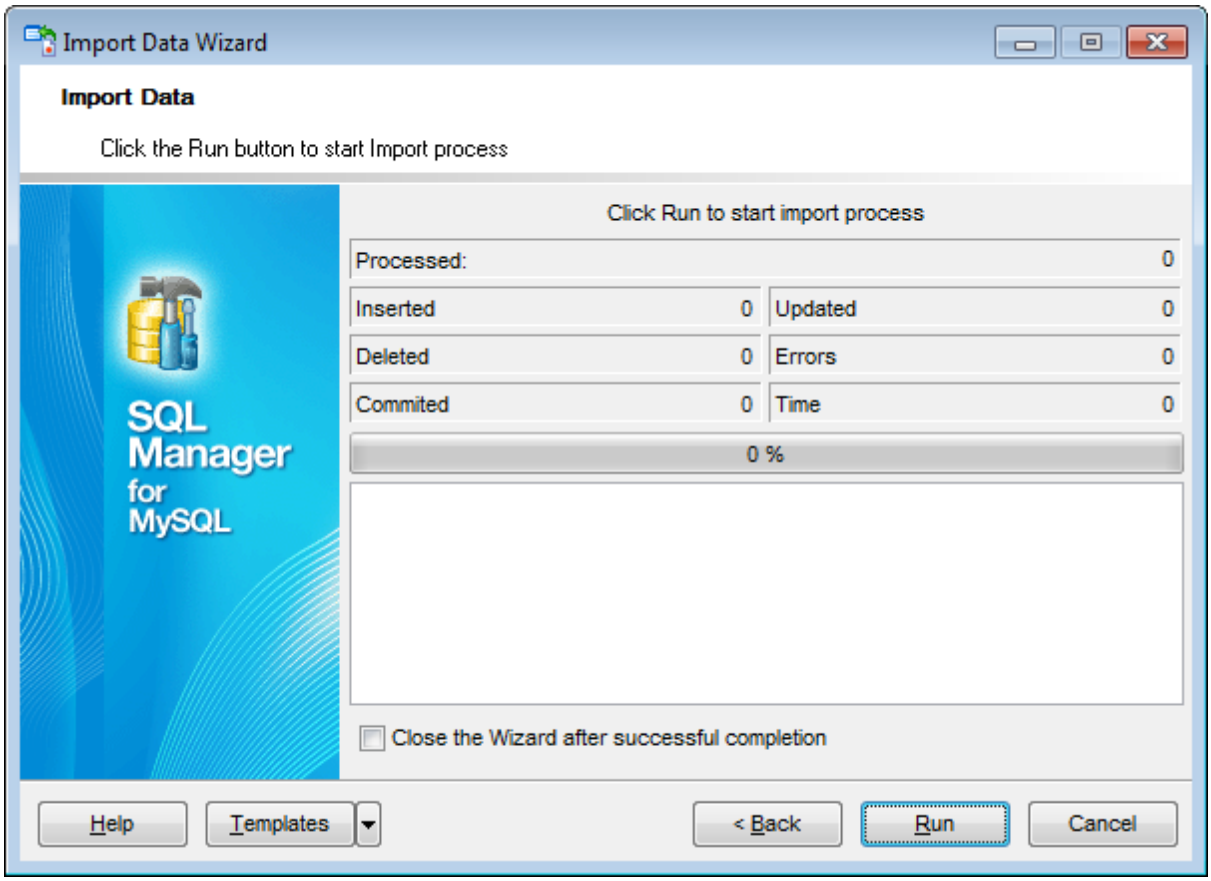
Import only ... record(s)
Specifies the number of records to be imported.

When you are done, click the **Next** button to proceed to the last step of the wizard.

8.2.8 Importing data

This step of the wizard is intended to inform you that all import options have been set, and you can start the import process.

The log area allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the import process is completed.

If necessary, you can save a template for future use.

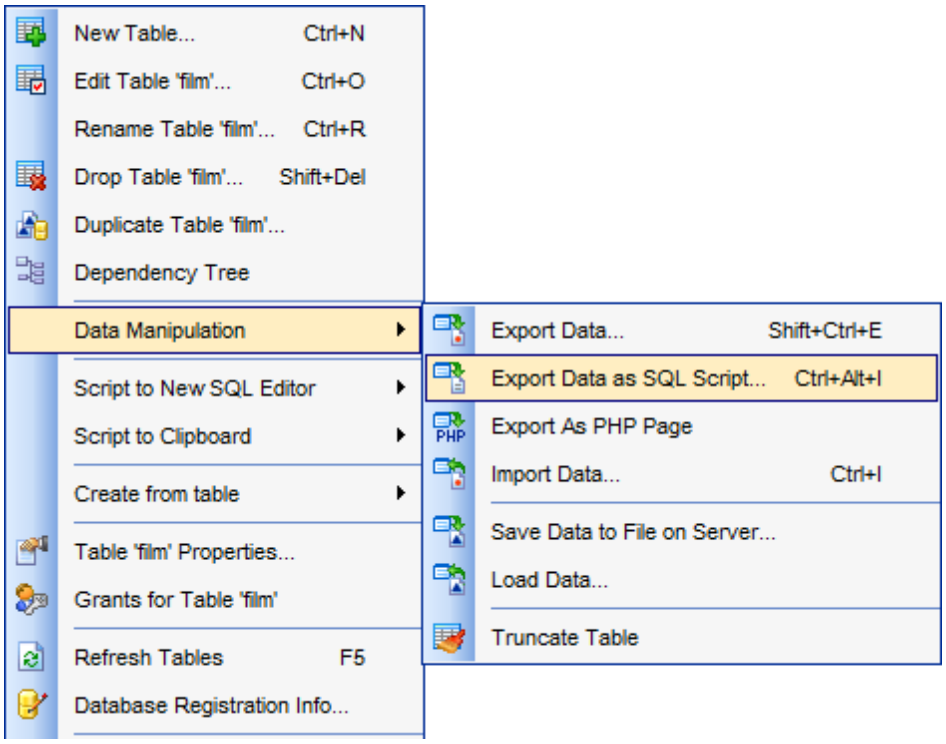
Click the **Run** button to run the import process.

After the operation is completed, you can view the total number of *processed* records, the number of *inserted/updated/deleted* records, the number of *committed* records, the number of *errors*, elapsed *time*, and the *log* of operations and errors (if any).

8.3 Export as SQL Script

Export as SQL Script Wizard allows you to export data from a table / view or from a query result to SQL script as a number of INSERT statements. You can save your settings as a template any time for future use.

To start the wizard, right-click the object in DB Explorer, select the **Data Manipulation | Export Data as SQL Script...**context menu item.
Alternatively, you can open the **Data** tab of Table Editor / View Editor or the **Result(s)** tab of SQL Editor / Query Builder, right-click the grid there, then select the **Data Manipulation | Export <object_name> as SQL Script...** context menu item.



- Selecting destination DBMS
- Setting destination file name
- Setting BLOB options
- Selecting columns to export
- Setting export options
- Editing result SQL script
- Exporting as SQL Script

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer

to the Feature Matrix page.

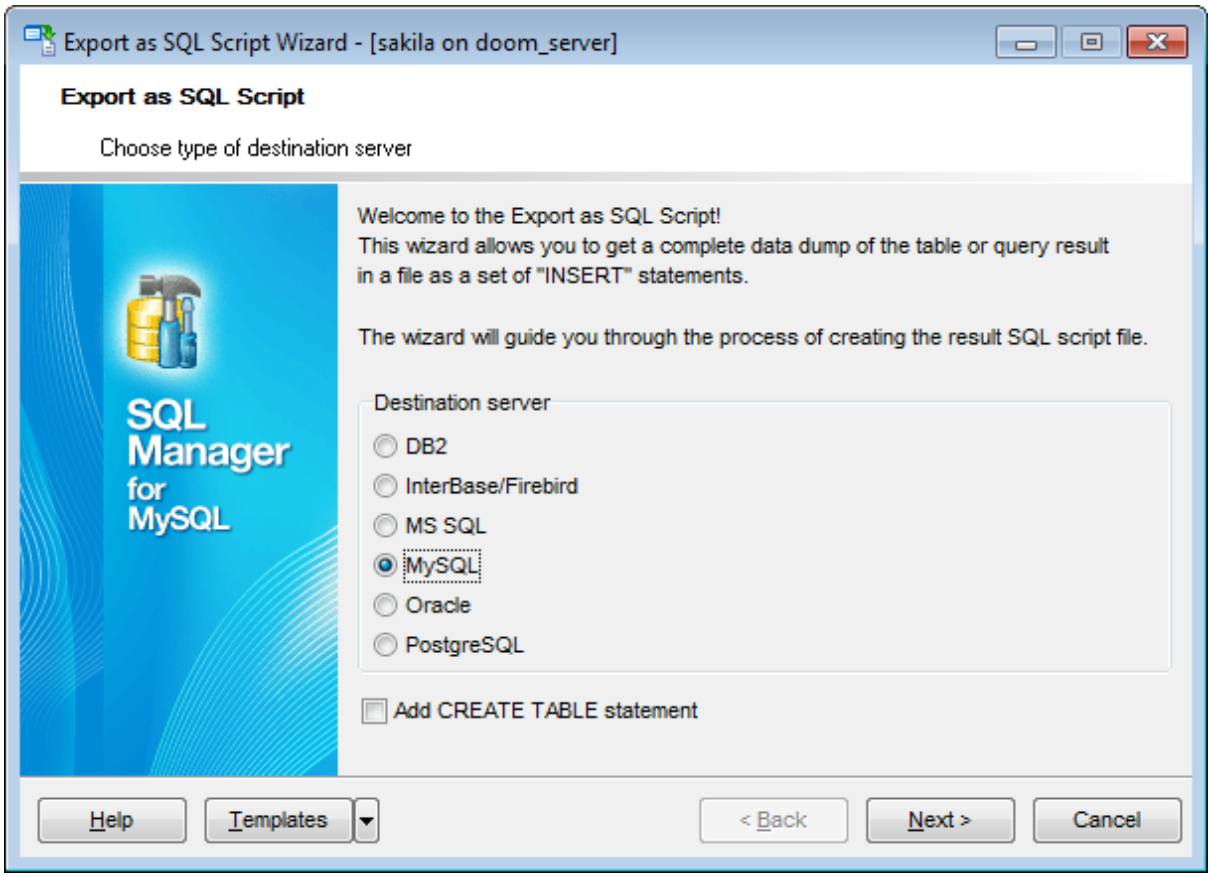
See also:

Export Data Wizard
Import Data Wizard
Save Data Wizard
Load Data Wizard
Using templates

8.3.1 Selecting destination DBMS

This step of the wizard allows you to define the **destination server** you need to export data for. The result script will be generated in compliance with the specifications of the selected DBMS:

- *DB2*
- *InterBase/Firebird*
- *Microsoft® SQL Server*
- *MySQL*
- *Oracle*
- *PostgreSQL*



Add CREATE TABLE statement
Check this option to add the *CREATE TABLE* statement to the result script.

Click the **Next** button to proceed to the Setting destination file name step of the wizard.

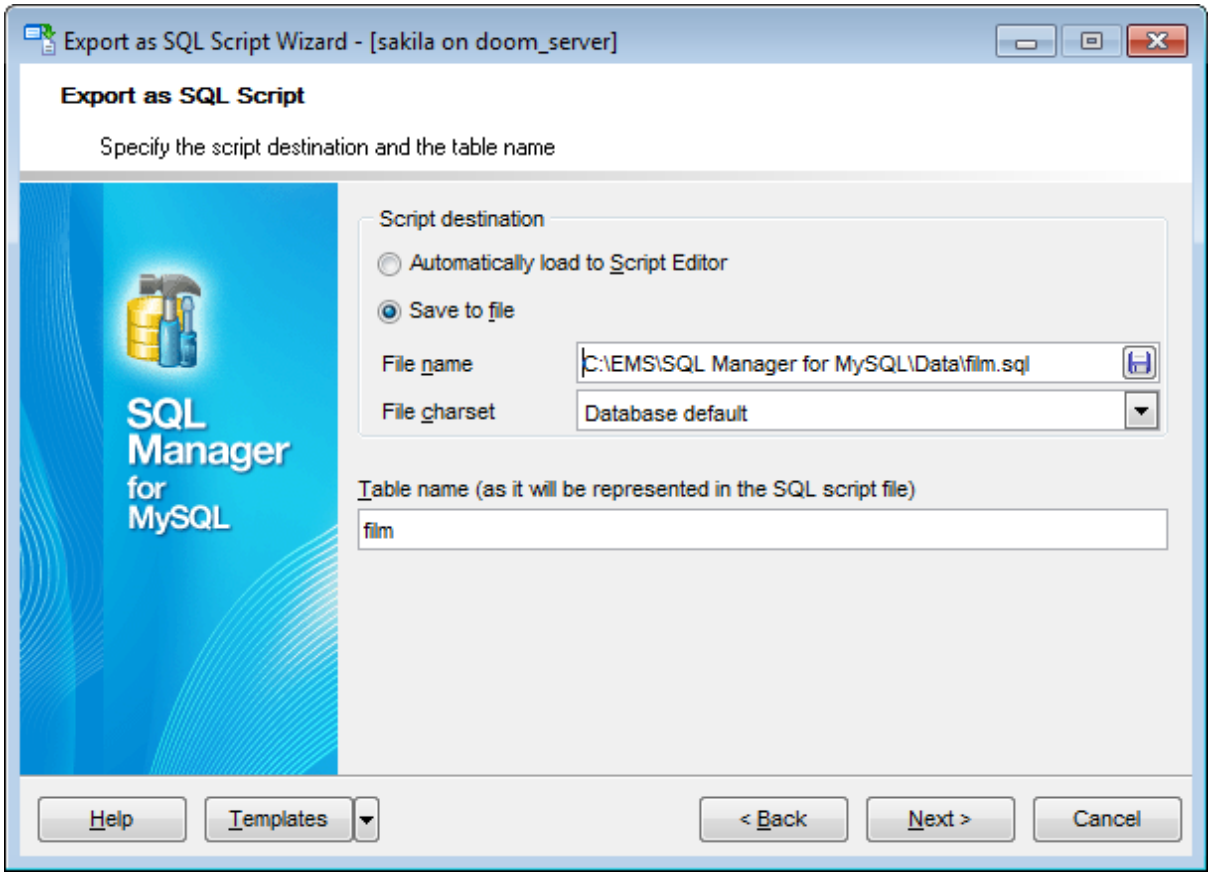
8.3.2 Setting destination file name

Specify whether the result script will be loaded to SQL Script Editor or saved to a file.

File name
Type in or use the button to specify the path to the file and the file name.

If necessary, select the **File charset** using the corresponding drop-down list.

Enter the **Table name** and the **Schema name** to be included in the result SQL script. Schema name should only be specified for the DBMS in which this object is implemented.

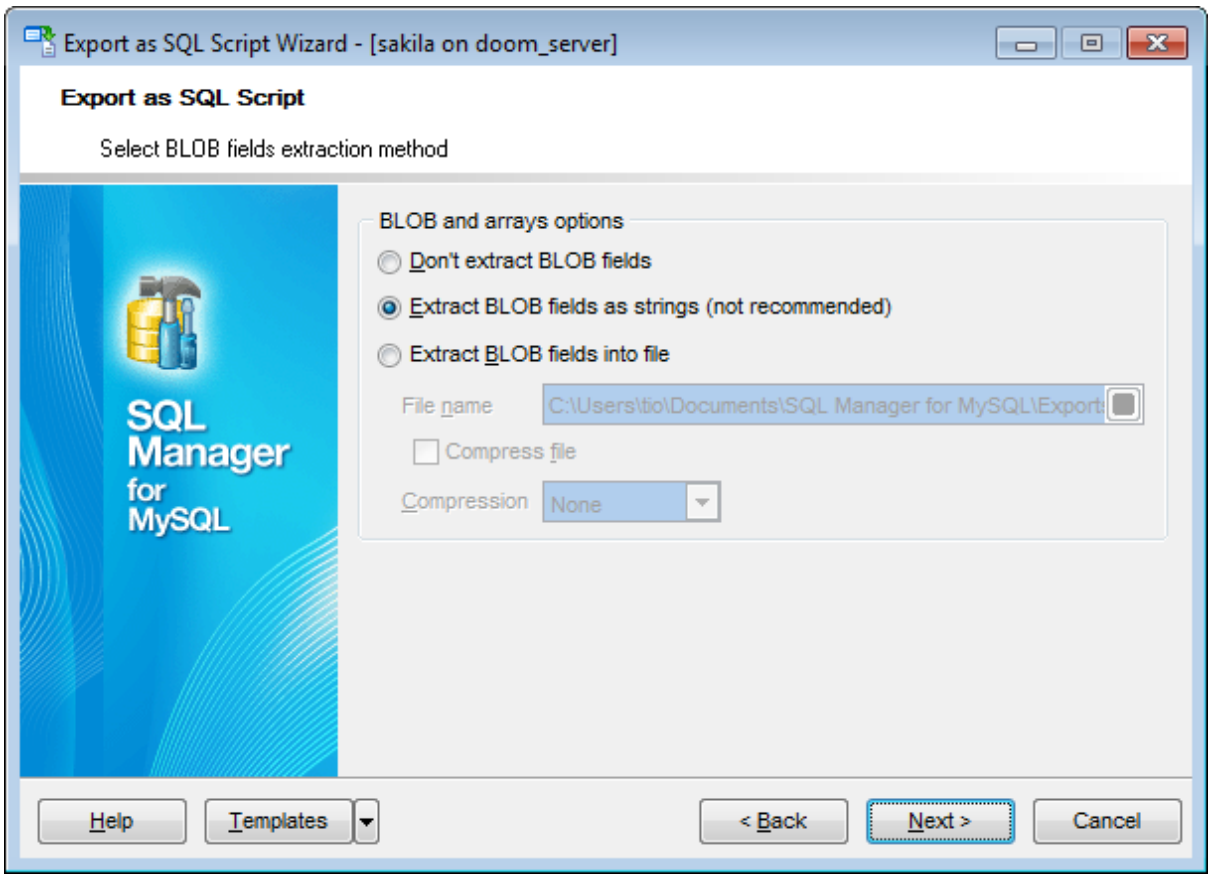


Click the **Next** button to proceed to the Setting BLOB options step of the wizard.

8.3.3 Setting BLOB options

BLOB options

In this group of options you can determine whether BLOB columns are *not to be extracted*, *extracted as strings*, or *extracted into a separate file* (available for *DB2*, *InterBase/Firebird*, *MS SQL*, *Oracle* destination servers). If the latter is selected, you also need to specify the **File name** (the **.blo* file where the BLOB data will be stored) and the location of the file on your local machine using the button.



Note: If you choose to save BLOB columns in a file then afterwards this data can be restored only by using the SQL Manager for MySQL SQL Script tool.

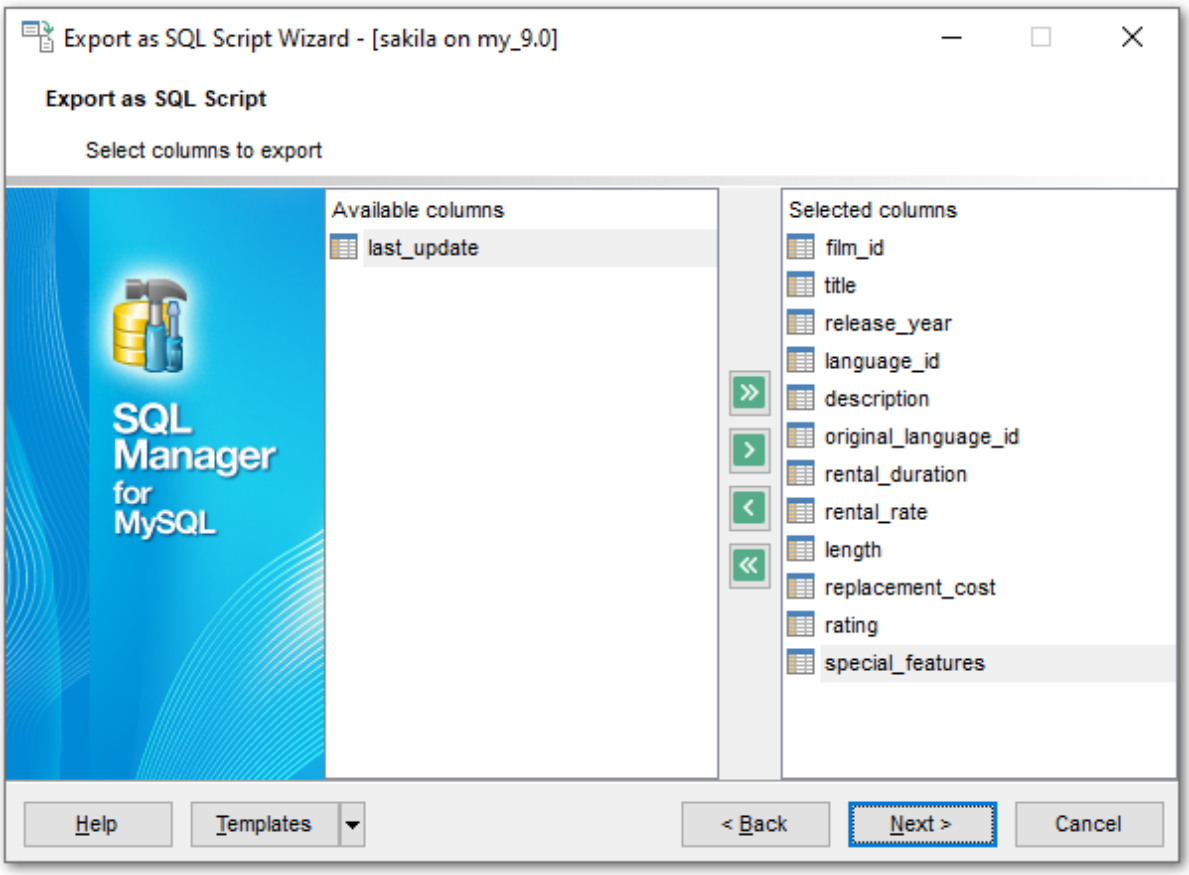
Compress file
Check this option if you wish to compress the file containing BLOB data.

Compression
Define the desired compression level to be applied for the file: *None*, *Fastest*, *Default*, *Best*.

Click the **Next** button to proceed to the Selecting columns to export step of the wizard.

8.3.4 Selecting columns to export

This step of the wizard allows you to select the table column(s) to be exported to SQL script.
To select a column, you need to move it from the **Available Columns** list to the **Selected Columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.



Click the **Next** button to proceed to the Setting export options step of the wizard.

8.3.5 Setting export options

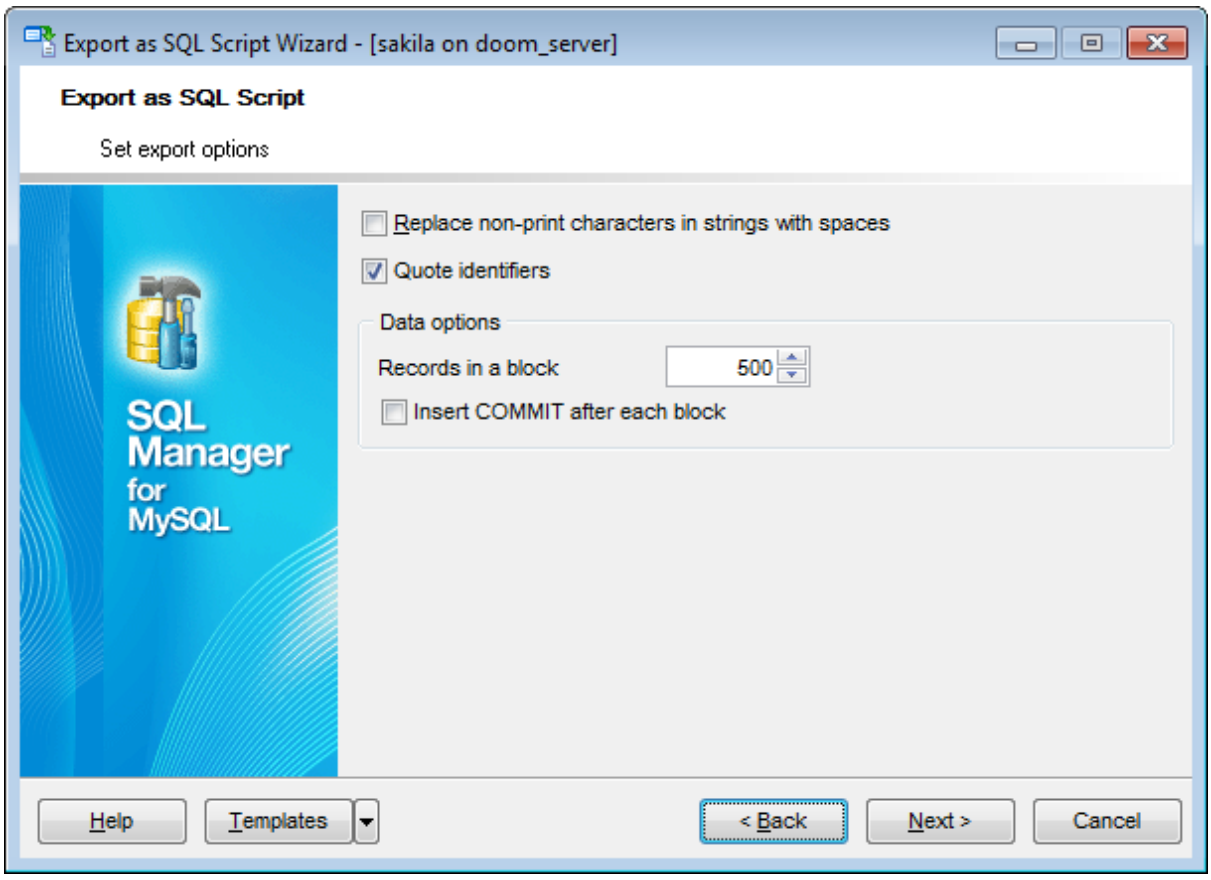
Specify common export options according to your needs.

If necessary, you can choose to **replace non-print characters in strings with spaces**.

☑ **Quote identifiers**
Check this option to apply quoting for identifiers in the destination file.

Records in block
Use the spinner control to define the number of records in each committed block.

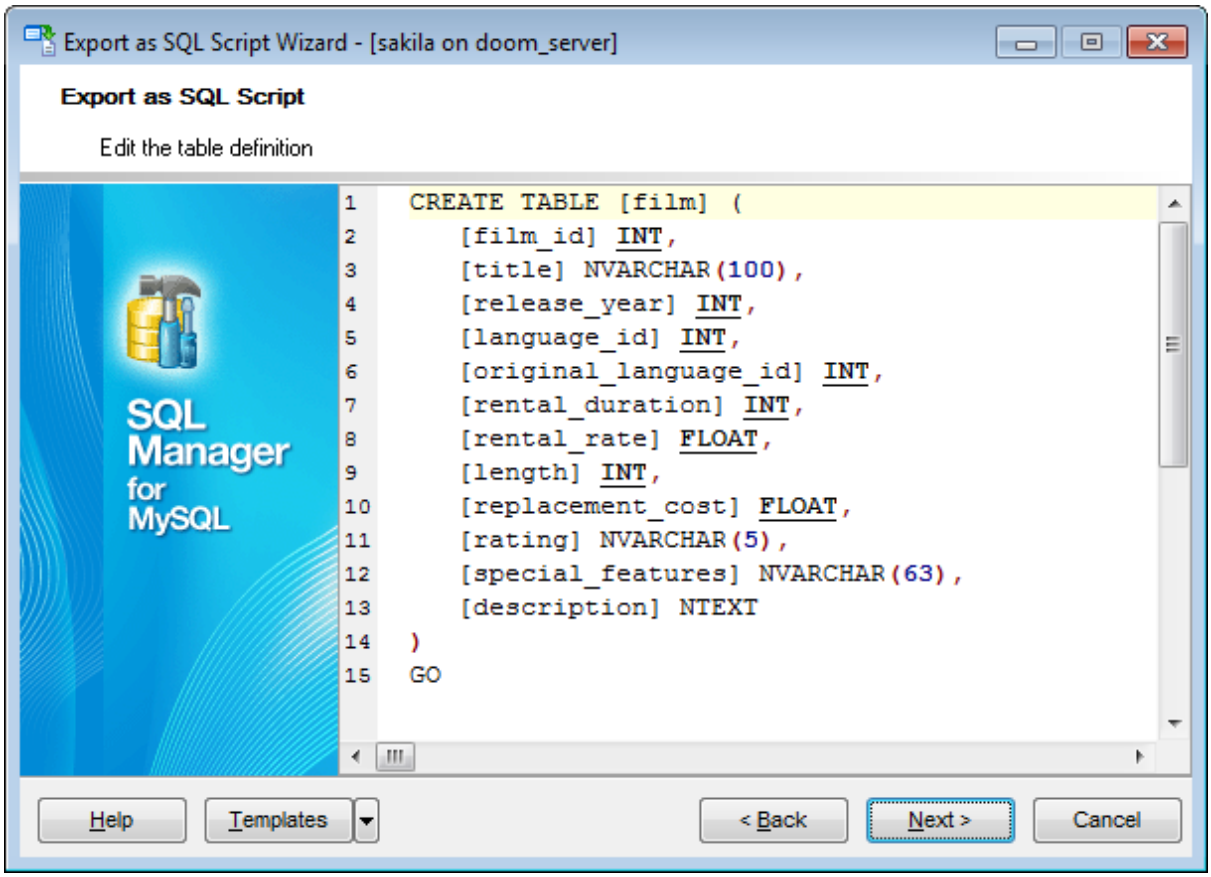
☑ **Insert COMMIT after each block**
Check this option to add the *COMMIT* statement after a defined number of records.



Click the **Next** button to proceed to Exporting as SQL Script.
If the **Add CREATE TABLE statement** option is enabled in the first step you will be taken to the Editing result SQL script.

8.3.6 Editing result SQL script

At this step you can view/edit result script in SQL Editor.
This step is available only when the **Add CREATE TABLE statement** option is enabled in the first step.

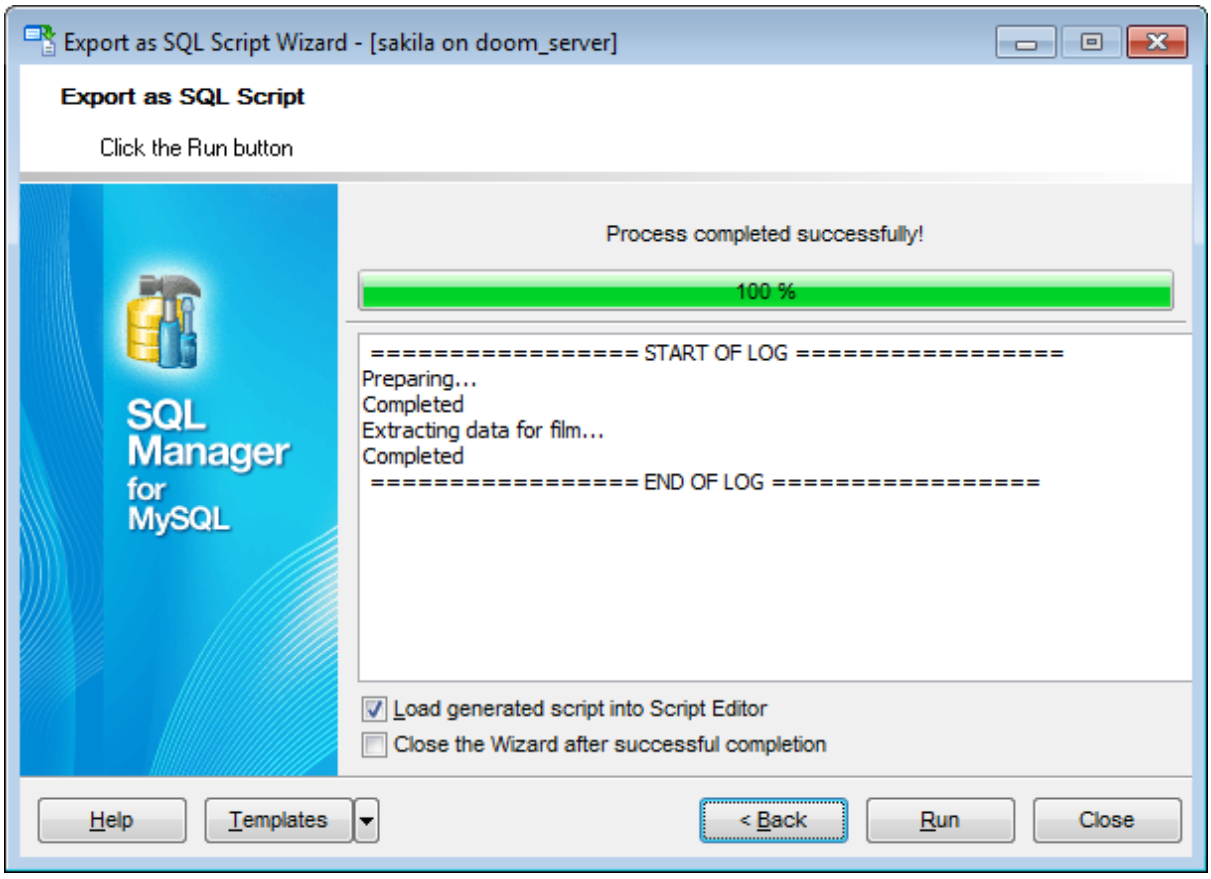


Press the **Next** button to proceed to the final step.

8.3.7 Exporting as SQL Script

This step of the wizard is intended to inform you that all export options have been set, and you can start the export as SQL script process.

The **Operations** tab allows you to view the log of operations and errors (if any).



Load generated script into Script Editor
Check this option to load the result script to SQL Script Editor.

Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the export process is completed.

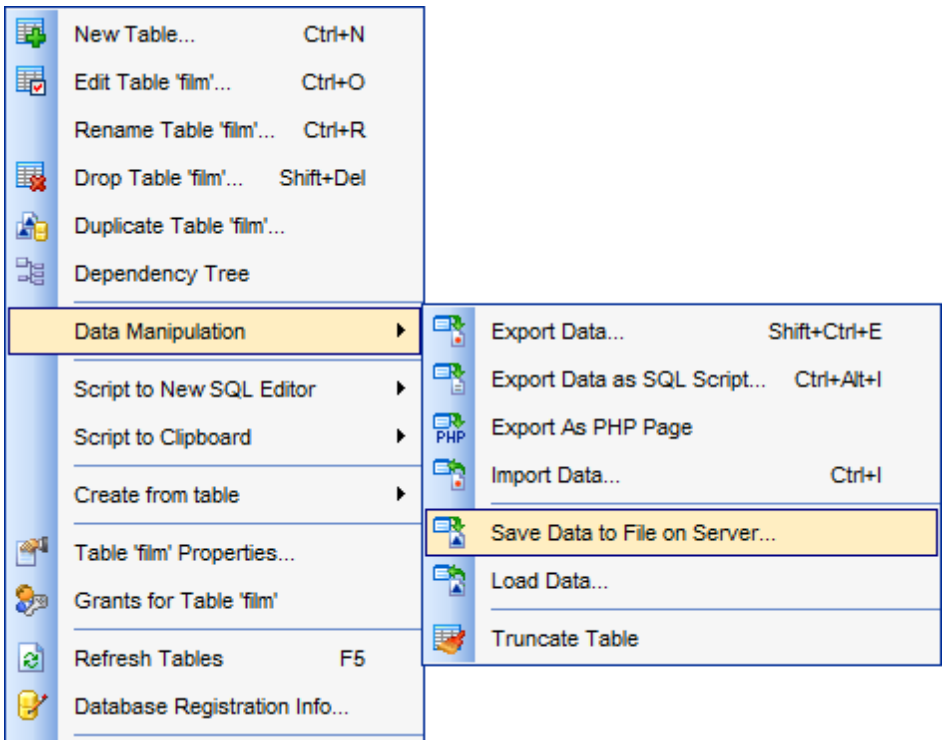
If necessary, you can save a template for future use.

Click the **Run** button to run the export as SQL script process.

8.4 Save Data Wizard

Save Data Wizard allows you to use the *SELECT ... INTO OUTFILE* MySQL statement to get a dump of a table at a very high speed. The file must be accessible to the server and the name must be specified from the viewpoint of the server. You can save your settings as a template any time for future use.

To start the wizard, right-click the table in DB Explorer, select the **Data Manipulation | Save Data to File on Server...** context menu item.
Alternatively, you can open the **Data** tab of Table Editor / View Editor or the **Result(s)** tab of SQL Editor / Query Builder, right-click the grid there, then select the **Data Manipulation | Save Data to File on Server...** context menu item.



- Setting destination file name
- Selecting columns for saving data
- Specifying data format parameters
- Saving data

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

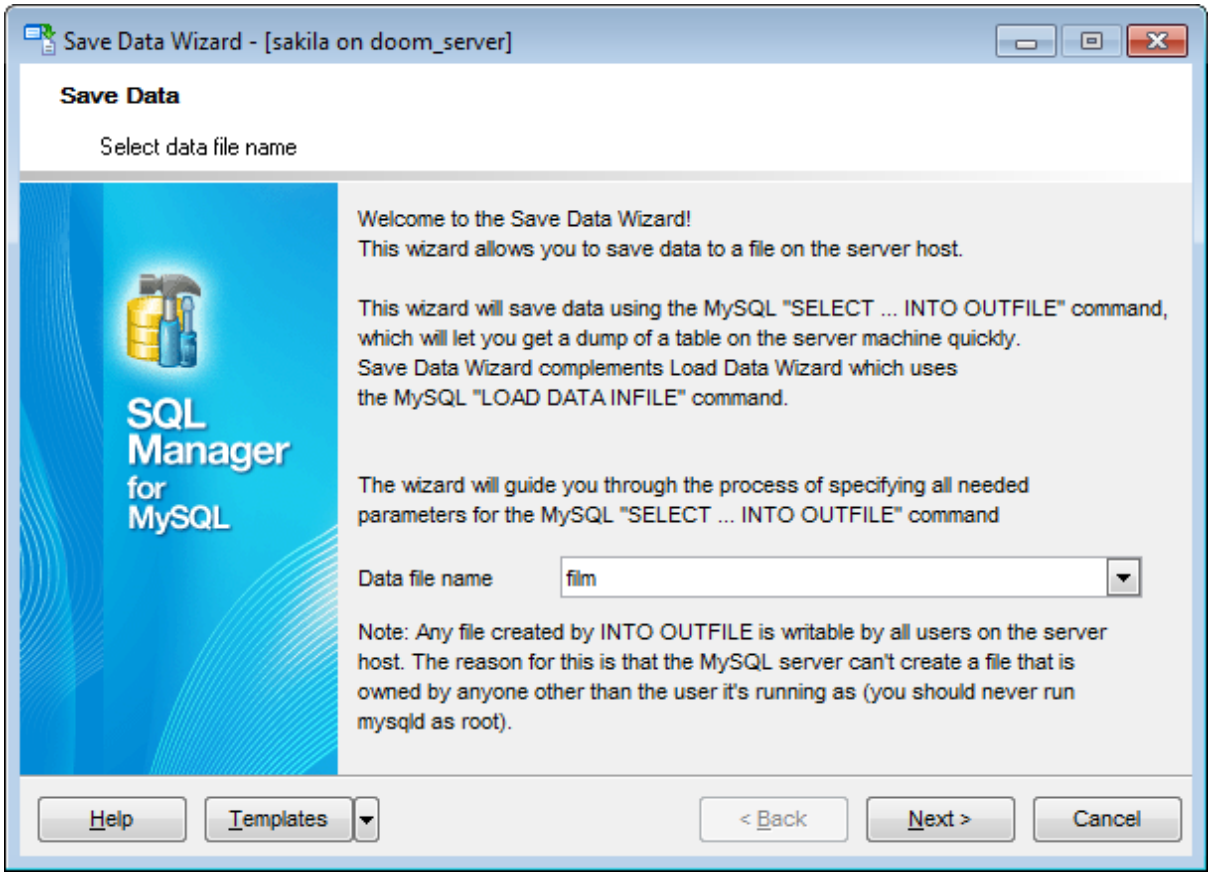
Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Export Data Wizard
Import Data Wizard
Export as SQL Script
Load Data Wizard
Using templates

8.4.1 Setting destination file name

This step of the wizard allows you to specify the destination data file name to which data will be saved. Define file name and path to it on server.

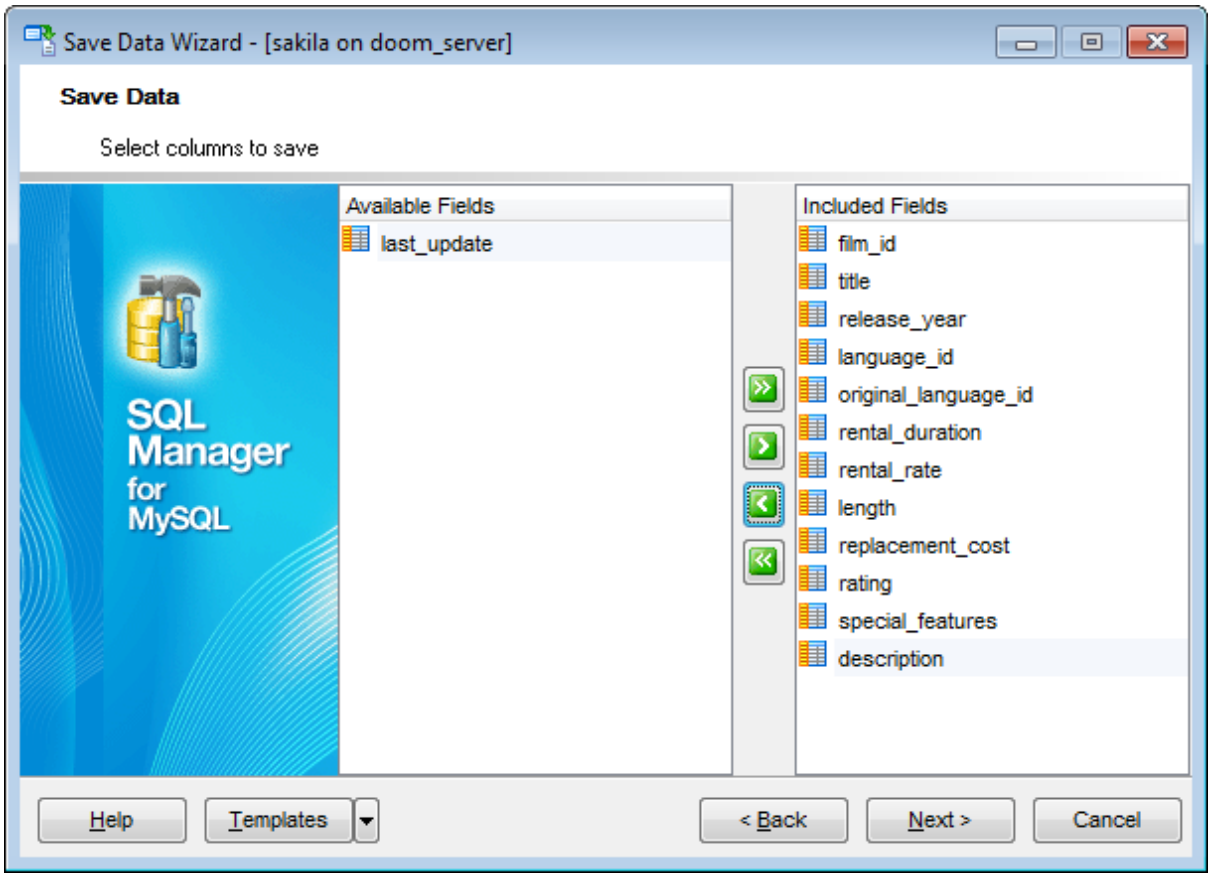


Data file name
Specify the destination file on the server host to save data. If necessary, use the drop-down list to select a previously specified value.

Click the **Next** button to proceed to the Selecting columns for saving step of the wizard.

8.4.2 Selecting columns for saving

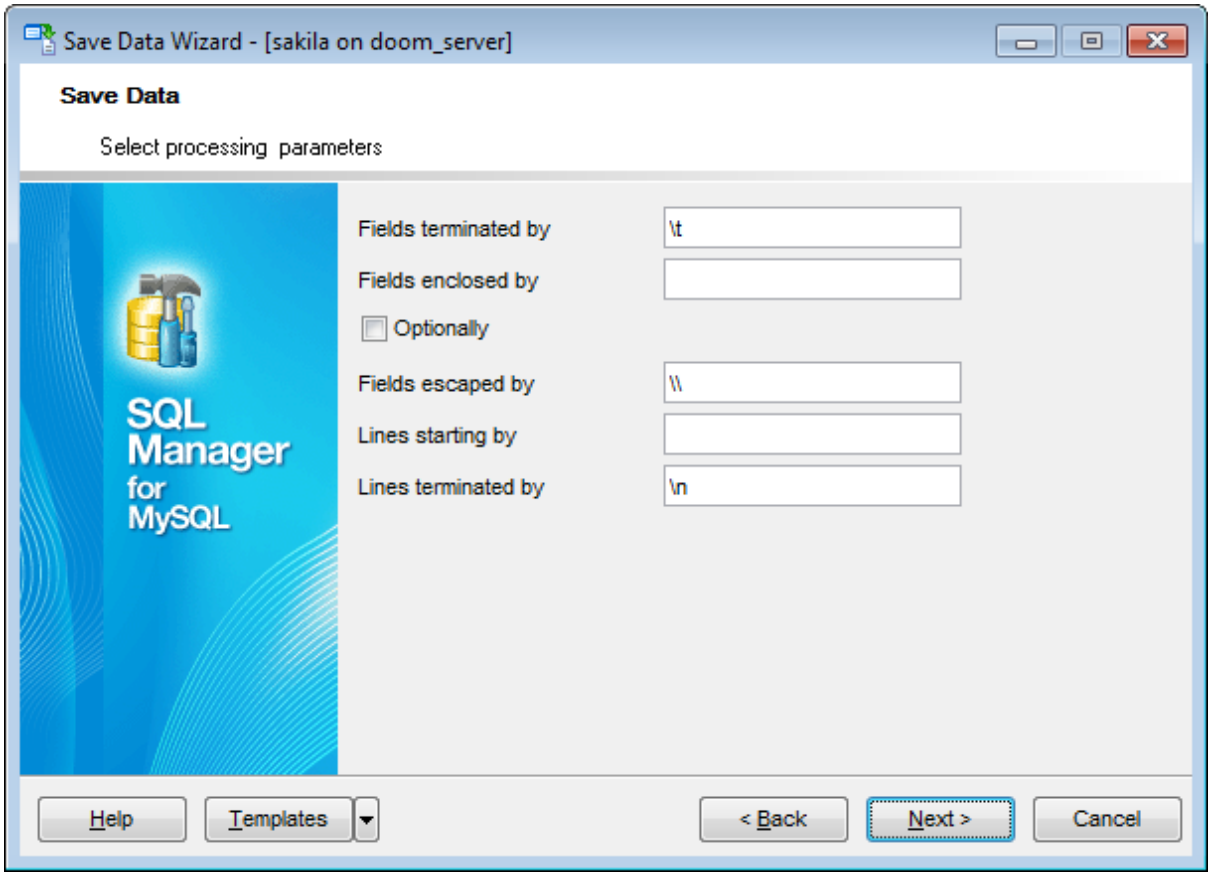
This step of the wizard allows you to select the table column(s) from which the data should be saved.
To select a column, you need to move it from the **Available Columns** list to the **Selected Columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.



Click the **Next** button to proceed to the Specifying data format parameters step of the wizard.

8.4.3 Specifying data format parameters

Define parameters for writing data to the destination file according to the description below.



Fields terminated by
Defines the character used for delimiting the field values in the destination file.

Fields enclosed by
Defines the character that will be used for quoting the field values in the destination file.

☑ **Optionally**
If this option is selected, the *Fields enclosed by* character is used only to enclose values from columns that have a string data type (such as *CHAR*, *BINARY*, *TEXT*, or *ENUM*).

Fields escaped by
Controls how to write special characters. If the character is not empty, it is used as a prefix that precedes *Fields enclosed by*, *Fields terminated by*, *Lines terminated by* characters on output.

Lines starting by
Defines the characters that will be used for inserting before every string in the destination file.

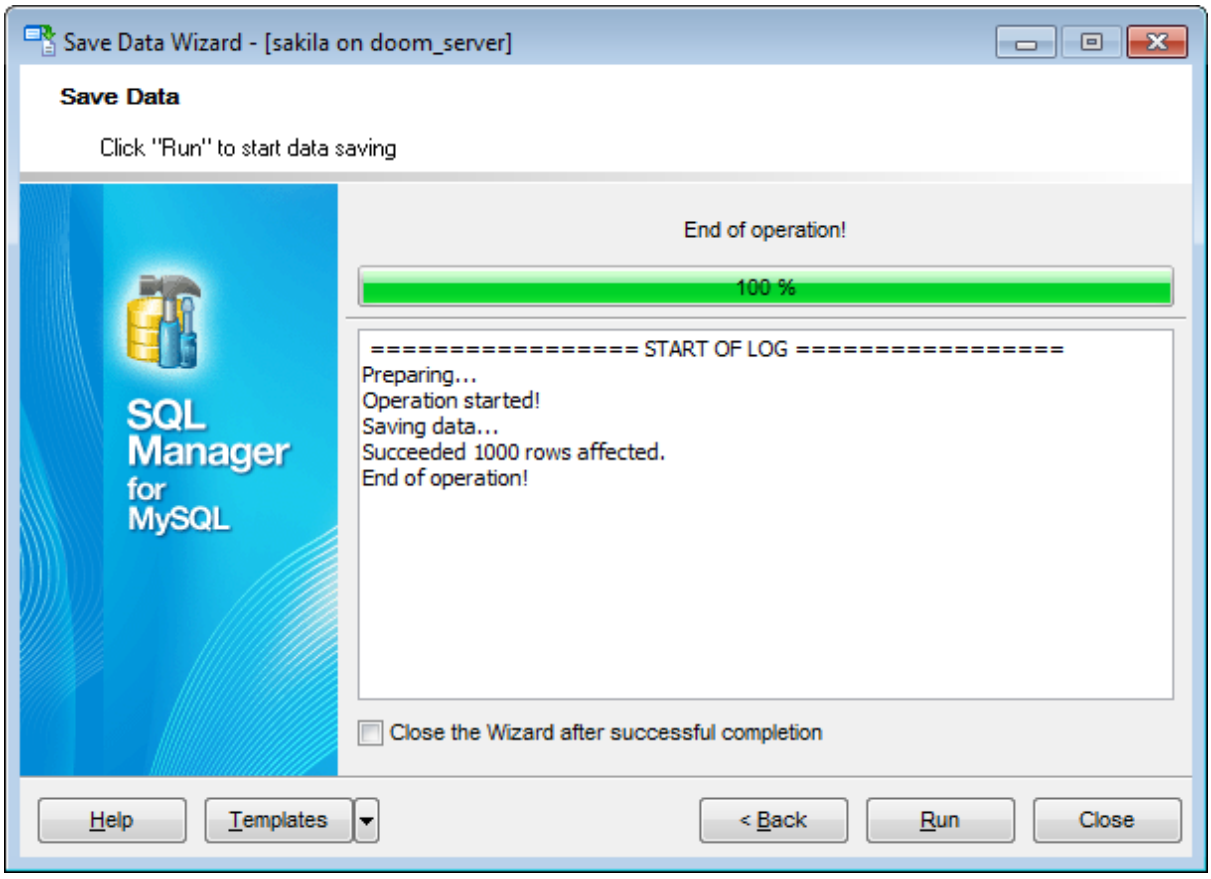
Lines terminated by
Defines the characters that will be used for delimiting strings in the destination file.

Click the **Next** button to proceed to Saving data.

8.4.4 Saving data

This step of the wizard is intended to inform you that all Save Data options have been set, and you can start the saving data process itself.

The **Operations** tab allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the saving data process is completed.

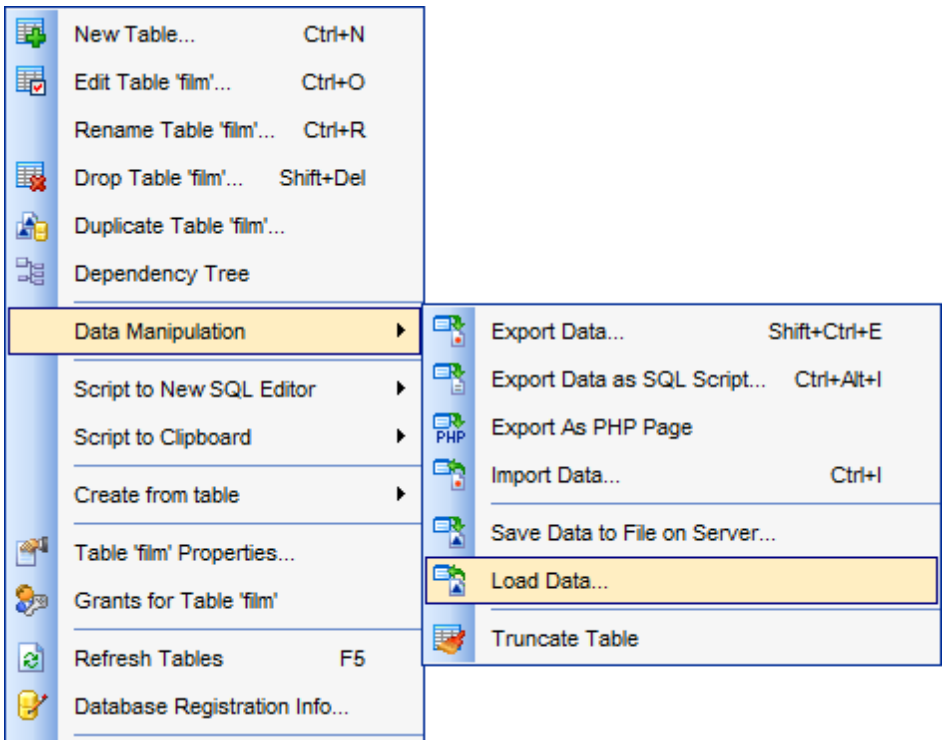
If necessary, you can save a template for future use.

Click the **Run** button to run the saving data process.

8.5 Load Data Wizard

Load Data Wizard allows you to use the *LOAD DATA INFILE* native MySQL statement to read rows from a text file to a table at a very high speed. This command copies data from a file to a table, appending the data to whatever is in the table already. The file must be accessible to the server and the name must be specified from the viewpoint of the server. You can save your settings as a template any time for future use.

To start the wizard, right-click the table in DB Explorer, select the **Data Manipulation | Load Data...** context menu item.
Alternatively, you can open the **Data** tab of Table Editor / View Editor, right-click the grid there, then select the **Data Manipulation | Load Data...** context menu item.



- Setting source file name
- Selecting processing parameters
- Selecting columns for loading data
- Specifying data format parameters
- Loading data

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

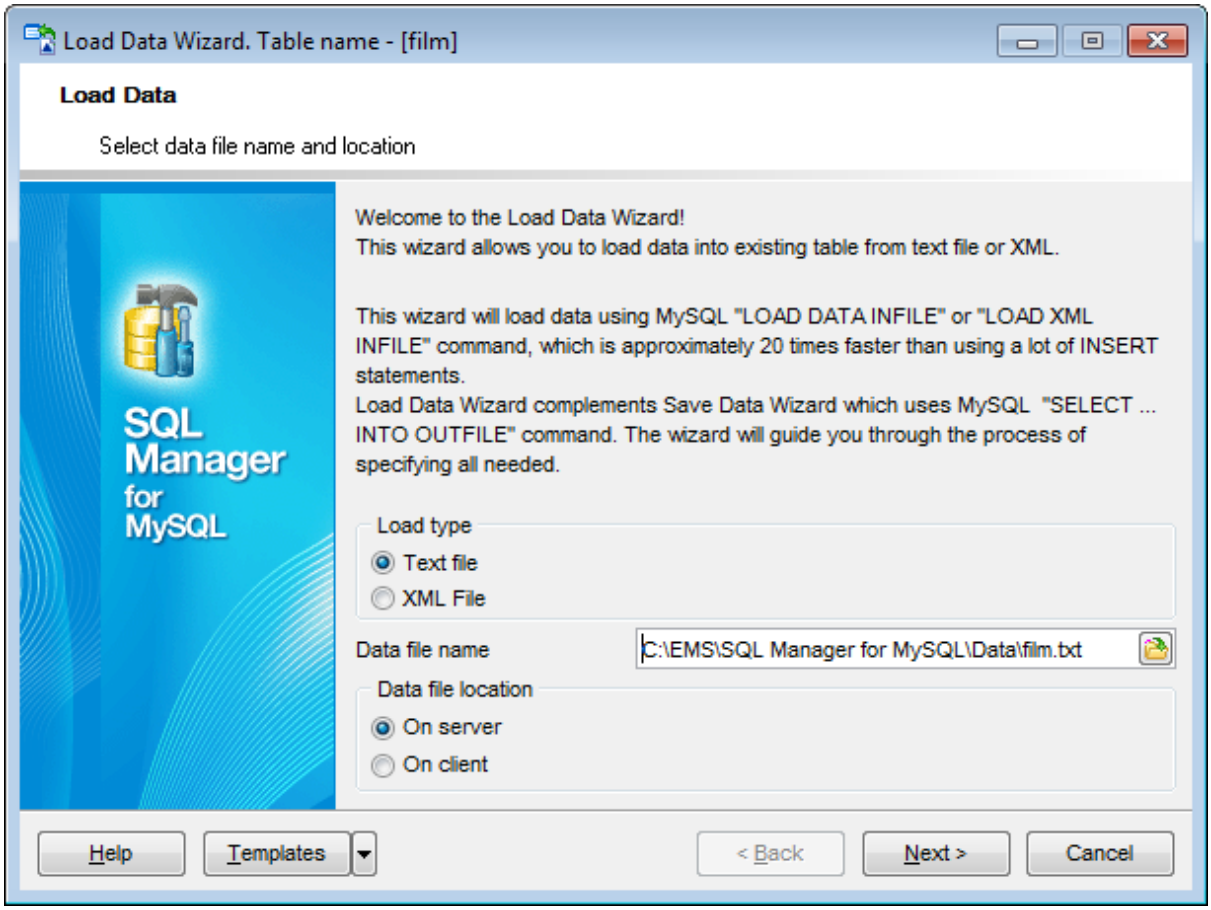
Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Export Data Wizard
Import Data Wizard
Export as SQL Script
Save Data Wizard
Using templates

8.5.1 Setting source file name

This step of the wizard allows you to specify the source data file from which data will be loaded. Define file name and location.



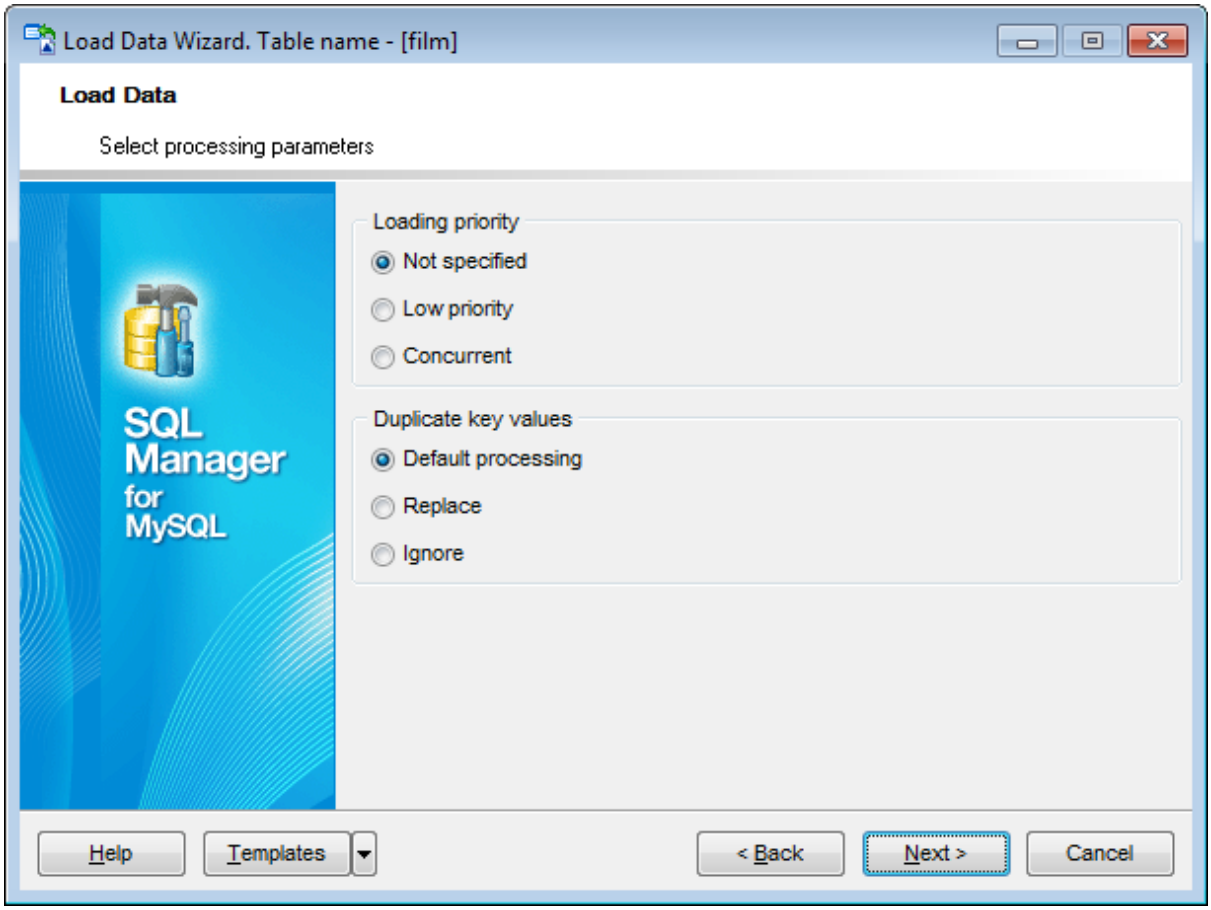
Data file name
Type in or use the button to specify the path to the source **.txt* or **.xml* file.

Data file location
Specify where the source file is located:
- *On the server*
- *On the client*

Click the **Next** button to proceed to the Selecting processing parameters step of the wizard.

8.5.2 Selecting processing parameters

Define options for the *LOAD DATA* command. The description of these options is given below.



Loading priority

Low priority
Delays loading data until no other clients are reading from the table.
Concurrent
Allows other threads to retrieve the data from the table while loading data is executed.

Duplicate key values

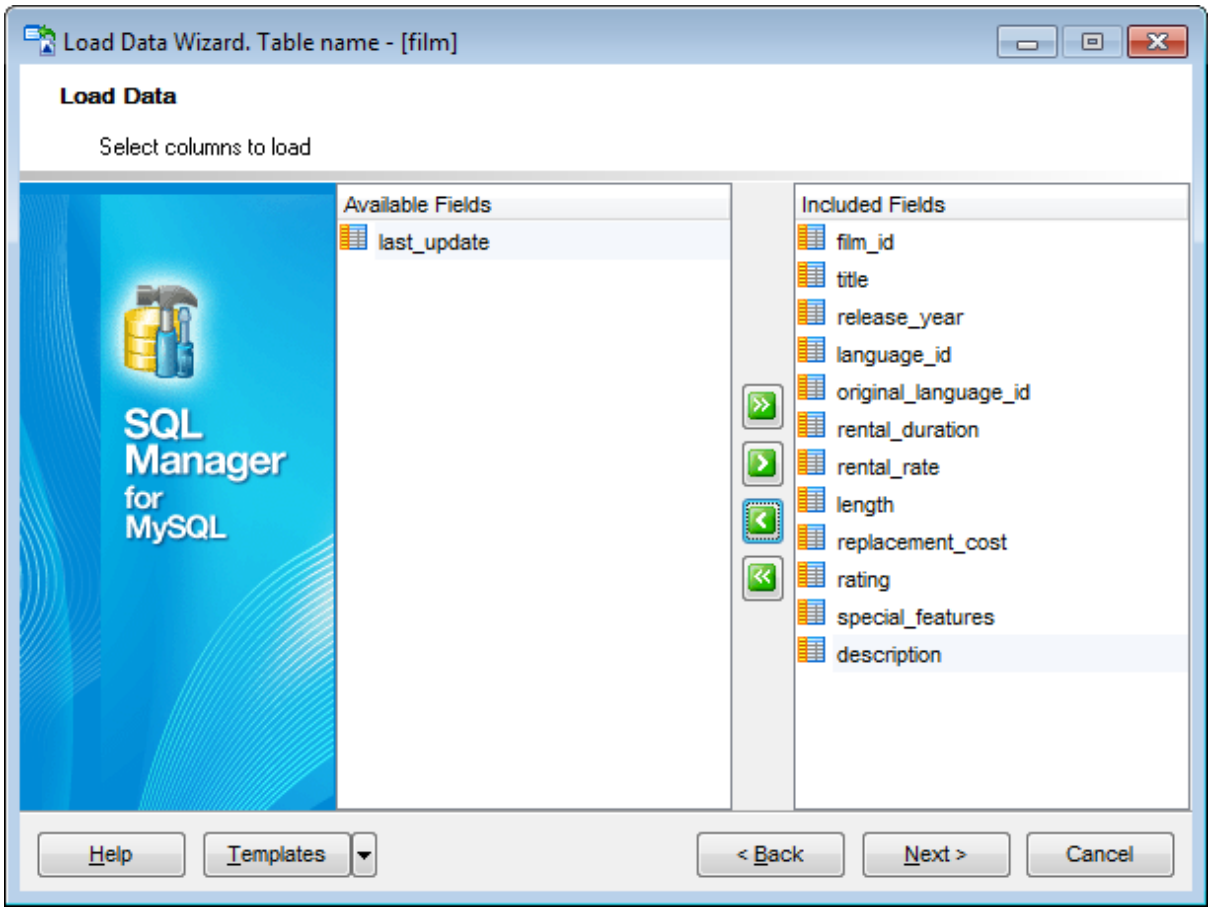
Replace
Replaces the existing rows with the new rows that have the same unique key value.
Ignore
Skips the input rows that duplicate an existing row on a unique key value.

Note: If you specify neither **Replace** nor **Ignore** option, an error occurs when a duplicate key value is found, and the rest of the text file is ignored.

Click the **Next** button to proceed to the Selecting columns for loading step of the wizard.

8.5.3 Selecting columns for loading

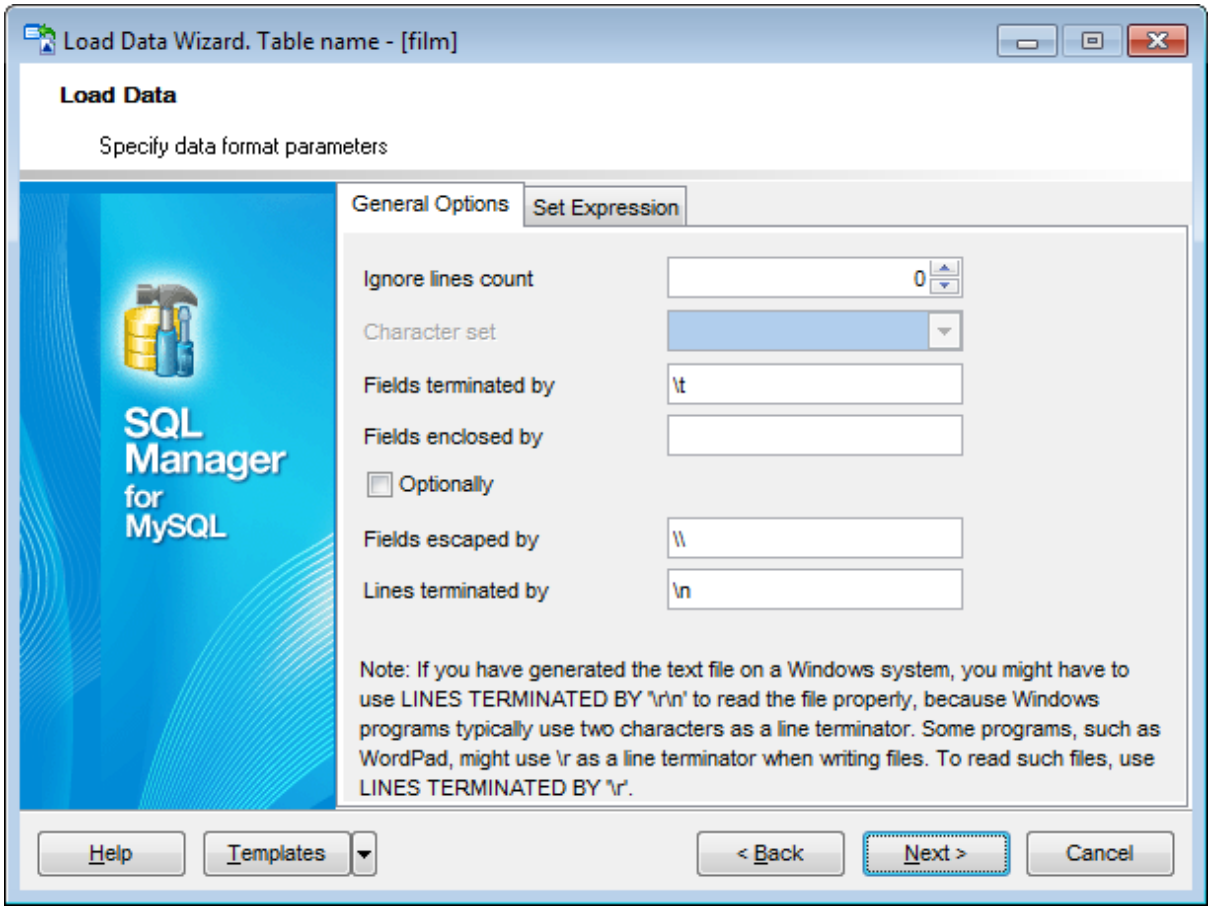
This step of the wizard allows you to select the table column(s) to be loaded into the table.
To select a column, you need to move it from the **Available Columns** list to the **Selected Columns** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.



Click the **Next** button to proceed to the Specifying data format parameters step of the wizard.

8.5.4 Specifying data format parameters

Define parameters for reading data from the source file according to the description below.



Fields terminated by
Defines the character used for delimiting the field values in the source file.

Fields enclosed by
Defines the character used for quoting the field values in the source file.

☑ **Optionally**
If this option is selected, the *Fields enclosed by* character is used only to enclose values from columns that have a string data type (such as *CHAR*, *BINARY*, *TEXT*, or *ENUM*).

Fields escaped by
Controls how to read special characters. If the character is not empty, it is used as a prefix that precedes *Fields enclosed by*, *Fields terminated by*, *Lines terminated by* characters on output.

Lines terminated by
Defines the character used for delimiting strings in the source file.

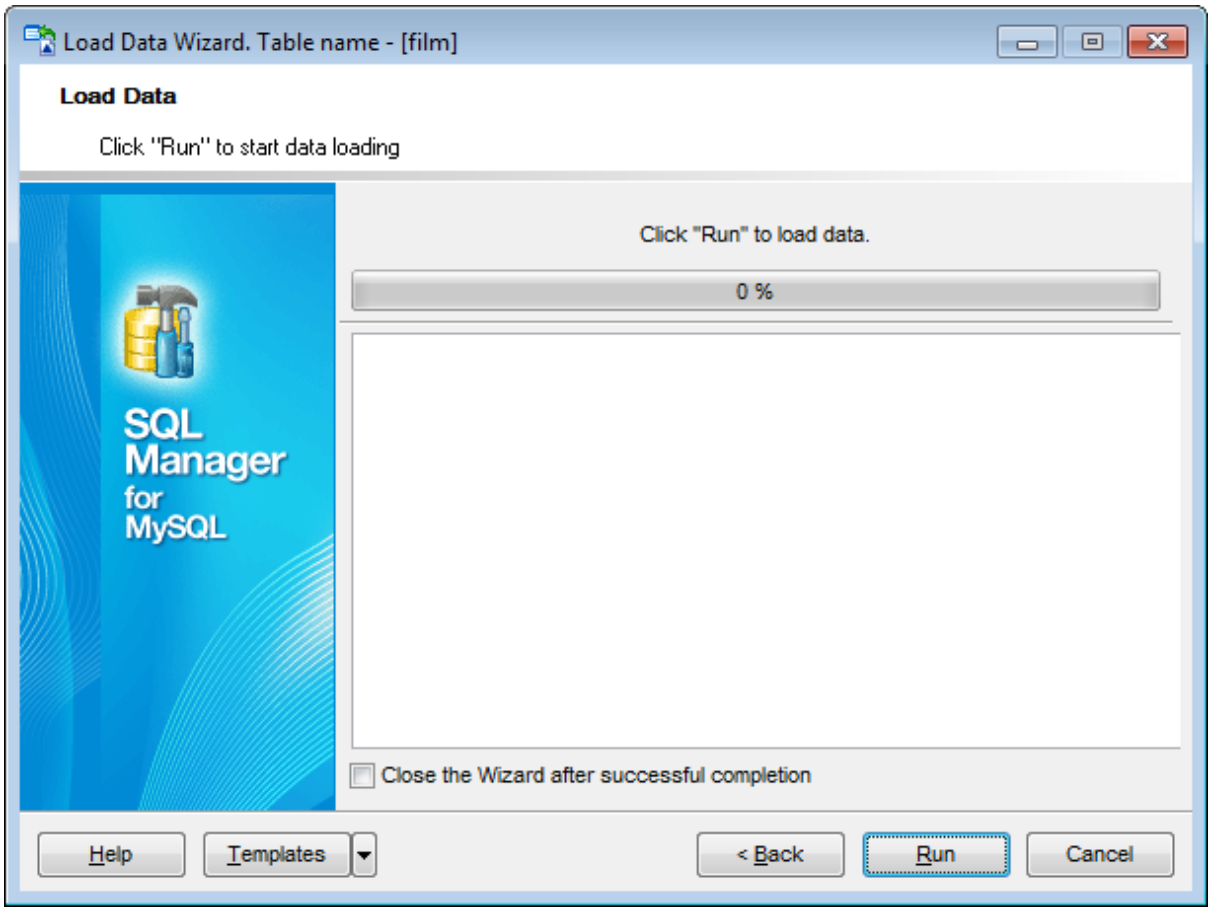
Ignore lines count
Specifies the number of first lines in the source file that are not loaded.

Click the **Next** button to proceed to Loading data.

8.5.5 Loading data

This step of the wizard is intended to inform you that all Load Data options have been set, and you can start the loading data process itself.

The **Operations** tab allows you to view the log of operations and errors (if any).



☑ **Close the Wizard after successful completion**
If this option is selected, the wizard is closed automatically when the loading data process is completed.

If necessary, you can save a template for future use.

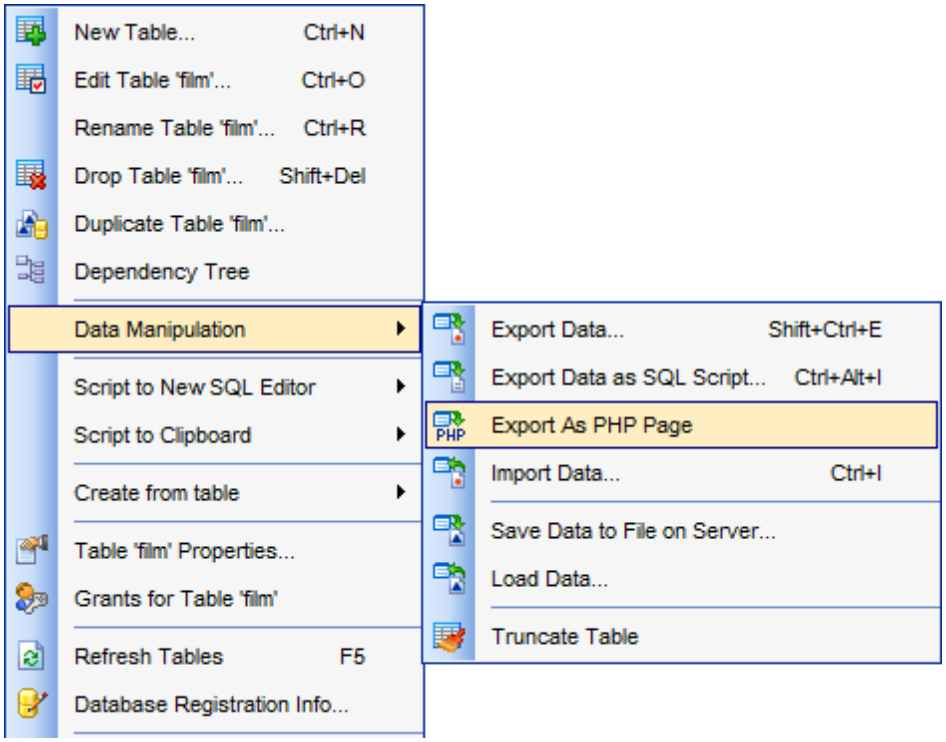
Click the **Run** button to run the loading data process.

8.6 Export as PHP wizard

Export as PHP Wizard creates PHP script allowing to connect to database, to display data of a table, and provides forms and procedures for editing and deleting data.

Export is allowed in editors with **Data** or **Results** tab. These are: Table Editor, View Editor, SQL Editor and Visual Query Builder.

This tool can be accessed with **Export as PHP page** item of the **Data Manipulation** group of navigation bar of data view tabs. The wizard can also be launched from table and view context menus in the DB Explorer tree.



- Specifying destination file
- Selecting columns to export
- Adjusting formats for exported columns
- Defining headers and footers of the result file
- Performing operation

Availability:

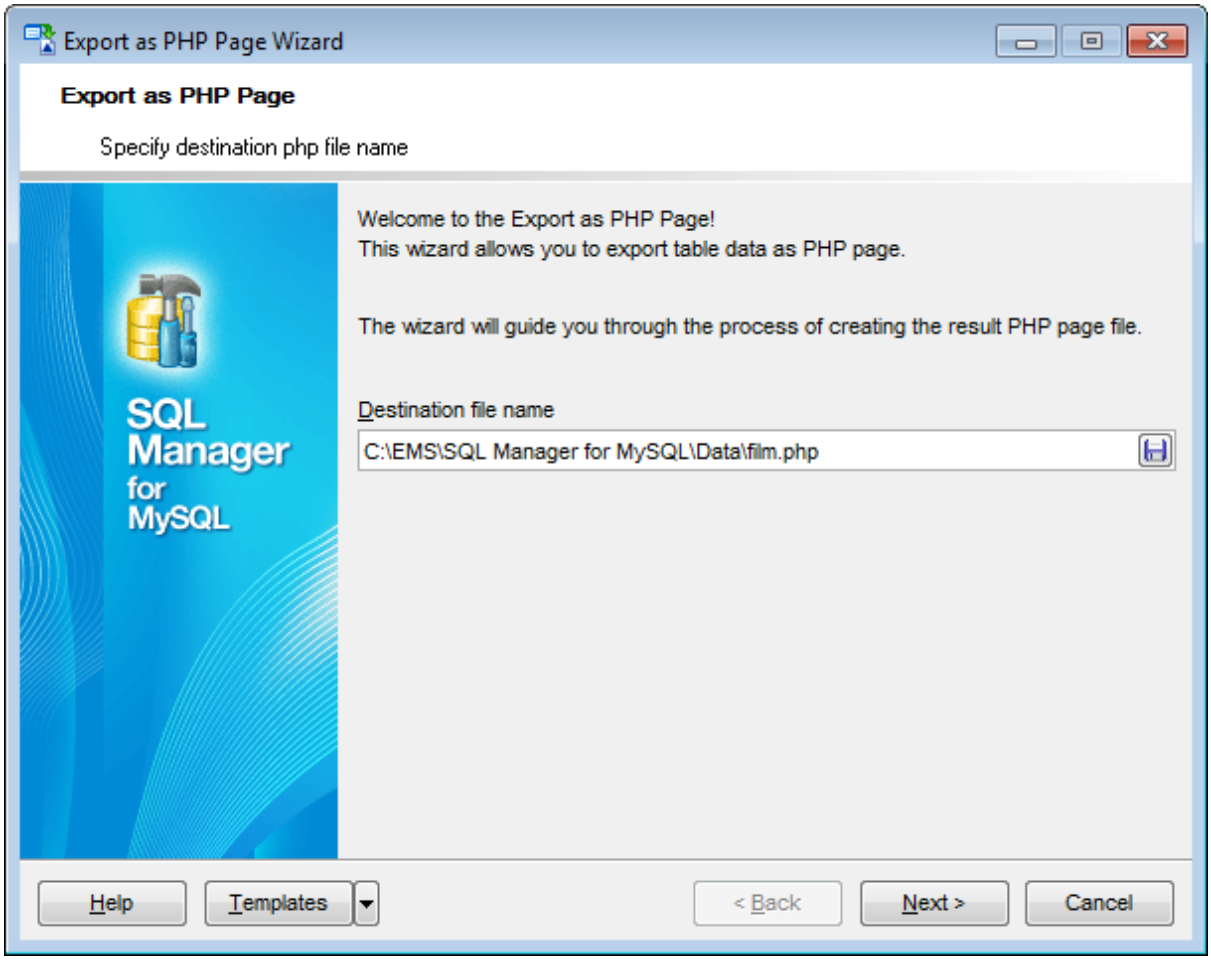
Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:
Specifying destination file
Selecting columns to export
Adjusting formats for exported fields
Defining headers and footers of the result file
Performing operation
Using templates

8.6.1 Specifying destination file

Use this step to define **Destination file name** in the respective field.

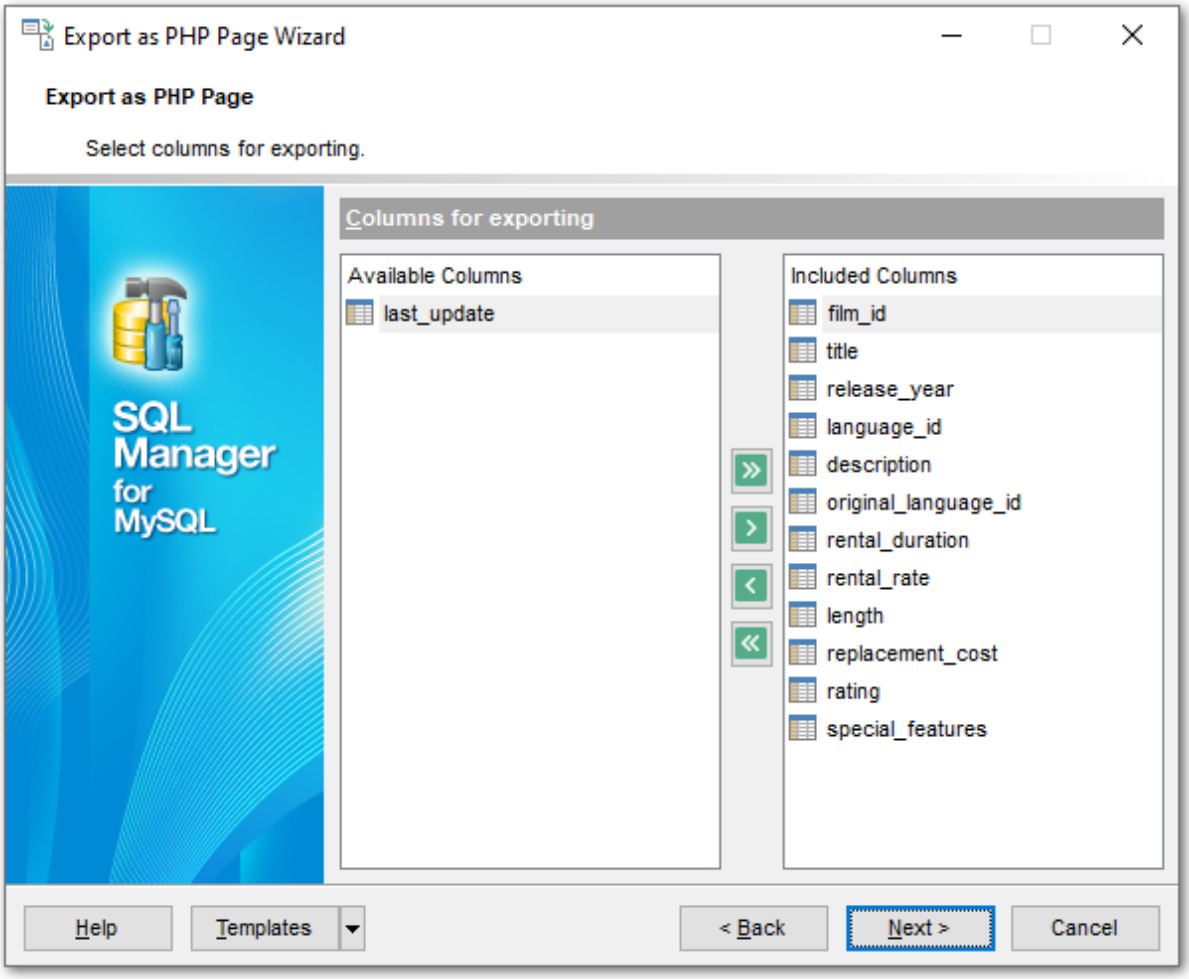


Press the **Next** button to proceed to the Selecting fields to export step.

8.6.2 Selecting columns to export

At this step you need to select table/view columns to export.

The **Available Columns** list contains complete list of the selected table/view columns. Use the navigation buttons to move the required columns to the **Included Columns** list. If no columns are selected, all columns will be exported by default.



Press the **Next** button to proceed to the Adjusting formats for exported columns step.

8.6.3 Adjusting formats for exported columns

Use this step to define parameters of the result PHP file.

PHP Options tab

Records per page
Specify maximum number of records displayed at one page.

Page range
Pagination parameter. Defines the number of pages for which direct hyperlinks will be available in navigation area.

Show page navigation
Define the location of the navigation elements: *On top and bottom*, *On top only*, *On bottom only*, *Never*.

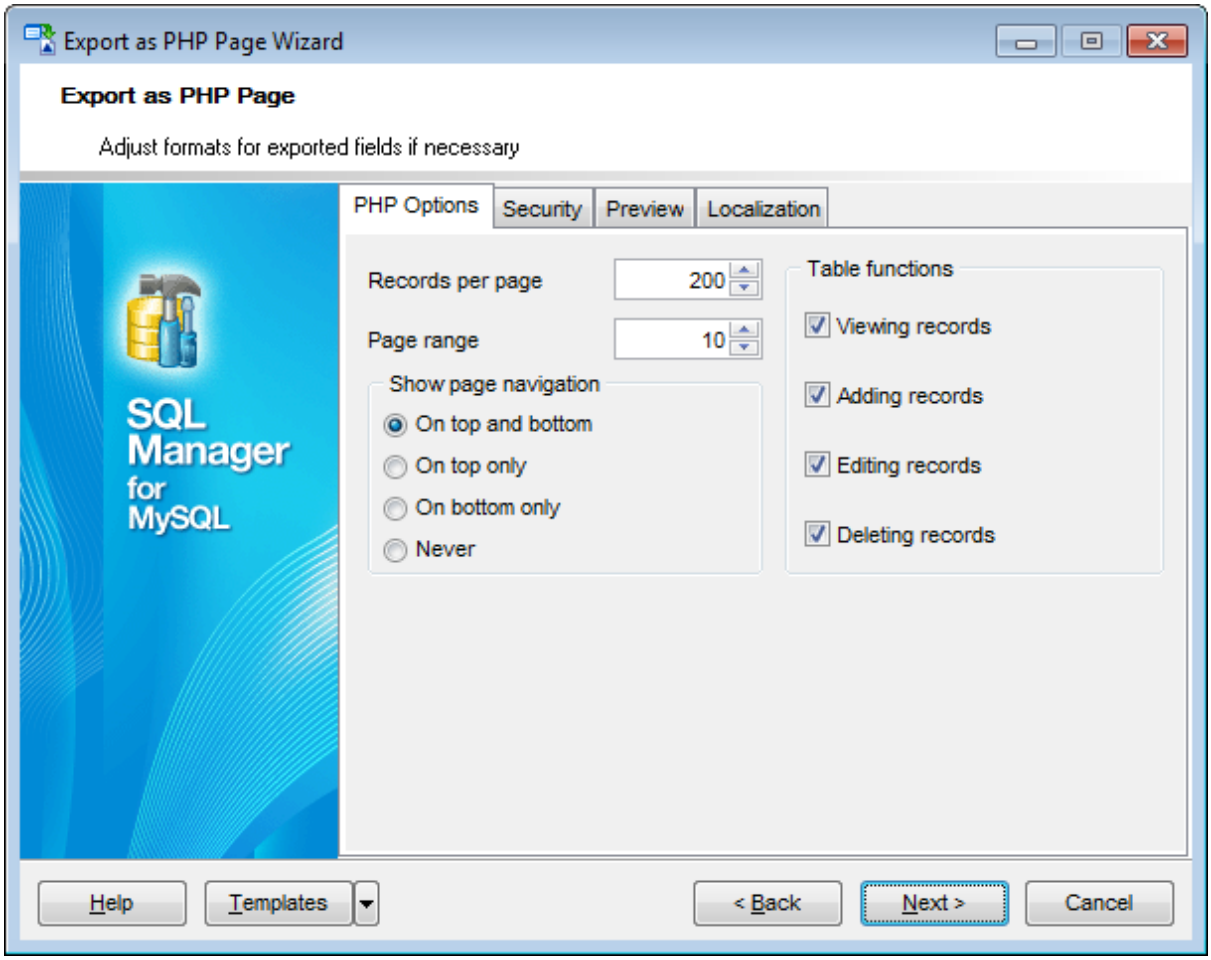
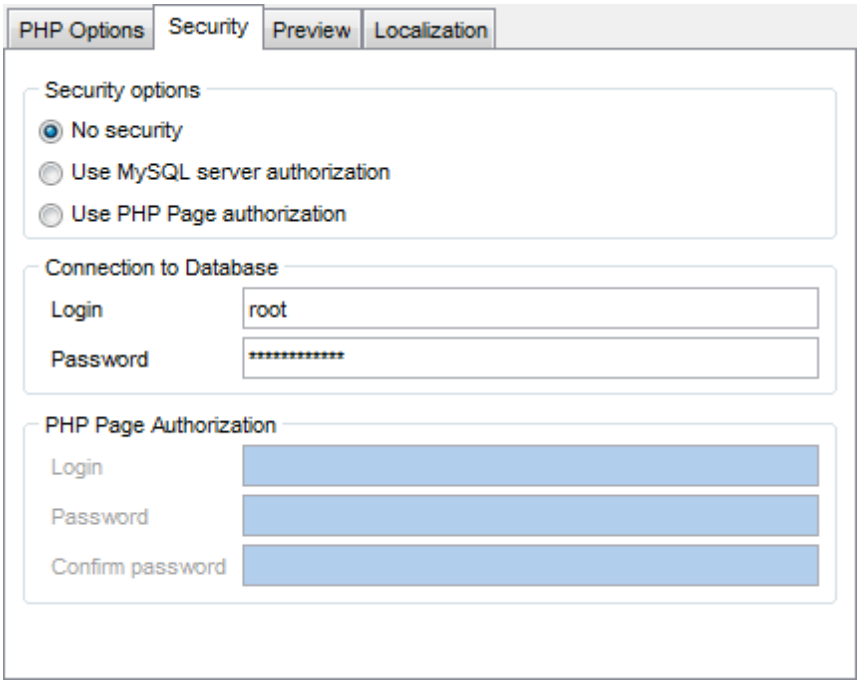


Table functions
Section contains the number of options. Check required options to implement respective function to generated form.

Security tab
At this tab you need to specify authorization parameters to connect to database via PHP script.

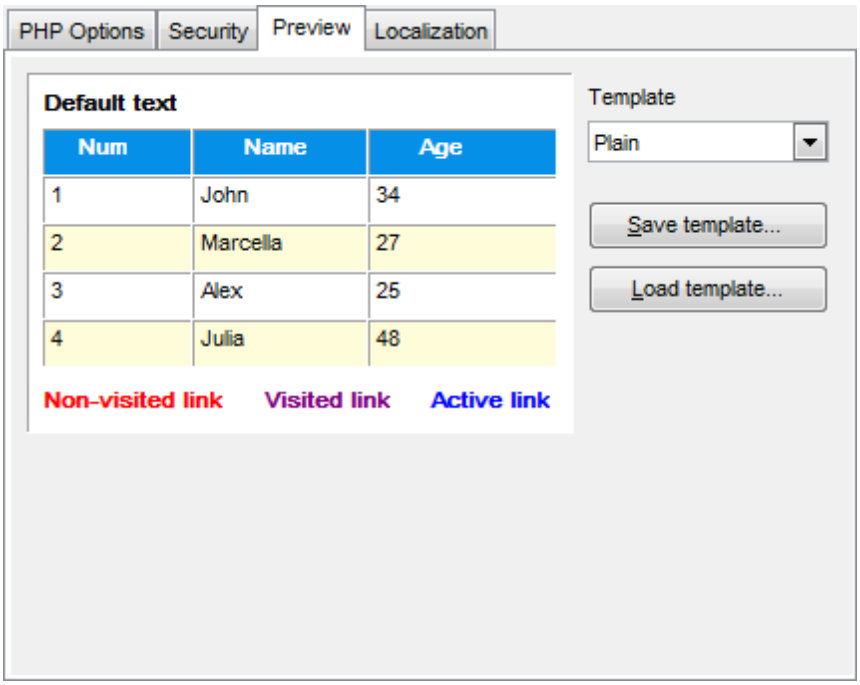


Security options

No security - MySQL authorization parameters (*Login* and *Password*), specified in the *Connection to database* section, are stored in the script.
Use MySQL server authorization - MySQL authorization dialog is prompted on script execution.
Use PHP Page authorization - To access the generating PHP page it is also necessary to specify the authorization parameters such as *Login* and *Password* in the *PHP Page Authorization* section. MySQL authorization parameters (*Login* and *Password*), specified in the *Connection to database* section, are stored in the script.

Preview tab
This tab allows you to manage visual settings of the page that will be generated by script.

Template
You can apply an existing template from the drop-down list. Table on the left will change according to the template settings applied.

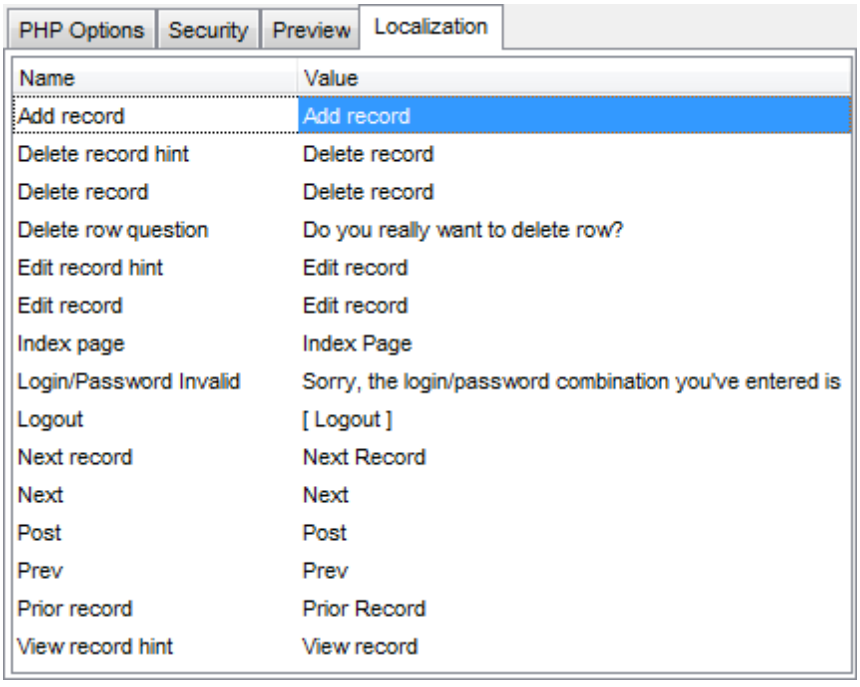


You can customize visual scheme manually. Simply click an element on the table and pick the needed color from palette.

Optionally you can save your own settings to a template for future use.

To save/load template use the respective buttons on the right.

Localization tab

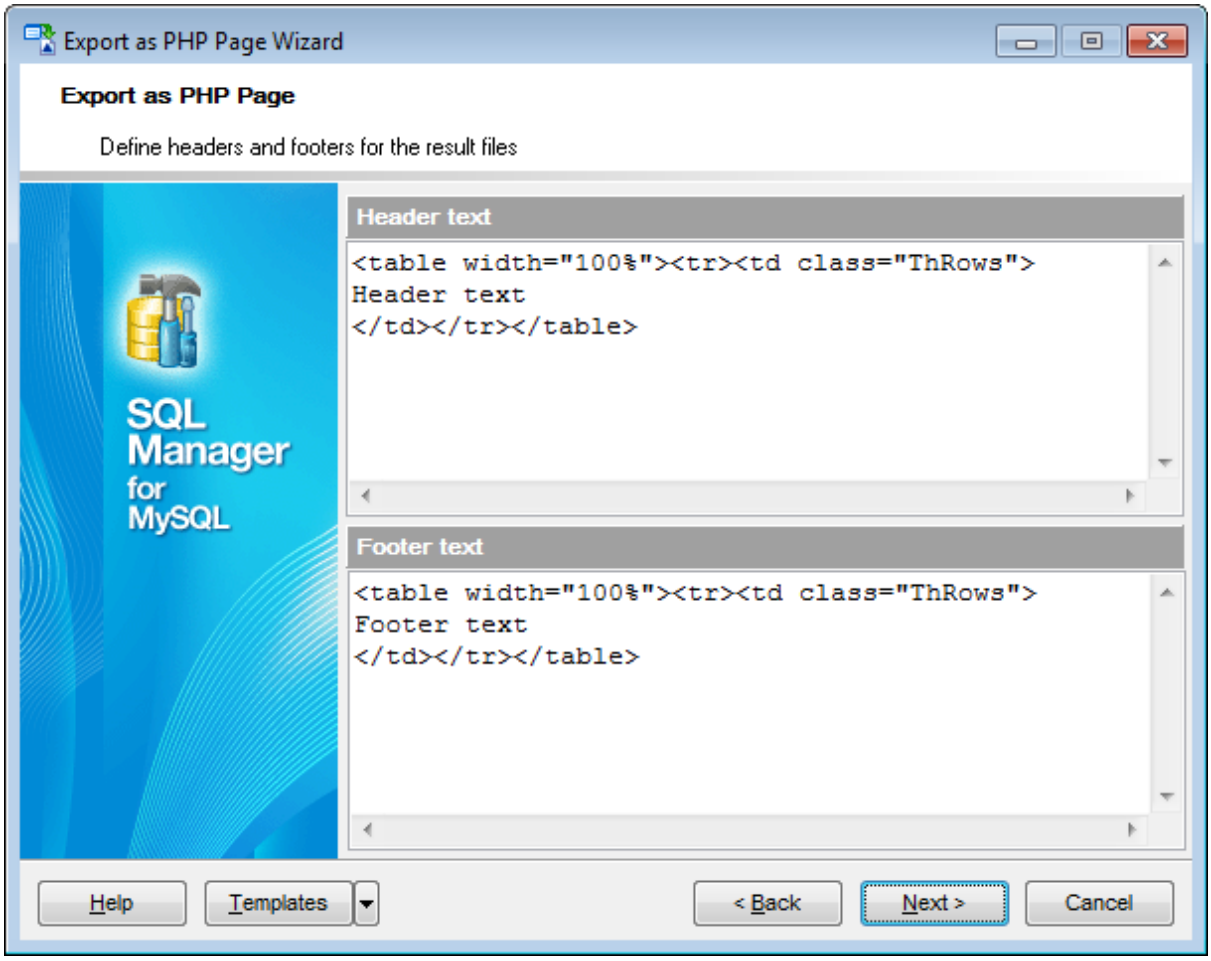


Use this tab to edit names of the elements on the generated page.

Click the **Next** button to proceed to the Defining headers and footers of the result file step.

8.6.4 Defining headers and footers of the result file

Use this step to define *Header* and *Footer* for the generated page.

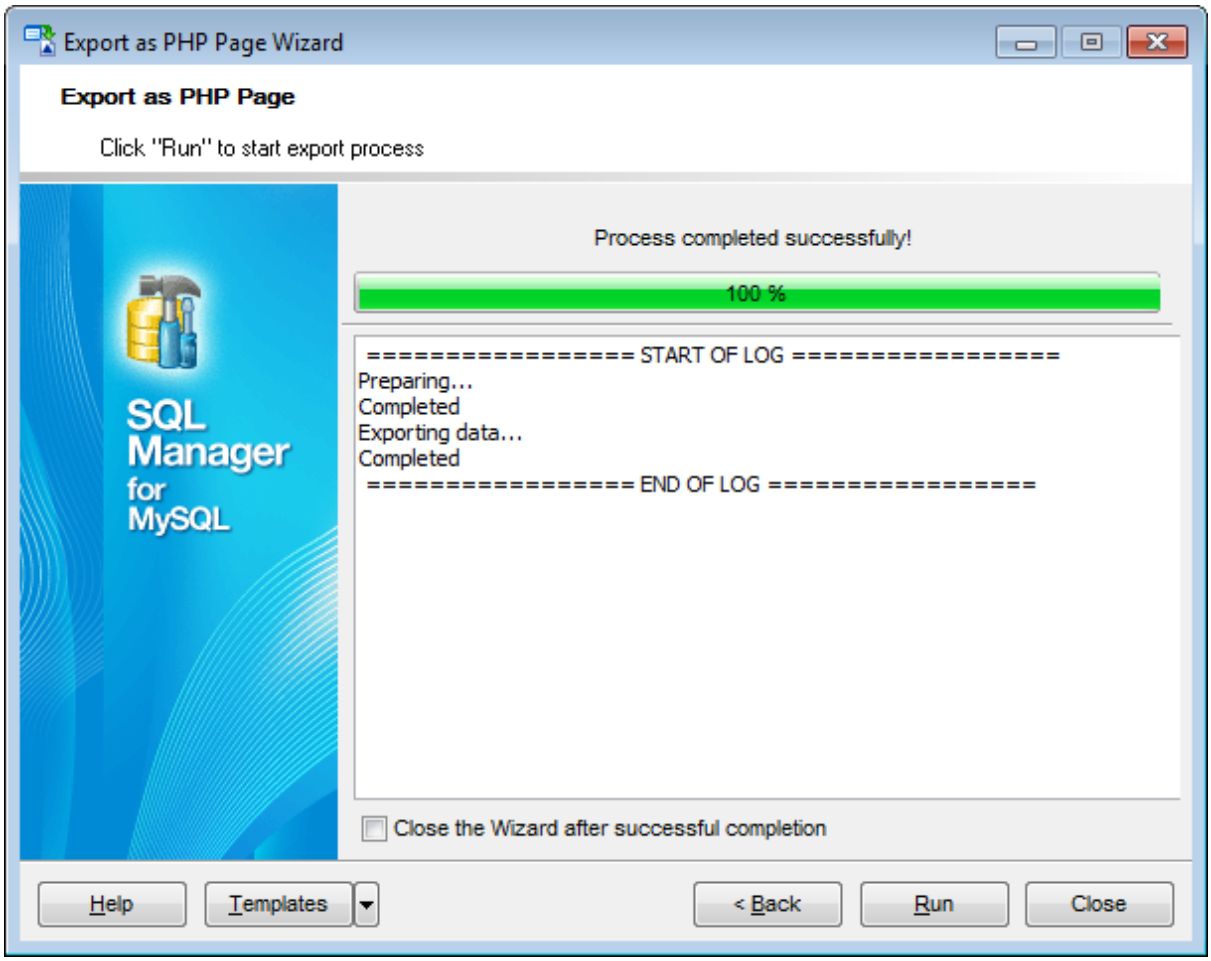


Press the **Next** button to proceed to the final step.

8.6.5 Performing operation

This step of the wizard is intended to inform you that all options have been set, and you can start exporting table to PHP.

The **Operations** tab allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the loading data process is completed.

Click the **Run** button to run export process.

Part

9 Database Tools

SQL Manager for MySQL provides a number of powerful tools that allow you to perform various operations over your databases.

- Common DB Tools
- Specific DB Tools

See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Server Tools
Personalization
External Tools
How To...

9.1 Common DB Tools

The following *common database tools* are available in **SQL Manager for MySQL**:

- **Dependency Tree**
  Allows you to view all the object dependencies in one diagram.
- **Visual Database Designer**
  Allows you to lay out your database schema visually.
- **SQL Script Editor**
  Executes SQL scripts in the database.
- **Extract Database Wizard**
  Extracts the table metadata and/or data to an SQL script which can be executed later on another machine to restore the database structure and/or data.
- **Print Metadata**
  Creates powerful metadata reports in the WYSIWYG mode ready for printing.
- **HTML Report**
  Creates powerful metadata reports in the HTML format.
- **Reports management**
  Tools for efficient management of reports: creating, editing, viewing, printing.
- **SQL Monitor**
  Displays all the SQL statements executed while working in **SQL Manager for MySQL**.
- **Search in Metadata**
  Helps you to search eithin database metadata.
- **Using templates**
  Facilitates using **SQL Manager** wizards.

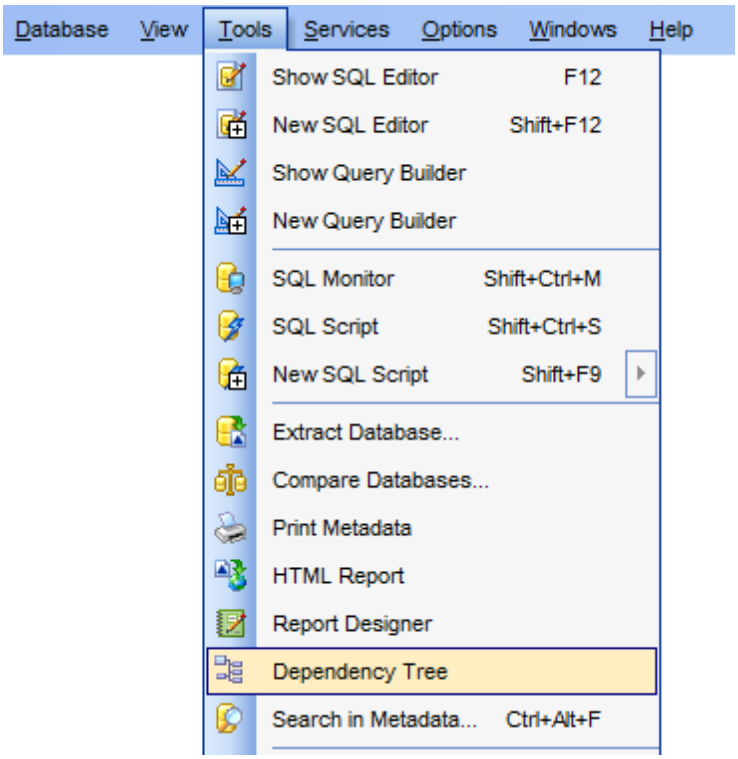
See also:

Specific database tools

9.1.1 Dependency Tree

The **Dependency Tree** tool allows you to view all the object dependencies in one diagram.

To call the **Dependency Tree** window, select the **Tools | Dependency Tree** main menu item, or use the **Dependency Tree** button on the main toolbar.



- Using Navigation bar and Toolbar
- Viewing dependency tree

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

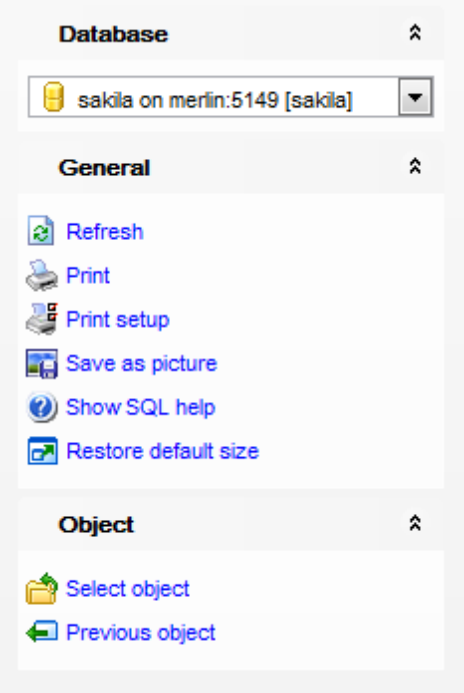
Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Database Objects Management

9.1.1.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Dependency Tree**.



The **Navigation bar** of the **Dependency Tree** window allows you to:

Database group
select a database for browsing object dependencies

General group
refresh the currently displayed dependency tree
print the diagram
set printing options using the **Print Setup** dialog
save the current diagram as a picture
view MySQL reference
restore the default size and position of the window

Object group
navigate by switching to the previous object
navigate by switching to the next object
show/hide subobjects
select a root object

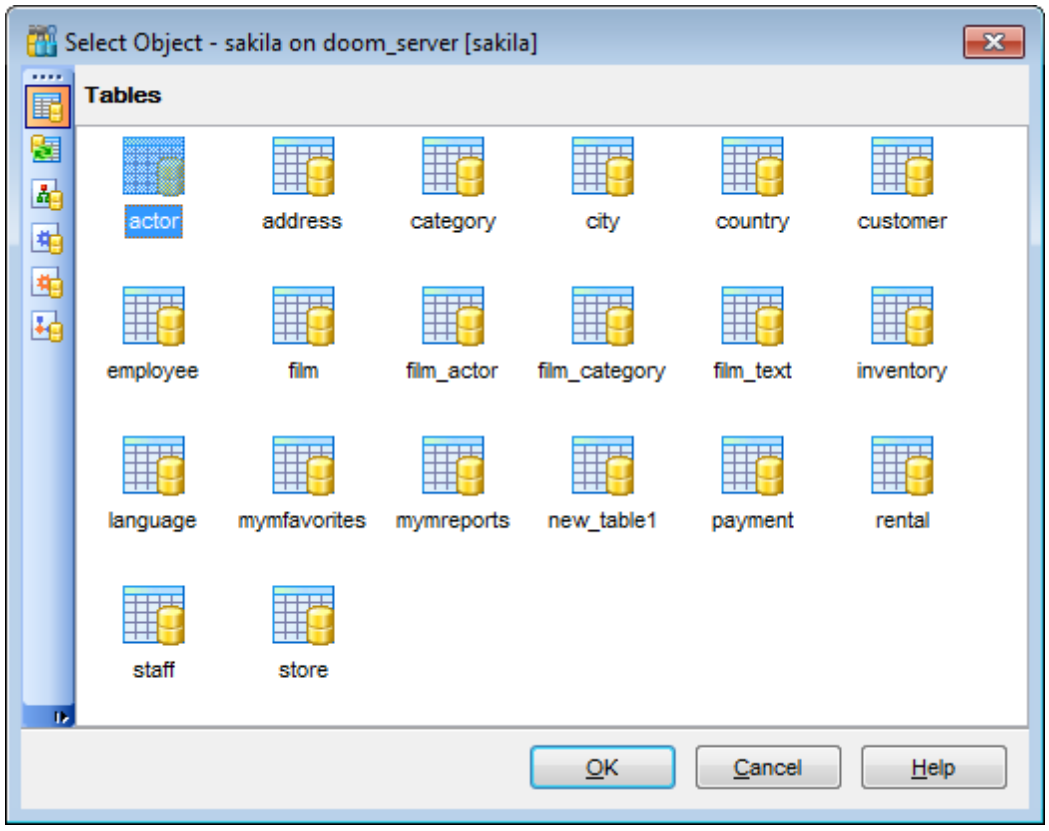
Items of the **Navigation bar** are also available on the **ToolBar** of the **Dependency Tree** window. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if

you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

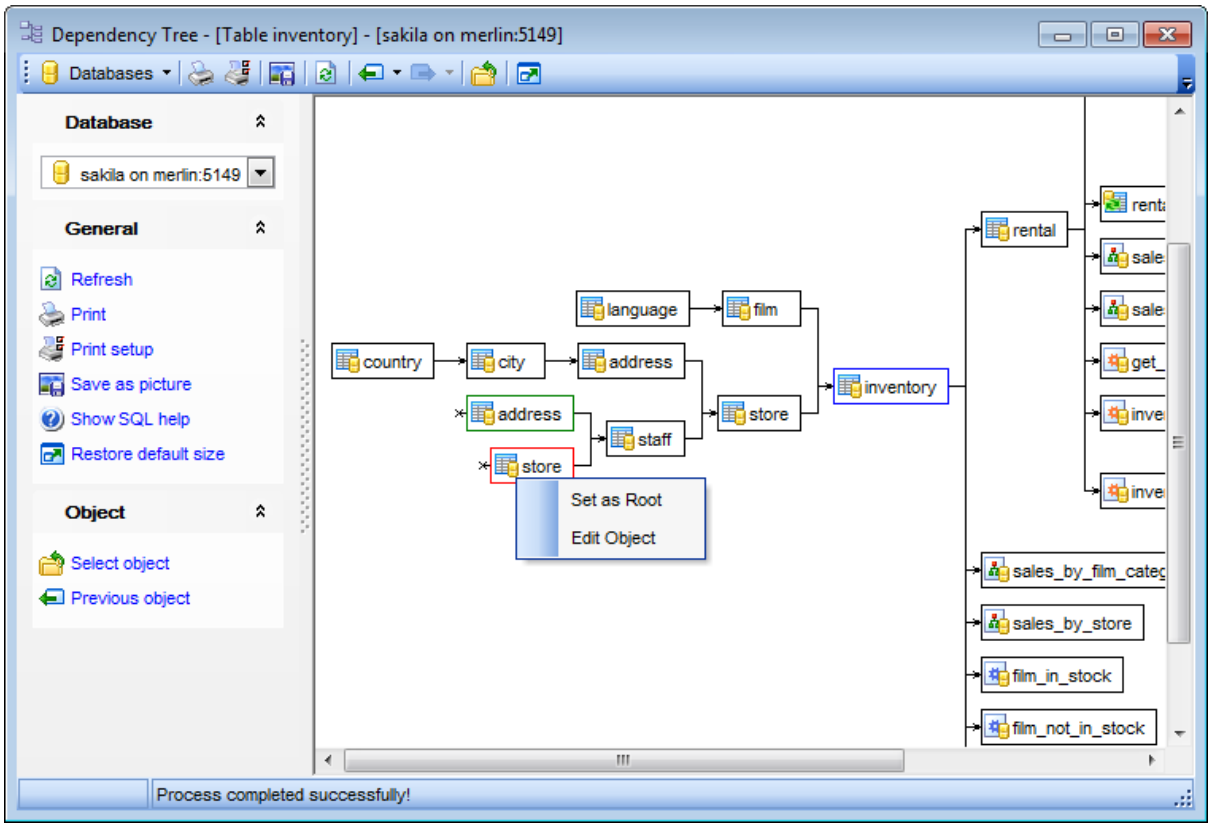
Hint: Items of the **Object** pane of the **Navigation bar** are also available in the *context menu* of the **Dependency Tree** area.

9.1.1.2 Viewing dependency tree

To view dependencies of an object, click the **Select object** Navigation bar item. Then select the required object in the **Select Object** dialog window. The dependency tree will appear in the main area of the window.



While the tree of dependencies is being built, the progress bar is displayed in the status area at the bottom of the window.



The *root* object is marked out with a blue frame.

The objects that *the root object depends on* are located to the left of the root object. The objects that *depend on the root object* are located to the right of the root object.

Object dependencies are denoted as regular arrows from the left to the right (->). A *cyclic dependency* (i.e. when the object already has some other depending object(s)) is denoted as a line ending with a cross (-x).

You can switch between objects by selecting them in the diagram. The selected object becomes the root object. To make an object root, you can also right-click it in the diagram area and select **Set as Root** from the **context menu**. The context menu of an object also allows you to *edit* it using the corresponding editor.

The history of selected root objects is also available: you can move back and forward through this history using the **Previous object** and the **Next object** links on the Navigation bar or toolbar.

Hint: To show/hide subobjects (e.g. table triggers, foreign keys), click the **Show subobjects** / **Hide subobjects** item on the Navigation bar.

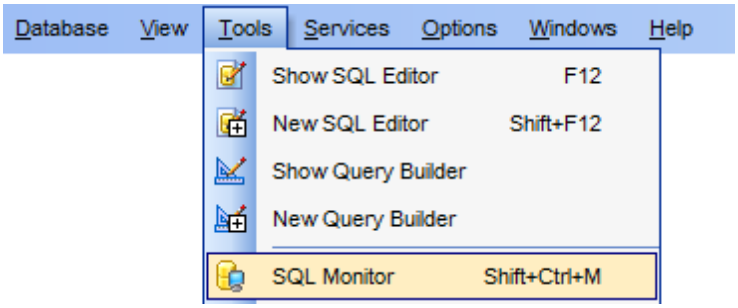
See also:

Select Object dialog

9.1.2 SQL Monitor

SQL Monitor allows you to view the log of all operations performed over databases and database objects in **SQL Manager for MySQL**. The content of the window is read-only.

To open the **SQL Monitor** window, select the **Tools | SQL Monitor** main menu item, or use the *Shift+Ctrl+M* shortcut.



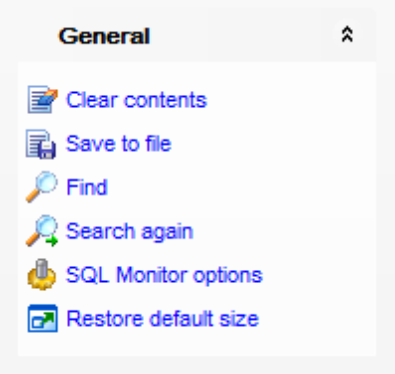
- Using Navigation bar and Toolbar
- Working with SQL Monitor

See also:

SQL Monitor options

9.1.2.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **SQL Monitor**.



The **Navigation bar** of **SQL Monitor** allows you to:

General group
- clear the content of the window
- save the content to a **.txt* file using the **Save as...** dialog
- search for a string using the Find Text dialog
- search again
- configure SQL Monitor using the SQL Monitor section of the Environment Options dialog
- restore the default size and position of the window
- specify that the window is displayed on top of other child windows

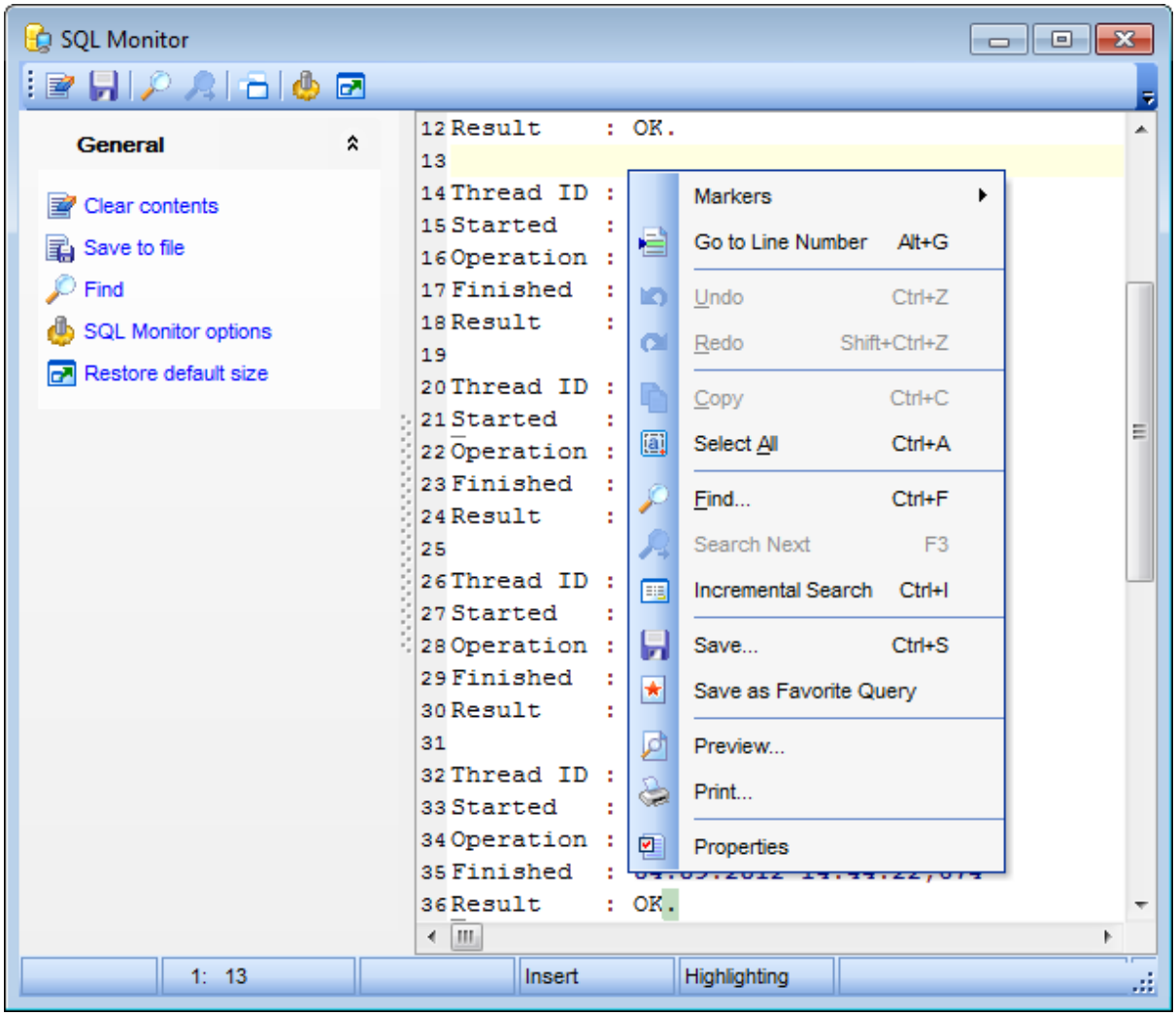
Items of the **Navigation bar** are also available on the **ToolBar** of **SQL Monitor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

9.1.2.2 Working with SQL Monitor

The working area of **SQL Monitor** lists the log of database operations and SQL queries as items, each consisting of 3 parts: *Executed* (the date and time of the operation), *Operation* (SQL statement sent to the server), *Result* (the result of the operation).

Items of the **context menu** of SQL Monitor area provide access to various functions for working with the window content. The context menu contains standard text-processing functions (*Copy*, *Select All*), spell checking and functions for working with the content as a whole, e.g. you can set *markers*, *move the cursor to a particular line*, *save* the content to a file or as a favorite query, configure the editor using the properties item or *preview/print* the content. Most of these operations can be also performed with the corresponding hot keys used.

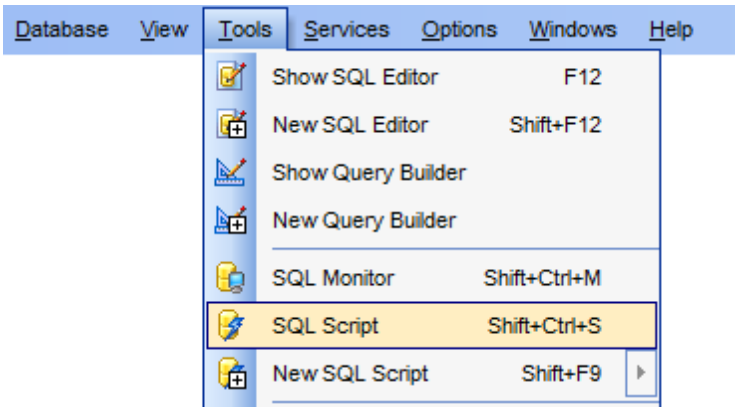
Implementation of the Find Text dialog and Incremental search bar contributes to more efficient work with the content of SQL Monitor.



9.1.3 SQL Script Editor

Using **SQL Script Editor** you can view, edit and execute SQL scripts.

To open SQL Script Editor, select the **Tools | New SQL Script** / **Tools | SQL Script** main menu items or use the corresponding / toolbar buttons. You can also use the *Shift+Ctrl+S* shortcut for the same purpose.



In the script area you can view and edit the SQL script text. For your convenience syntax highlight and code completion features are implemented.

- Using Navigation bar and Toolbar
- Working with SQL Script editor area
- Using Script Explorer
- Script execution

Note: **SQL Script Editor** does not show results returned upon SELECT queries execution. Please use SQL Editor for that purpose instead.

See also:

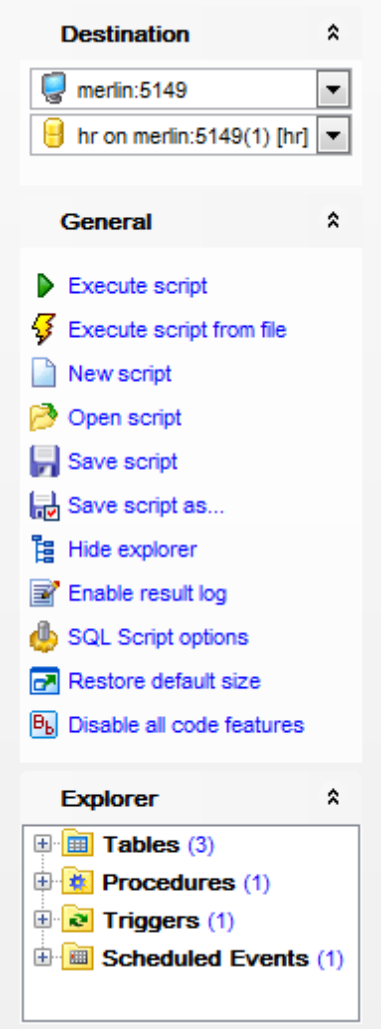
SQL Editor

SQL Script options

Editor Options

9.1.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **SQL Script Editor**.



The **Navigation bar** of **SQL Script Editor** allows you to:

Destination group
select a host
select a database for the script

General group
execute the current script
execute a script from file
create a new script
load a script from an **.sql* file using the **Open SQL Script** dialog
save the current script
save the script to an **.sql* file using the **Save as...** dialog

show/hide Script Explorer
enable/disable result log
configure SQL Script Editor within the Script Options section of the Environment Options dialog
restore the default size and position of the editor window
enables/disables syntax highlight, code completion and code folding

Explorer group
browse the tree objects used in the script using the Script Explorer pane

Items of the **Navigation bar** are also available on the **ToolBar** of **SQL Script Editor**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

See also:

Working with SQL Script editor area
Using Script Explorer
Script execution

9.1.3.2 Working with SQL Script editor area

The **Editor area** of SQL Script is provided for efficient working with SQL scripts in text mode.

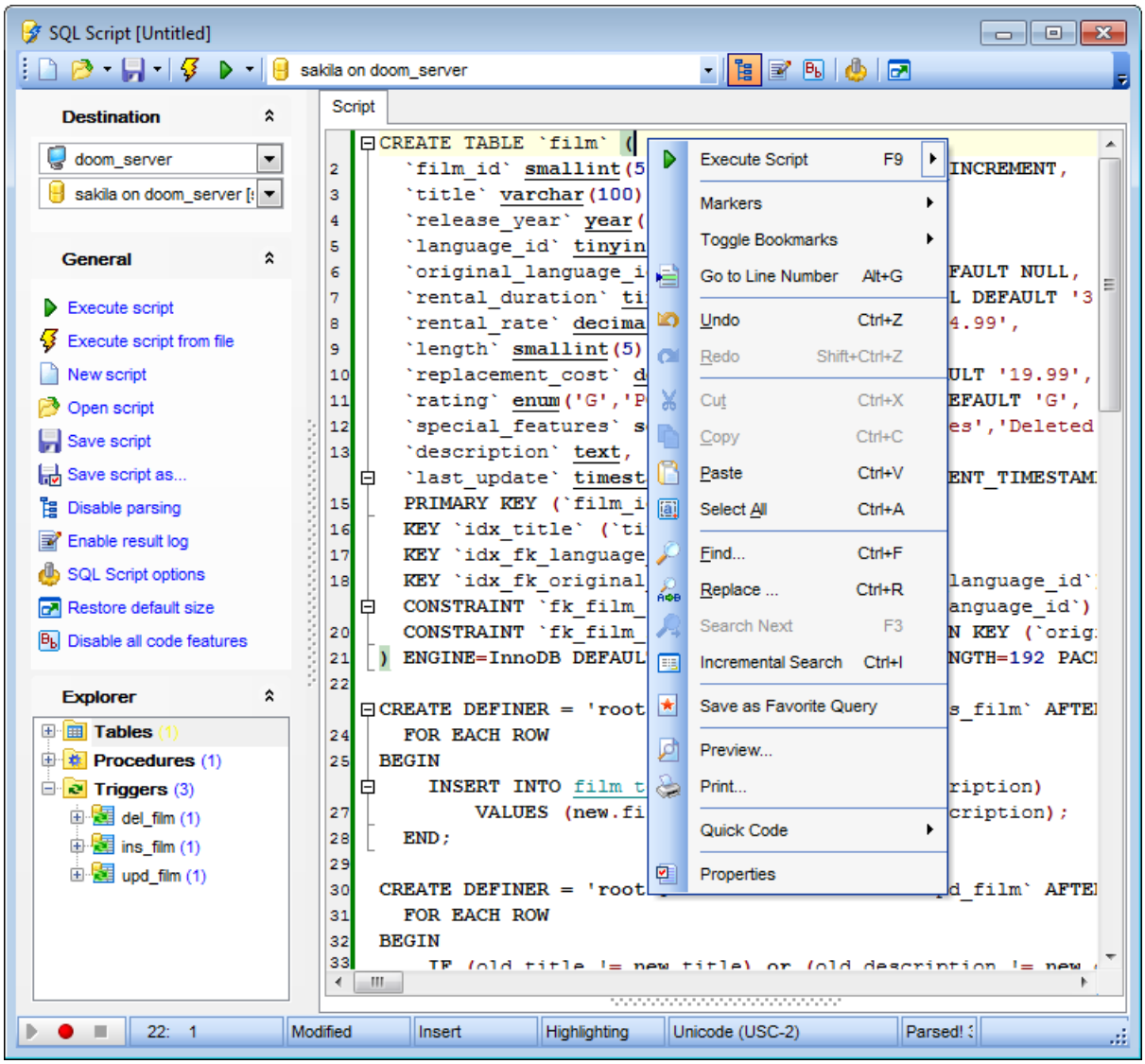
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented:

- using object links allowing you to open the object in the associated editor;
- ability to display line numbers;
- code folding for statements and clauses;
- customizable margins and gutters;
- formatting code for better representation

and more.

The **context menu** of SQL Script Editor area contains execution commands, most of the standard text-processing functions (*Cut*, *Copy*, *Paste*, *Select All*), spelling checking and functions for working with the script as a whole, e.g. you can enable/disable *parsing*, toggle *bookmarks* and *comments*, *move the cursor to a particular line*, *change the case* of selected text, *load/save* the content from/to a file or save as a favorite query, configure the editor using the **Properties** item or *preview/print* the text of the script. Most of these operations can be also performed with the corresponding hot keys used.

Implementation of the Find Text / Replace Text dialogs and Incremental search bar contributes to more efficient work with the SQL code.

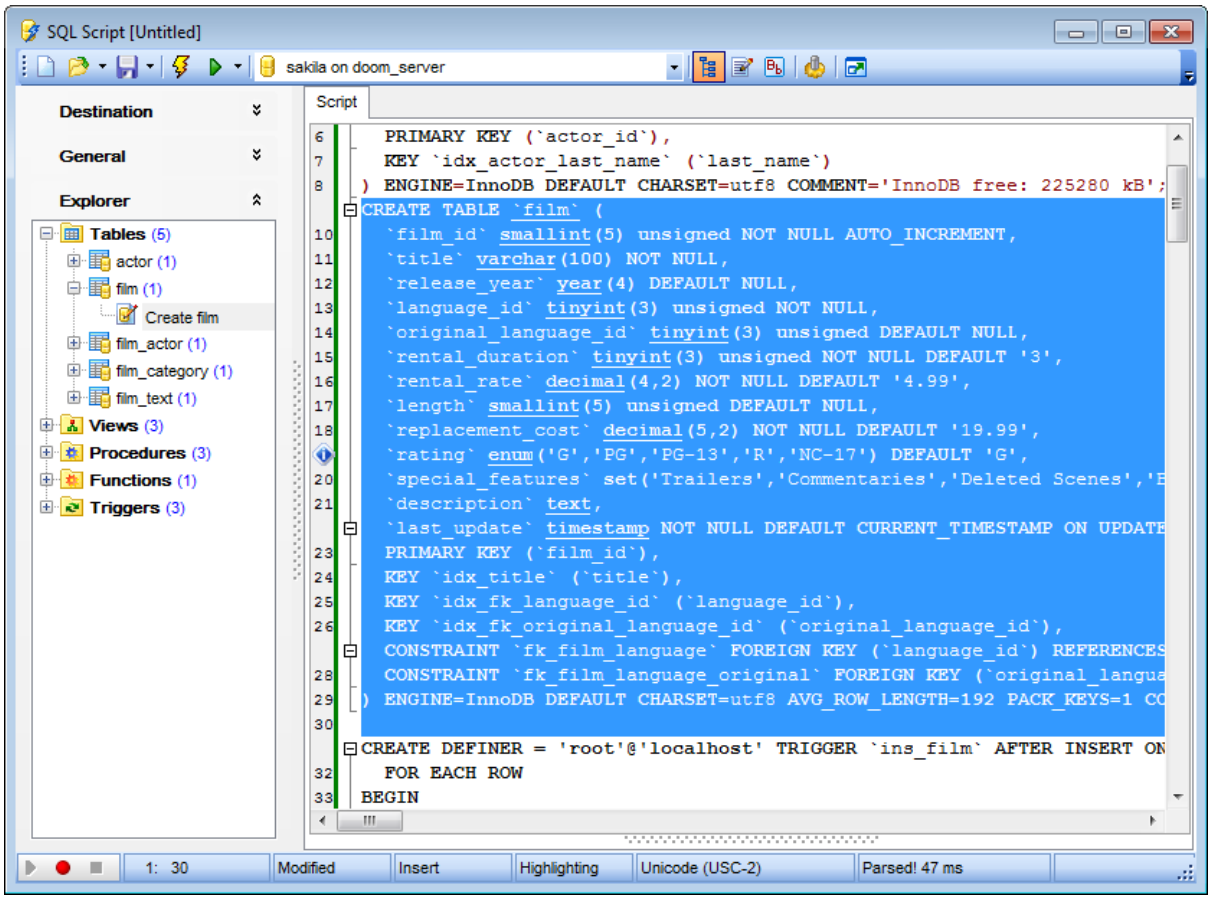


See also:

[Using Navigation bar and Toolbar]
[Using Script Explorer]
[Script execution]
[Managing Favorite queries]
[SQL Script options]

9.1.3.3 Using Script Explorer

The **Explorer** group on the Navigation bar displays the tree of objects, used in the current script and allows you to get to the required script fragment quickly by clicking the object in the tree.



Hint: When you click a node in the **Script Explorer** tree, the corresponding SQL statement is highlighted in the editor area. If you double-click a node, the corresponding SQL statement is highlighted, and the current focus is switched to the editor area (the cursor appears after the highlighted statement).

See also:

Using Navigation bar and Toolbar

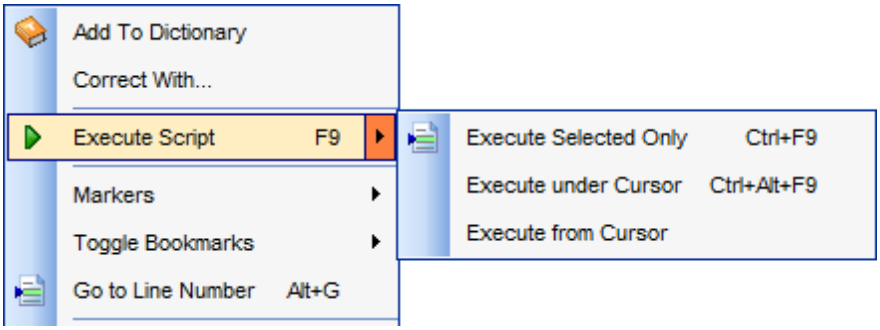
Working with SQL Script editor area

Database Objects Management

9.1.3.4 Script execution

When all the script parameters are set, you can immediately **execute the script** in **SQL Script Editor**.

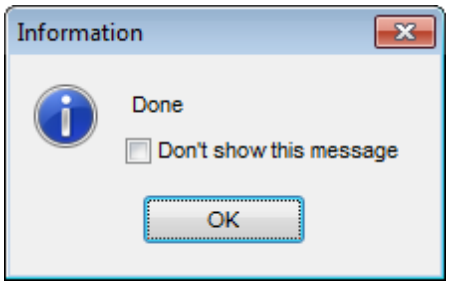
To execute a script, click the **Execute script** item of the Navigation bar or toolbar. You can also use the context menu or *F9* hot key for the same purpose.



Note: If the **Execute selected text separately** option (see the Tools | SQL Script section of the Environment Options dialog) is enabled (by default) and a text fragment is currently selected, only this fragment is executed when you click *Execute script* on the Navigation bar or press *F9*. If this option is disabled, the whole script is executed, but you can still execute the selected fragment using the corresponding *Execute Selected Only* item of the context menu or by pressing *Ctrl+F9*.

If there are no active database connections, the application prompts you to specify host connection parameters in the Login Host dialog for script execution.

If the SQL syntax is correct, the script is executed and the *'Done'* information message appears.



If the syntax contains errors or script cannot be executed, the corresponding error message is displayed in the status bar area at the bottom of the editor window.

Hint: When you select an item from the error list (in the status bar area), the corresponding SQL statement is highlighted in the editor area. If you double-click an item, the corresponding SQL statement is highlighted, and the current focus is switched to the editor area (the cursor appears after the highlighted statement).

Note: **SQL Script Editor** does not show results returned upon SELECT queries execution. Please execute such queries in SQL Editor to see the result dataset.

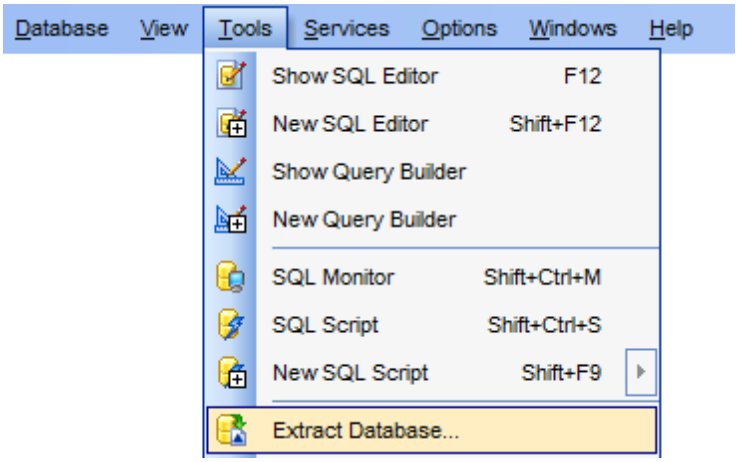
See also:

Using Navigation bar and Toolbar
Working with SQL Script editor area
Using Script Explorer

9.1.4 Extract Database Wizard

Extract Database Wizard allows you to extract database objects and/or data to an SQL script, e.g. for backup purposes.

To start the wizard, select the **Tools | Extract Database...** main menu item.



- Selecting a database for extraction
- Specifying destination file name
- Setting extraction mode
- Selecting objects for metadata extraction
- Selecting objects for data extraction
- Customizing script options
- Start of extraction process
- Using templates

See also:

SQL Script Editor

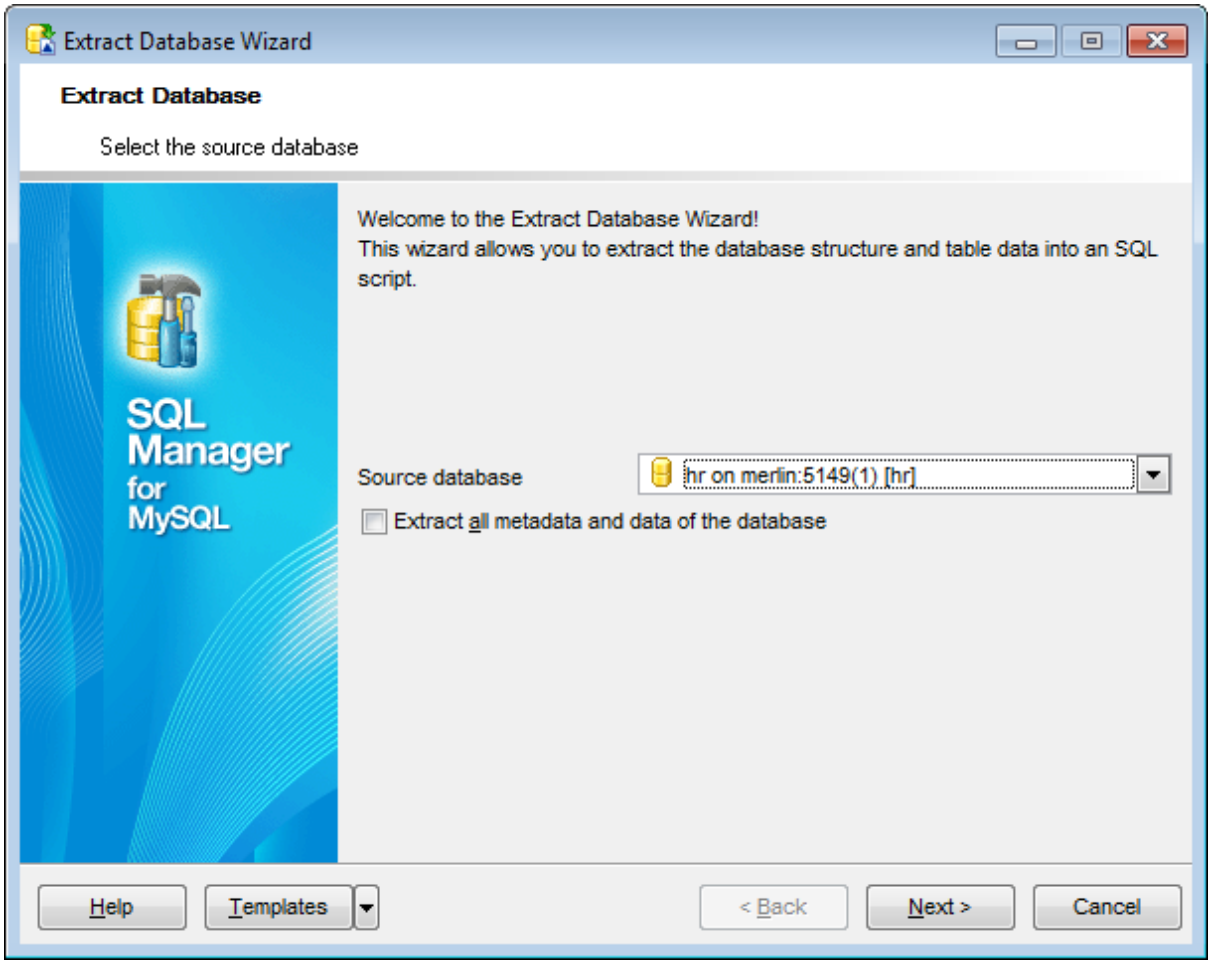
Database Objects Management

Using templates

9.1.4.1 Selecting source database

This step of the wizard allows you to select the **source database** from which metadata and/or data are to be extracted.

If necessary, check the ☑ **Extract all metadata and data of the database** option to simplify the wizard.



Click the **Next** button to proceed to the Specifying destination file name step of the wizard.

9.1.4.2 Specifying destination file name

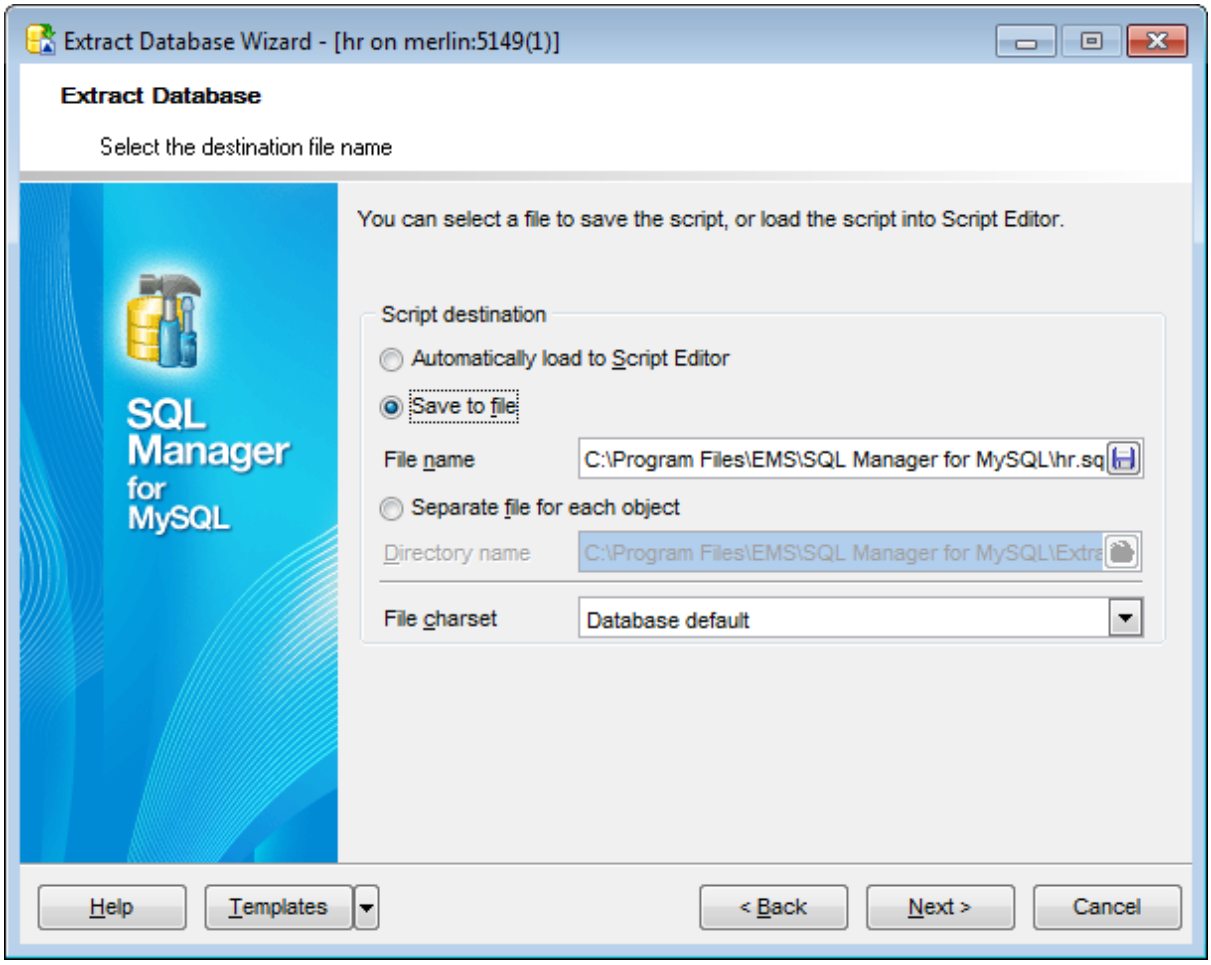
Script destination

Automatically load to Script Editor
Use this mode if there's no need to save script to file. Generated script will be automatically opened in SQL Script Editor.

Save to file
This mode allows you to save complete script to a single file.

File name
Set a name for the result **.sql* file and type in or use the **Save as...** button to specify the path to this file on your local machine or on a machine in the LAN.

Separate file for each object
Use this mode to extract each object of the database into a separate file. In this case you need to specify **Directory name** where created files will be stored.



Note: If the specified folder exists, make sure it doesn't contain any useful data, as you will be suggested to recreate the folder.

File charset

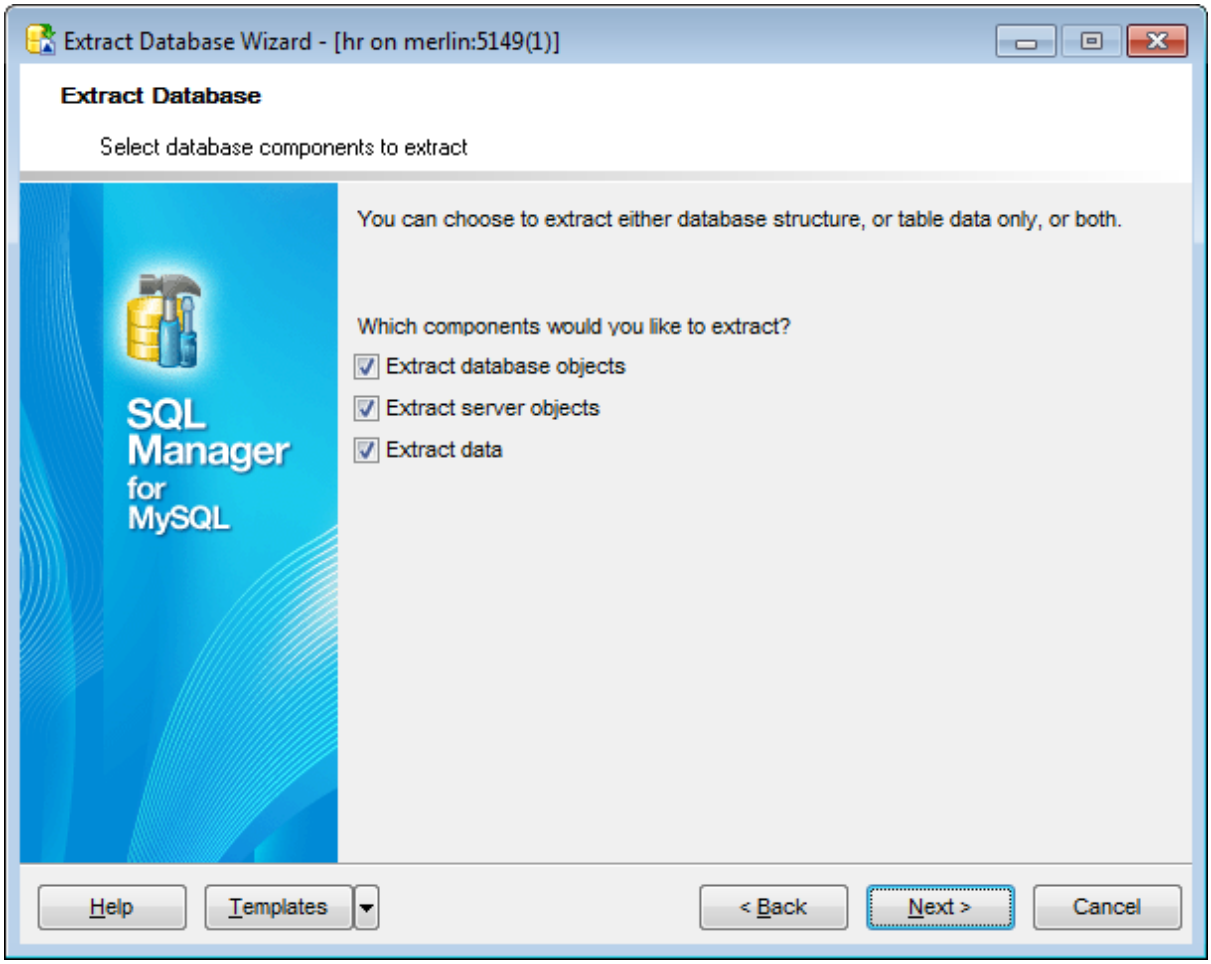
If necessary, use the drop-down list to select the character set for the exported data.

Depending on whether you have checked the ☑ **Extract all metadata and data of the database** option at the Selecting source database step, upon pressing the **Next** button you will either proceed to the Setting extraction mode, or you will be immediately forwarded to the Customizing script options step of the wizard.

9.1.4.3 Setting extraction mode

This step allows you to specify the **extraction mode**: choose whether *structure only*, *data only* or *both* are to be extracted.

Note that this step is only available if the ☑ **Extract all metadata and data of the database** option was unchecked when selecting the source database.



Click the **Next** button to proceed to Selecting objects for structure extraction.

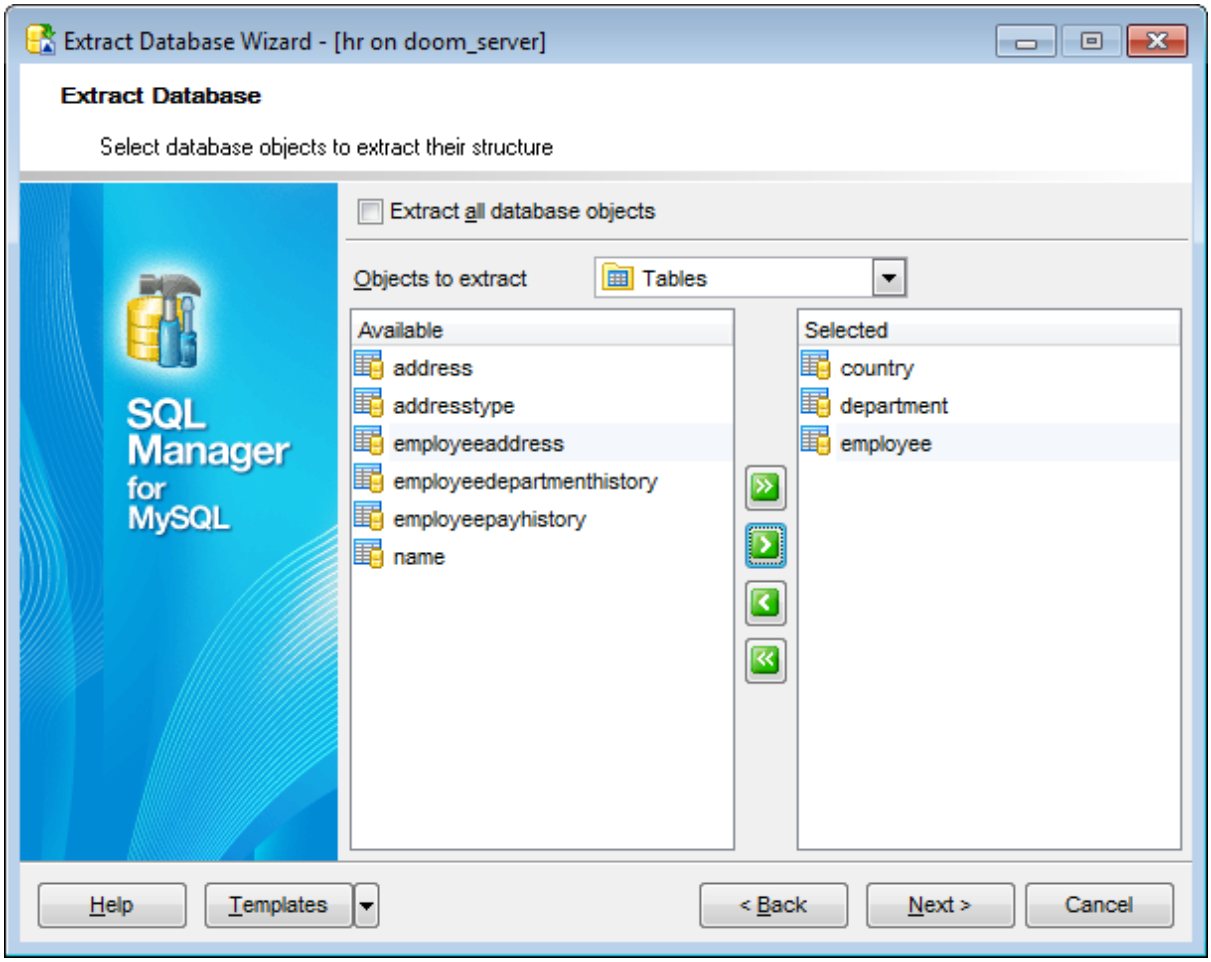
9.1.4.4 Selecting database objects for structure extraction

This step of the wizard allows you to **select database objects for metadata extraction** .

Note that this step is only available if the ☑ **Extract all metadata and data of the database** option was unchecked when selecting the source database.

☑ **Extract all database objects**
Includes all database objects into structure extraction process.

Objects to extract
Use the drop-down list to select the type of objects to extract.
To select an object, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop to move the objects from one list to another.



Click the **Next** button to proceed to Selecting objects for data extraction.

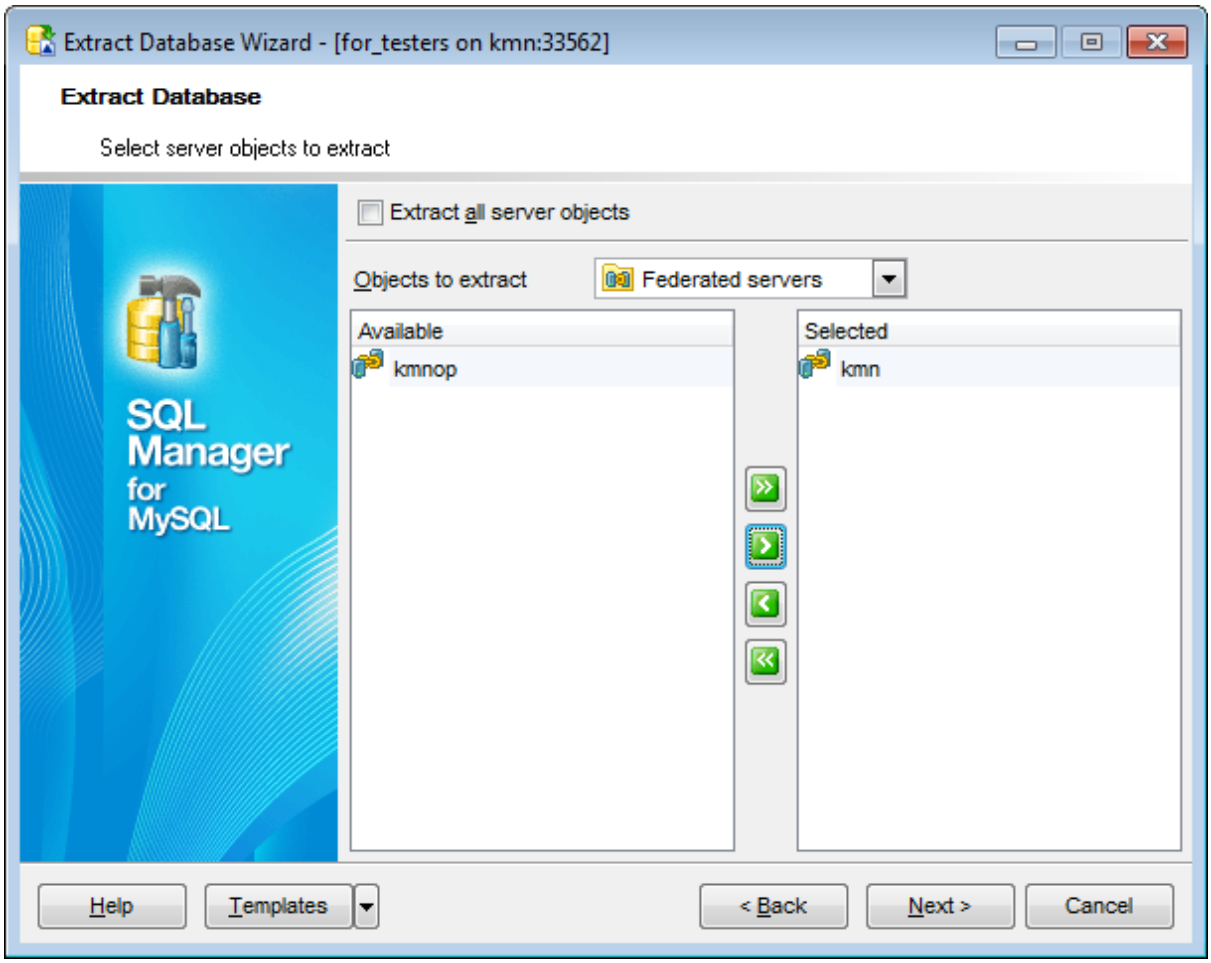
9.1.4.5 Selecting server objects to extract

This step of the wizard allows you to **select server objects for metadata extraction**.

Note: This step is available only if the ☑ **Extract server objects** option was checked in the Selecting source database step.

☑ **Extract all server objects**
Adds all server objects to the structure extraction process.

Objects to extract
Use the drop-down list to select the type of objects to extract.
To select an object, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop to move the objects from one list to another.



Click the **Next** button to proceed to the Selecting objects for data extraction step.

9.1.4.6 Selecting objects for data extraction

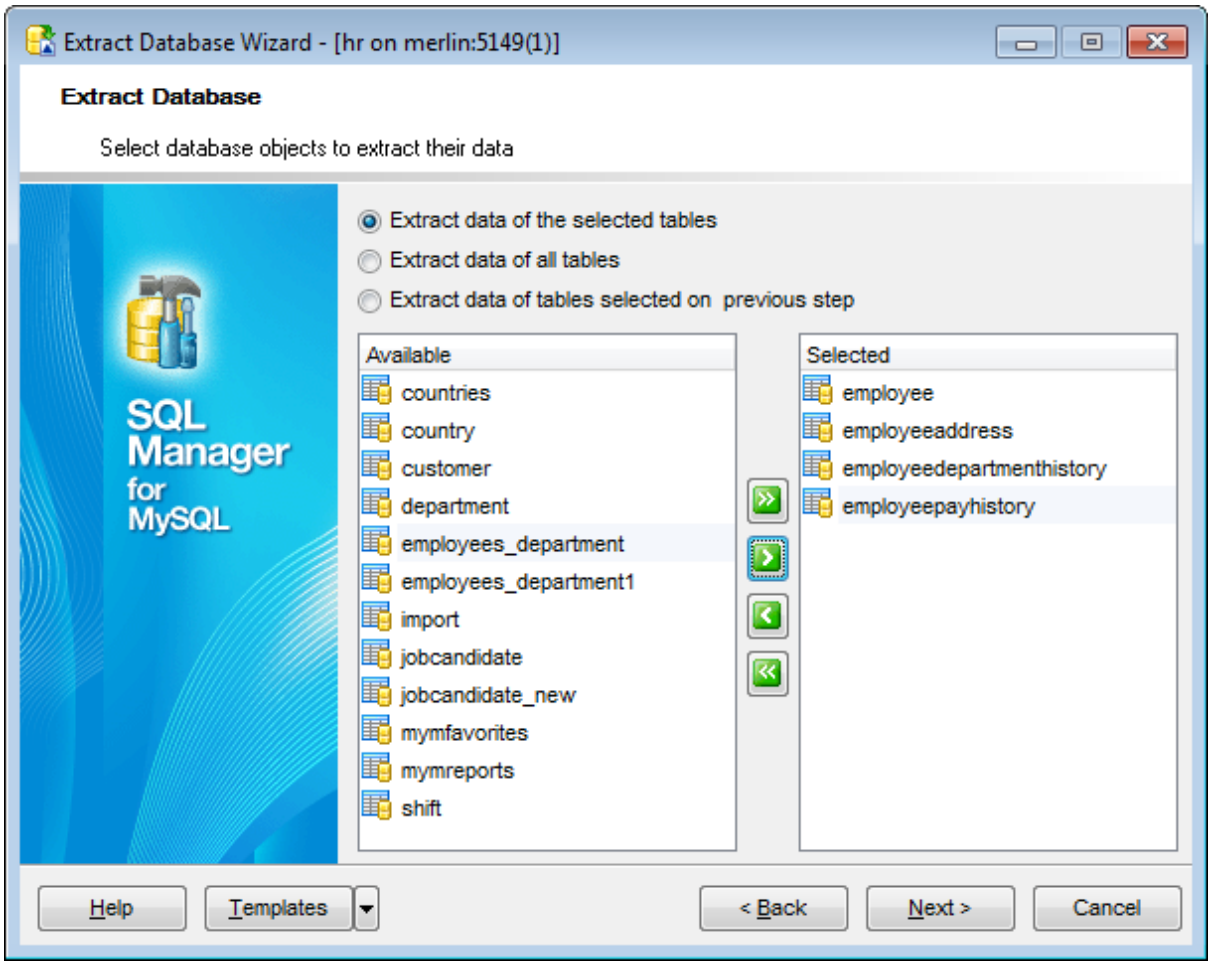
This step of the wizard allows you to **select tables for data extraction**.

Note that this step is only available if the ☑ **Extract all metadata and data of the database** option was unchecked when selecting the source database.

Extract data of the selected tables
Adds only selected tables to data extraction process.
To select a table, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.

Extract data of all tables
Adds all tables of the database to the data extraction process.

Extract data of tables selected on the previous step
Adds only the tables selected for metadata extraction.



Click the **Next** button to proceed to the Customizing script options step of the wizard.

9.1.4.7 Customizing script options

Start of extraction process

This step allows you to customize common **script options** and **data options** for the extraction process.

Script options

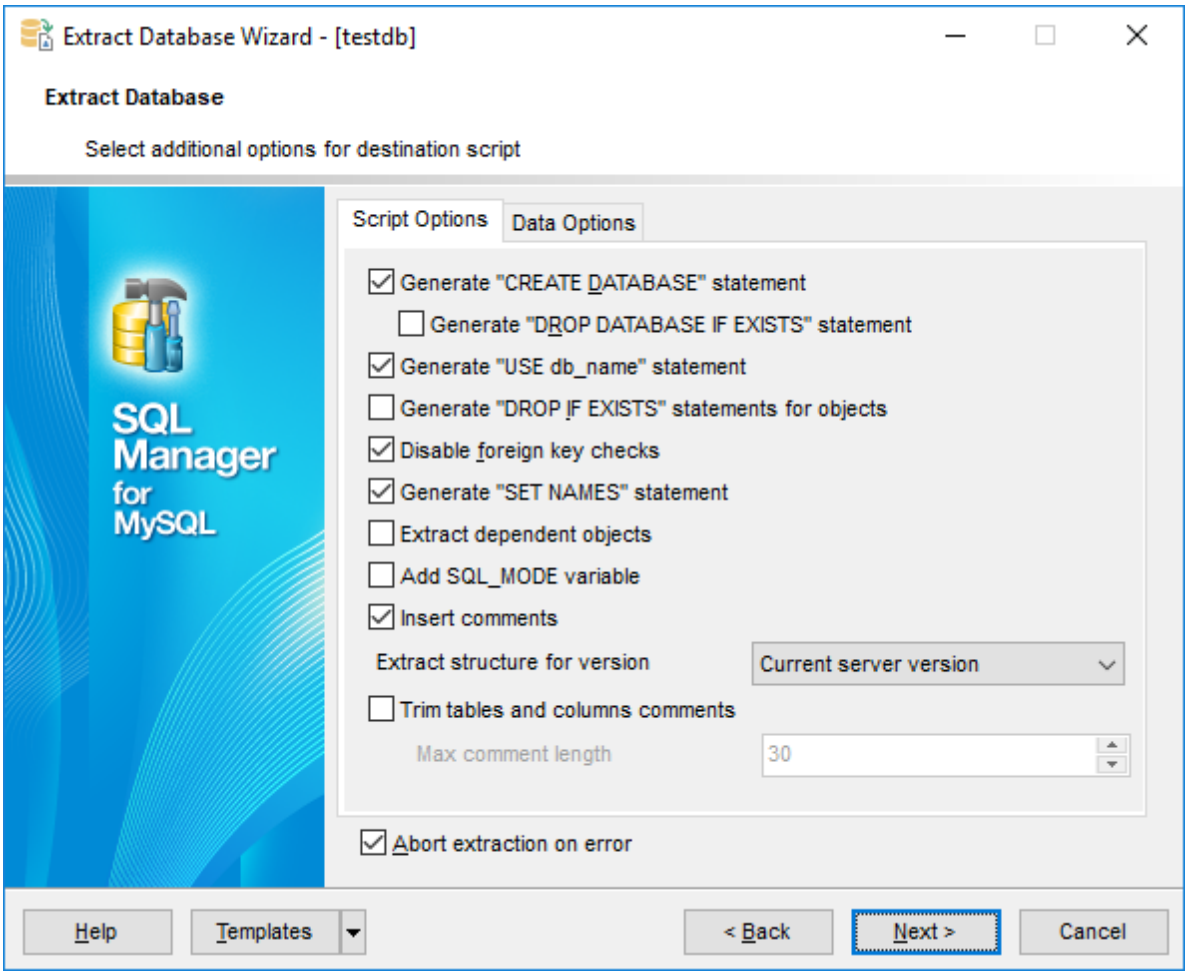
☑ **Generate "CREATE DATABASE" statement**
Check this option to add the *CREATE DATABASE* statement to the result script.

☑ **Generate "DROP DATABASE IF EXISTS" statement**
Check the option to add the *DROP DATABASE IF EXISTS* statement for the database in the result script.

☑ **Generate "USE db_name" statement**
Check the option to add the *USE db_name* statement to the result script.

☑ **Generate "DROP IF EXISTS" statements**
Check the option to add the *DROP IF EXISTS* statements for the extracted objects in the result script.

☑ **Disable foreign key checks**
If this option is selected, foreign key constraints are not considered in the extraction process (*SET FOREIGN_KEY_CHECKS=0*).



Generate "SET NAMES" statement
Check this option to add the *SET NAMES 'character_set'* statement to the result script. Character set issues affect not only data storage, but also communication between client programs and the MySQL server. The *SET NAMES 'character_set'* statement allows you to indicate which character set (different from the default) should be used by the server while communicating with the client program.

Extract dependent objects
This option determines objects' dependencies usage in the extraction process. Check the option to extract all objects that the selected objects depend on.

Add SQL_MODE variable
This option specifies that the *SET sql_mode='modes'* statement will be added to the result script.
SQL modes define what SQL syntax MySQL should support and what kind of data validation checks it should perform. This facilitates using MySQL in different environments and together with other database servers.

Insert comments
This option determines whether comments will be added to the result script.

Extract structure for version
This drop-down list allows you to define the version of MySQL server you need to extract metadata for. The result script will be generated in compliance with the specifications of the selected server version: *Current server version*, *3.23*, *4.0*, *4.1*, *5.0*, or *5.1*.

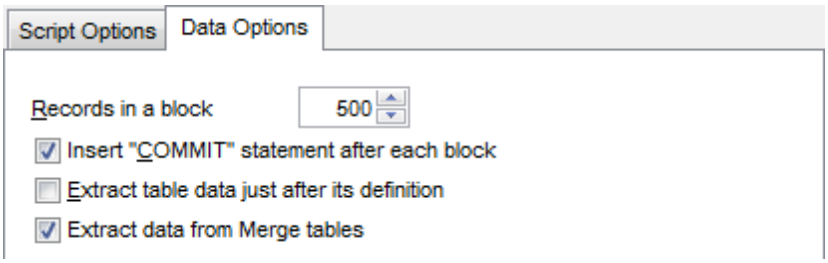
☑ **Trim tables and column comments**
Set limit for table and columns comments length. Maximum length of exported comment is defined in the **Max comment length** field.

Data options

Records in a block / ☑ **Insert "COMMIT" statement after each block**
These controls allow you to define whether the *COMMIT* statement is added to the script or not, and to specify the number of records in each block to be supplemented with this statement.

☑ **Extract table data just after its definition**
This option allows you to define the order for table data and metadata. With this option enabled, the result script is generated in the following way: *table definition*, *data* for the table as a set of *INSERT INTO* statements, then *definition for other objects*. Otherwise the following order is applied: *table definition*, *definition for other objects*, then *table data*.

☑ **Extract data from Merge tables**
Use this option if you wish to extract data from tables of the *MRG_MyISAM* storage engine .



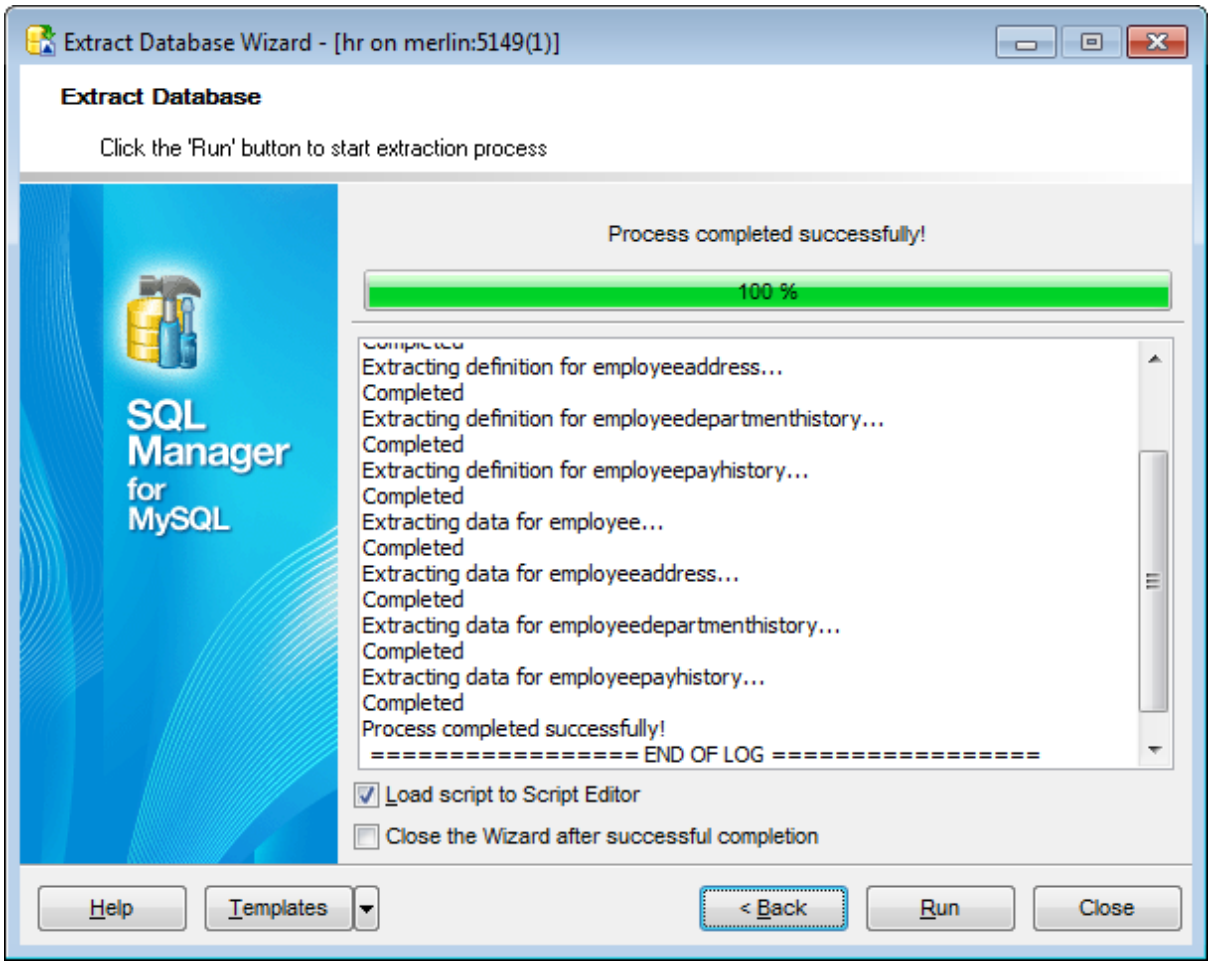
☑ **Abort extraction on error**
This option determines whether the extraction process should be stopped or forced to continue if an error occurs.

Click the **Next** button to proceed to the last step of the wizard.

9.1.4.8 Start of extraction process

This step of the wizard is intended to inform you that all extraction options have been set, and you can start the extraction process.

The **Operations** tab allows you to view the log of operations and errors (if any).



Load script to Script Editor
Check this option to load the result script to SQL Script Editor.

Close the wizard after successful completion
If this option is selected, the wizard is closed automatically when the extraction process is completed.

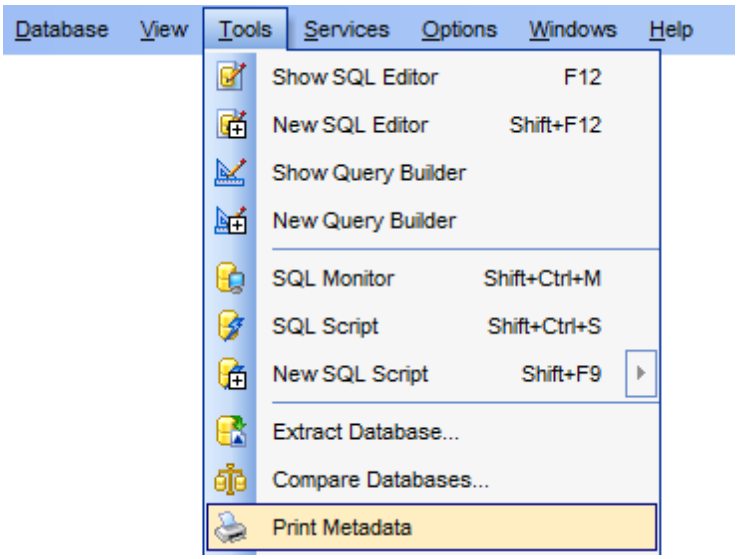
If necessary, you can save a template for future use.

Click the **Run** button to run the extraction process.

9.1.5 Print Metadata

Print Metadata allows you to generate and print metadata reports of any database object(s).

To open the window, select the **Tools | Print Metadata** main menu item, or use the **Print Metadata** button on the main toolbar.



- Using Navigation bar and Toolbar
- Printing options
- Print Preview

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

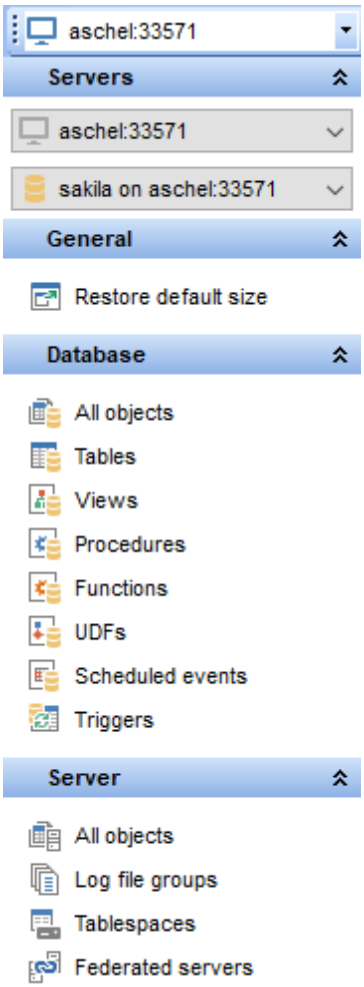
See also:

Database Objects Management

Print Metadata options

9.1.5.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Print Metadata**.



The **Navigation bar** of the **Print Metadata** window allows you to:

Database group
select a database for the printing report

General group
print metadata of the selected object(s)
preview the printing report
restore the default size and position of the window

Show group
✓ filter database objects by type

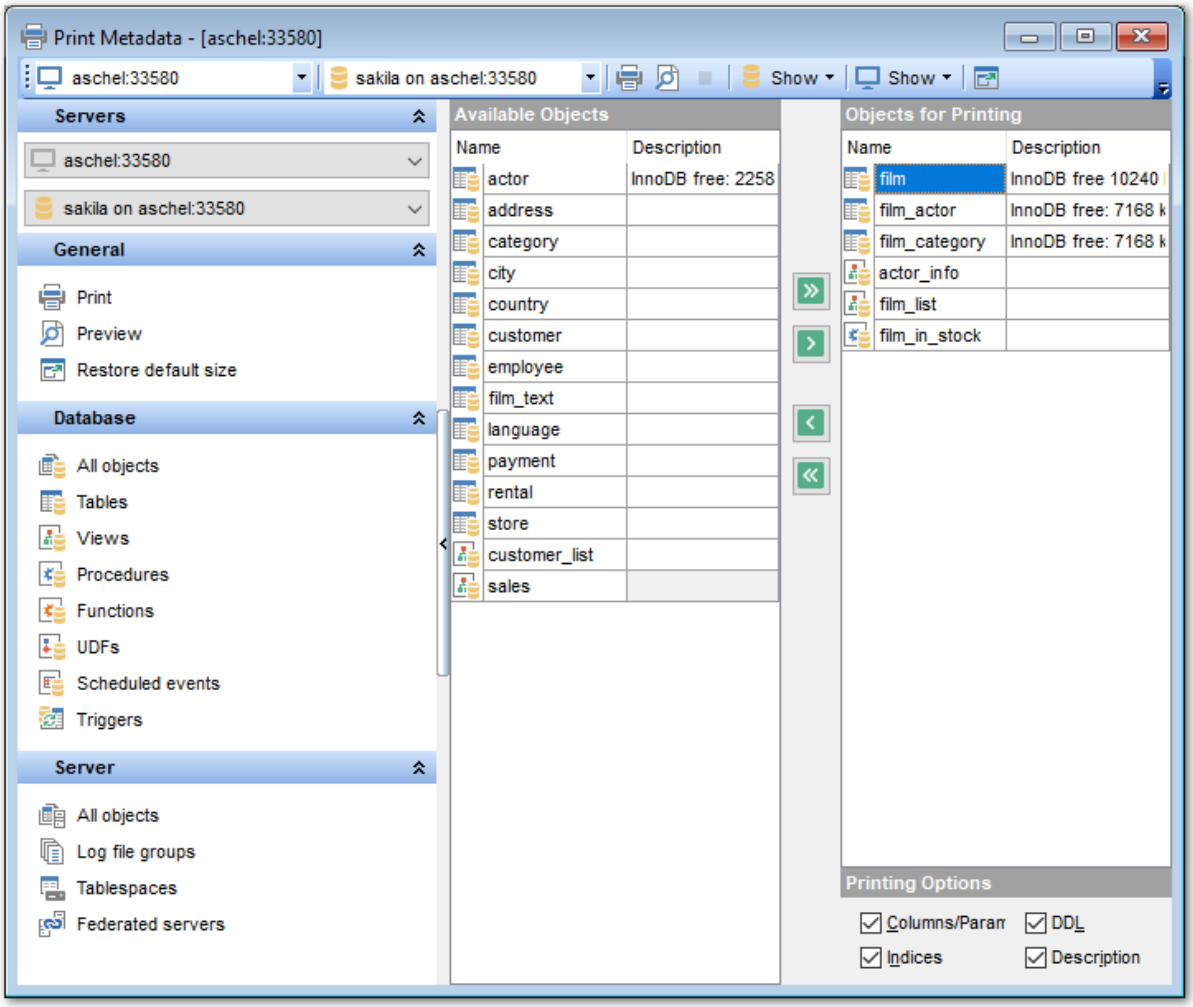
Items of the **Navigation bar** are also available on the **ToolBar** of the **Print Metadata** window. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

9.1.5.2 Printing options

The **Print Metadata** window allows you to select the database objects for printing metadata.
To select an object, you need to move it from the **Available objects** list to the **Objects for printing** list. Use the buttons or drag-and-drop operations to move the objects from one list to another.

After you select one or several objects, the **Printing Options** pane appears at the bottom.

Printing Options
Select an object in the **Objects for printing** list and specify items to be included into the printing report: *DDL*, *Description* (for all database objects), *Fields/Params*, *Indexes* (for tables).

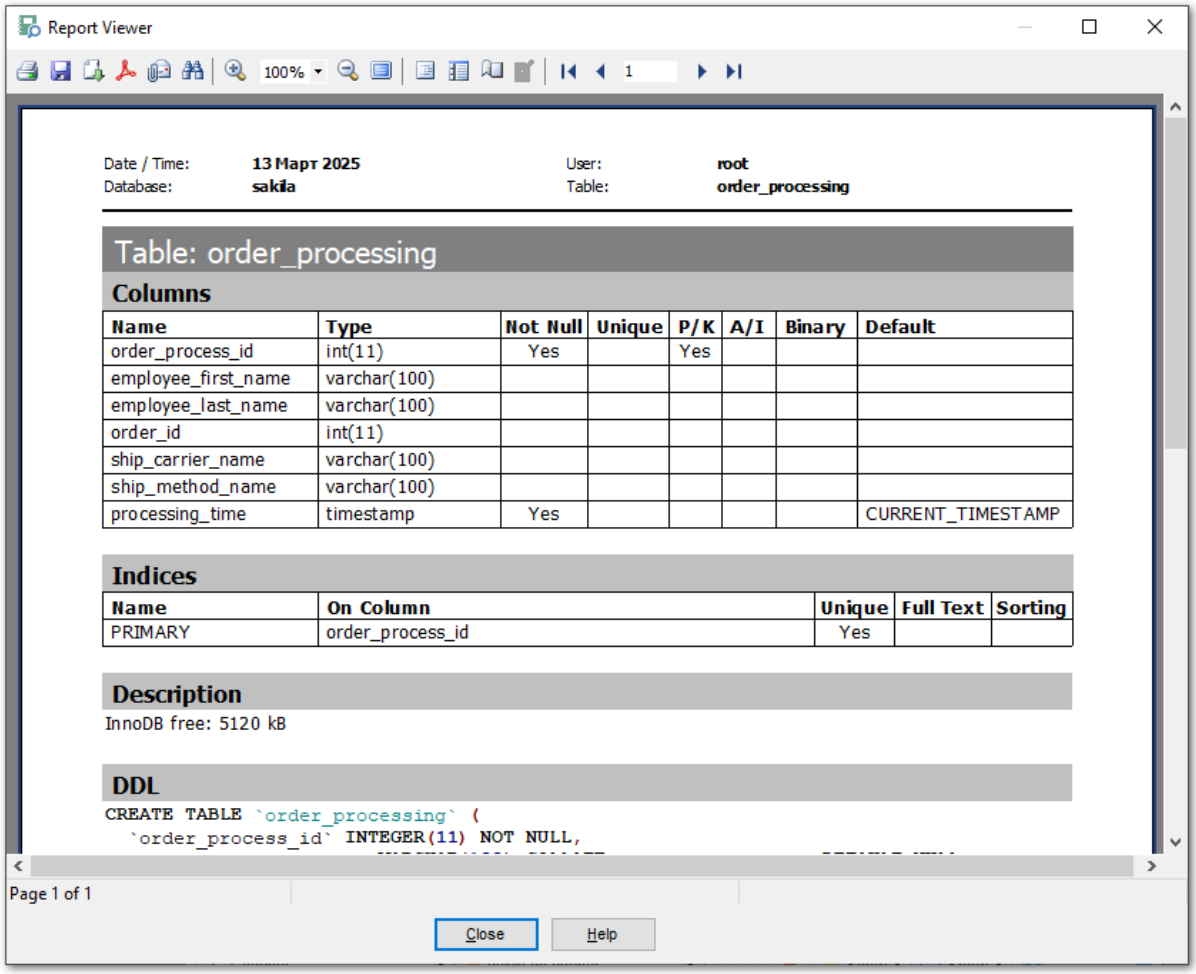


See also:
Using Navigation bar and Toolbar

Print Preview

9.1.5.3 Print Preview

You can **make a preview** of the printing report and **print metadata** for objects of the selected type using the corresponding items of the Navigation bar (or toolbar).



The toolbar of the **Preview** window allows you to:

- start printing the report;
- open a previously saved printing report;
- save the current report to an external **.fp3* file;
- export the preview content to any of the available formats: *HTML file*, *Excel file*, *Text file*, *RTF file*, *CSV file*, *HTML file*, *BMP image*, *Excel table (OLE)*, *JPEG image*, *TIFF image* (use the **Export** button for this purpose);
- search for text within the printing report;
- adjust zoom options;
- enable/disable printing report outline;
- enable/disable printing report thumbnails;
- specify page settings;
- edit the page using Report Designer;
- navigate within the printing report pages;
- close the **Preview** window.

See also:

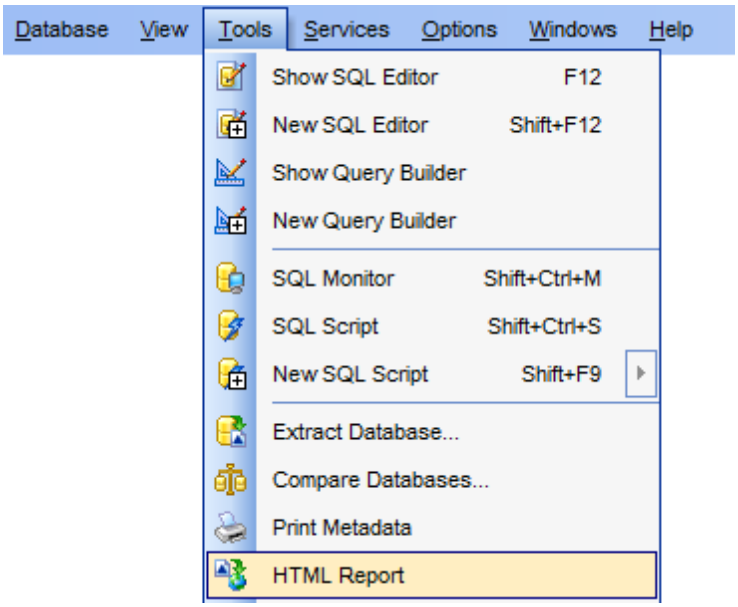
Using Navigation bar and Toolbar

Printing options

9.1.6 HTML Report Wizard

HTML Report wizard allows you to generate a detailed HTML report of the selected database objects.

To start **HTML Report Wizard**, select the **Tools | HTML Report** main menu item, or use the **HTML Report** button on the main toolbar.



- Selecting database and directory
- Selecting object types
- Selecting server object types
- Specifying CSS for HTML report
- Setting additional report options
- Creating HTML report
- Using templates

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Database Objects Management

Using templates

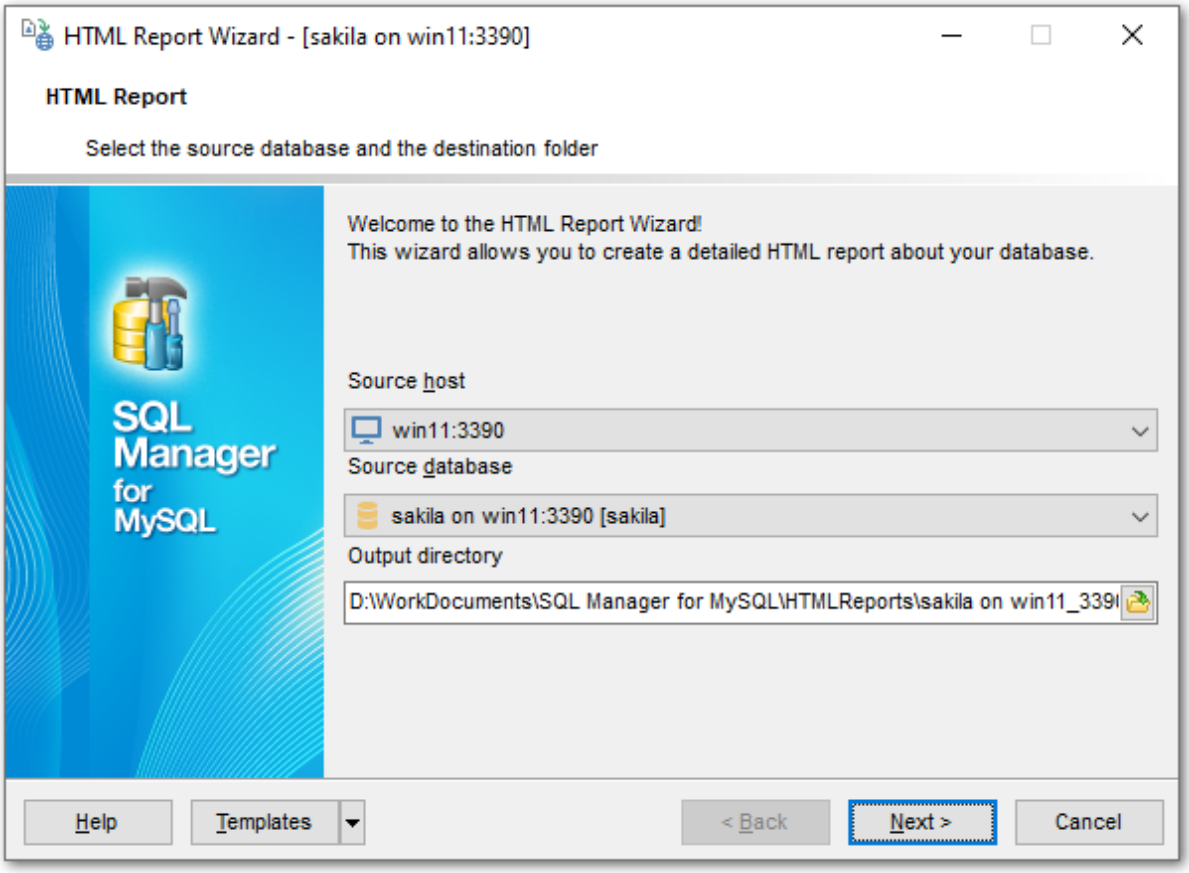
9.1.6.1 Selecting database and directory

At this step of the wizard you should select the **source database** and **output directory** for the HTML report.

Source host
Select the host on which source database is located.

Source database
Use the drop-down list of registered and connected databases to select the source database for the report.

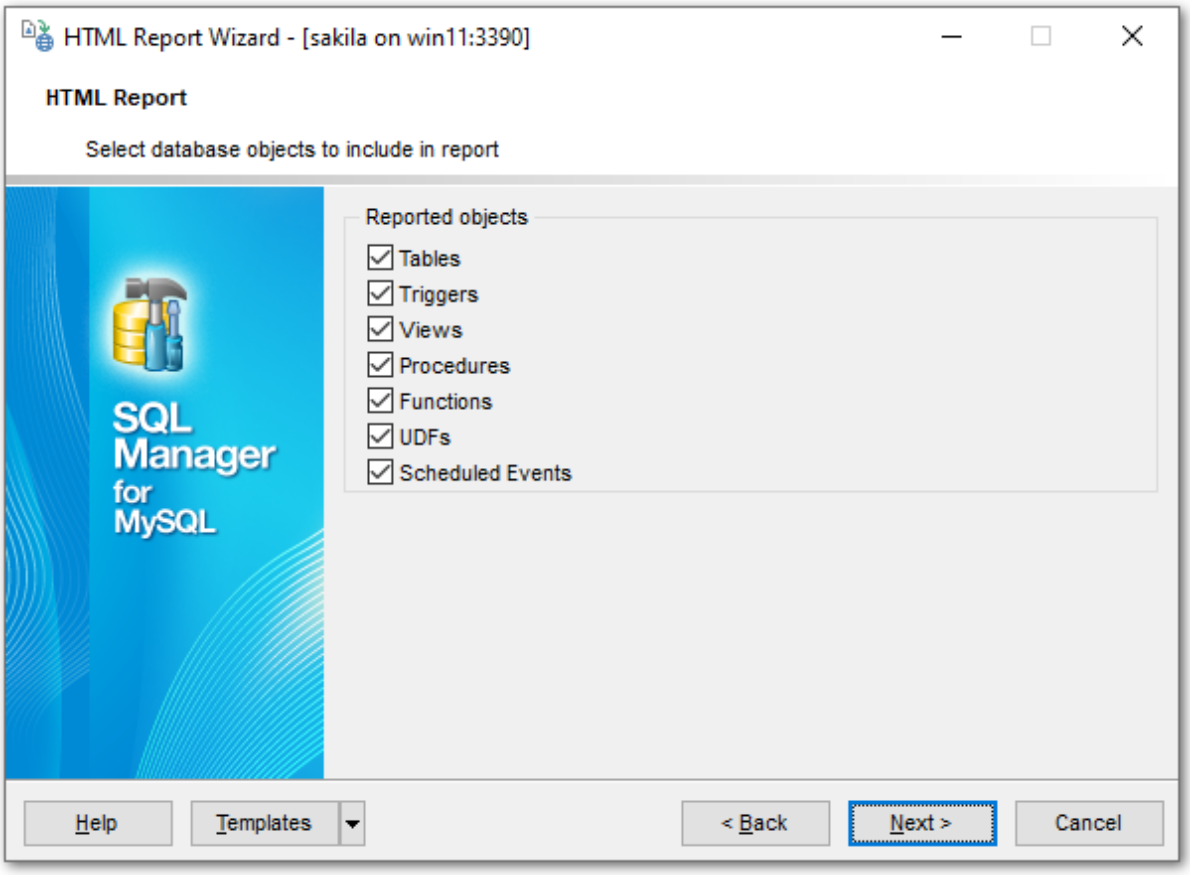
Output directory
Type in or use the button to specify the path to the output directory for the result HTML files using the **Browse for Folder** dialog.



Click the **Next** button to proceed to the Selecting database object types step of the wizard.

9.1.6.2 Selecting database object types

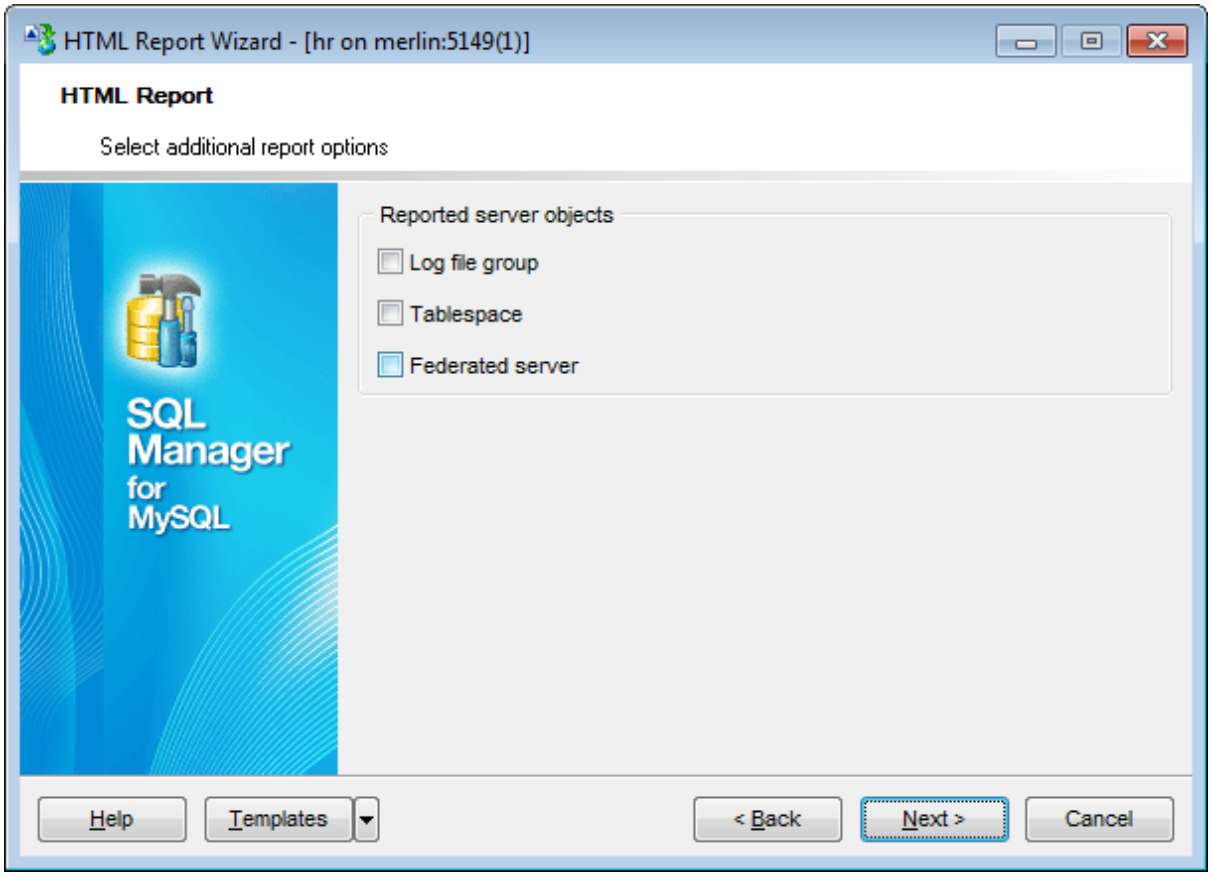
Use this step of the wizard to select *the types of objects* to be included in the result HTML report.



Click the **Next** button to proceed to the Selecting server object types step of the wizard.

9.1.6.3 Selecting server object types

Use this step to define which server objects should be included to report.



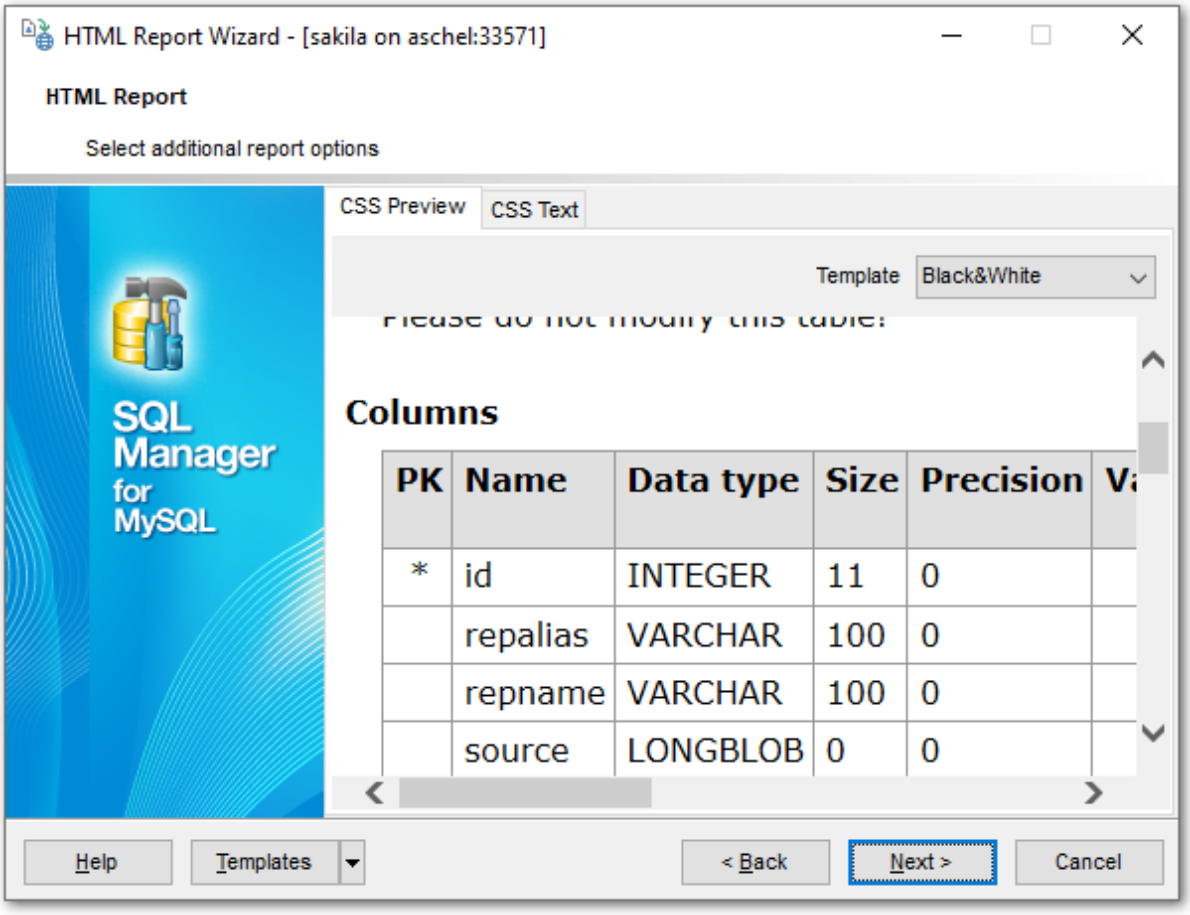
Check the respective options to include objects to report.

Click the **Next** button to proceed to the Specifying CSS step of the wizard.

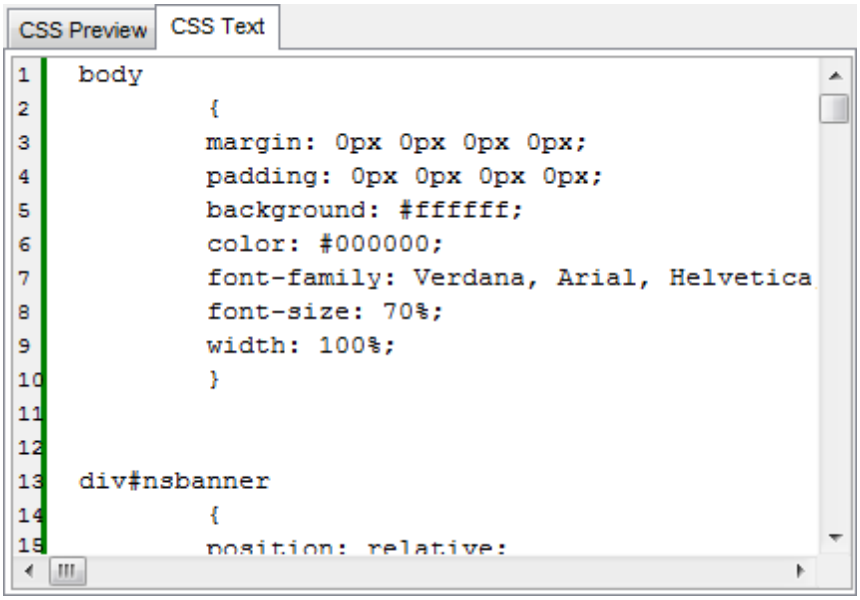
9.1.6.4 Specifying CSS

This step of the wizard allows you *to edit the CSS (Cascading Style Sheet) file* that will be used by the result HTML report. You can preview applied changes, as well as applying template schemes.

Use the **CSS Preview** tab to select template scheme, or to view changes made on **CSS Text** tab.



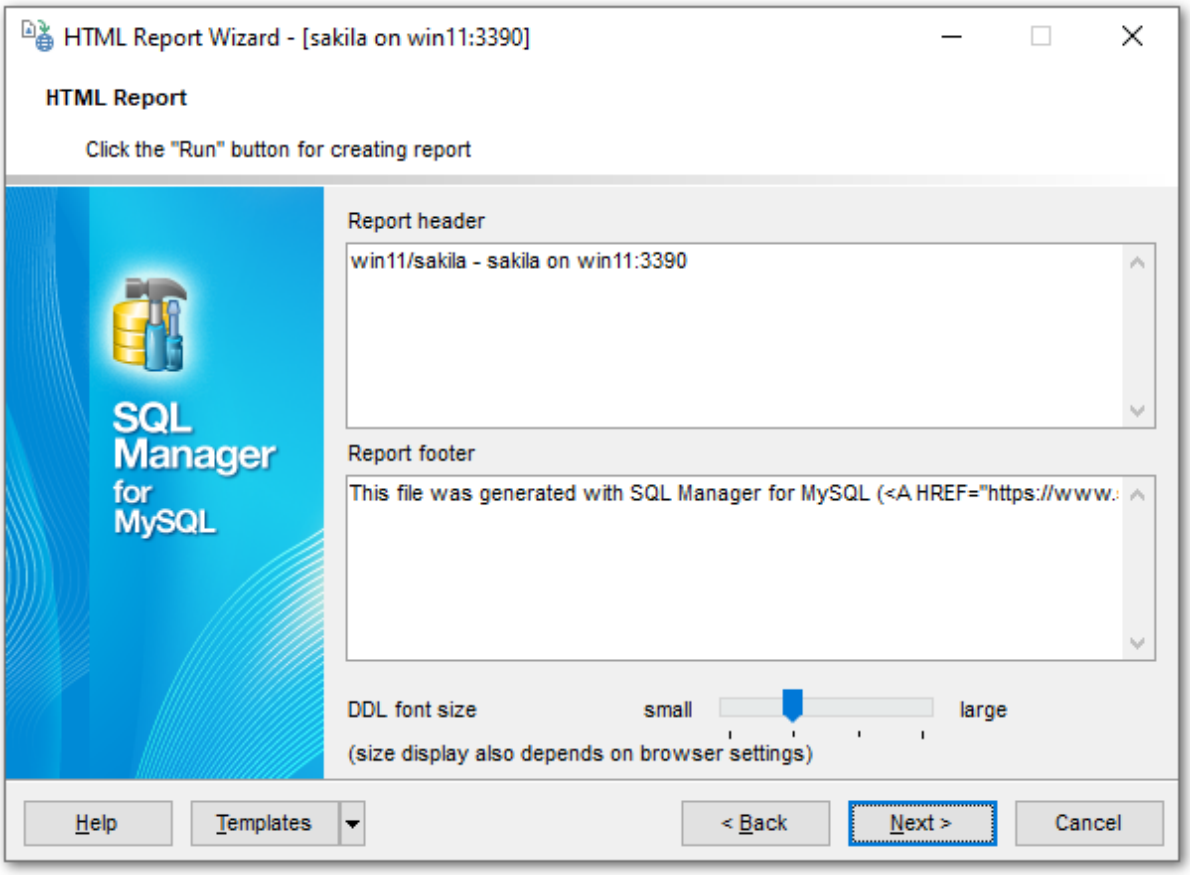
Customize scheme on the **CSS Text** tab.



Click the **Next** button to proceed to the Setting additional report options step of the wizard.

9.1.6.5 Setting additional report options

Use this step of the wizard to set additional HTML report options.



Optionally, you can define text for **Report header** and **Report footer** of the result HTML report. For your convenience the default header and footer text is already available.

You can manage size of DDL text in the result report with the respective slider.

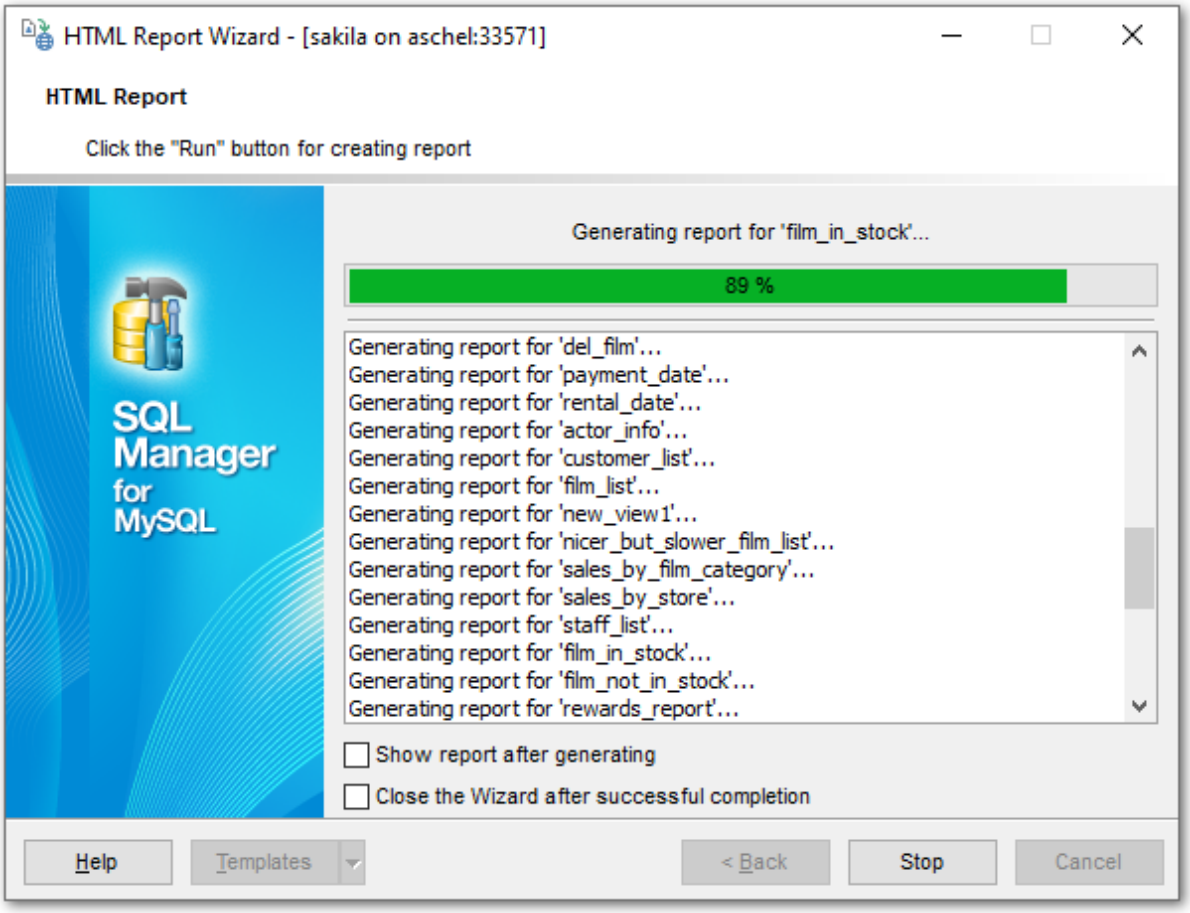
Note: Size display also depends on browser settings.

Click the **Next** button to proceed to Creating HTML report.

9.1.6.6 Creating HTML report

This step of the wizard is intended to inform you that all necessary options have been set, and you can start the process.

The **Operations** tab allows you to view the log of operations and errors (if any).



☑ **Show report after generating**
This option opens the result report in your default browser after generating.

☑ **Close the wizard after successful completion**
If this option is selected, the wizard is closed automatically when the creating HTML report process is completed.

If necessary, you can save a template for future use.

Click the **Run** button to run the process.

9.1.7 Reports management

SQL Manager for MySQL provides several tools for efficient *reports management*:

Create Report Wizard
This tool is used to simplify the process of creating reports.

Report Designer
It is a basic tool for creating powerful reports.

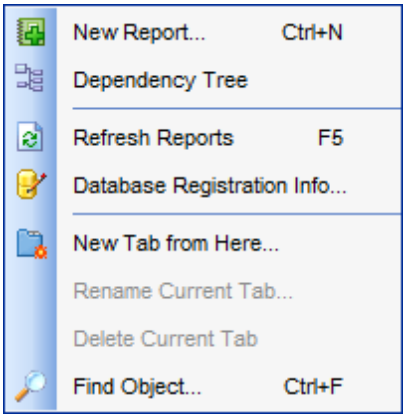
Report Viewer
Allows you to view created reports.

Reports can be stored either in the database (table *mymreports* will be created to store them) or in a directory on your hard drive specified on the Directories page of the Database Registration Info dialog.

9.1.7.1 Create Report Wizard

Using **Create Report Wizard** you can create a report containing required datasets, bands and columns on them, with a definite report style applied.

To start the wizard, select the **Database | New Object...** main menu item, then select **Report** in the Create New Object dialog. Alternatively, you can right-click the **Reports** node of the DB Explorer tree and select the **New Report...** item from the context menu.



- Specifying report name and options
- Selecting report bands
- Selecting report style
- Specifying paper settings
- Specifying margins
- Specifying other page settings

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Report Designer

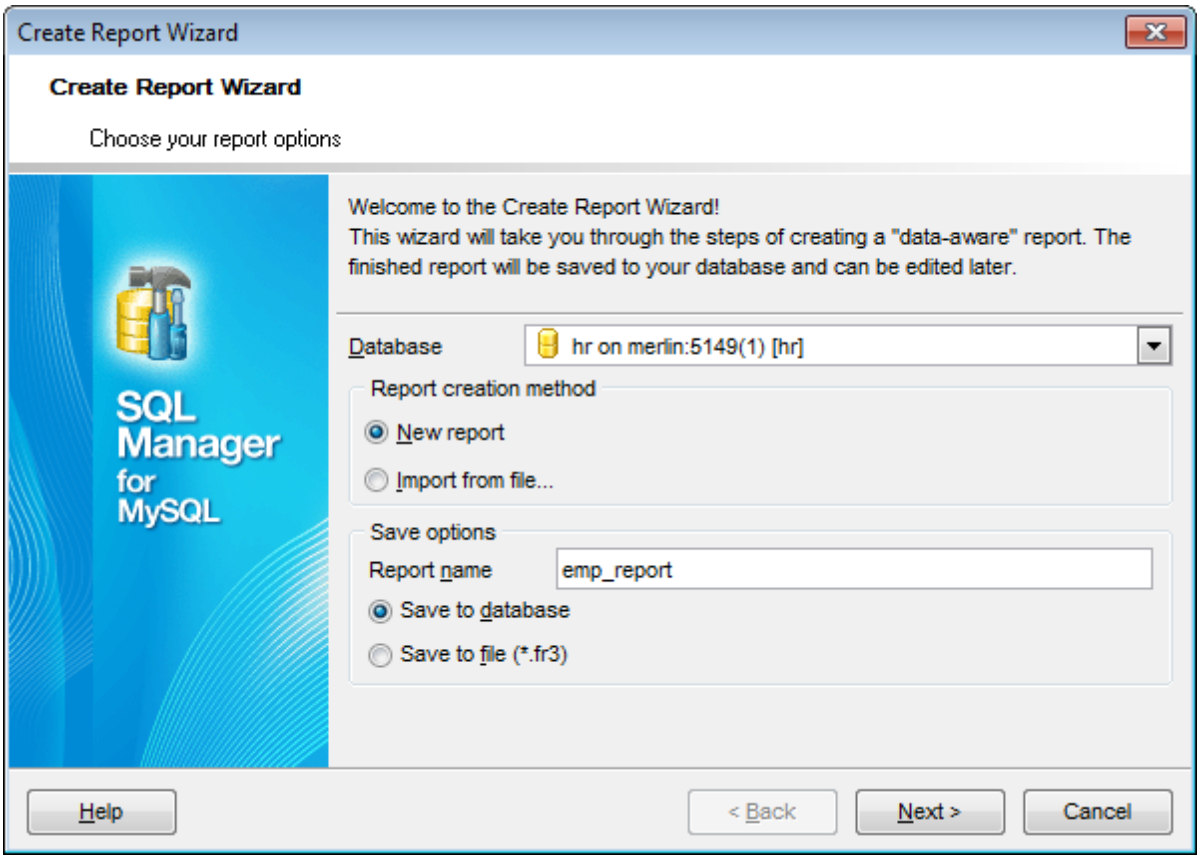
Report Viewer

9.1.7.1.1 Specifying database name and report options

Select the source **database** for adding a report and choose the action you need to perform: either *create a new report* or *import an existing report from file*.

Set the **name** for the new report and specify the save options for it:

Save to database
The report will be created on the server inside the database.
Save to file
If this option is selected, the report will be saved as a **.fr3* file to the directory specified on the Directories page of the Database Registration Info dialog.

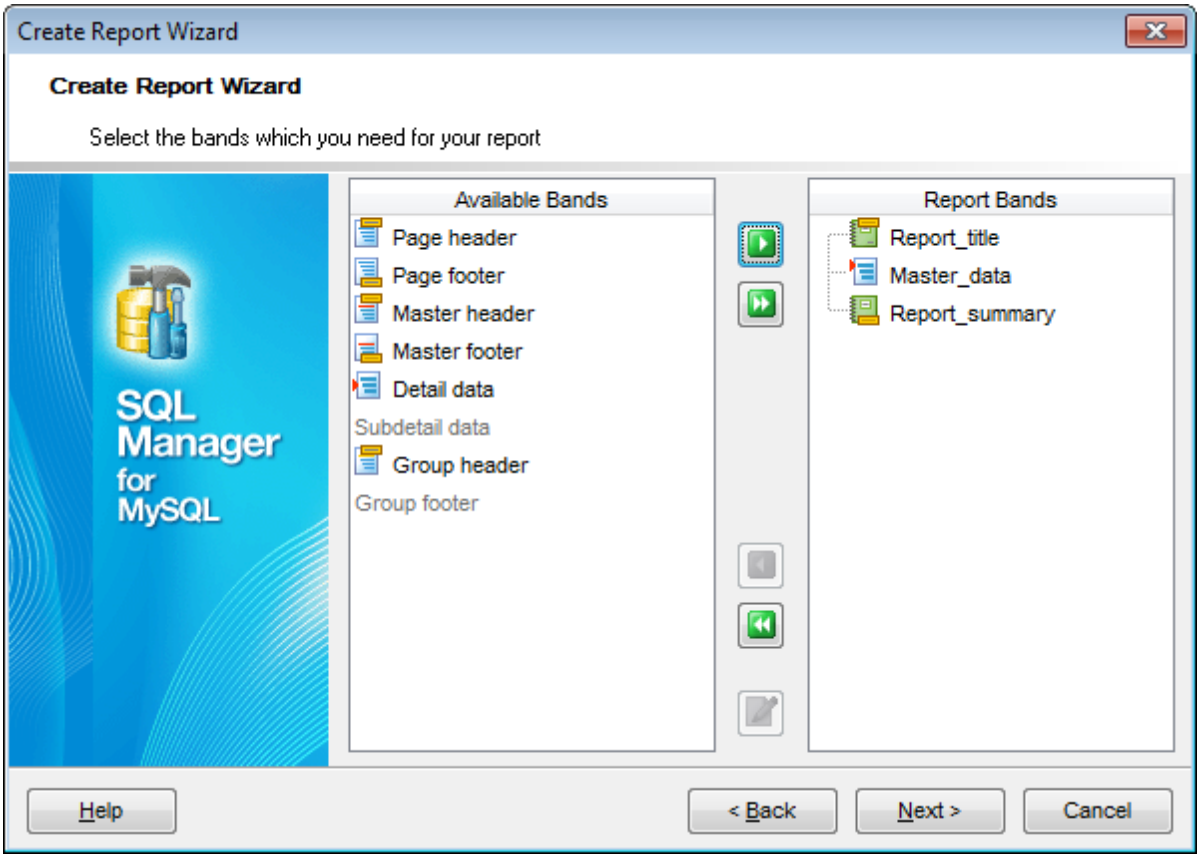


Click the **Next** button to proceed to the Selecting report bands step of the wizard.

9.1.7.1.2 Selecting report bands

This step of the wizard allows you to select the bands to be included in the report. To select a band, you need to move it from the **Available Bands** list to the **Report Bands** list. Use the buttons or drag-and-drop operations to move the columns from one list to another.

Use the **Edit** button to create datasets for 'data' bands using Query Builder.



Brief information about bands functionality is listed below. See **FastReport Help** for more information.

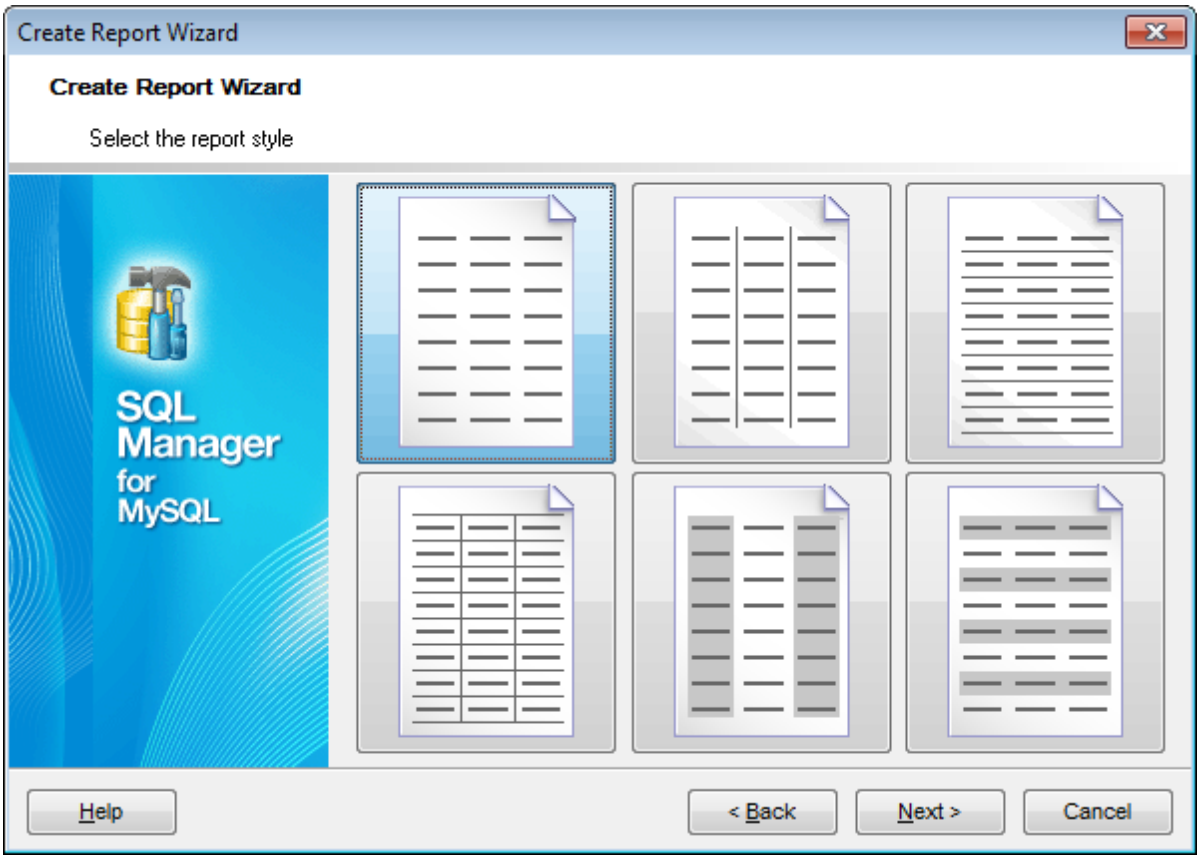
Name	**Functionality**
Report title	*Prints once at the beginning of report*
Report summary	*Prints once at the end of report*
Page header	*Prints at the top of each page*
Page footer	*Prints at the bottom of each page*
Master header	*Prints at the beginning of master list*
Master data	*Data rows of master list*
Master footer	*Prints at the end of master list*
Detail header	*Prints at the beginning of detail list*
Detail data	*Data rows of detail list*

Detail footer	*Prints at the end of detail list*
Subdetail header	*Prints at the beginning of subdetail list*
Subdetail data	*Data rows of subdetail list*
Subdetail footer	*Prints at the end of subdetail list*
Group header	*Prints at the beginning of each group*
Group footer	*Prints at the end of each group*

Click the **Next** button to proceed to the Selecting report style step of the wizard.

9.1.7.1.3 Selecting report style

Select the report style by clicking one of the images illustrating the styles available for the report.

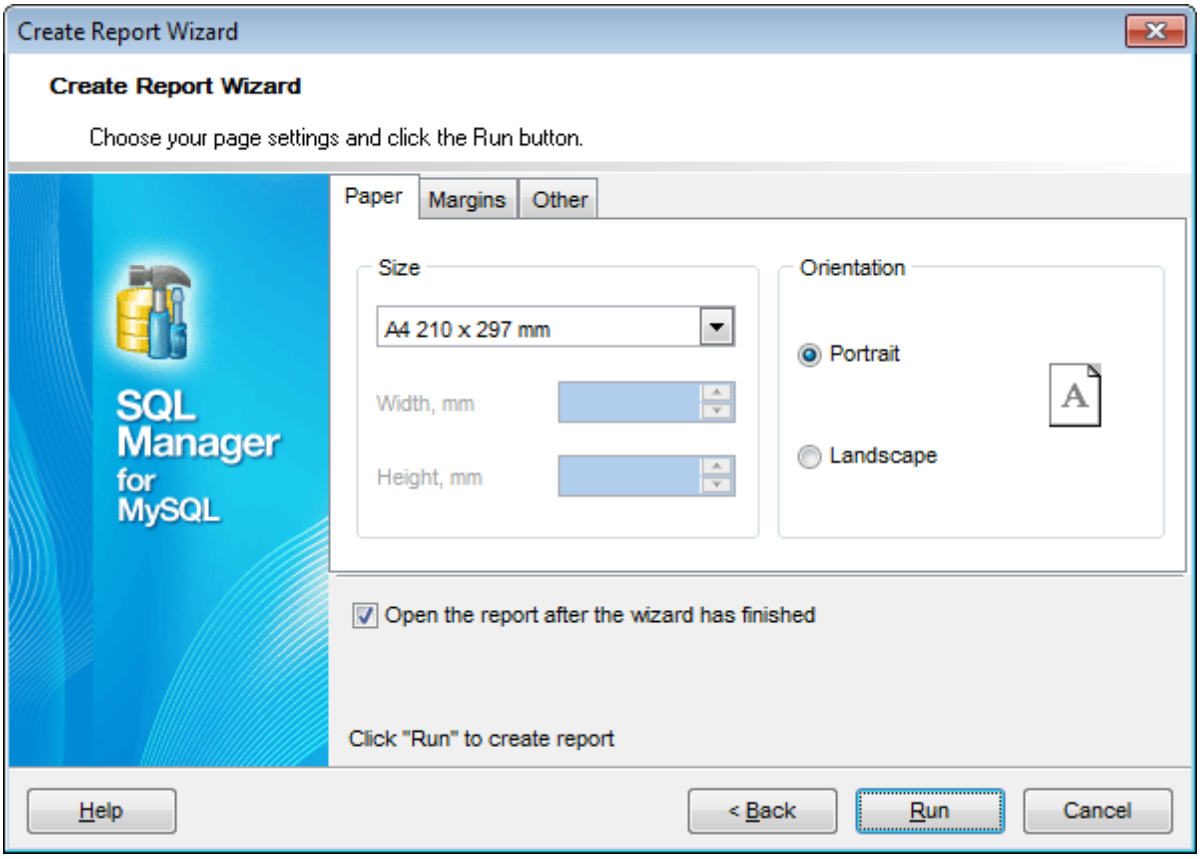


Click the **Next** button to proceed to the Specifying paper settings step of the wizard.

9.1.7.1.4 Specifying page settings

9.1.7.1.4.1 Specifying paper settings

Specify report options: paper *size* and *orientation*, page margins, other settings.



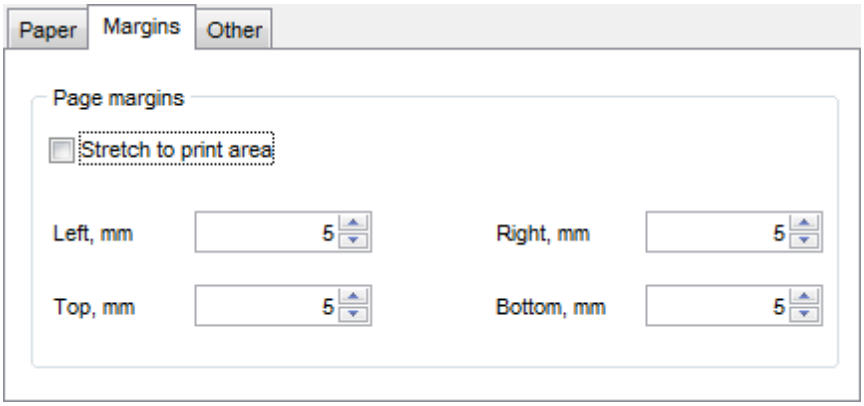
Use the **Margins** tab to specify margins for the result report.

☑ **Open the report after the wizard has finished**
If this option is checked, the report will be opened in Report Designer after generating.

When you are done, click the **Run** button to run the report generation process.

9.1.7.1.4.2 Specifying margins

☑ **Stretch to print area**
If this option is checked, the size of report is adjusted to the print area. If this option is unchecked, you can specify the *left*, *right*, *top* and *bottom* margins (in millimeters).



Use the **Other** tab to specify other page settings for the result report.

Open the report after the wizard has finished
If this option is checked, the report will be opened in Report Designer after generating.

When you are done, click the **Run** button to run the report generation process.

9.1.7.1.4.3 Specifying other page settings

Options

Print to previous page
This option allows to use white space on a previous page. This option can be used in case when a report template consists of several pages or when printing batch (composite) reports.

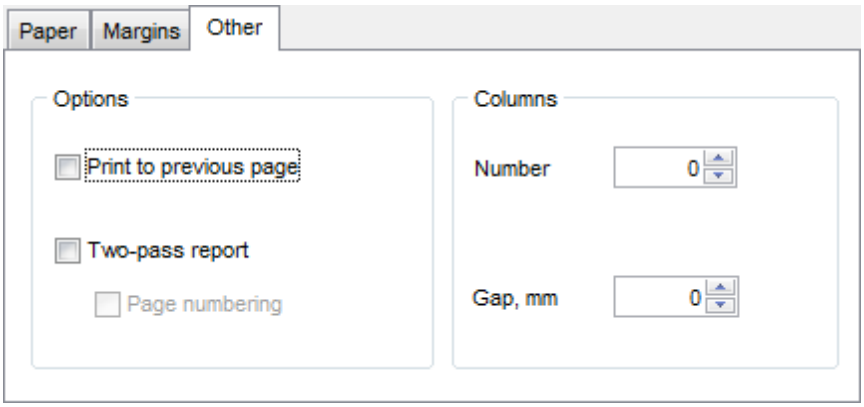
Two-pass report
If this option is selected, report's formation will be performed in two steps. During the first pass, a report is formed, and is divided into pages, but the result is not saved anywhere. During the second pass a standard report formation with saving a result in the stream is performed.

Page numbering
This option allows to print a page numbers.

Columns

Number
This parameter specifies the number of columns for multi-column reports' printing.

Gap, mm
This parameter specifies the width of the gap between columns.



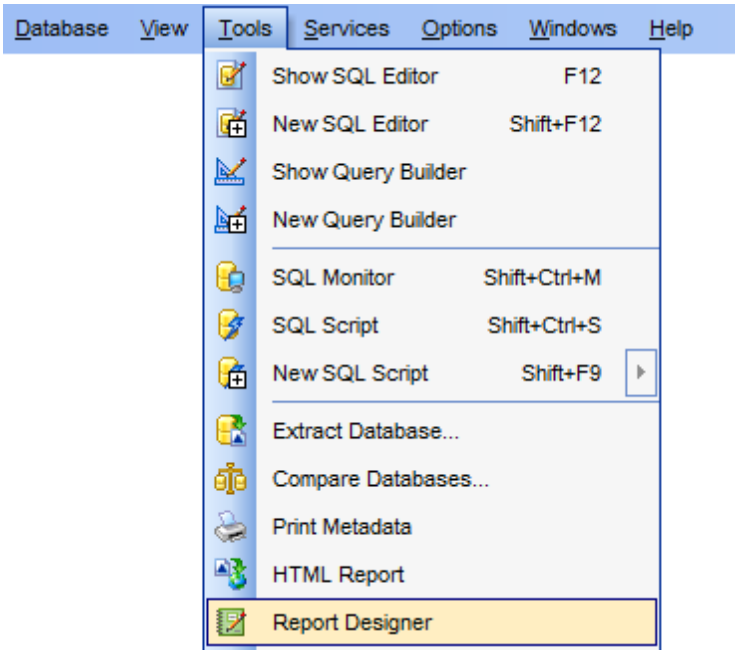
Open the report after the wizard has finished
If this option is checked, the report will be opened in Report Designer after generating.

When you are done, click the **Run** button to run the report generation process.

9.1.7.2 Report Designer

Report Designer allows you to create and edit reports. This tool can be opened after completion of Create Report Wizard to design a new report.
To edit an already existing project, use the appropriate Navigation bar item of Report Viewer.

This module is provided by Fast Reports, Inc. (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 the **Report Designer** below:

- Adding dialog form
- Adding database and query components
- Adding report data
- Viewing the report
- Saving the report

Note: The **Object Inspector** which allows you to edit report object properties, can be shown/hidden by pressing the **F11** key.

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

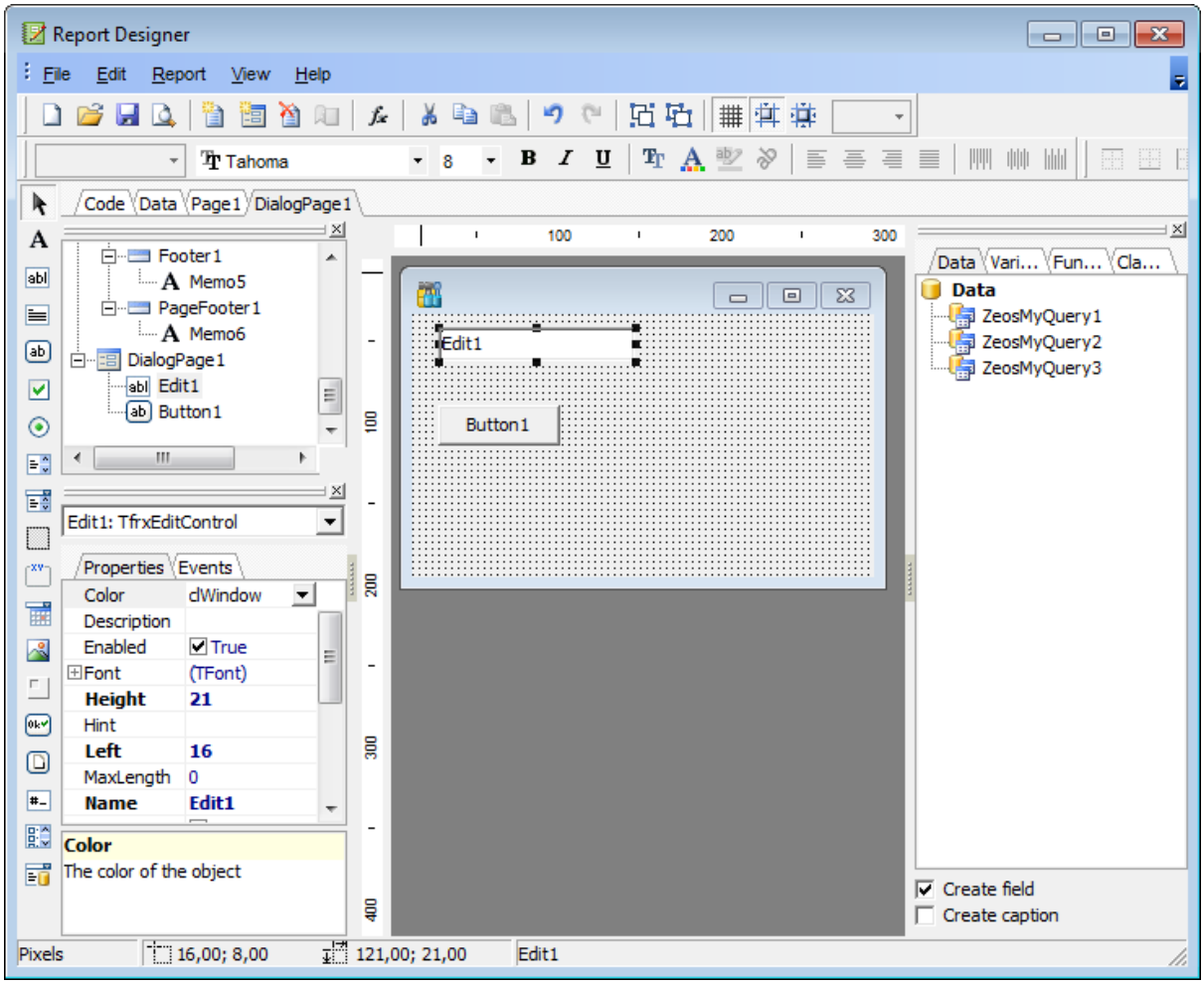
Create Report Wizard

Report Viewer

9.1.7.2.1 Adding dialog form

To add a dialog form, select the **File | New Dialog** main menu item in **Report Designer**.

The new dialog appears within the *DialogPage1* tab of the designer. Use the available RAD tools to add necessary interface elements to the dialog.



To call the dialog, proceed to the **Code** tab and supply the corresponding statement (*PascalScript*), e.g.

```
begin
DialogPage1.ShowModal;
end.
```

Using the **Language** drop-down list you can select the script language to be used for the event handler: *PascalScript* (by default), *C++Script*, *BasicScript*, *Jscript*.

For instance, the following C++Script code can be used as the handler for the *OnClick* event of the 'Show' button to open ZeosMyQuery:

```
{
 ZeosMyQuery1.Active = true;
```

```
}
```

See also:

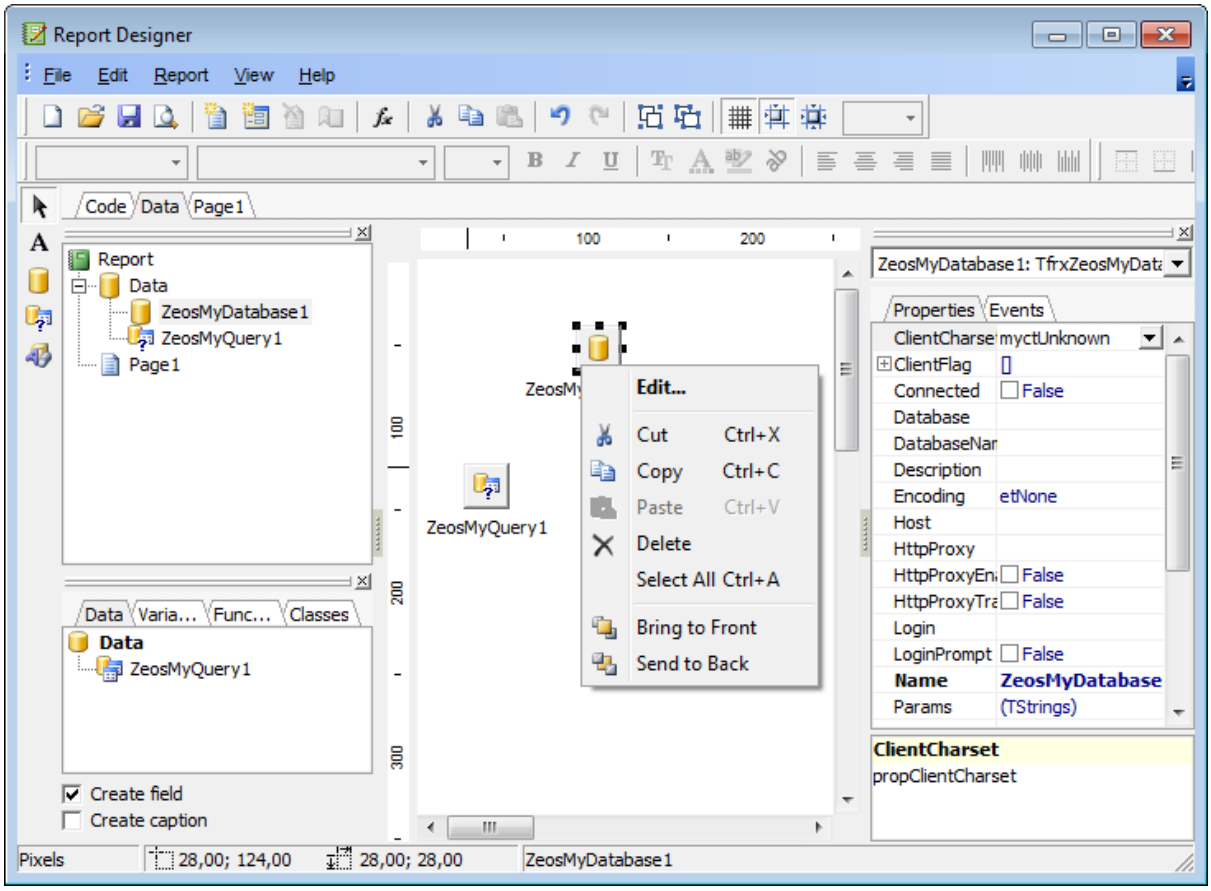
Adding database and query components
Adding report data
Viewing the report
Saving the report

9.1.7.2.2 Adding database and query components

Adding database component

In order to add the *Database* component:

- proceed to the **Data** tab of **Report Designer**;
- pick the **Zeos MySQL Database** component on the toolbar (on the left);
- click within the working area - the corresponding *ZeosMyDatabase1* icon appears in the area;
- set the database connection and authorization parameters using the **Properties Inspector**.

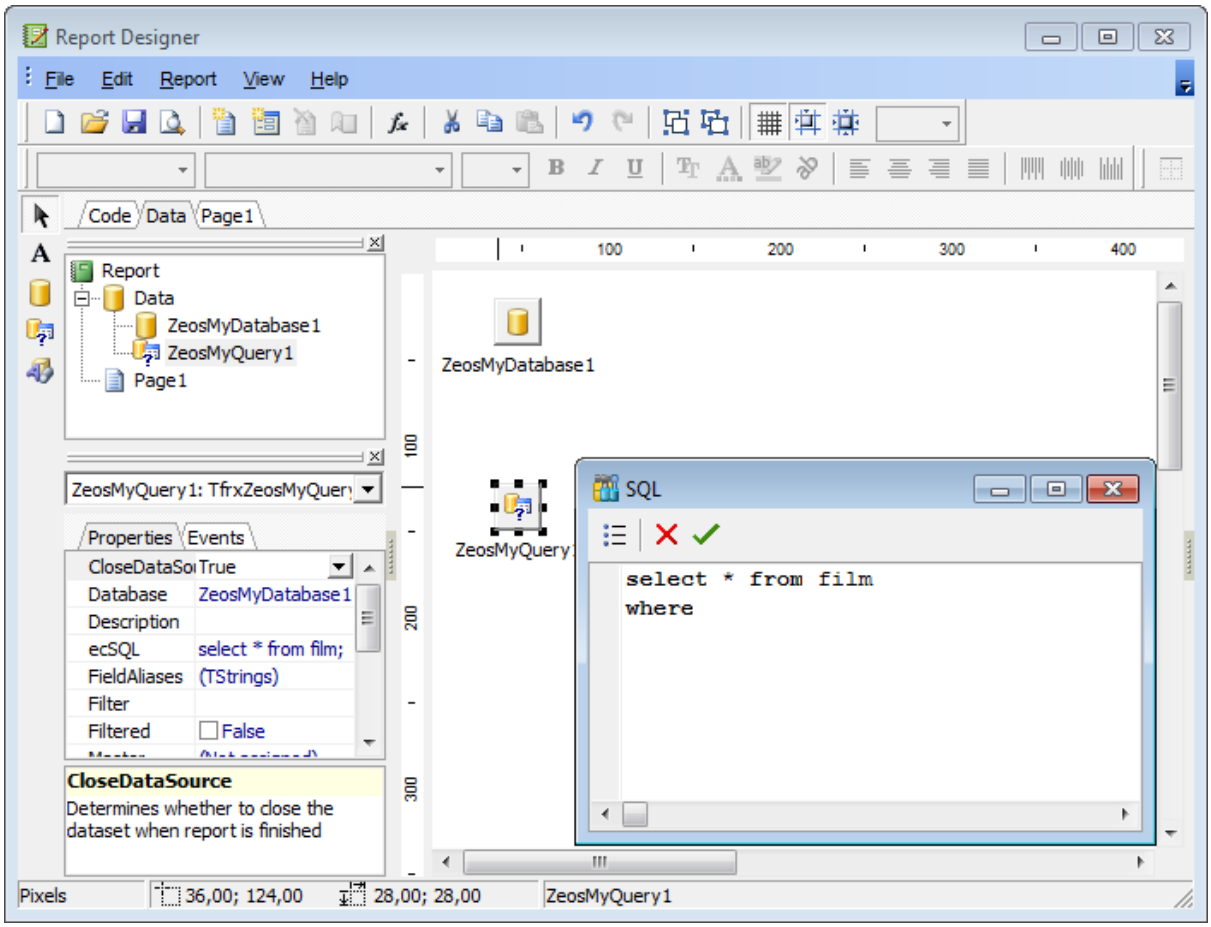


Adding query component

In order to add the *Query* component:

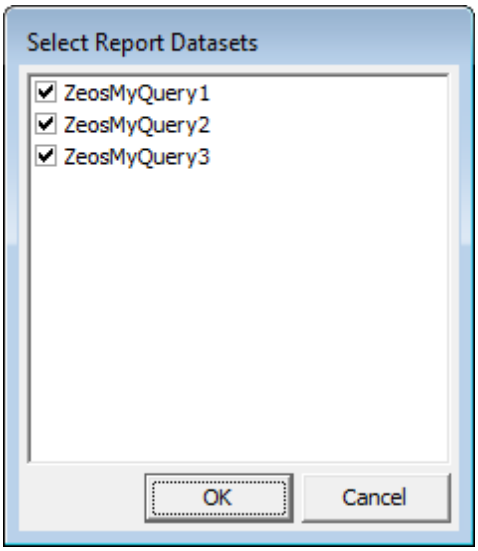
- proceed to the **Data** tab of **Report Designer**;
- pick the **Zeos MySQL Query** component on the toolbar (on the left);
- click within the working area - the corresponding *ZeosMyQuery1* icon appears in the area;
- set the database name and authorization parameters within the **Properties Inspector** ;
- double-click the *ZeosMyQuery1* icon to open the **SQL** window;
- input the SQL query that returns the required dataset and click the button;

- repeat the operation if you wish to add other query components to the report.



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

Using the above given steps you can create as many queries as you need. In order to select a dataset returned by a query, select the **Report | Data...** main menu item of **Report Designer** to call the **Select Report Datasets** dialog. Pick the required query within the dialog and press **OK**.



See also:

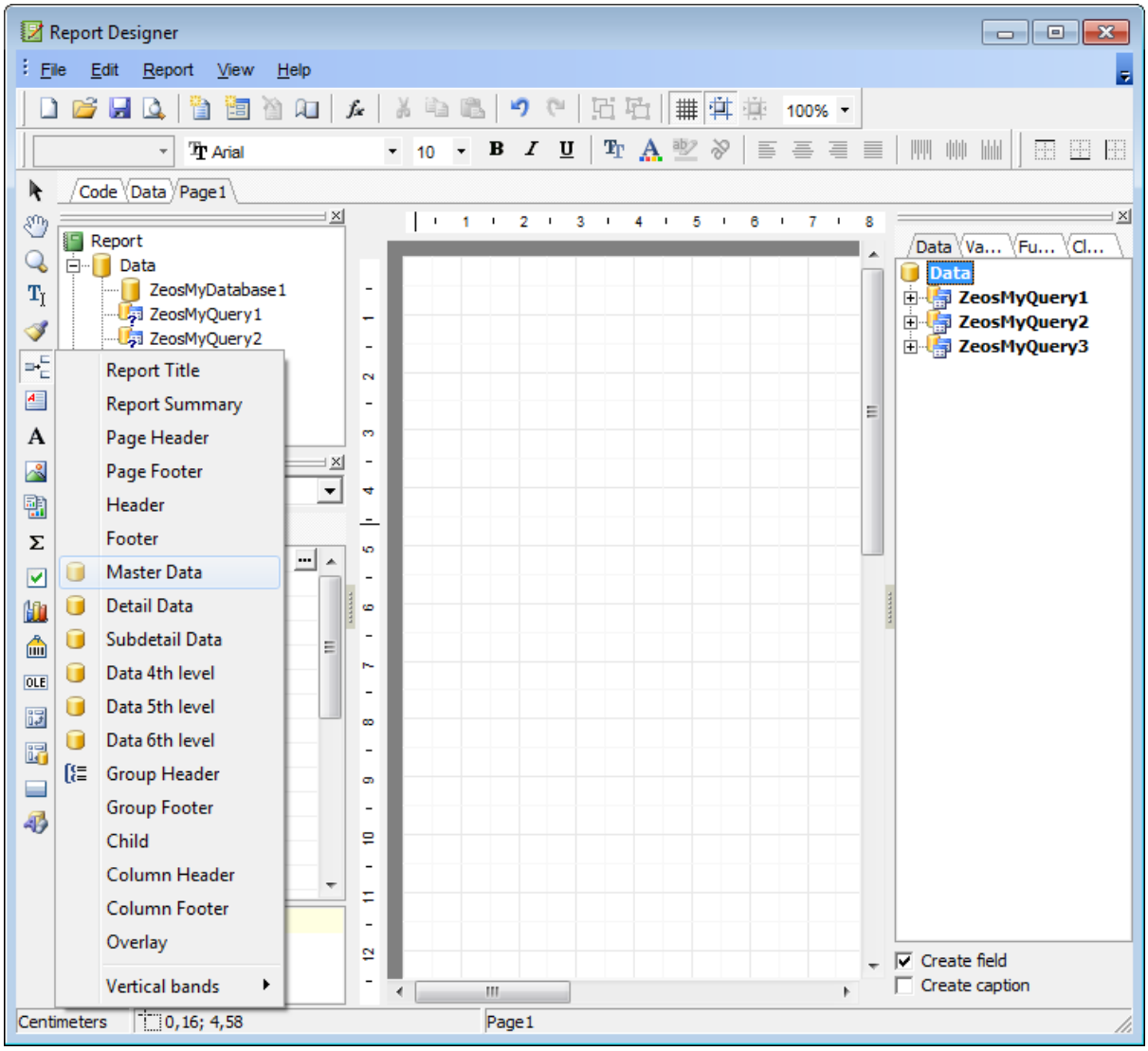
[Adding dialog form]
[Adding report data]
[Viewing the report]
[Saving the report]

9.1.7.2.3 Adding report data

Adding bands

In order to add a band to the report:

- proceed to the **Page1** tab of **Report Designer**;
- pick 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**.

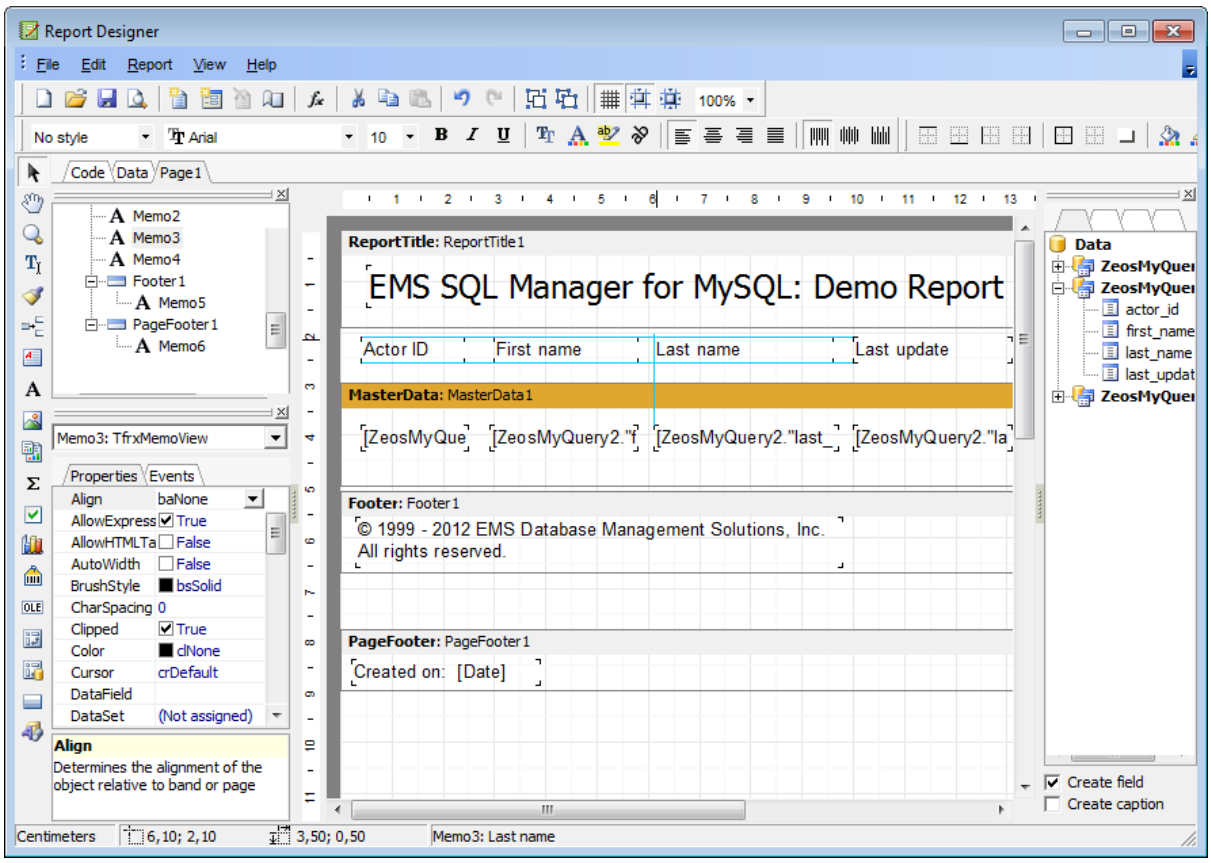


Adding report data

In order to add data to the report:

- proceed to the **Data** tab within the panel on the right side of the window;
- pick a column 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.



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

See also:

Adding dialog form

Adding database and query components

Viewing the report

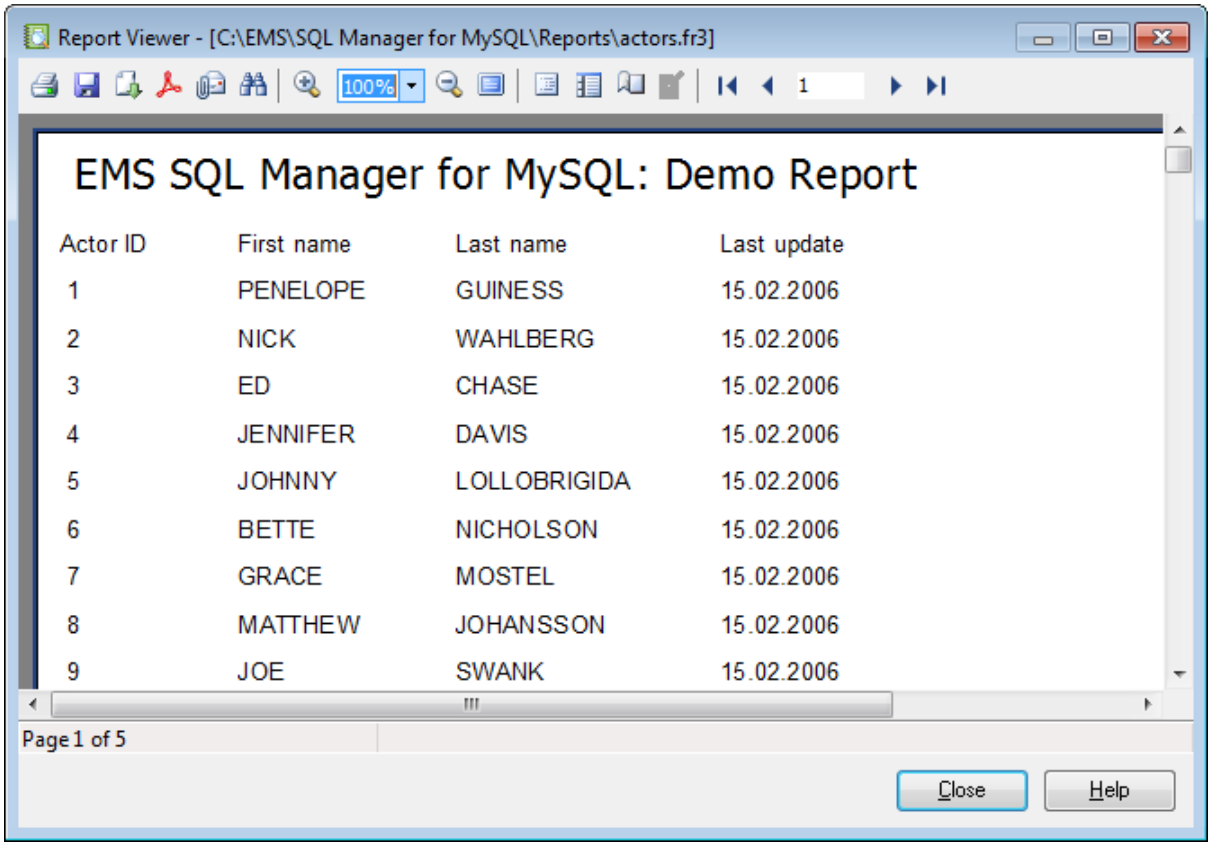
Saving the report

9.1.7.2.4 Viewing the report

Viewing the report

To preview the newly created report, select the **File | 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.



It is also possible to preview/print the report using Report Viewer.

See also:

Adding dialog form
Adding database and query components
Adding report data
Saving the report

9.1.7.2.5 Saving the report

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

To save the report, select the **File | Save** main menu item or use the corresponding  **Save Report** toolbar button. You can also use the *Ctrl+S* shortcut for the same purpose.

If necessary, you can add the report to the database using Create Report Wizard and perform preview/print operations using Report Viewer.

See also:

Adding dialog form

Adding database and query components

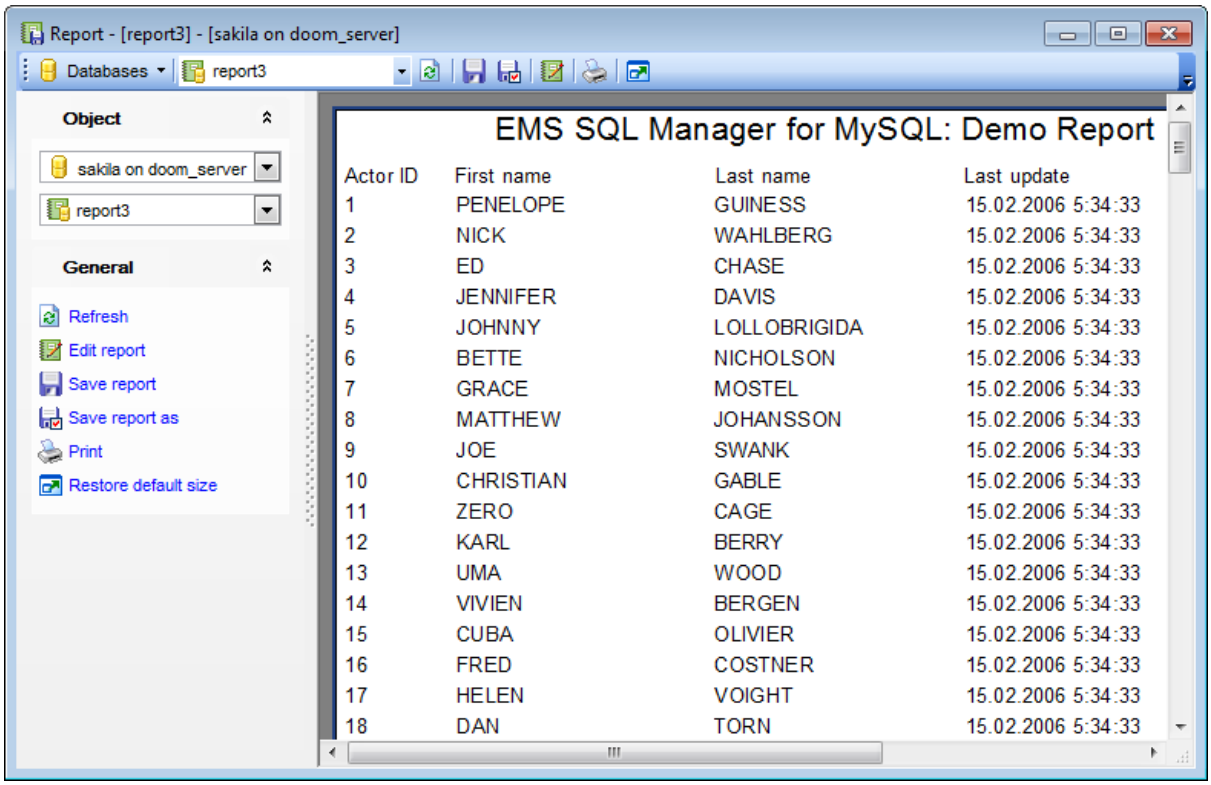
Adding report data

Viewing the report

9.1.7.3 Report Viewer

Using **Report Viewer** you can view, edit, save and print reports.

Possible report operations are described on the Using Navigation bar and Toolbar page.



Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

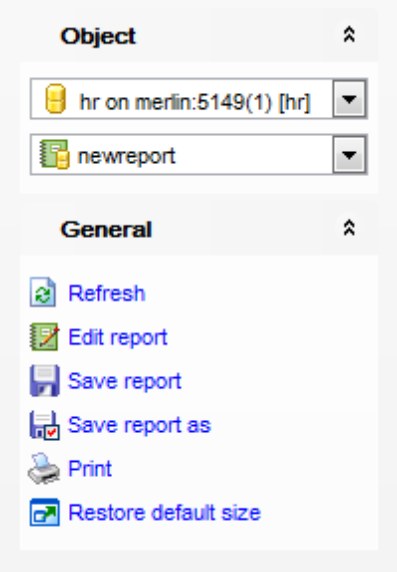
See also:

Create Report Wizard

Report Designer

9.1.7.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Report Viewer**.



The **Navigation bar** of **Report Viewer** allows you to:

Object
select a database
select a report for viewing

General
refresh the content of the window
edit report using Report Designer
save the current report
save the report to a **.fr3* file using the **Save as...** dialog
print the report
restore the default size and position of the viewer window

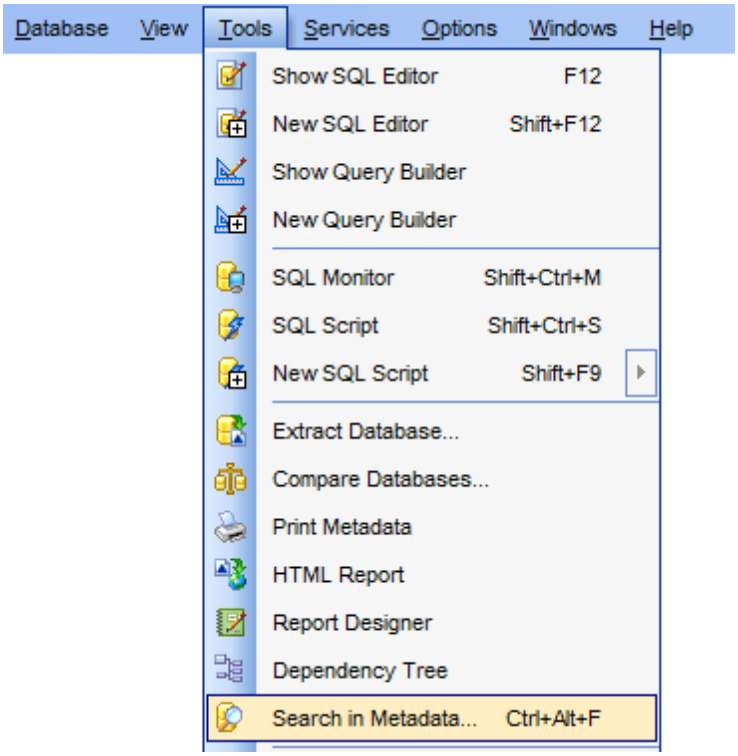
Items of the **Navigation bar** are also available on the **ToolBar** of the **Report Viewer** window. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

9.1.8 Search in Metadata

The **Search in Metadata** tool is implemented for quick search within the scope of database metadata. The tools allow you to set various search conditions and view the results.

To launch the **Search in Metadata** tool, select the **Tools | Search in Metadata** main menu item, or use the *Ctrl+Alt+F* shortcut.

- Using Navigation bar and Toolbar
- Setting search conditions
- Viewing search results

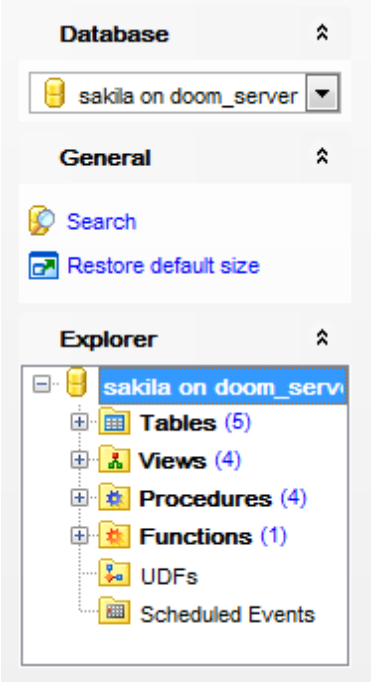


See also:

Database Objects Management

9.1.8.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Search in Metadata**.



The **Navigation bar** of the **Search in Metadata** tool allows you to:

Database group
select a database for searching

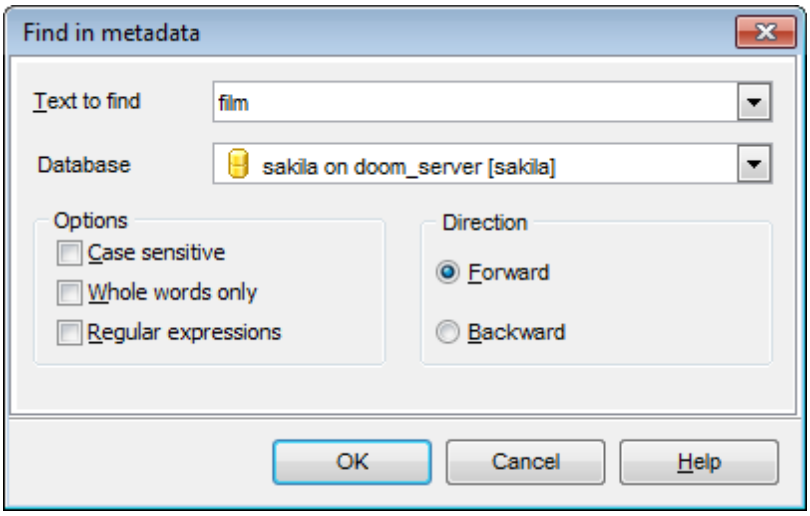
General group
set search conditions
restore the default size and position of the window

Explorer group
browse the tree of found database objects

Items of the **Navigation bar** are also available on the **ToolBar** of the **Search in Metadata** tool. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

9.1.8.2 Setting search conditions

The **Find in metadata** dialog allows you to set search conditions. It opens each time the **Search in Metadata** tool is launched.



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.

Database
Use the drop-down list to select a database for the search operation.

Options
Available search options are similar to those provided by the **Find Text** dialog. For detailed description of the search options refer to the Find Text dialog page.

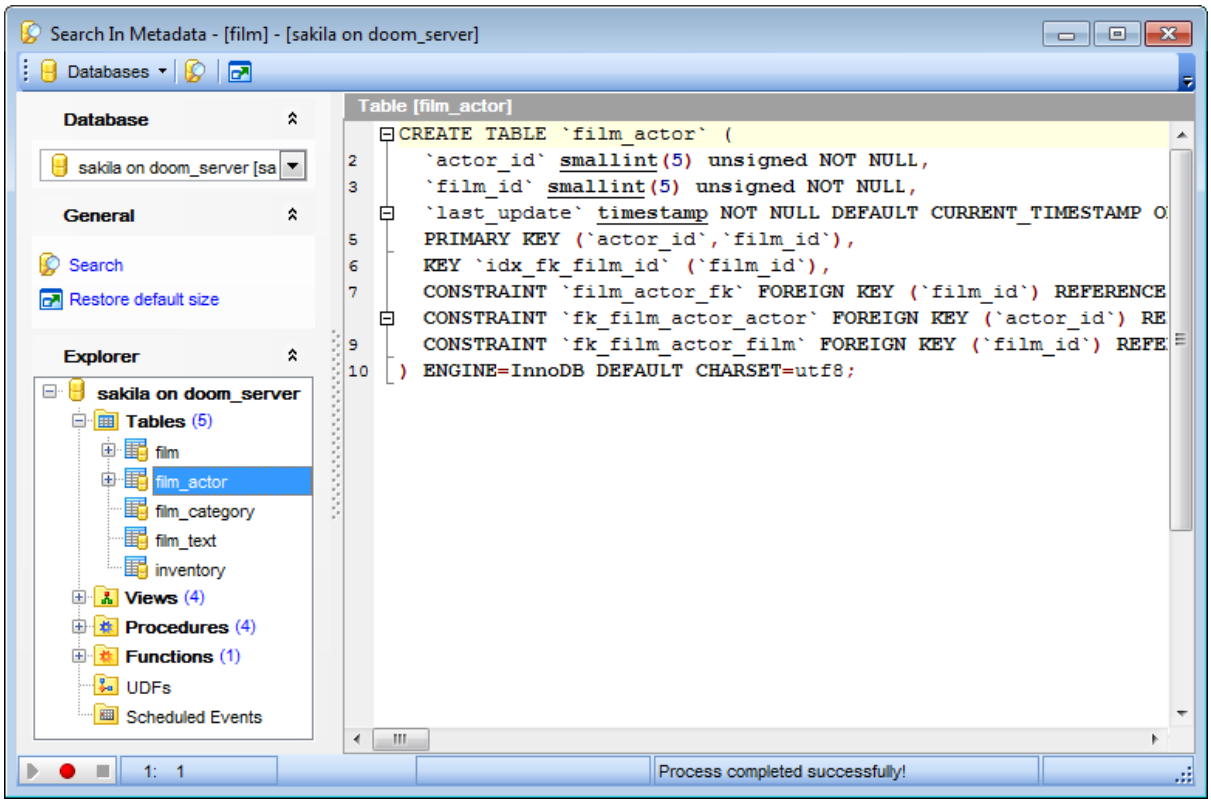
When all the options are set, click OK. The **Search in Metadata [search string]** report window will display the search progress and results.

See also:

Find Text dialog

9.1.8.3 Viewing search results

The **Search in Metadata** window allows you to view the search progress and results fetched from the database.



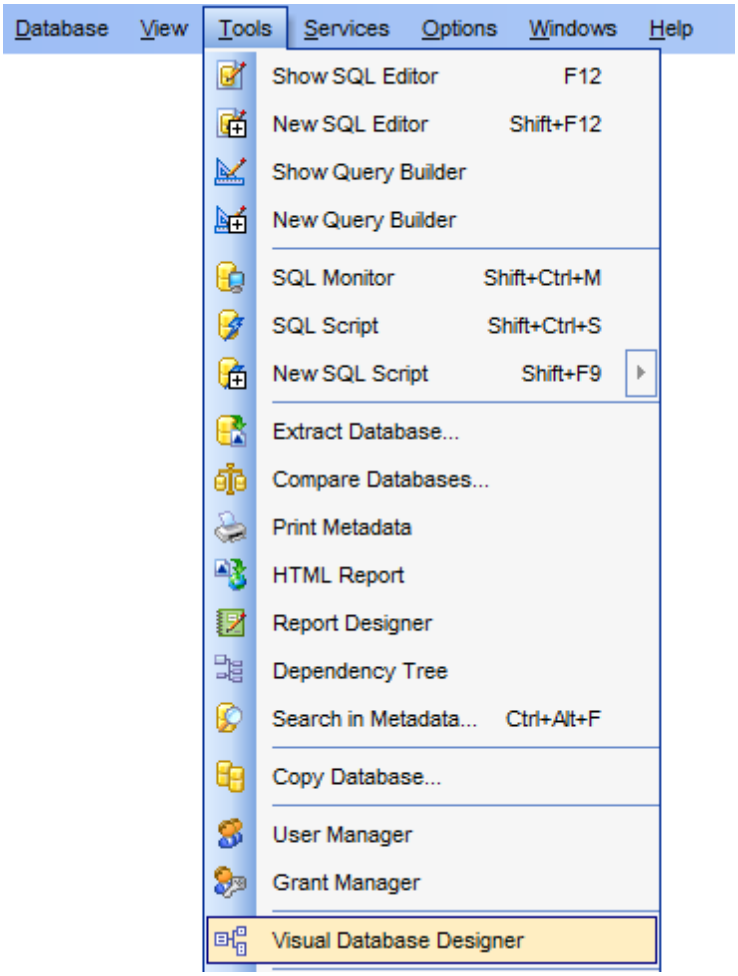
After the search is complete, the **Explorer** group on the Navigation bar displays the tree of database objects in which the search string is found, and allows you to view metadata of the required object or its fragment quickly by clicking enclosed object branches in the tree.

The **Object <object_name>** area is provided for viewing metadata of the objects, with the search string highlighted.
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see Working with SQL Editor area and Using the context menu.

9.1.9 Visual Database Designer

Visual Database Designer is provided for visual presentation of databases, database objects and relations between objects. It also allows you to create, edit and drop tables and table columns, set relations between tables and perform other operations you may need to achieve your purpose.

To open the designer, select the **Tools | Visual Database Designer** main menu item, or use the **VDBD** button on the main toolbar.



- Using Navigation bar and Toolbars
- Using Diagram Navigator and DB Objects pane
- Using context menus
- Adding/removing objects to/from diagram
- Incremental search
- Creating new objects
- Creating relations
- Working with diagram pages
- Reverse engineering
- Printing diagram
- Saving/loading diagram
- Setting diagram options

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

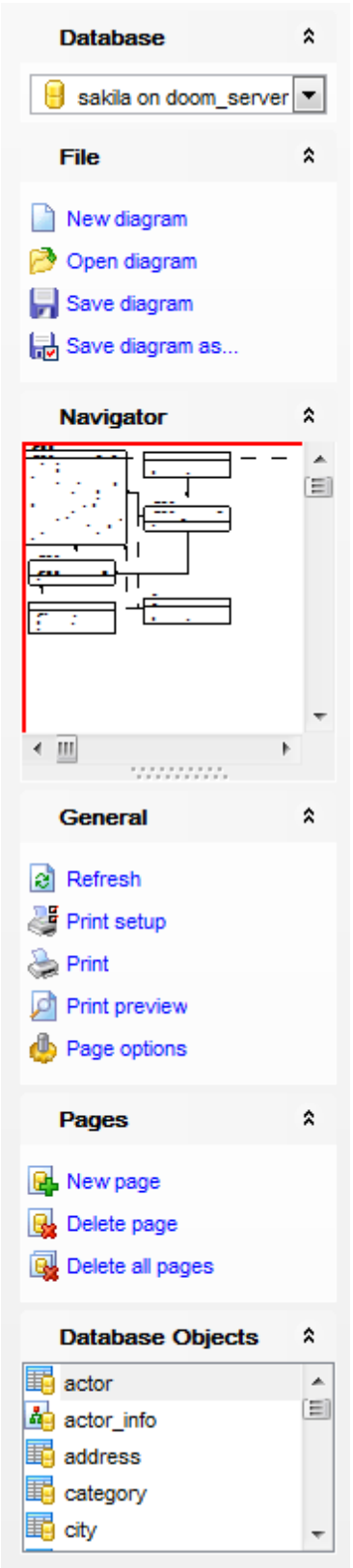
See also:

Database Objects Management

Visual Database Designer options

9.1.9.1 Using Navigation bar and Toolbars

The **Navigation bar** and **Toolbars** provide quick access to tools implemented in **Visual Database Designer**.



The **Navigation bar** of **Visual Database Designer** allows you to:
Database group
select a database for building the diagram

General group
edit diagram options
restore the default size and position of the window
set printing options using the **Print Setup** dialog
preview the diagram
print the diagram
refresh objects in the diagram

Navigator group
use Diagram Navigator

Database Objects group
search for objects in the diagram using the Database Objects pane
add objects to the diagram using the Database Objects pane

The **Toolbars** of **Visual Database Designer** provide quick access to most tools for working with diagrams.
To enable the toolbars, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbars only) or *Both* (if you need both the toolbars and the Navigation bar) in the **Bar style for child forms** group.

The **main toolbar** (by default, the toolbar is located at the top of the diagram area) contains a number of tools (including items of the **Navigation bar**, context menu, tools for printing diagram, etc.) allowing you to:

- select the database for building the diagram;
- undo/redo;
- create a new diagram;
- open an existing diagram;
- save the current diagram to a **.myd* file;
- save the current diagram as an image;
- activate the Incremental search panel;
- adjust diagram zoom for optimal representation: *zoom in*, *zoom out*, *fit model*;
- switch cursor mode: *select* / *select rectangle to fit*;
- open the Print Setup dialog;
- print the diagram;
- show Print Preview;
- arrange objects in the diagram;
- extract metadata of all objects in the diagram and load the script to SQL Script Editor;
- perform Reverse Engineering;
- refresh objects in the diagram;
- view/edit diagram options;
- specify a predefined zoom value;
- restore the default size and position of the window.

The **Pages** toolbar (by default, the toolbar is located at the top of the diagram area) contains tools for working with diagram pages allowing you to:

- *add* a new page;
- *delete* the current page;
- *delete all* pages.

The **Object Customization** toolbar (by default, the toolbar is located at the top-left of the diagram area) contains tools for customizing text elements on the diagram allowing you to:

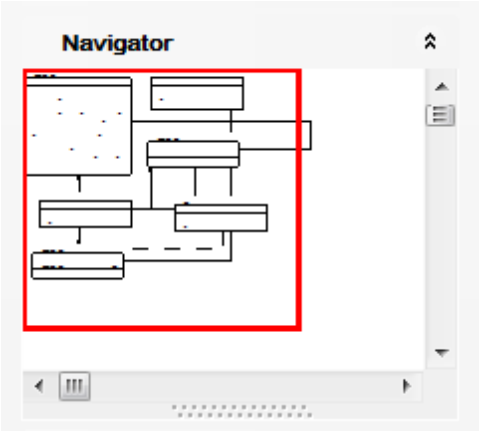
- change text font;
- define font size;
- set text style: *bold*, *italic* or *underline*;
- specify text color;
- specify frame color;
- specify background color.

Diagram toolbar located on the left allows you to:
switch to object selection mode;
switch to create table mode (enables creating tables on clicking);
switch to create relation mode;
switch to create virtual relation mode;
switch to create comment mode;
align left edges;
align right edges;
align tops;
align bottom;
align horizontal centers;
align vertical centers;
space equally, horizontal;
space equally, vertical.

See also:
Using Diagram Navigator and DB Objects pane
Using context menus
Adding/removing objects to/from diagram
Incremental search

9.1.9.2 Using Diagram Navigator and DB Objects pane

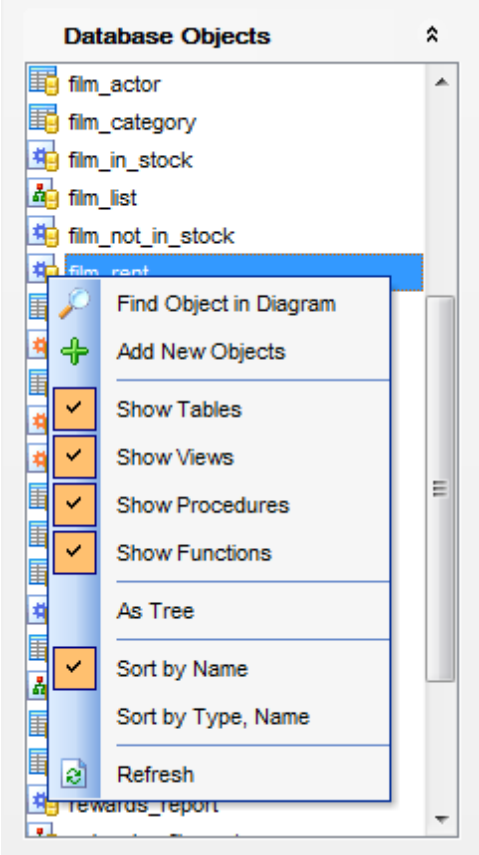
To navigate within the large diagram, use the **Navigator** tool available on the Navigation bar. It allows you to see the whole diagram in a reduced scale and to perform a number of operations over the diagram objects.



A mouse click in the **Navigator** area sets the center of the visible diagram area. The area currently visible in the main diagram area is outlined in a red bounding rectangle.

Using the **Navigator** you can work with the diagram objects in the same way as in the main diagram area: add/remove, create new objects, move objects within the diagram and perform other operations.

The **Database Objects** pane available on the Navigation bar allows you to browse the list of available database objects that can be added to the diagram.



Select and drag an object to the diagram area or double-click it to add the object to the diagram.

Right-click an item within the list to call the **context menu** allowing you to:
find the selected object in the diagram (if the object is found, it will be highlighted in the diagram area);
add new objects to the diagram by Reverse engineering;
specify whether *tables* are to be displayed;
specify whether *views* are to be displayed;
specify whether *procedures* are to be displayed;
specify whether *functions* are to be displayed;
toggle objects representation mode: *as a tree / as a list*;
select the sorting mode applied to the objects in the list: *by name / by type, name*;
refresh the list.

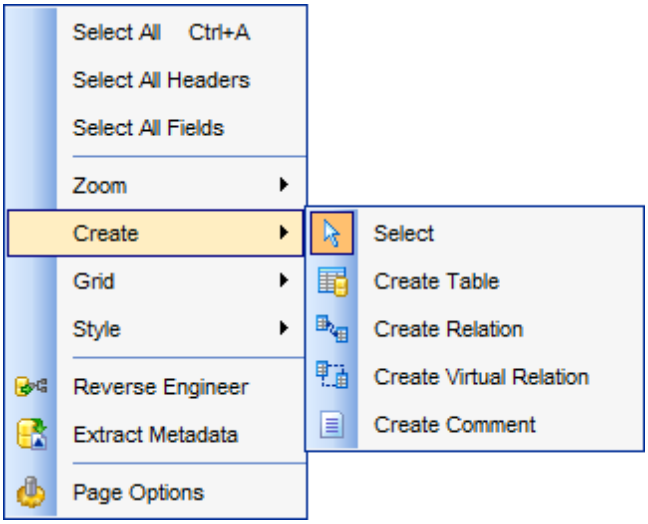
See also:
Using Navigation bar and Toolbars
Adding/removing objects to/from diagram
Creating new objects
Creating relations

Working with diagram pages

9.1.9.3 Using context menus

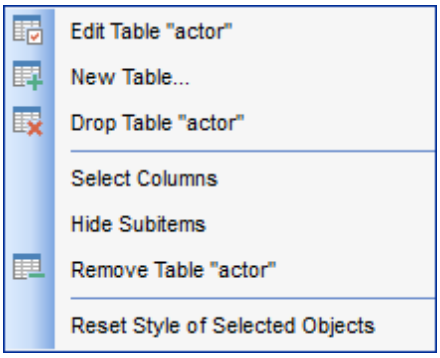
The **context menu** of the diagram area contains a number of items available in the Navigation bar and toolbars and allows you to:

- select all objects in the diagram area;
- adjust diagram zoom for optimal representation: *zoom in*, *zoom out*, *select rectangle to fit*, *fit model*, specify a predefined *zoom* value;
- set the cursor mode to *Select* or create a new table, view, procedure, function, relation, virtual relation, or comment;
- configure the grid: *draw grid*, *snap to grid*;
- adjust the diagram style: *draw primary key* columns *separately*, *draw entities icons*, *draw attributes icons*, *draw only names of entities*, *draw foreign key names*;
- perform Reverse Engineering;
- extract metadata of the diagram objects to SQL Script Editor;
- view/edit diagram options.



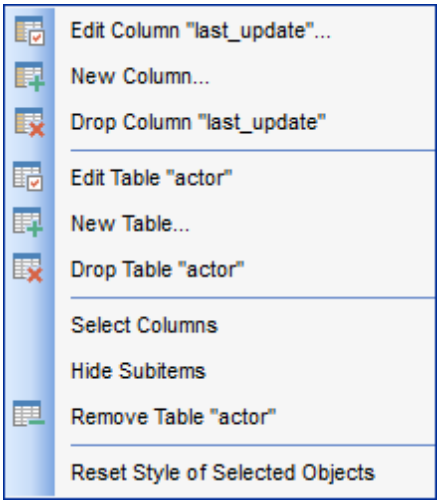
The **context menu** of an entity contains items for working with the object and allows you to:

- edit the object using its editor (Table Editor, View Editor, Procedure Editor, Function Editor);
- create a new object using its editor (New table, View Editor, Procedure Editor, Function Editor);
- drop the object from the database;
- show/hide object subitems (for *tables*) or the entire object (for *procedures*, *functions*);
- remove the object from the diagram (for *tables*, *views*).



The **context menu** of a column contains items for working with the object and its columns and allows you to:

- edit the selected column using its editor (Column Editor);
- create a new column;
- drop the selected column;
- edit the object using its editor (Table Editor);
- create a new object using its editor (New table);
- drop the object from the database;
- show/hide object subitems;
- remove the object from the diagram.



See also:

Using Navigation bar and Toolbars
Adding/removing objects to/from diagram
Incremental search
Creating new objects
Creating relations

9.1.9.4 Working with diagram objects

9.1.9.4.1 Adding/removing objects to/from diagram

To *add* an object to the diagram:

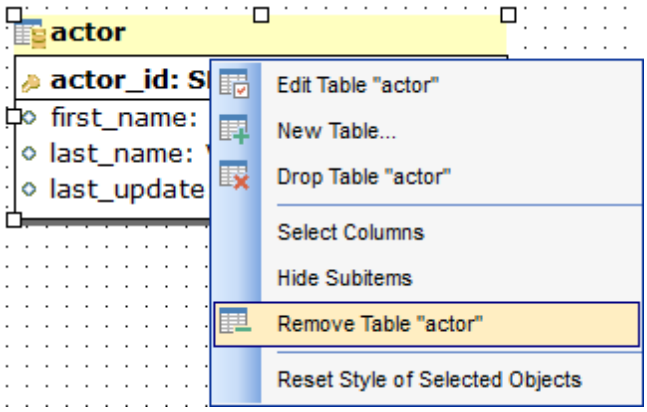
- drag it from the Database Explorer tree to the diagram area

or

- drag it from the Database Objects pane (available on the Navigation bar) to the diagram area or simply double-click this object in the list.

To add objects by Reverse engineering, you can right-click within the **Database Objects** list and select the **Add new objects...** context menu item.

To remove an object from the diagram, select it in the diagram area, then right-click its title and choose the **Remove <object_name>** item from the context menu, or just press the **Del** key.



See also:

Using Navigation bar and Toolbars
Using Diagram Navigator and DB Objects pane
Using context menus
Creating new objects
Creating relations
Reverse engineering
Database Objects Management

9.1.9.4.2 Incremental search

To **search** for an object within the diagram:

- right-click the required object in the Database Objects pane and select the **Find Object in Diagram** item from the context menu

or

- click the **Incremental Search** button on the main toolbar or use the *Ctrl+I* shortcut to activate the Incremental Search panel in the status bar area of the designer window.

Type a string in the edit-box, and the object having the name with the closest match will be highlighted in the diagram area.

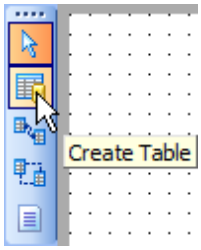
See also:

Using Diagram Navigator and DB Objects pane

9.1.9.4.3 Creating objects

To create a new object using Visual Database Designer:

- press the **Create table** button on the New object toolbar;
- click the desired point on the diagram to place the new object at;
- specify object properties using its editor (New table, View Editor, Procedure Editor, Function Editor).



Hint: To create a new object, you can also select the corresponding item from the context menu. The context menus also allow you to edit and drop database objects.

Note: Before you press the **Compile** button the object is created on the diagram area only but not in the database.

See also:

Using Diagram Navigator and DB Objects pane

Adding/removing objects to/from diagram

Incremental search

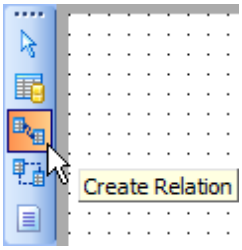
Creating relations

9.1.9.4.4 Creating relations

Creating material relations

To establish a new *material relation* (which is the foreign key in terms of database management):

- press the **Create Relation** button on the New object toolbar;
- click the entity where the referential constraint should be created;
- click the referred entity;
- specify the new foreign key properties using Foreign key Editor.



Creating virtual relations

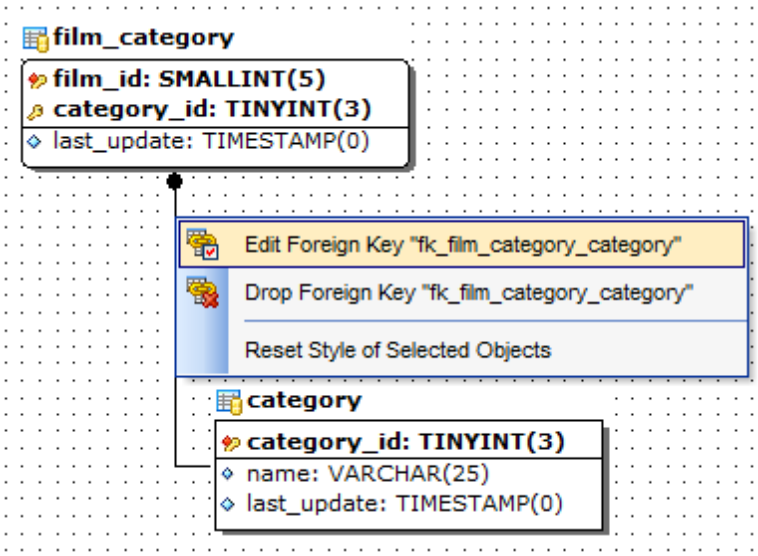
Due to the fact that only tables of InnoDB storage engine support Foreign Keys, **SQL Manager for MySQL** provides an ability to build **virtual relations** between tables of other (non-referential) storage engines (e.g. MyISAM).
Virtual relations do not exist physically, they are only stored in the diagram. They are designed for building database structure visually regardless of the storage engines used. A virtual relation can be materialized further into a Foreign Key when you change the table storage engine to InnoDB.

To establish a new *virtual relation* (which is implemented as a *virtual foreign key*):

- press the **Create Virtual Relation** button on the New object toolbar;
- click the entity where the virtual referential constraint should be created;
- click the referred entity;
- specify the new virtual foreign key properties using Foreign key Editor.

Hint: To create a relation, you can also use the corresponding item of the context menu.

Once the relation is created, it is displayed as a line between two entities in the diagram area. The style the line is drawn is determined by the diagram *notation*.
The **context menu** of this line allows you to edit the foreign key using Foreign key Editor, drop the foreign key from the database, or *materialize* the relation (if it is *virtual*).



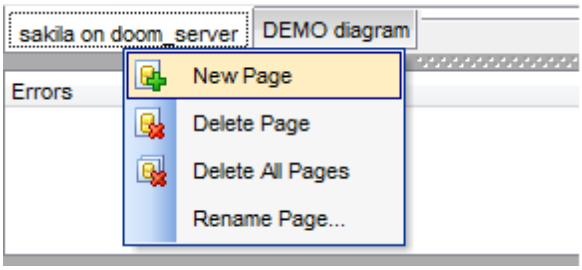
See also:

Using Diagram Navigator and DB Objects pane
Adding/removing objects to/from diagram
Incremental search
Creating new objects

9.1.9.5 Working with diagram pages

You can create several **pages** in one diagram to split the model into several subject groups, e.g. for better comprehension.

To manage diagram pages, right-click on the tabs at the bottom of the diagram area and select the required popup menu items for *adding*, *deleting* and *renaming* pages.



Hint: Page management items are also available on the Pages toolbar of Visual Database Designer.

See also:

Using Diagram Navigator and DB Objects pane

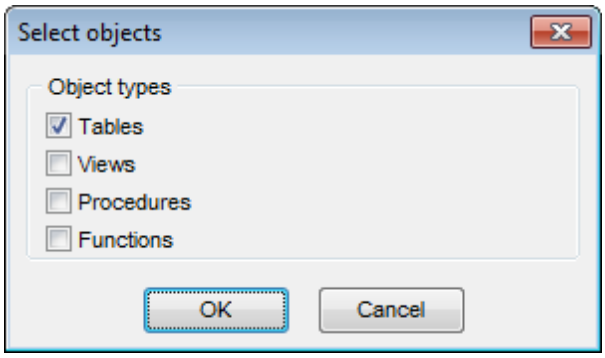
Adding/removing objects to/from diagram

9.1.9.6 Reverse engineering

The **reverse engineering** operation builds relationship diagram on the basis of the current database's structure. The objects are arranged automatically within the diagram model.

To start the reverse engineering process, press the **Reverse Engineer** button on the main toolbar, or use the corresponding item of the context menu.

The **Select objects** dialog allows you to specify the object types to be placed on the diagram upon reverse engineering: tables, views, procedures, functions.



See also:

Using Navigation bar and Toolbars

Using Diagram Navigator and DB Objects pane

Adding/removing objects to/from diagram

9.1.9.7 Printing diagram

Visual Database Designer allows you to print and preview the diagram.

To preview the diagram:

- press the **Print Preview** button on the toolbar;
- preview the diagram using the Print Preview window.

To setup print options:

- press the **Print Setup** button on the toolbar, or use the corresponding link on the Navigation bar;
- set printing options using the Print Setup dialog and press **OK**.

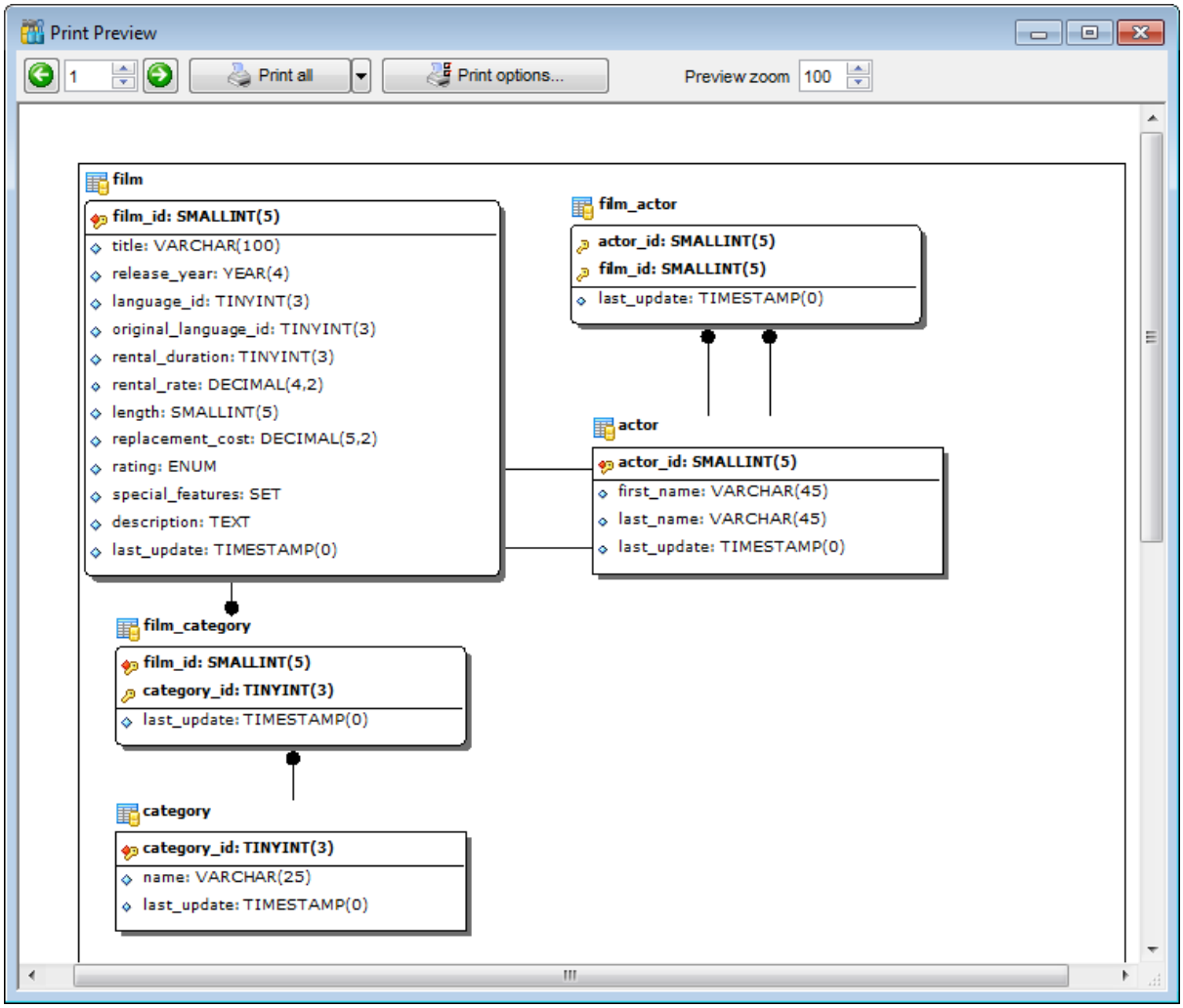
To print the diagram:

- press the **Print** button on the toolbar;
- set printing options using the Print Setup dialog and press the **Print** button.

9.1.9.7.1 Print Preview

The **Print Preview** dialog allows you to see the diagram layout in WYSIWYG mode before it will be printed.

Use the navigation buttons or the spinner control to navigate within the preview pages.
Click the **Print options...** button to call the Print Setup dialog.
If necessary, specify the **preview zoom** according to your preferences.
Click the **Print all** button to start printing.



See also:

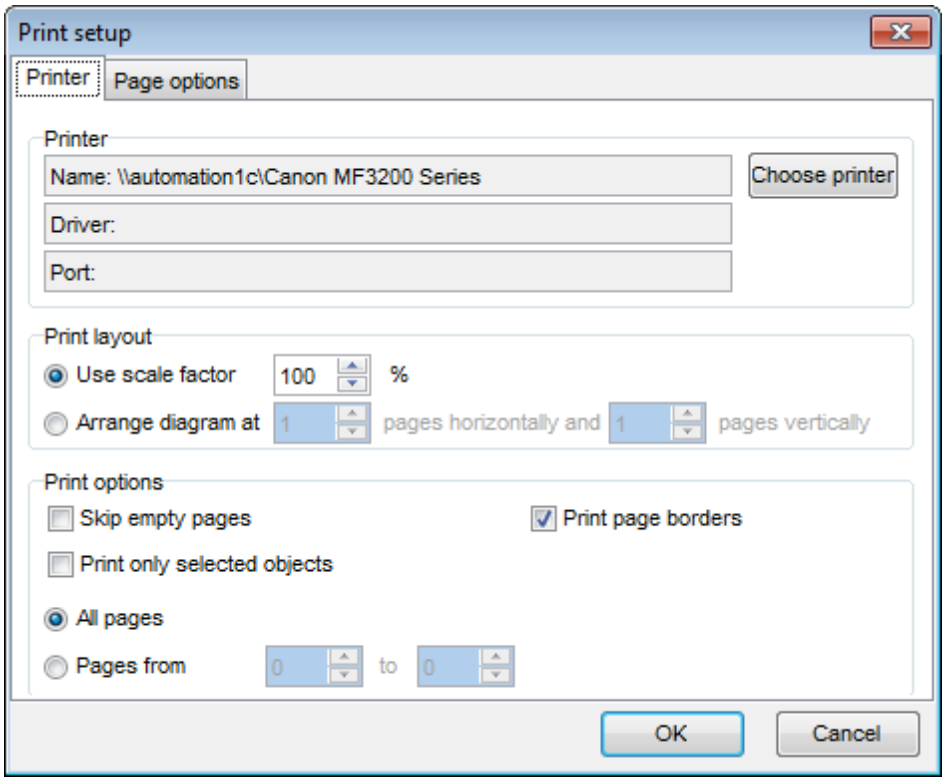
Print Setup dialog

9.1.9.7.2 Print Setup dialog

The **Print Setup** dialog of **Visual Database Designer** provides two tabs for setting printing options: **Printer** and **Page options**.

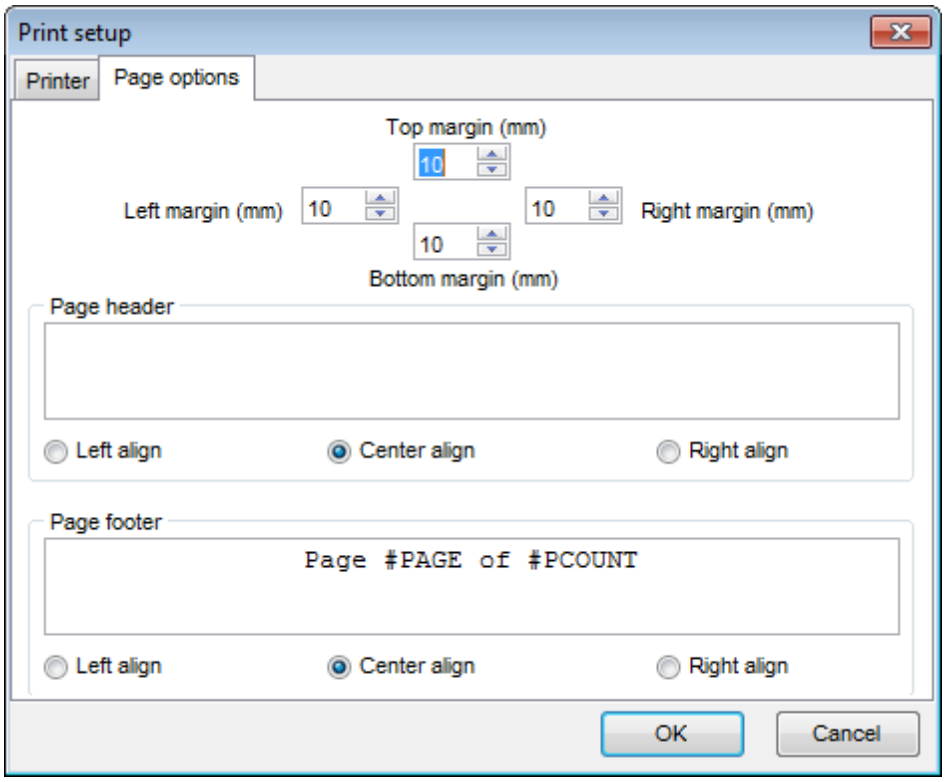
The **Printer** tab of the **Print Setup** dialog allows you to:

- specify the printer (use the **Choose printer** button to select a printer which is not set by default on your system; the *name*, *driver*, *port* fields display the selected printer details);
- specify print layout: print using a defined *scale factor* or arrange diagram at a defined number of pages horizontally and vertically;
- set other print options.



The **Page options** tab of the **Print Setup** dialog allows you to:

- specify page margins (in millimeters): *Top margin*, *Bottom margin*, *Left margin*, *Right margin*;
- specify **Page header** and **Page footer**: enter the header/footer running titles *text*, set left/center/right *align*.



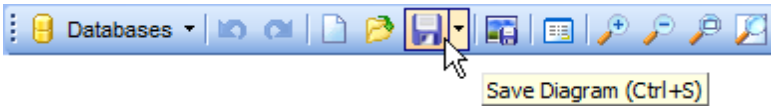
Hint: It is also possible to set macros in the **Page header** and **Page footer** fields:
#PCOUNT stands for the quantity of pages;
#PAGE - the number of the current page;
#DATE denotes the current date;
#TIME denotes the current time.

See also:

Print Preview

9.1.9.8 Saving/loading diagram

Use the **Save Diagram** and the **Open Diagram** buttons on the main toolbar to save the diagram as a **.myd* file for future use or to load the previously saved diagram.



If necessary, you can save the diagram as an image: click the **Save as Picture** button on the on the main toolbar.

See also:

Using Navigation bar and Toolbars
Using Diagram Navigator and DB Objects pane
Using context menus
Adding/removing objects to/from diagram

9.1.9.9 Setting diagram options

Using the **Diagram Options** dialog you can setup the behavior and look of each diagram page.

To open this dialog, use the **Diagram options** item of the Navigation bar or on the main toolbar, or select the corresponding item from the context menu.

See detailed description of each option on the Visual Database Designer page of the Environment Options dialog.

See also:

Using Diagram Navigator and DB Objects pane

Visual Database Designer options

9.2 Specific DB Tools

SQL Manager for MySQL provides graphical interface for a number of database maintenance operations. The following *specific database tools* are available in **SQL Manager**:

Compare Databases Wizard
Creates an SQL Script providing databases synchronization.

Copy Database Wizard
Allows you to copy database objects and/or data from one database to another

Using templates
Facilitates using **SQL Manager** wizards

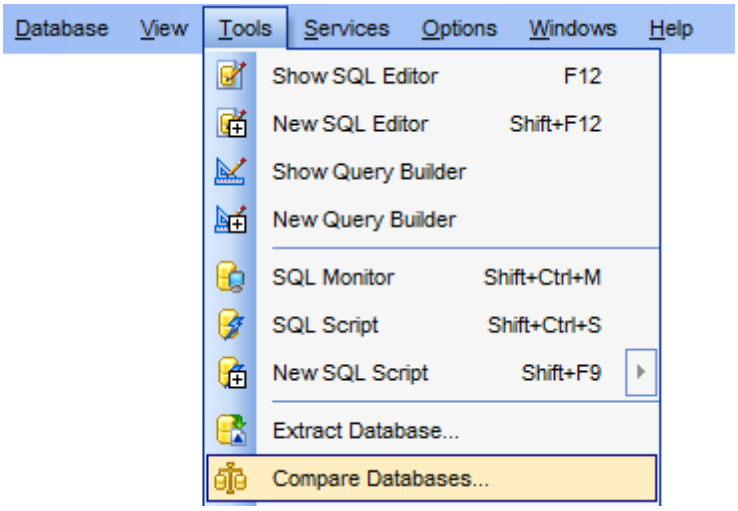
To obtain detailed information concerning specific MySQL database maintenance services, refer to the official MySQL server documentation.

See also:

Common database tools

9.2.1 Compare Databases Wizard

Compare Databases Wizard creates an SQL script that provides database structure synchronization. To launch the wizard use the **Tools | Compare Databases...** item of the main menu.



- Selecting source database
- Selecting target database
- Selecting type of the synchronization script
- Defining options for the destination script
- Performing operation

Availability:

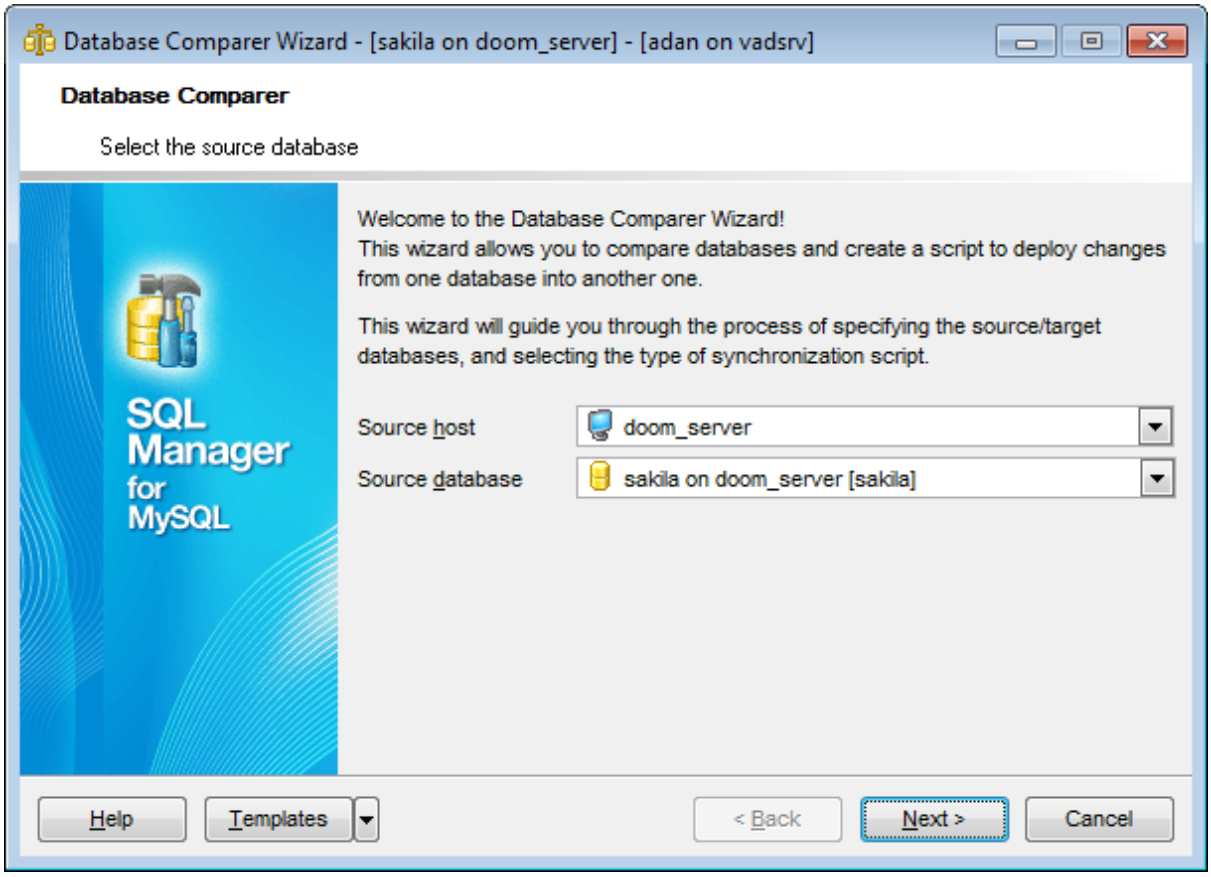
Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:
Copy database wizard
Show information

9.2.1.1 Selecting source database

Use this step to define source database for comparing.



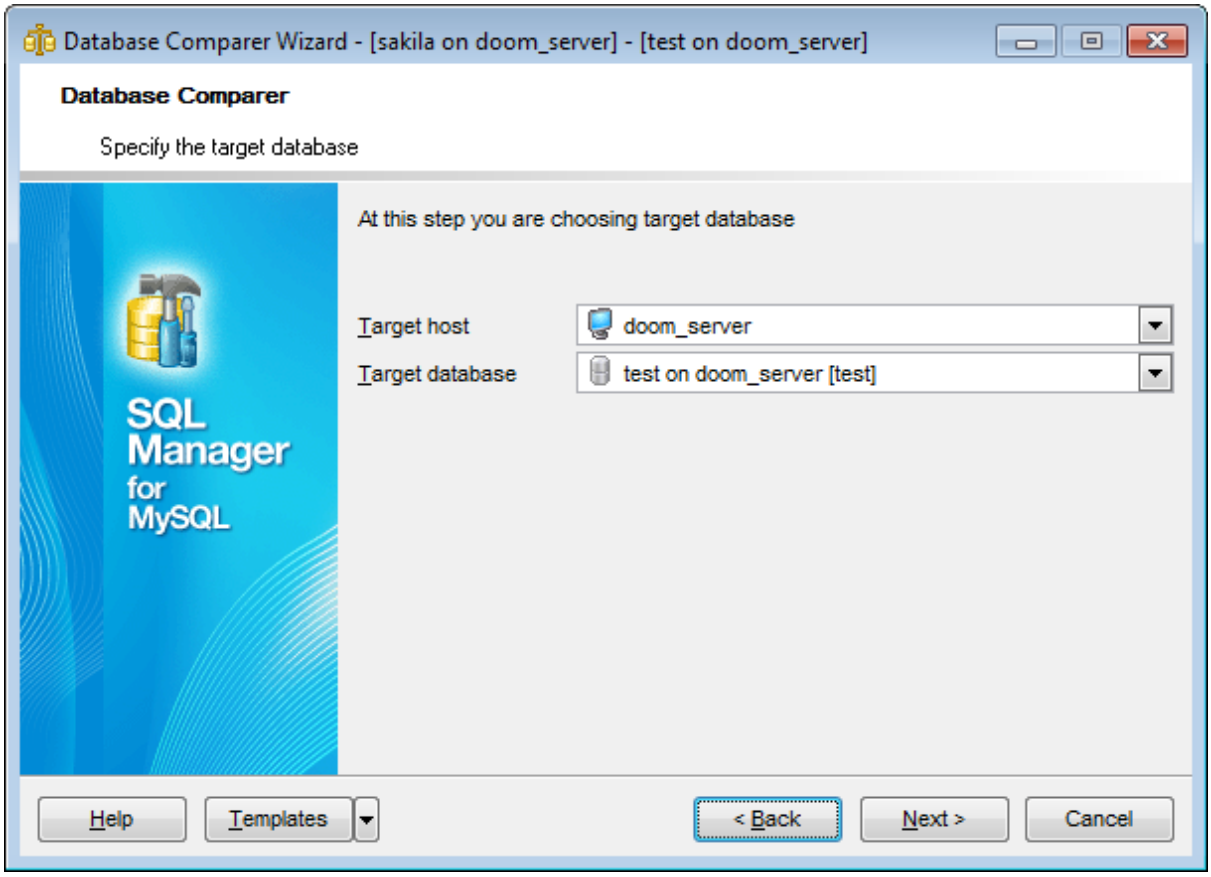
Source host
Define host where source database is located.

Source database
Select source database from the drop-down list.

Click the **Next** button to proceed to the Selecting target database step.

9.2.1.2 Specifying target database

Use this step to define target database for comparing.



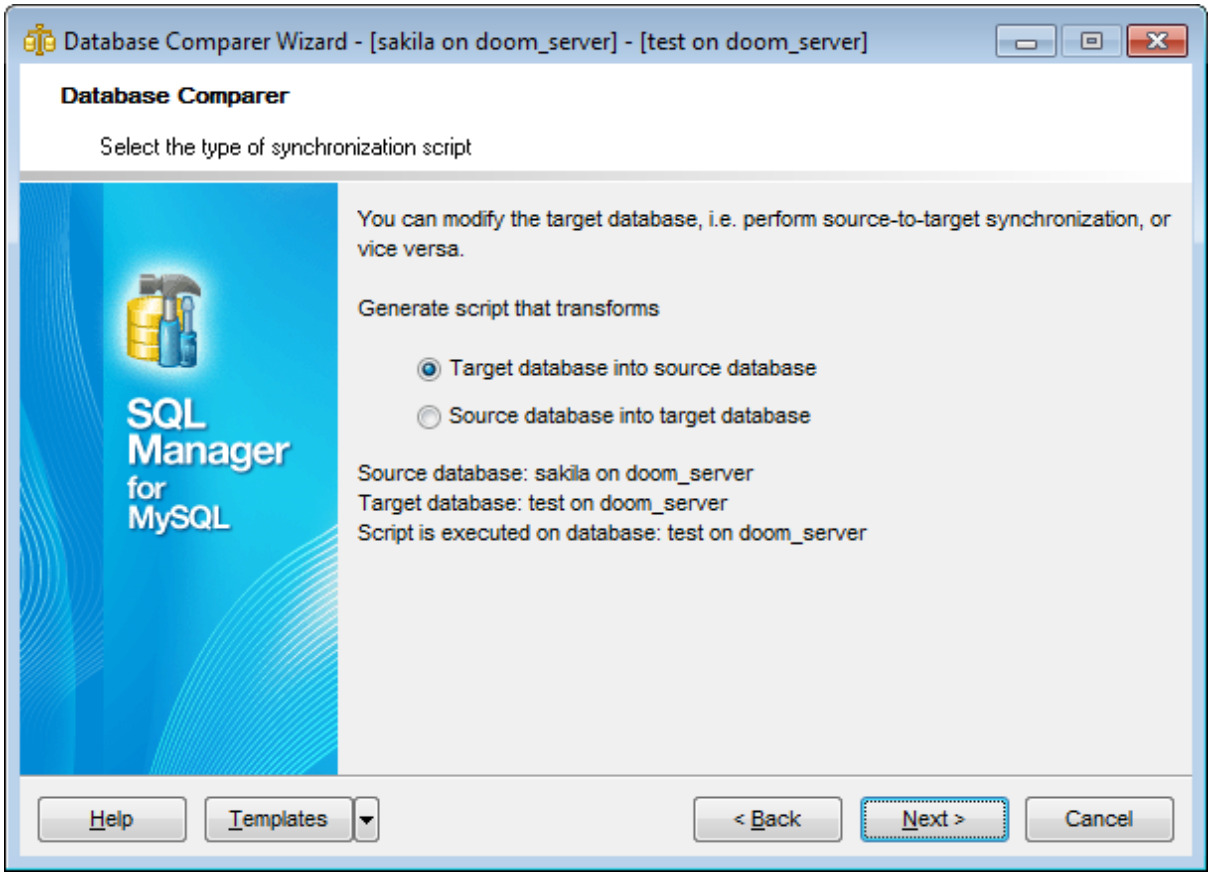
Target host
Define host where target database is located.

Target database
Select target database from the drop-down list.

Click the **Next** button to proceed to the Selecting type of the synchronization script step.

9.2.1.3 Selecting type of synchronization script

Specify the direction of the selected databases comparing.



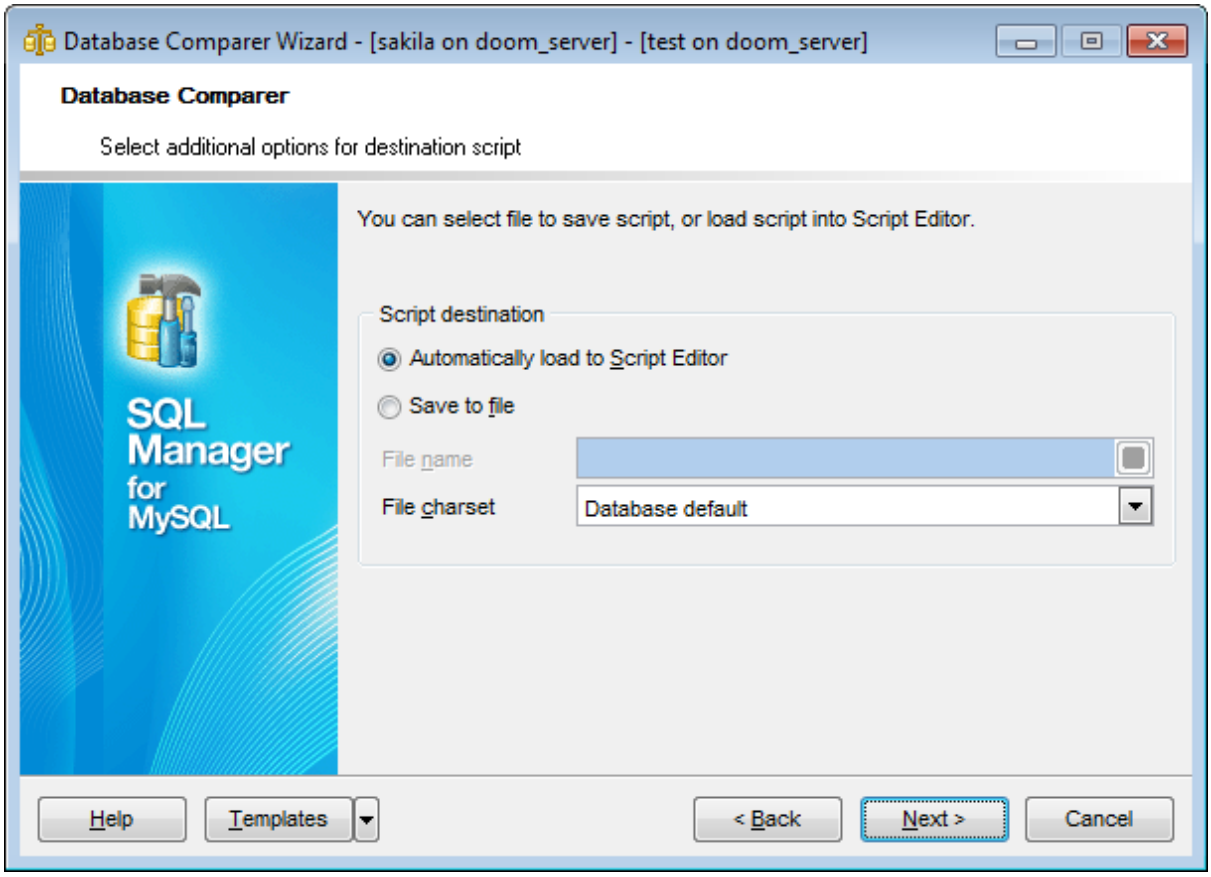
Target database into source database
Enables reverse comparing: the synchronization script will contain statements which make the target database identical to the source one.

Source database into target database.
Enables direct comparing: the synchronization script will contain statements which make the source database identical to the target one.

Click the **Next** button to proceed to the Defining options concerned destination script step.

9.2.1.4 Defining options for destination script

Use this step to define additional option for destination script.



Automatically load to Script Editor
With this option is enabled, the synchronization script will not be saved. It will be loaded to Script Editor.

Save to file
Use this option if you need to save the synchronization script to a file.

File name
Defines the name of the file to save the synchronization script to. Click the **Save** button to locate file using the standard dialog or type the file name and it's location manually.

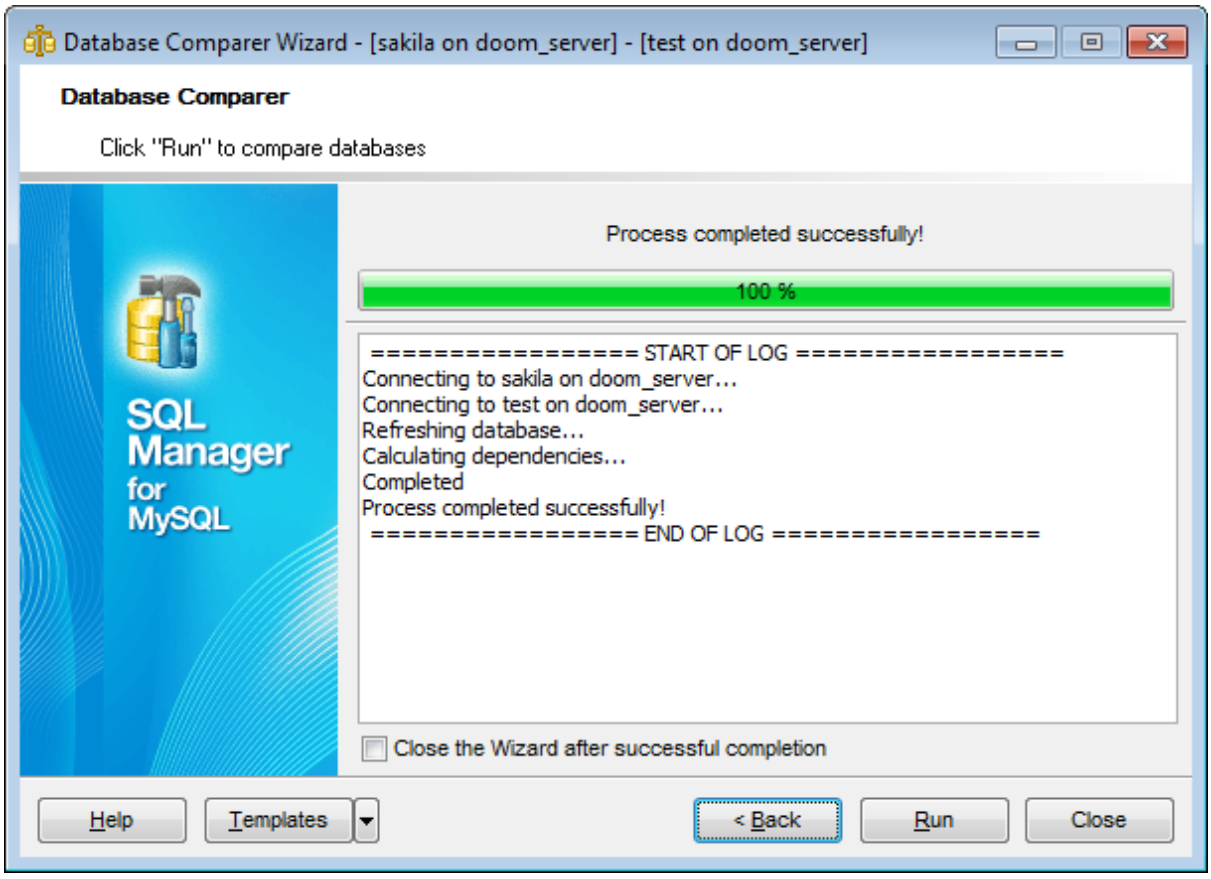
File charset
Specified character set will be used when saving the script to file.

Click the **Next** button to proceed to the Performing operation step.

9.2.1.5 Performing operation

This step of the wizard is intended to inform you that all necessary options have been set, and you can start comparing databases.

The log area allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is completed. If the option is disabled then you can repeat the operation with the same or redefined parameters.

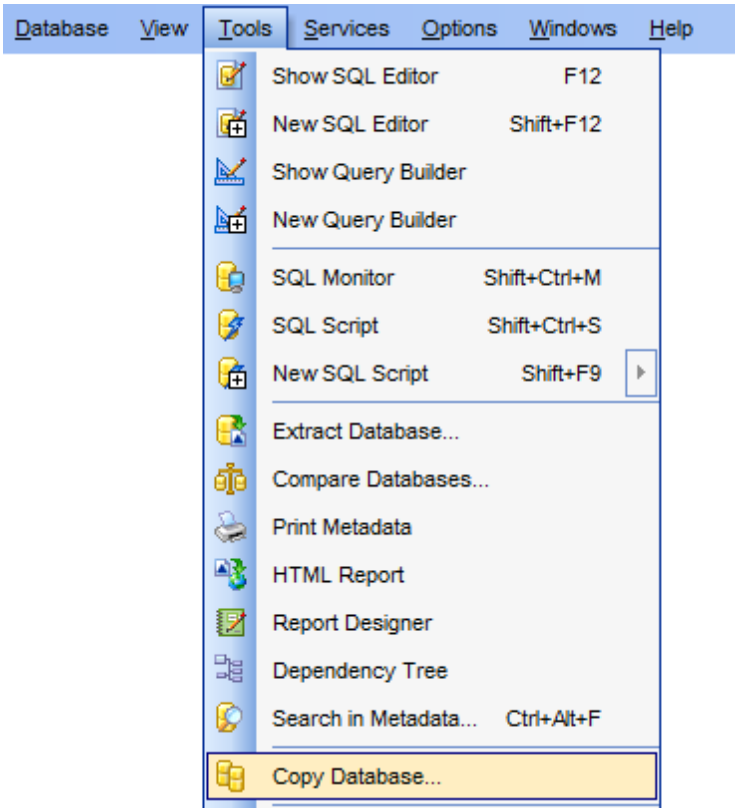
Click the **Run** button to run the backup database operation.

Use the templates button to save current settings to template or to restore settings from an existing template.

9.2.2 Copy Database Wizard

Copy Database Wizard allows you to transfer the entire database with its objects and data from one location to another.

To run the wizard, select the **Tools | Copy Database...** main menu item.



- Selecting source database
- Specifying destination database
- Selecting components to copy
- Selecting objects to copy their structure
- Selecting objects to copy their data
- Setting additional options
- Copying database
- Using templates

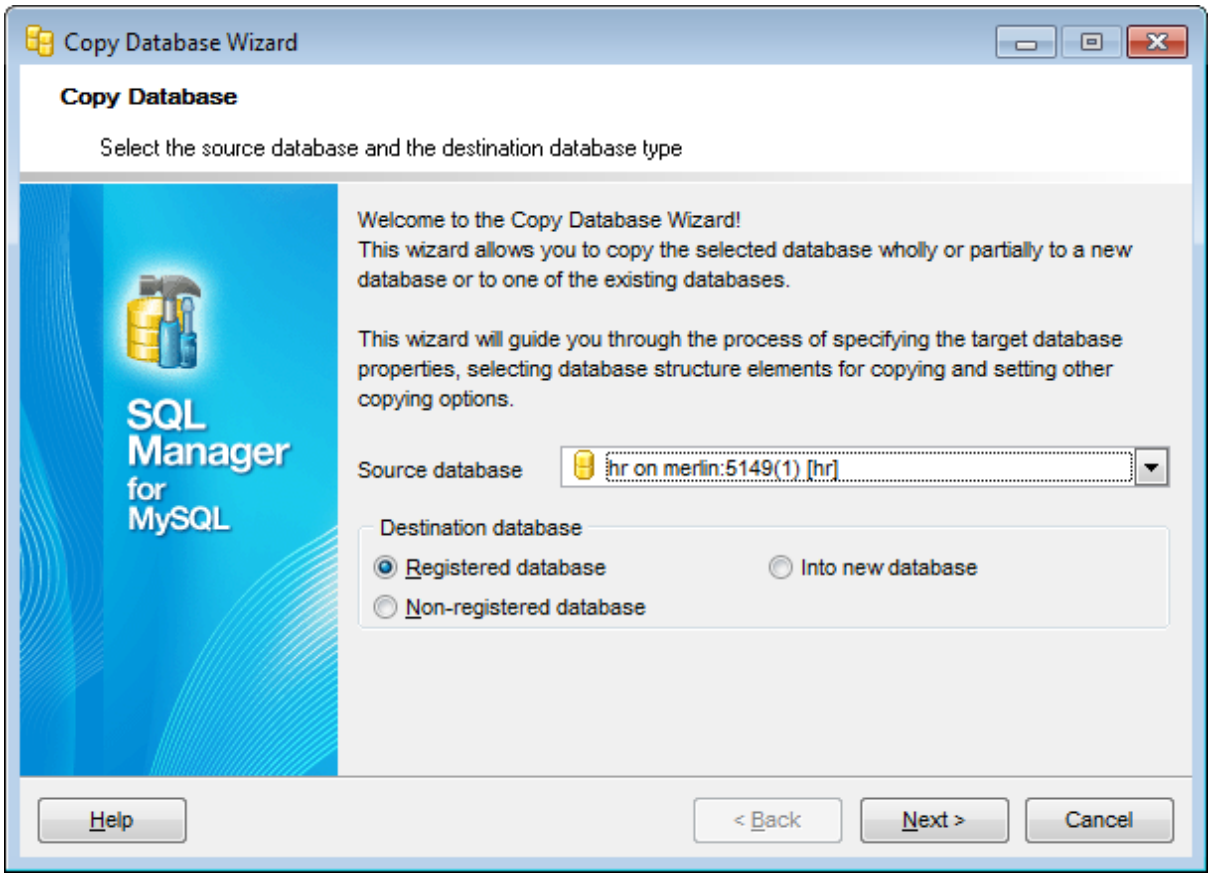
Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

9.2.2.1 Selecting source database

This step of the wizard allows you to select the **source database** to copy and specify **destination database** registration status.



Source Database
Use the drop-down list of registered and currently connected databases to select the database to copy.

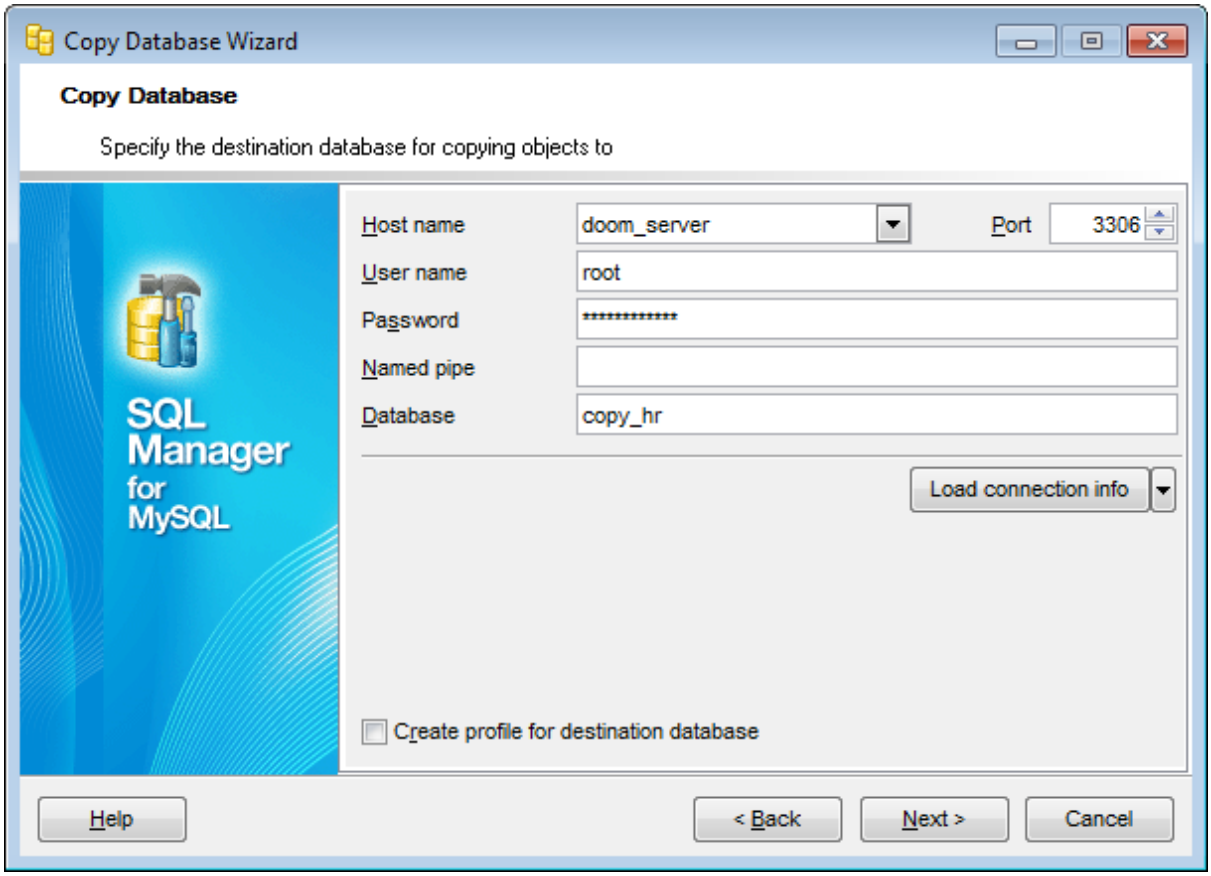
Destination database

Select *Registered database* if you want to copy the specified database to a registered database, or select *Non-registered database* to copy the specified database to a new (non-registered) database. Optionally, you can select the *Into new database* mode. In this mode a new database will be created.

Click the **Next** button to proceed to the Specifying destination database step of the wizard.

9.2.2.2 Specifying destination database

Use this step of the wizard to set the **destination database** for copying objects to. If the database is already registered (i.e. *Registered database* was selected at the previous step), then you just need to select a host and a database that resides on this host. Otherwise you should set all the connection properties using the corresponding boxes and options: *Host name*, *Port*, *User name*, *Password*, *Database* name.



Specify the host where the destination database resides: type in the host name in the **Host name** field or select one in the drop-down list.
Enter MySQL port to connect through in the **Port** field and provide *authorization* settings: **User name** and **Password**.

Optionally you can use **Named pipe** to connect to database. Define **Named pipe** in the respective field. Named pipe value is stored in the MySQL server configuration file.

Database
Type in the name of the database to copy objects into.

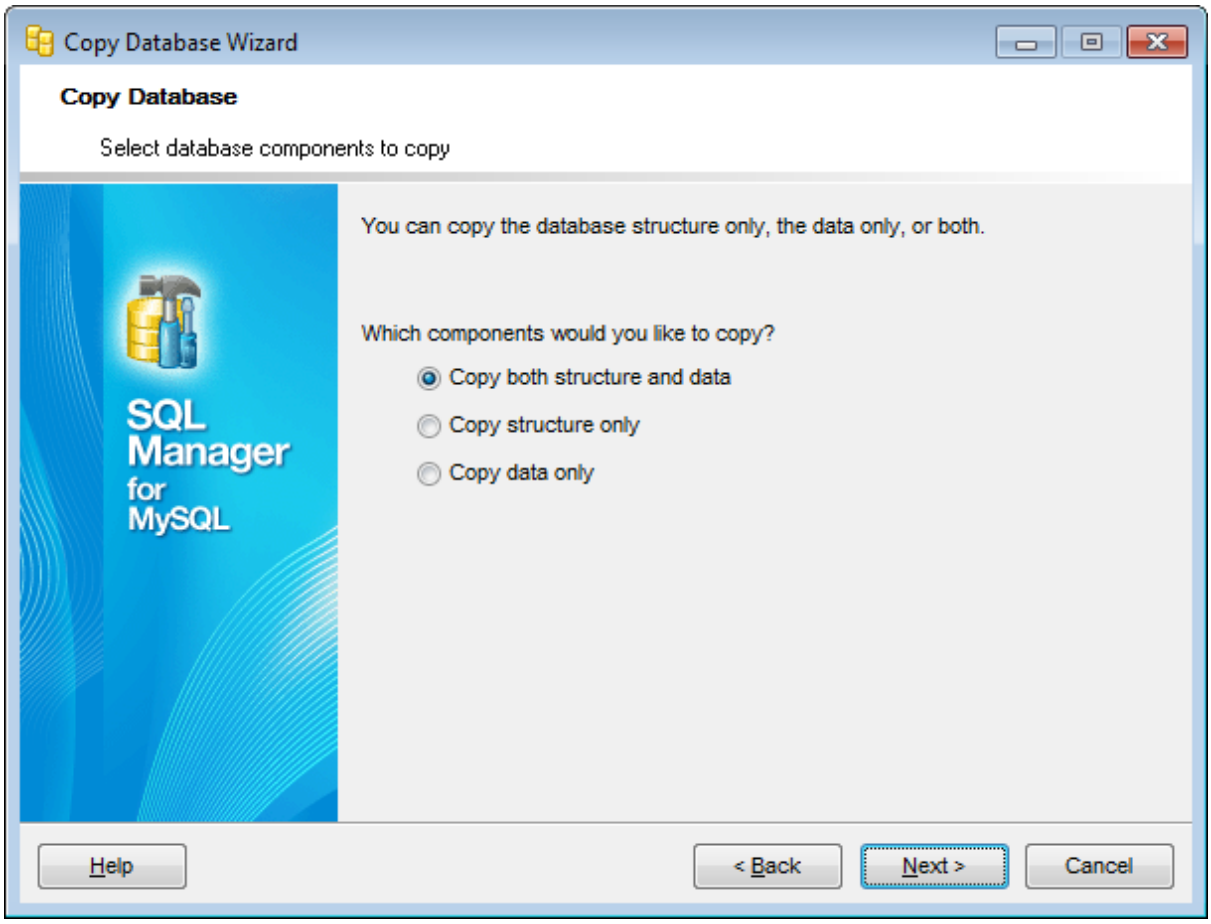
If necessary, check the **Create profile for destination database** option to register database in SQL Manager for MySQL.

The **Load connection info** menu allows you to select the alias of a previously registered database and use it's registration info for the newly created/configured database.

Click the **Next** button to proceed to the Selecting components to copy step of the wizard.

9.2.2.3 Selecting components to copy

This step allows you to specify the **components to copy**: choose whether *structure only*, *data only* or *both structure and data* should be copied.



Click the **Next** button to proceed to the Selecting objects to copy their structure step of the wizard, or to the Selecting objects to copy their data step if you have specified to *copy data only*.

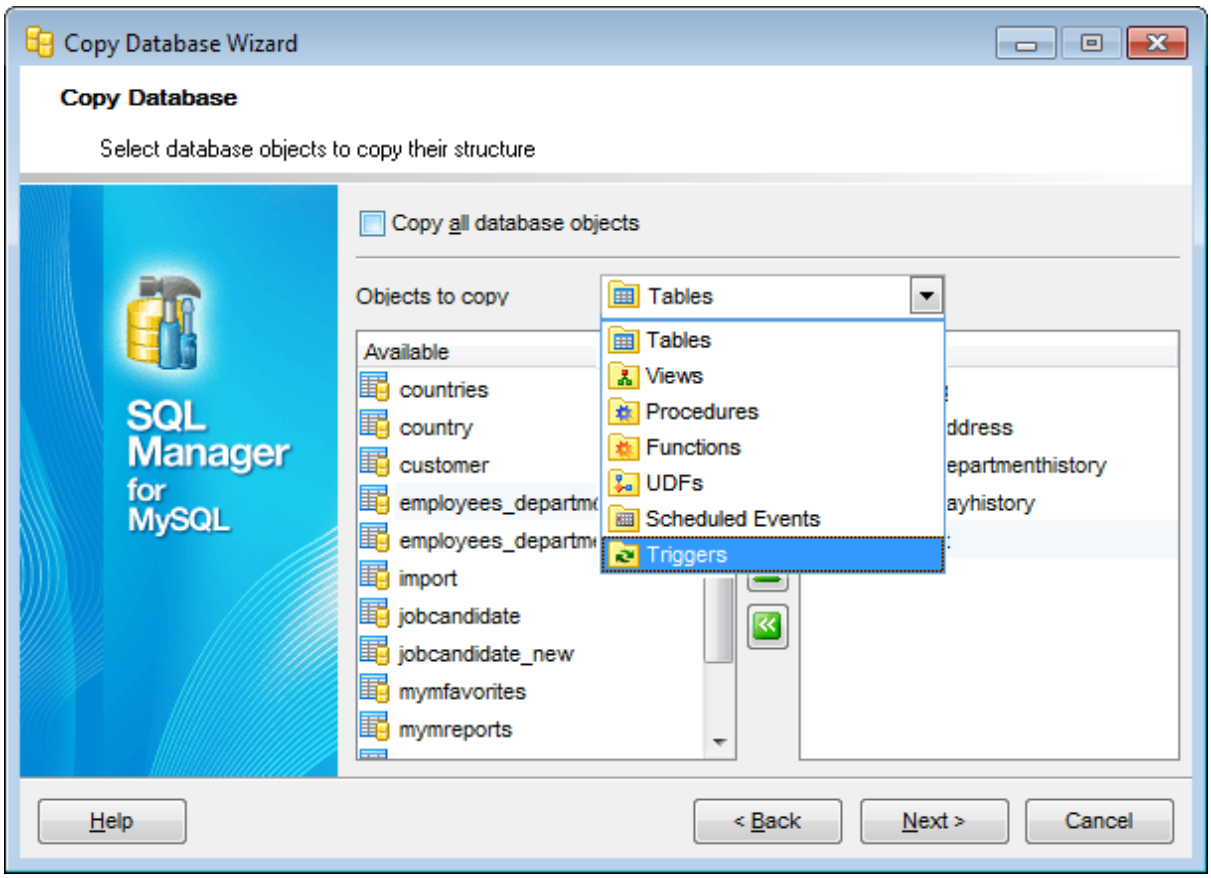
9.2.2.4 Selecting objects to copy their structure

This step of the wizard allows you to **select database objects for copying metadata**.

Note that this step is only available if the *Copy both structure and data* or *Copy structure only* mode was specified when Selecting components to copy.

Copy all database objects
Adds all objects of the source database to the copy database process.

Objects to copy
Use the drop-down list to select the type of objects to be copied.
To select an object, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the objects from one list to another.

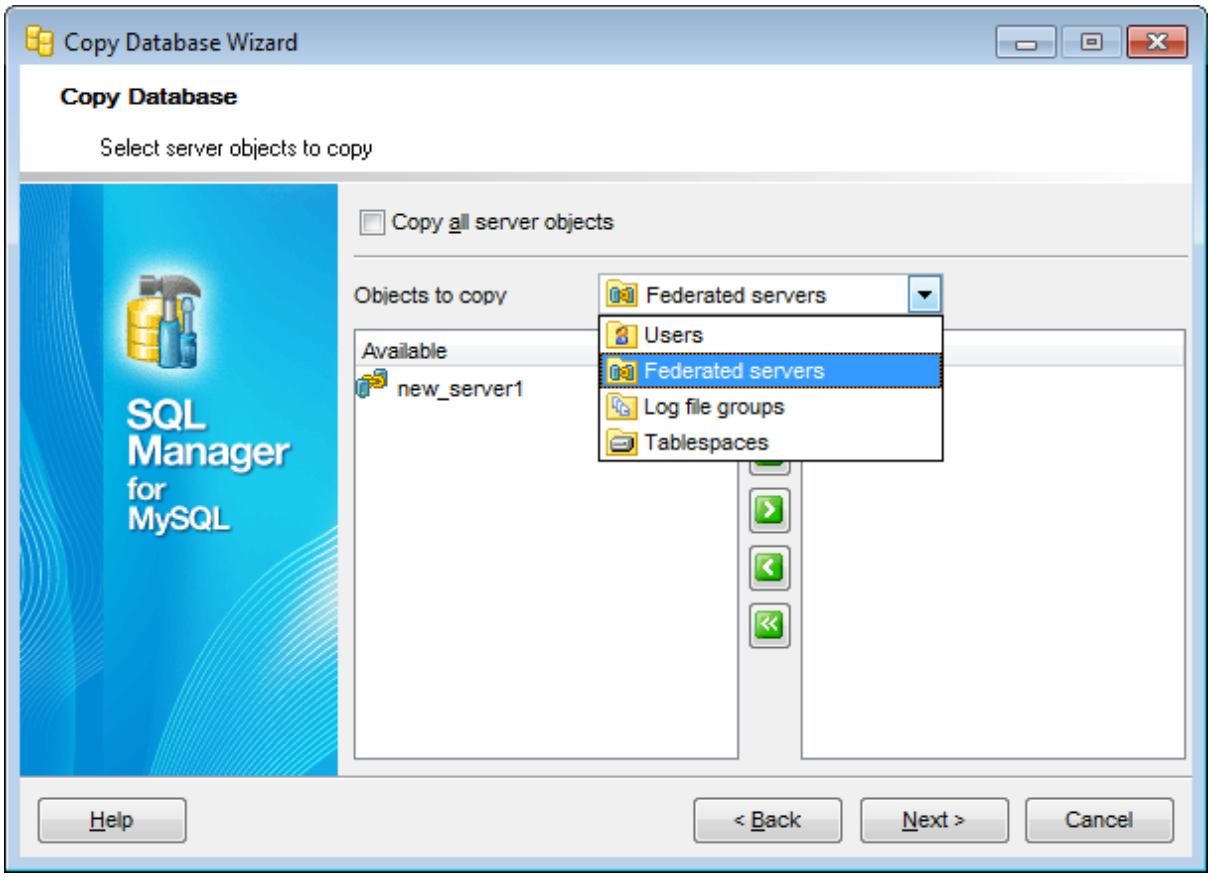


Click the **Next** button to proceed to the Selecting objects to copy their data step of the wizard, or to the Setting additional options step if you specified to *copy structure only* when Selecting components to copy.

9.2.2.5 Selecting server objects to copy

This step of the wizard allows you to **select server objects for copying metadata**.

This step is available only when you copying database structure.



Copy all server objects
Use the option if you want all server objects to be copied.

To select objects manually, select object type from the Objects to copy drop-down list. Then move all needed objects of the selected type from **Available** list to **Selected**.

Click the **Next** button to proceed to the Selecting objects to copy their data step.

9.2.2.6 Selecting objects to copy their data

This step of the wizard allows you to **select tables for copying data**.

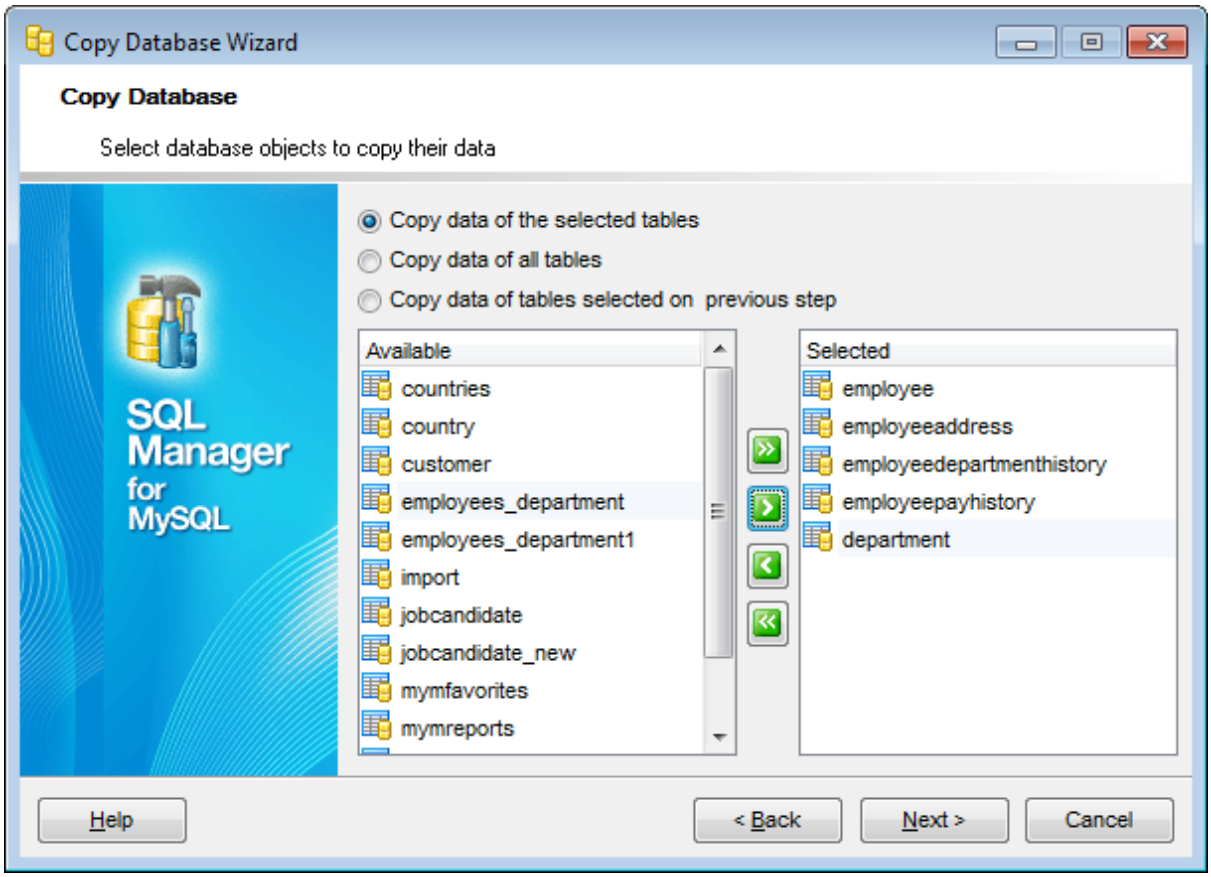
Note that this step is only available if the *Copy both structure and data* or *Copy data only* mode was specified when Selecting components to copy.

Copy data of the selected tables
Adds only selected tables to the Copy Database process.

Copy data of all tables
Adds all tables of the source database to the Copy Database process.

Copy data of tables selected on the previous step
Adds only the tables selected for copying their structure.

To select a table, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.



Click the **Next** button to proceed to the Setting additional options step of the wizard.

9.2.2.7 Setting additional options

This step allows you to customize common **copying options** and **data options** for the Copy Database process.

Connection options

☑ **Use compression protocol**
Enables using the compressed data protocol when connecting to the destination database.

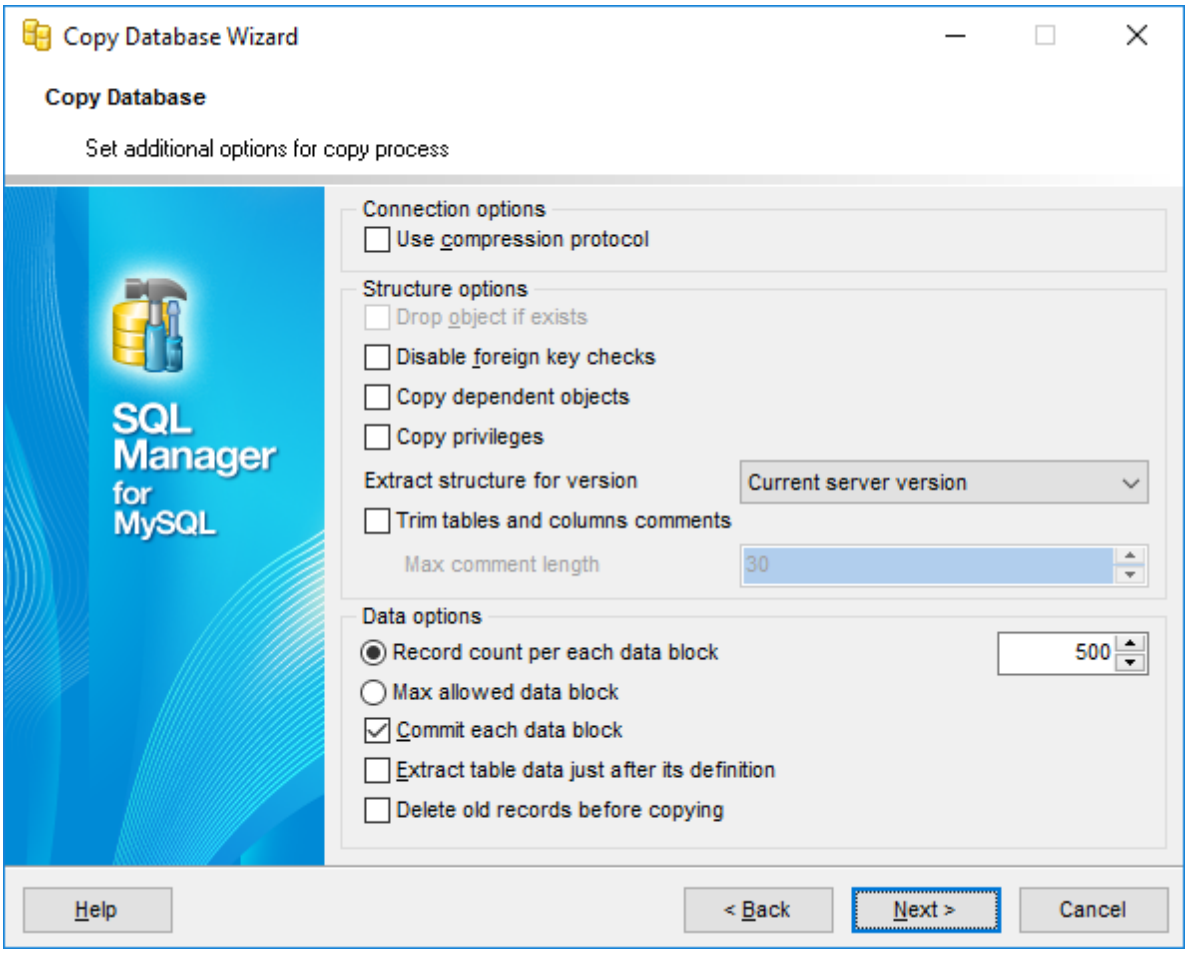
Structure Options

☑ **Drop object if exists**
Check the option to add the *DROP IF EXISTS* statements for the objects specified for copying.

☑ **Disable foreign key checks**
If this option is selected, foreign key constraints are not considered in the copying process (*SET FOREIGN_KEY_CHECKS=0*).

☑ **Copy dependent objects**
This option determines objects' dependencies usage in the copying process. Check the option to copy all objects that the selected objects depend on.

☑ **Copy privileges**
Check the option to copy privileges associated with objects.



Data options

Record count per each data block
In this mode you can define number of records in each committed block manually. Use the spinner control for this purpose.

Max allowed data block
Select this option to set maximum size for data block.

Commit each data block
Check this option to add the *COMMIT* statement after the defined number of records.

Extract table data just after its definition
Check the option to extract table metadata before extracting data.

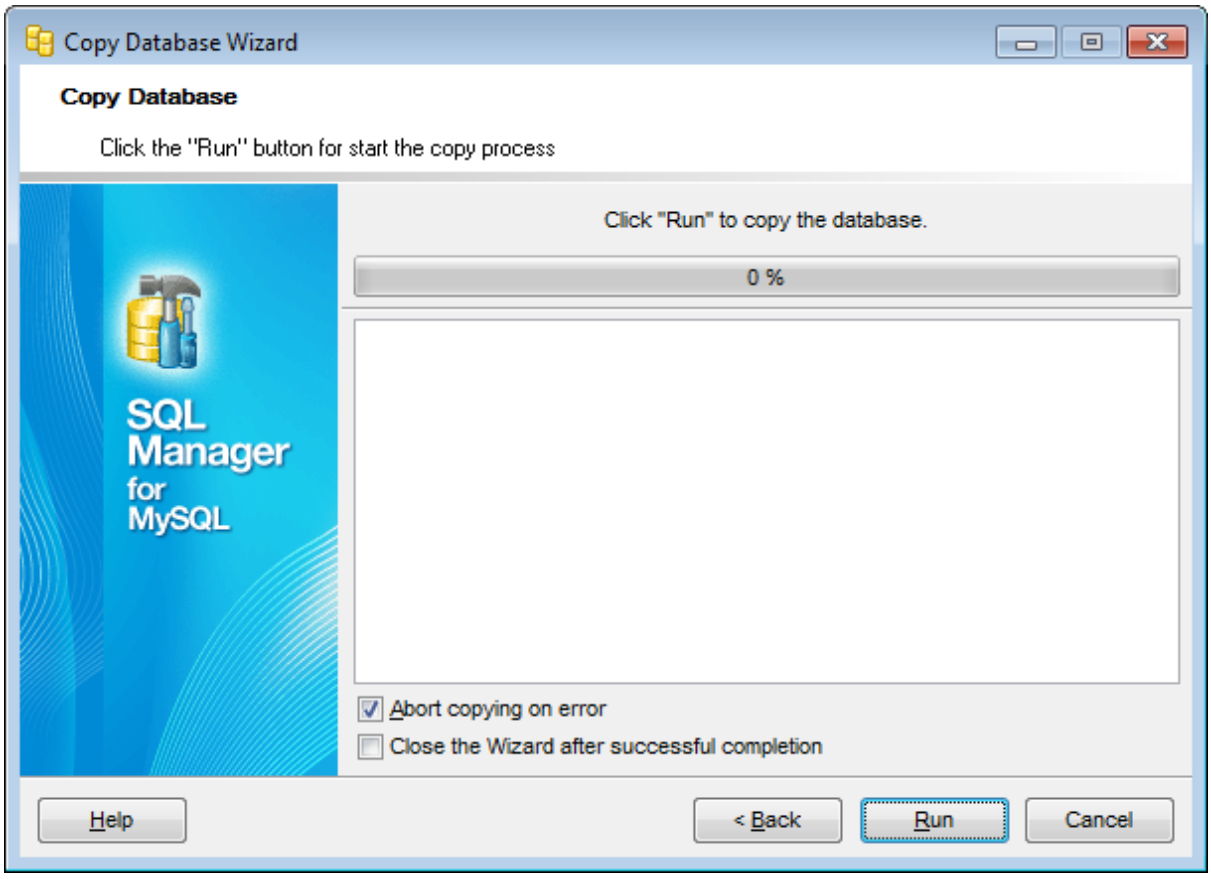
Delete old records before copying
Check the option to truncate target table (if it exists) before inserting data from a source table.

When you are done, click the **Next** button to proceed to the Copying database step of the wizard.

9.2.2.8 Copying database

This step of the wizard is intended to inform you that all necessary options have been set, and you can start the Copy Database process.

The **Operations** tab allows you to view the log of operations and errors (if any).



Abort copying on error
This option determines whether the copying process should be stopped or forced to continue if an error occurs.

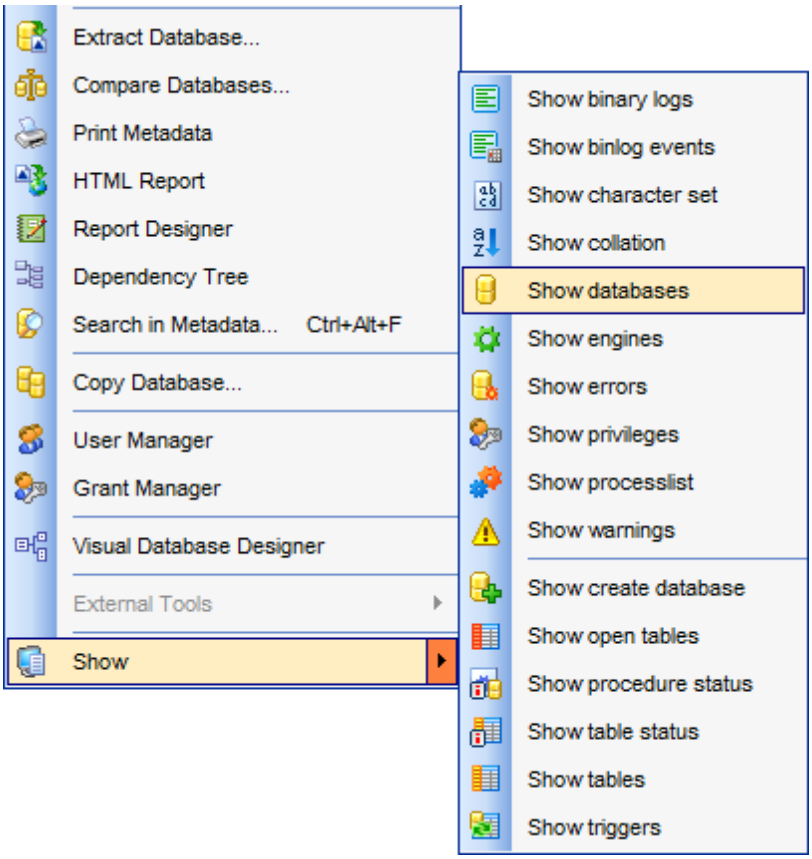
Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is completed.

If necessary, you can save a template for future use.

Click the **Run** button to complete the operation.

9.2.3 Show information

Show information has many forms that provide information about databases, tables, columns, or status information about the server. To access this tool open the main menu **Tools | Show** submenu and select the needed item. Alternatively you can use the **Database Tools |** **Show** in the database context menu.



You can find more detailed info at: http://dev.mysql.com/doc/refman/5.0/en/show.html

Availability:

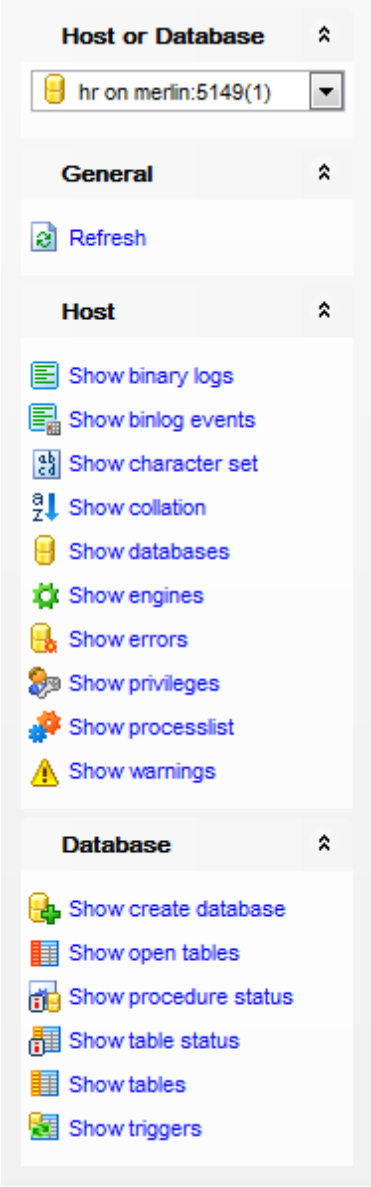
Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:
Compare Databases Wizard
Copy Database Wizard

9.2.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbars** provide quick access to tools implemented in **Show Information**.



The **Navigation bar** of **Show Information** allows you to:

General group
select a database

Host group
Show binary logs
Show binlogs events
Show character set
Show collation

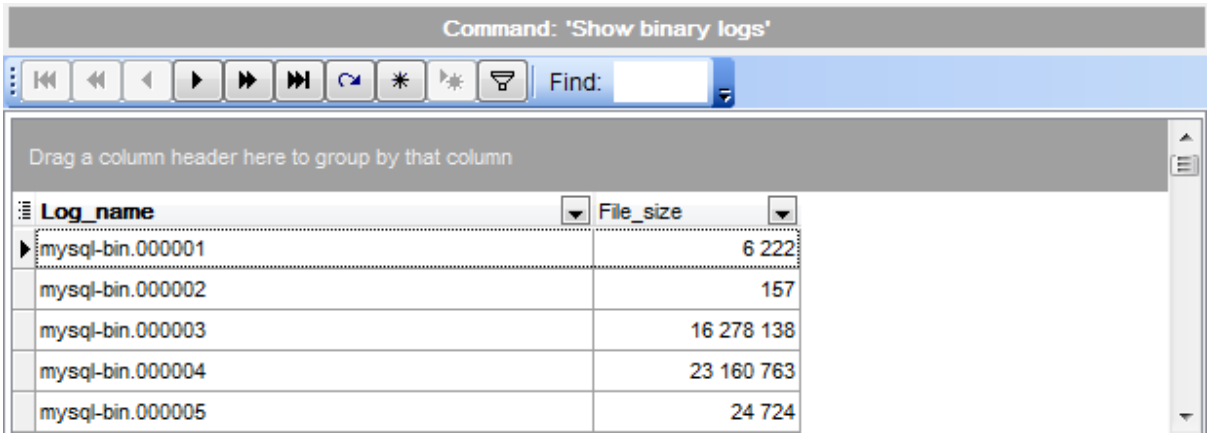
Show databases
Show engines
Show errors
Show privileges
Show processlist
Show warnings

Database group
Show create database
Show open tables
Show procedure status
Show table status
Show tables
Show triggers

The **Toolbars** of **Visual Database Designer** provide quick access to most tools of **Show Information** feature.
To enable the toolbars, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbars only) or *Both* (if you need both the toolbars and the Navigation bar) in the **Bar style for child forms** group.

9.2.3.2 Show host information

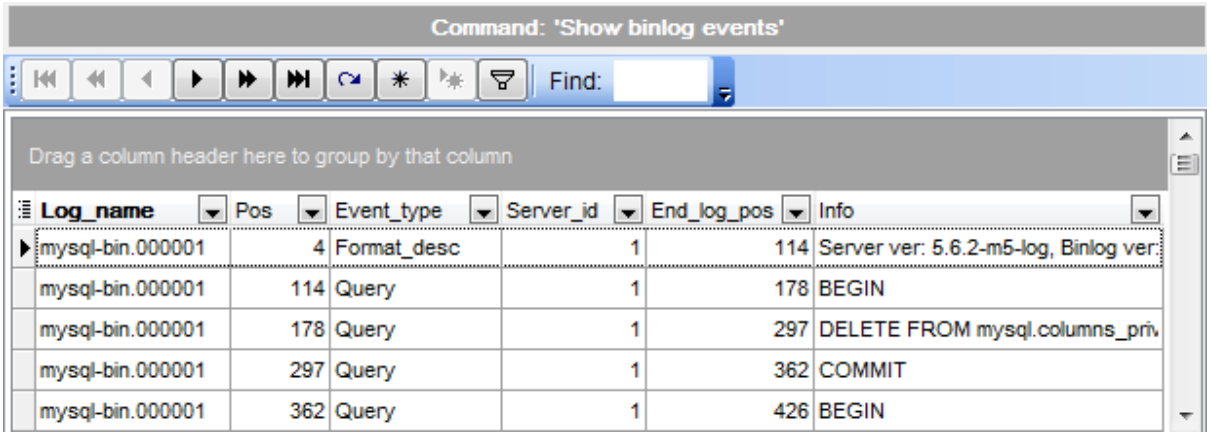
Show binary logs
Lists the binary log files on the server.



Log_name	File_size
mysql-bin.000001	6 222
mysql-bin.000002	157
mysql-bin.000003	16 278 138
mysql-bin.000004	23 160 763
mysql-bin.000005	24 724

Table displays *log name* and *file size* in respective columns.

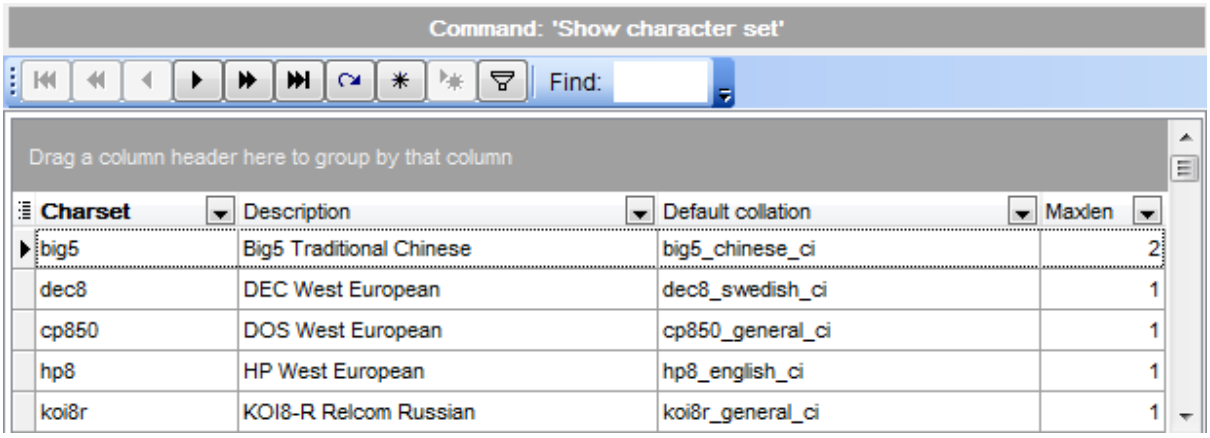
Show binlogs events
Shows the events in the binary log. Binary log consists of files that store events describing changes in database.



Log_name	Pos	Event_type	Server_id	End_log_pos	Info
mysql-bin.000001	4	Format_desc	1	114	Server ver: 5.6.2-m5-log, Binlog ver:
mysql-bin.000001	114	Query	1	178	BEGIN
mysql-bin.000001	178	Query	1	297	DELETE FROM mysql.columns_priv
mysql-bin.000001	297	Query	1	362	COMMIT
mysql-bin.000001	362	Query	1	426	BEGIN

Table displays *log name*, *start log position*, *event type*, *server ID*, *end log position* and additional *info*.

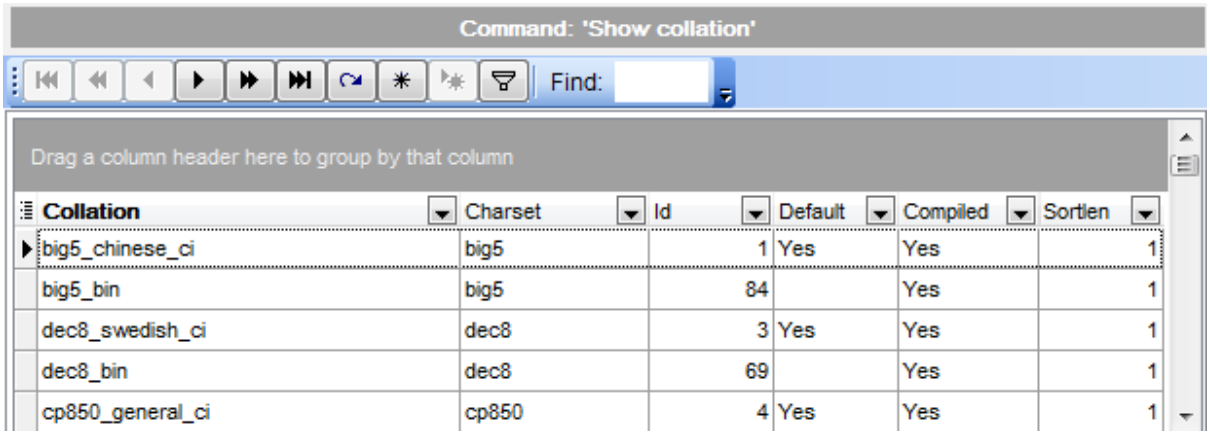
Show character set
Shows all available character sets.



Charset	Description	Default collation	Maxlen
big5	Big5 Traditional Chinese	big5_chinese_ci	2
dec8	DEC West European	dec8_swedish_ci	1
cp850	DOS West European	cp850_general_ci	1
hp8	HP West European	hp8_english_ci	1
koi8r	KOI8-R Relcom Russian	koi8r_general_ci	1

Table displays *character set*, its *description*, *default collation* (set of rules for data comparing, that is used by default for corresponding character set; these rules define table of codes and used for collation of current character set with Unicode and other formats) and *max length* (in bytes).

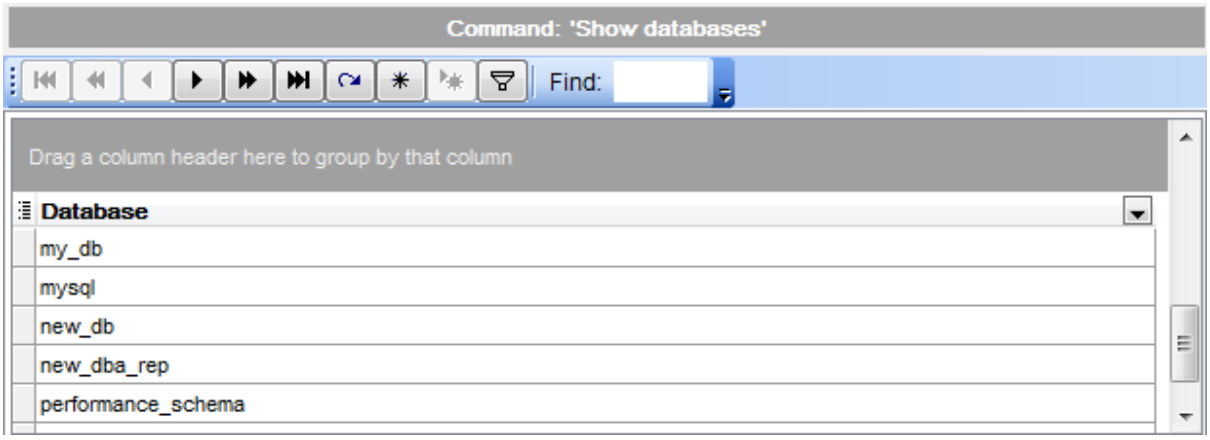
Show collation
Lists collations supported by the server.



Collation	Charset	Id	Default	Compiled	Sortlen
big5_chinese_ci	big5	1	Yes	Yes	1
big5_bin	big5	84		Yes	1
dec8_swedish_ci	dec8	3	Yes	Yes	1
dec8_bin	dec8	69		Yes	1
cp850_general_ci	cp850	4	Yes	Yes	1

Table displays *collation* name, corresponding *character set*, *collation ID*, whether collation is *default* for its character set, is collation *compiled* on server and *sorting length* (memory size required for sorting string data).

Show databases
Lists the databases on the MySQL host.



Show engines
Displays status information about the server's storage engines.

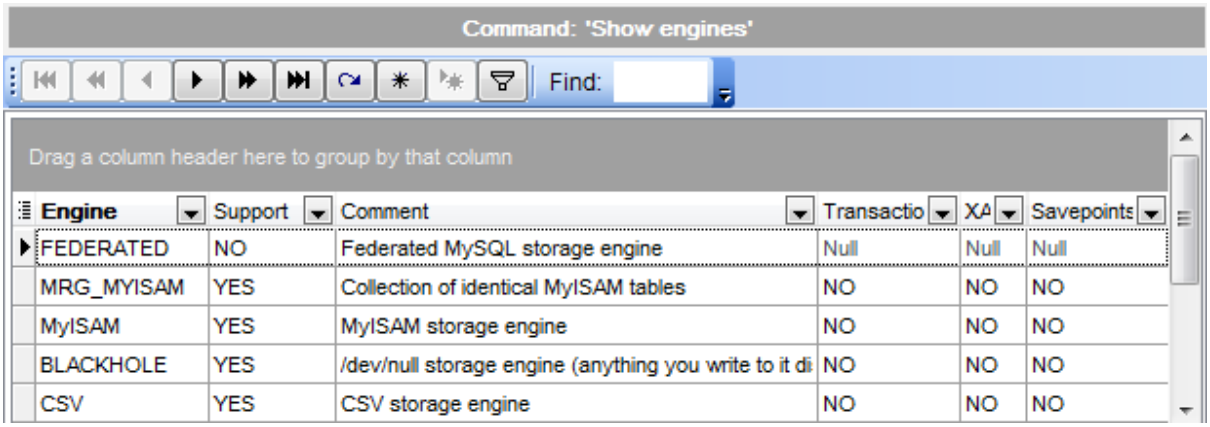


Table displays *engine* name, whether engine is *supported* by server, brief *comments*, whether *transactions*, *XA* transactions and *savepoints* are supported by this engine.

Show errors
Shows the error messages that resulted from the last statement that generated messages in the current session.

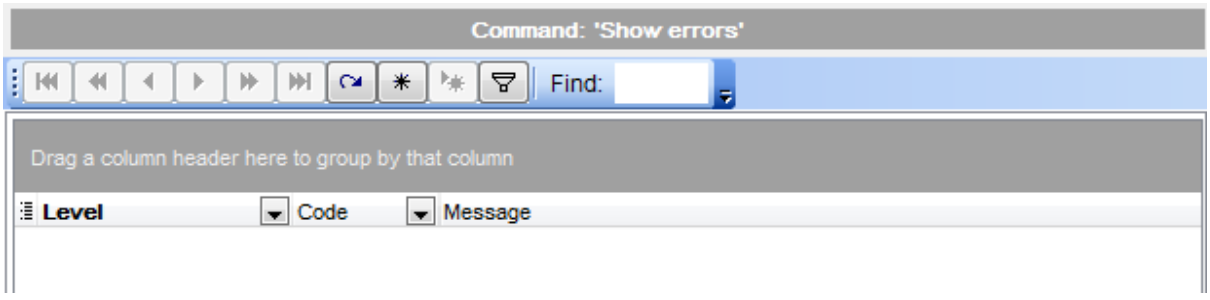


Table displays error *level*, error *code* and *text* of error message.

Show privileges
Shows the list of system privileges that the MySQL server supports. The list can vary depending on the current server version.

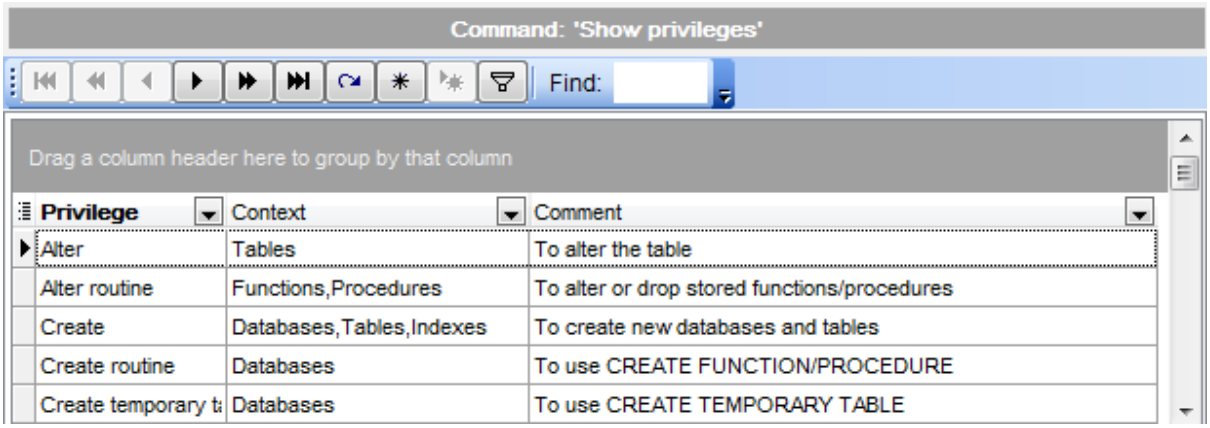


Table displays *privilege* name, *context* (objects, which this privilege can be applied to) and brief *comments*.

Show processlist
Lists threads which are currently running.

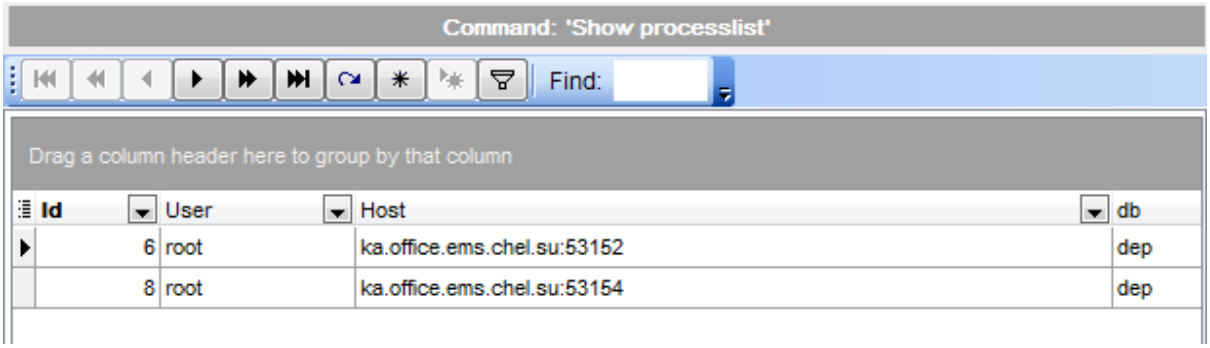


Table displays the connection *ID*, *user* who issued the statement, client *host*, default *database* (NULL if not selected), type of *command* the thread is executing, *time* in seconds that the thread has been is current state, *state* that indicates what the thread is doing, *info* - the statement the thread is executing (NULL if it is not executing any statement).

Show warnings
Shows the error, warning, and note messages that resulted from the last statement that generated messages in the current session.

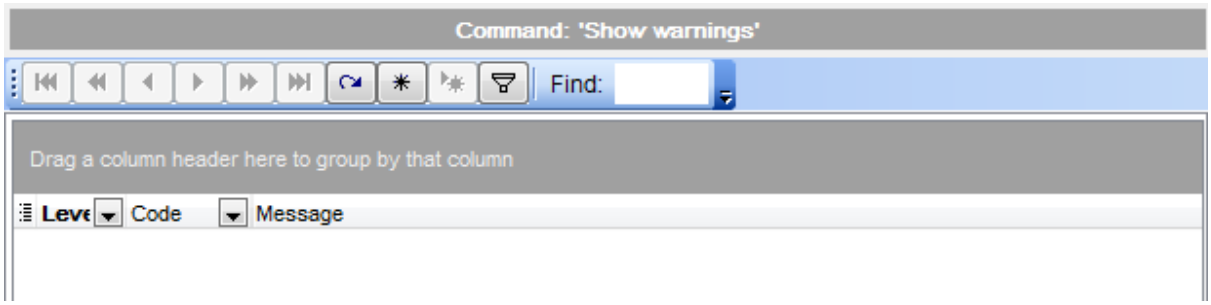


Table displays warning *level*, its *code* and *message*.

9.2.3.3 Show database information

Show create database
Shows the CREATE DATABASE statement that creates the given database.

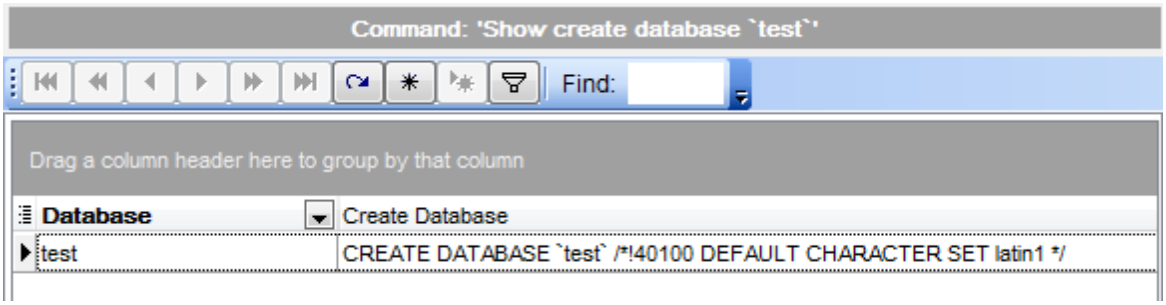


Table displays *database* name and respective *CREATE DATABASE* statement.

Show open tables
Lists the non-TEMPORARY tables that are currently open in the table cache.

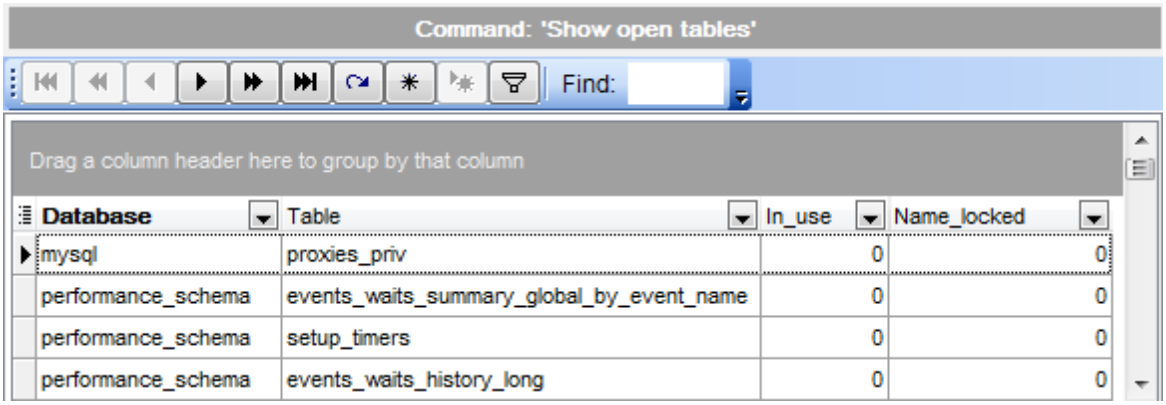


Table displays *database* name, where the table is contained, the *table* name, the number of table locks or lock requests for the table (*In_use*), and whether the table *name is locked*.

Show procedure status
Shows status of all procedures on the host.

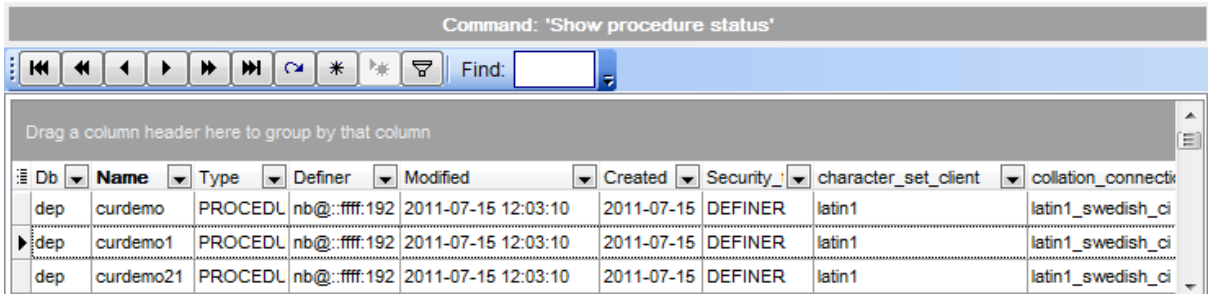
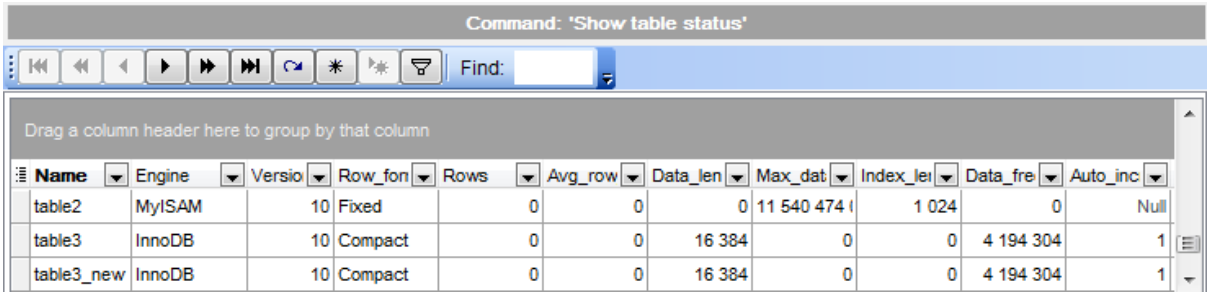


Table contains name of *database* where procedure is stored, procedure *name*, procedure *type*, procedure *definer*, date when the procedure was last *modified*, date when the procedure was *created*, *security type* (whether procedure executed using the invoker or definer privileges), brief *comments*, client *character set* name, *collation* of the connection character set, *database collation*.

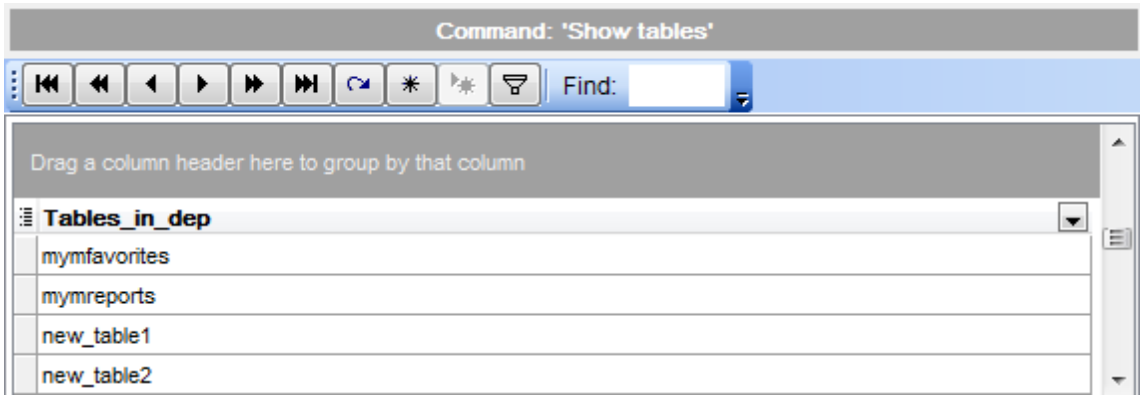
Show table status
Lists non-temporary tables in the specified database and provides vary information about each table.



Name	Engine	Versio	Row_for	Rows	Avg_row	Data_len	Max_dat	Index_le	Data_fre	Auto_inc
table2	MyISAM	10	Fixed	0	0	0	11 540 474	1 024	0	Null
table3	InnoDB	10	Compact	0	0	16 384	0	0	4 194 304	1
table3_new	InnoDB	10	Compact	0	0	16 384	0	0	4 194 304	1

Table contains *name* of the table, storage *engine* for the table, *version* number of the table's .frm file, *row-storage format* (Fixed, Dynamic, Compressed, Redundant, Compact), number of *rows*, *average row length*, *length of the data file*, *maximum length of the data file*, *length of the index file*, *Data_free* - number of allocated but unused bytes, next *AUTO_INCREMENT* value, *Create_time* - time when the table was created, *Update_time* - time when the data file was last updated, *Check_time* - time when the table was last checked, the table's character set and *collation*, the live *checksum* value (if any), *Create_options* - extra options used with CREATE TABLE statement, the comment used when creating the table.

Show tables
Lists all tables of the selected database.



Tables_in_dep
mymfavorites
mymreports
new_table1
new_table2

Table displays names of tables stored in the database.

Show triggers
Lists the triggers currently defined for tables in a database.

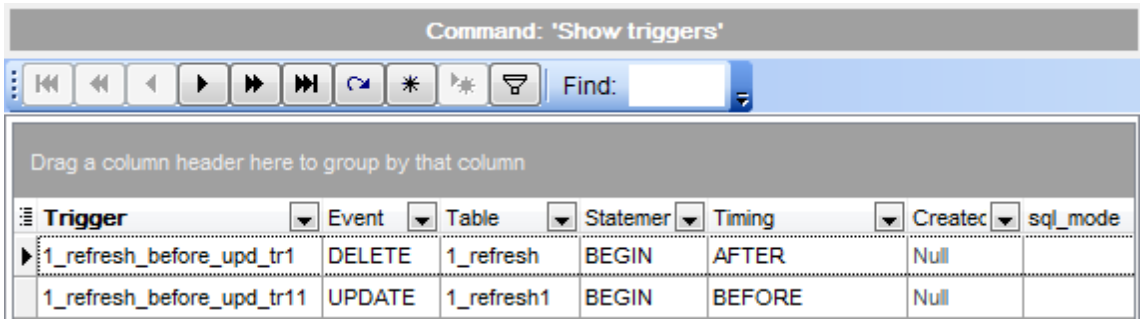
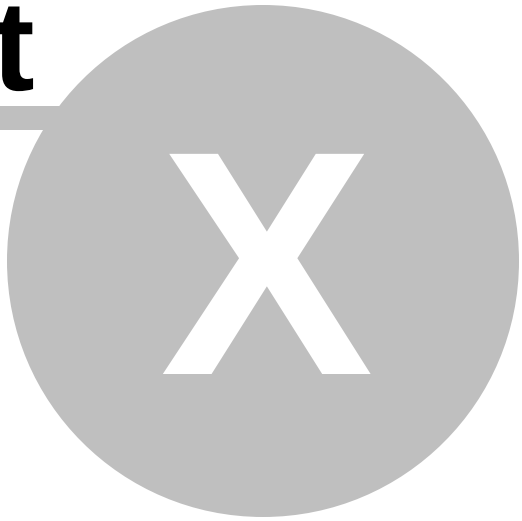


Table displays *trigger* name, *event* that causes trigger activation (INSERT, UPDATE or DELETE), *table* for which trigger is defined, *statement* to be executed when trigger is activated, trigger *timing* (BEFORE or AFTER), *Created* (currently the value of this column is always NULL), *SQL mode* in effect when the trigger executes (starting from MySQL ver. 5.0.11), definer - account under which the trigger was created, client *character set* name, *collation* of the connection character set, *database collation*.

Part



10 Server Tools

SQL Manager for MySQL provides a number of powerful tools for working with your database server:

Dump Database
Backup Tables
Restore Tables
Flush
Analyze Tables
Check Tables
Repair Tables
Optimize Tables
Truncate Tables
Change Tables Engine
Server Properties
Instance Manager
Run mysql.exe
Ping Server
Shutdown Server

To obtain detailed information concerning MySQL security system and services, refer to the official MySQL server documentation.

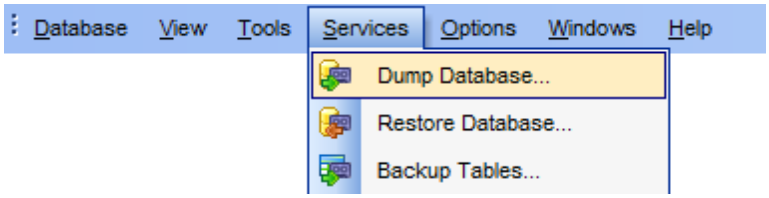
See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server security management
Personalization
External Tools
How To...

10.1 Dump Database

Dump Database Wizard allows you to backup a MySQL database into an SQL script using *mysqldump.exe* client. It can be used to dump a database or a set of databases for backup or transfer to another SQL server (not necessarily a MySQL server).

To run this wizard select the **Services | Dump Database** main menu item.



- Specifying source host
- Selecting databases to dump
- Selecting objects to dump
- Specifying destination file name
- Setting dump options
- Setting structure options
- Setting data options
- Performing operation

See also:

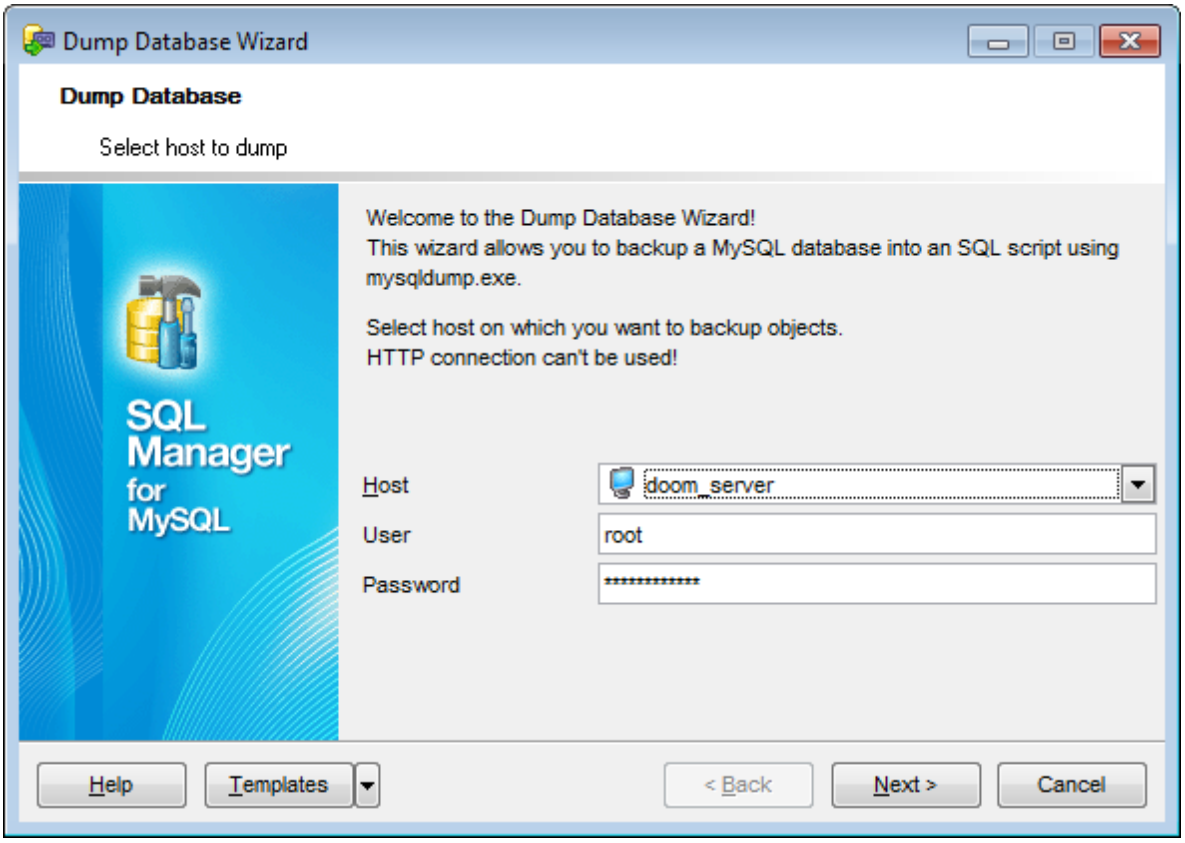
Backup Tables

Restore Database

Using templates

10.1.1 Specifying source host

Use this step to define a host where the databases are located and connection parameters.



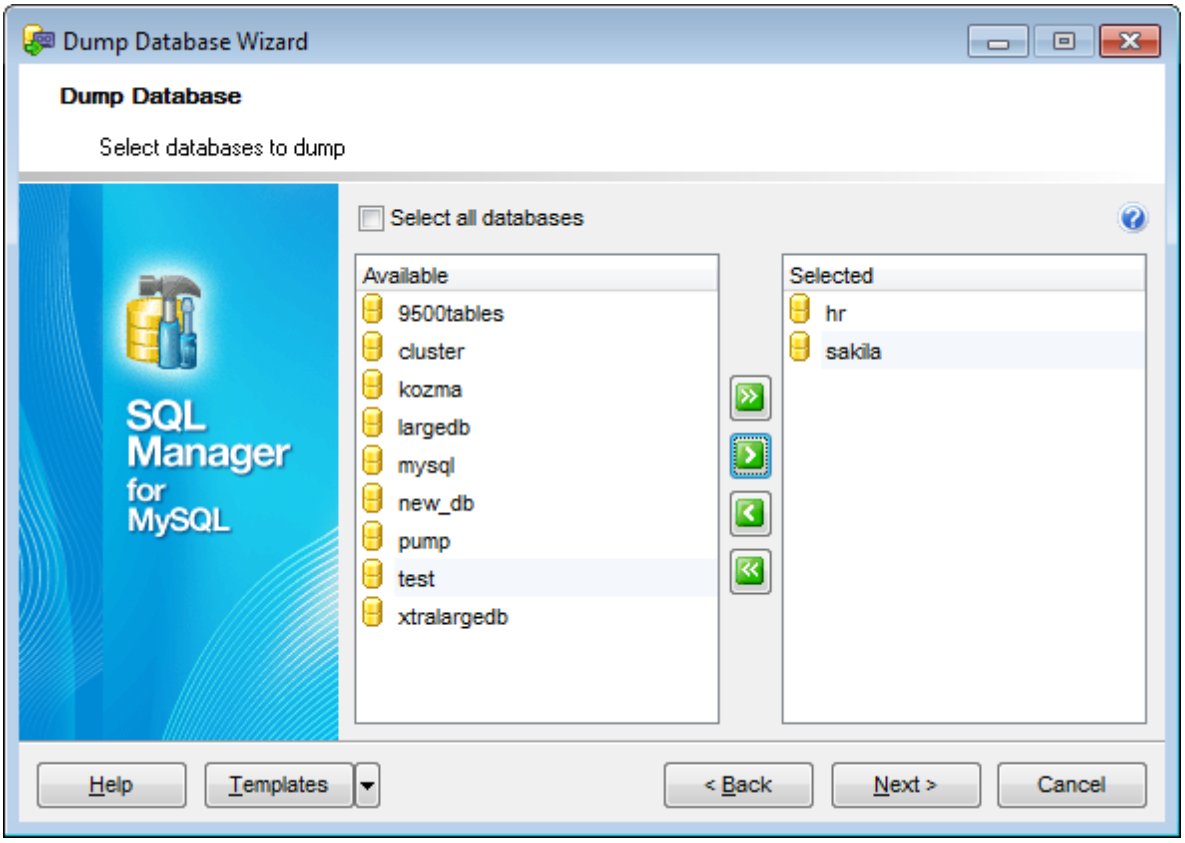
Use the respective drop-down list to select a registered **Host** where the databases are located.

Also, you need to provide *authorization* settings: **User** and **Password** to connect to the server.
By default, these fields are filled up with authorization parameters provided in the Database Registration Info dialog. You can specify another settings for working with *mysqldump.exe*, for example administrator account, in case a user with restricted access rights is used for managing database.

Click the **Next** button to proceed to the Selecting databases to dump step of the wizard.

10.1.2 Selecting databases to dump

This step of the wizard allows you to select the database(s) that reside on the selected host for dumping.



To select a database, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the databases from one list to another.

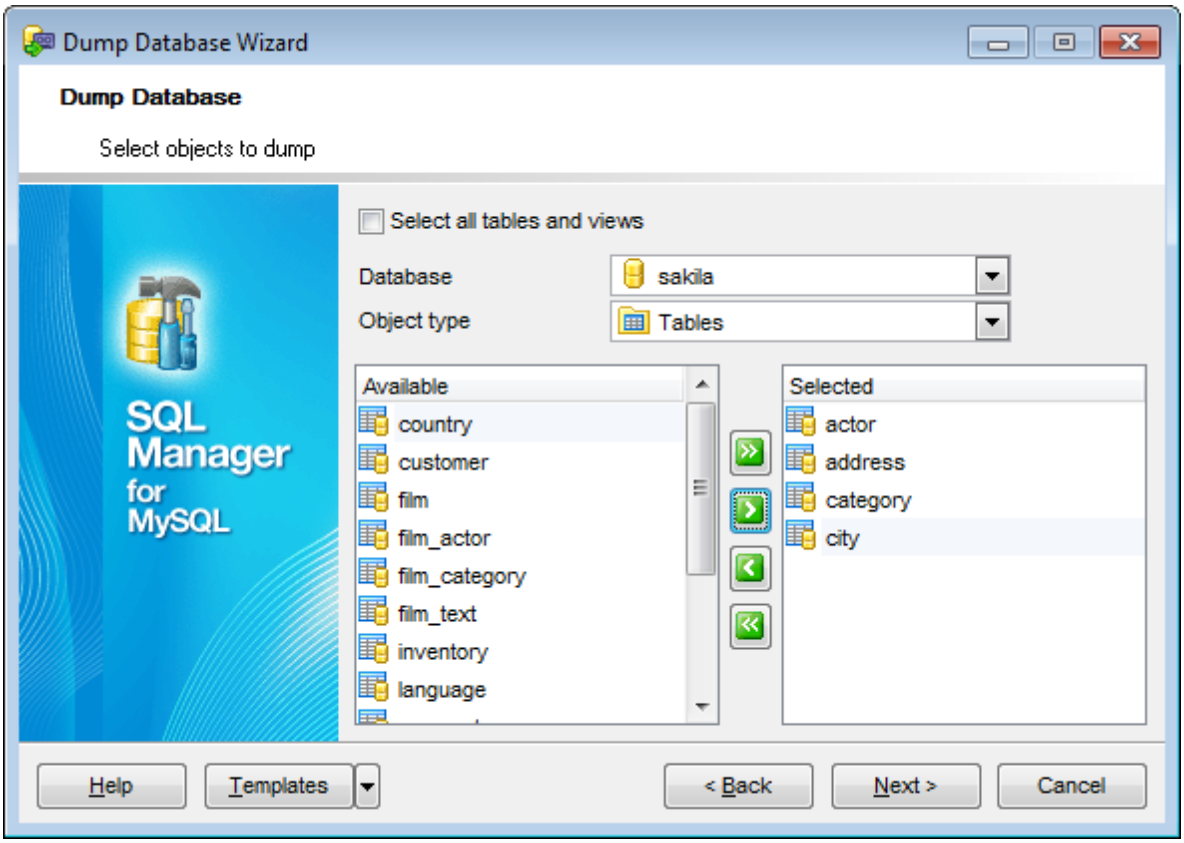
Select all databases
This option is equivalent to the '*--all-databases*' option of the *mysqldump*.
If this option is checked then all tables and views of all databases on the selected host will be dumped.

Click the **Next** button to proceed to the Selecting objects to dump step of the wizard.

10.1.3 Selecting objects to dump

This step of the wizard allows you to **select database(s) objects for dumping**.

Note that this step is only skipped if the ☑ *Select all databases* option was selected on the Selecting databases to dump step.



☑ **Select all tables and views**
Adds all objects of the source databases to the dump database process.

Database
Use the drop-down list to select one of the databases specified on the Selecting databases to dump step.

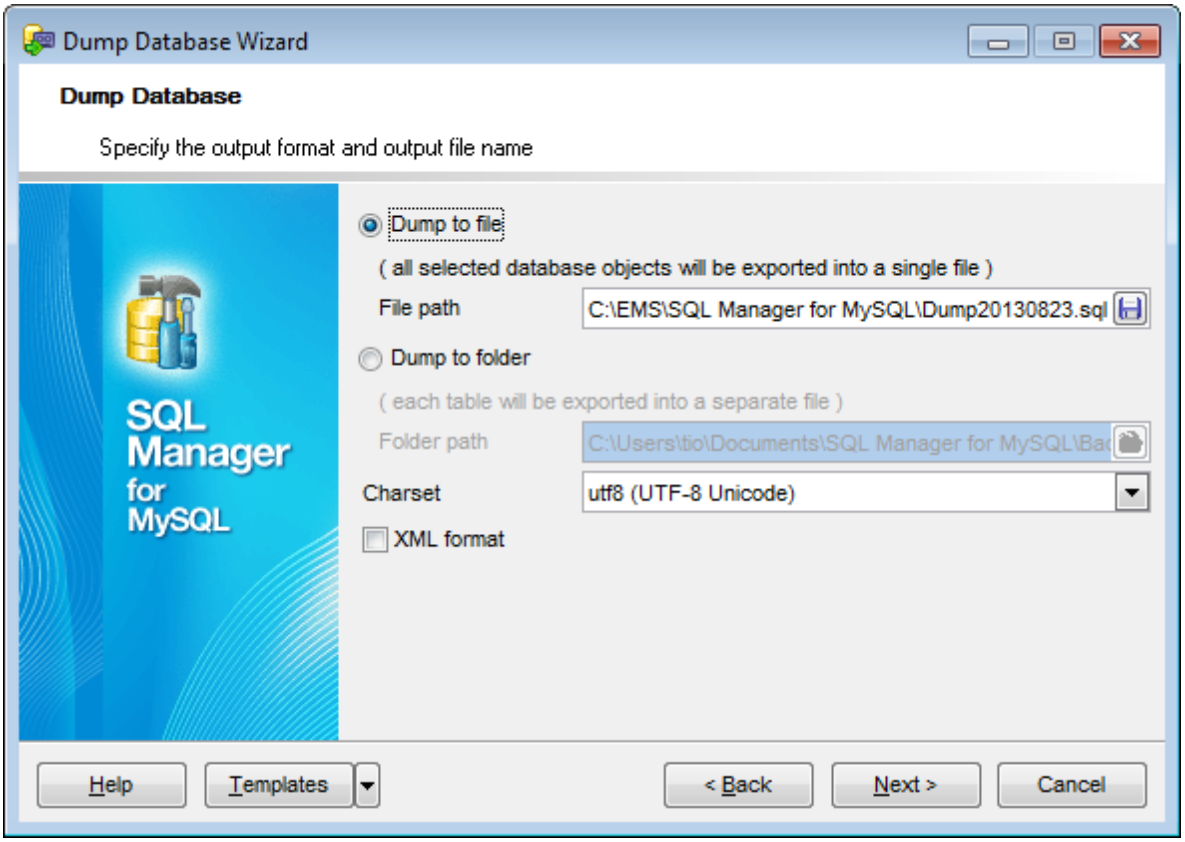
Object type
Use the drop-down list to select the type of objects to be dumped.

To select an object, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the objects from one list to another.

Click the **Next** button to proceed to the Specifying destination file name step of the wizard.

10.1.4 Specifying destination file name

Use this step to specify the dump file(s) output options.



Dump to file
Select this option to export all dumped objects of the selected databases into a single file.

File path
Provide the path to the file for saving the dump script to. Click the **Save** button to locate file using the standard dialog or type the file name and it's location manually.

Dump to folder
This option indicates that the dump script should be splitted into different files. Each table will be exported into a separate file. All views, procedures and functions are exported to the '*routines.sql*' file.

Folder path
Provide the path to the folder where dump script files will be stored. Click the **Browse** button to locate the folder using the standard dialog or type the folder path manually.

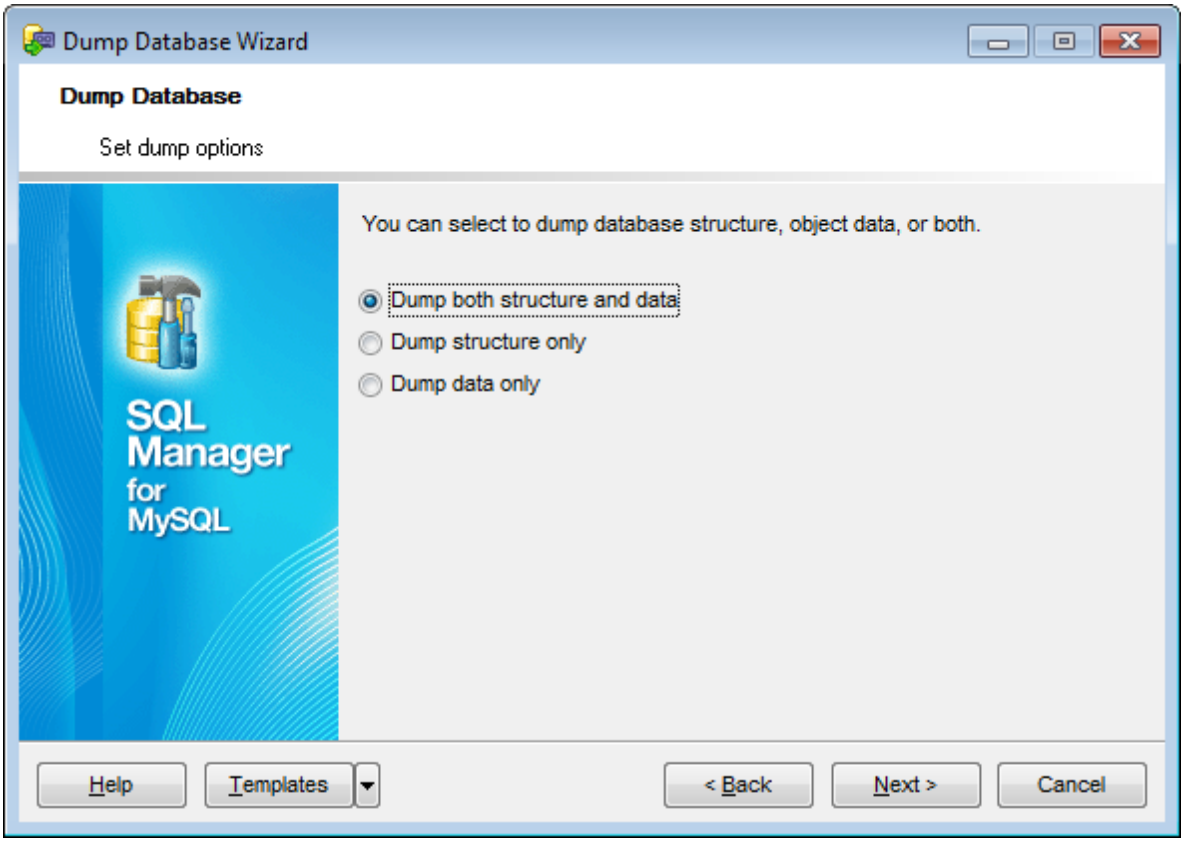
Charset
If necessary, use the drop-down list to select the character set for the file with exported data.

XML format
If this option is checked then the result dump file will be saved in the *.xml file.

Click the **Next** button to proceed to the Setting dump options step of the wizard.

10.1.5 Setting dump options

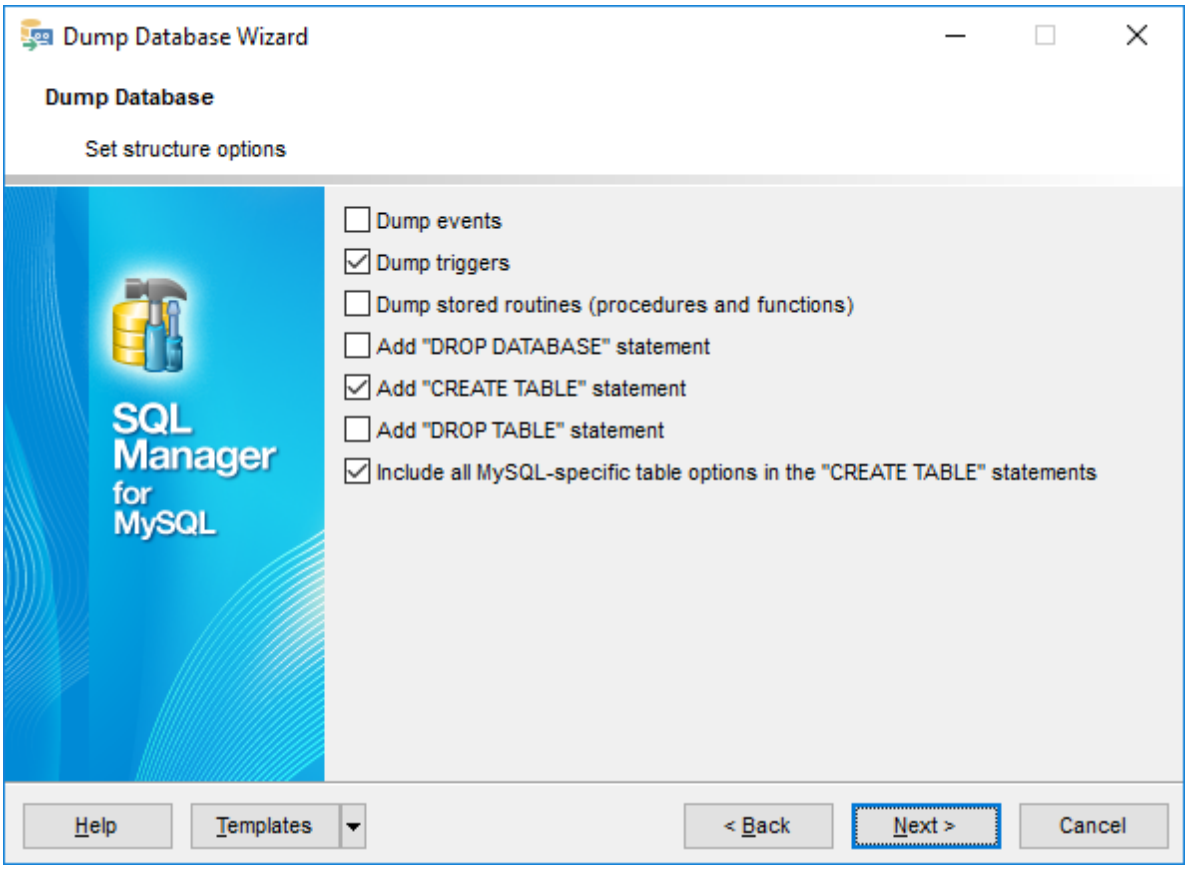
This step allows you to specify the **dump options**: choose whether *structure only*, *data only* or *both* are to be dumped.



Click the **Next** button to proceed to the Setting structure options step of the wizard.

10.1.6 Setting structure options

Use this step of the wizard to set structure options of the result file.
Note that this step is skipped if the *Dump data only* option was selected on the Setting dump options step.



Dump events
This option is equivalent to the '*--events*' option of the *mysqldump*.
Include Event Scheduler events for the dumped databases in the output.

Dump triggers
This option is equivalent to the '*--triggers*' option of the *mysqldump*.
Include triggers for each dumped table in the output.

Dump stored routines (procedures and functions)
This option is equivalent to the '*--routines*' option of the *mysqldump*.
Include stored routines (procedures and functions) for the dumped databases in the output. The output generated contains CREATE PROCEDURE and CREATE FUNCTION statements to re-create the routines.

Add "DROP DATABASE" statement
This option is equivalent to the '*--add-drop-database*' option of the *mysqldump*.
Check the option to add the *DROP DATABASE* statement for the database in the result script.

Add "CREATE TABLE" statement
This option regulates the '*--no-create-info*' parameter of the *mysqldump* command.
Check this option to add the *CREATE TABLE* statement to the result script that re-creates each dumped table.

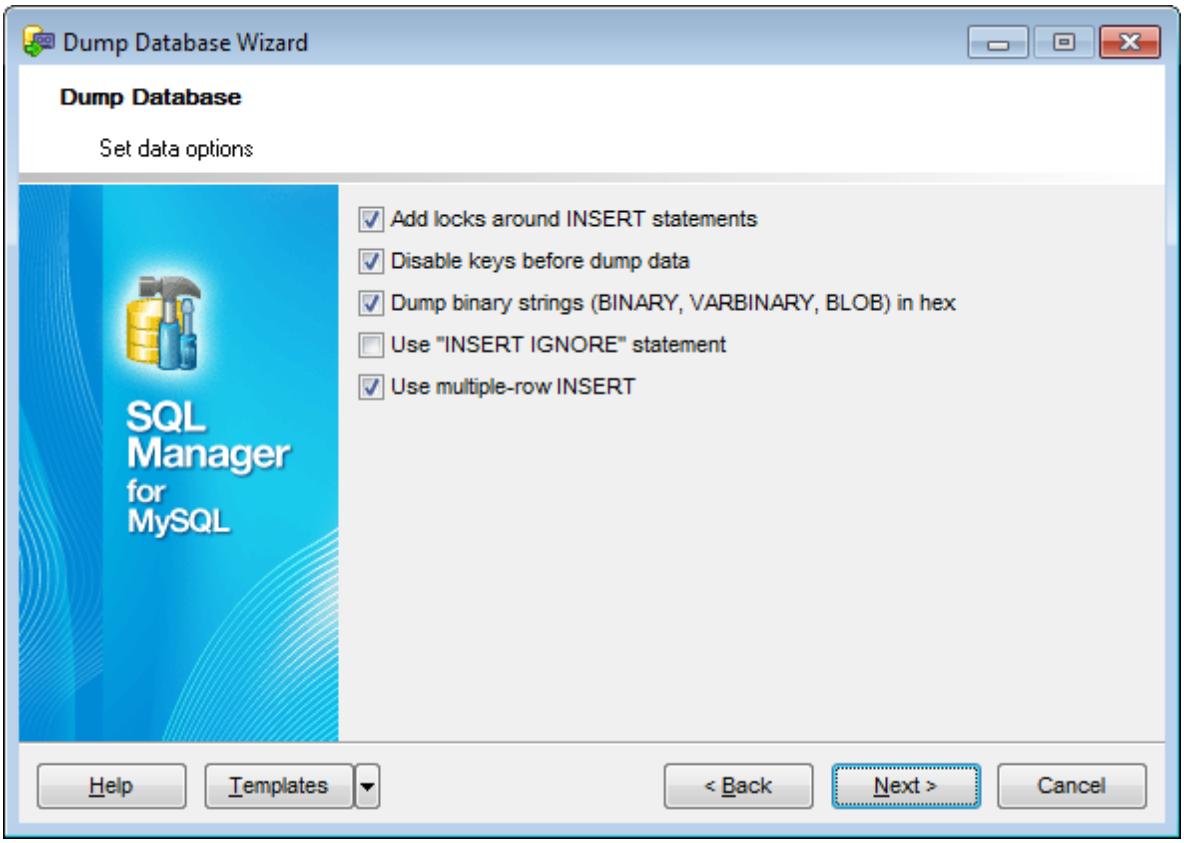
Add "DROP TABLE" statement
This option is equivalent to the '*--add-drop-table*' option of the *mysqldump*.
Check this option to add a DROP TABLE statement before each CREATE TABLE statement.

Include all MySQL-specific table options in the "CREATE TABLE" statements
This option is equivalent to the '*--create-options*' option of the *mysqldump*.

Click the **Next** button to proceed to the Setting data options step of the wizard.

10.1.7 Setting data options

Use this step of the wizard to set data options of the result file.
Note that this step is skipped if the *Dump structure only* option was selected on the Setting dump options step.



Add locks around INSERT statements
This option is equivalent to the '*--add-locks*' option of the *mysqldump*.
If this option is checked then each table dump is surrounded with LOCK TABLES and UNLOCK TABLES statements.

Disable keys before dump database
This option is equivalent to the '*--disable-keys*' option of the *mysqldump*.
Check this option to surround the INSERT statements with */*!40000 ALTER TABLE tbl_name DISABLE KEYS */*; and */*!40000 ALTER TABLE tbl_name ENABLE KEYS */*; statements for each table.

Dump binary strings (BINARY, VARBINARY, BLOB) in hex
This option is equivalent to the '*--hex-blob*' option of the *mysqldump*.
If this option is checked then binary columns are dumped using hexadecimal notation.

Use "INSERT IGNORE" statement
This option is equivalent to the '*--insert-ignore*' option of the *mysqldump*.

INSERT IGNORE statements are written instead of INSERT statements in a script.

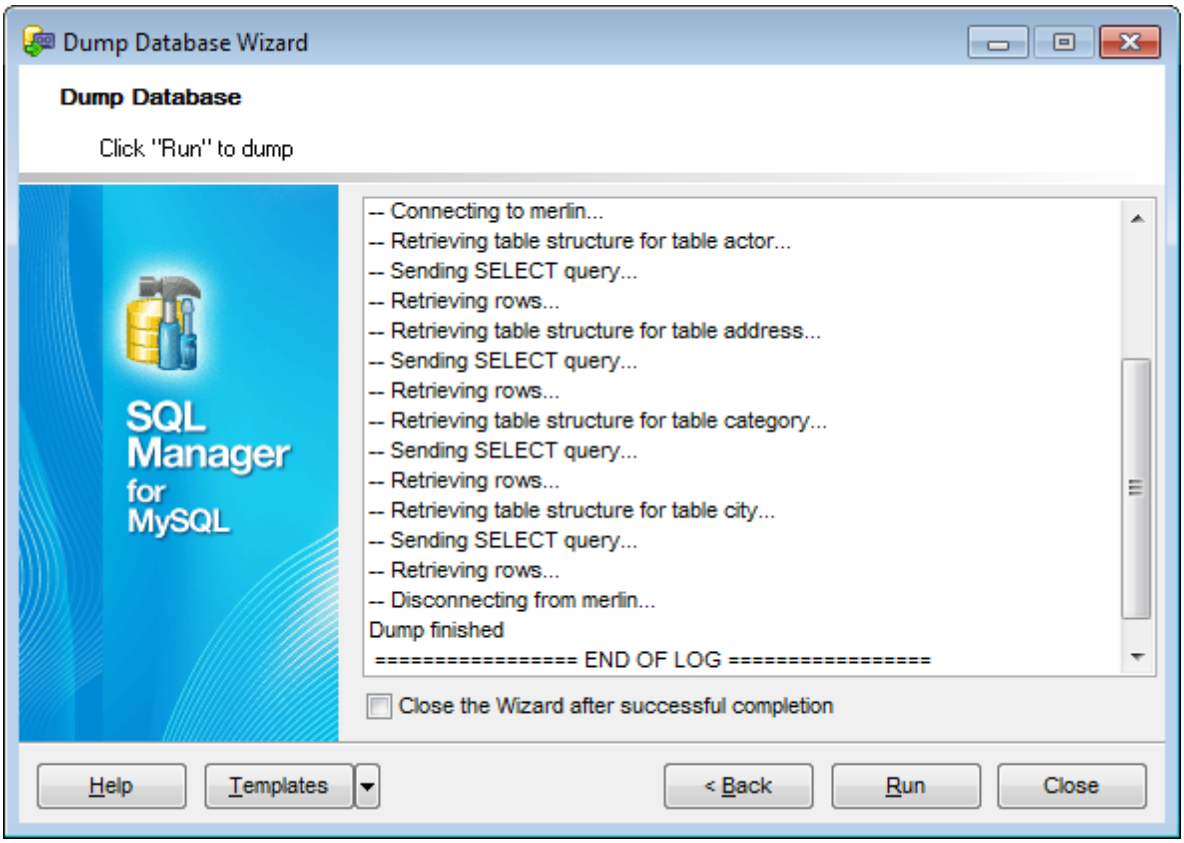
Use multiple-row INSERT
This option is equivalent to the '*--extended-insert*' option of the *mysqldump*.
Check this option to use multiple-row INSERT syntax that include several VALUES lists.
This results in a smaller dump file and speeds up inserts when the file is reloaded.

Click the **Next** button to proceed to the Performing operation step of the wizard.

10.1.8 Performing operation

This step of the wizard is intended to inform you that all dump options have been set, and you can start the dump process.

The log area allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the dump process is completed.

If necessary, you can save a template for future use.

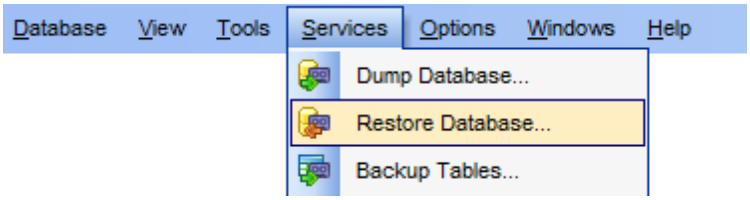
Click the **Run** button to run the extraction process.

10.2 Restore Database

Restore Database Wizard allows you to restore a MySQL database from an SQL script using *mysql.exe* client. It can be used for restoring a database or a set of databases.

Note: For running the restoring process the *mysql.exe* file must be situated in the *C:\Program Files (x86)\EMS\SQL Manager for MySQL\Dump* directory.

To run this wizard select the **Services** | **Restore Database** main menu item.



- Specifying host
- Selecting file for restoring
- Selecting databases
- Selecting objects
- Performing operation

See also:

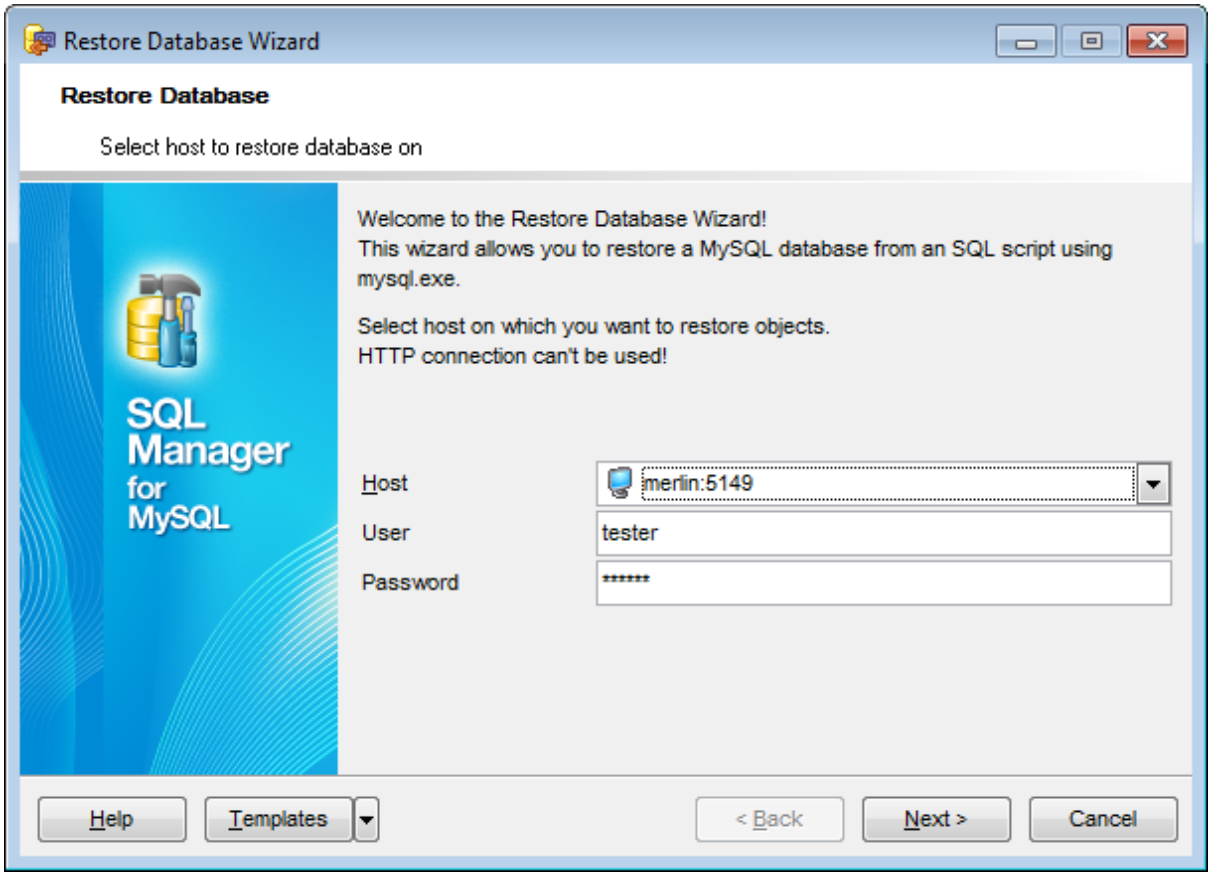
Restore Tables

Dump Database

Using templates

10.2.1 Specifying host

Use this step to define a host where the databases should be restored and connection parameters.



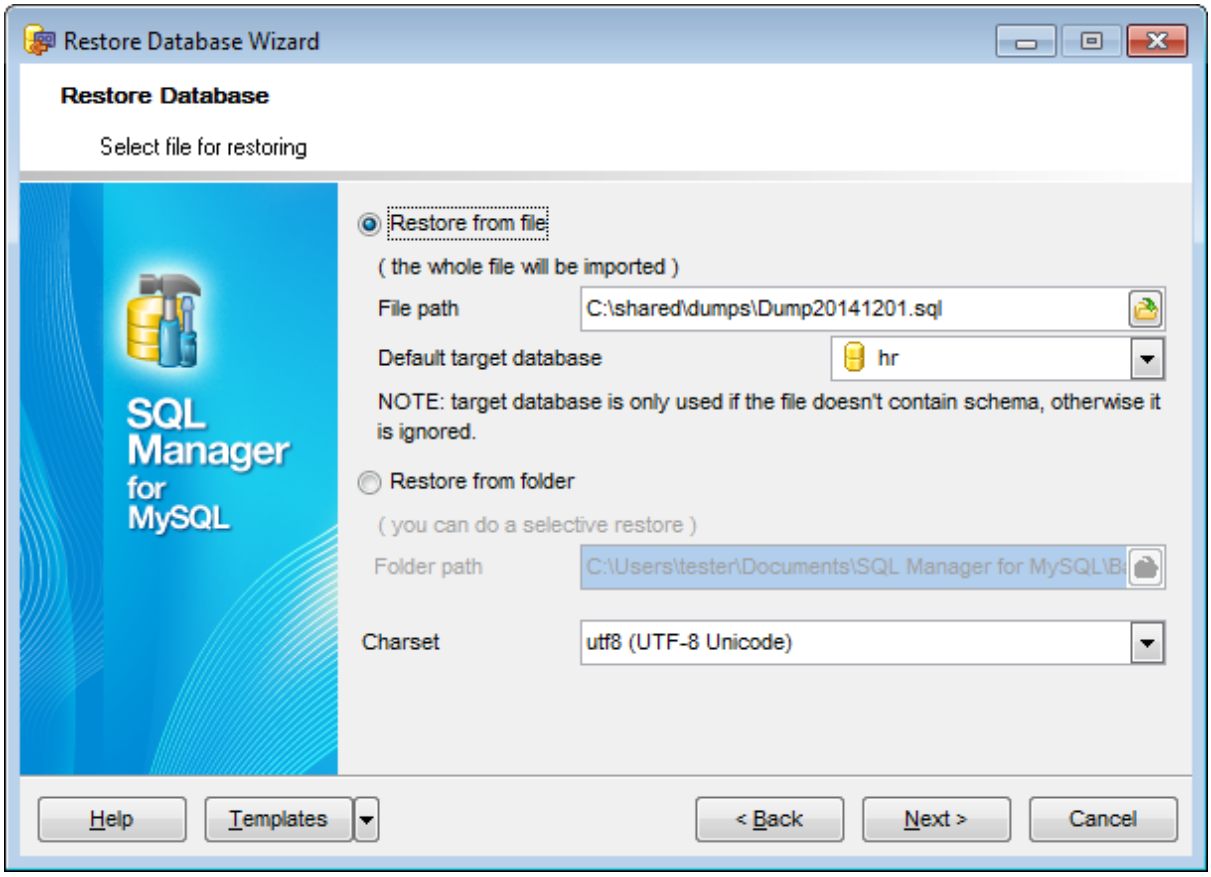
Use the respective drop-down list to select a registered **Host** where the databases are located.

Also, you need to provide *authorization* settings: **User** and **Password** to connect to the server.
By default, these fields are filled up with authorization parameters provided in the Database Registration Info dialog. You can specify another settings for working with *mysql.exe*, for example administrator account, in case a user with restricted access rights is used for managing database.

Click the **Next** button to proceed to the Selecting file for restoring step of the wizard.

10.2.2 Selecting file for restoring

On this step you need to specify a dump file or a folder with dump files that should be restored.



Restore from file
Select this option to restore a database or a set of databases from the single dump file.

File path
Provide the path to the file for loading the dump script. You can specify file name and location manually or locate it using standard **Open** dialog.

Default target database
Use the drop-down list of the databases located on the host to select the database that should be restored. This value is used if the dump file does not contain *CREATE DATABASE* or USE statements, otherwise it is ignored and all databases included in the dump file are restored.

Restore from folder
Select this option to restore a database or a set of databases from a set of files located in one folder.

Folder path
Provide the path to the folder for loading the dump files. You can specify the folder

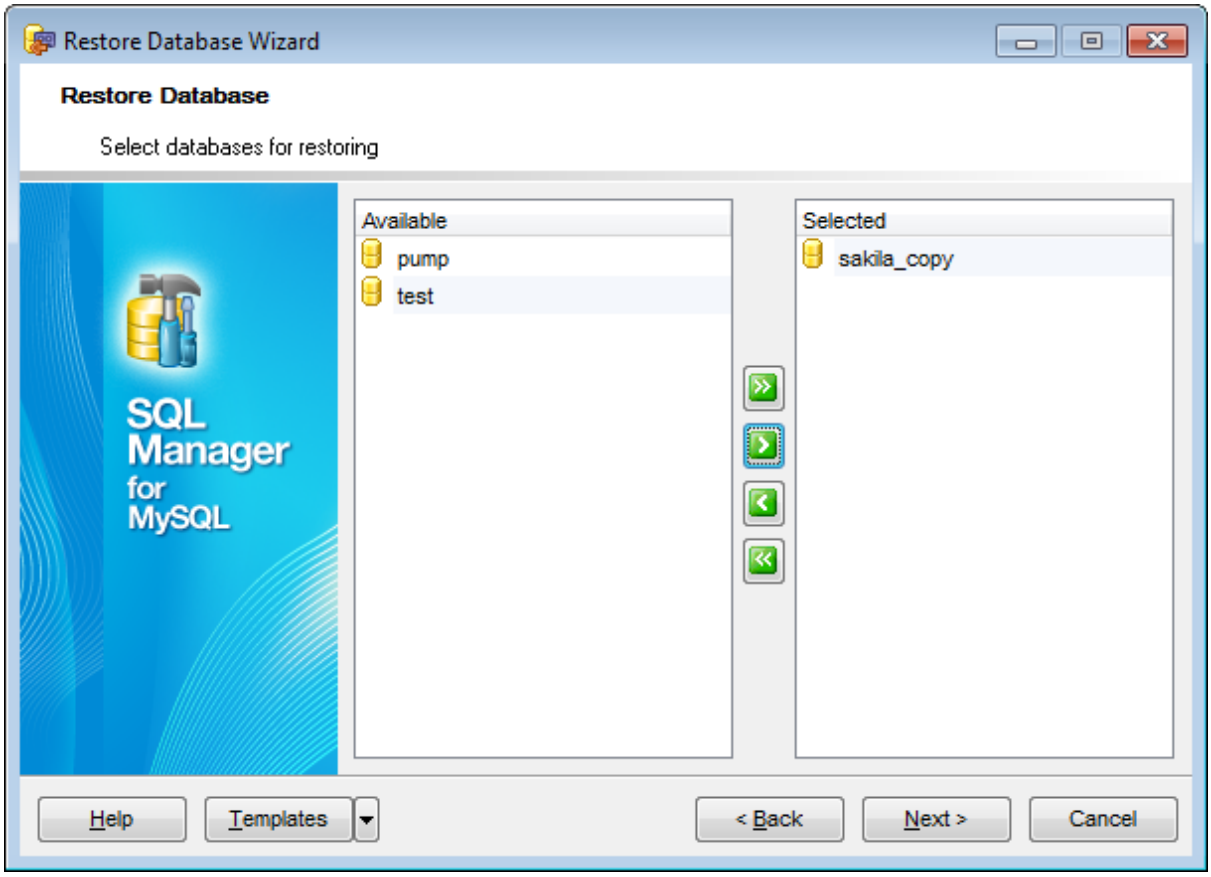
location manually or locate it using standard  **Open** dialog.

Charset
If necessary, use the drop-down list to select the character set of the script.

Click the **Next** button to proceed to the Selecting databases step of the wizard.

10.2.3 Selecting databases

This step appears if on the previous step the **Restore from folder** option was selected. On this step you can select databases that should be restored.



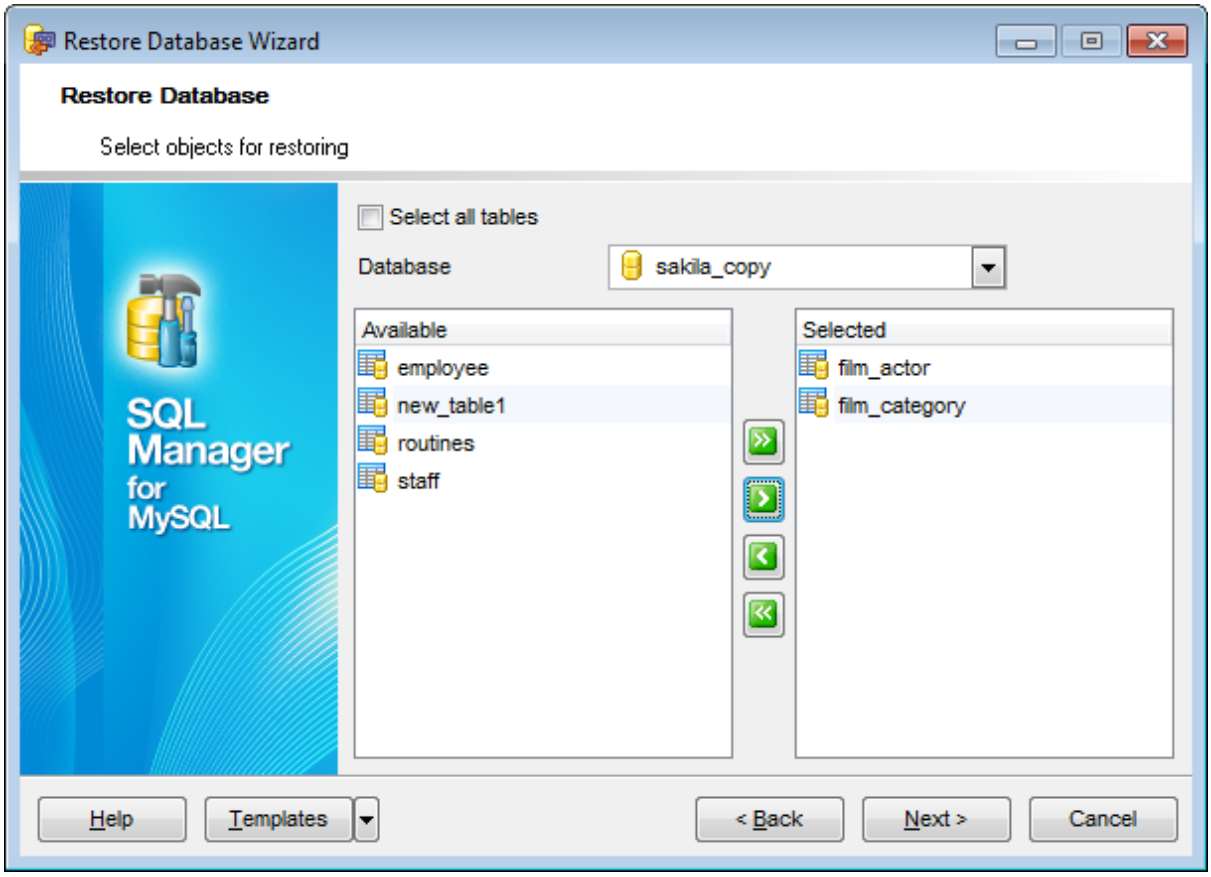
The **Available** list contains all databases found in the specified folder.

To select a database, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the databases from one list to another.

Click the **Next** button to proceed to the Selecting objects step of the wizard.

10.2.4 Selecting objects

On this step you can select tables that should be restored.



Use the **Database** drop-down list to select the database where the tables will be restored.

The **Available** list contains all tables which DDLs are found in the selected database dump.
To select a table, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the databases from one list to another.

Note: For restoring views, procedures and triggers you need to select the *'routines'* table.

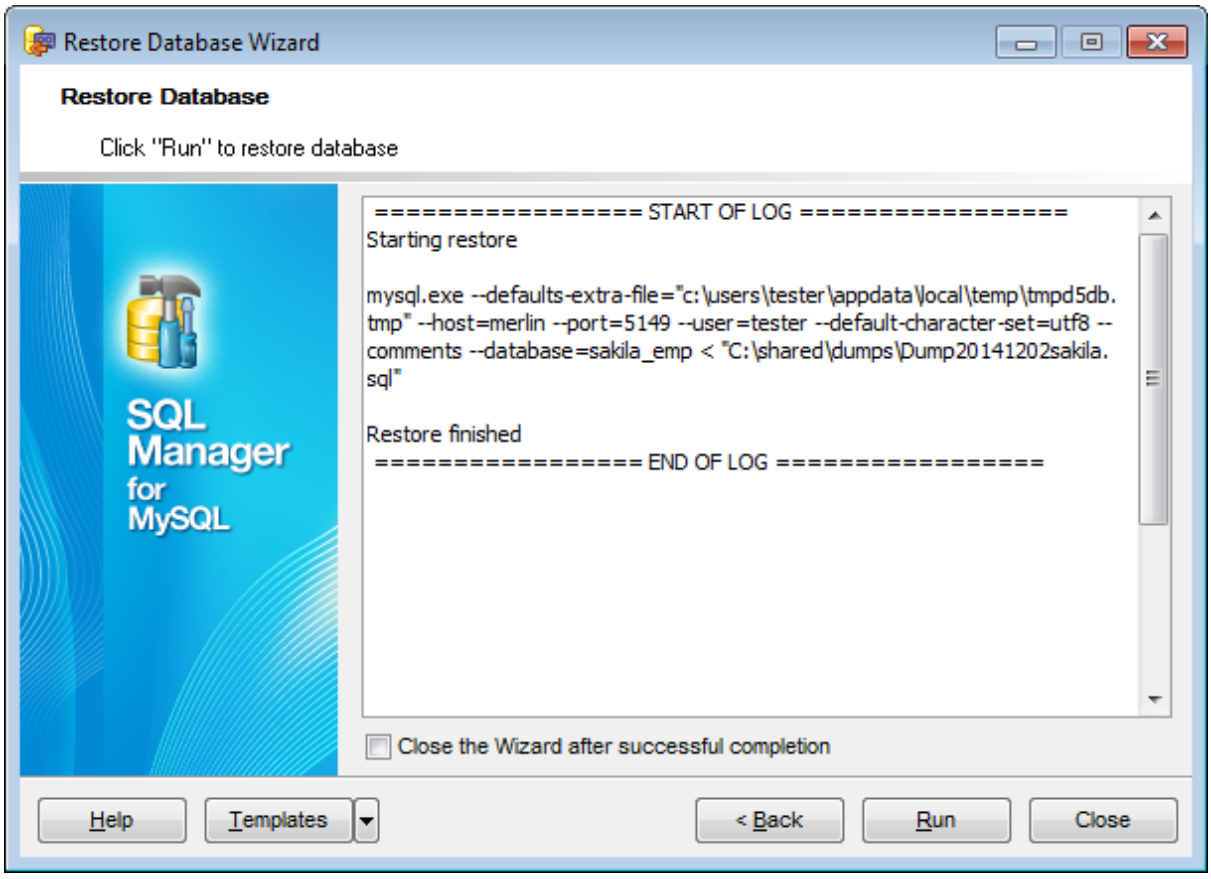
To restore all available tables in all selected databases check the **Select all tables** option.

Click the **Next** button to proceed to the Performing operation step of the wizard.

10.2.5 Performing operation

This step of the wizard is intended to inform you that all restore options have been set, and you can start the restore process.

The log area allows you to view the log of operations and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the restoring process is completed.

If necessary, you can save a template for future use.

Click the **Run** button to run the extraction process.

10.3 Backup Tables

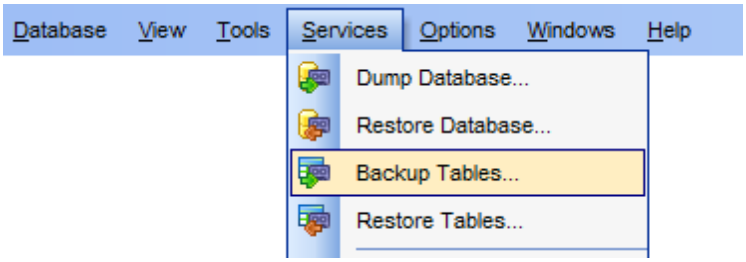
Backup Tables Wizard allows you to make a copy of all the table files to a local backup directory.

Currently MySQL supports backup only for tables of MyISAM storage engine. The service copies *.frm (definition) and *.myd (data) files. The index file can be rebuilt from those two. The copied table is locked with a read lock during the backup process.

Note: This tool is not accessible for MySQL 5.5 and higher.

Note: You cannot backup tables on a remote server; backup works only for local databases. To backup tables from a remote server, you can use Extract Database, and then restore them using SQL Script Editor.

To run the wizard, select the **Services | Backup Tables...** main menu item.



- Selecting database for backup
- Selecting tables for backup
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

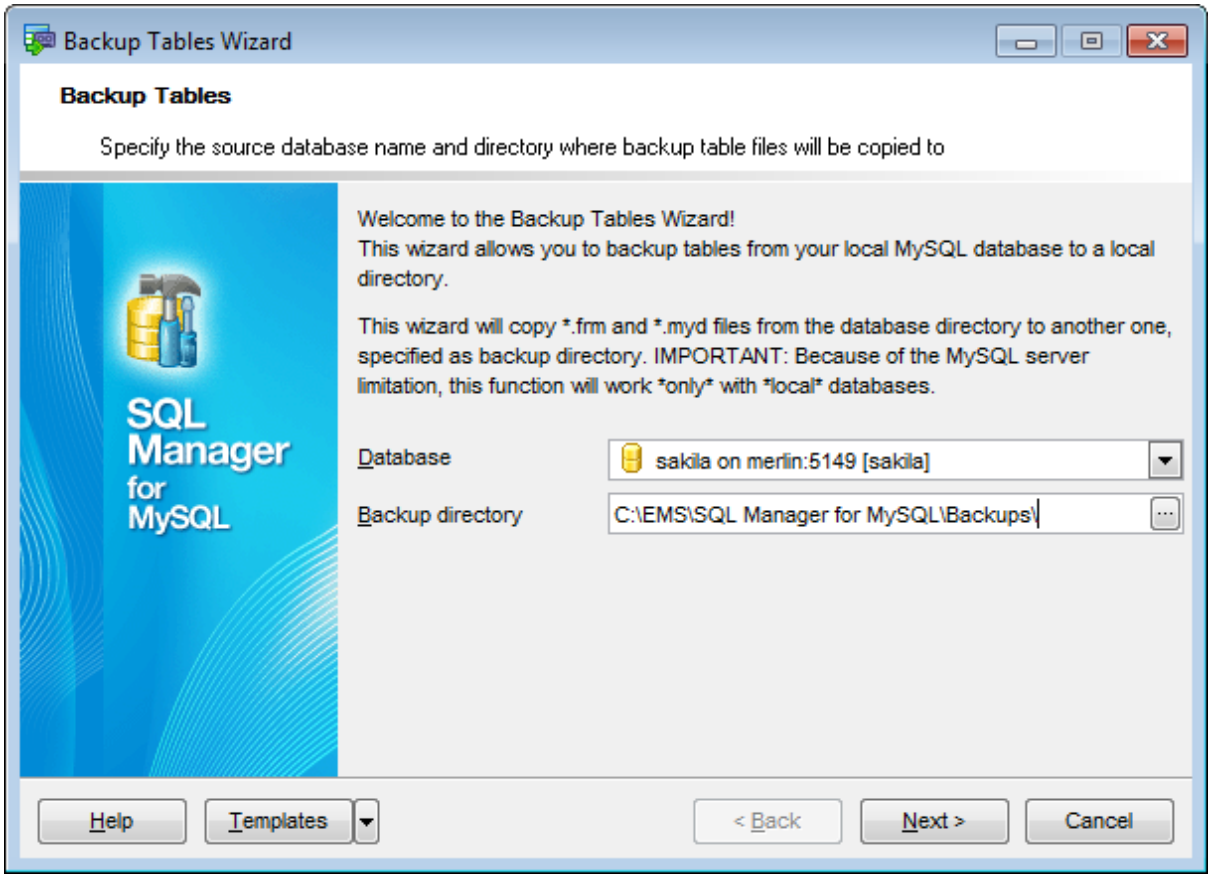
See also:

Restore Tables

Using templates

10.3.1 Selecting database

This step of the wizard allows you to specify the **database** where tables for backup are stored and the **backup directory**.



Database
Use the drop-down list of registered databases to select the database where tables for backup are stored.

Backup directory
Type in or use the ellipsis button to specify the full path to the directory where the backup files will be stored.

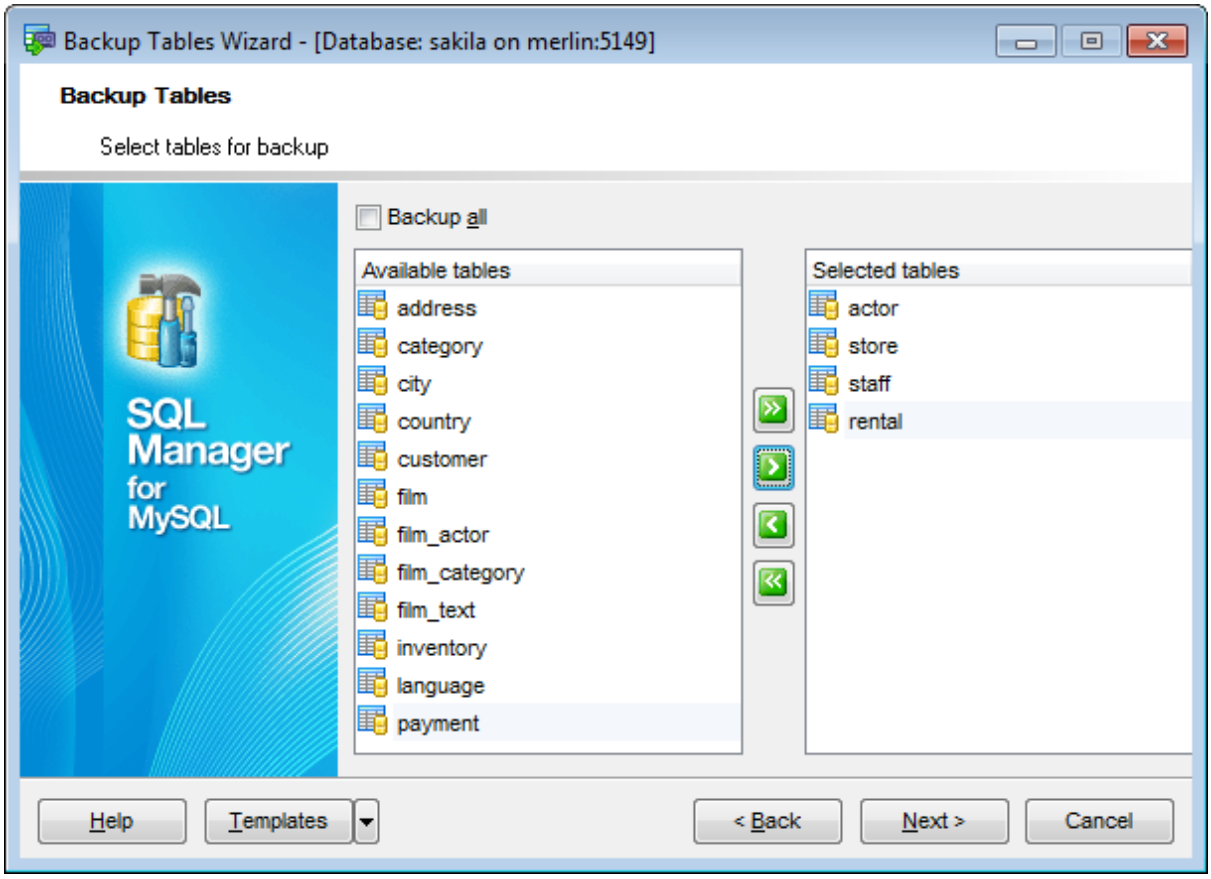
Click the **Next** button to proceed to the Selecting tables for backup step of the wizard.

10.3.2 Selecting tables for backup

Use this step of the wizard to **select the tables** to be backed up using MySQL routines.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.

To backup all available tables, check the corresponding **Backup all** option.



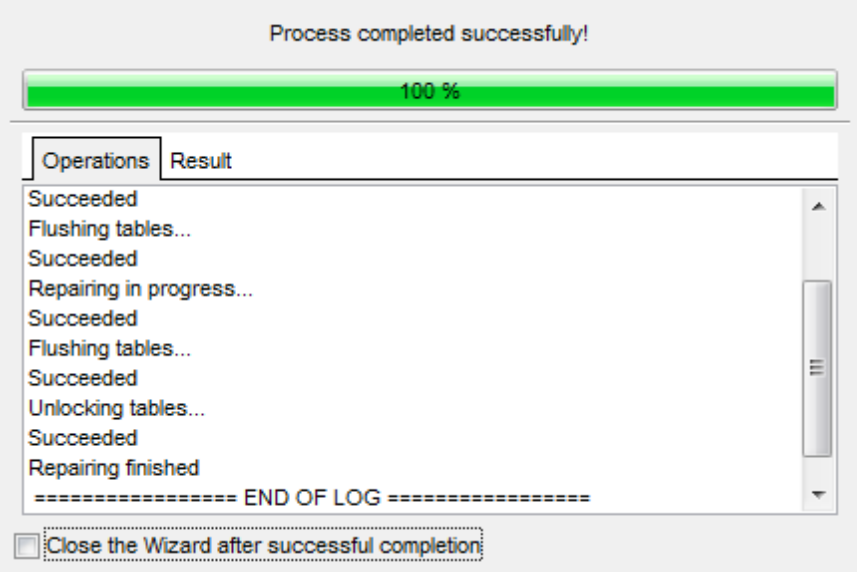
Click the **Next** button to proceed to the last step of the wizard.

10.3.3 Viewing routine results

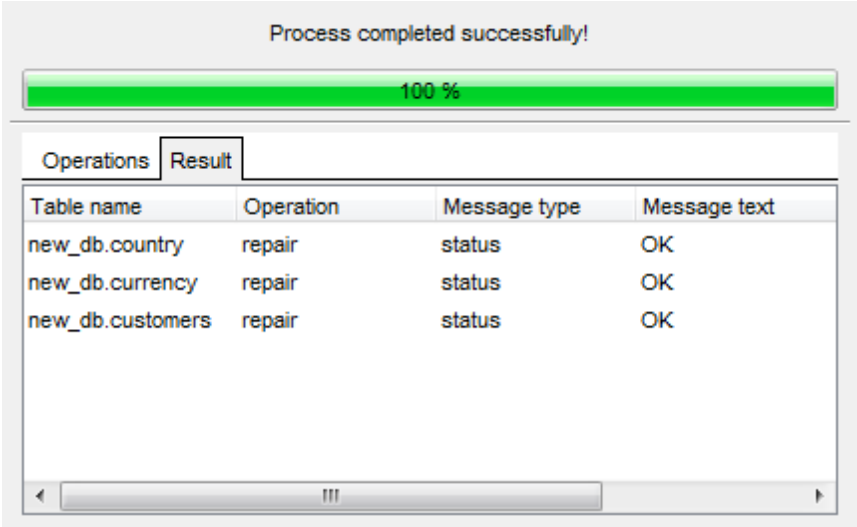
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

If necessary, you can save a template for future use.

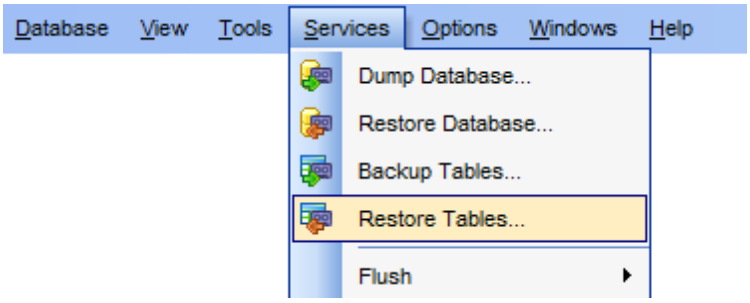
Click the **Run** button to complete the operation.

10.4 Restore Tables

Restore Tables Wizard allows you to restore database tables saved previously with Backup Tables Wizard.

Existing tables cannot be overwritten: en error will be displayed on attempt to restore the table over the existing one. The restore process takes more time than creating a backup, because the tool needs to rebuild indices. The more keys there are in tables, the more time the reconstruction will take. At present it is possible to restore (as well as to backup) only tables of MyISAM storage engine.

To run the wizard, select the **Services |** **Restore Tables...** main menu item.



- Setting the source directory
- Selecting target database
- Selecting tables for restoring
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

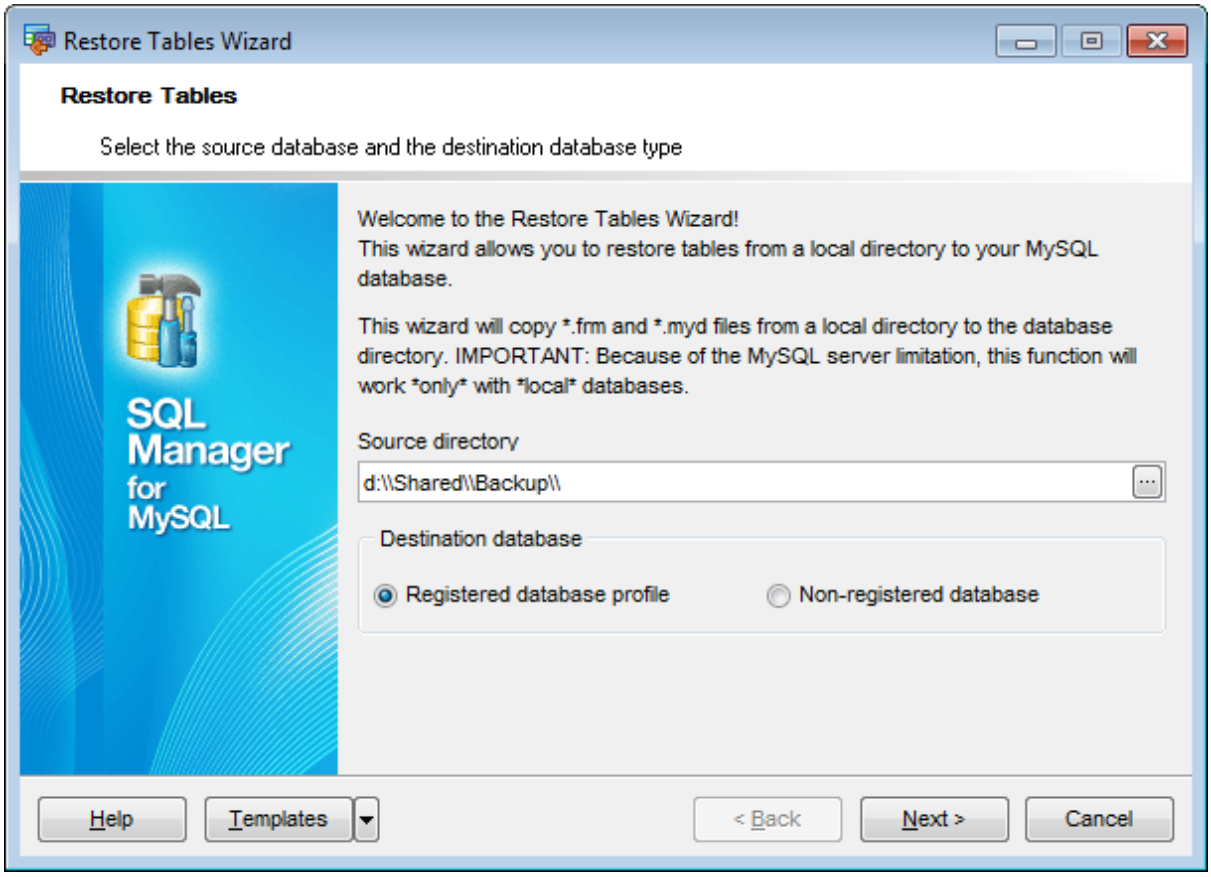
See also:

Backup Tables

Using templates

10.4.1 Setting the source directory

This step of the wizard allows you to specify the **source directory** to be used to restore tables and to select the status of the destination database.



Source directory

Type in or use the ellipsis button to specify the full path to the directory where the backup files are currently stored.

Destination database

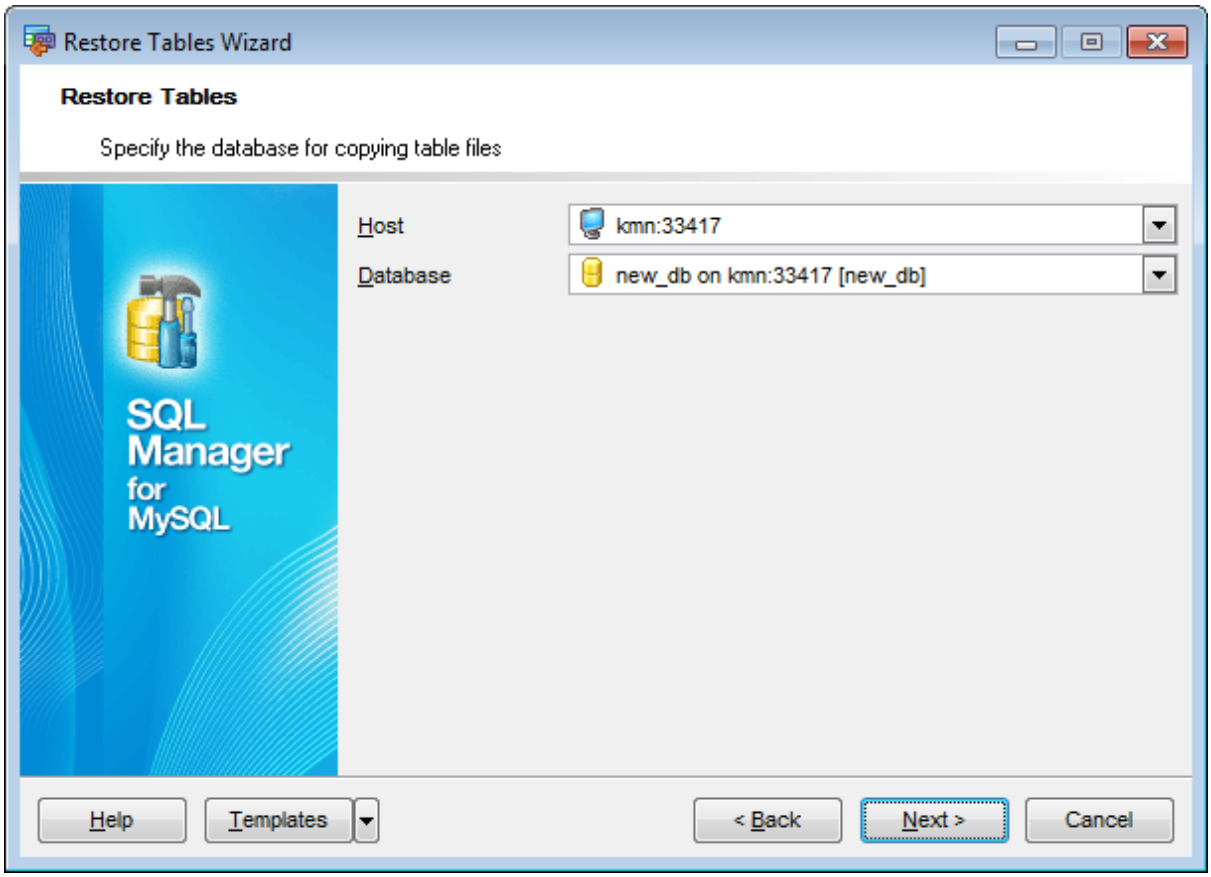
Select whether the tables should be restored to a *registered database* or to a database which is not registered in **SQL Manager** yet (*non-registered database*).

Click the **Next** button to proceed to the Selecting target database step of the wizard.

10.4.2 Selecting target database

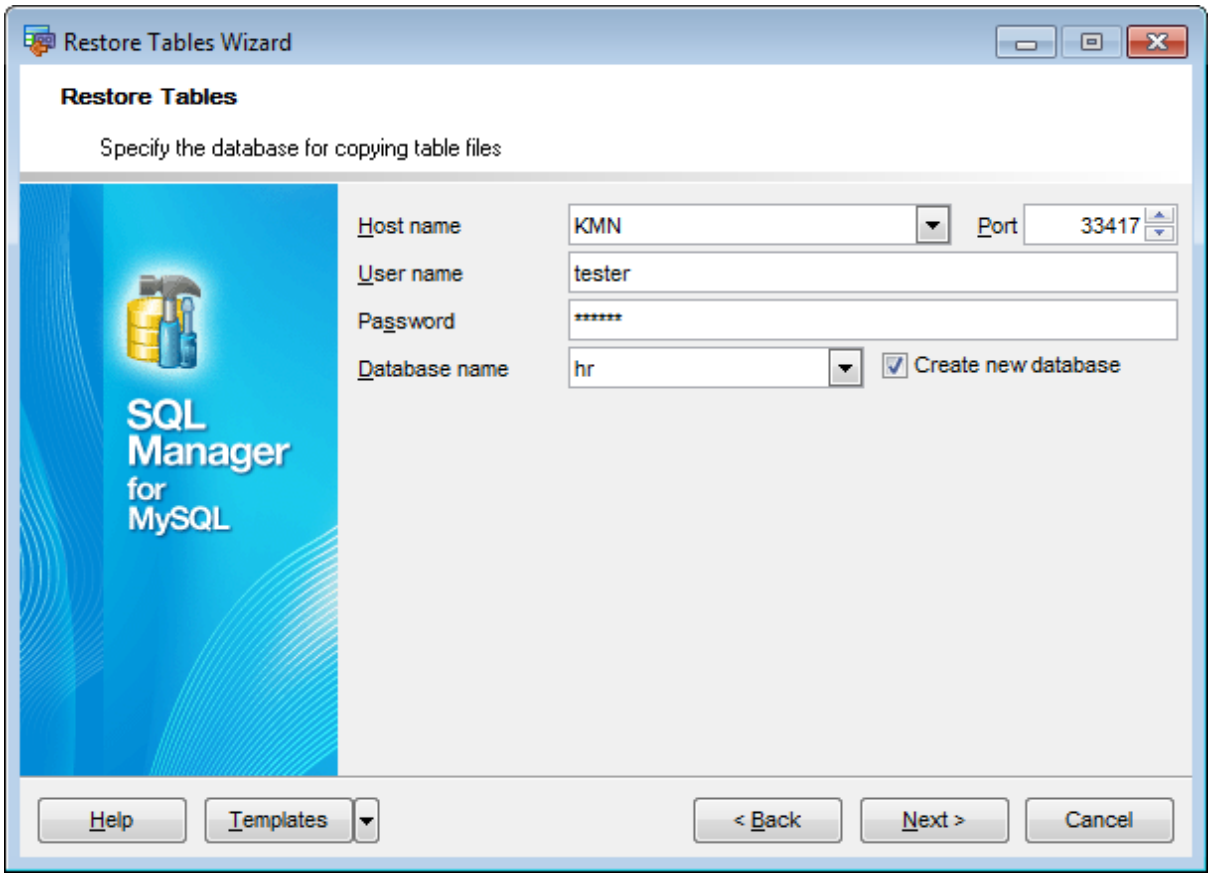
Use this step to define the database to restore tables into.

In case you are restoring the tables to a *registered database*:
Use the **Host** and **Database** drop-down lists to select the host and the database where the tables will be restored.



In case you are restoring the tables to a *non-registered database*:

Set the connection parameters to register the database where the tables will be restored.



Select a registered **Host** from the drop-down list and specify the connection **port**.

Provide authorization information: **User name** and **Password**.

Select a **Database name** from the respective drop-down list.

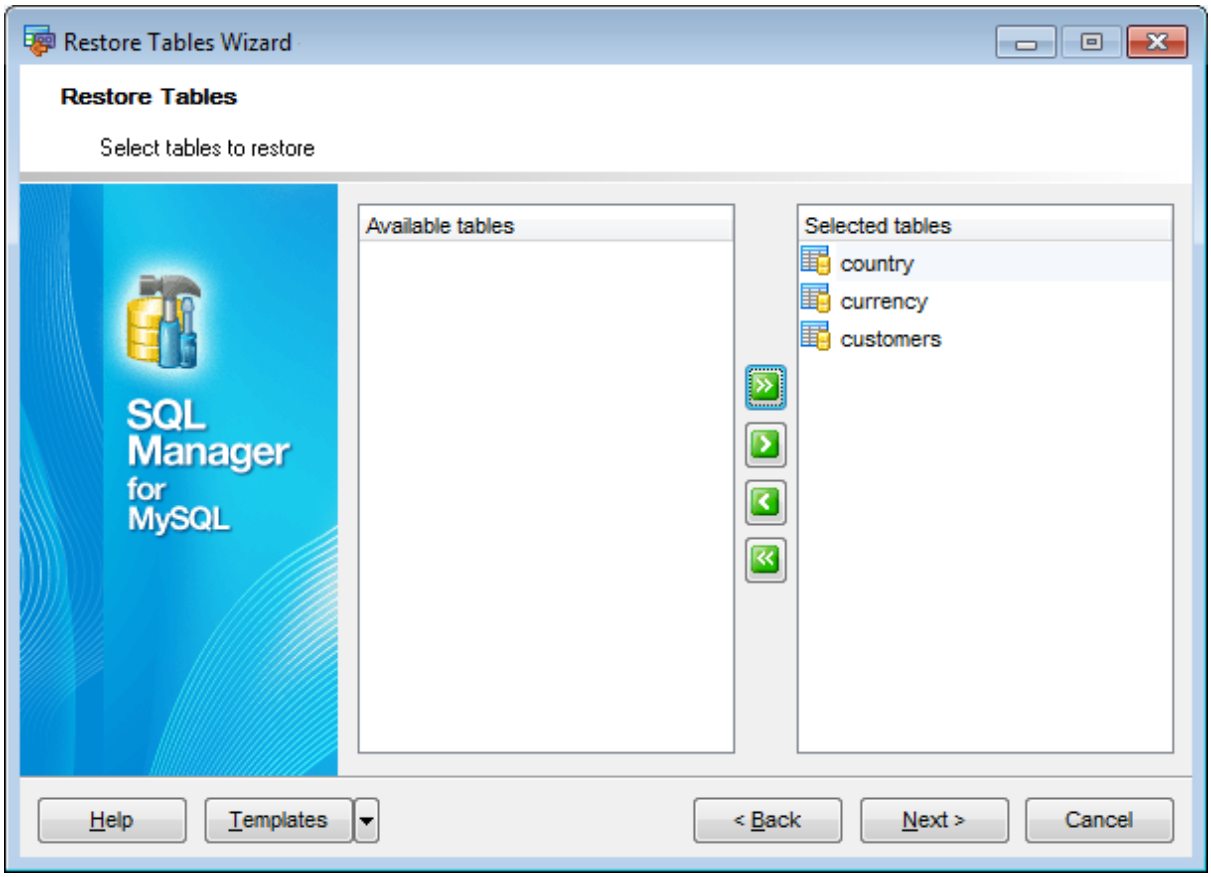
Note: If there is no required database on the host, you can create a new one. Use the ☑ **Create new database** option for this purpose.

Click the **Next** button to proceed to the Selecting tables for restoring step of the wizard.

10.4.3 Selecting tables for restoring

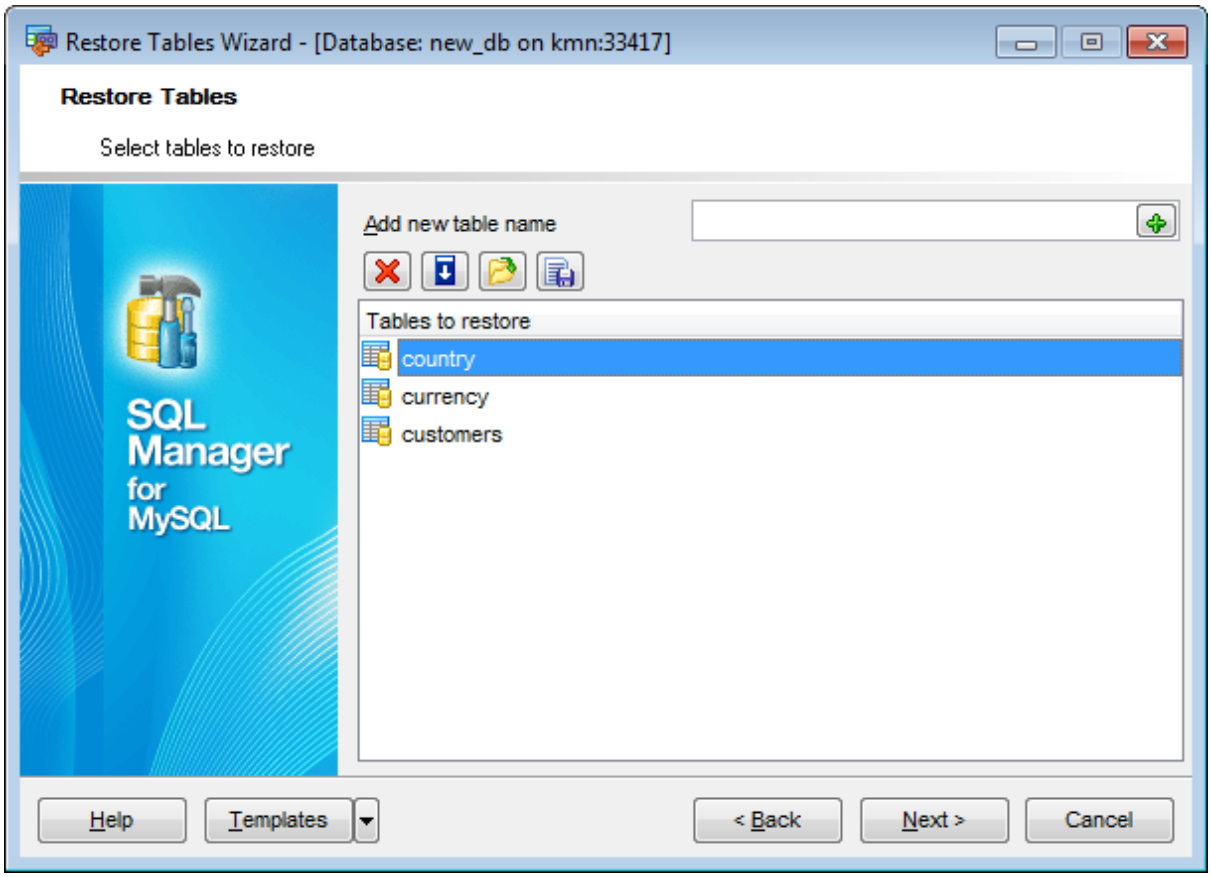
Use this step of the wizard to **select the tables** to be restored using MySQL routines.

If you are restoring tables on a local host then this step looks the following way:



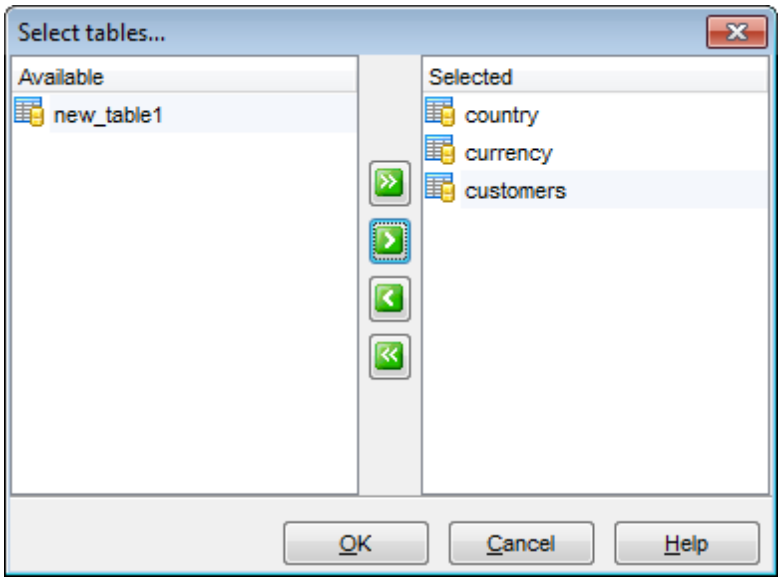
To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.

If you are restoring tables on a remote host then this step looks the following way:



Note: You can manually input the names of tables that do not exist in the database to restore (e.g. when restoring tables on a remote host).

To *add* a table name, type it in and click the ✚ button to add it to the **Tables to restore** list.
To *remove* a table name, select it in the **Tables to restore** list and click the ✖ button.
To *fill* table names from the specified target database, click the button to call the **Select tables...** dialog.



To *load* table names list from a text file, click the button.
To *save* the **Tables to restore** list as a **.txt* file, click the button.

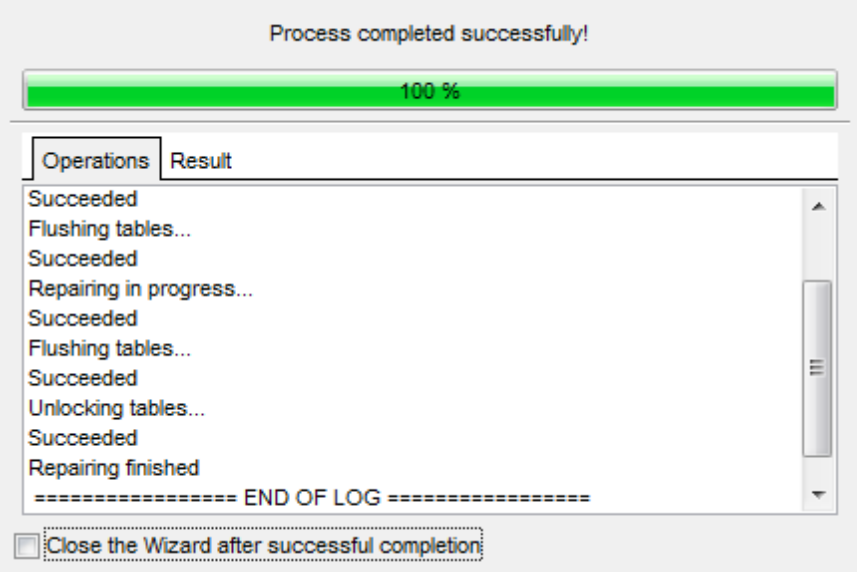
Click the **Next** button to proceed to the last step of the wizard.

10.4.4 Viewing routine results

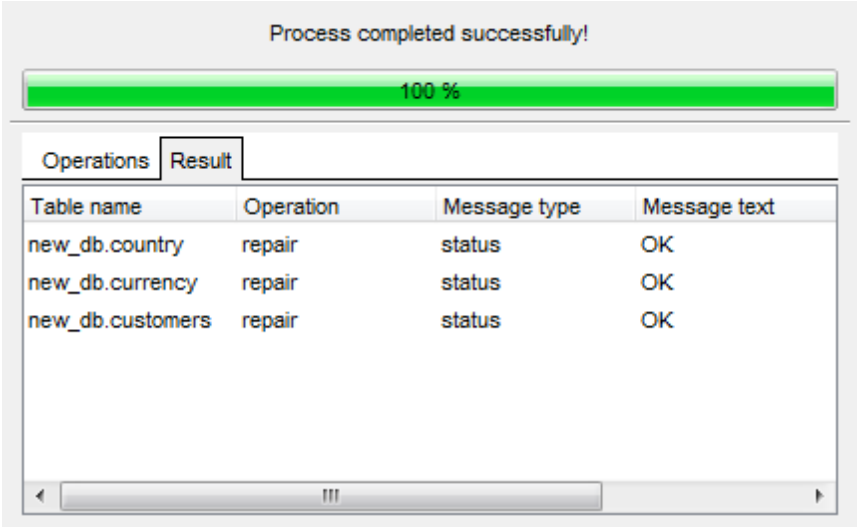
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

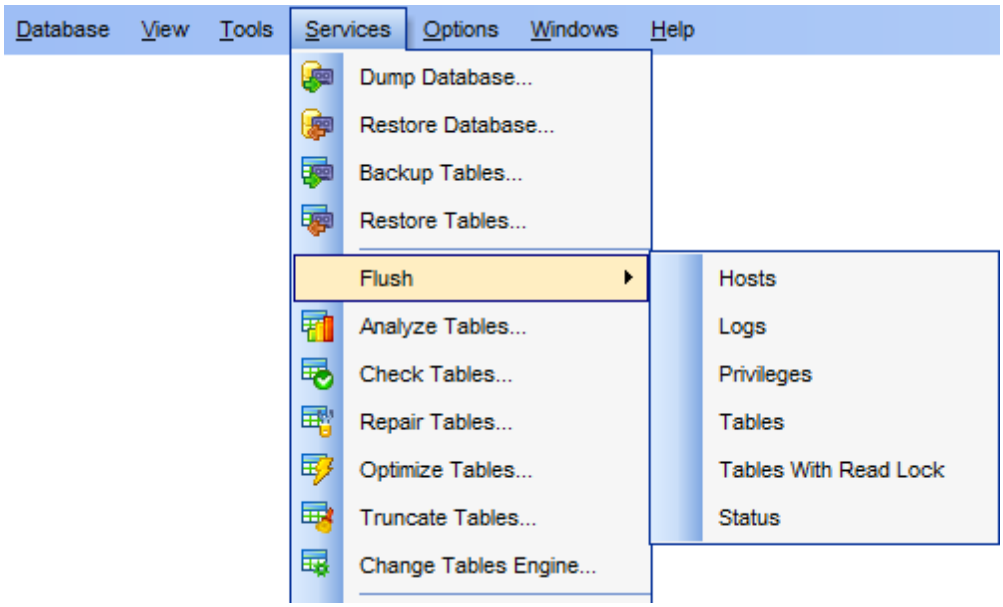
If necessary, you can save a template for future use.

Click the **Run** button to complete the operation.

10.5 Flush

The **Services | Flush** menu allows you to perform native MySQL *FLUSH* operations that clear some of the internal caches used by the server.

Note: To execute the *FLUSH* command, the user must have the corresponding *Reload* global privilege granted.



- Flush usage

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

10.5.1 Flush usage

The following list illustrates the use of *FLUSH*:

- **HOSTS**

Empties the host cache tables. You should flush the host tables if some of your hosts change IP number or if you get the error message 'Host ... is blocked'. When more than *max_connect_errors* errors occur in a row for a given host while connection to MySQL server, MySQL assumes something is wrong and blocks the host from further connection requests. Flushing the host tables allows the host to attempt to connect again.

- **LOGS**

Closes and reopens all log files. If you have specified the update log file or a binary log file without an extension, the extension number of the log file will be incremented by one relative to the previous file. If you have used an extension in the file name, MySQL will close and reopen the update log file.

- **PRIVILEGES**

Reloads the privileges from the grant tables in the MySQL database.

- **QUERY CACHE**

Defragments the query cache to better utilize its memory. This command will not remove any queries from the cache, unlike *RESET QUERY CACHE*.

- **TABLES**

Closes all open tables and forces all tables in use to be closed.

- **TABLES WITH READ LOCK**

Closes all open tables and locks all tables for all databases with a read until one executes *UNLOCK TABLES*. This is very convenient way to get backups if you have a file system, like Veritas, that can take snapshots in time.

- **STATUS**

Resets most status variables to zero. This is something one should only use when debugging a query.

- **USER_RESOURCES**

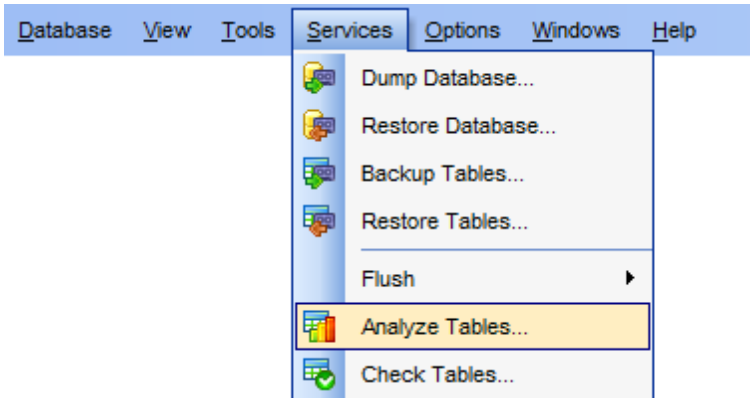
Resets all user resources to zero. This will enable blocked users to login again.

10.6 Analyze Tables

Analyze Tables Wizard allows you to analyze and store the key distribution for tables.

During the analysis the table is locked with a read lock (for MyISAM and BDB tables) or with a write lock (for InnoDB tables). MySQL uses the stored key distribution to decide in what order tables should be joined when one does a join on something different than a constant. In addition, key distributions can be used when deciding which indexes to use for a specific table within a query.

To run the wizard, select the **Services | Analyze Tables...** main menu item.



- Selecting database
- Selecting tables for analysis
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

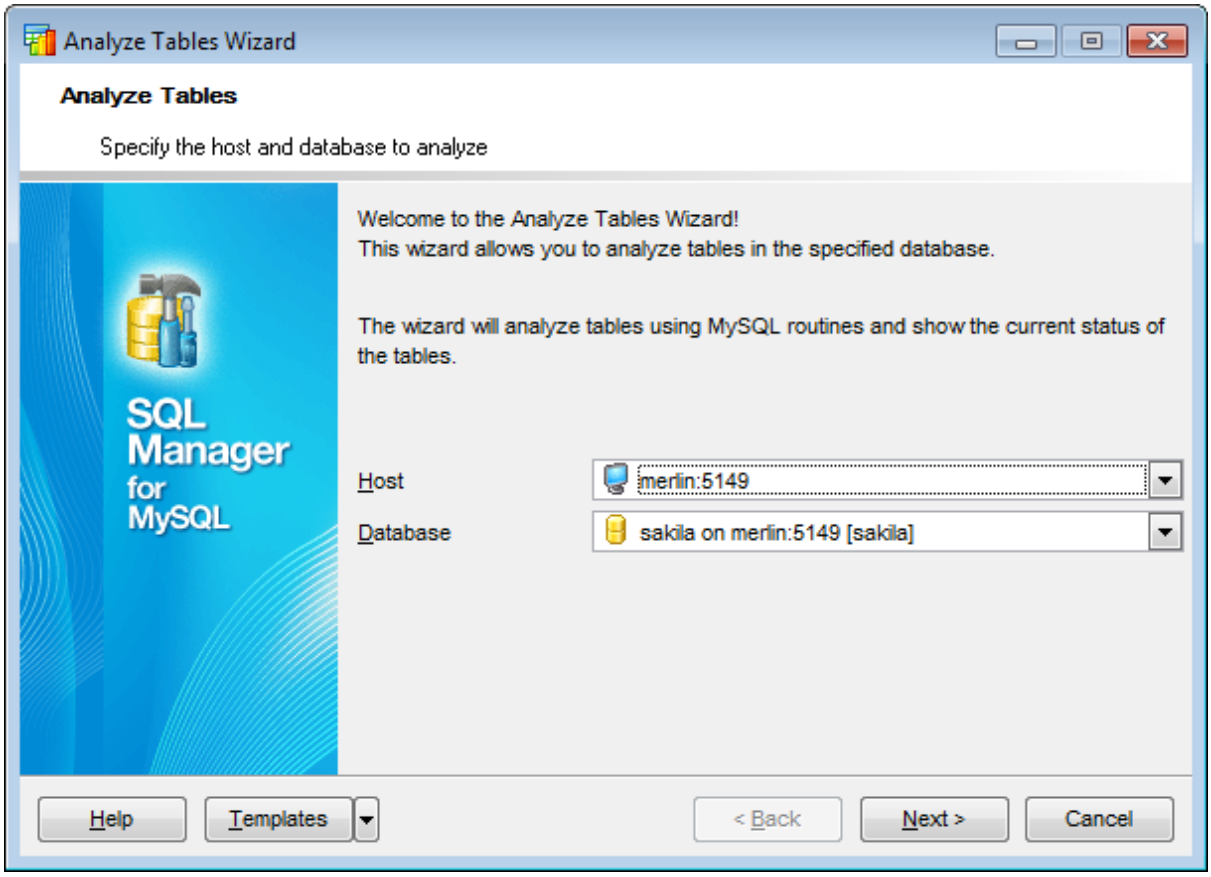
See also:

Tables

Using templates

10.6.1 Selecting database

This step of the wizard allows you to specify the **host** and the **database** where tables for analysis are stored.



Host
Use the drop-down list of registered hosts to select the host where the database resides.

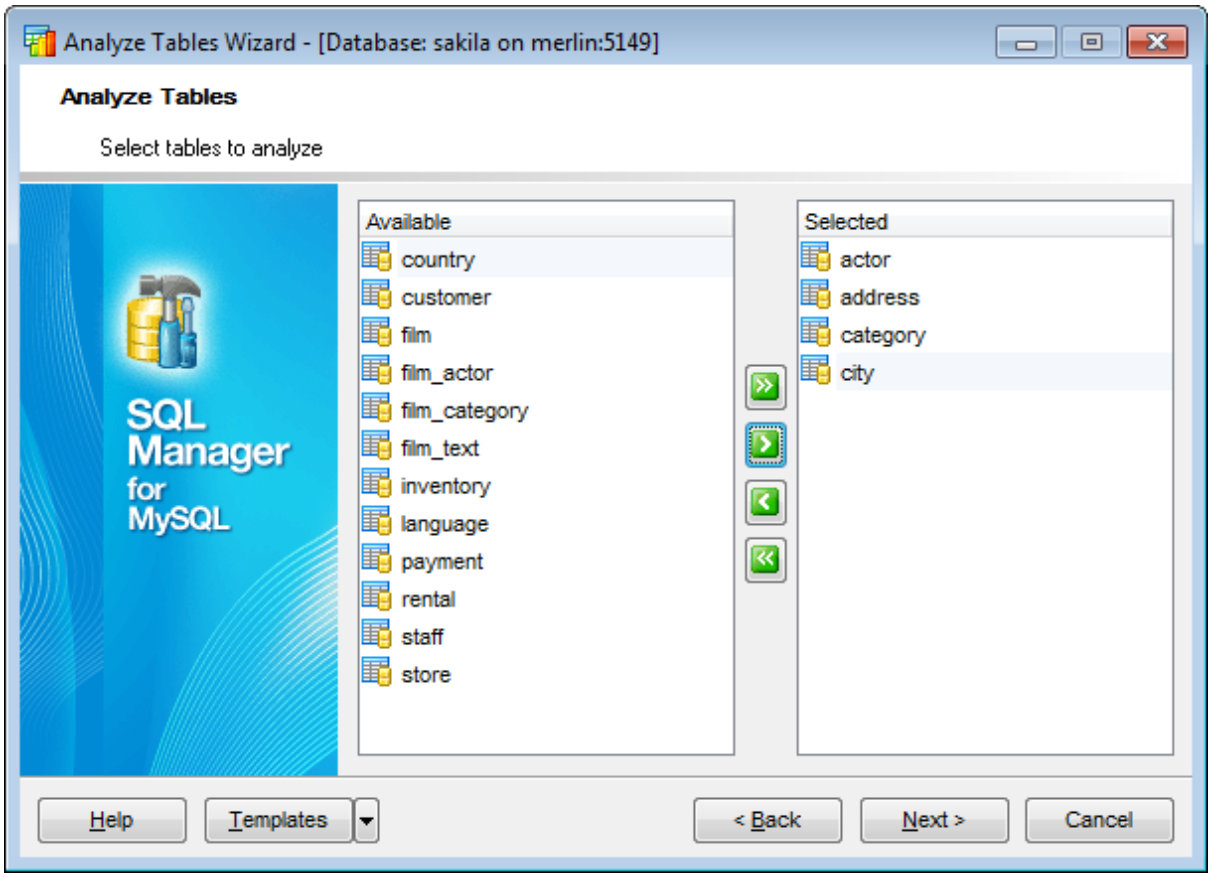
Database
Use the drop-down list of registered databases to select the database where tables for analysis are stored.

Click the **Next** button to proceed to the Selecting tables for analyzing step of the wizard.

10.6.2 Selecting tables for analyzing

Use this step of the wizard to **select the tables** to be analyzed using MySQL routines.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.



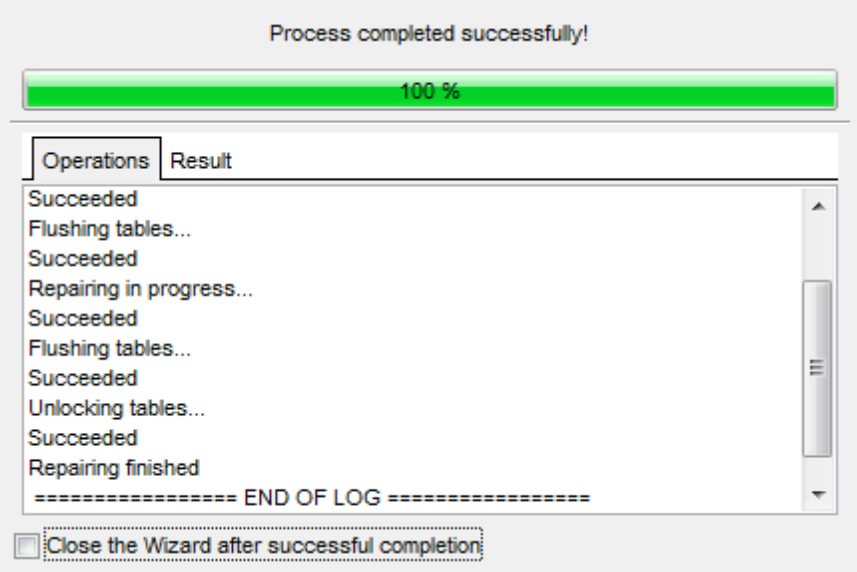
Click the **Next** button to proceed to the last step of the wizard.

10.6.3 Viewing routine results

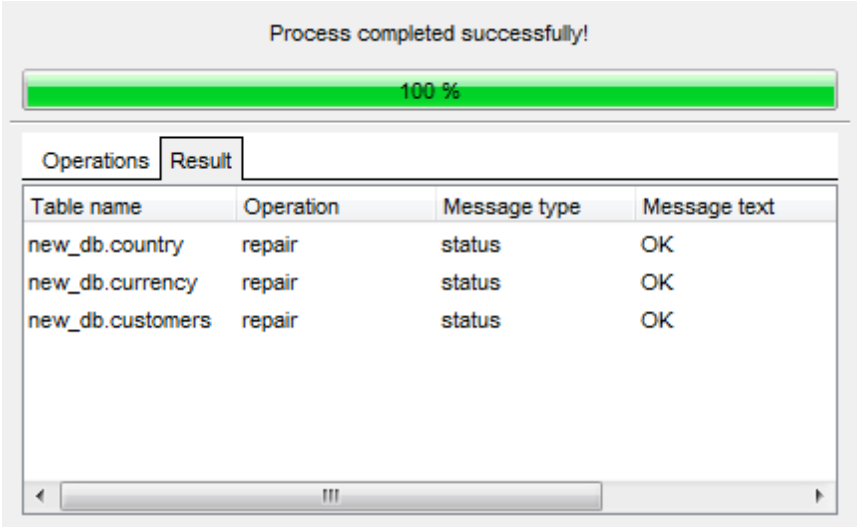
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

If necessary, you can save a template for future use.

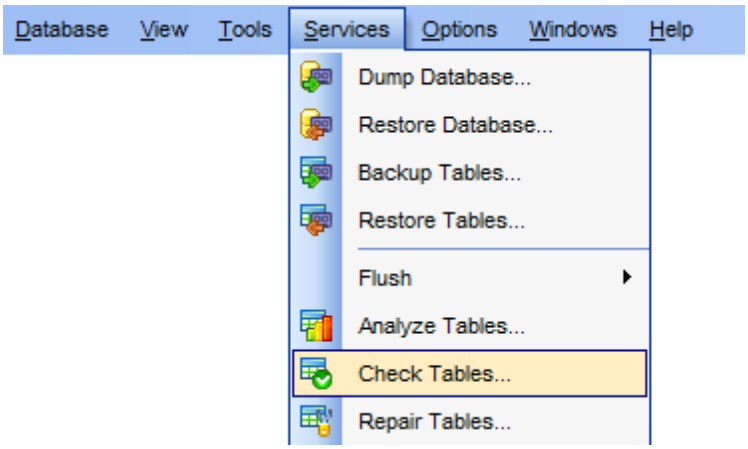
Click the **Run** button to complete the operation.

10.7 Check Tables

Check Tables Wizard allows you to check database tables for errors.

In MySQL 6.x.x the service works for tables of *MyISAM*, *InnoDB*, *ARCHIVE*, and *CSV* storage engines. For *MyISAM* tables, the key statistics are updated as well.

To run the wizard, select the **Services | Check Tables...** main menu item.



- Selecting database
- Selecting tables for checking
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

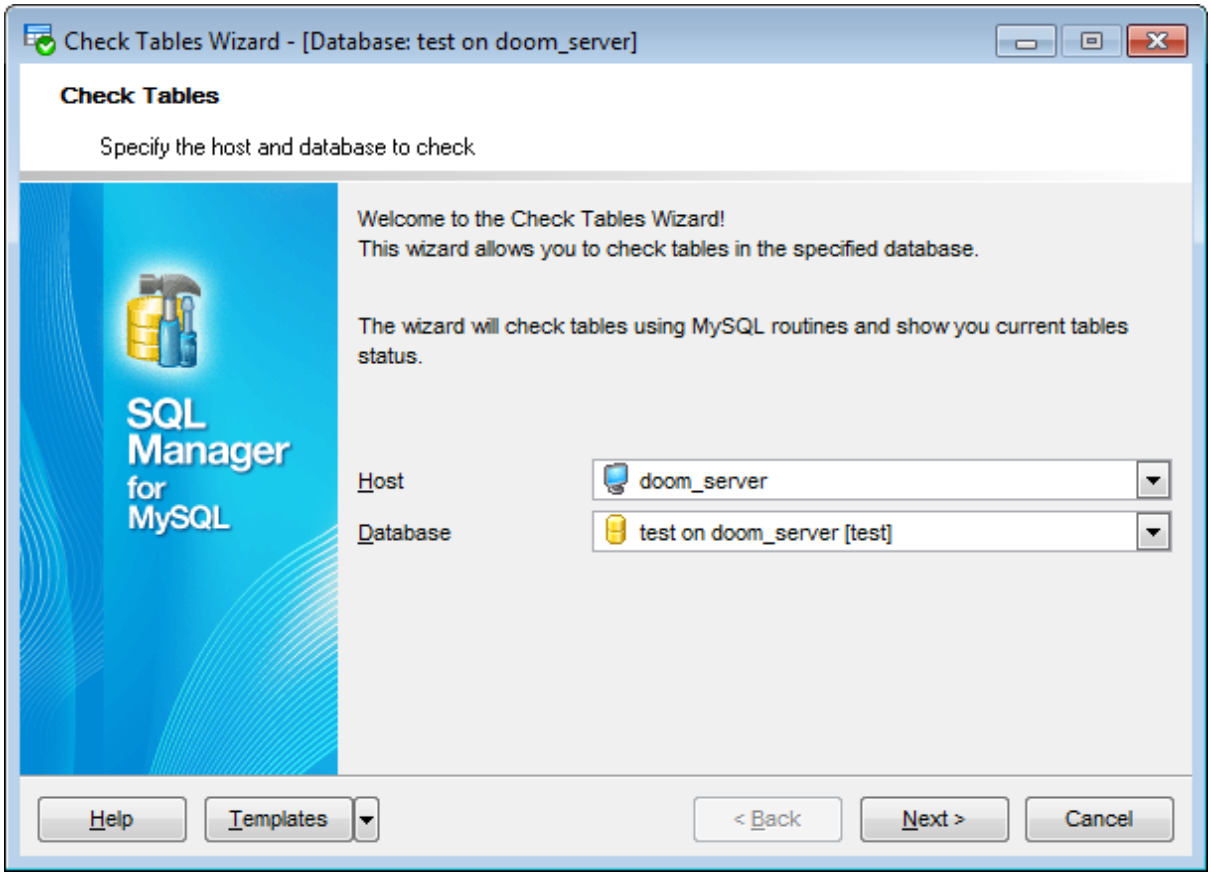
See also:

Tables

Using templates

10.7.1 Selecting database

This step of the wizard allows you to specify the **host** and the **database** where tables for checking are stored.



Host
Use the drop-down list of registered hosts to select the host where the database resides.

Database
Use the drop-down list of registered databases to select the database where tables for checking are stored.

Click the **Next** button to proceed to the Selecting tables for checking step of the wizard.

10.7.2 Selecting tables for checking

Use this step of the wizard to define **check options** and **select the tables** to be checked using MySQL routines.

Options

☑ **Quick**
Do not scan the rows to check for wrong links.

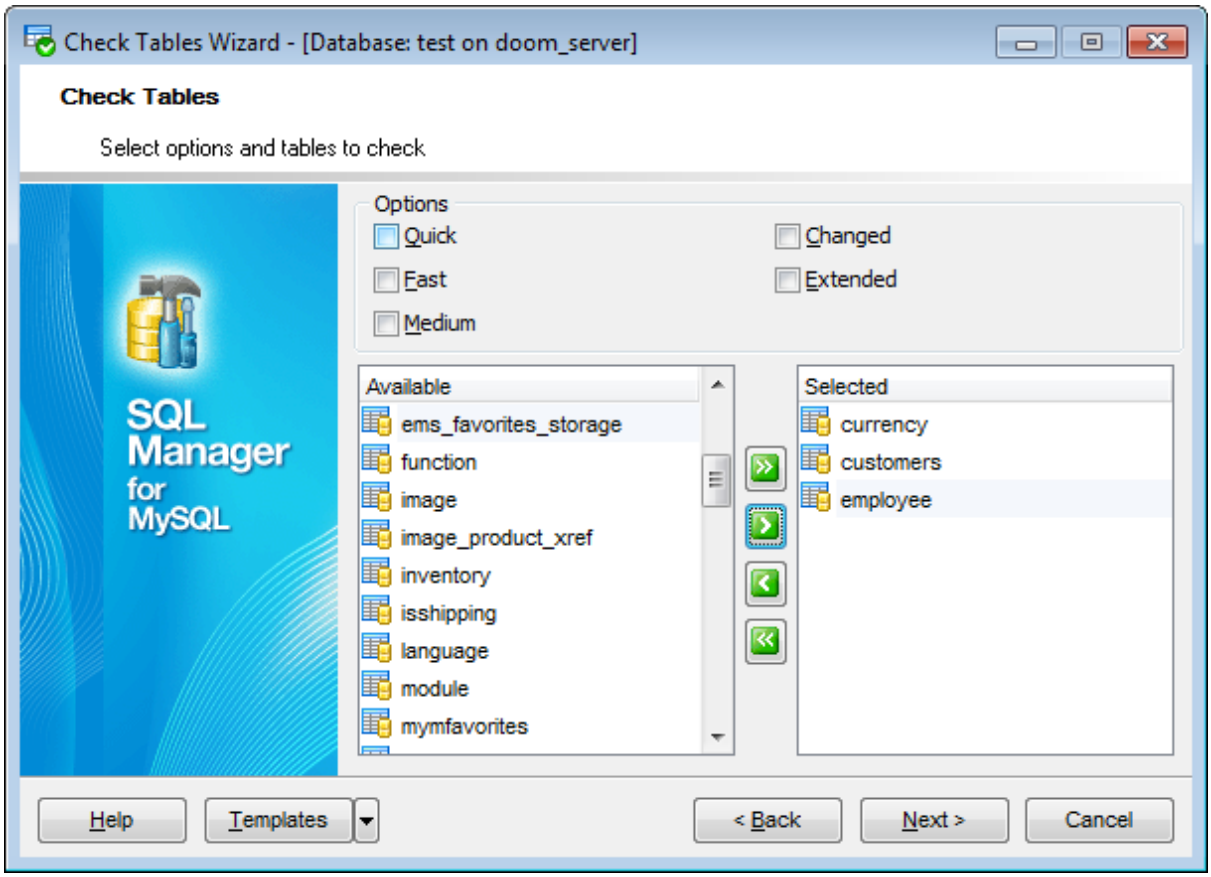
☑ **Fast**
Check only tables that have not been closed properly.

☑ **Changed**
Check only tables that have been changed since last check or have not been closed properly.

☑ **Medium**
Scan rows to verify that deleted links are ok. This also calculates a key checksum for the rows and verifies this with a calculated checksum for the keys.

☑ **Extended**
Perform a full key lookup for all keys for each row. This ensures that the table is 100% consistent, but it might take a long time.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the  buttons or drag-and-drop operations to move the tables from one list to another.



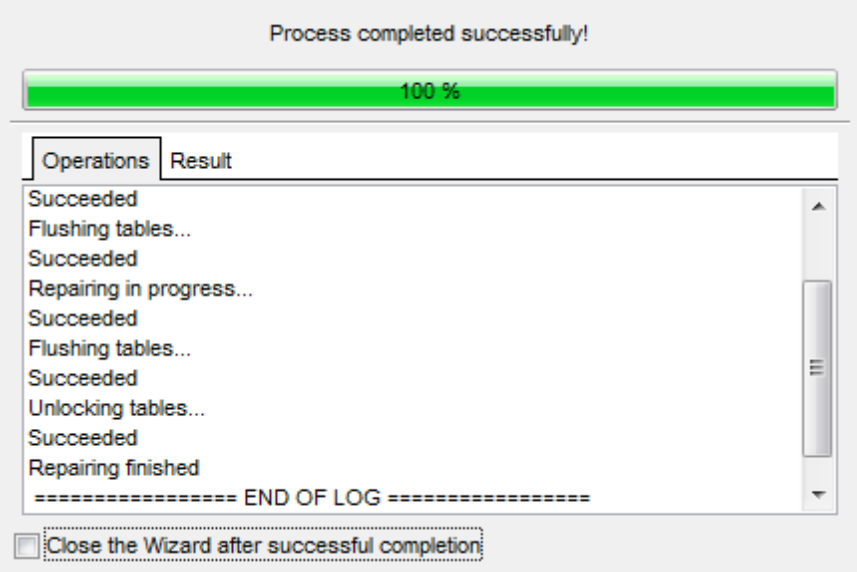
Click the **Next** button to proceed to the last step of the wizard.

10.7.3 Viewing routine results

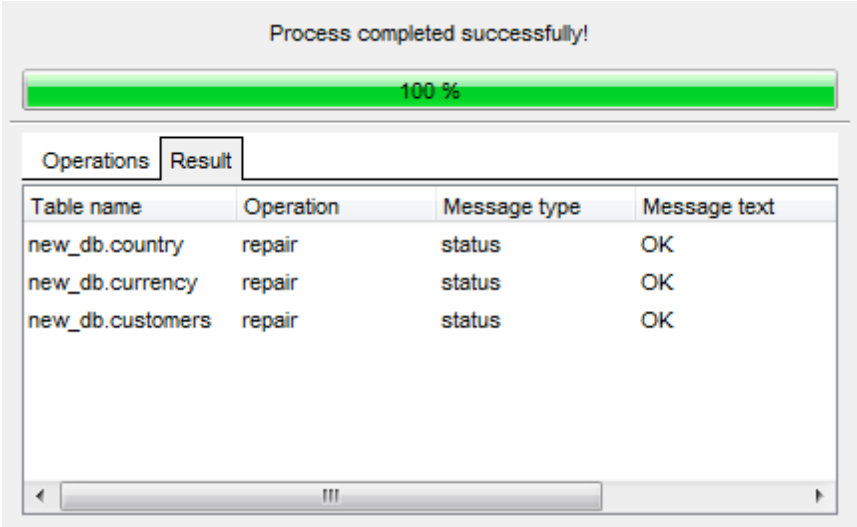
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

If necessary, you can save a template for future use.

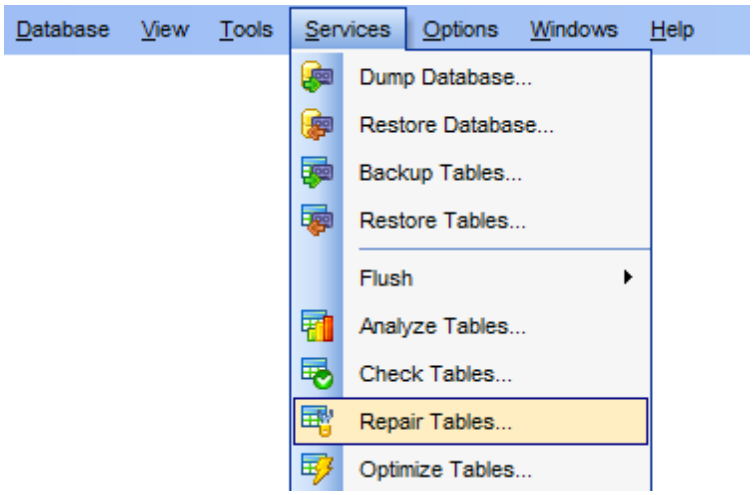
Click the **Run** button to complete the operation.

10.8 Repair Tables

Repair Tables Wizard allows you to repair database tables that are possibly corrupted.

In MySQL 6.x.x the service works for tables of *MyISAM*, *ARCHIVE*, and *CSV* storage engines.

To run the wizard, select the **Services | Repair Tables...** main menu item.



- Selecting database
- Selecting tables for repairing
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

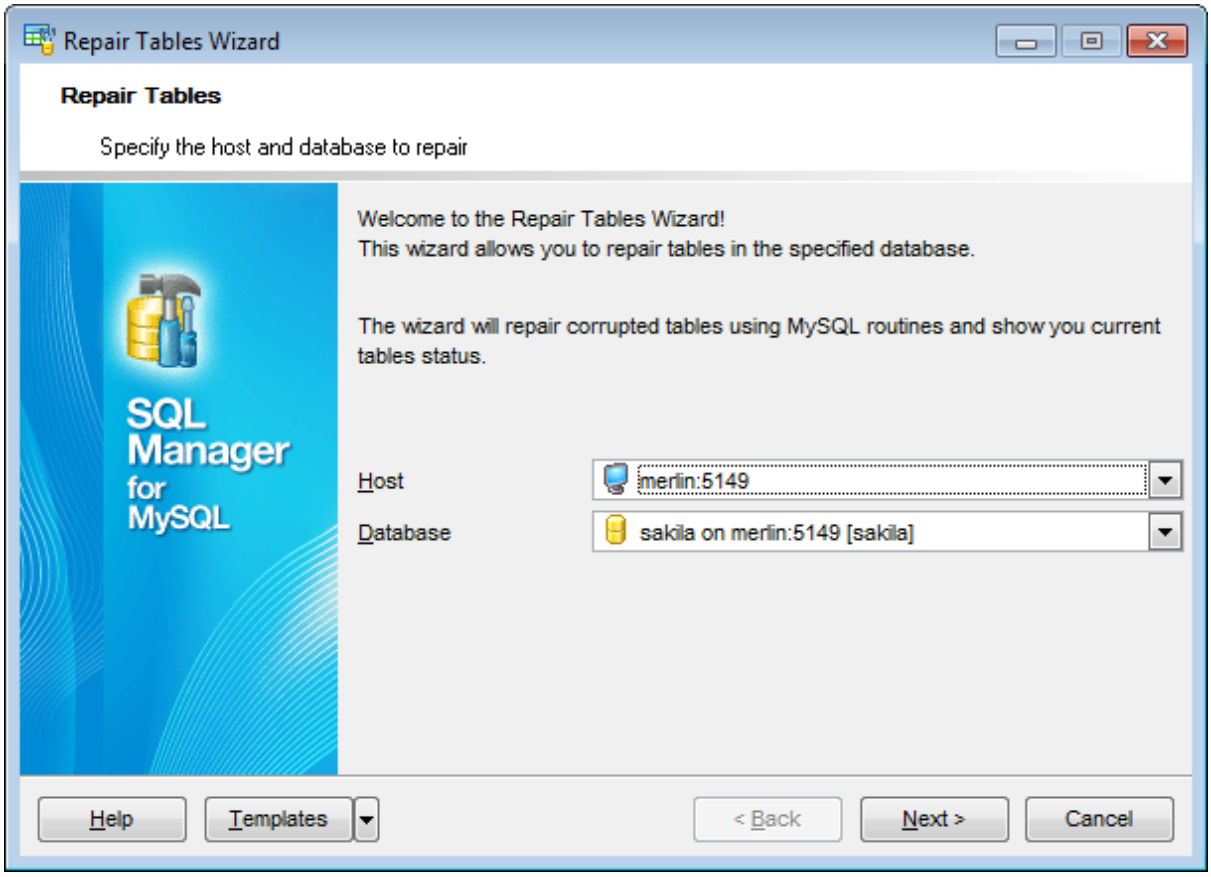
See also:

Tables

Using templates

10.8.1 Selecting database

This step of the wizard allows you to specify the **host** and the **database** where tables for repairing are stored.



Host
Use the drop-down list of registered hosts to select the host where the database resides.

Database
Use the drop-down list of registered databases to select the database where tables for repairing are stored.

Click the **Next** button to proceed to the Selecting tables for repairing step of the wizard.

10.8.2 Selecting tables for repairing

Use this step of the wizard to define **repair options** and **select the tables** to be repaired using MySQL routines.

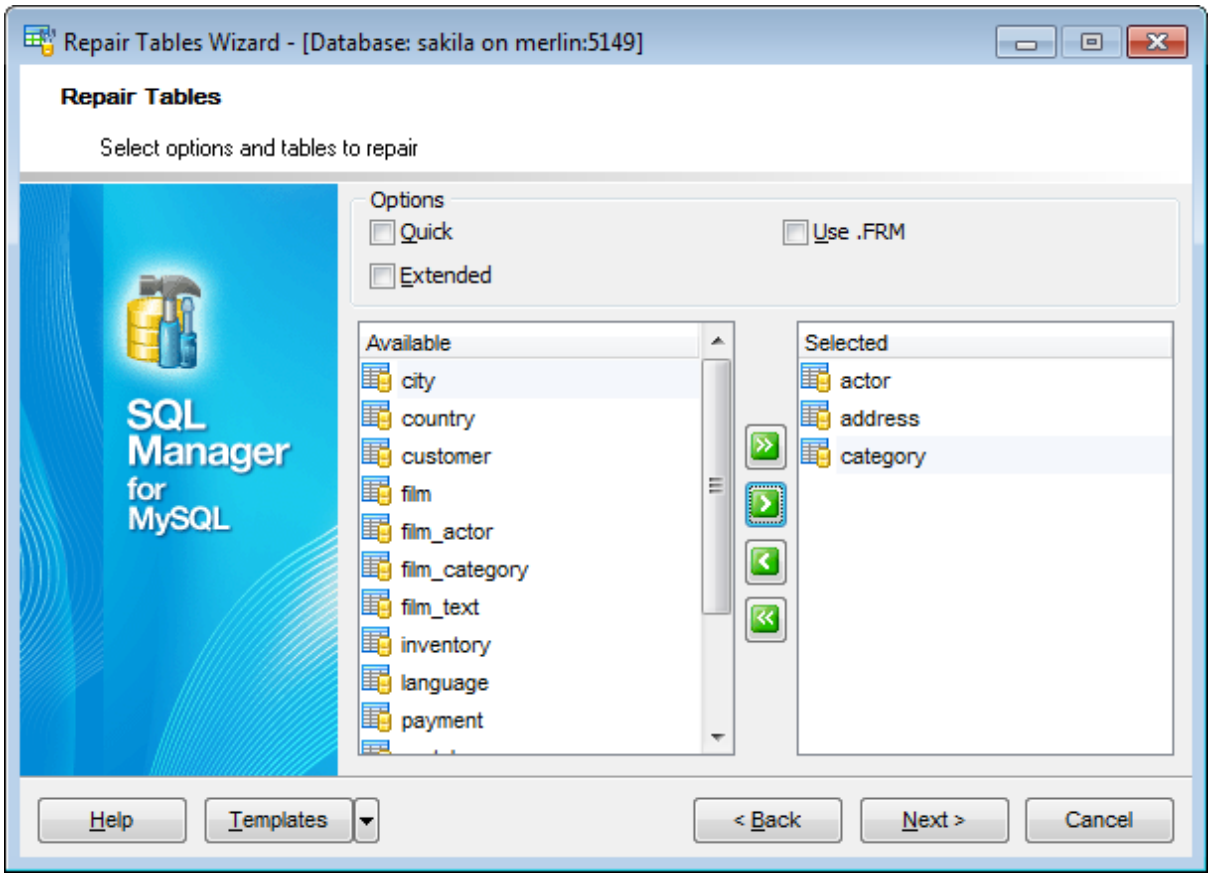
Options

☑ **Quick**
Perform a repair of the index tree only.

☑ **Extended**
Create the index row by row instead of creating one index at a time with sorting.

☑ **Use .FRM**
Use this mode if the **.myi* file is missing or if its header is corrupted. In this mode MySQL will recreate the table using information from the **.frm* file.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.



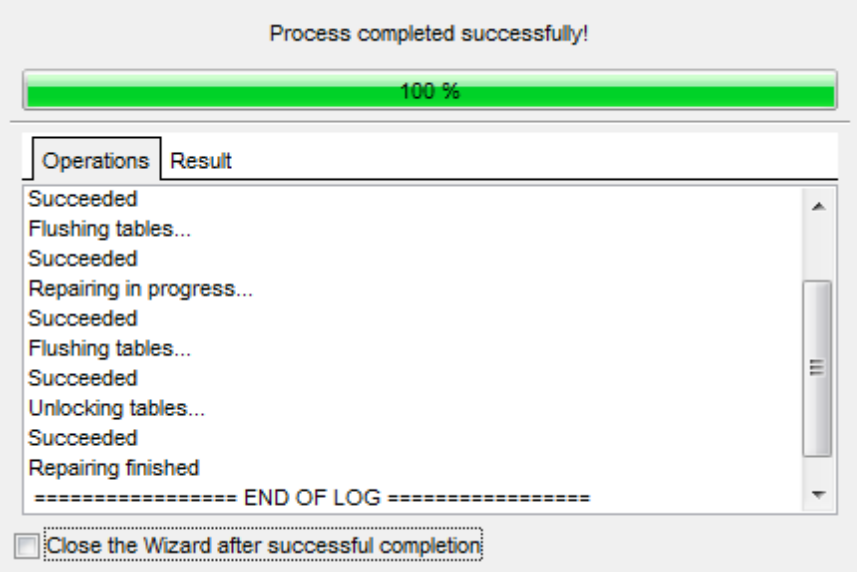
Click the **Next** button to proceed to the last step of the wizard.

10.8.3 Viewing routine results

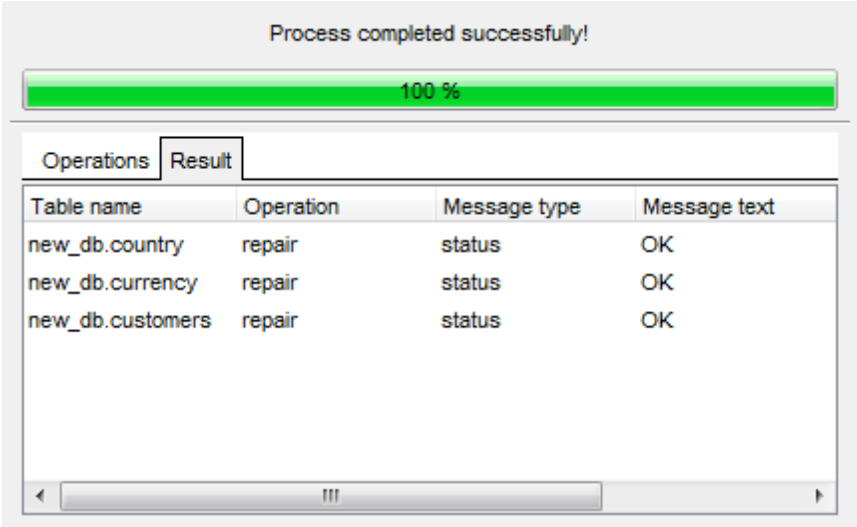
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

If necessary, you can save a template for future use.

Click the **Run** button to complete the operation.

10.9 Optimize Tables

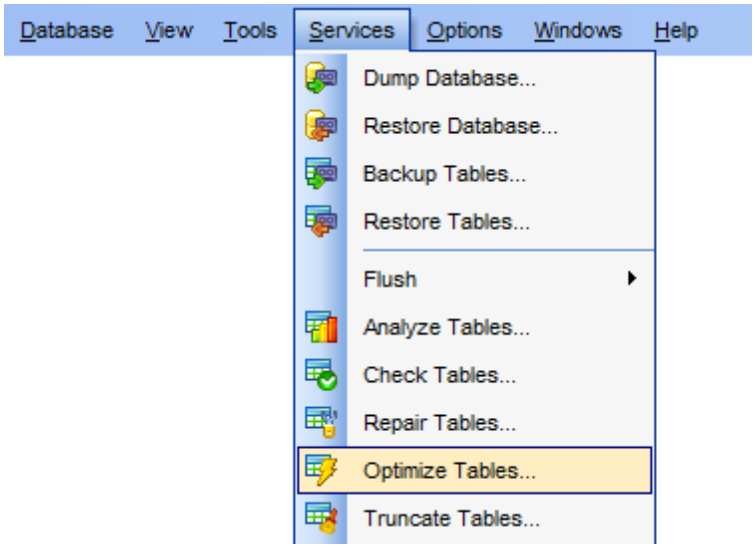
Optimize Table Wizard should be used if you have deleted a large part of a table or if you have made many changes to a table with variable-length rows (tables that have *VARCHAR*, *VARBINARY*, *BLOB*, or *TEXT* columns). Deleted records are maintained in a linked list and subsequent INSERT operations reuse old record positions. You can use optimization to reclaim the unused space and to defragment the data file.

OPTIMIZE TABLE works as follows:

- if the table has deleted or split rows, repairs the table;
- if the index pages are not sorted, sorts them;
- if the statistics are not up to date (and the repair could not be done by sorting the index), updates them.

In MySQL 6.x.x the service works only for tables of *MyISAM*, *InnoDB*, and *ARCHIVE* storage engines.

To run the wizard, select the **Services | Optimize Tables...** main menu item.



- Selecting database
- Selecting tables for optimizing
- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

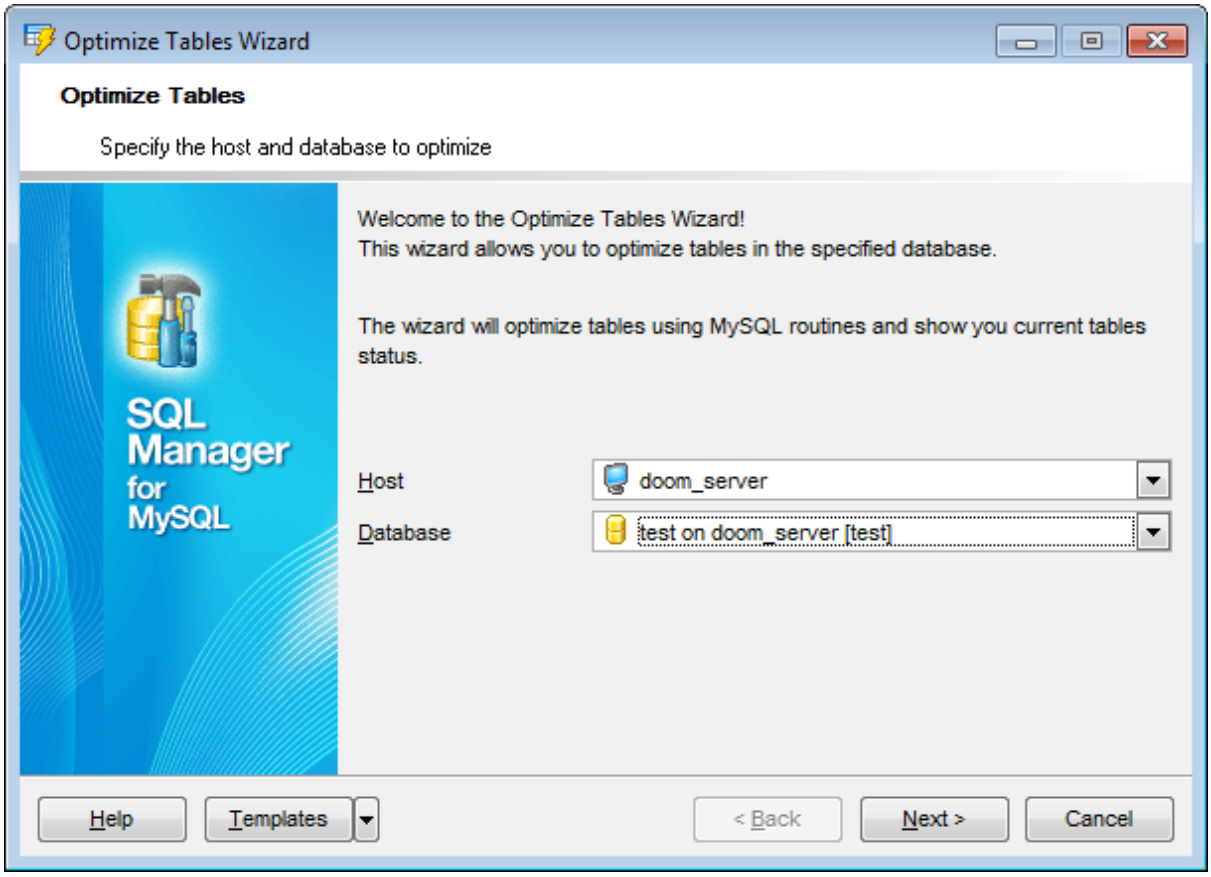
See also:

Tables

Using templates

10.9.1 Selecting database

This step of the wizard allows you to specify the **host** and the **database** where tables for optimization are stored.



Host
Use the drop-down list of registered hosts to select the host where the database resides.

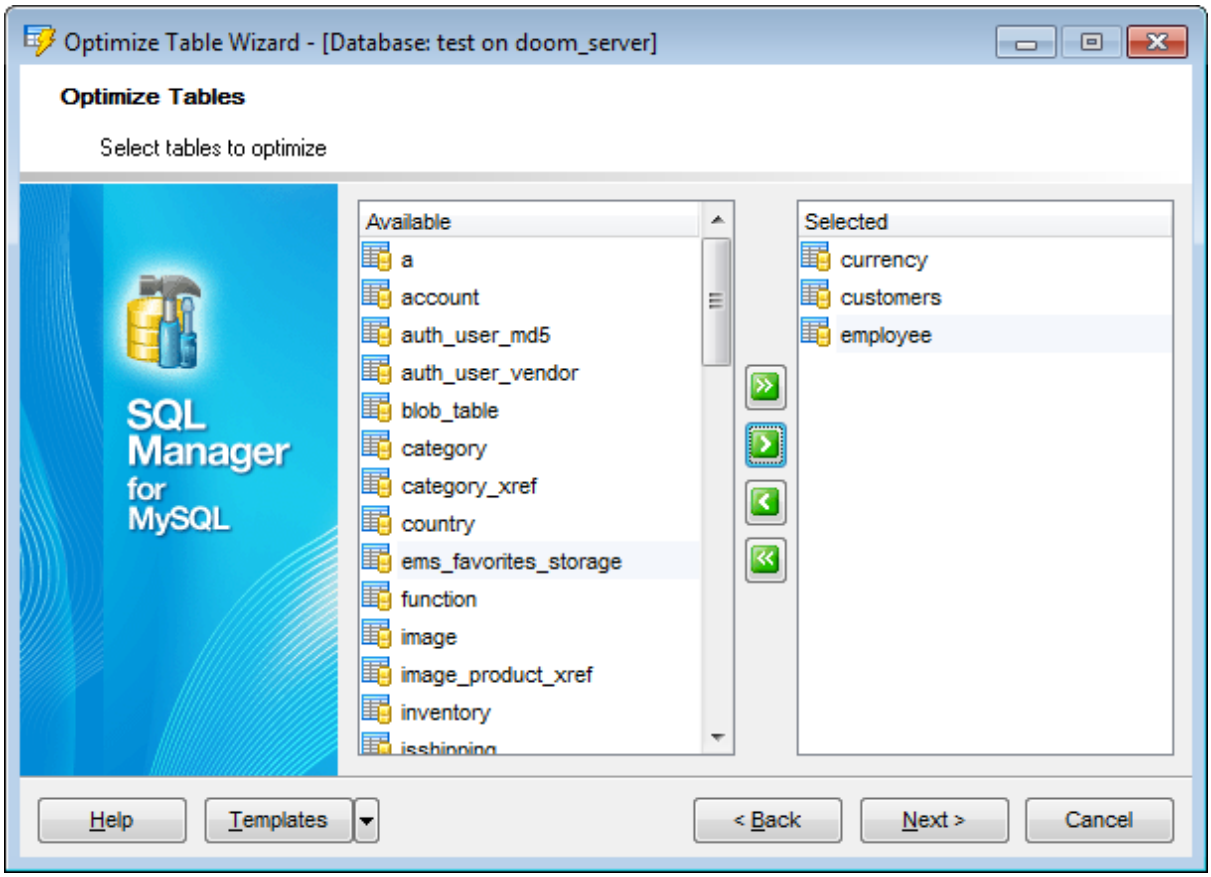
Database
Use the drop-down list of registered databases to select the database where tables for optimizing are stored.

Click the **Next** button to proceed to the Selecting tables for optimizing step of the wizard.

10.9.2 Selecting tables for optimizing

Use this step of the wizard to **select the tables** to be optimized using MySQL routines.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.



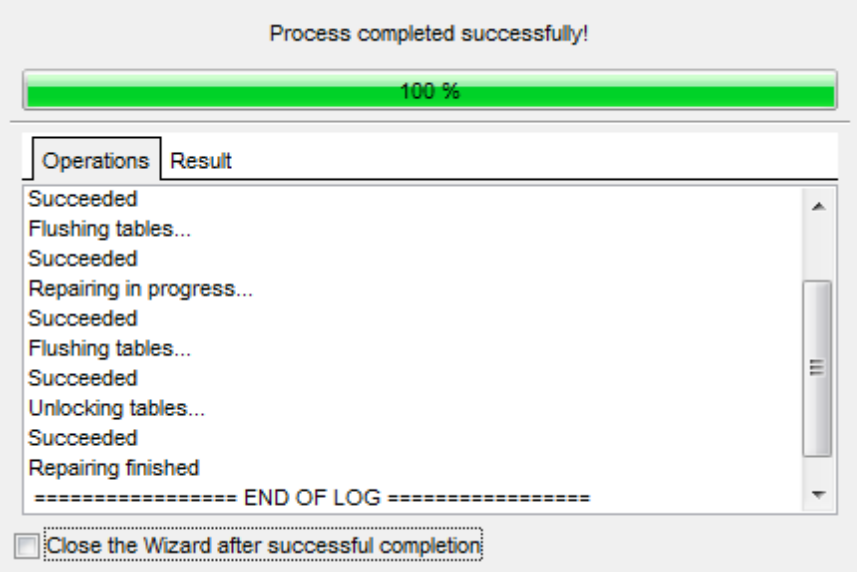
Click the **Next** button to proceed to the last step of the wizard.

10.9.3 Viewing routine results

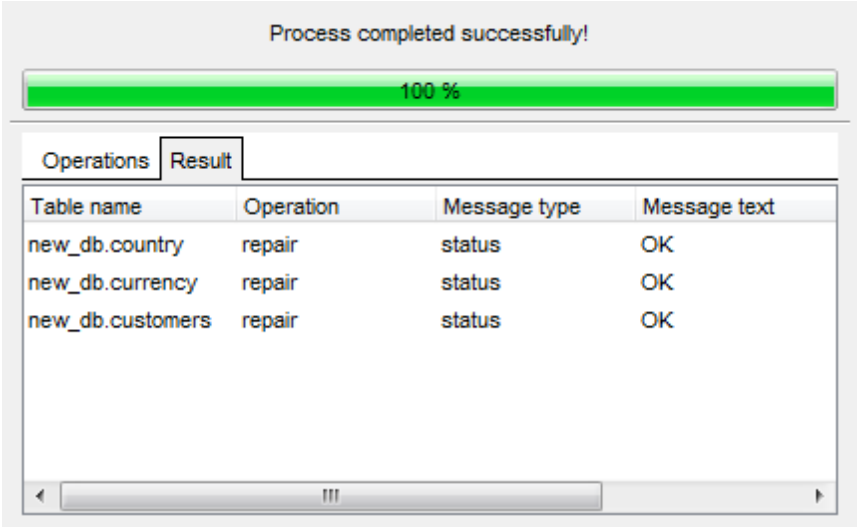
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

If necessary, you can save a template for future use.

Click the **Run** button to complete the operation.

10.10 Truncate Tables

Truncate Table Wizard empties table(s) completely.

Logically, this is equivalent to a *DELETE* statement that deletes all rows, but there are practical differences under some circumstances.

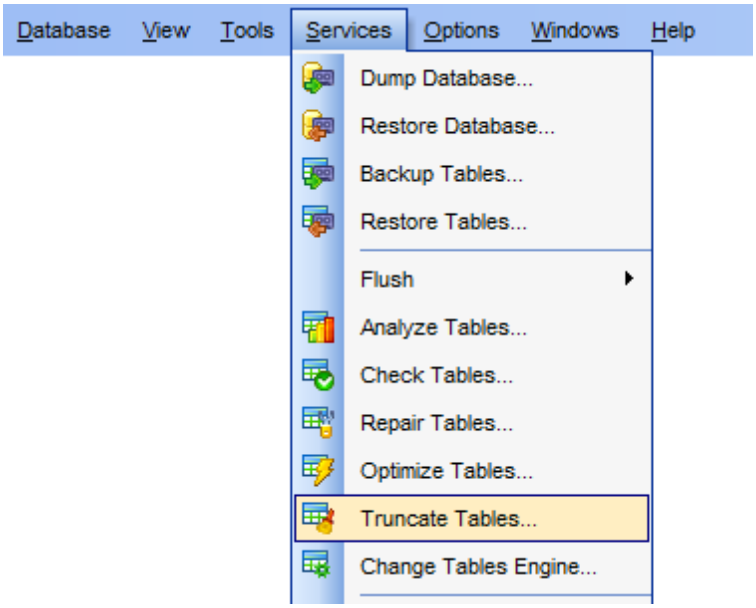
In MySQL 3.23, *TRUNCATE TABLE* is mapped to *COMMIT*; DELETE FROM tbl_name, so it behaves like *DELETE*.

For InnoDB (before MySQL version 5.0.3), *TRUNCATE TABLE* is mapped to *DELETE*, so there is no difference. Starting with MySQL 5.0.3, fast *TRUNCATE TABLE* is available. The operation is still mapped to *DELETE* if there are foreign key constraints that reference the table.

For other storage engines, *TRUNCATE TABLE* differs from *DELETE FROM* in the following ways (since MySQL 4.0 and later):

- truncate operations drop and recreate the table which is much faster than deleting rows one by one;
- truncate operations are not transaction-safe; you get an error if you have an active transaction or an active table lock;
- the number of deleted rows is not returned;
- as long as the table definition file tbl_name.frm is valid, the table can be recreated as an empty table with *TRUNCATE TABLE*, even if the data or index files have become corrupted;
- the table handler does not remember the last used *AUTO_INCREMENT* value, but starts counting from the beginning.

To run the wizard, select the **Services | Truncate Tables...** main menu item, or open a table in Table Editor and use the **Truncate table** item of the Navigation bar.



- Selecting database
- Selecting tables for truncating

- Viewing routine results

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

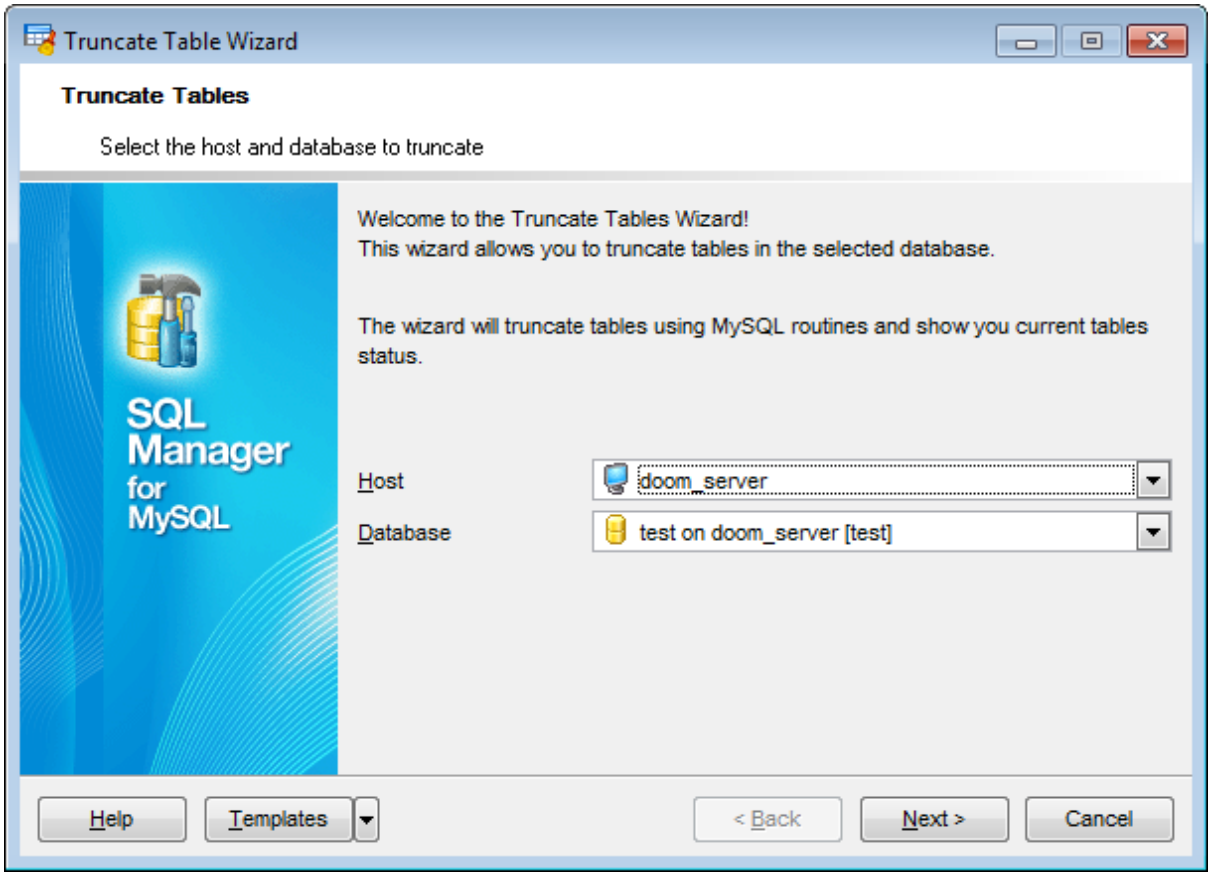
See also:

Tables

Using templates

10.10.1 Selecting database

This step of the wizard allows you to specify the **host** and the **database** where tables for truncating are stored.



Host
Use the drop-down list of registered hosts to select the host where the database resides.

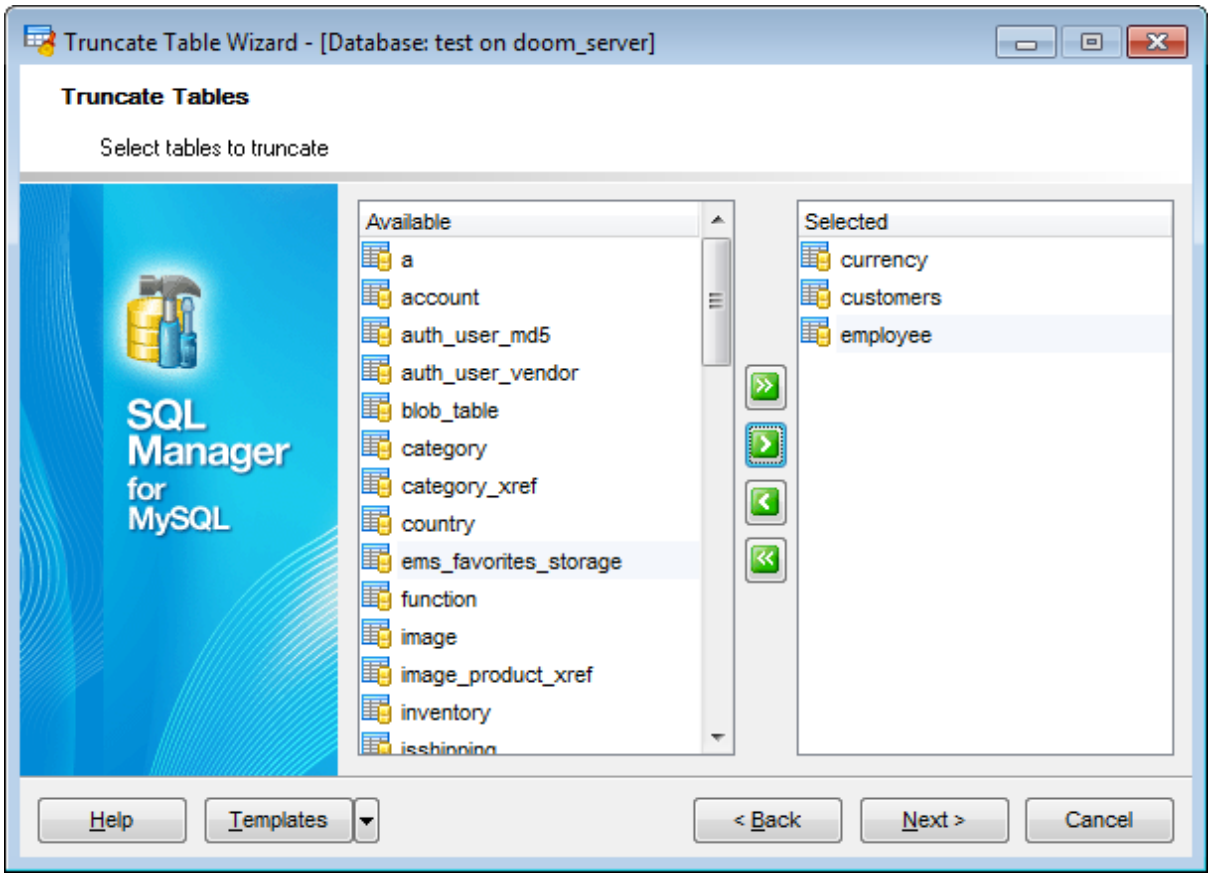
Database
Use the drop-down list of registered databases to select the database where tables for truncating are stored.

Click the **Next** button to proceed to the Selecting tables for truncating step of the wizard.

10.10.2 Selecting tables for truncating

Use this step of the wizard to **select the tables** to be truncated using MySQL routines.

To select a table, you need to move it from the **Available tables** list to the **Selected tables** list. Use the buttons or drag-and-drop operations to move the tables from one list to another.



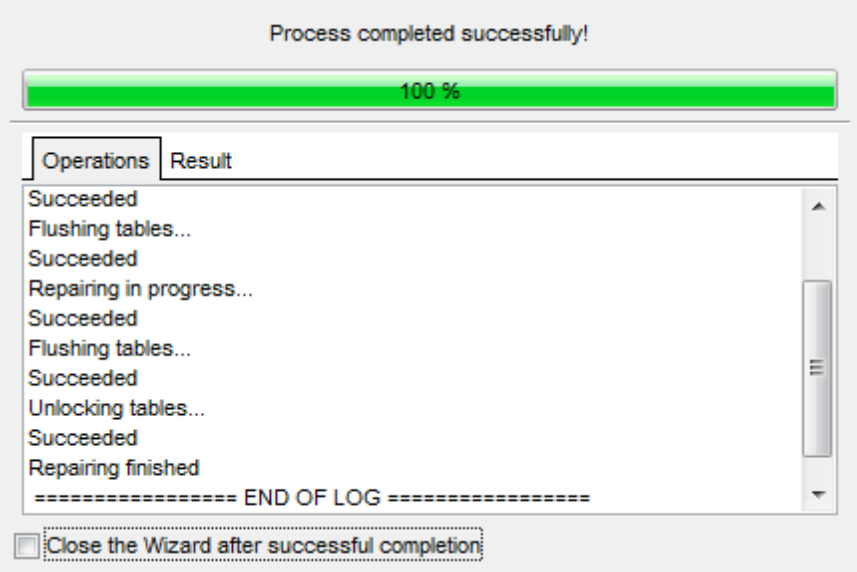
Click the **Next** button to proceed to the last step of the wizard.

10.10.3 Viewing routine results

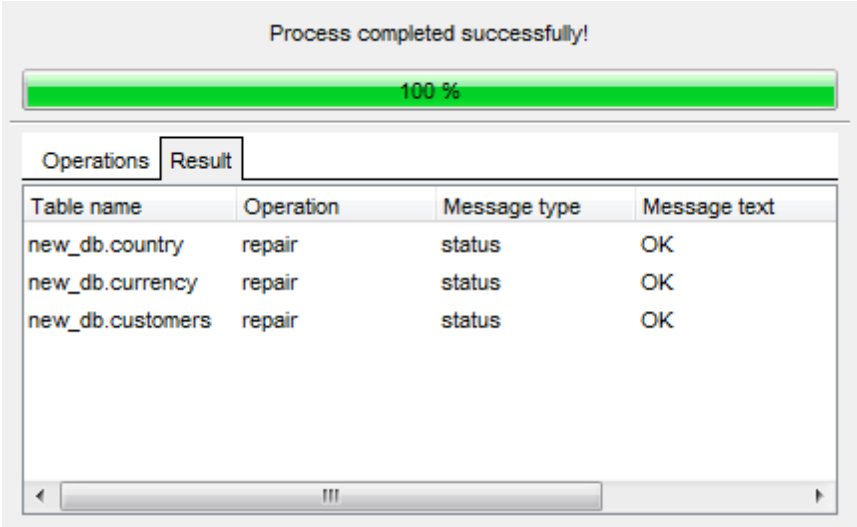
The last step of the wizard is intended to inform you that all necessary options have been set at the previous steps, and now you can start the specified process.

The green progress bar indicates the total progress of the routine.

The **Operations** tab allows you to view the log of operations.



The **Result** tab displays the routine results (detailed information on routine objects, operation status, routine result messages) for each of the specified tables, and errors (if any).



Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is

completed.

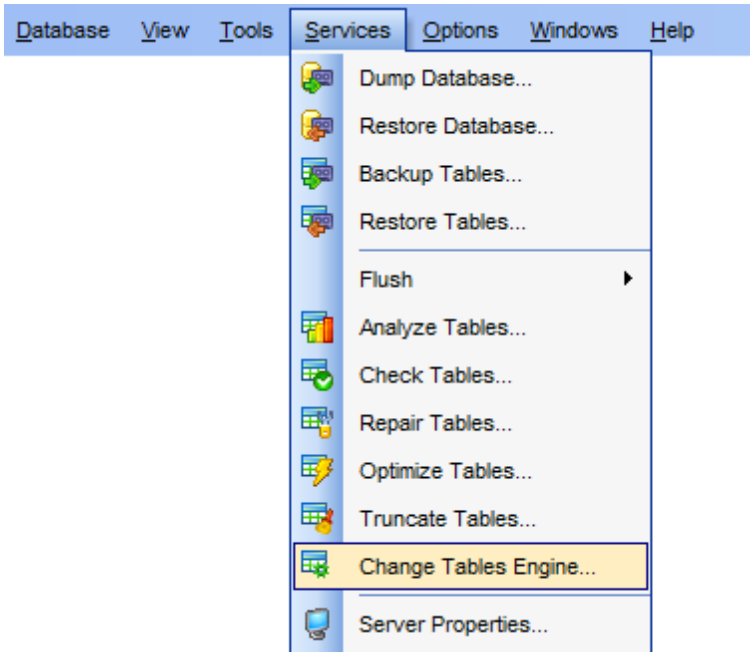
If necessary, you can save a template for future use.

Click the **Run** button to complete the operation.

10.11 Change Tables Engine

This wizard allows you to change tables storage engine.

To run the wizard select the **Services |** **Change Tables Engine** main menu item.



- Selecting host and database
- Selecting tables
- Performing operation

Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

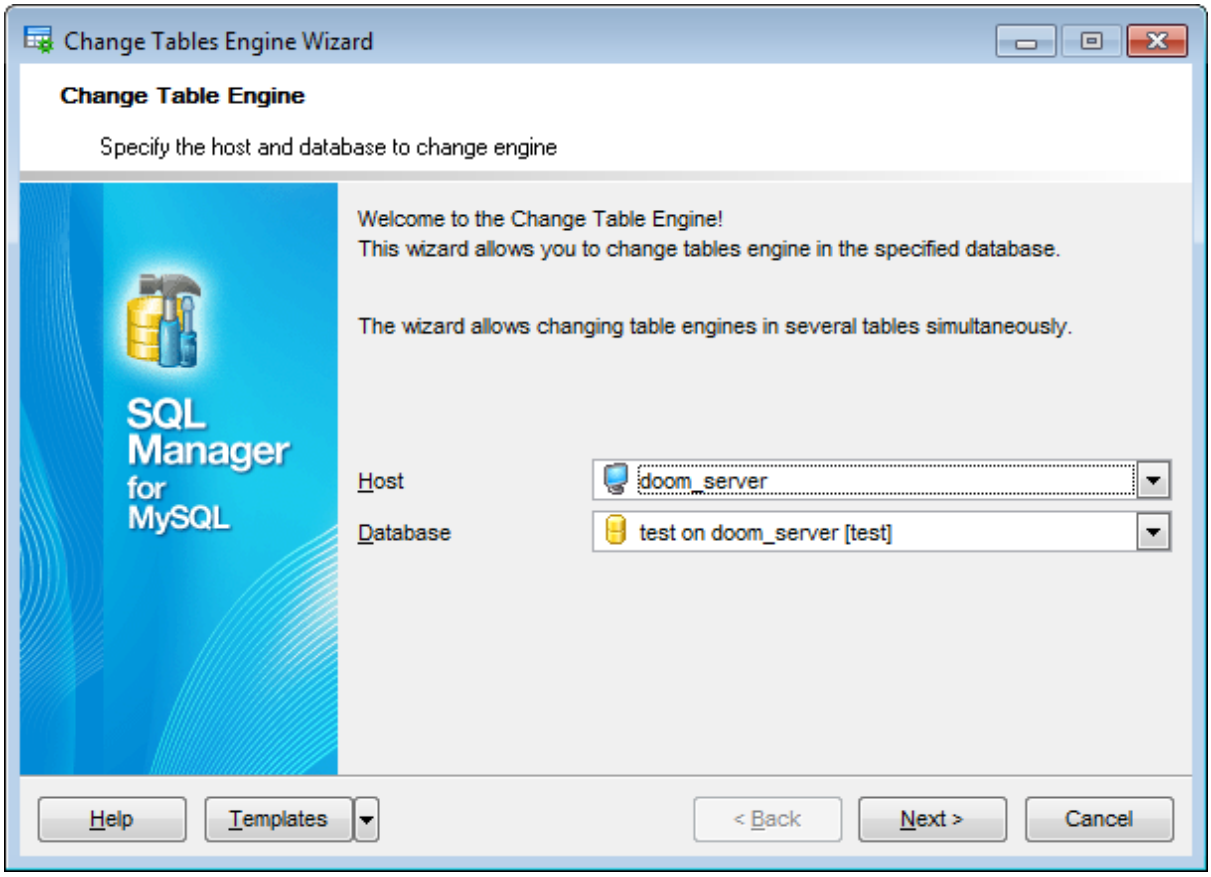
See also:

Tables

Using templates

10.11.1 Selecting host and database

Use this step to define location of tables whose storage engine needs to be changed.



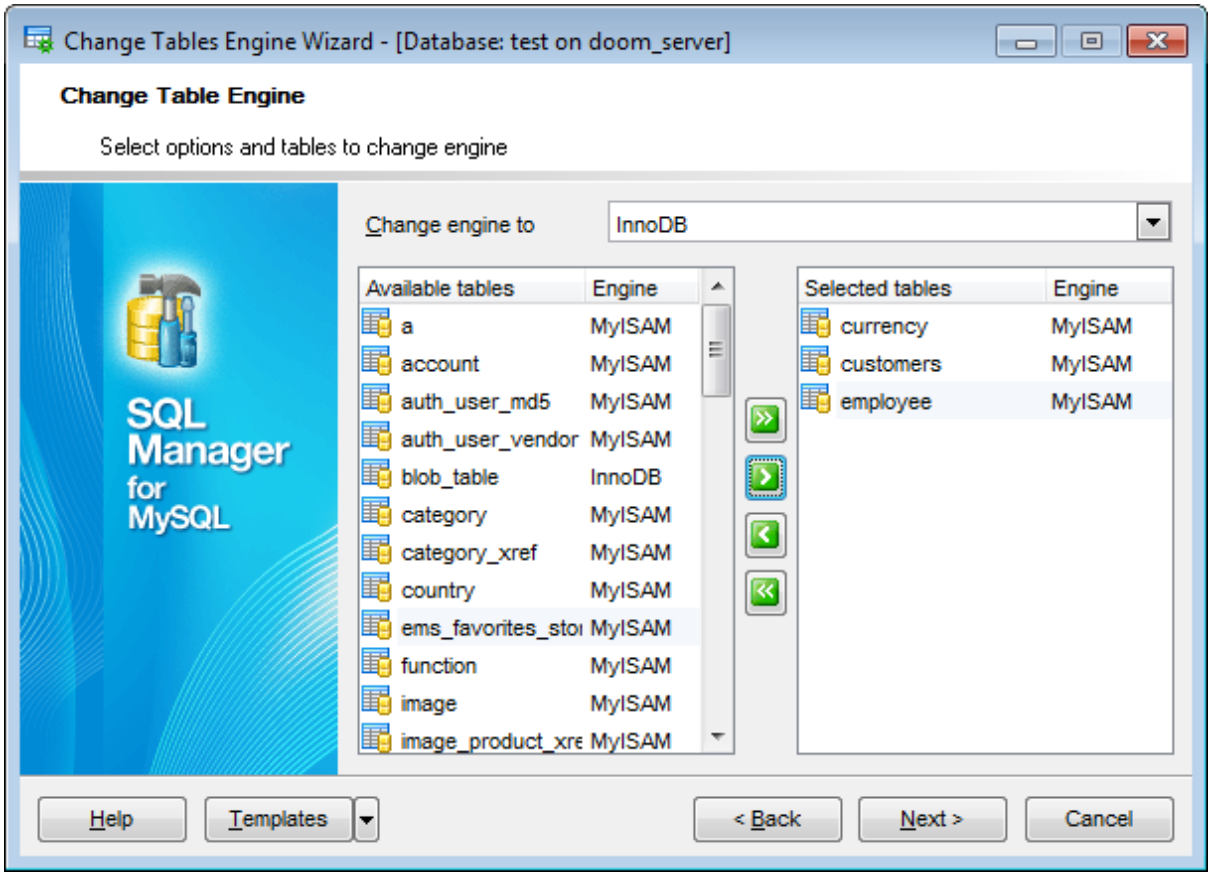
Select **Host** and **Database** from the respective drop-down list.

If required host or database is not registered run the Register Database Wizard.

Click the **Next** button to proceed to the Selecting tables step.

10.11.2 Selecting tables

At this step you need to select tables whose storage engine you want to change.



The **Available tables** list displays all tables contained in the database. Move the tables to the **Selected tables** list to change their storage engine.

Select the storage engine to apply for the selected tables from the **Change engine to** drop-down list.
Selected Tables.

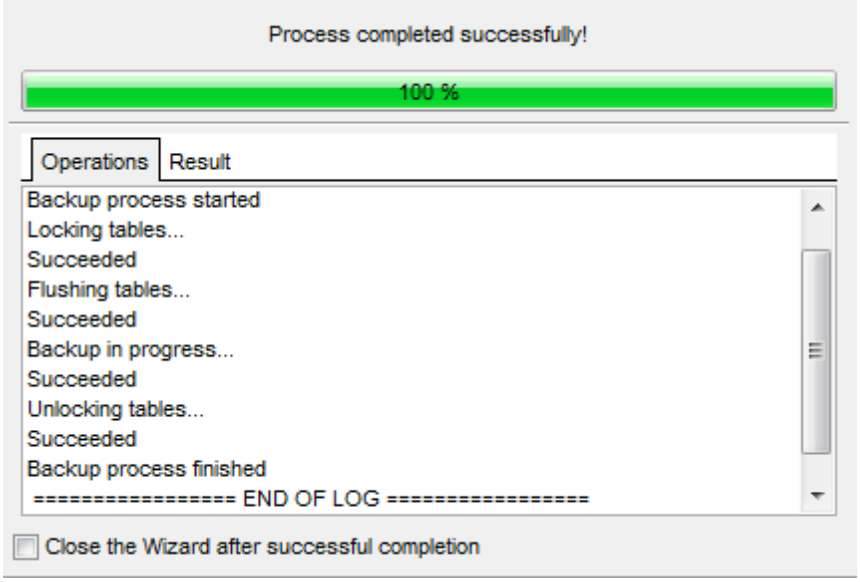
Click the **Next** button to proceed to the final step.

10.11.3 Viewing routine results

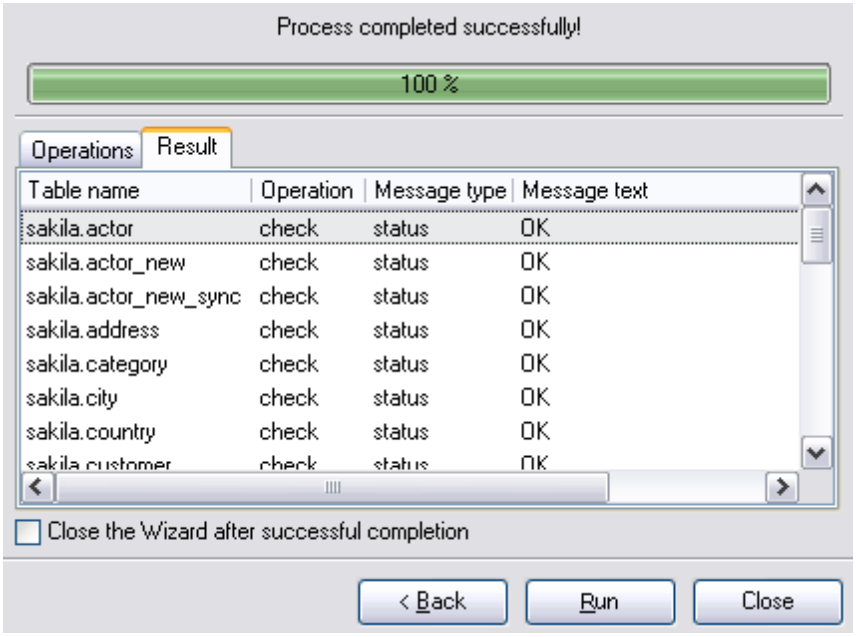
This step of the wizard is intended to inform you that all necessary options have been set, and you can start the change tables engine process.

Click the **Run** button to complete the operation.

Operations tab
Here you can view the log of operations and errors (if any).



Results tab
This tab displays the list of tables with the operations applied to them. Performance status and message is also displayed here.



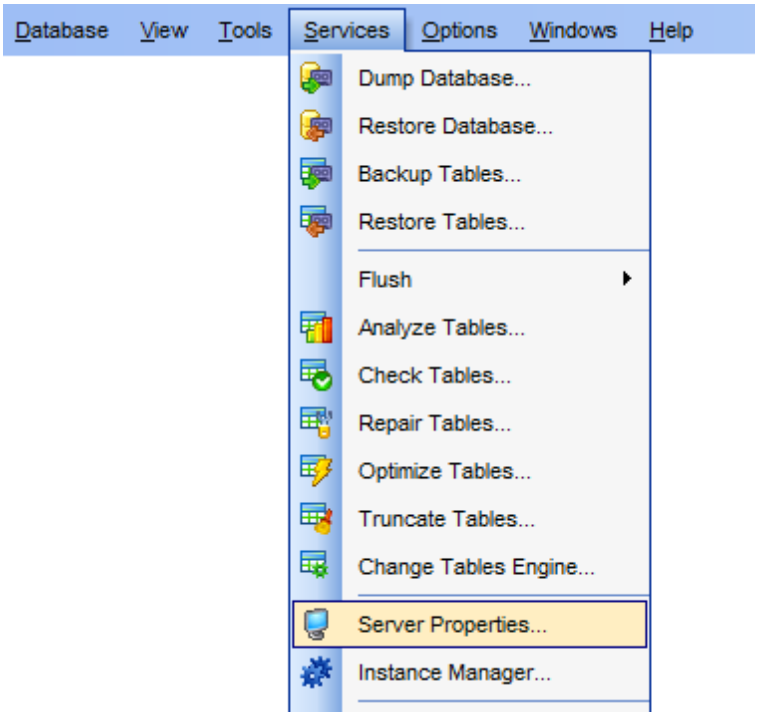
Close the Wizard after successful completion
If this option is selected, the wizard is closed automatically when the process is completed.

If necessary, you can save a template for future use.

10.12 Server Properties

The **Server Properties** viewer allows you to view the properties of the selected server: server variables, processes, status, query logs.

To open the **Server Properties** viewer window, select the **Services | Server Properties...** main menu item.



- Viewing variables
- Viewing system variables
- Viewing process list
- Viewing InnoDB status
- Viewing general query log

Before the **Server Properties** viewer is launched, the application prompts you to specify host connection parameters in the Login Host dialog for retrieving server properties.

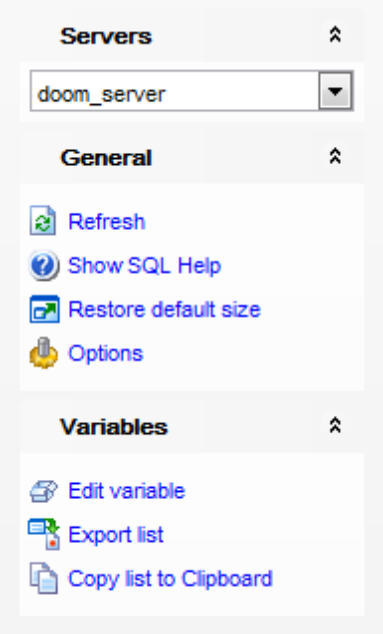
Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

10.12.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in the **Server Properties** viewer.



The **Navigation bar** of the **Server Properties** viewer allows you to:

Servers group
select the server to retrieve properties

General group
refresh the content of the active tab
view MySQL reference
restore the default size and position of the viewer window
configure the **Server Properties** viewer within the Tools | Server Properties page of the Environment Options dialog

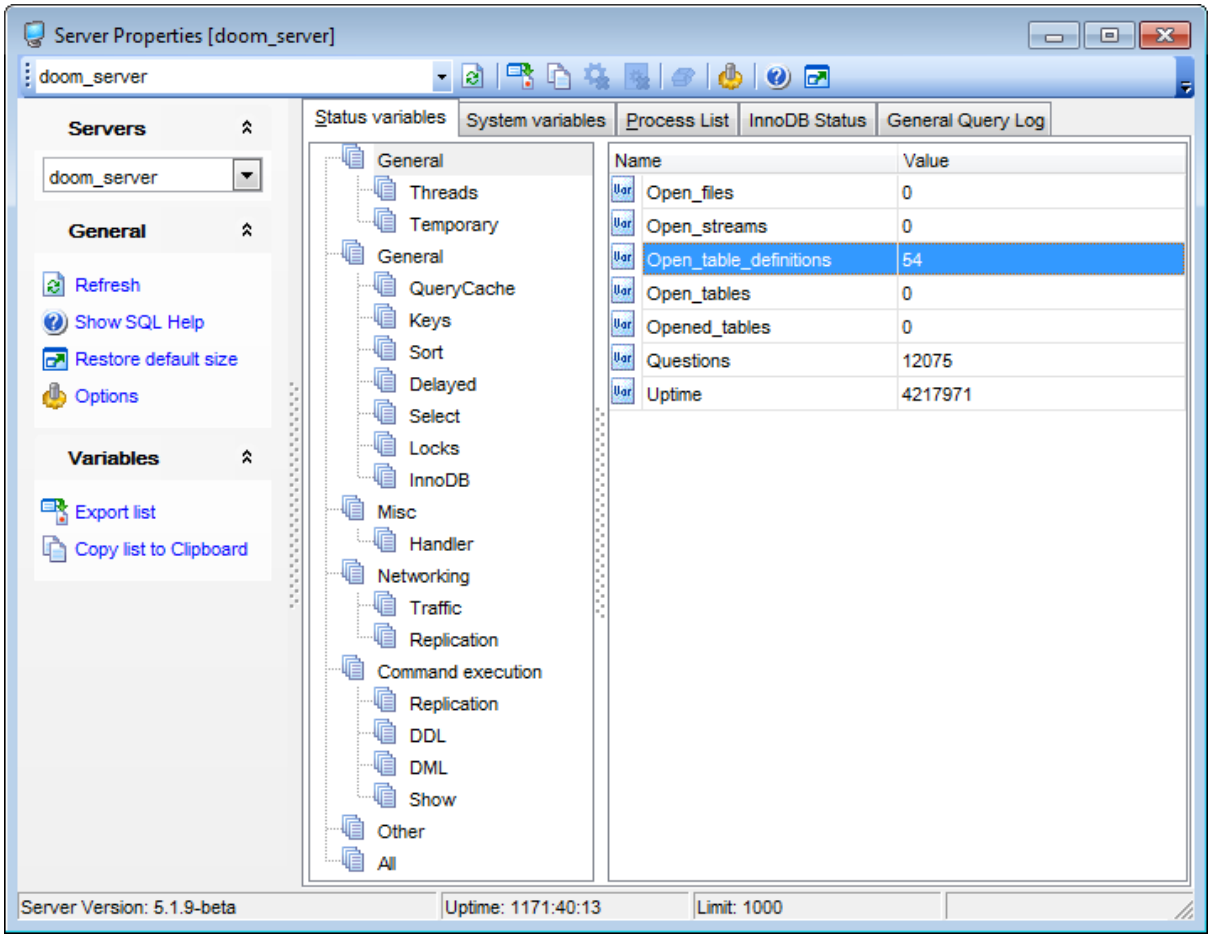
Depending on the current tab selection, the **Navigation bar** expands to one or more additional panes with tab-specific actions that can be useful for working with server processes:
Variables group
edit the selected system variable using the Set variable dialog
export the list of variables
copy the list of variables to clipboard

Process List group
export the list of processes
copy the list of processes to clipboard

Items of the **Navigation bar** are also available on the **ToolBar** of the **Server Properties** viewer. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

10.12.2 Viewing status variables

The **Status variables** tab of the **Server Properties** viewer displays the list of MySQL status variables and their values.



The variables are displayed in groups: *General*, *Performance*, *Misc*, *Networking*, *Command execution*, *Other*, *All*. Select a group (or a sub-group) in the tree on the left side to browse the list of status variables included in this group.

Note: Status variables are not available for editing.

Right-click an item within the list to call the **context menu** allowing you to *refresh* the list.

If necessary, you can export the list of status variables to any of supported formats or copy the list to Windows clipboard using the corresponding items of the Navigation bar.

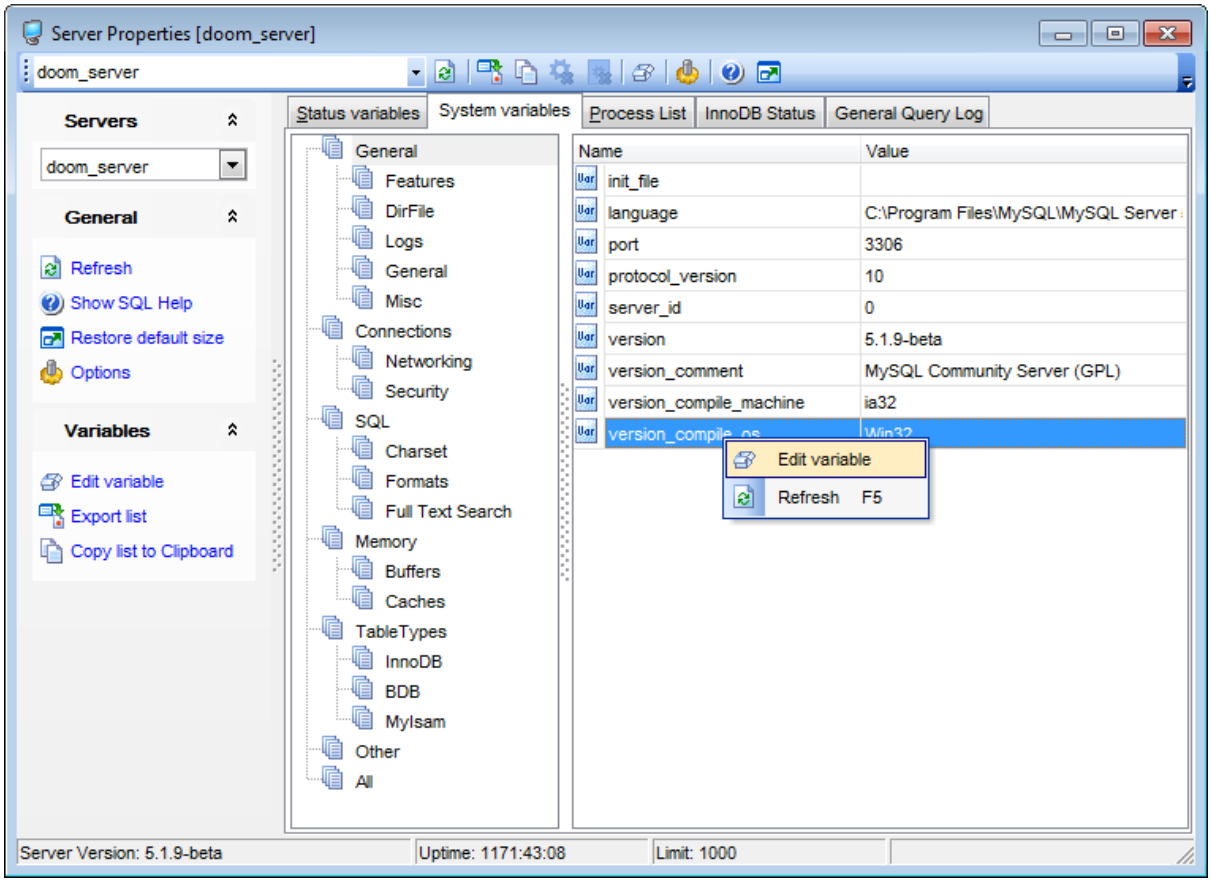
Hint: The status area at the bottom displays the exact MySQL server version and the server uptime.

See also:

Viewing system variables
Viewing process list
Viewing InnoDB status
Viewing general query log

10.12.3 Viewing system variables

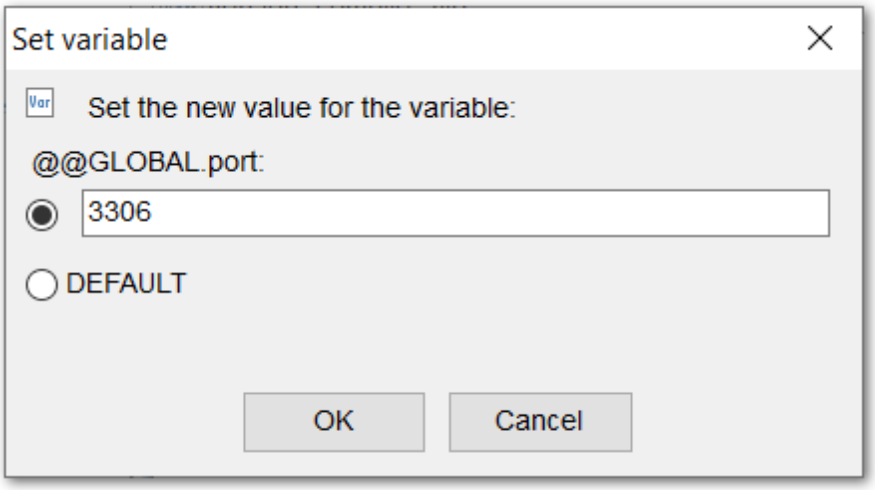
The **System variables** tab of the **Server Properties** viewer displays the list of MySQL system variables and their values.



The variables are displayed in groups: *General*, *Connections*, *SQL*, *Memory*, *Table Types*, *Other*, *All*. Select a group (or a sub-group) in the tree on the left side to browse the list of system variables included in this group.

Right-click an item within the list to call the **context menu** allowing you to *edit* a variable and to *refresh* the list.

The **Set variable** dialog allows you to edit the current value assigned to the variable and to specify whether the changes will be applied *globally*.



If necessary, you can export the list of system variables to any of supported output file formats or copy the list to Windows clipboard using the corresponding items of the Navigation bar.

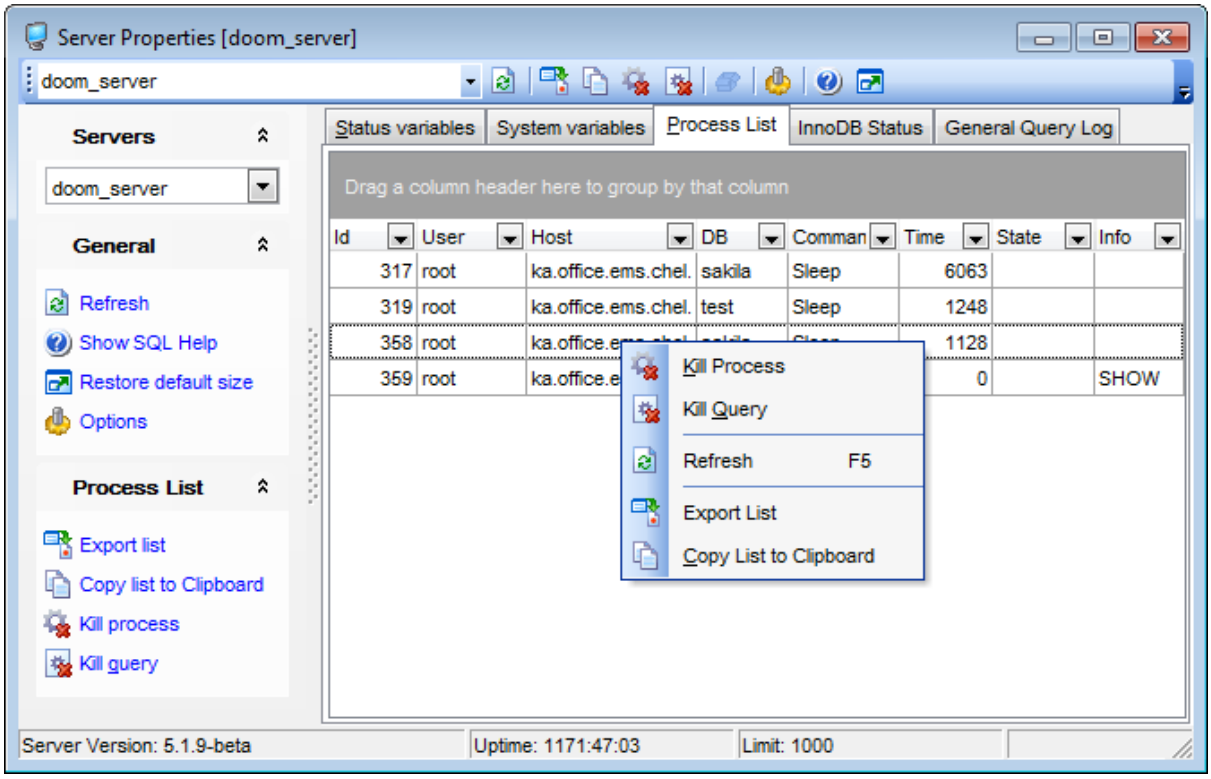
Hint: The status area at the bottom displays the exact MySQL server version and the server uptime.

See also:

Viewing status variables
Viewing process list
Viewing InnoDB status
Viewing general query log

10.12.4 Viewing process list

The **Process List** tab of the **Server Properties** viewer allows you to browse the list of processes running on the server and manage them efficiently.



The list displays the processes as a grid with the following columns: *ID*, *User*, *Host*, *DB*, *Command*, *Time*, *State*, *Info*. If more convenient, you can change the order of the columns by dragging their headers horizontally.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

If necessary, you can **group the data in grid** by any of the columns. This operation is performed by dragging the column header to the gray **"Group by" box** area at the top. When grouping by a column is applied to the grid, all the rows are displayed as subnodes to the grouping row value. To reverse grouping, just drag the column header back.

Note: The process list items are not available for editing.

Right-click an item within the list to call the **context menu** allowing you to *kill* a process or a query, *refresh* the list, or copy the list to Windows clipboard. Using the context menu you can also export the list of jobs to any of supported output file formats.

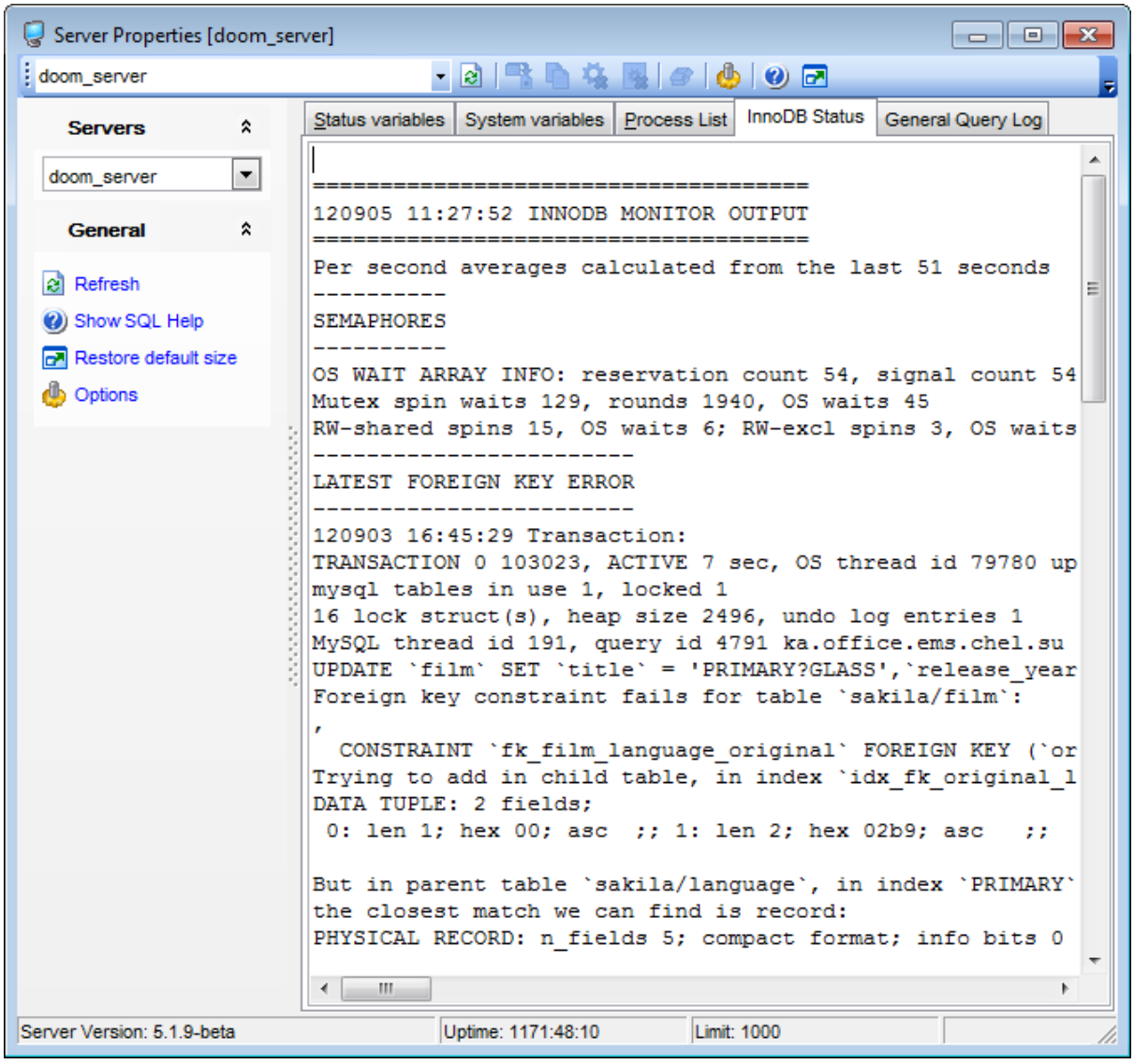
Process management tools are also available through the Navigation bar of the **Server Properties** viewer.

See also:

Viewing status variables
Viewing system variables
Viewing InnoDB status
Viewing general query log

10.12.5 Viewing InnoDB status

The **InnoDB Status** tab of the **Server Properties** viewer displays the InnoDB monitor output that includes the following sections:
SEMAPHORES
TRANSACTIONS
FILE I/O
INSERT BUFFER AND ADAPTIVE HASH INDEX
BUFFER POOL AND MEMORY
ROW OPERATIONS



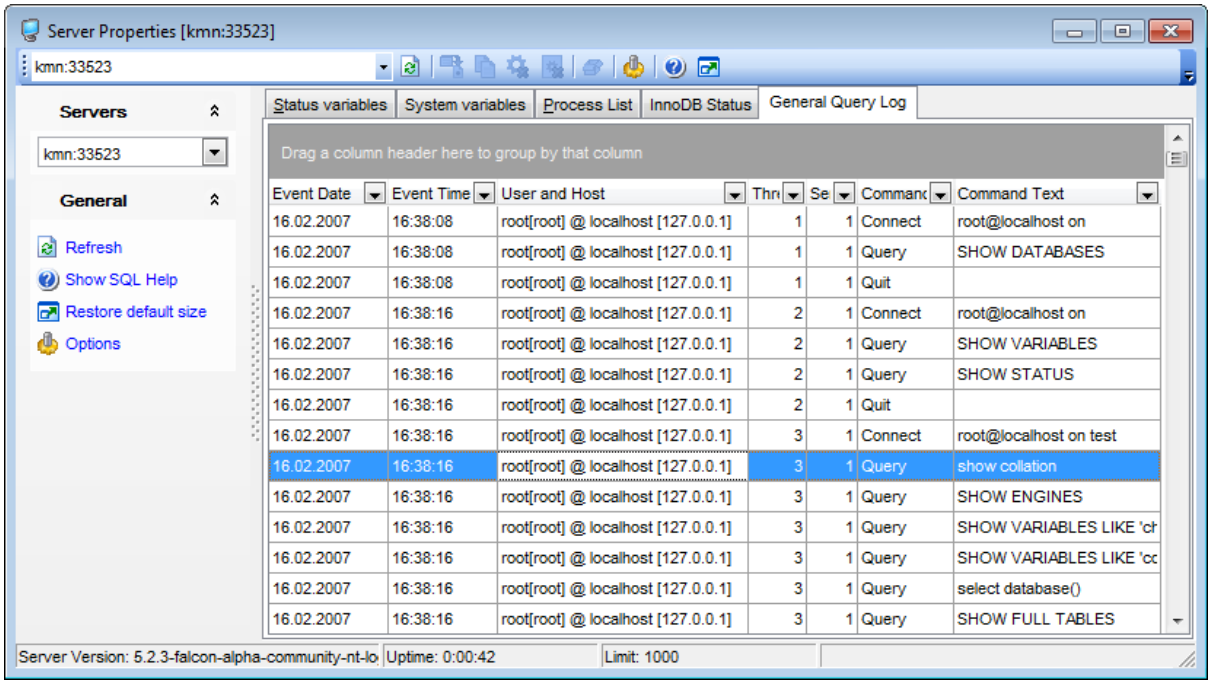
Note: The InnoDB Monitor output is not available for editing.

See also:

10.12.6 Viewing general query log

The **General Query Log** tab of the **Server Properties** viewer displays the query log for the specified server.

Note: This tab is only available for MySQL version 5.1.6 and higher and when the server is configured for logging to table. For more information refer to the official MySQL server documentation.



The list displays the server events as a grid with the following columns: *Event Date*, *Event Time*, *User and Host*, *Thread*, *Server ID*, *Command*, *Command Text*. If more convenient, you can change the order of the columns by dragging their headers horizontally.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

If necessary, you can **group the data in grid** by any of the columns. This operation is performed by dragging the column header to the gray **"Group by" box** area at the top. When grouping by a column is applied to the grid, all the rows are displayed as subnodes to the grouping row value. To reverse grouping, just drag the column header back.

Note: The query log items are not available for editing.

See also:

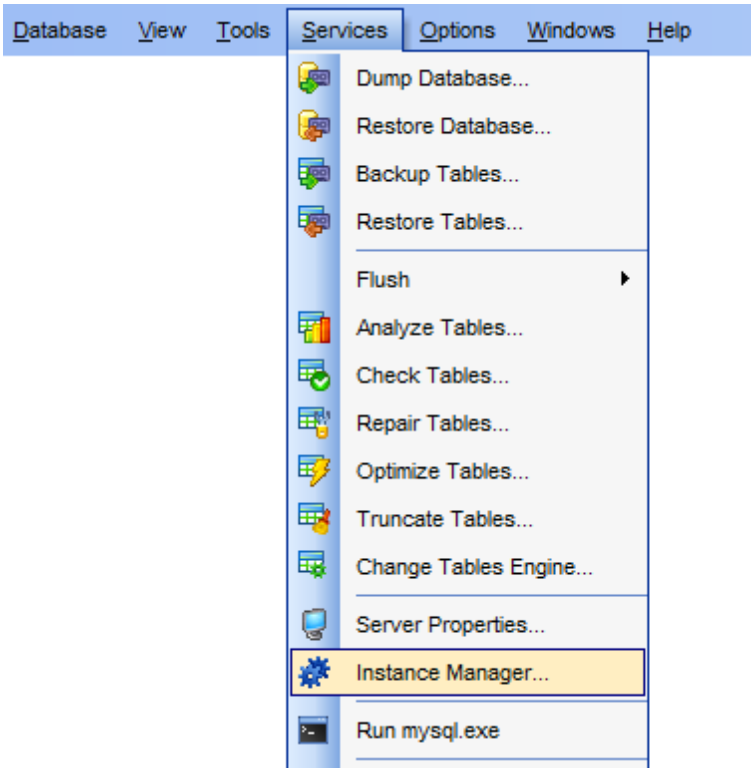
Viewing status variables

Viewing system variables

10.13 Instance Manager

This tool allows you to monitor and manage MySQL instances.

To run this tool select the **Services |** **Instance Manager** main menu item.



- Starting/Stopping Service
- Configuring Service

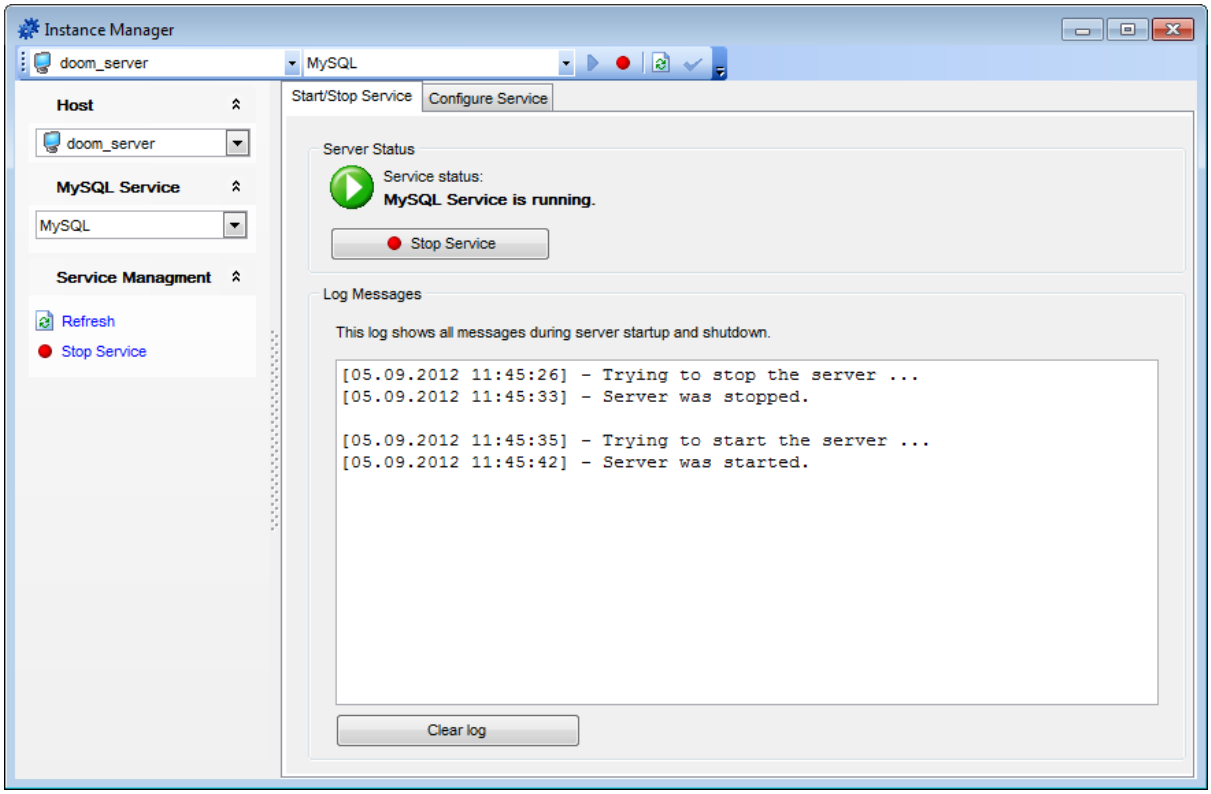
Availability:

Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

10.13.1 Starting/Stopping Service

This tab allows you to stop/start MySQL service on the selected host.



Use the navigation bar or toolbar to select the required host.

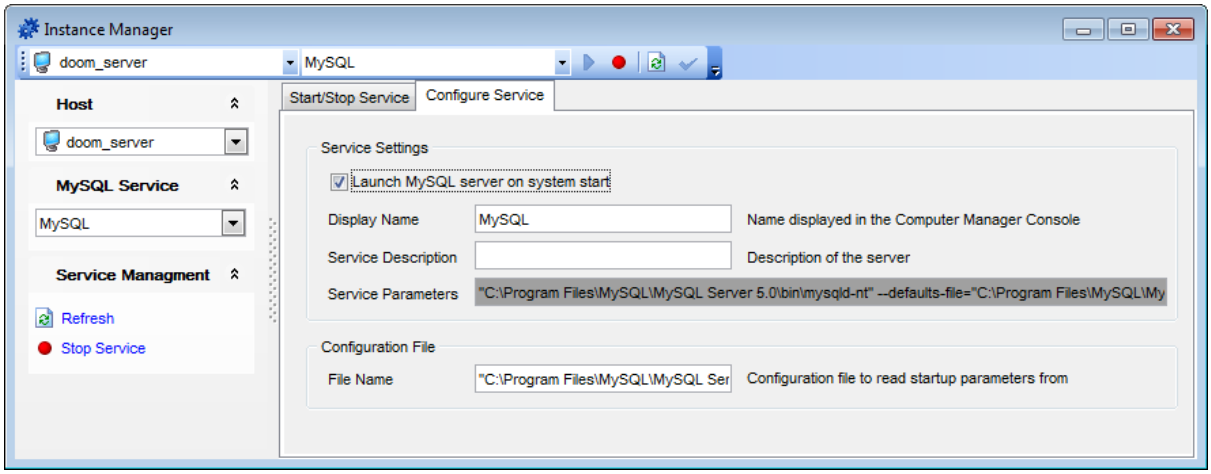
Within the Server Status section you can define whether service is stopped or running and change its state using Stop/Run Service buttons.

The log area displays the log of operations and errors (if any).
Optionally, you can clear log using the respective button.

Configuring Service

10.13.2 Configuring Service

Use this tab to define MySQL service settings.



Service Settings

Launch MySQL server on system start

Forces MySQL services to run on system start if enabled.

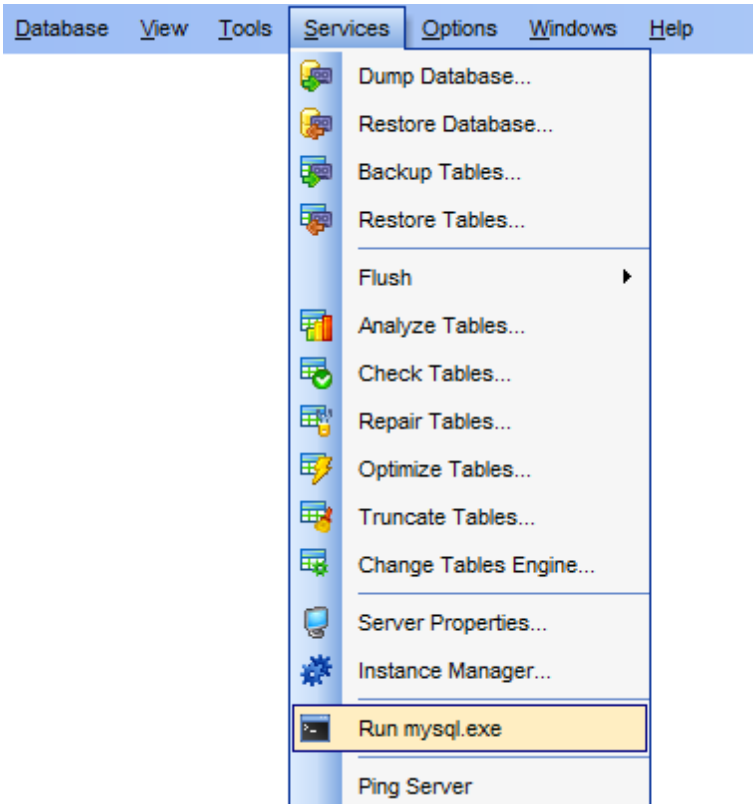
You can define service name in the **Display Name** field. Specified value will be used in Computer Manager Console.
Optionally you can define **Service Description** for the server.

Configuration file

Specify filename and its location. Parameters specified in the file will be used by service.

10.14 Run mysql.exe

Select the **Services | Run mysql.exe** main menu item to open MySQL console.

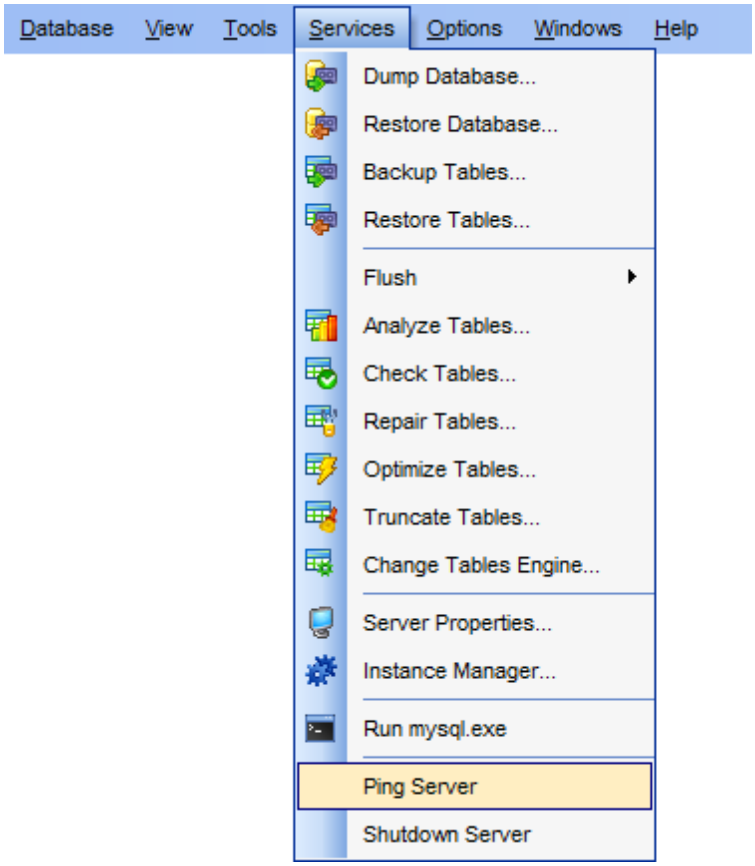


By default, the *mysql.exe* file is located in the *C:\Program Files (x86)\EMS\SQL Manager for MySQL\Dump* directory.

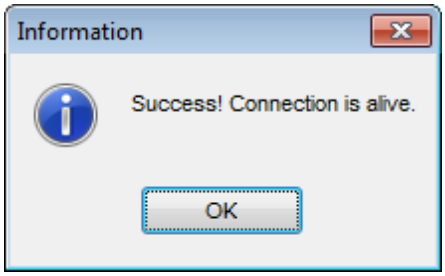
10.15 Ping Server

Ping Server is a simple tool which is used to check the server connection by pinging the server from the client machine.

To use the tool, select the **Services | Ping Server** main menu item.



If the server is pinged correctly, the *'Success! Connection is alive'* information message appears, otherwise you will receive an error message.



Availability:
Full version (for Windows) **Yes**

Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

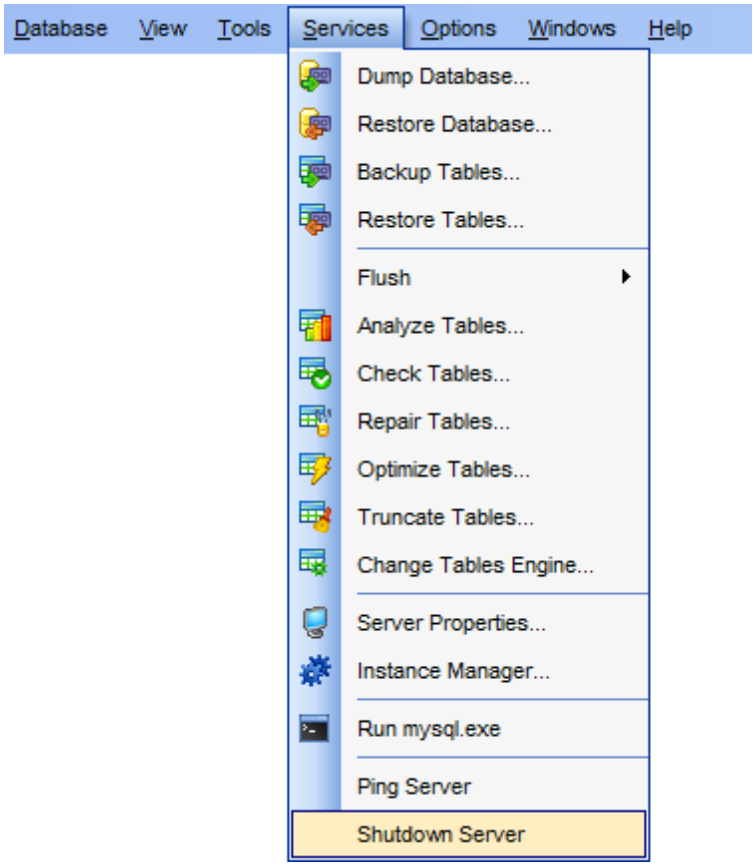
Shutdown Server

10.16 Shutdown Server

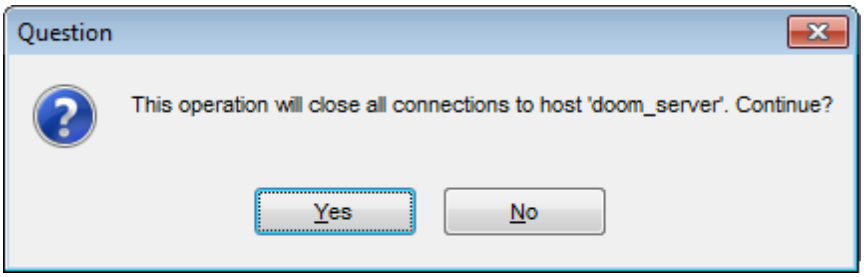
Shutdown Server is a simple tool which is used to shutdown MySQL server.

To use the tool, select the **Services | Shutdown Server** main menu item.

Note that the user must have the corresponding *Shutdown* global privilege granted to perform this operation.



To prevent occasional server shutdowns, a dialog with a warning message pops up each time you attempt to use this tool. You must confirm the action to shutdown the server.



Availability:

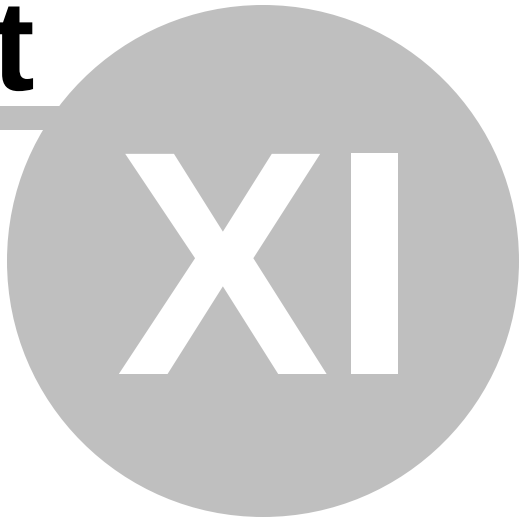
Full version (for Windows)	**Yes**
Lite version (for Windows)	**No**

Note: To compare all features of the **Full** and the **Lite** versions of **SQL Manager**, refer to the Feature Matrix page.

See also:

Ping Server

Part



11 Server security management

SQL Manager for MySQL provides the following tools for efficient MySQL security management:

- User Manager
- User Editor
- Grant Manager

Adding Users

In order to add a new user:

- select the **Tools | User Manager** main menu item or use the corresponding toolbar button to open User Manager;
- select the **Add user...** item from the **context menu** or within the Navigation bar;
- define user properties and permissions using User Editor.

Editing User Properties

In order to edit an existing user:

- select the **Tools | User Manager** main menu item or use the corresponding toolbar button to open User Manager;
- select the **Edit user...** item from the **context menu** or within the Navigation bar;
- edit the user properties and permissions using User Editor.

Managing Grants

To define grants on database objects:

- select the **Tools | Grant Manager** main menu item, or use the corresponding toolbar button to open Grant Manager;
- select the object type using the drop-down list on the toolbar;
- select a user from the **Privileges for** pane of the Navigation bar;
- edit user privileges using Grant Manager.

To define grants on tables, you can also:

- right-click a table in DB Explorer and select the **Grants for Table <table_name>** item from the context menu;
- edit user privileges using Grant Manager.

Deleting Users

In order to delete an existing user:

- select the **Tools | User Manager** main menu item or use the corresponding toolbar button to open User Manager;
- right-click the user to delete and select the **Delete User** item from the **context menu** or within the Navigation bar;
- confirm deleting in the dialog window.

See also:

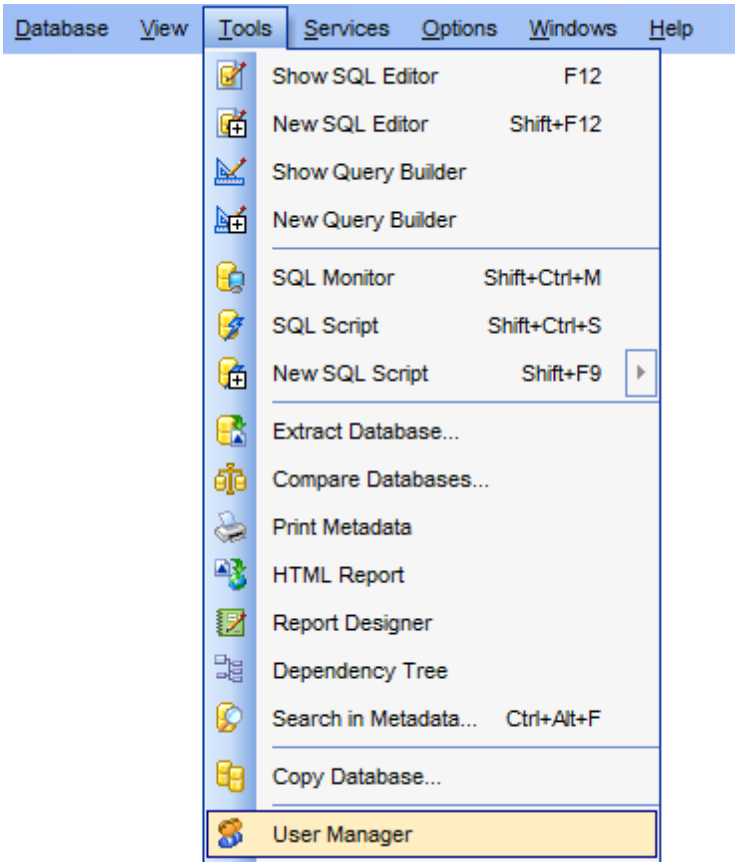
Getting Started

11.1 User Manager

User Manager allows you to browse the list of existing MySQL users, and manage them efficiently.

To launch the tool, select the **Tools | User Manager** main menu item.

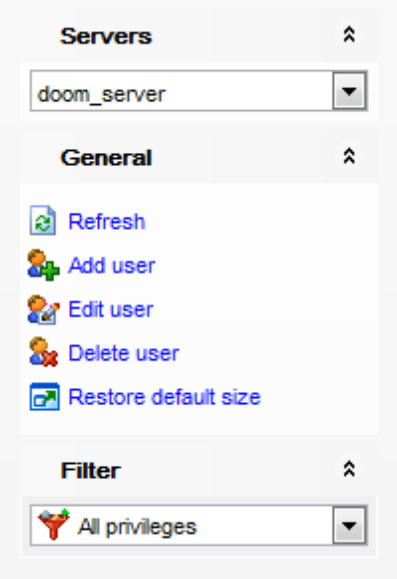
Note: You should register the server with Register Database Wizard before using this tool.



See also:
User Editor
Grant Manager

11.1.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **User Manager**.



The **Navigation bar** of the **User Manager** window allows you to:

Servers group
select the server to retrieve the list of users

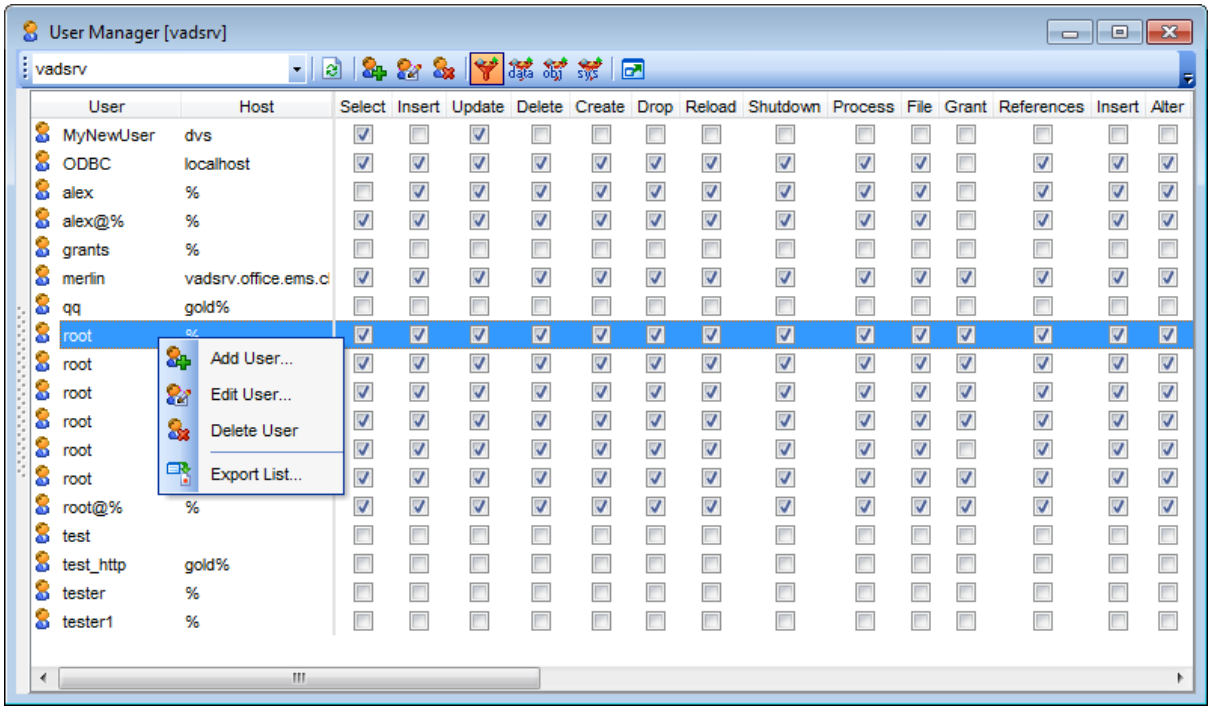
General group
refresh the currently displayed list of users
add a new *user*
edit the selected *user*
delete the selected *user*
restore the default size and position of the window

Filter group
select the group of privileges to display:
All privileges
Data privileges
Object privileges
System privileges

Items of the **Navigation bar** are also available on the **ToolBar** of the **User Manager** window. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

11.1.2 Managing users

If you are not connected to the database server yet, select the host from the **Servers** drop-down list and you will be prompted for login and password.



The list displays the existing users as a grid with the following columns: *User*, *Host*, and the columns indicating the global privileges granted to the user: *Select*, *Insert*, *Update*, *Delete*, *Create*, *Drop*, *Reload*, *Shutdown*, *Process*, *File*, *Grant*, *References*, *Index*, *Alter*, *Show Database*, *Super*, *Create TMP Table*, *Lock Tables*, *Execute*, *Replicate Slave*, *Replicate Client*, *Show View*, *Create View*, *Create Routine*, *Alter Routine*, *Create User*, *Event*, *Max. Queries*, *Max. Updates*, *Max. Connections*.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

To ease managing user privileges you can work with a specific group of privileges at a time. Select required group from the Filter drop-down list that is located on the navigation bar. You can also find filtering buttons on the toolbar: *All privileges*, *Data privileges*, *Object privileges*, *System privileges*.

Right-click an item within the list to call the **context menu** allowing you to *create* a new user and specify its properties using User Editor, *edit*, *delete* the selected user, or show/ hide columns of the list. Using the context menu you can also export the list of users to any of supported output file formats.

Users management tools are also available through the Navigation bar and toolbar of **User Manager**.

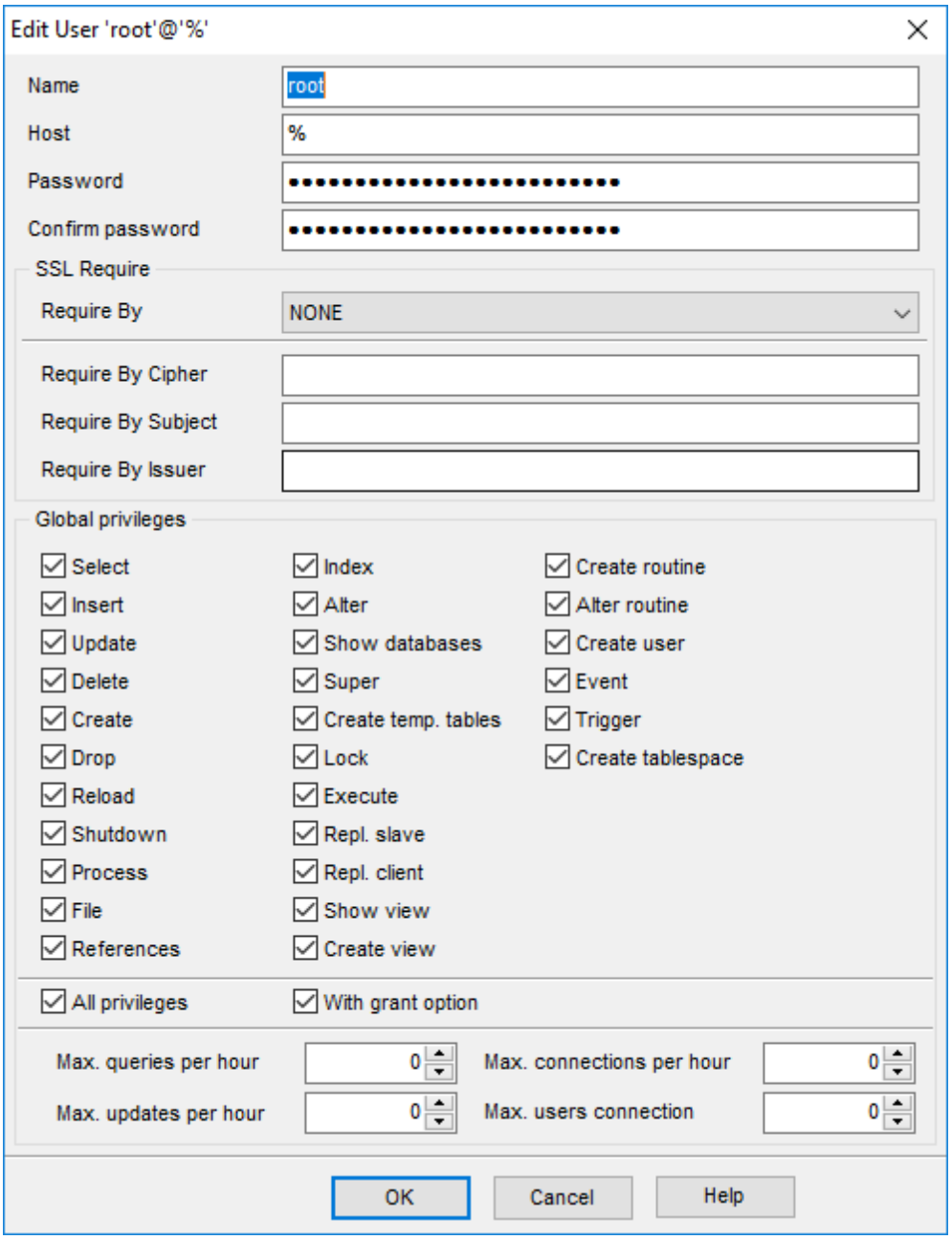
11.2 User Editor

The **User Editor** dialog allows you to create/edit a user and specify its properties.

Name
Enter a name for the new user, or modify the name of the user being edited.

Host
Specify the host from which the user is allowed to access the server.
Note: The % character can be used to indicate that the user is allowed to access the server from any host.

Password / **Confirm password**
Set a password by which the user will be identified in the server.



SSL Require
This section allows you to define additional user authentication parameters.

Note: This section is active only when server is running with SSL.

Require By
MySQL server can check the X509 certificate attributes additionally to common authentication based on user name and password.
Select authentication method from the drop-down list.

SSL

Allow only SSL-secured connections for the account.

X509
Client must have valid certificate. The only requirement for the certificate is that it should be possible to verify its signature with one of the CA certificates.

Require By Cipher
Cipher is needed to ensure that ciphers and key lengths of sufficient strength are used. SSL itself can be weak if old algorithms using short encryption keys are used. Using this option, you can ask that a specific cipher method is used to allow a connection.
Example: EDH-RSA-DES-CBC3-SHA

Require By Subject
Places the restriction on connection attempts that the client must present a valid X509 certificate containing the subject. If the client presents a certificate that is valid but has a different subject, the server rejects the connection.
Example: C=EE, ST=Some-State, L=Tallinn, O=MySQL demo client certificate, CN=Tonu Samuel/Email=tonu@mysql.com

Require By Issuer
Places the restriction on connection attempts that the client must present a valid X509 certificate issued by CA 'issuer'. If the client presents a certificate that is valid but has a different issuer, the server rejects the connection. Use of X509 certificates always implies encryption, so the SSL option is unnecessary in this case.
Example:C=FI, ST=Some-State, L=Helsinki, O=MySQL Finland AB, CN=Tonu Samuel/Email=tonu@mysql.com

Global privileges
This group allows you to specify the global privileges for the user being created/edited.

Extended user properties
This area allows you to define additional properties pertaining MySQL users: *Max. queries per hour*, *Max. updates per hour*, *Max. connections per hour*, *Max. users connection*. Use the spinner controls to set the required values for the properties.

Hint: The **Global privileges** and **Extended user properties** can also be specified in Grant Manager.

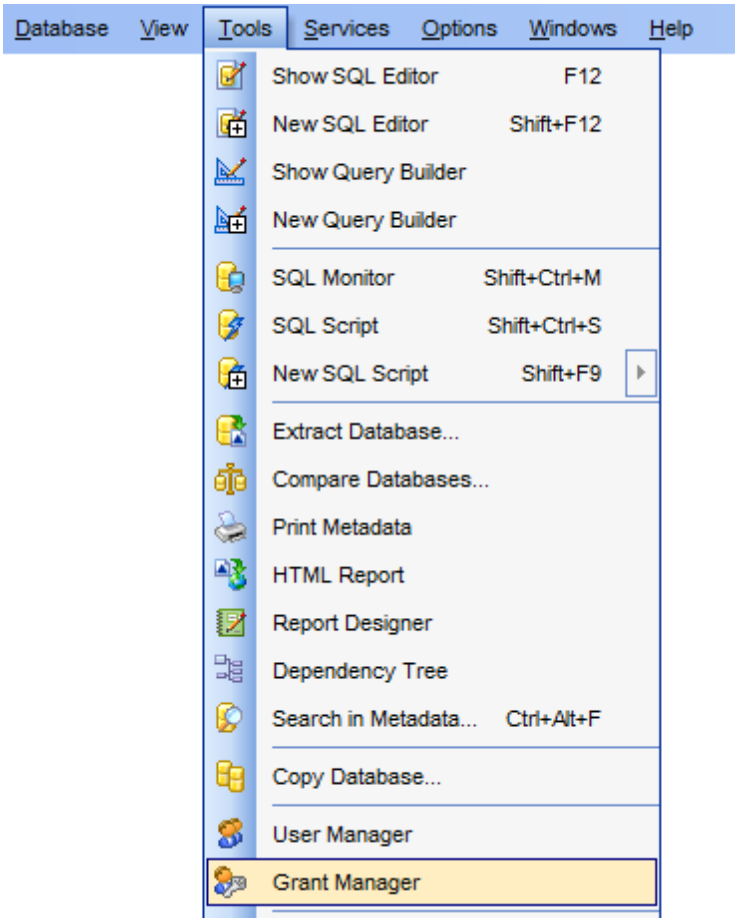
See also:
User Manager
Grant Manager

11.3 Grant Manager

Grant Manager allows you to set the user access grants for certain databases and database objects: tables, views, functions, etc.

'Global' user privileges define the user access rights to all the database tables on the server. Granting privileges on the selected databases, tables or columns allows user to perform the defined operation (select, update, insert) over all the tables of the selected database, over the selected tables or over the selected fields only.

To open **Grant Manager**, select the **Tools | Grant Manager** main menu item.



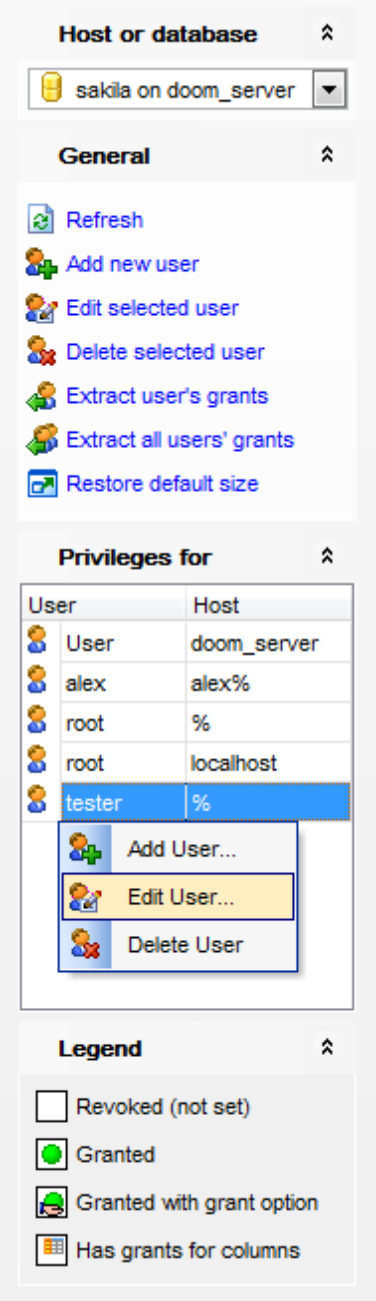
- Using Navigation bar, Toolbar and context menu
- Managing global privileges
- Managing database-specific privileges
- Managing column permissions
- Filtering objects in list

See also:
User Manager

User Editor

11.3.1 Using Navigation bar, Toolbar and context menu

The **Navigation bar**, **Toolbar** and **context menu** provide quick access to tools implemented in **Grant Manager**.



The **Navigation bar** of **Grant Manager** allows you to:

Host or database group
select a host to manage global privileges or a database to manage database-specific and column permissions

General group
refresh the content of the window
call User Editor to add a new database user
call User Editor to edit an existing user
delete a database user
extract the selected user's grants and load the script to SQL Script Editor
extract all users' grants and load the script to SQL Script Editor
restore the default size and position of the window

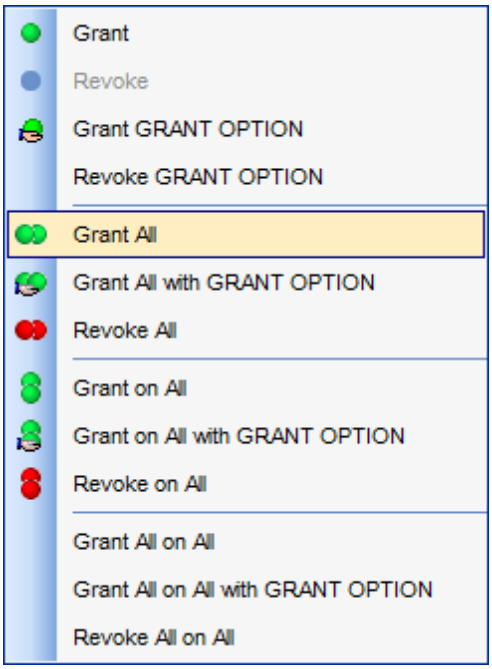
Privileges for group
select an existing database user to grant privileges to

Right-click an item within the **Privileges for** list to call the **context menu** allowing you to:
- call User Editor to add a new user;
- call User Editor to edit the selected user;
- delete the selected user.

Items of the **Navigation bar** are also available on the **ToolBar** of **Grant Manager**. To enable the toolbar, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

The **context menu** is aimed at facilitating your work: you can perform a variety of operations using context menu items.

The **context menu** of **Grant Manager** allows you to:
- grant a permission on an object to the selected user;
- revoke a previously granted permission;
- grant a permission (with GRANT OPTION) on an object to the selected user;
- revoke a previously granted permission (with GRANT OPTION);
- grant all permissions on an object to the selected user;
- grant all permissions (with GRANT OPTION) on an object to the selected user;
- revoke all previously granted permissions on an object;
- grant a permission on all objects to the selected user;
- grant a permission (with GRANT OPTION) on all objects to the selected user;
- revoke a previously granted permission on all objects;
- grant all permissions on all objects to the selected user;
- grant all permissions (with GRANT OPTION) on all objects to the selected user;
- revoke all previously granted permissions on all objects.



See also:

Managing global privileges
Managing database-specific privileges
Managing column permissions
Filtering objects in list

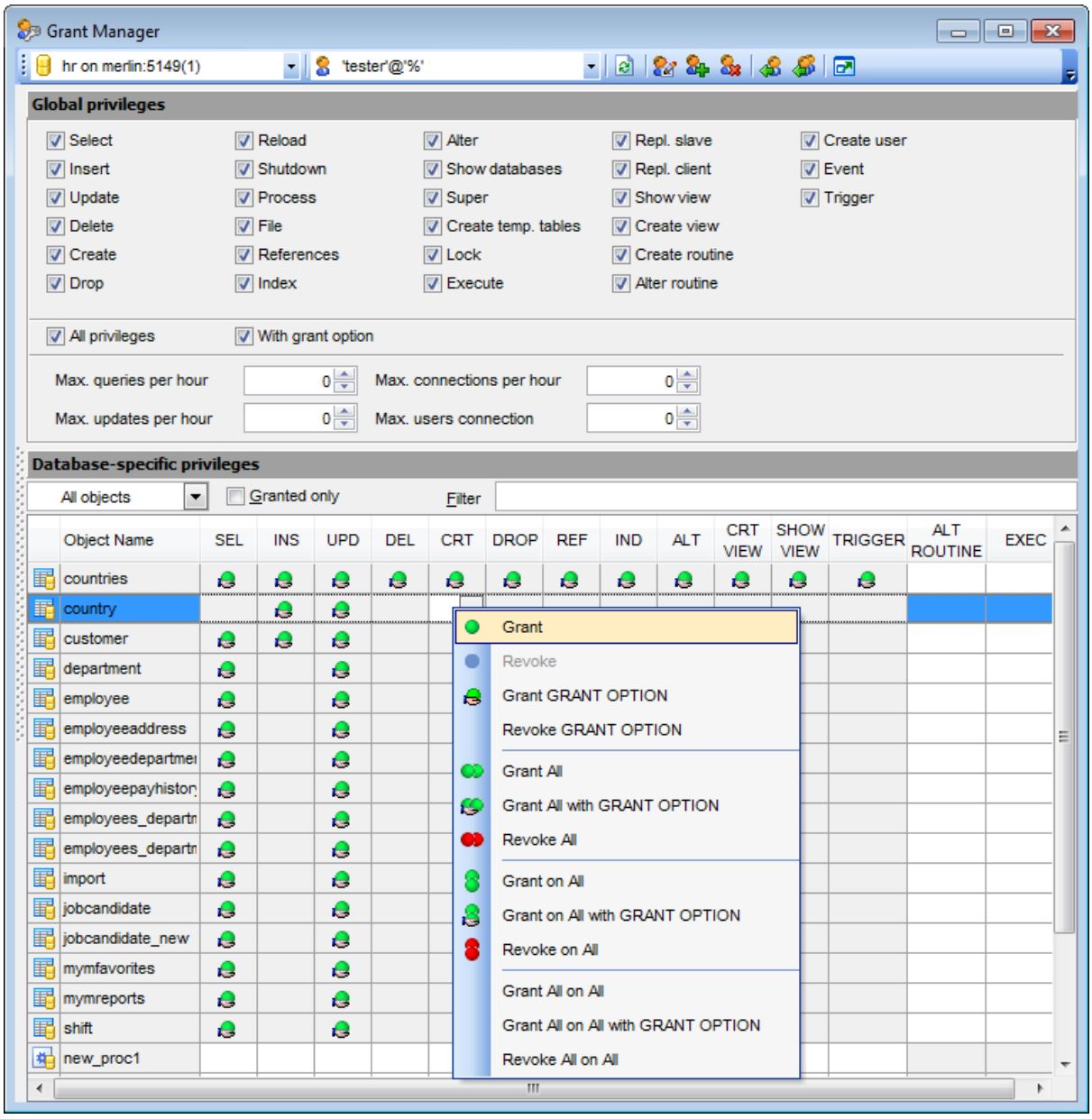
11.3.2 Managing global privileges

The **Global privileges** area of the **Grant Manager** window allows you to define global privileges and extended properties for MySQL users.

Note: This area is available for setting grants on entire *databases* when a **host** is selected in the **Host or Database** group of the Navigation bar (or toolbar).

To edit global privileges of a user, select the user in the **Privileges for** pane of the Navigation bar or toolbar. Tick off a checkbox to grant the global privilege to the selected user. For your convenience the ☑ **With grant option** and ☑ **All privileges** options are available below.

Use the panel below of the user **Global privileges** group to edit **extended user properties**: *Max. queries per hour*, *Max. updates per hour*, *Max. connections per hour*, *Max. users connection*. Use the spinner controls to set the required values for the properties.



See also:

[Using Navigation bar, Toolbar and context menu]

[Managing database-specific privileges]

[Managing column permissions]

[Filtering objects in list]

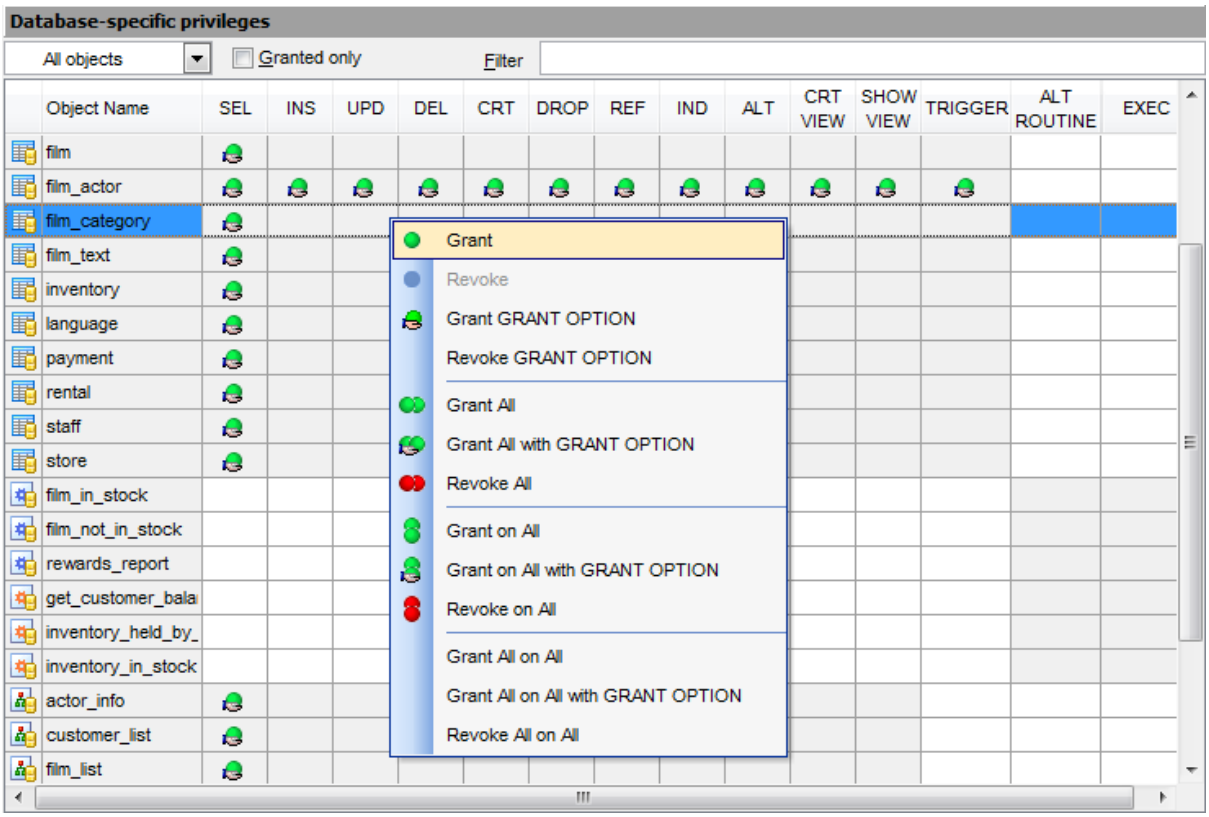
11.3.3 Managing database-specific privileges

The **Database-specific privileges** area allows you to define privileges on database objects and grant privileges to a user.

Note: This area is available for setting grants on *database objects* when a **database** is selected in the **Host or Database** group of the Navigation bar (or toolbar).

To edit the privileges of a user on an object of a database, select the database using the **Host or Database** pane of the Navigation bar, then select a *user* from the **Privileges for** list available within the Navigation bar. Then select the type of objects to be displayed in the main working window using the drop-down list at the top.

The **Object Name** column contains the list of objects of the selected type; each subsequent column corresponds to the permission which can be granted on the selected object:
SEL, *INS*, *UPD*, *DEL*, *CRT*, *DROP*, *REF*, *IND*, *TRIG*, *ALT* (for tables, views);
EXEC, *ALTER ROUTINE* (for procedures, functions).



The list of objects can be configured in several ways: you can specify that only granted objects are displayed in the grid, or define an object name to filter the objects by that name.

Right-click a cell to grant a specific permission on a certain object. To grant a permission on an object, you should find the object in the **Object Name** list and the column with the corresponding permission. Note that the cells that are highlighted gray do not admit to

setting grants for an obvious reason (e.g. you cannot execute a table). The context menu of a cell contains possible permissions that can be granted:

- *Grant*
- *Grant with GRANT OPTION*
- *Revoke* (removes a previously granted permission)
- *Grant All*
- *Grant All with GRANT OPTION*
- *Revoke All*
- *Grant on All*
- *Grant on All with GRANT OPTION*
- *Revoke on All*
- ✓ *Grant All on All*
- ✓ *Grant All on All with GRANT OPTION*
- ✓ *Revoke All on All*

Hint: You can also assign privileges by double-clicking the respective cell - in this case the grant status is changed in the following order: *Grant -> Revoke*.

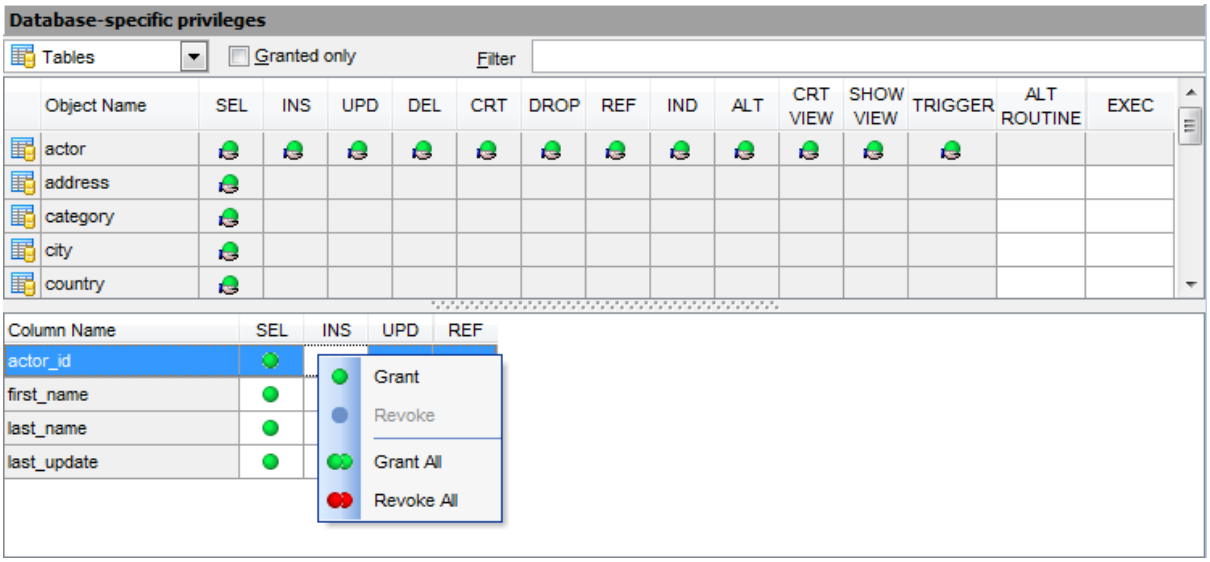
See also:

Using Navigation bar, Toolbar and context menu
Managing global privileges
Managing column permissions
Filtering objects in list

11.3.4 Managing column permissions

If you select a table or a view the **Column permissions** area appears. It displays the grid with table/view columns and the privileges that can be granted to the selected user.

Use items of the context menu to grant/revoke permissions on columns.



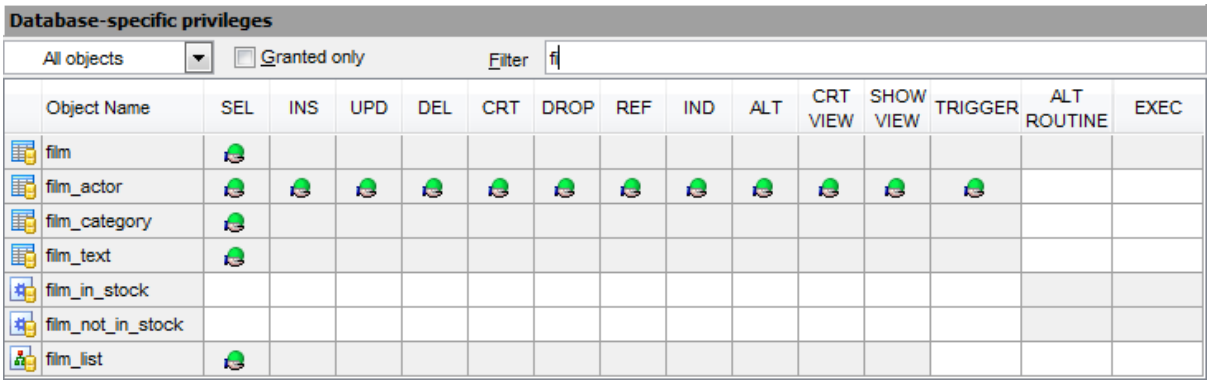
See also:

Using Navigation bar, Toolbar and context menu
Managing global privileges
Managing database-specific privileges
Filtering objects in list

11.3.5 Filtering objects in list

In large databases with huge amount of objects it may be difficult to find the required object. For this purpose you are provided with several tools for *filtering objects in list*:

- the **Object type** control: select the required object type from the drop-down list (e. g. *Tables*);
- the **Filter** panel: enter a character string to filter the object names by that string (note that the filter is case-sensitive);
- the **Granted only** option: check this option to display objects with at least one granted operation.



See also:

Using Navigation bar, Toolbar and context menu

Managing global privileges

Managing database-specific privileges

Managing column permissions

Part

12 Options

SQL Manager for MySQL provides you with capabilities for flexible personalization of the application.

Please see the chapters below to learn how to use personalization tools effectively.

- Environment Options
- Editor Options
- Save Settings
- Localization
- Keyboard Templates
- Object Templates
- Find Option dialog

The **Options** menu allows you to export all program settings to a **.reg* file for future use, e.g. when you need to move the settings to another machine (see **Save Settings** for details).

Hint: Each of the SQL Manager Options dialogs is provided with the **Reset to defaults button**. You can use it either to **Reset current category** or to **Reset all categories**.

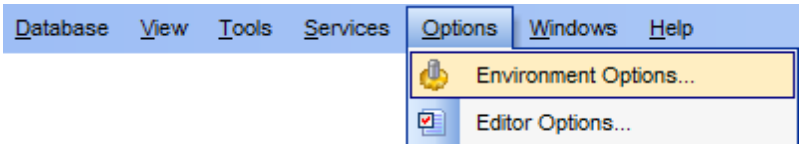
See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
External Tools
How To...

12.1 Environment Options

Environment Options allow you to customize general options of the **SQL Manager** 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.



See also:

Editor Options

12.1.1 Preferences

Show splash screen at startup
Displays the splash screen of **SQL Manager for MySQL** at the application startup.

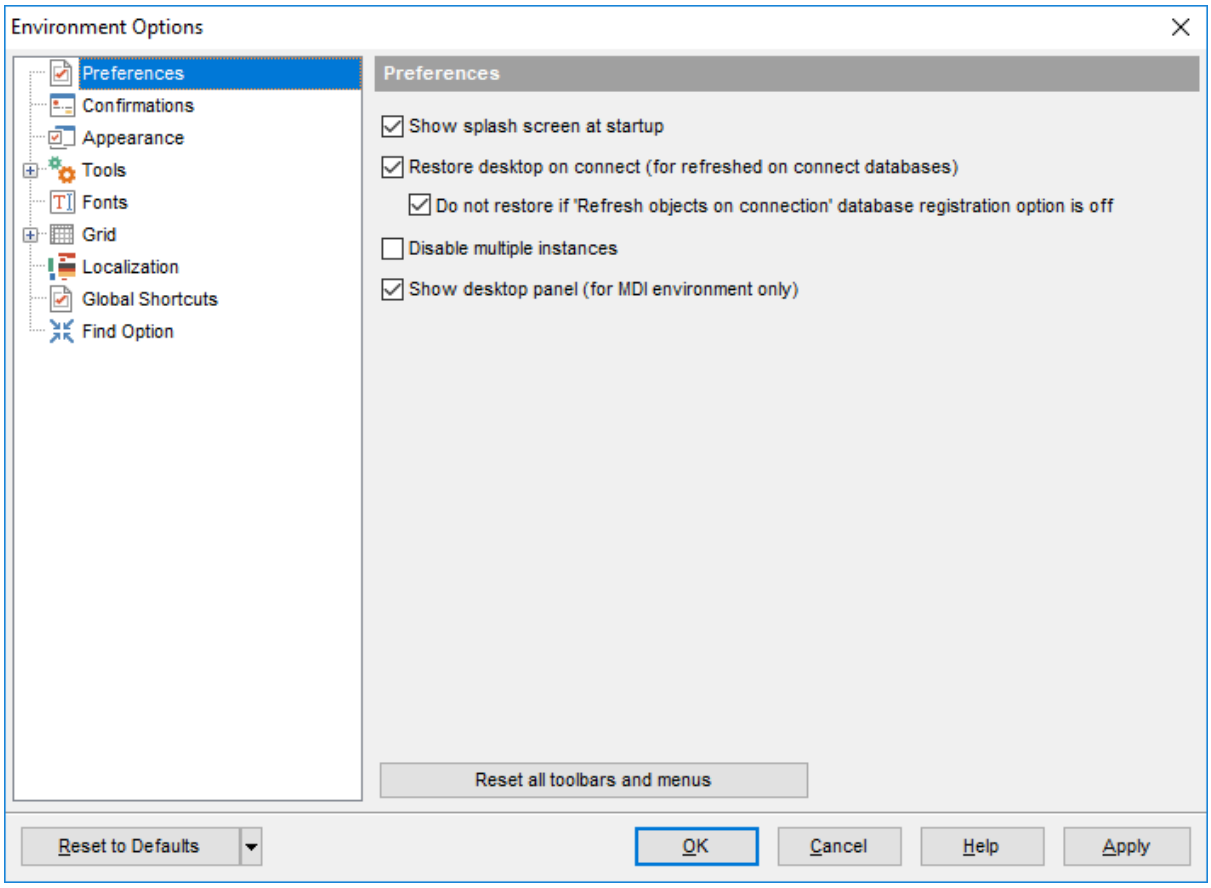
Restore desktop on connect
This option determines whether the previously opened windows and their positions should be restored upon connection to the database.

Do not restore if 'Refresh objects on connection' database registration option is off
The previously opened windows and their positions are not restored for the databases having 'Refresh objects on connection' off at the Database Registration Info.

Disable multiple instances
Checking this option prevents one from running multiple instances of **SQL Manager for MySQL**.

Show desktop panel (for MDI Environment style only)
Displays Desktop Panel when no child windows are open.

Show Full Version features
This option is available in the Lite version of **SQL Manager**. When selected, a 30-day period of fully-functional usage is activated.



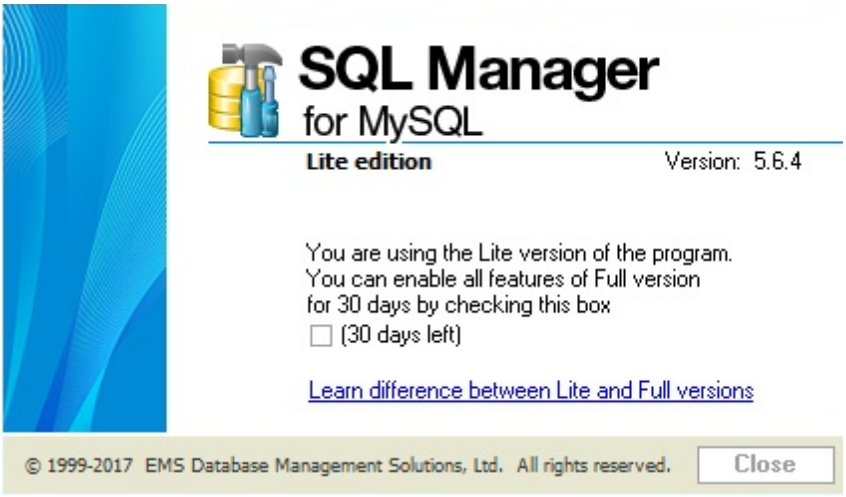
Hint: The **Reset to defaults** button which is common for all sections of the **Environment Options** dialog allows you to discard all changes and restore the settings to their defaults.

See also:

Confirmations
Windows
Tools
Fonts
Grid
Localization
Find Option

12.1.1.1 Full mode activation

Note that when using **the FREE Lite version of SQL Manager for MySQL** (which contains functional limitations) you can activate a 30-day period of fully-functional usage. During this period you will get the splash screen displaying the number of days left every time you start the application. After the period expires, you will be able to continue using the Lite version.



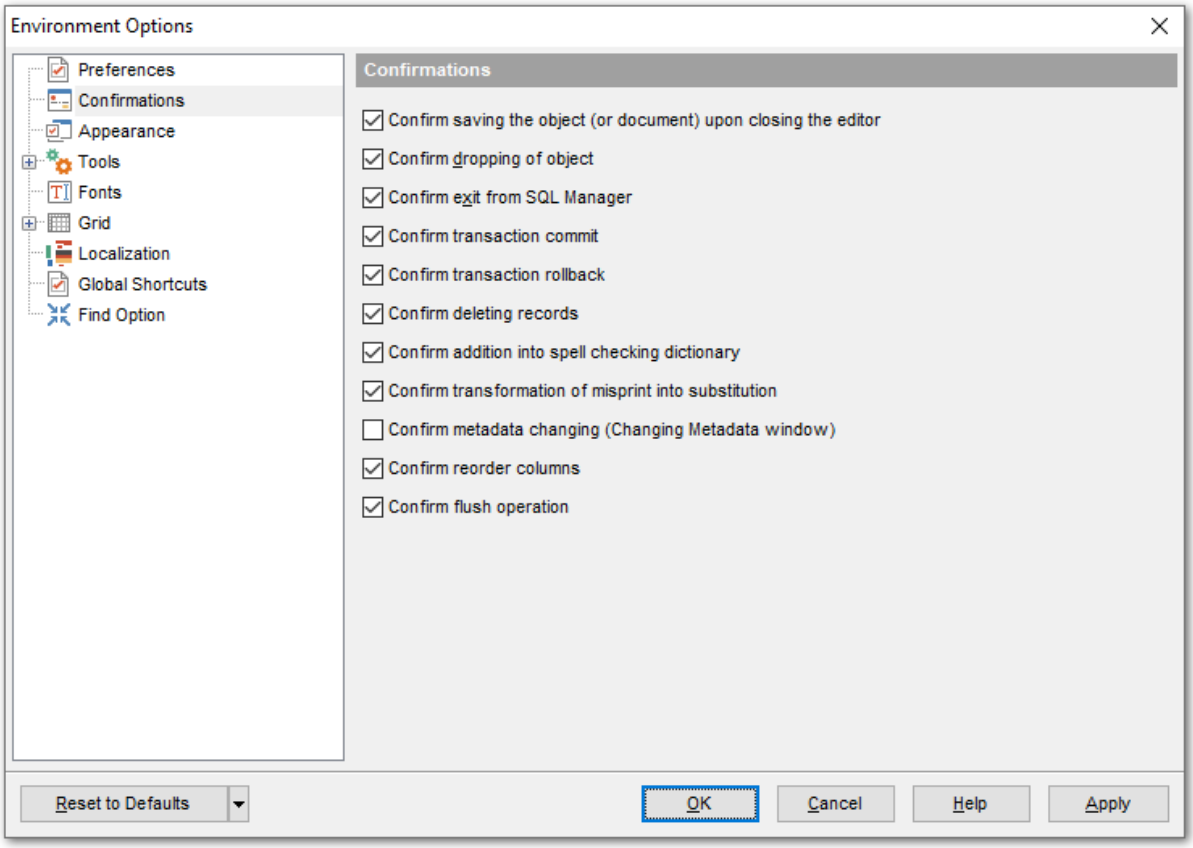
To activate *the 30-day Full version mode*, please enable the **Show Full Version features** option available on the Preferences page of the **Environment Options** dialog (note that this option is only available in the Lite version of **SQL Manager**).

12.1.2 Confirmations

Confirm saving the object (or document) upon closing the editor
If this option is selected, the program requires confirmation each time you want to save changes in a database object or document.

Confirm dropping of object
If this option is selected, the program requires confirmation of dropping a database object.

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



Confirm transaction commit
If this option is selected, the program requires confirmation on attempt to commit a transaction.

Confirm transaction rollback
If this option is selected, the program requires confirmation on attempt to rollback a transaction.

Confirm deleting records
This option enables/disables a confirmation dialog for deleting records.

Confirm addition into spell checking dictionary
Option defines whether confirmation required to add new word into spell checking dictionary

Confirm transformation of misprint into substitution
Enable the option to avoid accident transformations of misprints into substitutions.

Confirm metadata changing (Changing Metadata window)
Use the option to enable/disable confirmation of metadata changing.

Confirm reorder columns
Enable this option if you wish to be prompted for confirmation when reordering columns.

Confirm flush operation
If this option is selected, the program prompts to confirm the flush operation.

Notify about possible problems with incorrect client character set on connection
If this option is selected, the application will check the character set specified for connection and notify you if it is incorrect.

12.1.3 Appearance

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

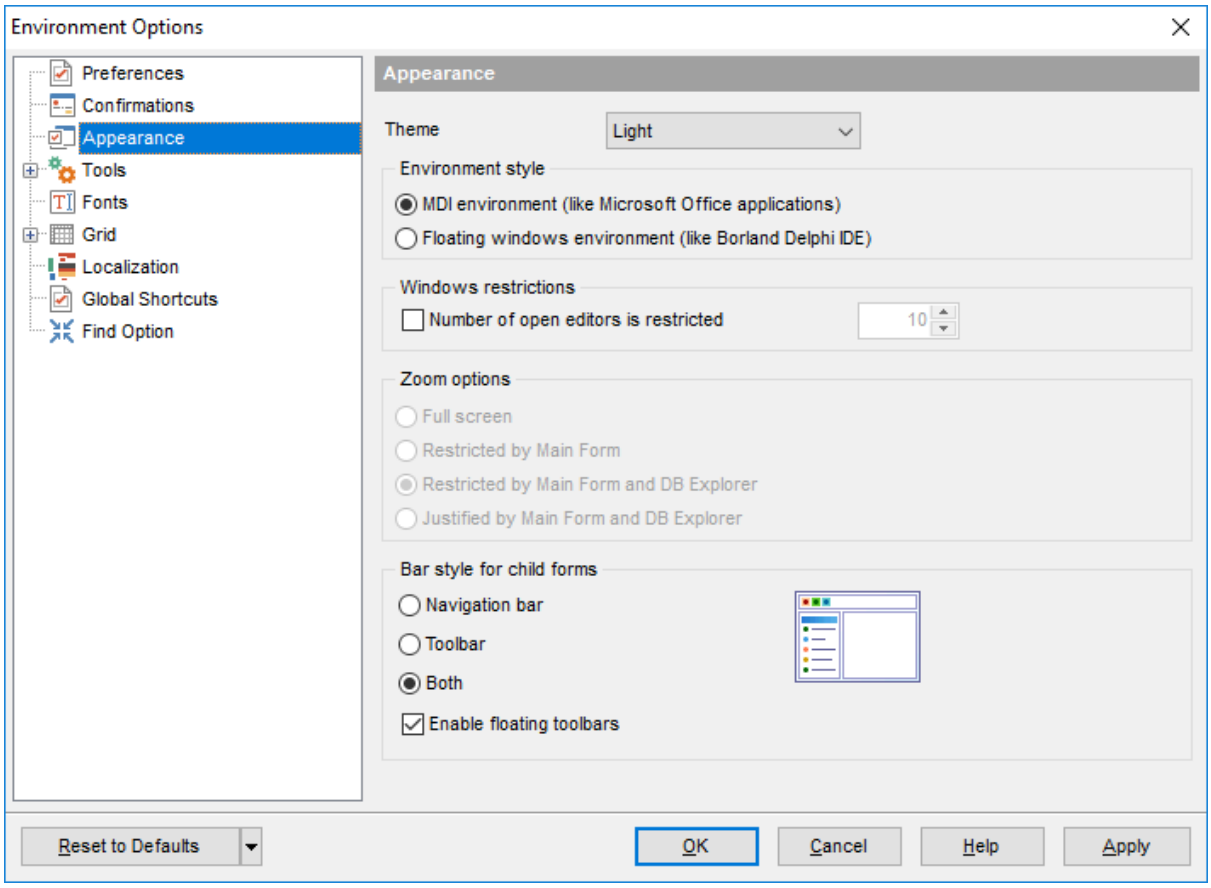
Environment style
This group allows you to define the basic window environment - *MDI* (like Microsoft® Office) or *Floating windows* (like Borland® Delphi IDE).

Windows restrictions
This option allows you to set the number of editors (Table Editor, SQL Editor, etc.) that can be opened simultaneously.

Zoom options
This group of options is only available if **Environment Style** is set to *Floating windows environment*. It allows you to set maximization size for child windows:
- *Full screen*
- *Restricted by Main Form*
- *Restricted by Main Form and DB Explorer*
- *Justified my Main Form and DB Explorer*

Bar style for child forms
Here you can define the location of action buttons: within the *Navigation bar* (on the left) and/or on the *Toolbar*.

If necessary, you can also **Enable floating toolbars** for your application.

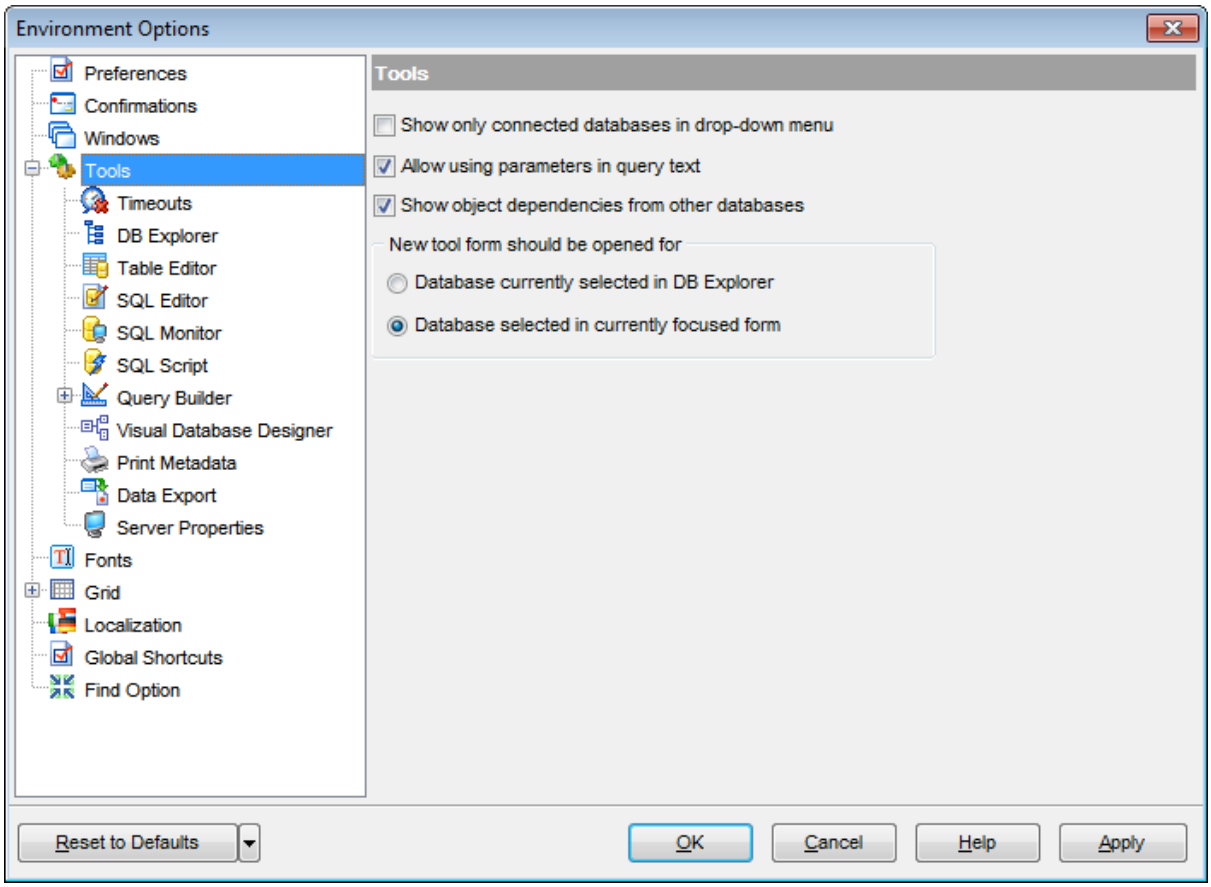


12.1.4 Tools

Show only connected databases in drop-down menu
If this option is checked, only connected databases are displayed in drop-down menus of such tools as Query Builder, SQL Script, etc.

Allow using parameters in query text
This feature allows you to specify different values within a query in a popup dialog just before the query execution. Use the colon (':') character before an identifier (e.g. :P1) to specify a parameter within the query.

Show object dependencies from other databases
Enable the option to display dependent object stored in other databases.



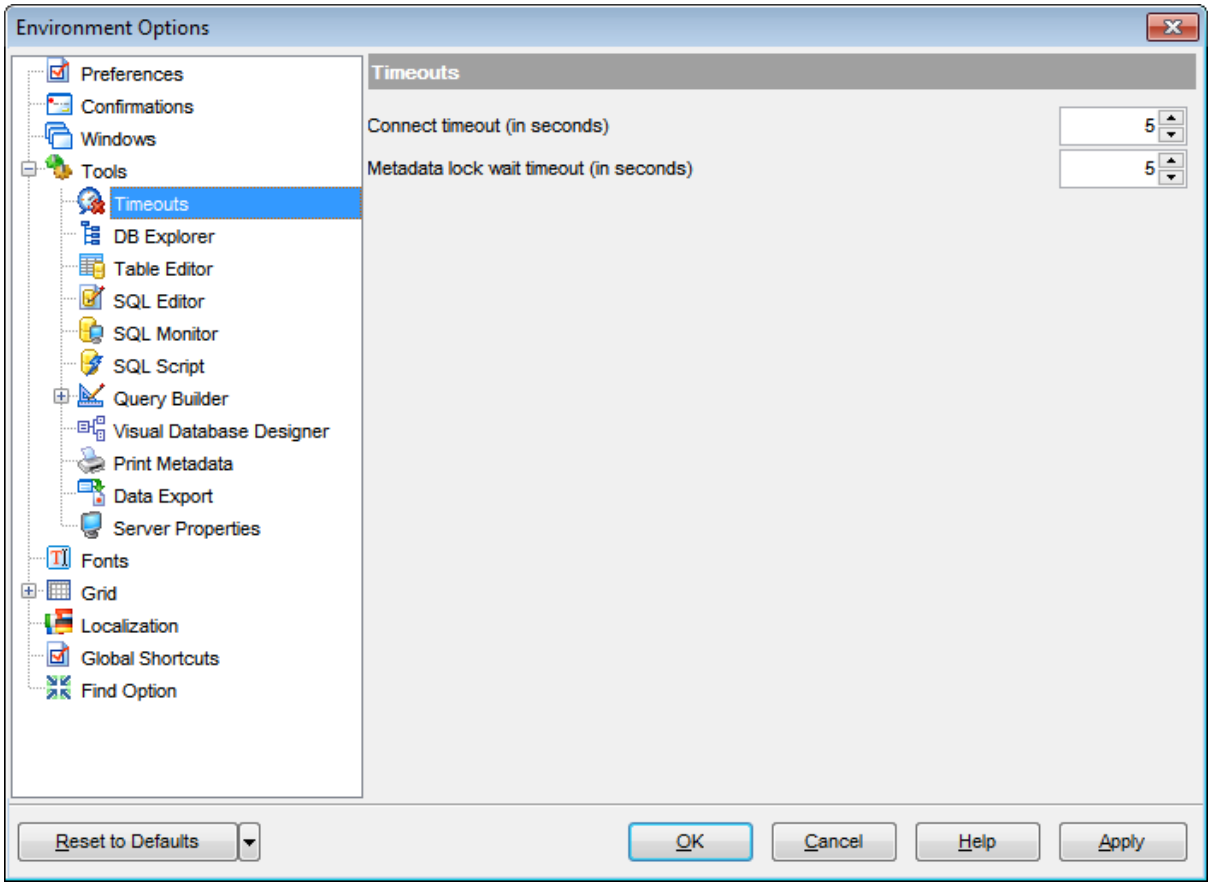
New tool form should be opened for
This option defines which database should be selected in the launched tool.
Database currently selected in DB Explorer
Tool will be opened with the database focused in the DB Explorer selected.

Database selected in currently focused form
Tool will be opened with the database which is selected in the current form.

12.1.4.1 Timeouts

Connect timeout (in seconds) option is used to define the timeout for connection to the server.

Metadata lock wait timeout (in seconds) option is used to define the timeout for attempts to acquire metadata locks. This timeout applies to all statements that use metadata lock: DML and DDL operations on tables, views, stored procedures, and stored functions, LOCK TABLES, FLUSH TABLES WITH READ LOCK, and HANDLER statements.



12.1.4.2 DB Explorer

General options

Show hosts in DB Explorer
Shows/hides database hosts in the DB Explorer tree.

Show table subobjects
Shows/hides table subobjects (columns, indexes, etc.) in the DB Explorer tree.

Sort by aliases
Use this option to apply sorting registered hosts and databases by their aliases in the DB Explorer tree.

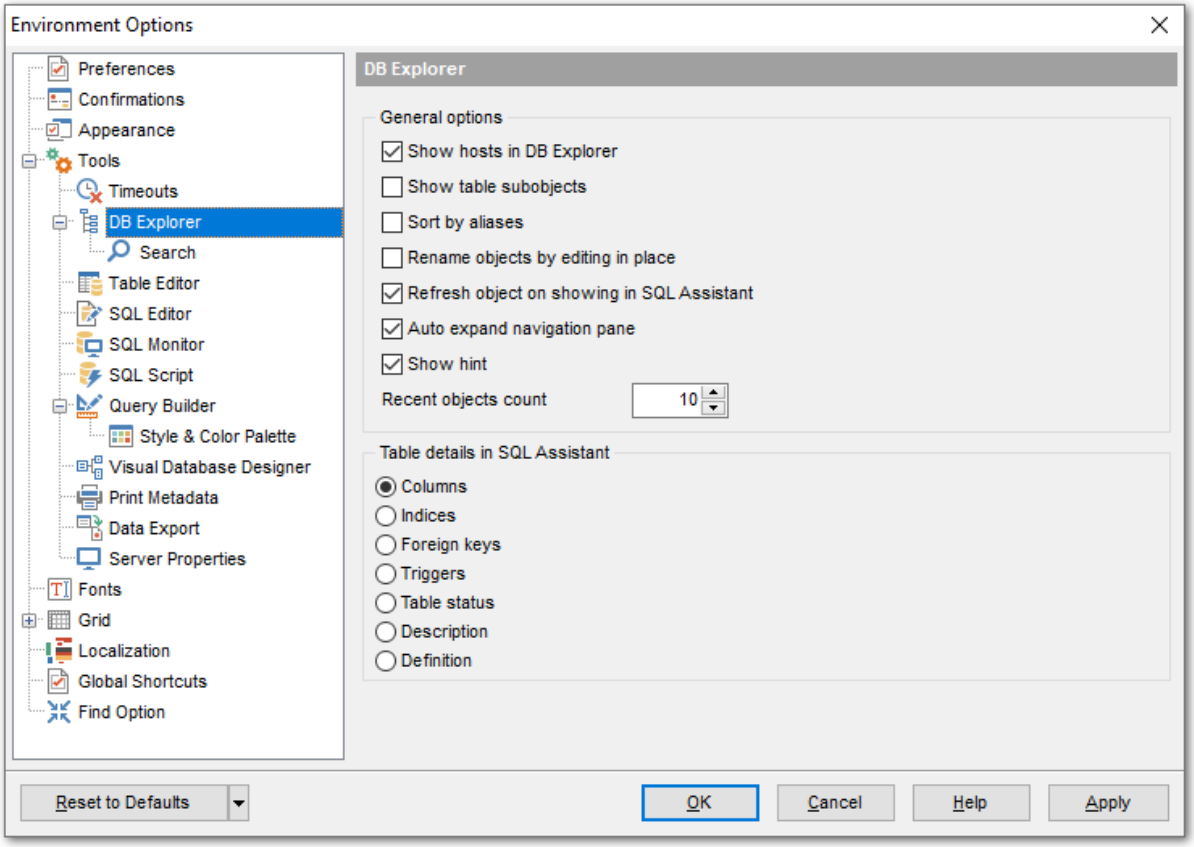
Rename objects by editing in place
Allows you to edit object names in DB Explorer by selecting any object and clicking its alias one more time.

Refresh objects on showing in SQL Assistant
This option enables/disables refreshing objects each time they are displayed in SQL Assistant.

Auto expand navigation pane

If this option is checked, the list of navigation tabs in DB Explorer is expanded automatically on program launch.

Show hint
Enables displaying of hints for the databases in the DB Explorer tree.



Recent objects count
Defines the number of objects displayed within the Recent menu of the DB Explorer.

Table details in SQL Assistant

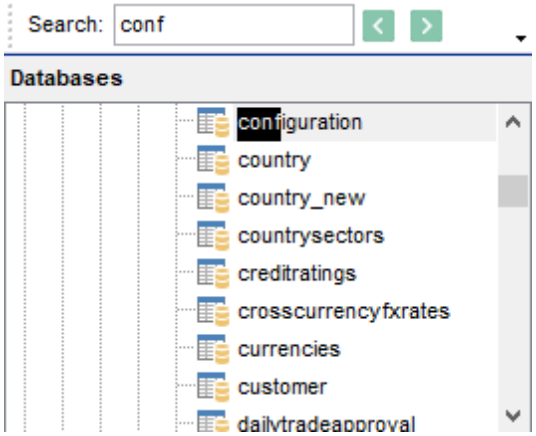
These options switch the SQL Assistant mode for displaying table details (columns, *indexes*, *Foreign keys*, *triggers*, *table status*, *description* or *definition*).

See also:

Database Explorer

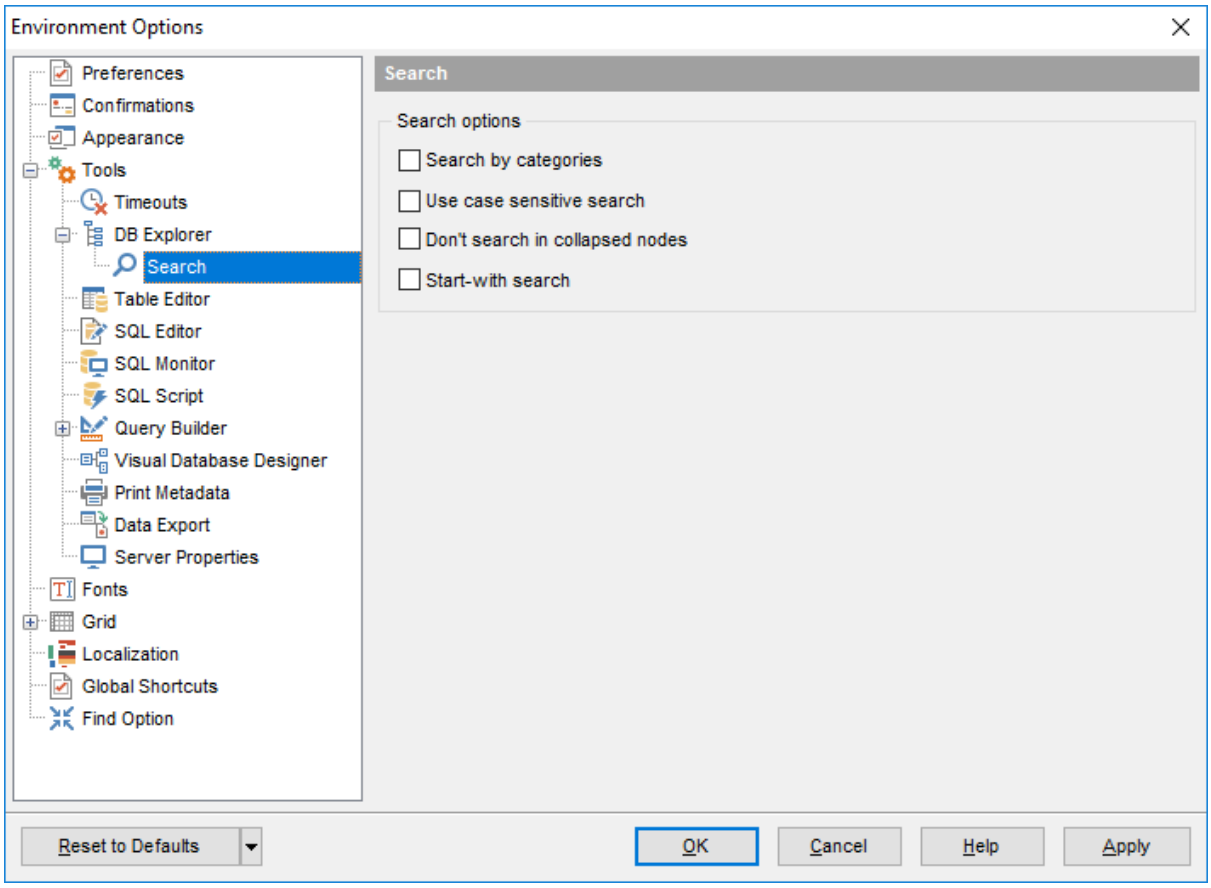
12.1.4.2.1 Search

Here you can set search options for DB Explorer search string:



Search by categories
This option determines the search scope when the Find Item feature is used: if this option is selected, the search is performed within the currently selected category (node in the tree) only.

Use case sensitive search
If this option is selected, the search string case is considered when using the Search Panel.



Don't search in collapsed nodes

Enable the option to search within the expanded nodes only.

Start-with search

Check this option to search for objects those names begin with the defined searched string.

12.1.4.3 Table Editor

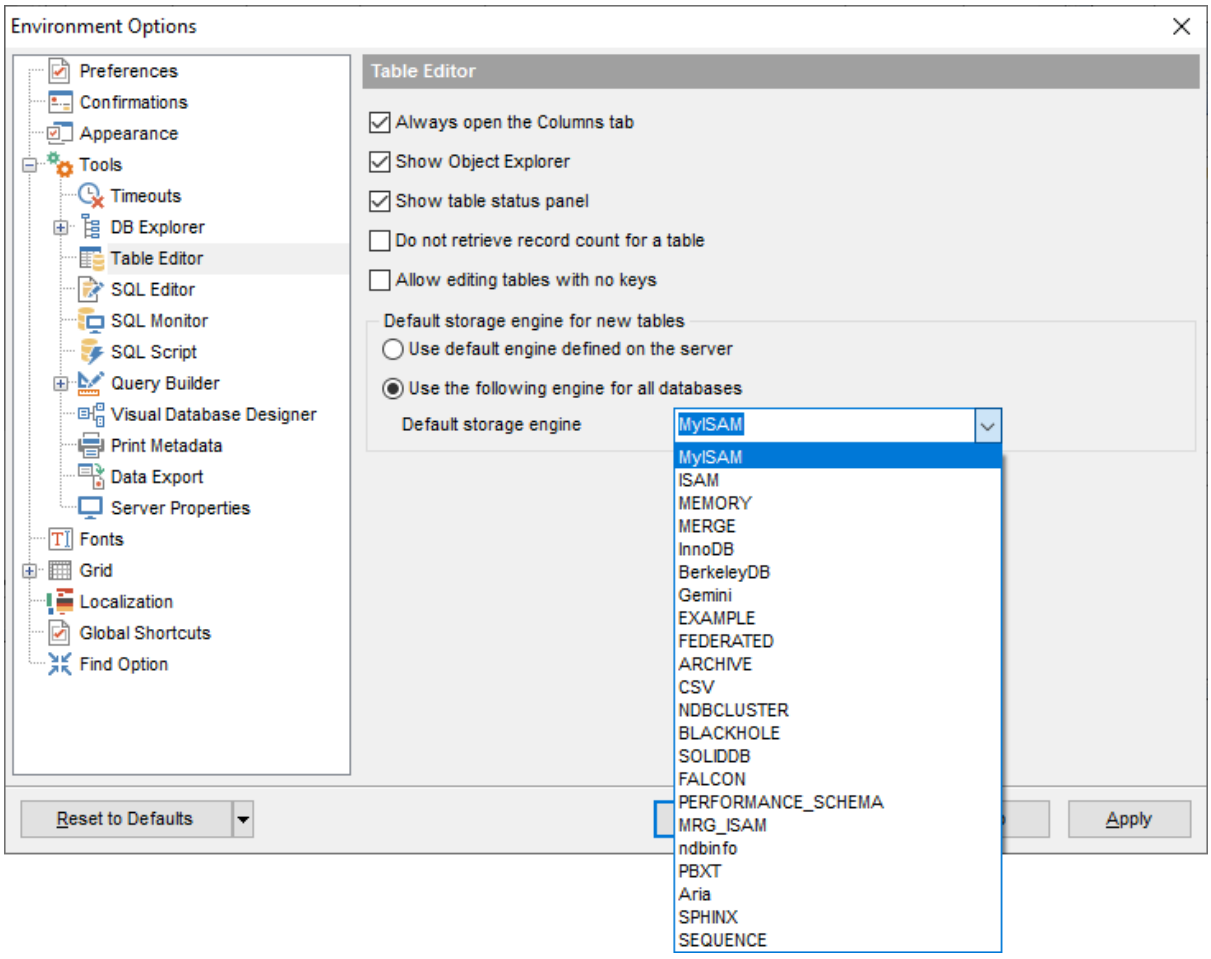
Always open the Columns tab
If this option is checked, the Columns tab is activated by default upon opening a table in Table Editor.

Show Object Explorer
Enables/disables the Object Explorer panel within the Navigation bar of Table Editor.

Show table status panel
Enables/disables the table status panel.

Do not retrieve record count for a table
Check this option to disable retrieving record count for tables (with this feature enabled, opening large tables may take much time).

Allow to edit tables with no keys
Enables/disables editing tables that have no key columns (note that editing tables without unique or primary keys might lead to data integrity issues).



Default storage engine for new tables
This group allows you to define the storage engine to be used while creating a new table:

- *default engine defined on the server*
- *the following engine for all databases* (use the **Default storage engine** drop-down list to select one of the supported types: *MyISAM*, *ISAM*, *HEAP*, *MRG_MyISAM*, *InnoDB*, *BerkeleyDB*, *Gemini*, *FEDERATED*, *ARCHIVE*, *CSV*, *NDBCluster*, *BLACKHOLE*, *SOLIDDB*, *FALCON*).

See also:

Table Editor

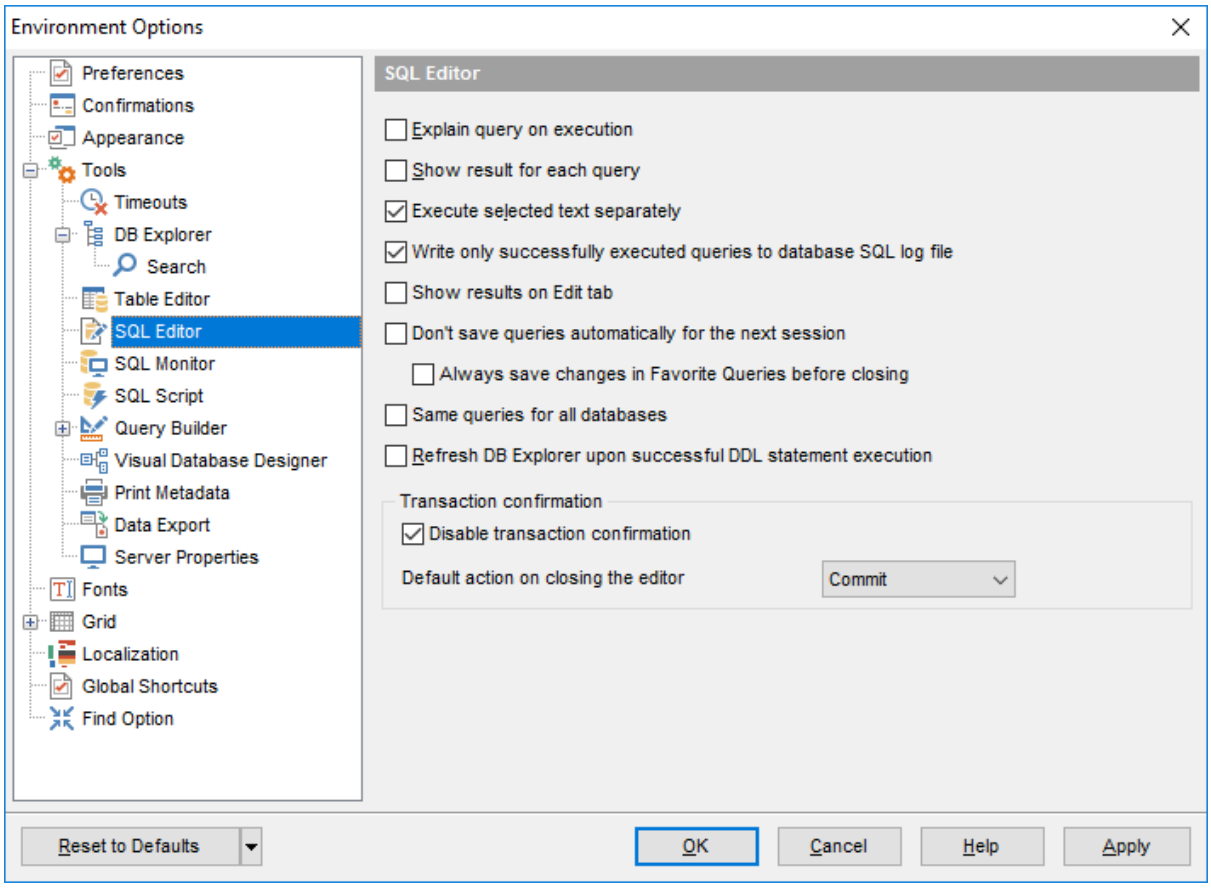
12.1.4.4 SQL Editor

Explain query on execution
If this option is checked, the query plan is displayed automatically upon query execution in SQL Editor.

Show result for each query
With this option checked, when you execute two or more queries, the result of each query will be displayed one by one. Otherwise, only the result of the last query will be displayed.

Execute selected text separately
Check this option to allow execution of the selected statement separately.

Write only successfully executed queries to database SQL log file
If this option is checked, unsuccessful queries will not be saved to the SQL Editor log file (see Setting log options in the Database Registration Info dialog).



Show results on Edit tab
If this option is checked, the **Results** tab is displayed as a separate tab.

Don't save queries automatically for the next session
If this option is checked, the SQL query text will not be saved. Otherwise, it will be saved

in Windows registry and will be therefore available in the next application sessions.

Always save changes in Favorite Queries before closing
This option enables/disables saving changes in SQL queries marked as Favorite automatically upon closing the editor.

Same queries for all databases
With this option enabled, SQL Editor stores all queries in a shared repository, so that switching to another database does not cause loading queries of that database (applying this option does not affect currently opened copies of SQL Editor). The value of the option can be changed freely without any risk to lose the query repository content.

Refresh DB Explorer upon successful DDL statement execution
If this option is selected, the content of DB Explorer is refreshed each time a DDL statement is executed successfully in SQL Editor.

Transaction confirmation

Disable transaction confirmation
If this option is checked, no transaction confirmation will be required on closing Visual Query Builder and SQL Editor. Specify the **default action** (*Commit* or *Rollback*) and this action will be performed automatically each time when you close the editor.

See also:
SQL Editor

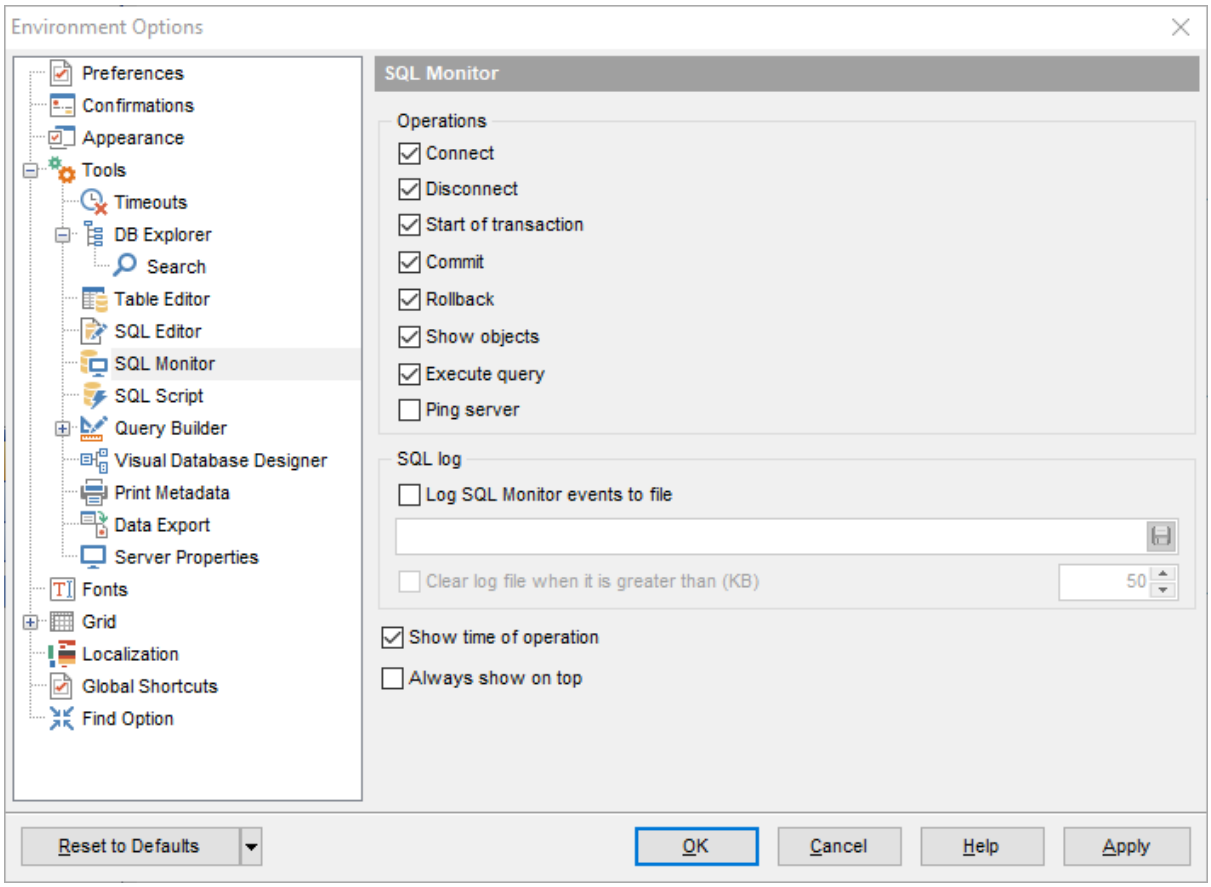
12.1.4.5 SQL Monitor

Operations

Specify the operations to be logged in SQL Monitor: *Connect*, *Disconnect*, *Start of transaction*, *Commit*, *Rollback*, *Show objects*, *Execute query*, *Ping server*.

SQL log

This group of options allows you to enable logging of all SQL Monitor events to a file. Check the **Log SQL Monitor events to file** option, specify the path to the log file using the button, and enter a name for the **.sql* file. To clear the log file after it reaches some definite size, check the **Clear log file when it is greater than...** option and set the maximum file size (in Kilobytes).



Show time of operation

If this option is checked, the execution time of logged operations is added.

Always show on top

Select this option if you want to display the SQL Monitor window in the foreground permanently.

See also:

SQL Monitor

12.1.4.6 SQL Script

Abort script on error
If this option is checked, script execution is aborted if an error occurs.

Enable parsing
With this option checked, SQL Script Editor parses the loaded script to enable fast navigation in the Script Explorer tool.

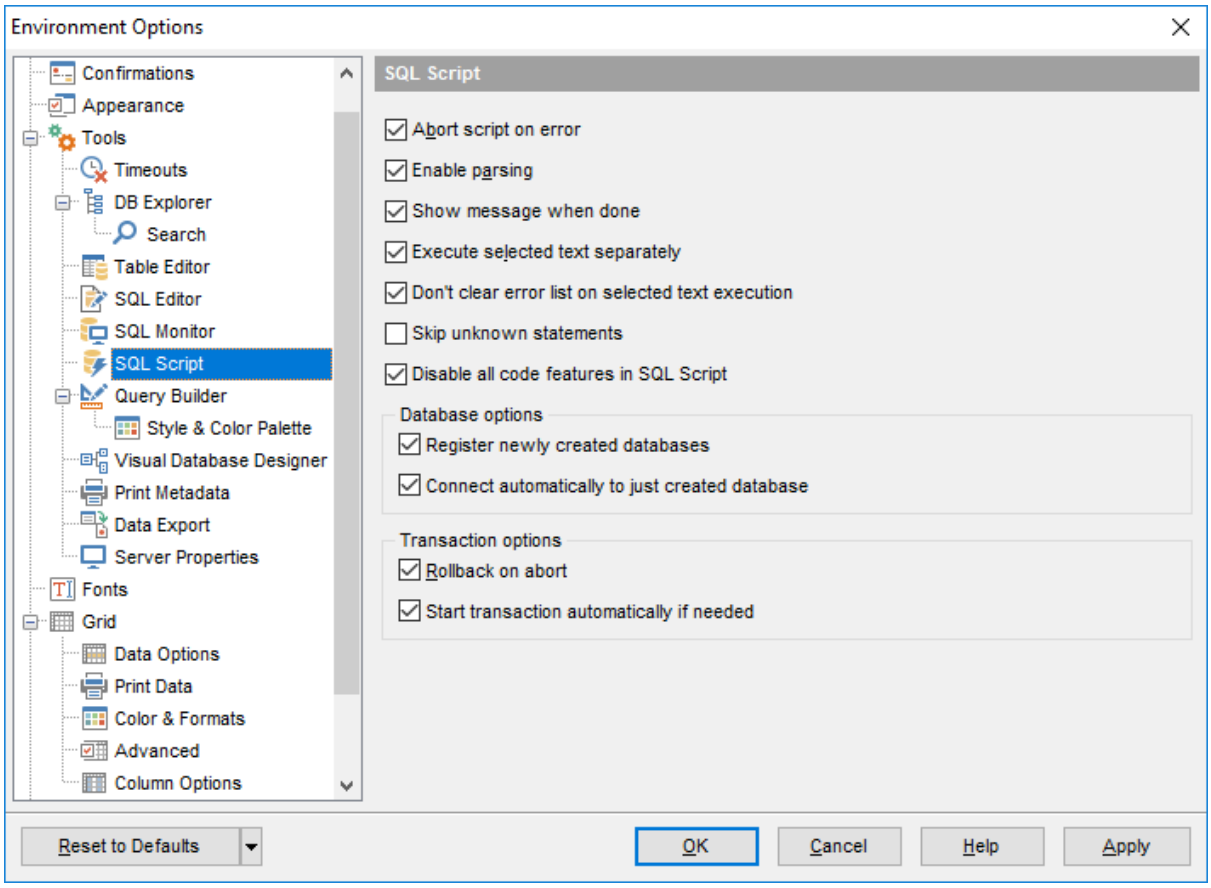
Show message when done
Displays a message box on finishing script execution.

Execute selected text separately
Check this option to allow execution of the selected statement separately.

Don't clear error list on selected text execution
If this option is checked, the error list is not cleared upon execution of the selected statement.

Skip unknown statements
If the option is disabled, the execution of unknown statement in script results in error. Enable the option to skip such statements and continue performing script.

Disable all code features in SQL Script
This option disables code completion, code folding, highlight and all options that are set on the Quick Code page. For options that are set on the Color page, the defaults will be applied.



Database options

Register newly created databases
Enable the option to register newly created databases in SQL Manager for MySQL.

Connect automatically to just created database
Check the option to connect to newly created database automatically.

Transaction options

Rollback on abort
This option is only available if the **Abort script on error** option is checked. This option evokes automatic rollback when script execution is aborted.

Start transaction automatically if needed
If the option is enabled then transaction starts automatically after statements is executed. Otherwise, the BEGIN statement is required for transaction to start.

See also:
SQL Script Editor

12.1.4.7 Query Builder

General options

☑ **Allow SELECT queries only**
When this option is checked, the *INSERT*, *UPDATE* and *DELETE* statements are not allowed in Query Builder.

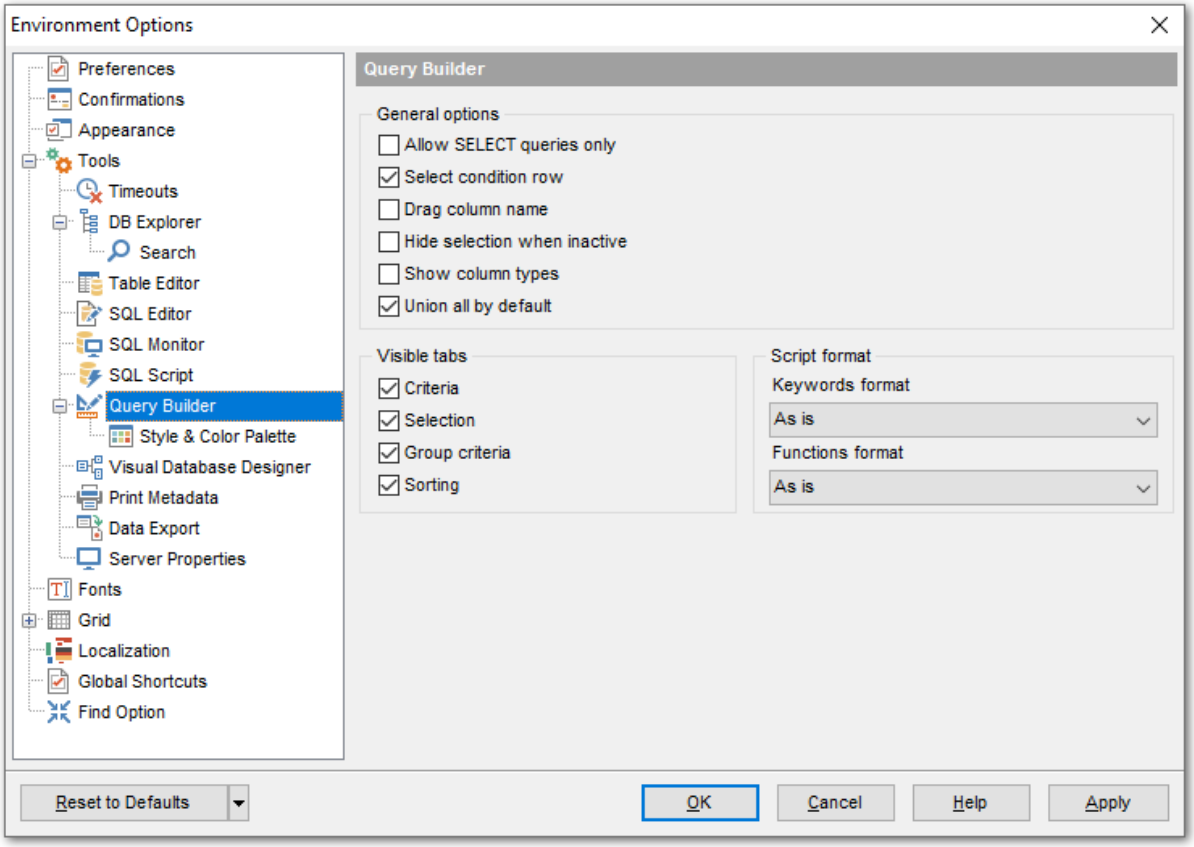
☑ **Select condition row**
Displays the selected condition in different rows on the **Criteria** and **Grouping Criteria** tabs of Query Builder.

☑ **Drag column name**
Displays the dragged column name in the **Builder** area.

☑ **Hide selection when inactive**
Hides the selection when the Query Builder window is inactive.

☑ **Show column types**
Displays the column data type next to the column name in the table box.

☑ **Union all by default**
Check this option to use the *UNION ALL* expression in Query Builder by default.
The *UNION* keyword allows you to include the results of two *SELECT* statements in one resulting table.
The *ALL* parameter incorporates all rows into the results, including duplicates. If not specified, duplicate rows are removed.



Visible tabs

These options specify which Query Builder tabs are available and which are not. Use the check boxes to make the corresponding tabs visible/invisible.

Script format

These options specify case formatting of keywords and functions in query text within the Edit tab: *As is* keeps the original case, *Uppercase* sets all the keywords/functions to the upper case, *Lowercase* sets all the keywords/functions to the lower case, and *First upper* sets the first letters of all keywords/functions to the upper case.

Additionally, you can set styles and color for all **Query Builder** objects by using Style & Color Palette.

See also:

Visual Query Builder

12.1.4.7.1 Style & Color Palette

Style

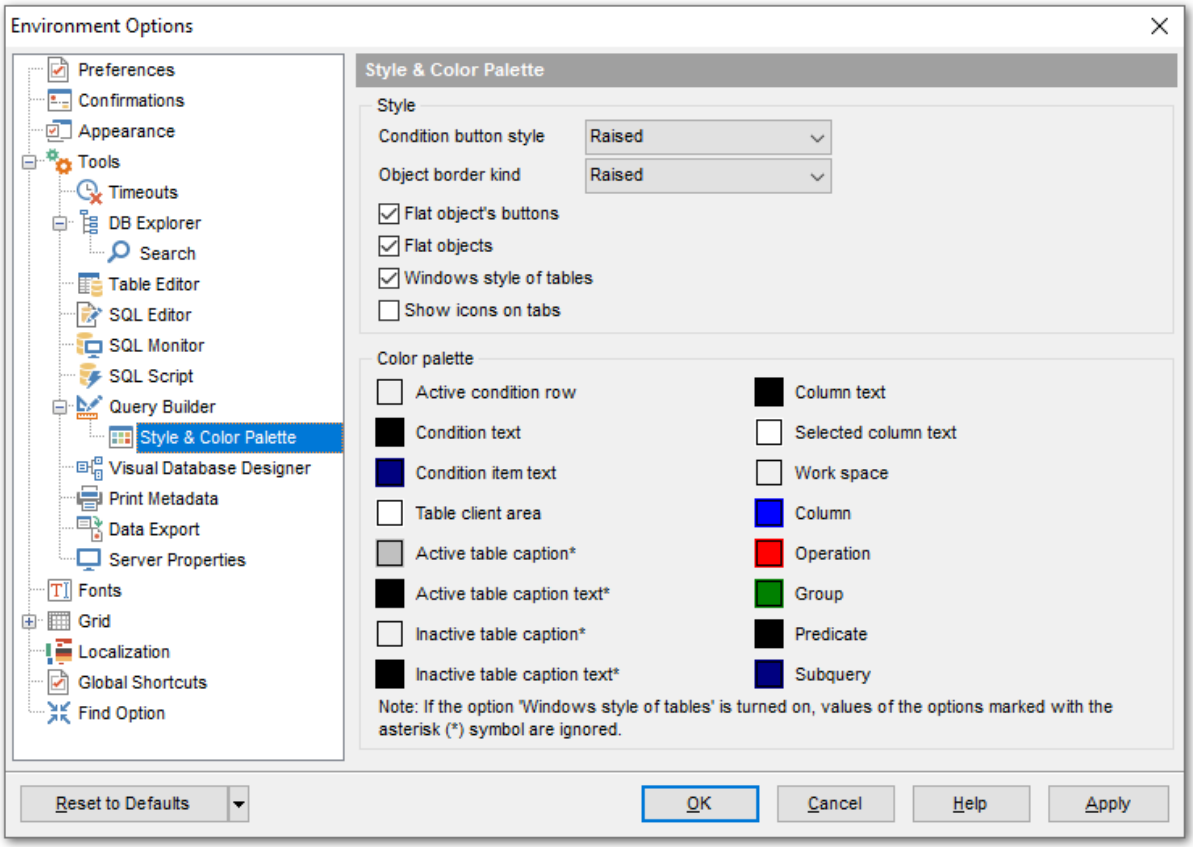
These options specify the way various Query Builder elements look: the **Condition button** : *Flat*, *3DLook*, *Raised*; **object borders**: *Bump*, *Etched*, *Raised*, *Sunken*. If necessary, you can also specify **flatness** for objects and buttons using the corresponding options.

XP tables style

This option determines the appearance of non-client areas of tables in Query Builder.

Show icons on tabs

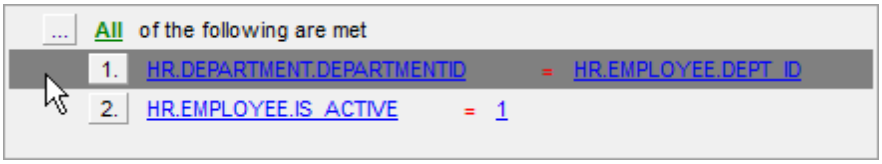
With this option selected, you can see icons next to the tab names in Query Builder.



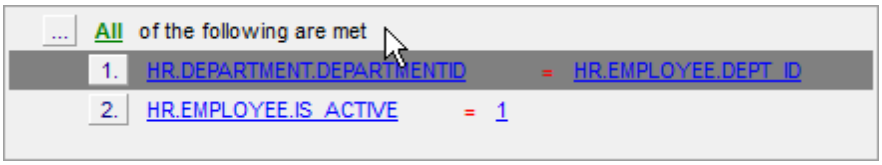
Color palette

These options define the colors of various Query Builder elements.

Active condition row (at the Criteria and Grouping criteria tabs):



Condition text (at the Criteria and Grouping criteria tabs):



Condition item text (at the Criteria and Grouping criteria tabs):

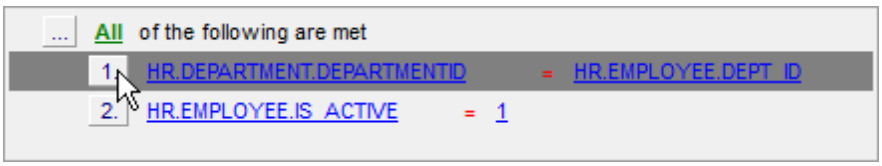
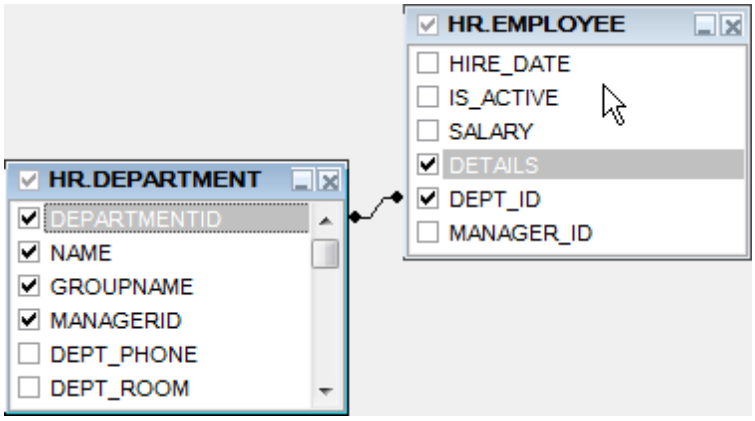
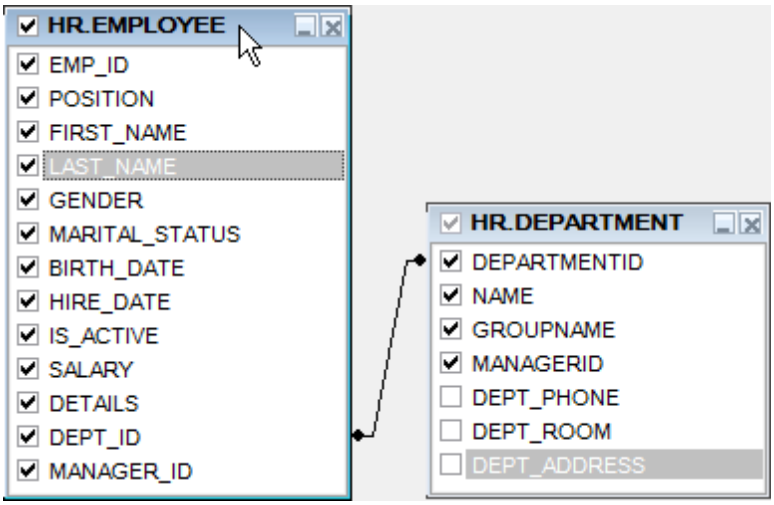


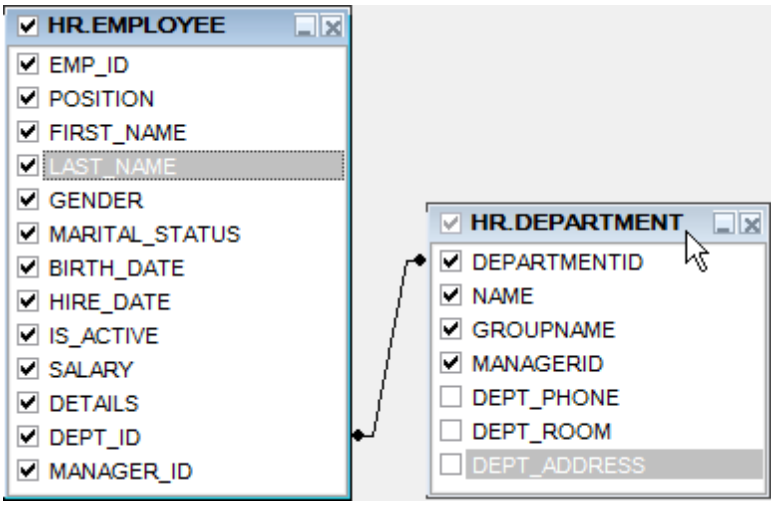
Table client area (in the diagram area):



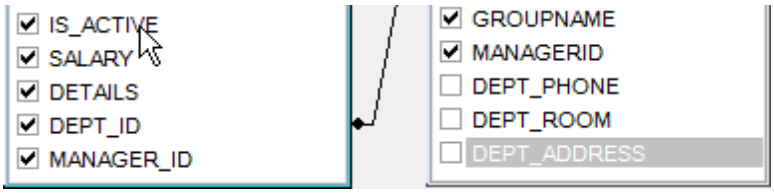
Active table caption (in the diagram area):



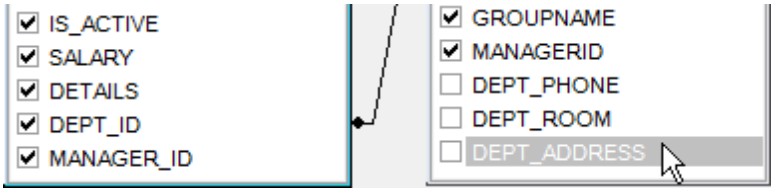
Inactive table caption (in the diagram area):



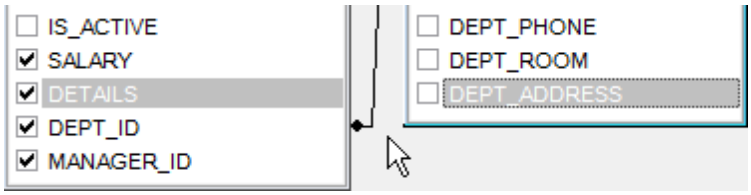
Field text (in the diagram area):



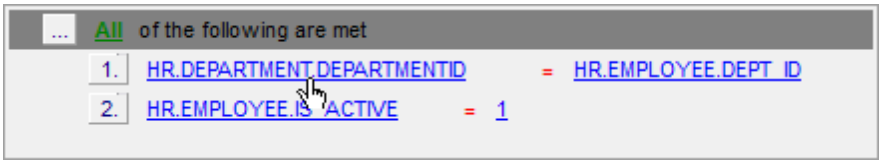
Selected field text (in the diagram area):



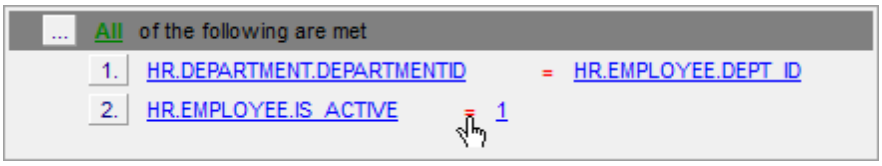
Work space (in the diagram area):



Field (at the Criteria and Grouping criteria tabs):

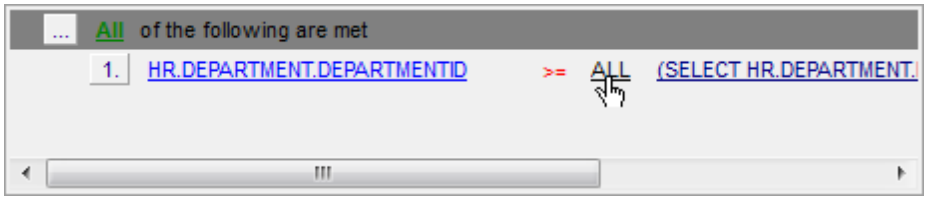


Operation (at the Criteria and Grouping criteria tabs):

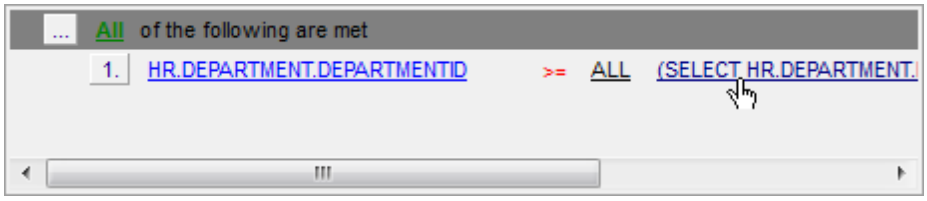


Group (at the Grouping criteria tab):

Predicate (at the Criteria and Grouping criteria tabs when a subquery is used):



Subquery (at the Criteria and Grouping criteria tabs when a subquery is used):



Click an item to select a color for the corresponding element using the **Color** dialog where you can specify the required color from the palette.

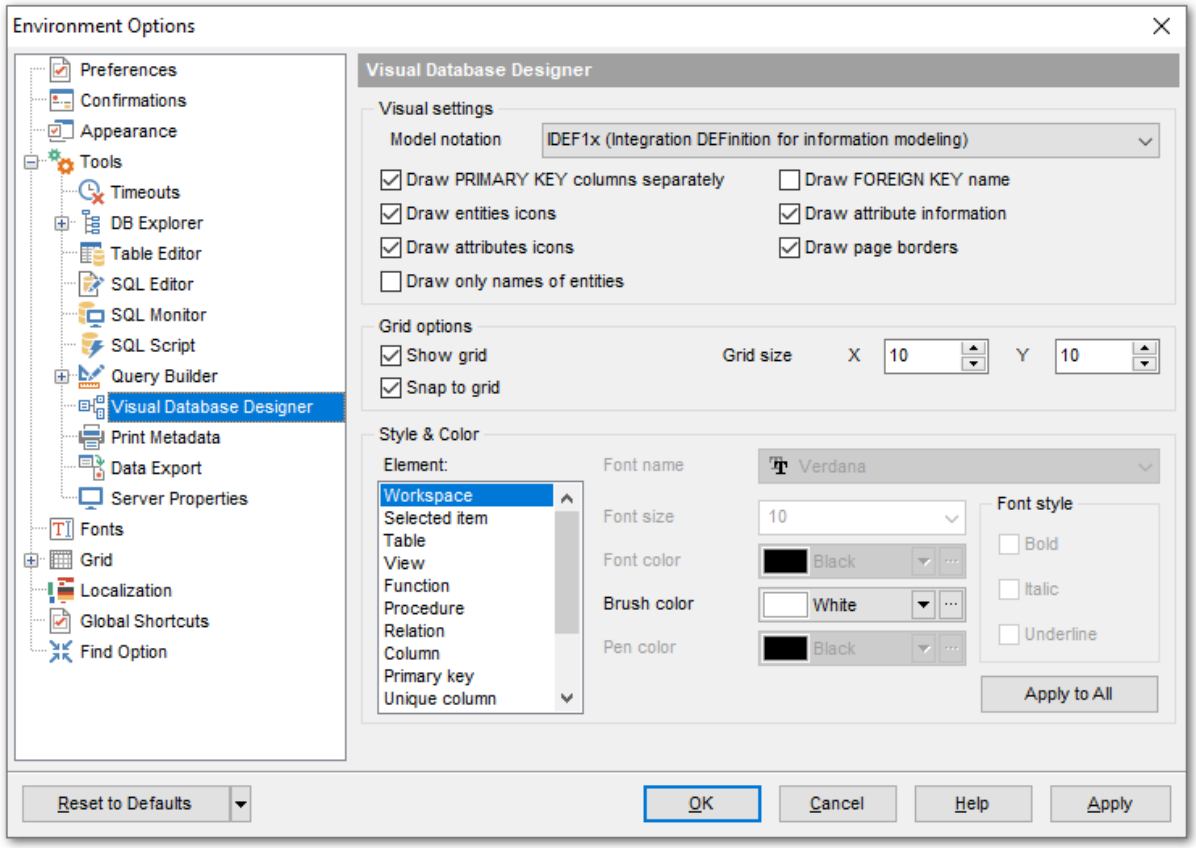
12.1.4.8 Visual Database Designer

Visual settings

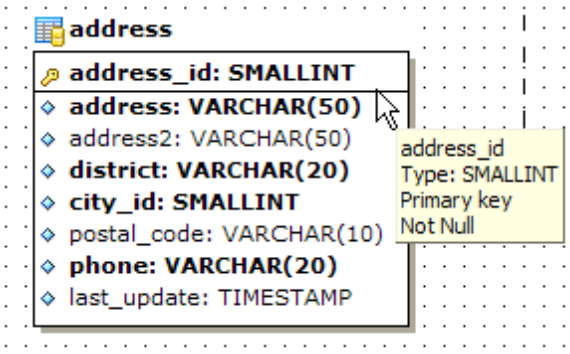
Model notation
When you work in Visual Database Designer, you can choose one of the following modeling notations:

- Integration DEFinition for Information Modeling (IDEF1X);
- Information Engineering (IE).

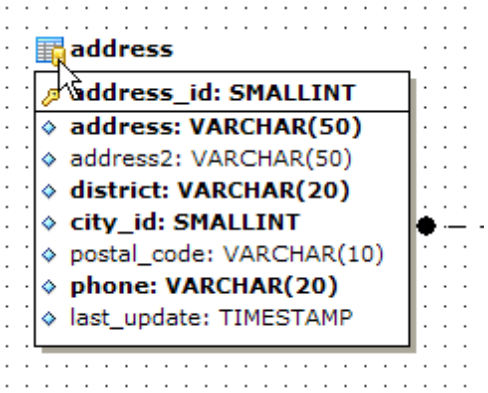
The *IDEF1X* and *IE* notations use different symbols to represent relationships between entities (and tables).



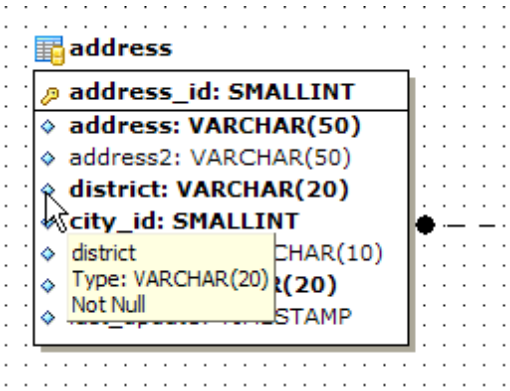
Draw PRIMARY KEY columns separately
Separates Primary key columns from other columns with a horizontal line.



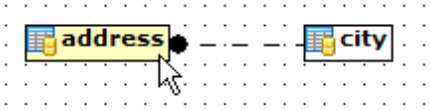
Draw entities icons
Displays icons at the left of each entity header according to its type.



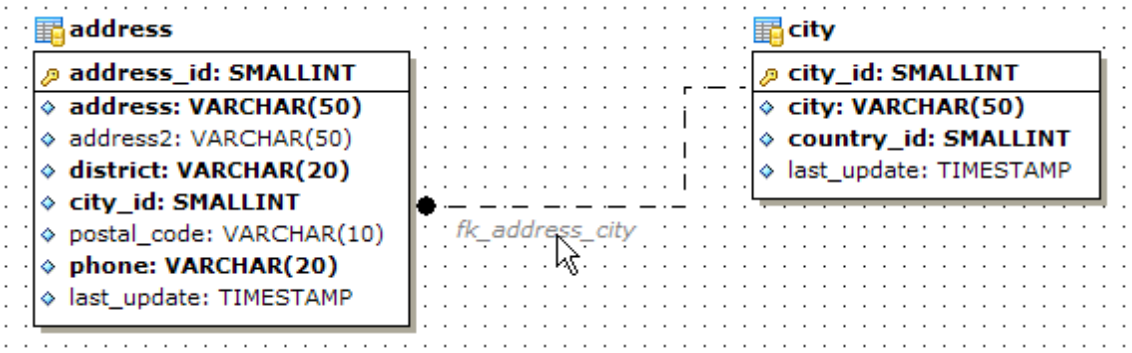
Draw attributes icons
Displays icons at the left of each attribute according to its type (Primary key, Foreign key, ordinary field).



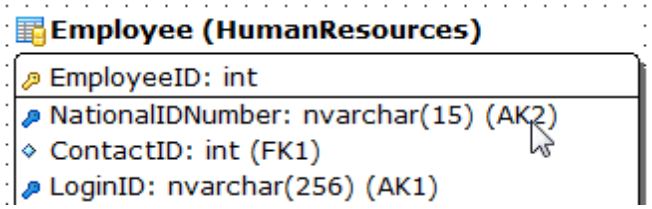
Draw only names of entities
Displays only entity headers, fields are hidden.



Draw FOREIGN KEY name
Displays foreign key names for the corresponding relations.



Draw attribute information
Display attribute properties (optionality, keys, etc.) in parentheses after the attribute name and type.



Draw page borders
Displays borders on the diagram page which are the borders used when printing pages with the diagram.

Grid options

Show grid
Displays dots in the diagram area to make the grid visible.

Snap to grid
Automatically aligns entities on the form with the nearest grid line. You cannot place an entity in between grid lines.

Grid size
Sets grid spacing in pixels along the *x*- and *y*-axes. Specify a higher number to increase grid spacing.

Style and Color

In this section you can set style and color for all VDBD diagram objects: *Workspace*, *Selected Item*, *Table*, *Relation*, *Field*, *Comment*.

Select an item from the list and define its properties: *font name, font style, font size, font color, brush color and pen color*.

Click **Apply to all** to use current settings for all the elements.

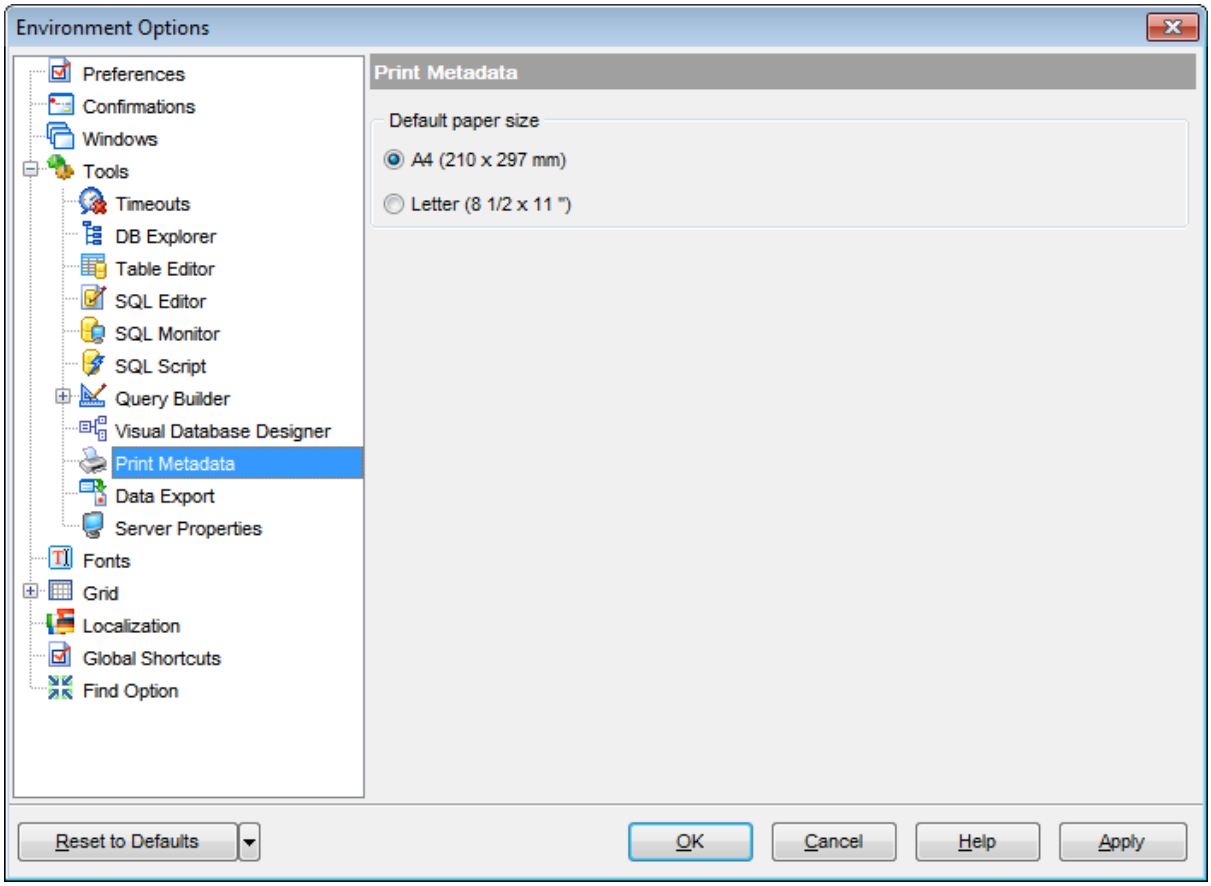
See also:

Visual Database Designer

12.1.4.9 Print Metadata

Default paper size

Define the default paper size for reports created with the Print Metadata tool used:
- *A4* (210 x 297 mm)
- *Letter* (8 1/2 x 11 ")

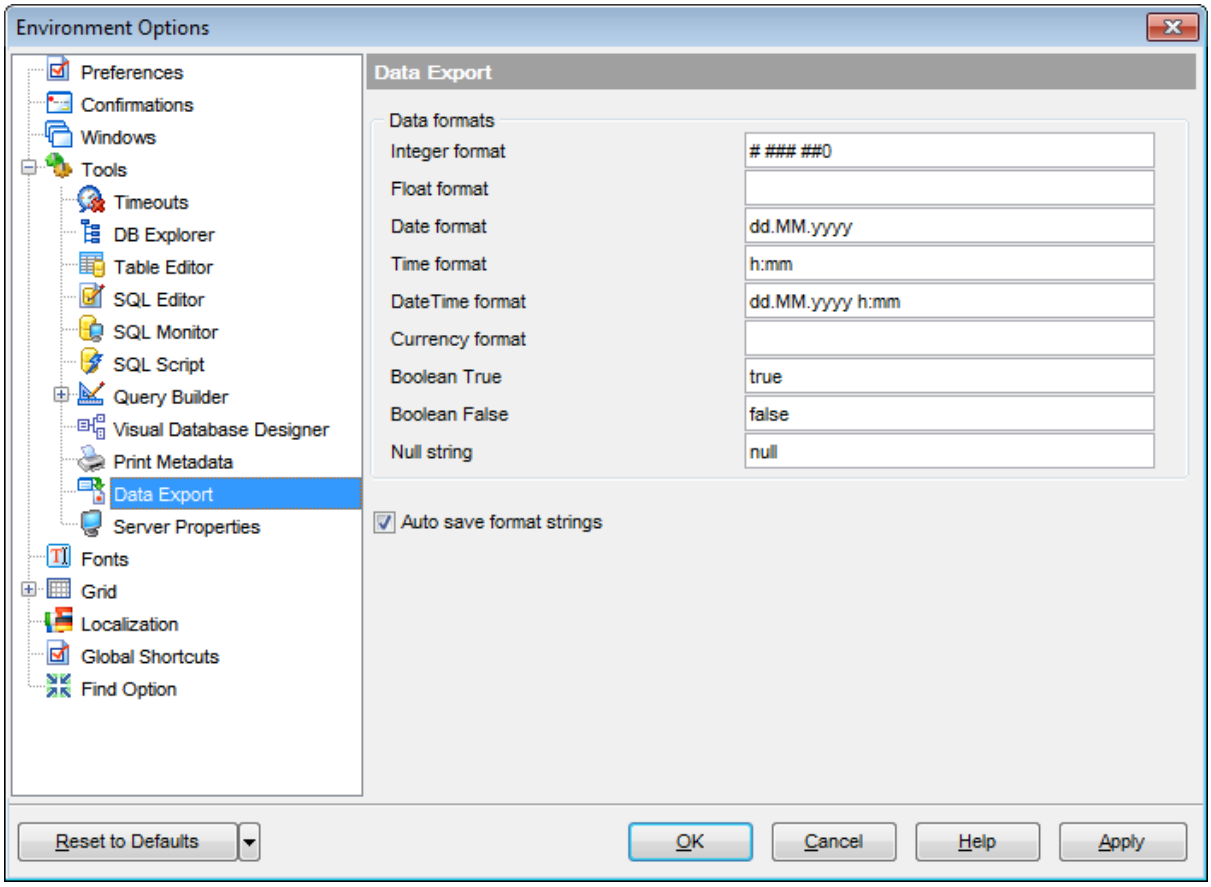


See also:

Print Metadata

12.1.4.10 Data Export

This page allows you to customize formats applied to exported data.



Data formats

Edit the format masks to adjust the result format in the way you need: *Integer format*, *Float format*, *Date format*, *Time format*, *DateTime format*, *Currency format*, *Boolean True*, *Boolean False*, *Null string*.

☑ **Auto save format strings**
Select this option to save specified format strings automatically.

Click the **Set defaults** button if you wish to apply default data formats.

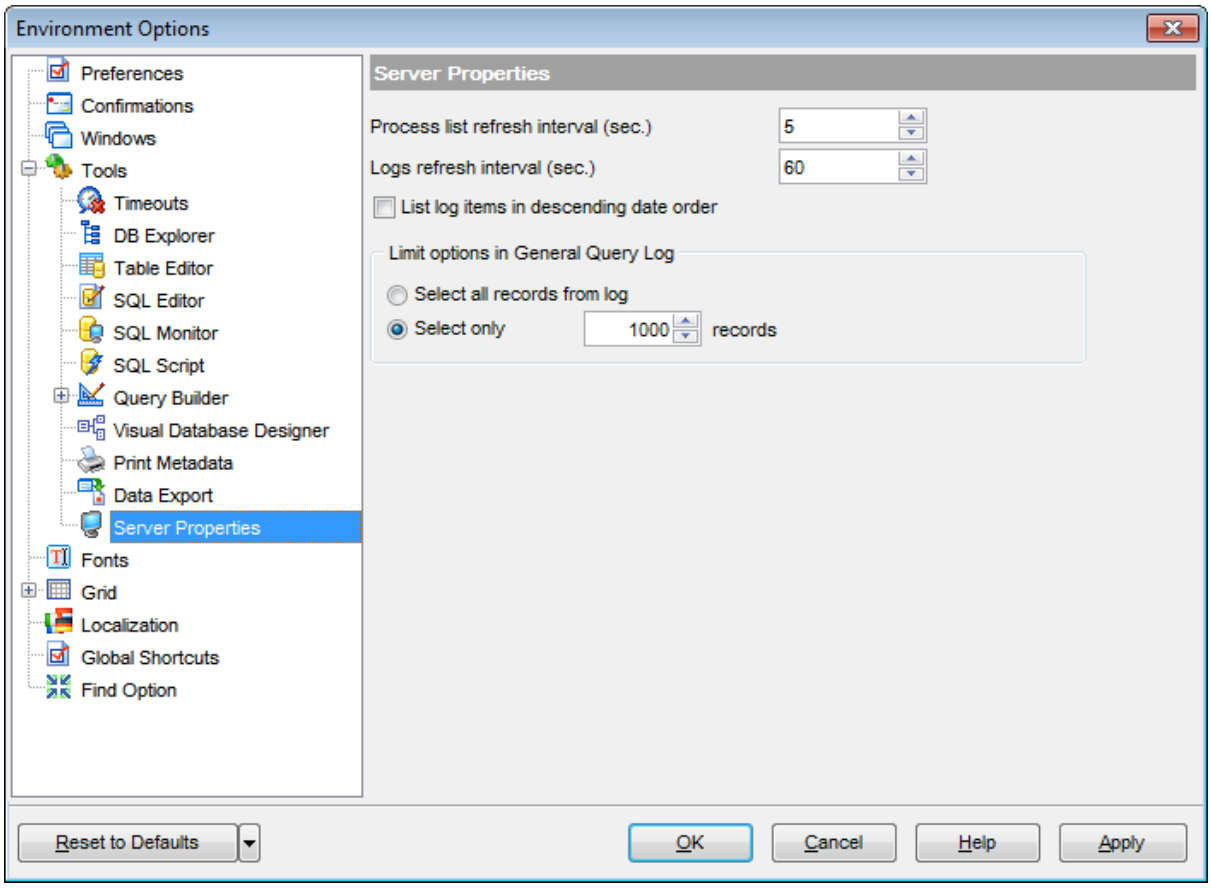
These settings can also be specified at the Adjusting data formats step of Export Data Wizard.
Fore more details see Format specifiers.

See also:

Export Data Wizard

12.1.4.11 Server Properties

Using this page you can set the process/logs list *refresh intervals*, specify the *order* for the log items list, and set the *limit options* for **General Query Log** that will be applied to the Server Properties viewer.



Process list refresh interval (sec.)
Use this spinner control to set the refresh interval for the process list (in seconds).

Logs refresh interval (sec.)
Use this spinner control to specify the refresh interval for logs (in seconds).

List log items in descending date order
Check this box to sort the log items in the descending date order.

Limit options in General Query Log
This group allows you to set limitations for the General Query Log:

Select all records from log
If you choose this item, all records will be selected from the log,
Select only ... records
if you choose this item, only the defined number of records will be selected from the log.

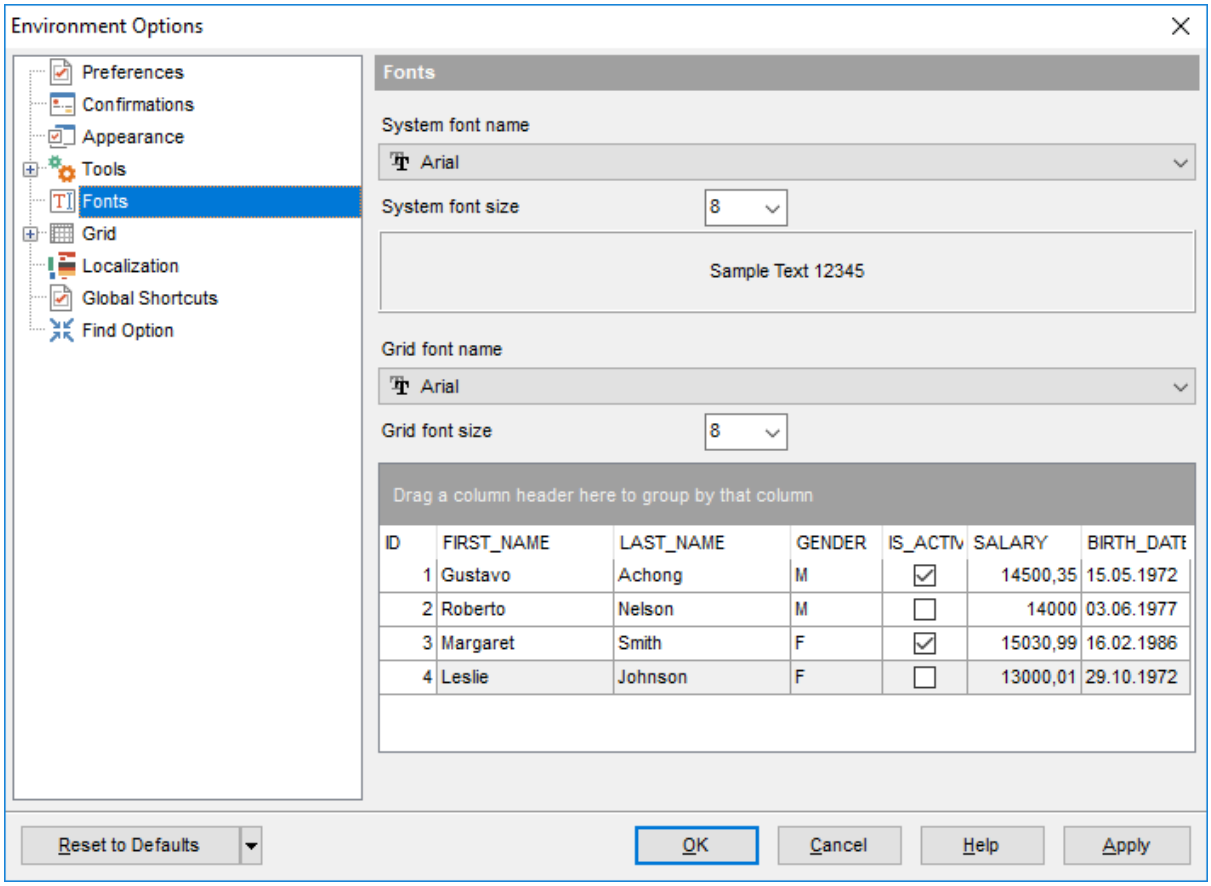
See also:

Server Properties

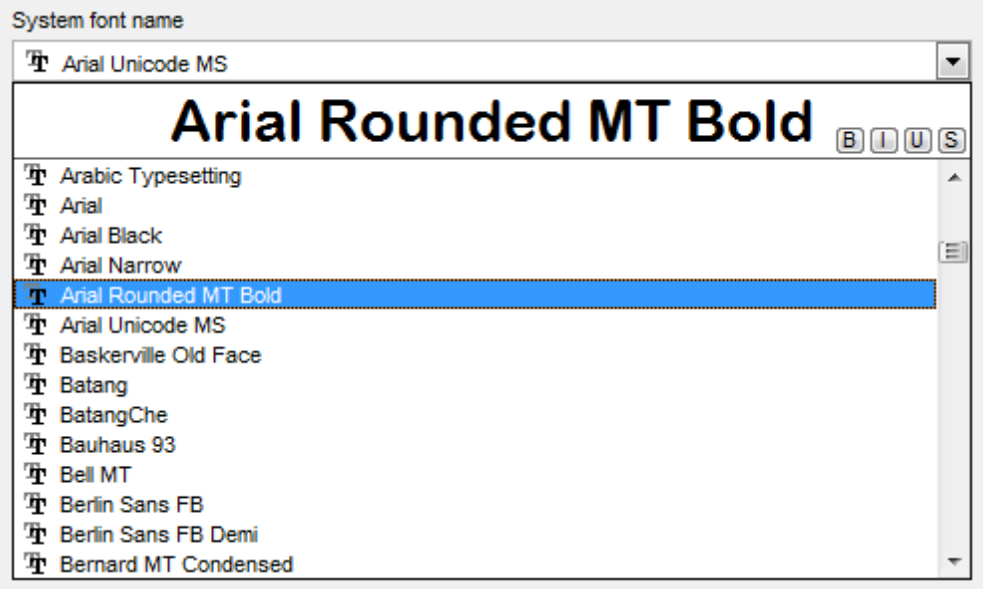
12.1.5 Fonts

This section of the **Environment Options** dialog allows you to specify fonts used in the application.

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



System font name
Defines the font used by **SQL Manager for MySQL**. Select the font name from the drop-down list of available system fonts.



System font size
Defines the font size used by **SQL Manager for MySQL**. Type in or use the drop-down list to select the required value.

Grid font name
Defines the font for the data grid.

Grid font size
Defines the font size for the data grid.

12.1.6 Grid

General options

Striped grids
Displays the odd grid rows in a different color defined by the **Strip** option available on the Color & Formats page.

Show editor immediately
Allows editing the cell value right after the cell is clicked.

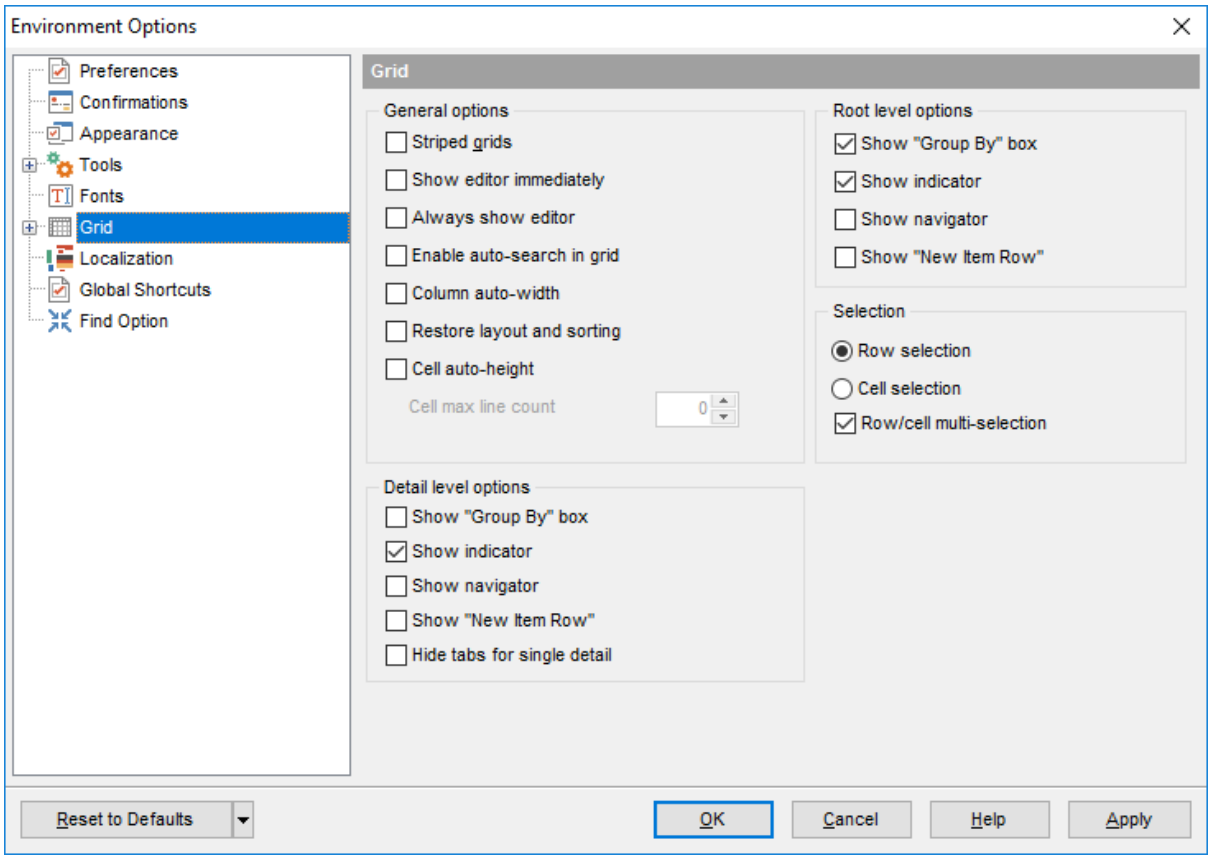
Always show editor
Set this option to make the cell editors always active.

Enable auto-search in grid
If this option is checked, the cursor is automatically forwarded to the closest match when you start typing.

Column auto-width
With this option set, column widths are changed in order to display all columns without using the horizontal scroll bar. If the content a column is still too large to display without a need to resize the grid, then the column values are truncated and the hidden characters are replaced with an ellipsis at the end.

Restore layout and sorting
Use this option to keep the original grid width and custom sorting.

Cell auto-height
If the widths of the columns are insufficient to display the full content, then text clipping occurs. Set this option to prevent this. If this option is set, the cell content is displayed in multiple lines where necessary. You can set the number of lines to display using the **Cell max line count** option.



Root level options

These options are applied to the main view of the grid. See Grid View for details.

Detail level options

These options are applied to the detail view of the grid. See Grid View for details.

Show "Group by" box

Displays the gray area above the column caption allowing one to group data in the grid.

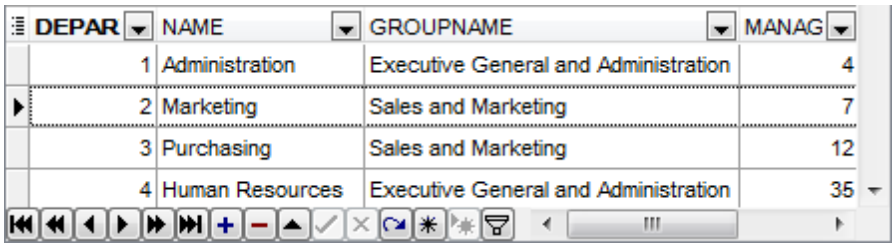
Show indicator

Activates/deactivates the row indicator pane at the left.

DEPAR	NAME	GROUPNAME	MANAG
1	Administration	Executive General and Administration	4
2	Marketing	Sales and Marketing	7
3	Purchasing	Sales and Marketing	12
4	Human Resources	Executive General and Administration	35

Show navigator

Activates/deactivates the data navigator similar to the navigation pane at the top of the grid. The navigator is available at the bottom of detail level view.



DEPAR	NAME	GROUPNAME	MANAG
1	Administration	Executive General and Administration	4
2	Marketing	Sales and Marketing	7
3	Purchasing	Sales and Marketing	12
4	Human Resources	Executive General and Administration	35

Show "New item row"
Displays an empty row at the bottom of a view which is a convenient way for adding data to the grid.

Hide tabs for single detail
This option is useful when only one view is present on the detail level. When the option is enabled, the view tab is hidden.

Selection
Select whether **Row** or **Cell** should be highlighted in the grid on focusing the cell.

Row multi-selection
With this option set, multiple rows can be selected in grid.

See also:
Grid View

12.1.6.1 Data Options

Limit options in table and view editors

Define the number of records to be selected on opening the **Data** tab of Table Editor and View Editor:
- *Select all records from a table**
- *Select only ... records** (you should set the number of records using the corresponding spinner control)

Advanced

☑ **Use separate connections for each data view within a database***
Select this option to create a separate connection for each data view. Enabling this option is recommended if maximum allowed number of connections is too low.

☑ **Asynchronous query execution**
Check this option to allow executing queries in background mode (asynchronously). Note that this option is only available when the *Use separate connections for each data view within a database* option is enabled.

☑ **Use transactions**
Check this option to enable transactions for data. You can change this option for the separate databases in the Database Registration Info.

☑ **Perform data sorting on client in data view***
If enabled, the data are sorted by **SQL Manager for MySQL** (on the client side). If this option is disabled, the data are sorted on MySQL server with the help of the *ORDER BY* clause used in SQL query.

☑ **Perform data filtration on client in data view***
If enabled, the data are filtered by **SQL Manager for MySQL** (on the client side).
If disabled, SQL filter is used in data view. In this case filtering is performed on the MySQL server with the help of the *WHERE* clause used in SQL query.

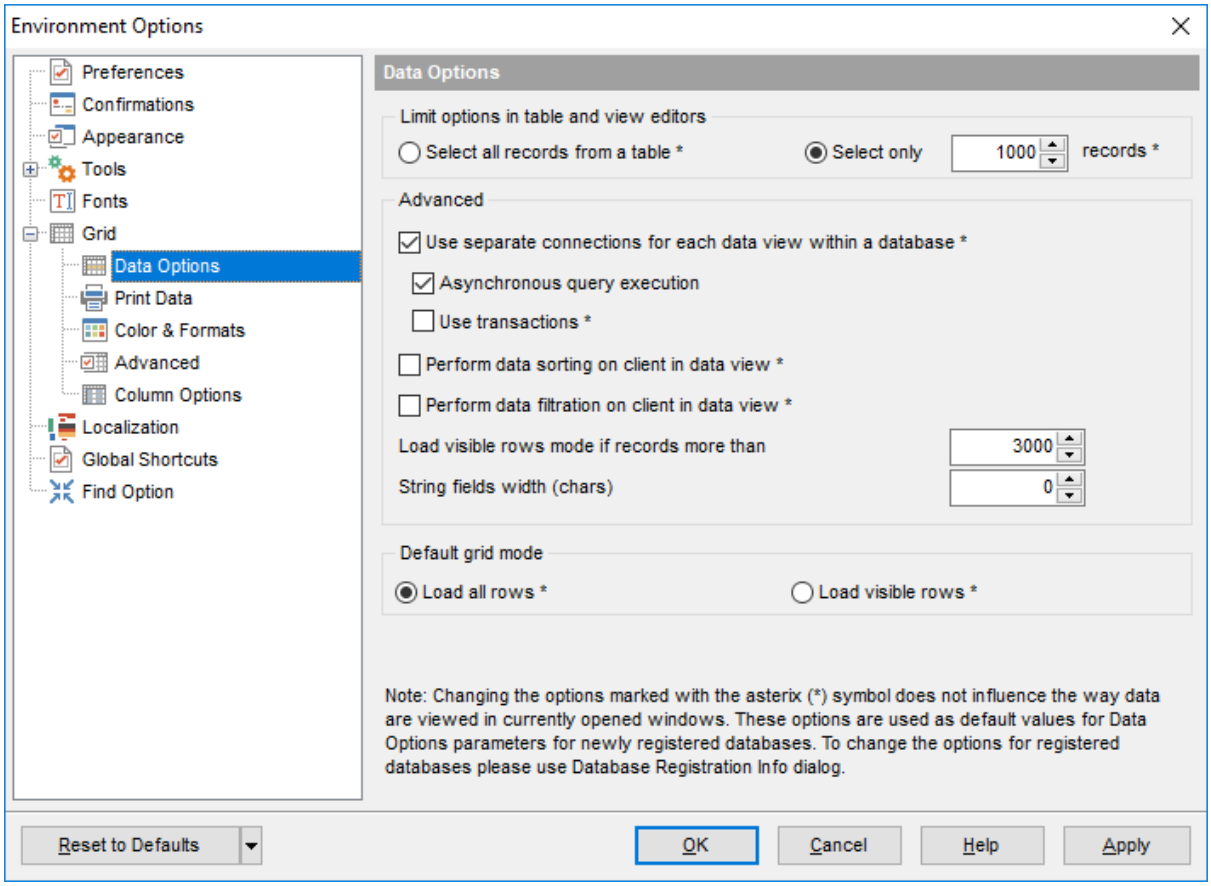
With the **Perform data sorting on client in data view** option enabled, sorting is performed by means of the grid. Otherwise a click on the column header for sorting causes reloading all table data with the selected column in the *ORDER BY* expression of the *SELECT* statement.
If the table contains a huge amount of records and the **Select only N records** mode (see the **Default limit options in table and view editors** group) is used, this mode is more preferable (e.g. all the records having values starting with "A" will be displayed, and not those which were in originally opened N records).

All above-mentioned is related to the **Perform data filtration on client in data view** option as well. If the filter is applied to a table containing a great number of records, it is strongly recommended to enable this option - in this case the filter will be applied to all table/view records, not only to those which are displayed at the present moment.

Load visible rows mode if records more than...
Set this option to switch to the **Load visible rows** mode when the number of records in

the dataset exceeds the specified value.

String fields width (chars)
Using this option you can limit string fields width that may improve performance on large datasets.



Default grid mode

Load all rows*
The grid loads all records from a dataset. This option increases the grid performance by reloading only changed dataset records when updating. In this mode all features (automatic sorting, filtering and summary calculations) are available.

Load visible rows*
The grid loads only a fixed number of dataset records into memory. This option minimizes dataset loading time. Automatic sorting, filtering, summary calculations are not available in this mode.

The **Default grid mode** options allow you to define the grid mode which will be used by default.
With the **Load all rows** option enabled, when loading data, all the records are loaded into grid buffers. In this mode opening the tables with many records may take a considerable amount of time. But in this case you can make use of some advantages: in the filter drop-

down list the column headers are displayed with the values for quick filtering; it is possible to open several sub-levels at the same time when viewing data in master-detail view, etc.
In case opening and other operations with an object consisting of many records takes sufficient time, the **Load visible rows** mode should be used instead. It can be set individually for each table and saved between sessions (can be set via the context menu of the grid).

Note: Changing the options marked with the asterisk (*) sign does not affect the way data are viewed in currently opened windows. These options are used as default values for Data Options parameters for newly registered databases. To change the options for registered databases, please use the Database Registration Info dialog.

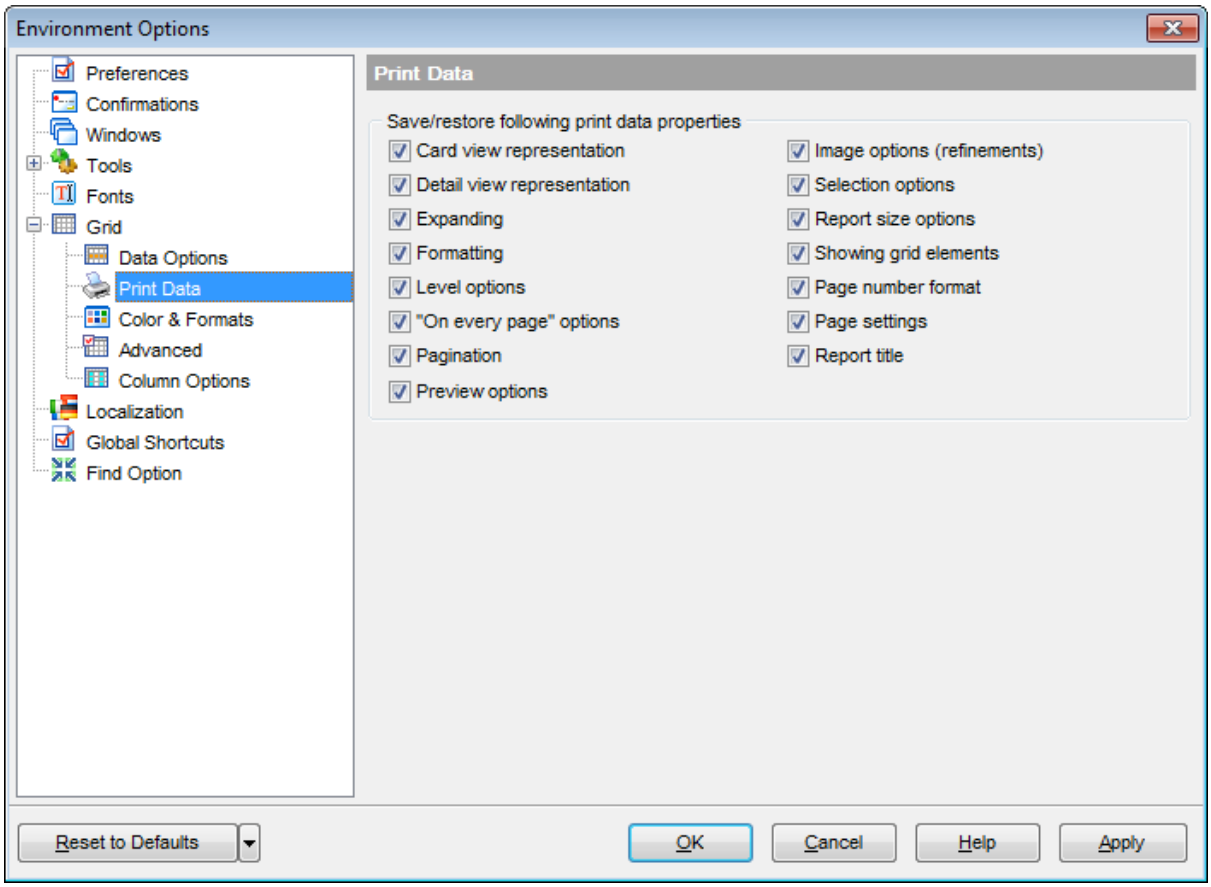
See also:
EMS SQL Manager FAQ

12.1.6.2 Print Data

Save/restore following print data properties

These options specify which Print Data properties will be saved between work sessions (e. g. if you tick off the *Page settings* item, those settings will be saved and stored between the sessions).

You can save/restore the following **Print Data properties**: *Card view representation*, *Detail view representation*, *Expanding*, *Formatting*, *Level options*, *"On every page" options*, *Pagination*, *Preview options*, *Image options*, *Selection options*, *Report size options*, *Showing grid elements*, *Page number format*, *Page settings*, *Report title*.



12.1.6.3 Color & Formats

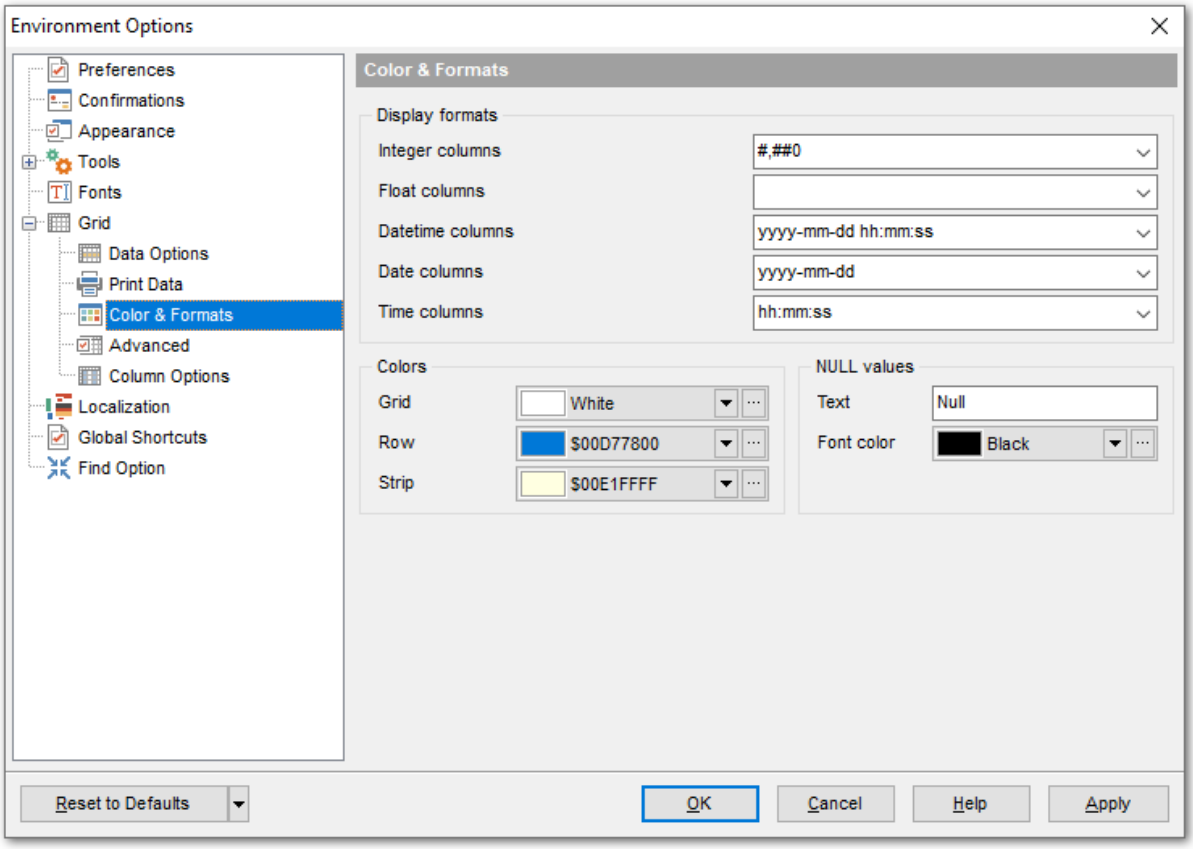
Display formats

Integer columns
Defines the format for displaying *SMALLINT*, *INTEGER* and *BIGINT* data.

Float columns
Defines the format for displaying *NUMERIC* and *DOUBLE PRECISION* data.

Date / Time columns
Defines the format for displaying *DATE* / *TIME* data.

For more information refer to the Format specifiers page.



Colors

Options of this group allow you to set colors for basic grid elements. Use the ellipsis button to open the **Color** dialog allowing you to select the required color from the palette.

Grid
Defines the background color of the data grid.

Row
Defines the color of the selected row in the data grid.

Strip
Defines the color of the odd rows (applied if the **Striped grids** option is set on the Grid page).

NULL values

Text
Defines the text that stands for NULL values in grid.

Font color
Defines the font color for displaying NULL values in the grid. Use the ellipsis  button to open the **Color** dialog allowing you to select the required color from the palette.

12.1.6.4 Advanced

Advanced options

Cell hints for clipped text
Indicates whether a hint box is displayed when hovering over a cell containing clipped text.

Focus cell on cycle
Determines whether the focus moves to the next row after it reaches the right-most cell within the current row.

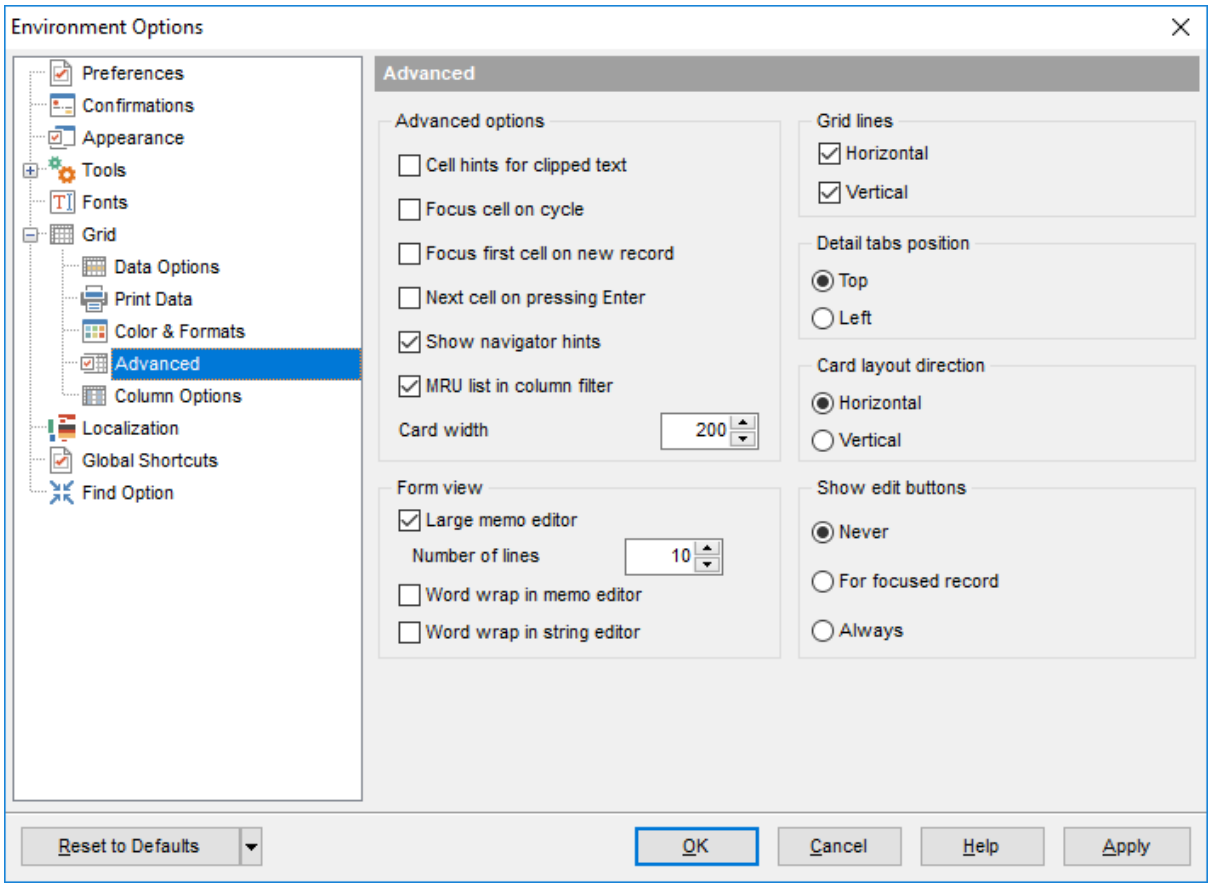
Focus first cell on new record
Determines whether the focus moves to the first cell of a newly created row.

Next cell on pressing Enter
Determines whether the current view columns can be navigated by using the **Enter** key.

Show navigator hints
Indicates whether a hint box is displayed when hovering over navigation buttons.

MRU list in column filter
Enables showing of *Most Recently Used* items when filtering columns

Card width
Defines the width of the card used in Card View mode.



Form view

Large memo editor
Sets the number of lines for text-typed columns when viewing data in Form view.

Word wrap in memo editor
Determines whether long strings are wrapped within the memo editor area.

Word wrap in string editor
Determines whether long strings are wrapped within the string editor area.

Grid lines
Determines whether to display *vertical* and *horizontal* lines between cells.

Detail tabs position
Specifies the position of the tabs in detail level views: *top* or *left*.

Card layout direction
Specifies the direction of cards in Card View mode: *horizontal* or *vertical*.

Show edit buttons
Indicates when the edit buttons are displayed: *never*, *for focused record* or *always*.

12.1.6.5 Column Options

Common options

Auto-select text
Determines whether all text within an editor is automatically selected when the editor gets focus.

Hide selection on losing focus
Determines whether the visual indication of the selected text remains when the editor loses focus.

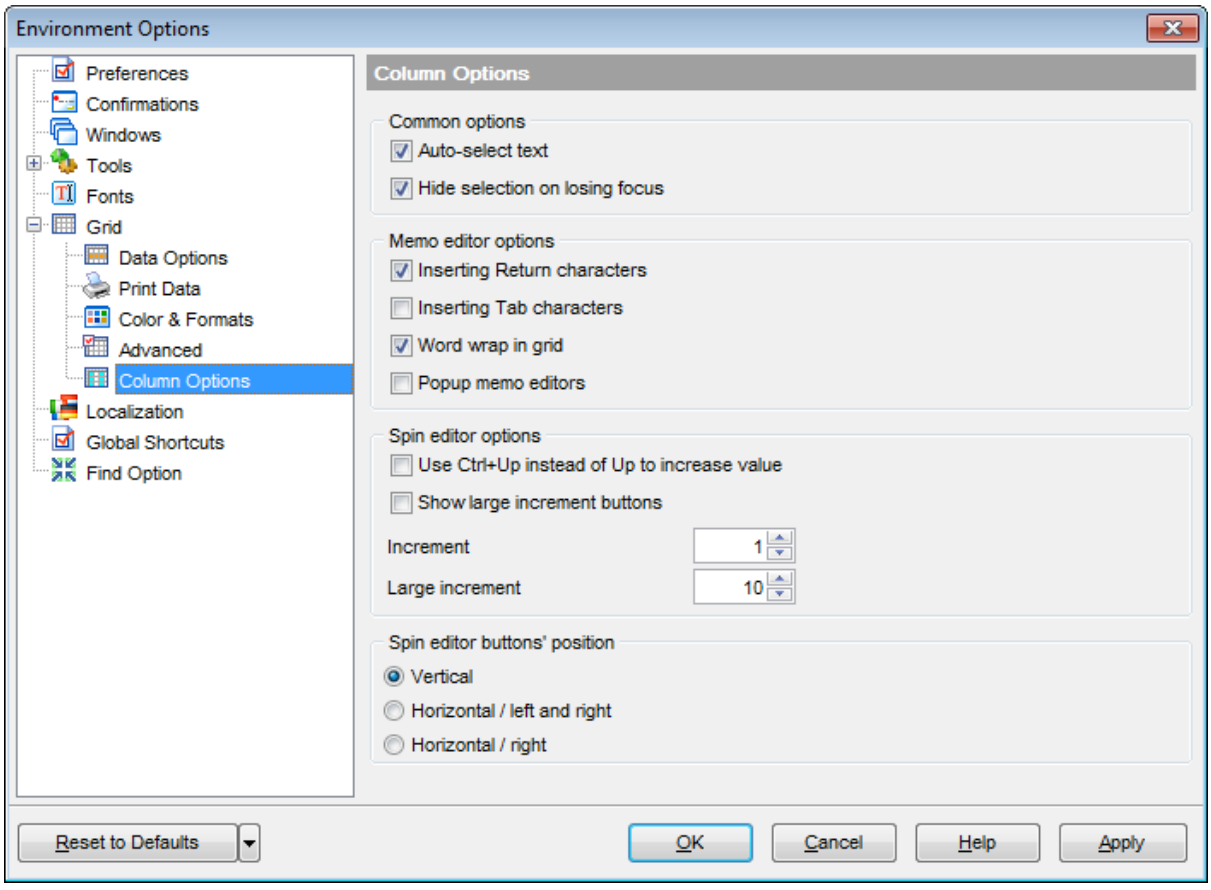
Memo editor options

Inserting Return characters
Specifies whether a user can insert return characters into text.

Inserting Tab characters
Specifies whether a user can insert tab characters into text.

Word wrap in grid
Determines whether long strings are wrapped in grid.

Popup memo editors
Turns on popup memo editors for text BLOB type columns.



Spin editor options

☑ **Use Ctrl+Up instead of Up to increase value**
Allows you to use *Ctrl+Up* and *Ctrl+Down* key combinations for editing spinner values (for *INTEGER* column values).

☑ **Show large increment buttons**
Determines whether fast buttons (for large increment) are visible within the editor.

Increment
Specifies the increment value for the spin editor (spinner control).

Large increment
Specifies the large increment value for the spin editor (spinner control).

Spin editor buttons' position
Specifies the position of spin editor (spinner control) buttons: *vertical*, *horizontal / left and right* or *horizontal / right*.

12.1.7 Localization

The **Localization** section of the **Environment Options** dialog is provided for managing the localization files of **SQL Manager for MySQL**.

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 **Explorer**  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.

 **Auto scan languages on startup**
When checked, the directory with localization files will be scanned automatically at the application startup; all the languages found will be added to the list of available languages.

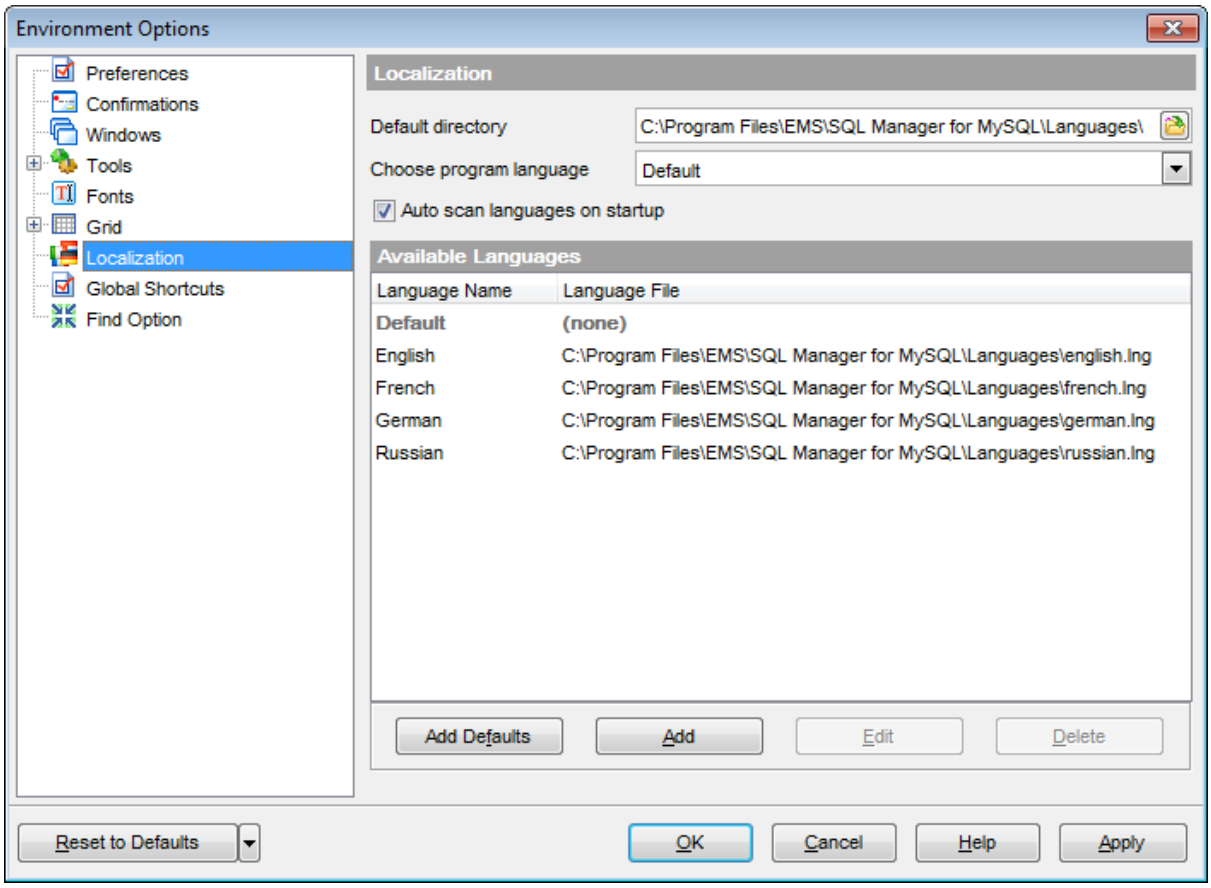
Available Languages
Lists all the languages available for localization and the corresponding **.lng* files. Double-click a language in the list to edit its name or the **.lng* file.

Add Defaults
This button is used to search for **.lng* files in the **Default directory** and add all of them to the **Available Languages** list.

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).

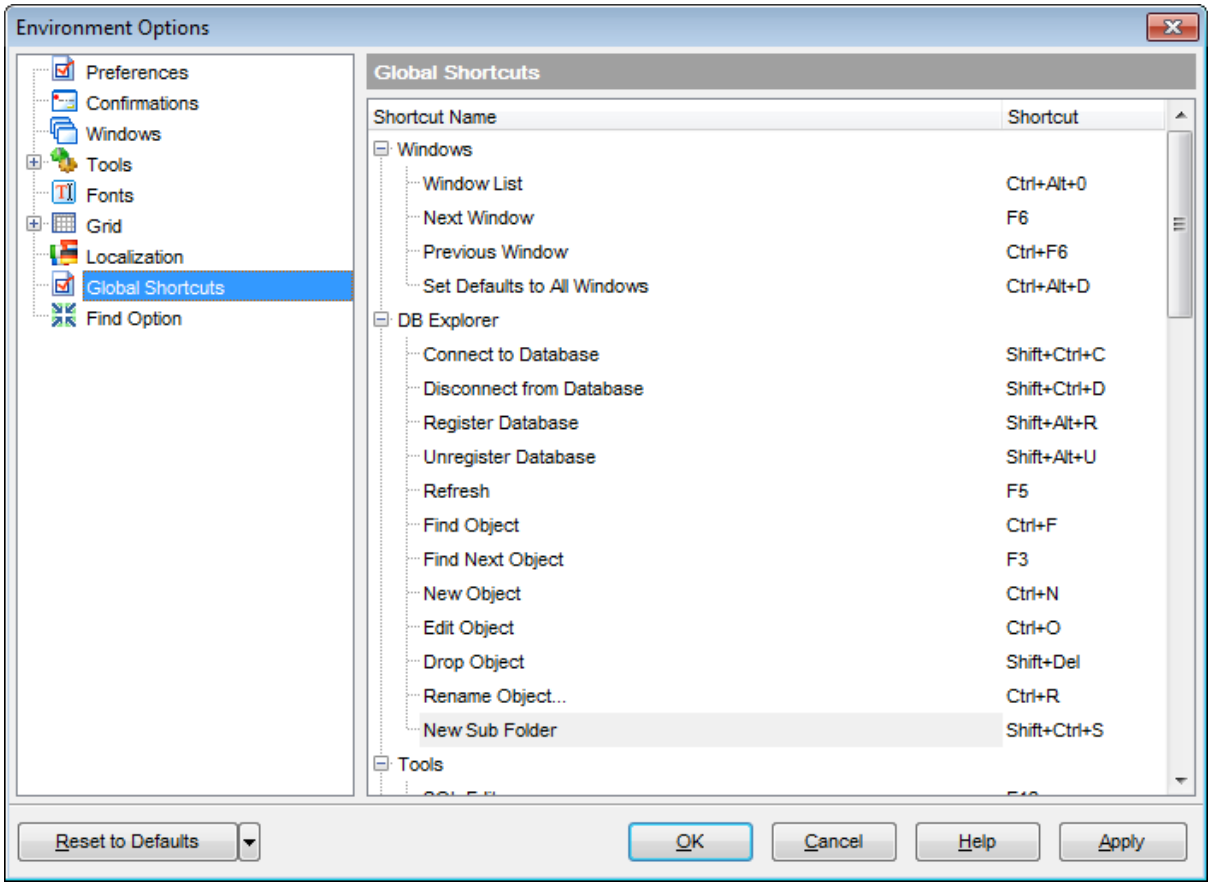


See also:

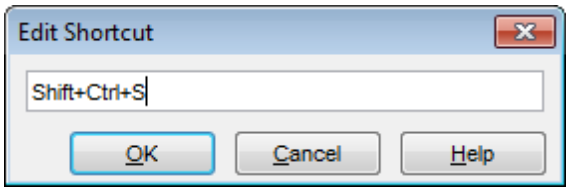
Localization

12.1.8 Global Shortcuts

This section allows you to view/edit shortcuts most needed actions when working with SQL Manager for MySQL.



To edit shortcut, select the required action click the ellipsis button and press the preferred key combination to assign it with the action.



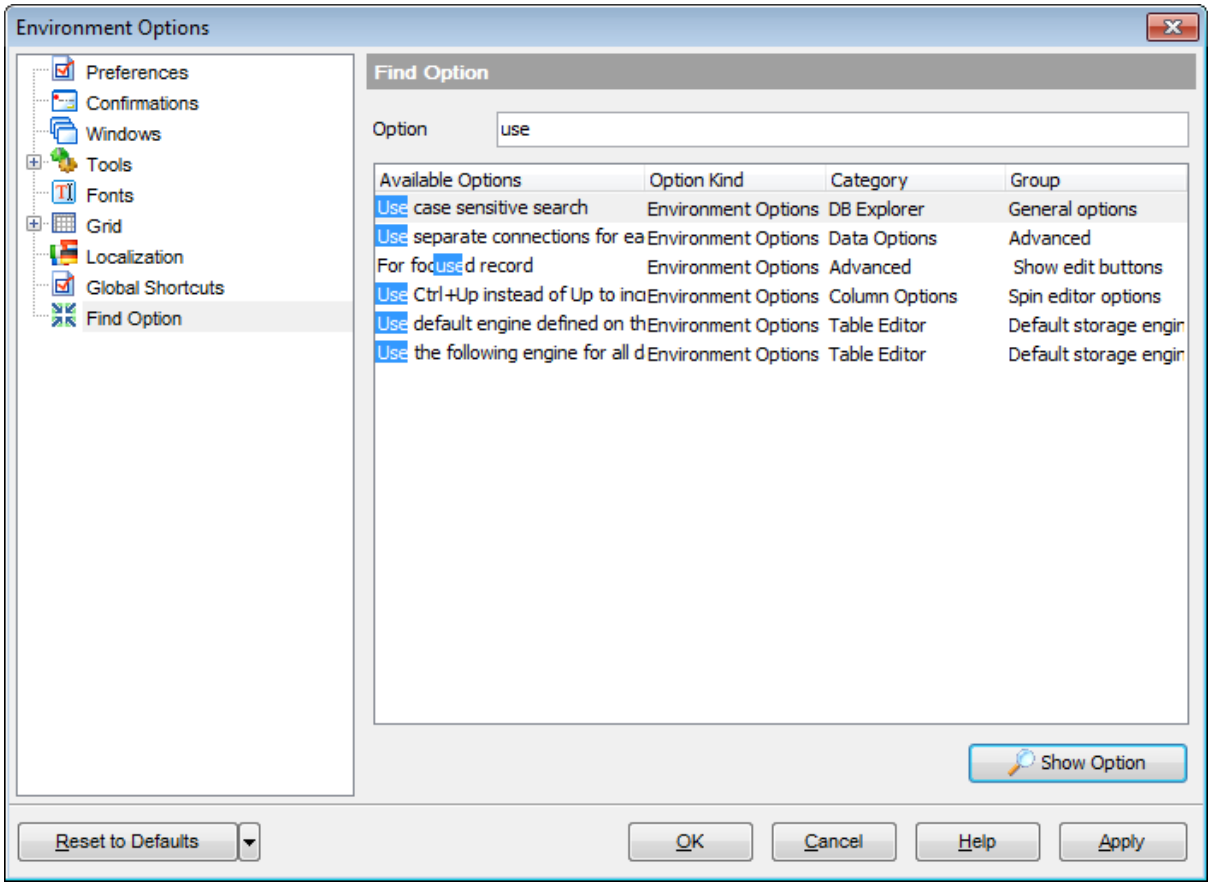
This dialog displays currently assigned key combination. Pressing any key changes the value in the field. Press the required key combination and click **OK** to apply it.

Note: TAB and PRINT SCREEN keys cannot be used in combination.

12.1.9 Find Option

The **Find Option** section allows you to search for options available within the **Environment Options** dialog easily and quickly.

Option
In this field you can enter the name of the option to search for within **SQL Manager** *Environment Options*.



The **Available options** area lists all options of the *Environment Options* category according to the specified name. The **Option Kind**, **Category** and **Group** columns specify option type and location.
Select the required option in the list and click **Show Option** to open the corresponding section where you can view/edit the value of this option. For your convenience the required option is marked with an animated icon.

12.2 Editor Options

Editor Options allow you to set the parameters of viewing and editing SQL statements within SQL Editor and other SQL editing tools of the **SQL Manager** application.

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
- SQL Formatter
- Key Mapping
- Spell Checking
- Find Option

See also:

Environment Options

12.2.1 General

Editor options

Auto indent
If this option is checked, each new indention is the same as the previous one when editing SQL text.
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.

Find text at cursor
If this option is checked, the **Text to find** field in the Find Text dialog is automatically filled with the text on which the cursor is set.

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.

Double click line
If this option is checked, double-clicking the line on which the cursor is set selects the whole line.

Trim trailing spaces
If this option is checked, all spaces after the last symbol in line will be trimmed.

Fixed line height
Prevents line height calculation. If this option is checked, the default line height is taken.

Persistent blocks
Keeps marked blocks selected even when the cursor is moved with the arrow keys used, unless a new block is selected.

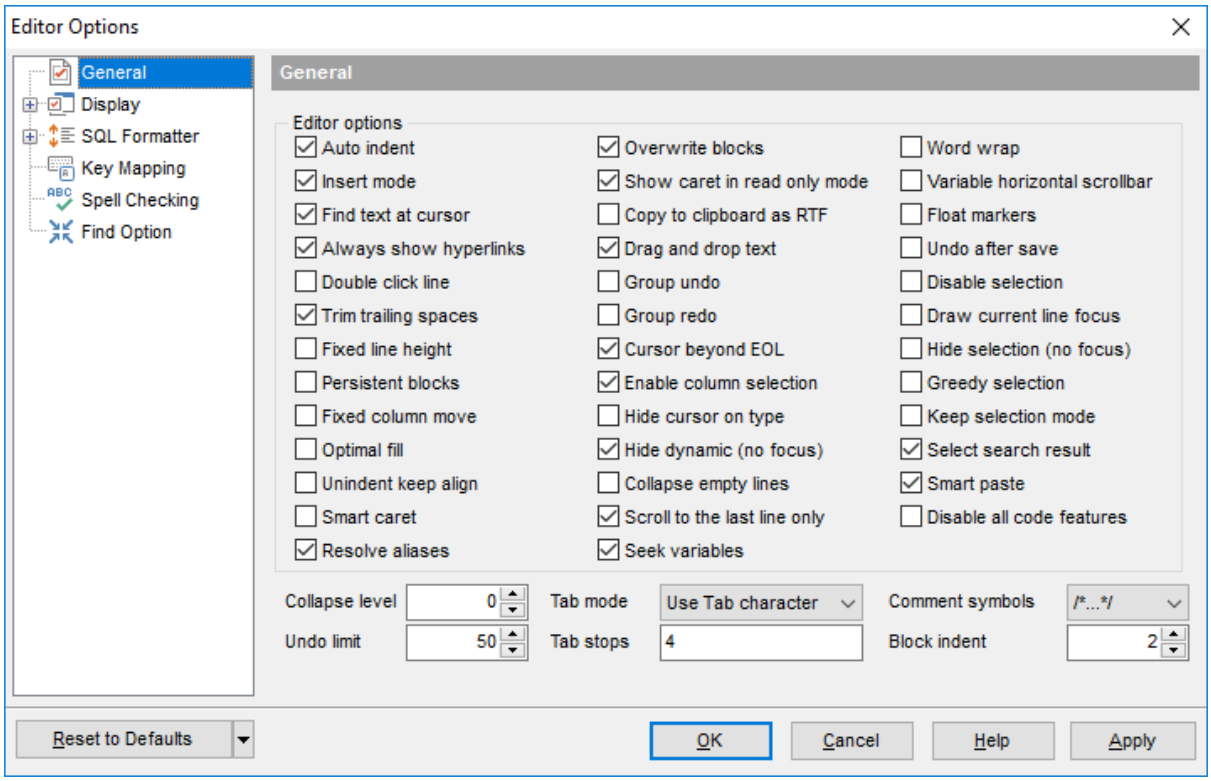
Fixed column move
If this option is checked, the caret keeps its horizontal position when moved between lines.

Optimal fill
Check this option to enable optimal algorithm of filling text content in the working area of the editor.

Unindent keep align
Keeps align for the lines that are not indented.

Smart caret
This option determines the caret movement (up, down, line start, line end). The caret is moved to the nearest position on the screen.

Resolve aliases
Enables/disables the syntax highlight and code completion features for aliases.



Overwrite blocks
Replaces a marked block of text with whatever is typed next. If **Persistent Blocks** is also selected, the text you enter is appended to the currently selected block.

Show caret in read only mode
Displays/hides the caret in read-only mode.

Copy to clipboard as RTF
If this option is checked, the selected text is copied in RTF format.

Drag and drop text
This option allows to drag and drop selected text.

Group undo
This option allows you to undo multiple actions of the same kind.

Group redo
This option allows you to redo multiple actions of the same kind.

Cursor beyond EOL
If this option is checked, the horizontal position of a cursor is kept. If you move the cursor (using the *Up* and *Down* arrow keys) onto a line having length less than the current cursor horizontal position, it will be positioned after the last symbol of the line.

Enable column selection
Enables/disables column selection mode.

Hide cursor on type
Hides/displays mouse cursor within the working area while a user is typing some text.

Hide dynamic (no focus)
Hides dynamic highlights when an editor is not focused.

Collapse empty lines
Collapses empty lines after a text range when this range has been collapsed.

Scroll to the last line only
When the option is enabled, you can scroll to the last line of the text only, otherwise you can scroll to the end of the page.

Seek variables
Switches code completion feature for variables.

Word wrap
When on, text is wrapped at the right margin of the editor area to fit in the visible area.

Variable horizontal scrollbar
If this option is checked, the horizontal scrollbar varies according to the current content of the editor.

Float markers
When enabled, markers are linked to the text, and they will move with the text while the text is being edited; otherwise the markers are linked to the caret position, and stay unchanged while the text is being edited.

Undo after save
Keeps undo buffer unchanged after saving.

Disable selection
Disables any selection when editing.

Draw current line focus
Draws the focus rectangle around the current line when the editor has focus.

Hide selection (no focus)
Hides the selection when the editor loses focus.

Greedy selection
Selects an extra column/line in column/line selection modes.

Keep selection mode
Enables selection for caret movement commands (like in BRIEF).

Select search result
Determines whether the search result should be selected.

Smart paste
When this option is enabled, the editor gets both Unicode and ANSI content from the clipboard, converts them using the selected character set and selects the best text to be pasted. This allows getting correct text copied from both ANSI and Unicode applications

disregarding the currently selected keyboard language.

Disable all code features
This option disables code completion, code folding, highlight and all options that are set on the Quick Code page. For options that are set on the Color page, the defaults will be applied.

Collapse level
Specifies the level of text ranges that will be affected by the "Collapse all" command.

Undo limit
Defines the maximum number of changes possible to be undone.

Tab mode
Specifies the way the TAB key is processed. Possible values are: *Use tab character* (inserts a tab character); *Insert spaces* (inserts space characters); *Dialog behaviour* (when the edit control is in a dialog, the focus is switched to the next control); *Smart tab* (tabs to the first non-white space character in the preceding line).

Tab stops
Defines the tab length used when editing a text.

Comment symbols
Defines the symbols which will be used to comment code fragments.

Block indent
Specify the number of spaces to indent a marked block.

Hint: The **Reset to defaults** button which is common for all sections of the **Editor Options** dialog allows you to discard all changes and restore the settings to their defaults.

12.2.2 Display

Default editor fonts

Use these options to set the *font* and *size* used in the editor.

Show only fixed-width fonts
Use this option to display only fonts with fixed width in the **Font** dialog.

Gutter

Show line numbers
If this option is checked, line numbers are displayed in the SQL text editor window.

Gutter auto width
Enable this option to specify that the gutter width will be adjusted automatically.

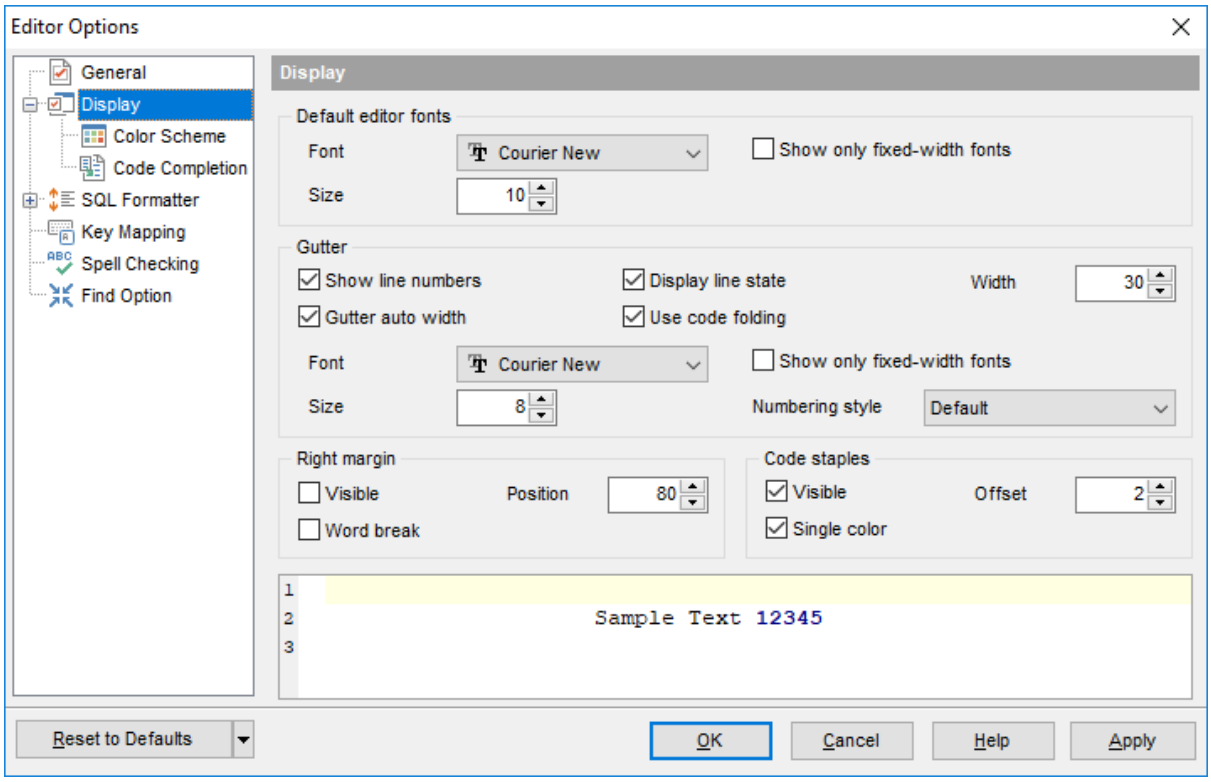
Display line state
If this option is checked, a colored line indicating the state of all altered lines in the text is displayed at the gutter of the editor window.

Use code folding
Check this option to enable to code folding feature of SQL Editor.

Width
Defines the gutter width in the editor window.

Use these options to set the *Font*, *Size* and *Numbering style* used in the gutter.

Show only fixed-width fonts
Use this option to display only fonts with fixed width in the **Font** dialog.



Right margin

Visible
Makes the right text margin visible.

Word break
Allows breaking the words at the right margin.

Position
Defines the position of the right text margin in the editor window.

Code staples

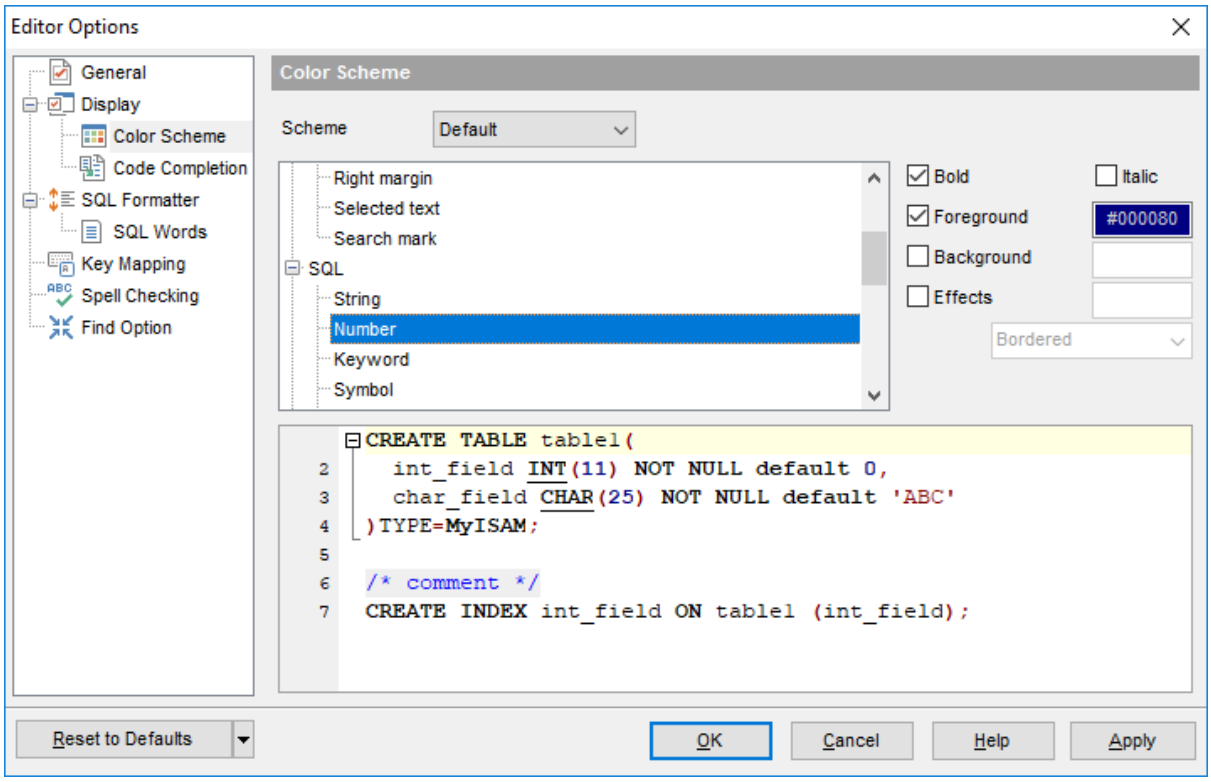
Visible
Makes the code staples visible in the editor window.

Single color
Check the option to apply a single color for code staples.

Offset
Specify the offset value for code staples.

12.2.2.1 Color Scheme

Scheme
Select the default color scheme for all editors: *Default* (Light) or *Dark*.



The **Element** list contains all elements available in SQL editors of the program. For your convenience the preview area (located below the **Element** list) illustrates the changes being made to each of the elements
Controls for changing the properties of the item selected in the **Element** list are located on the right. Use the following instructions for each of the elements.

☑ **Bold**
Highlights the element with bold.

☑ **Italic**
Makes the element text cursive.

☑ **Foreground**
Select the foreground color for the element.

☑ **Background**
Select the background color for the element.

☑ **Effects**
Enables additional effects for the element text.

See also:

12.2.2.2 Code Completion

This dialog allows you to specify the **automatic features**, **fonts**, **styles**, **foreground** and **background colors**, **borders** and other attributes of the text used by the editor to display objects for 'quick code': *tables*, *UDFs*, *indices*, columns, *foreign keys*, *procedures*, *functions*, *views*, *triggers*, *scheduled events*, *SQL keywords*, *SQL functions*.

Automatic features

☑ **Code completion**
If this option is checked, then on typing the first word characters in the SQL text editor you will be offered some variants for the word completion in a popup list (an analogue of the **Code Insight** feature in **Delphi IDE**). The popup list will appear after a period of time defined by the **Delay** option.

Delay
Using this option you can change the time after which completion variants popup.

Sensitivity
This option allows you to set the number of characters to be typed before code completion is activated.

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

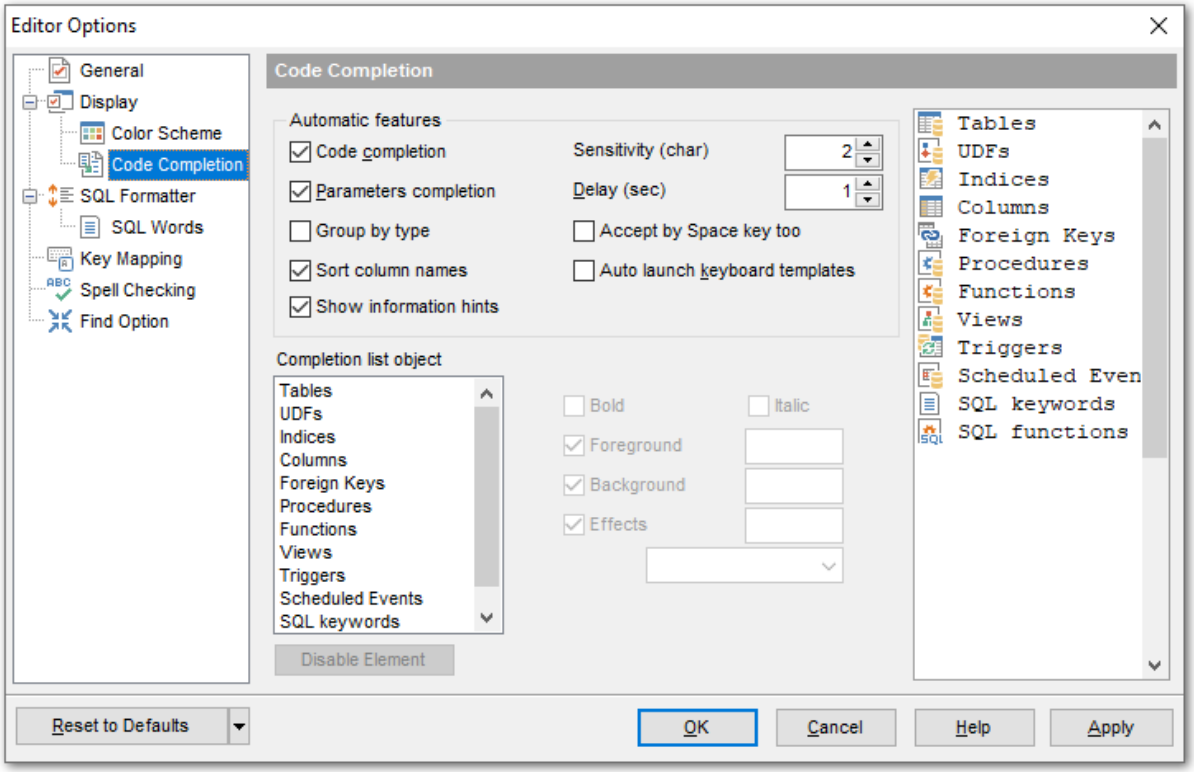
☑ **Group by type**
If enabled, the items in the code completion list are sorted by type, otherwise they are sorted by name.

☑ **Sort column names**
Enable this option to force sorting for column names.

☑ **Show information hints**
This option enables/disables information hints for variants offered by *code completion* feature.

☑ **Auto launch keyboard templates**
Allows you to use keyboard templates for faster typing frequently used expressions (see Keyboard Templates).

☑ **Accept by Space key too**
Enables selecting the completion item with Space key.



Completion list object

The list contains all objects for which you can set quick code parameters. For your convenience the preview area (located to the right of the **Completion list object** list) illustrates the changes being made to each of the objects.
If you press the **Disable element** button, the standard settings will be applied to this object; the button text will change to **Enable element**. If you press this button, you will be able to change font and color attributes for this object.

Controls for changing the properties of the item selected in the **Completion list object** list are located on the right.

See also:

General
Display
Color
SQL Formatter
Key Mapping
Spell Checking
Find Option

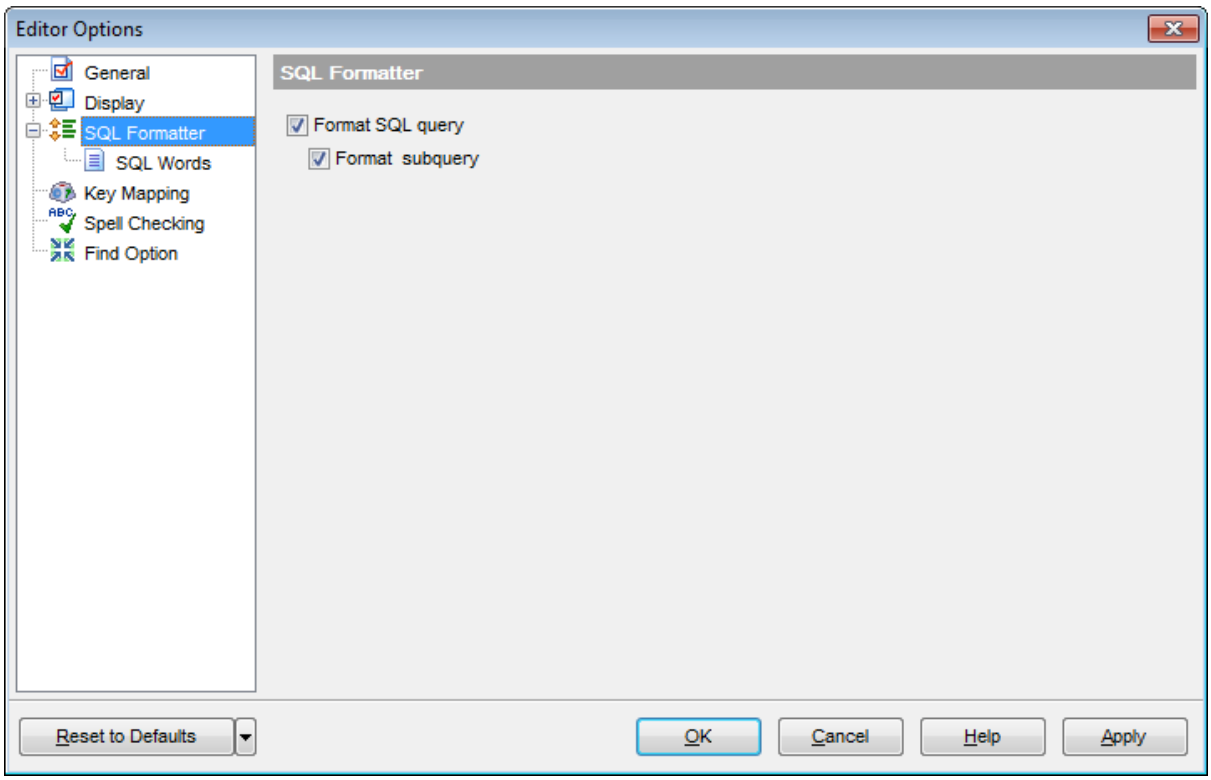
12.2.3 SQL Formatter

SQL Formatter is a feature implemented in SQL Manager for MySQL and is a useful tool for formatting SQL queries and scripts, making SQL statements easy to read. SQL Formatter is introduced in SQL Editor, SQL Script and some object editors.

The **Settings** tab of the **SQL Formatter** section allows you to enable this feature and apply SQL formatting to subqueries, if necessary.

☑ **Format SQL query**
Check this option to enable SQL formatting.

☑ **Format subquery**
Enables SQL formatting for subqueries.



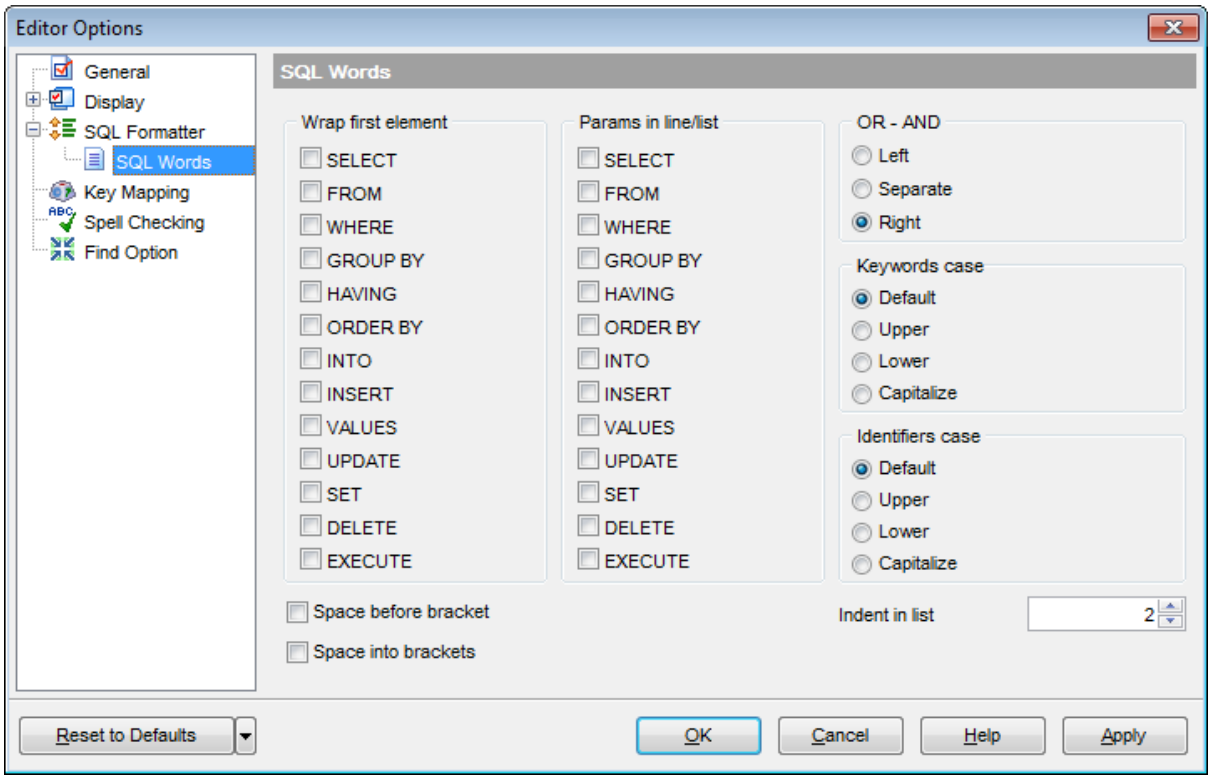
See also:
SQL Editor

12.2.3.1 SQL words

The **SQL words** tab of the **SQL Formatter** section allows you to select the key words for each action of SQL formatter and to set formatting parameters.

Wrap first element
Wraps the selected text at a specific column. Select the SQL key words after which formatting should be applied.

Params in line/list
Allows you to display the parameters followed by the defined key words in list or in line.



OR - AND
Set the placement of the *AND* an *OR* operators according to the operands followed by them. See the example below.

Left

```
WHERE
        AND ...
        AND ...
        AND ...
```

Separate

```
WHERE
        ...
         AND
```

```
...
 AND
```

Right

```
WHERE
        ... AND
        ... AND
        ... AND
```

The **Keywords case** / **Identifiers case** options allow you to define the case of the corresponding items.
You can choose *UPPER*, *lower*, *Capitalize*.
Default case means that the name of the identifier/keyword remains "AS IS".

Space before bracket
Adds a "space" character before the opening bracket and after the closing one.

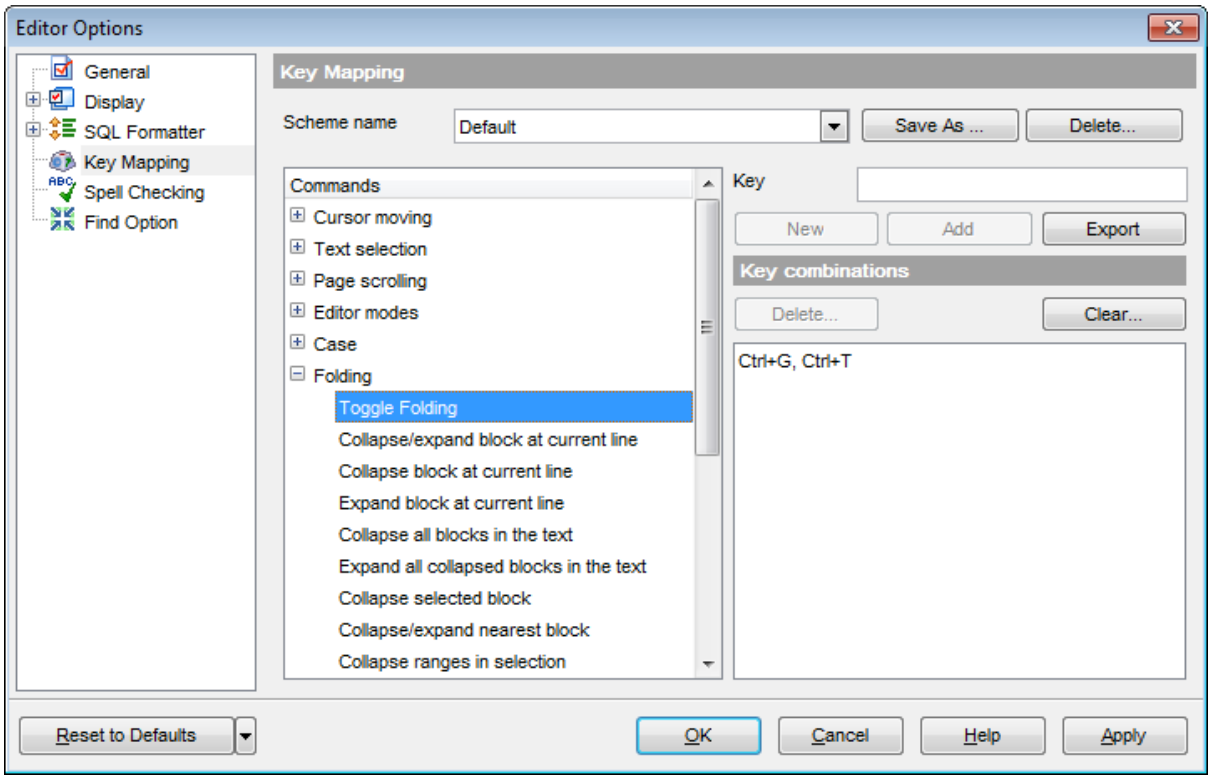
Space into brackets
Adds a "space" character after the opening bracket and before the closing one.

Indent in list
Sets the size of indent relatively to the previous string.

12.2.4 Key Mapping

For your convenience **key mapping** is provided in **SQL Manager for MySQL**. On this page you can set the shortcuts for various commands/operations according to your needs.

Use the **Commands** list on the right to select the command for which you need to make a shortcut, then place cursor into the **Key** editor and press the key combination you find useful (use *Ctrl Alt Shift* buttons). After setting the shortcut, press the **New** button to add it to the list of existing **Key combinations**. If the specified shortcut is already assigned to another command/operation, an error message with the command/operation will be returned.



Note: It is possible to set more than one key combination for the same command/operation (e.g. *Ctrl-K*, *Ctrl-H*) using the **Add** button.

If necessary, you can export the current Key mapping list to an external file by pressing the **Export** button.

Manage the shortcuts within the Key combinations list using the **Delete** (to remove the selected item) and the **Clear** (to remove all shortcuts for this command/operation) buttons.

It is also possible to save a custom key mapping scheme, if necessary:

- set the shortcuts for the appropriate commands/operations;
- click the **Save As...** button;
- input the new scheme name in the corresponding dialog.

To delete a scheme, select it in the **Scheme name** drop-down list and press the **Delete** button.

See also:

SQL Editor

SQL Manager shortcuts

12.2.5 Spell Checking

Spell checking is a new feature implemented in **SQL Manager for MySQL** for your convenience.

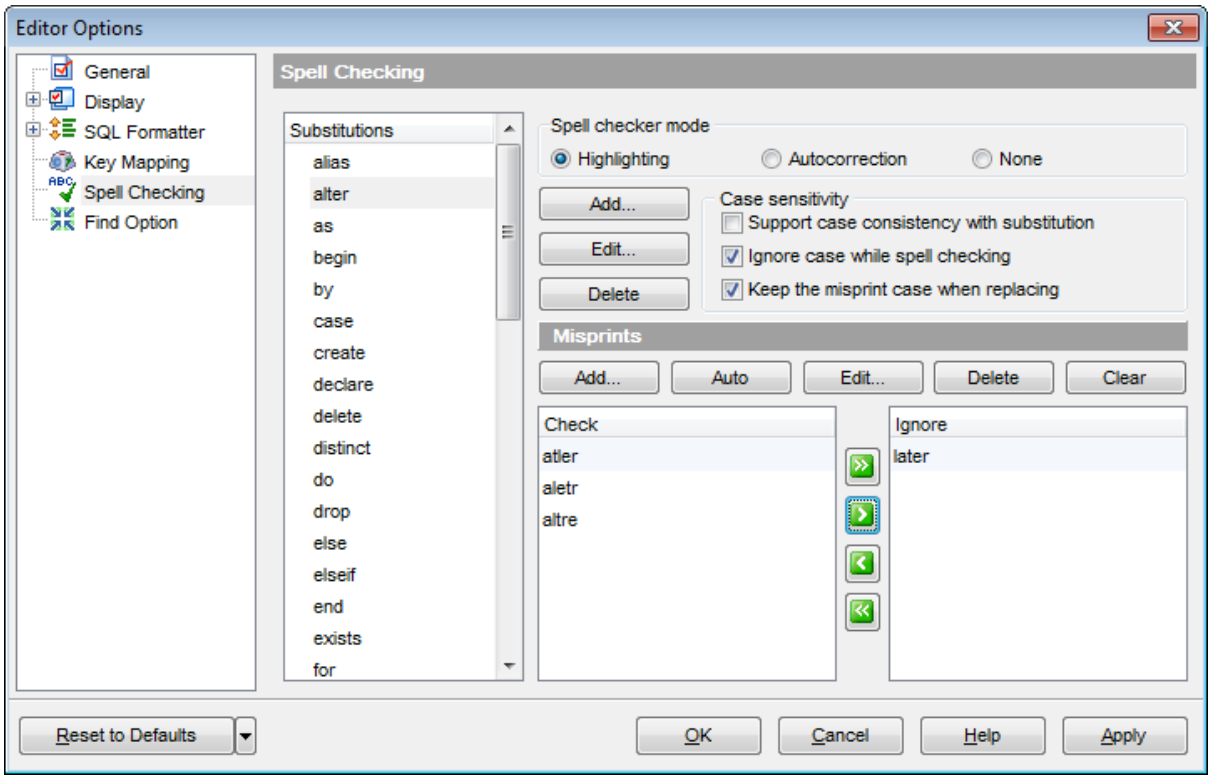
Set the necessary **Spell checker mode**:

Highlighting
In this mode incorrectly spelled and misprinted words are highlighted in the editor.

Autocorrection
In this mode incorrectly spelled and misprinted words are replaced with the corresponding words from the **Substitutions** list automatically.

None
In this mode the spelling checker is disabled.

Use the **Add...** button to add a new item to the **Substitutions** list, the **Edit...** button to alter the selected substitution, and the **Delete** button to remove the selected substitution from the spelling checker vocabulary.



Case sensitivity

Support case consistency with substitution
If this option is selected, the spelling checker uses the case of words-substitutions when performing a replacement.

Ignore case while spell checking
Check this option to disable case checking.

Keep the misprint case when replacing
Check this option if you do not wish to change the case of the replaced word.

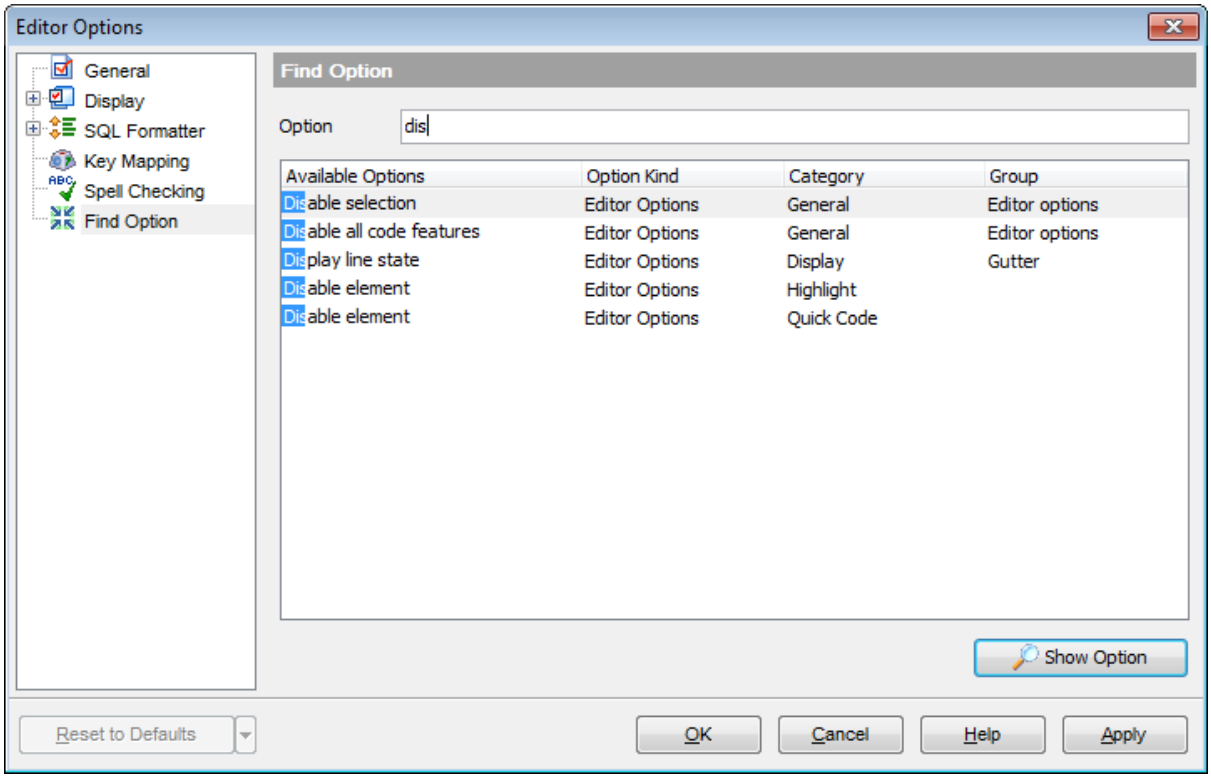
Misprints
Controls of this group allow you to manage the spelling checker vocabulary: use the **Add...** button to add a new misprint to the vocabulary, the **Auto** button to use the default list of misprints, the **Edit...** button to change the selected misprint, the **Delete** button to remove the selected misprint from the vocabulary, and the **Clear** button to empty the list of misprints for the currently selected substitution.

It is also possible to exclude a misprint from spell checking without deleting the misprint. This misprint will therefore remain in the vocabulary, but it will be ignored by the spelling checker.
To mark a misprint as excluded, you need to move it from the **Check** list to the **Ignore** list. Use the  buttons or drag-and-drop operations to move the misprints from one list to another.

12.2.6 Find Option

The **Find Option** section allows you to search for options available within the **Editor Options** dialog easily and quickly.

Option
In this field you can enter the name of the option to search for within **SQL Manager** *Editor Options*.

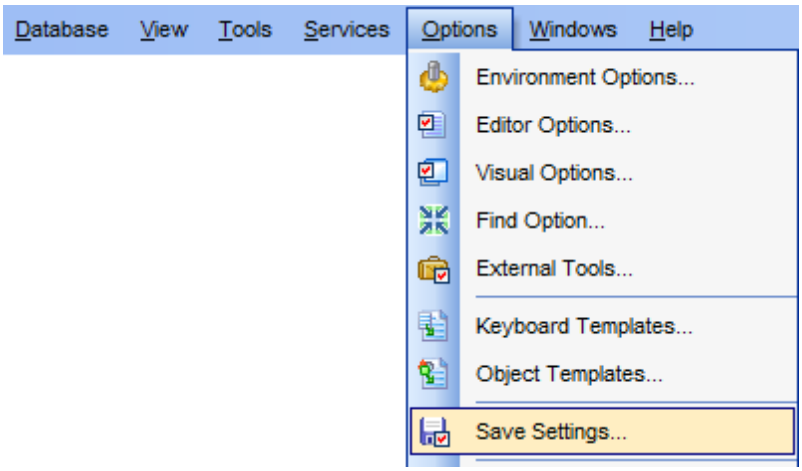


The **Available options** area lists all options of the *Editor Options* category according to the specified name. The **Option Kind**, **Category** and **Group** columns specify option type and location.
Select the required option in the list and click **Show Option** to open the corresponding section where you can view/edit the value of this option. For your convenience the required option is marked with an animated icon.

12.3 Save Settings

Save Settings Wizard allows you to export the settings of **SQL Manager for MySQL** - wholly or partially - to a single **.reg* file which can be applied afterwards to **SQL Manager for MySQL** installed on another machine, or it can be used to backup previous settings.

To start the wizard, select the **Options | Save Settings** main menu item.



To apply saved settings you need to open the created **.reg* file, then press the OK button in the window appeared. All settings will be applied automatically (they will be added in the Windows Registry).

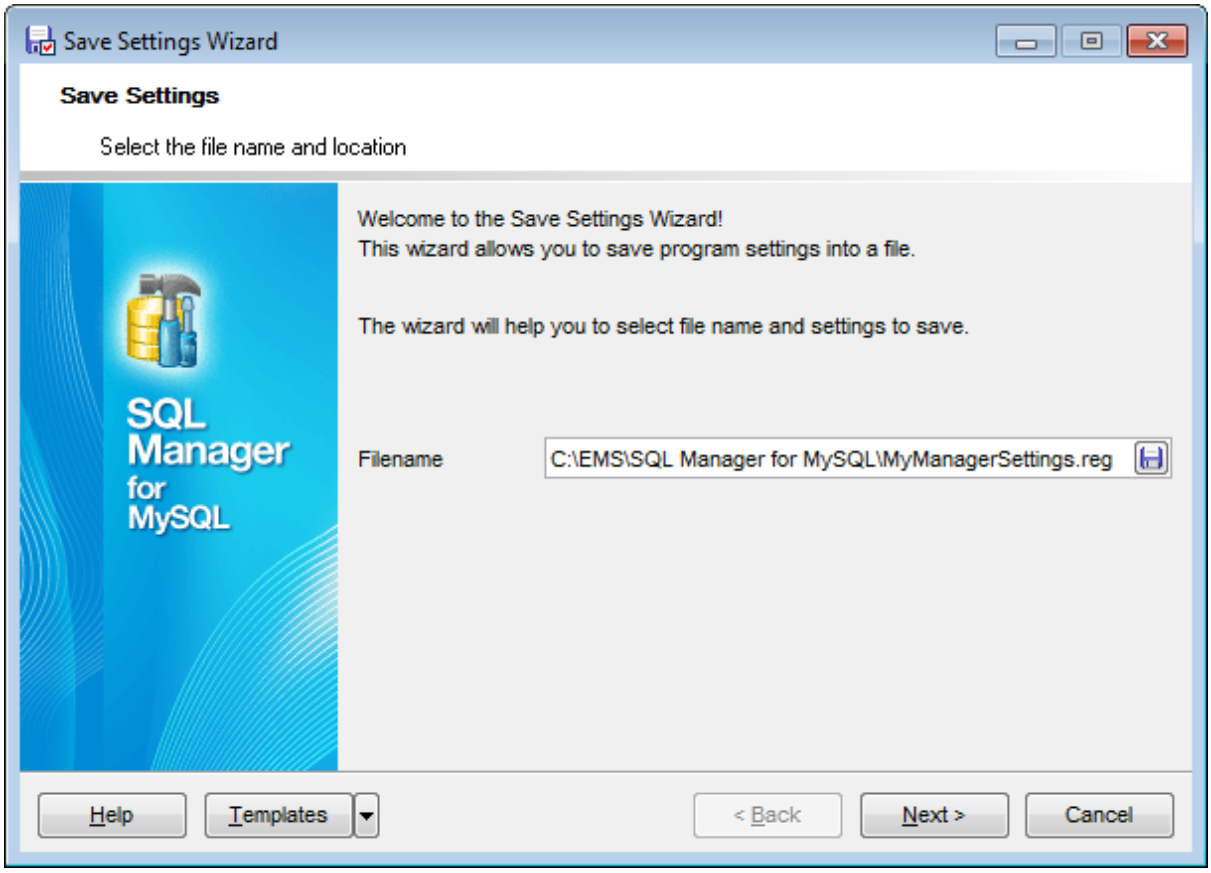
- Specifying destination file
- Selecting settings
- Selecting databases
- Saving settings

12.3.1 Specifying destination file

This step of the wizard allows you to specify the location of the destination file.

Filename
Use the button to set the path to the **.reg* file where the application settings are to be saved.

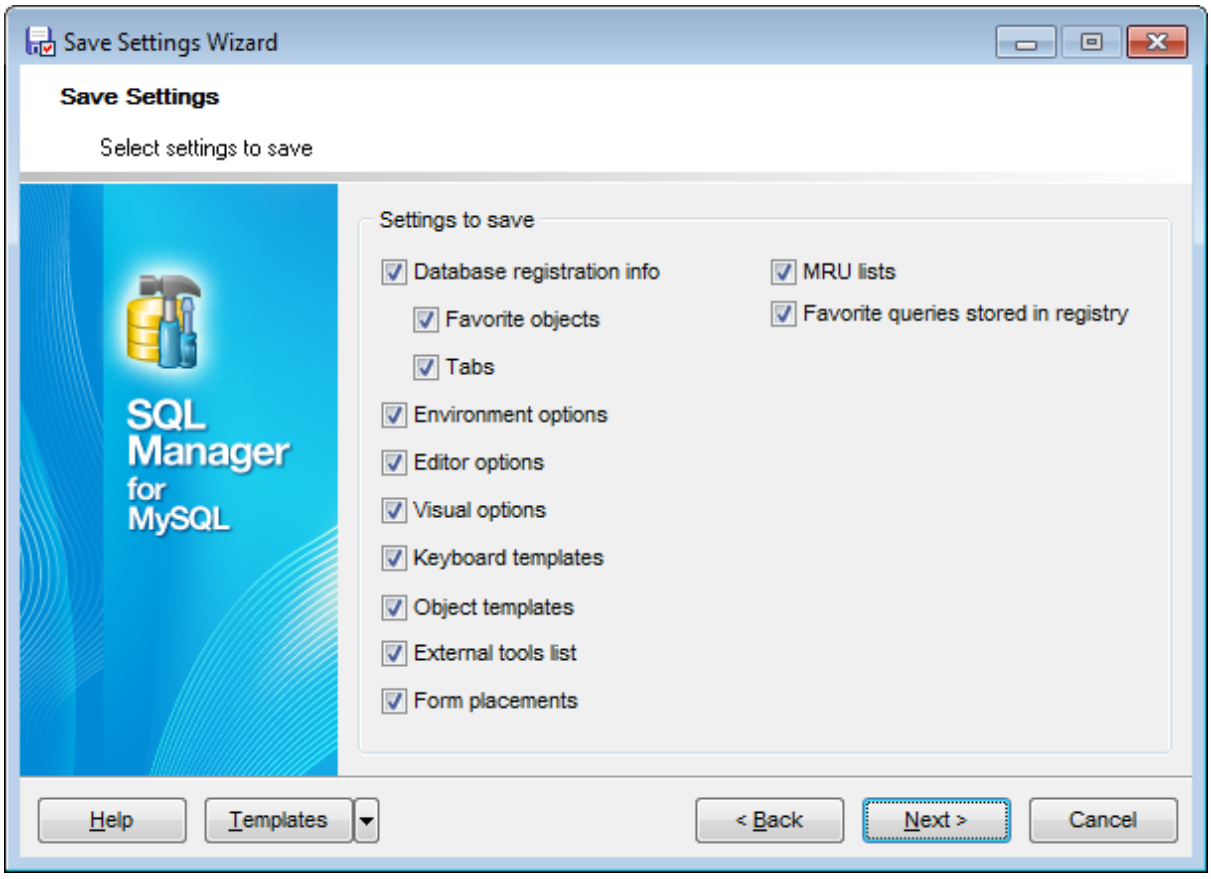
Note: If the target file already exists, the application will show a warning dialog where you can choose the action you need.



Press the **Next** button to proceed to the next step of the wizard.

12.3.2 Selecting settings

This step of the wizard allows you to specify the information you need to be saved to the result file: *Database registration info*, *Favorite objects*, *Tabs*, *Environment options*, *Editor options*, *Visual options*, *Keyboard templates*, *Object templates*, *External tools list*, *Form placements*, *MRU lists*, *Favorite queries stored in registry*.

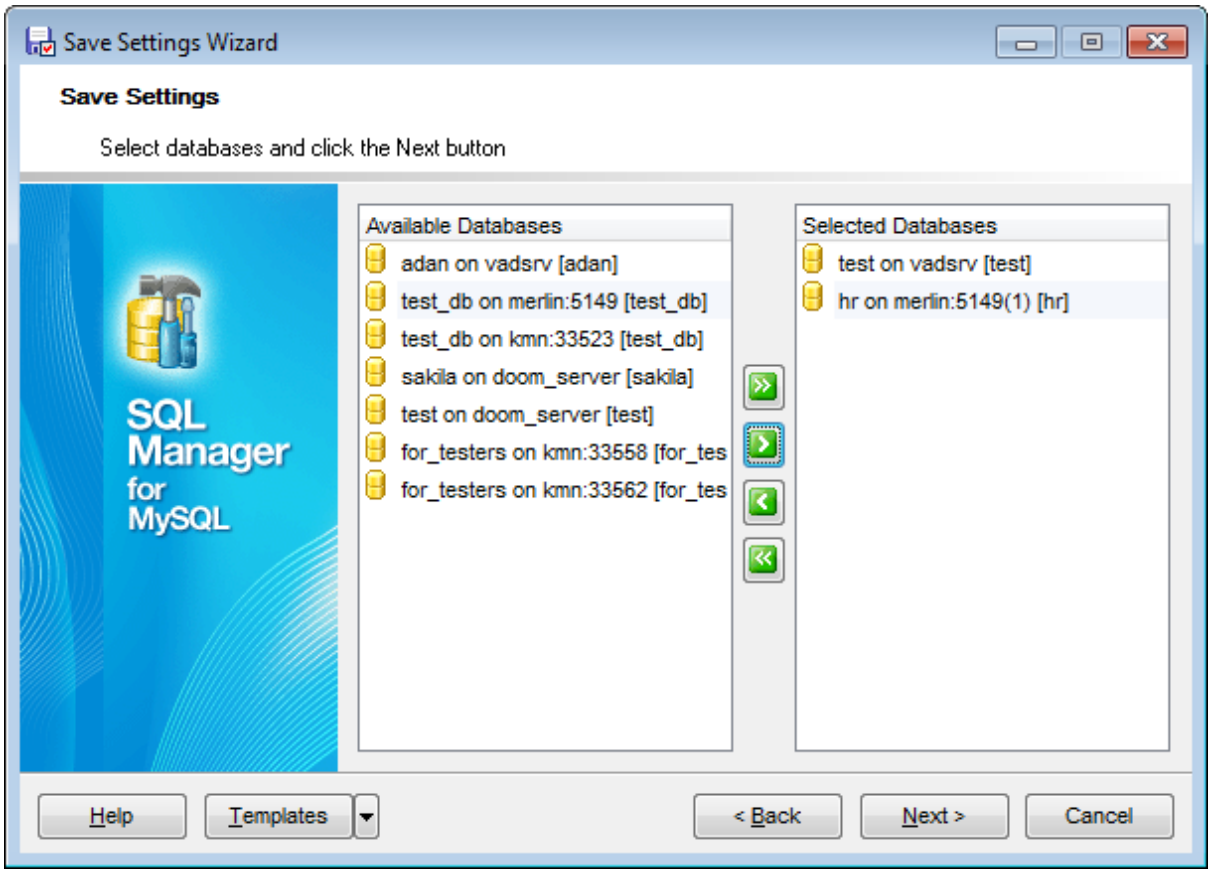


Press the **Next** button to proceed to the next step of the wizard.

12.3.3 Selecting databases

This step of the wizard allows you to select the database(s) to save the registration settings.

To select a database, you need to move its alias from the **Available Databases** list to the **Selected Databases** list. Use the buttons or drag-and-drop operations to move the databases from one list to another.

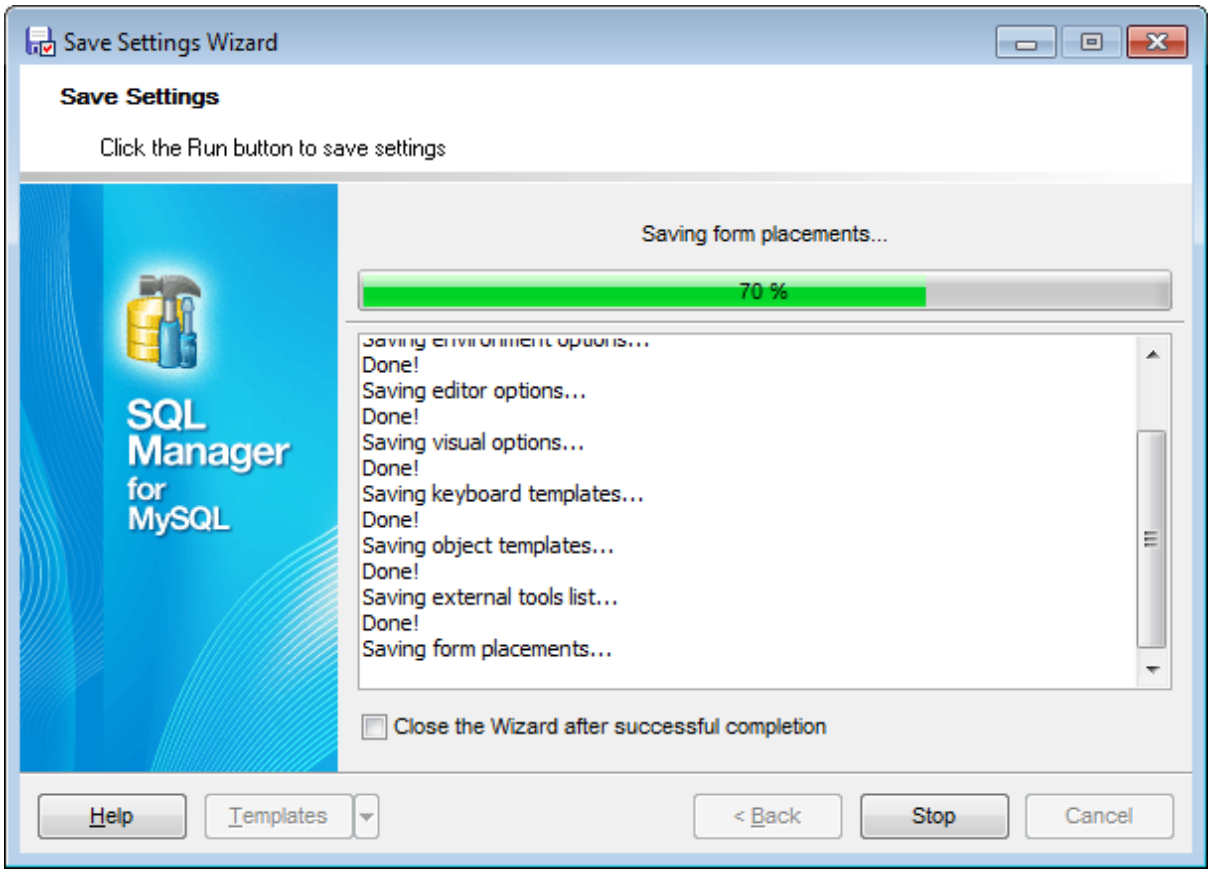


Click the Next button to proceed to the final step.

12.3.4 Saving settings

After the saving settings operation has been configured, you can immediately start the process.

If all the settings are saved correctly, you will get the following message:

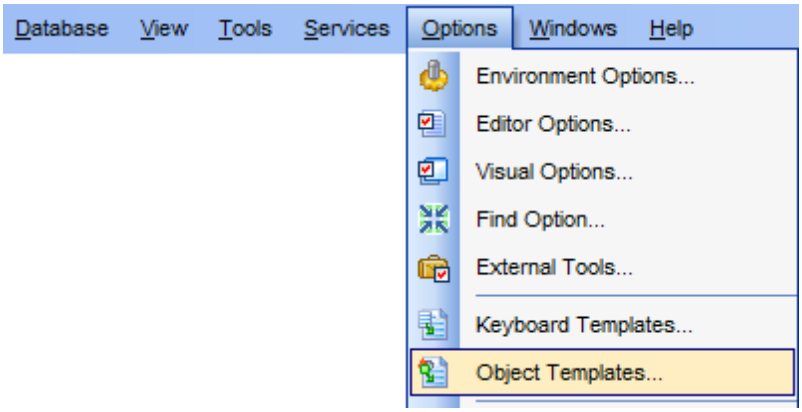


If necessary, you can click **Details** to display/hide extended information about the operation.

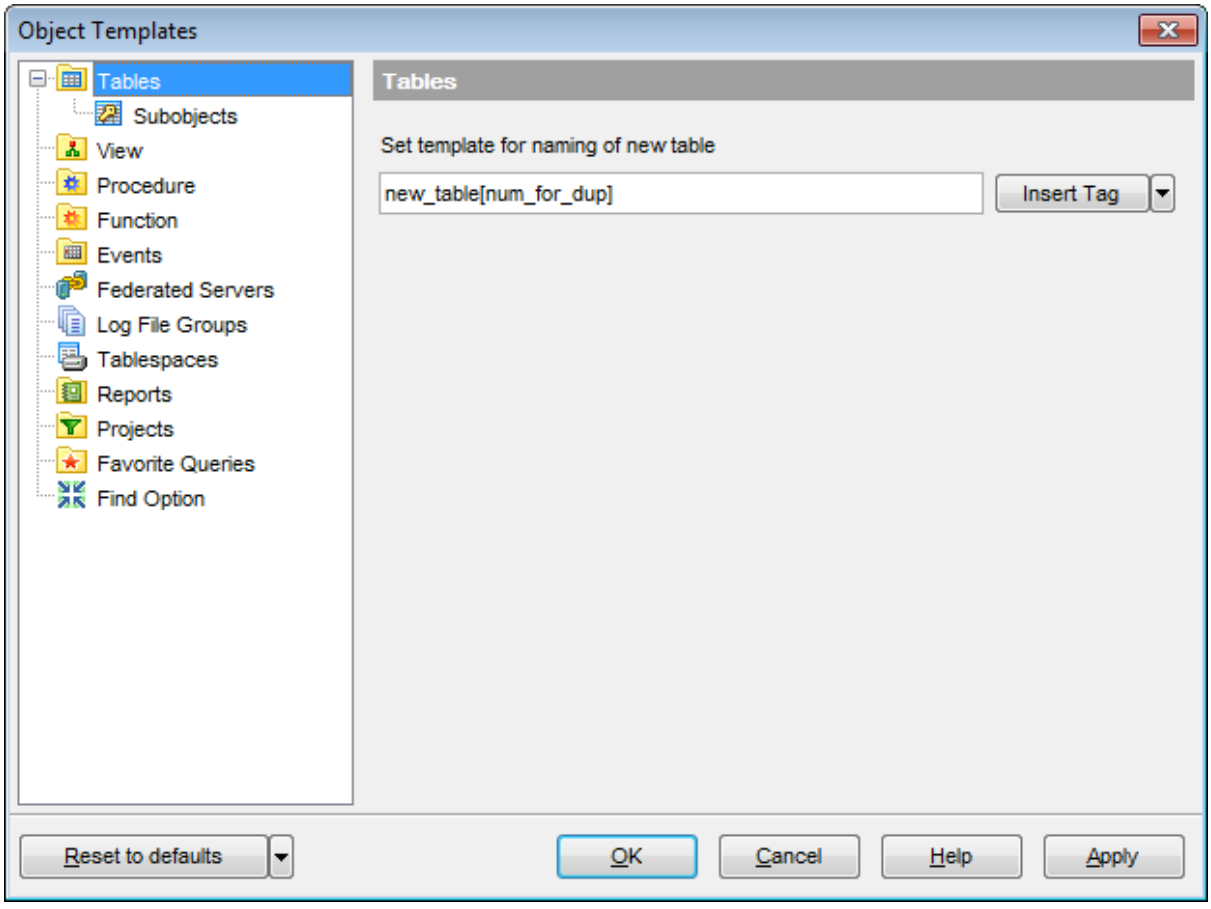
12.4 Object Templates

The **Object Templates** window allows you to preset the definition template for the name of an object to be created.

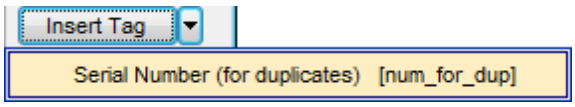
To open this window, select the **Options | Object Templates...** main menu item.



Select an object in the tree and define its template which will be used as the name for the newly created object in the respective field.



Insert Tag



Use this list to insert the *[num_for_dup]* tag to the template. This tag allows adding serial number for duplicates.

Additionally you can define templates for table subobjects.

Table subobjects
Find option

See also:

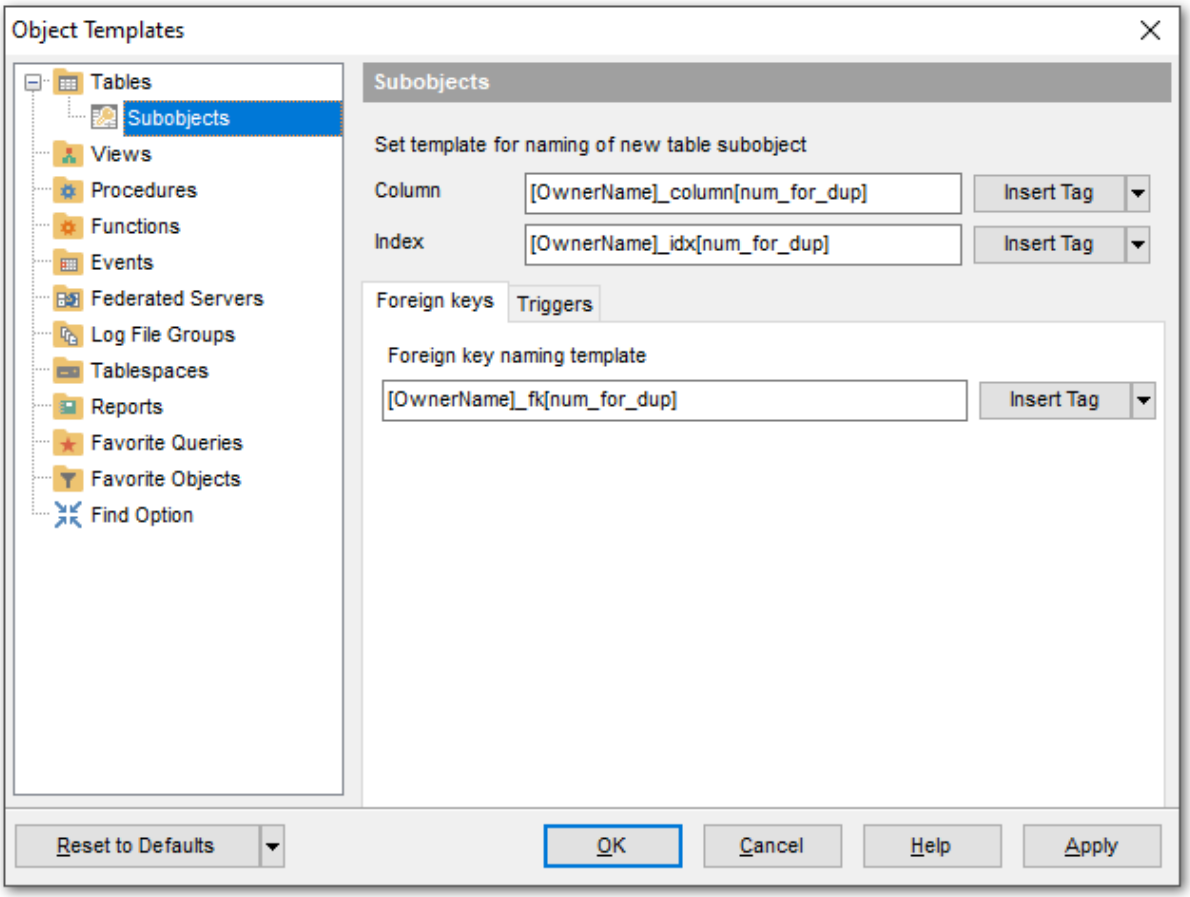
Database/Server Objects Management

12.4.1 Table subobjects

Using the **Foreign keys** tab you can set a template for foreign key naming. The **Insert Tag** drop-down list allows you to select one or more tags that may simplify template creation:
Table Name: *{table_name}*
Serial Number (for duplicates): *{num_for_dup}*
Referenced Table Name: *{ref_table_name}*

Use the **Insert Tag** button to add the selected tag value to the template, e.g. *{table_name}*, *{num_for_dup}*, etc.

This page allows you to define name templates for table subobjects.



Use the **Columns** and **Index** fields to define name templates for newly created objects. Press the **Insert Tag** button and select an item from the drop-down list to add a tag to name template.

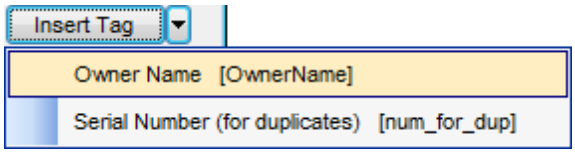


Table Name: *[OwnerName]*;
Serial Number (for duplicates): *[name_for_dup]*.

Using the **Foreign keys** tab you can set a template for foreign key naming. The **Insert Tag** drop-down list allows you to select one or more tags that may simplify template creation:

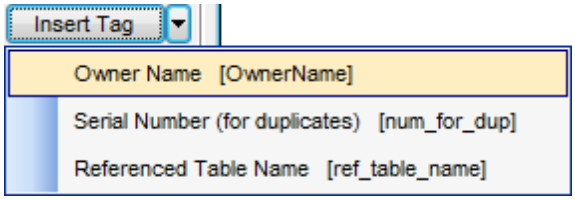
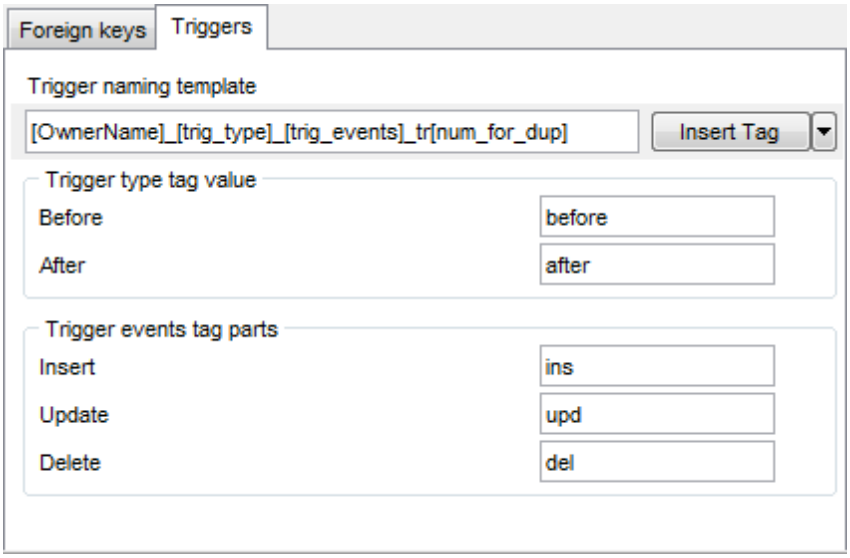


Table Name: *{table_name}*
Serial Number (for duplicates): *{num_for_dup}*
Referenced Table Name: *{ref_table_name}*

Using the **Triggers** tab you can set a template for trigger naming. Here you can also specify templates for **tags** added to default names of *Before* and *After* trigger types and for **tag parts** added to trigger events: *Insert*, *Update*, *Delete*.



The **Insert Tag** drop-down list allows you to select one or more tags that may simplify template creation:

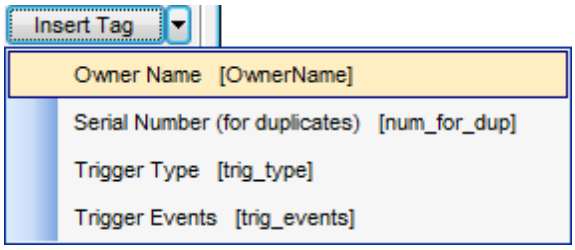


Table Name: *{table_name}*
Serial Number (for duplicates): *{num_for_dup}*
Trigger Type: *{trig_type}*
Trigger Events: *{trig_events}*

Example:
For newly created foreign key you define:
- prefix "fk_"
- ID for the first table "T1"
- tag [table_name]
- ID for the referenced table "T2"
- tag - [ref_table_name]

Template in this case will be 'fk_T1[OwnerName]_T2[num_for_dup]'.
Foreign key name created with this template will be:
"fk_T1Lotti_MateriePrime_T2Commesse_Lotti", where *Lotti_MateriePrime* and *Commesse_Lotti* are table names.

12.5 Localization

When using **SQL Manager for MySQL**, your are provided with multi-language interface support. You can change the program language, specify the directories for your localization files easily, edit existing localizations and create your own localization files.

Changing Program Language

In order to select the program interface language:
- select the **Options | Select Program Language...** main menu item;
- select the interface language in the Select Language dialog;
- click **OK** to apply the language and close the dialog.

Editing Program Localization

In order to edit the interface localization:
- open one of the program windows (e.g. Table Editor, SQL Editor) where you wish to edit the localization of captions and hints;
- use the *Shift+Ctrl+L* keyboard shortcut to open the Localization Editor window;
- edit window captions and hints as necessary;
- click the **Save** button on the toolbar.

Note: The Localization Editor window is only available if the currently selected language is different from the default.

Creating New Localization Files

In order to create a new localization file:
- create a new localization file similar to those located in the *%program_directory%\Languages* folder;
- select the **Options | Environment Options** main menu item;
- proceed to the Localization section of the **Environment Options** dialog;
- click the **Add** button;
- set the language name and the path to the new **.lng* file within the Language Info Editor dialog.

The new language is added to the list of available languages. Now you can set it as the interface language using the Select Program Language dialog or the Localization section of the Environment Options dialog.

See also:

Localization

Language Info Editor

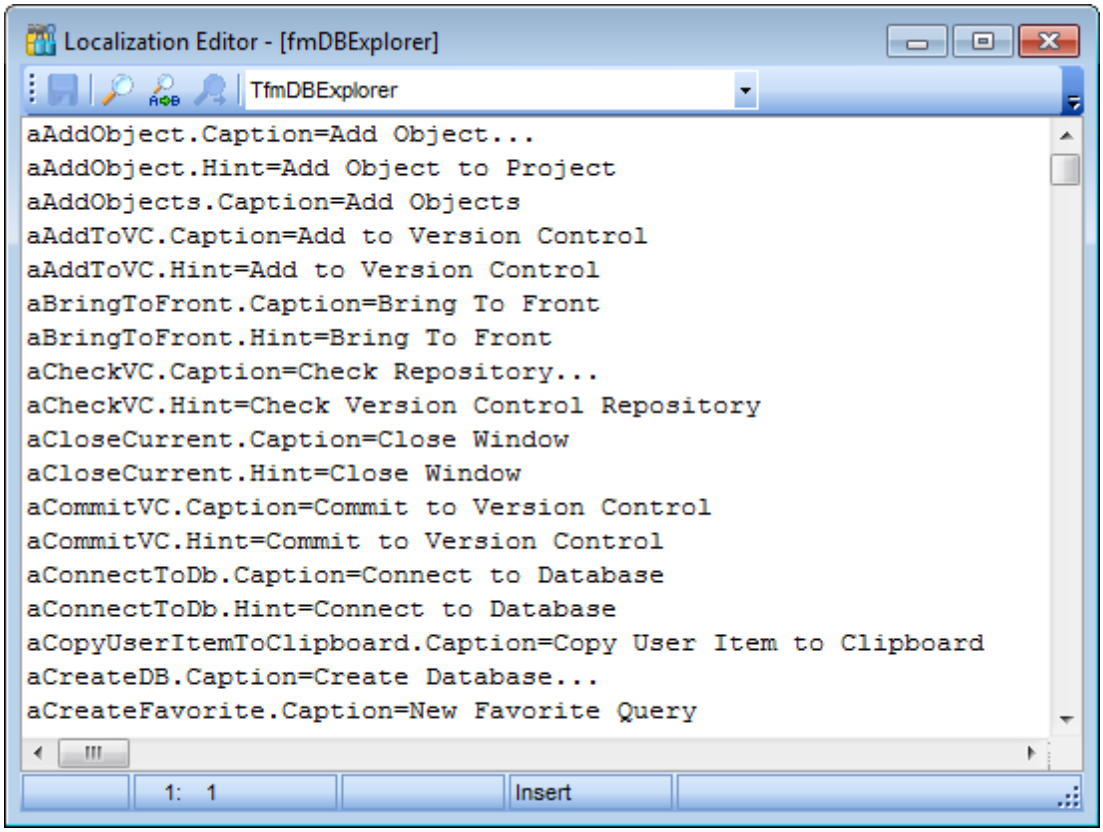
12.5.1 Localization Editor

The **Localization Editor** window allows you to edit the captions and hints of any **SQL Manager** window, if the selected program language is different from the default one.

To call this window, use the *Shift+Ctrl+L* shortcut in any child window of **SQL Manager for MySQL**.

The working area of the window contains the element names and the corresponding strings divided by the "**=**" character. These strings are what you see in the program as menu items, window captions, button hints, etc. Edit them to change the program appearance. Be careful and do not edit the identifiers that stand before the "**=**" character - this will not produce any effect.

For your convenience the **Find** and **Replace** features are provided - the corresponding toolbar buttons are used to call the Find Text dialog or the Replace Text dialog respectively. The **Search Again** button enables the repeated search for the text that was last searched.



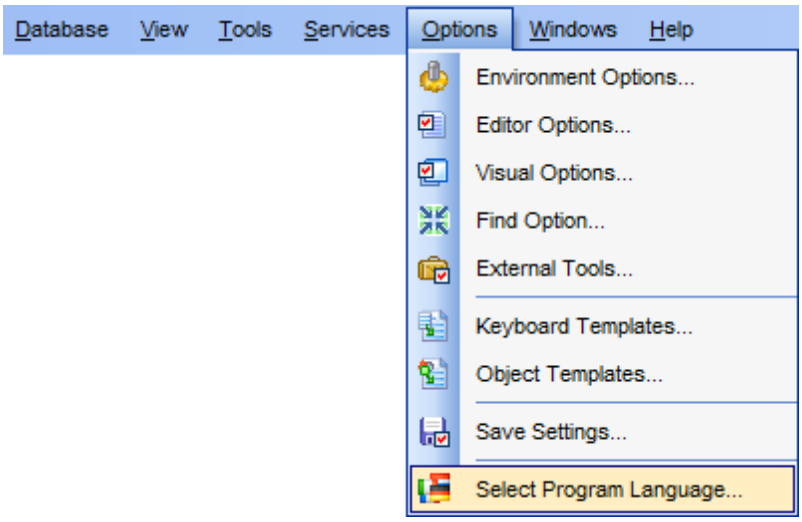
When you are done with editing, click the **Save** button on the toolbar to apply the changes you have made.

See also:

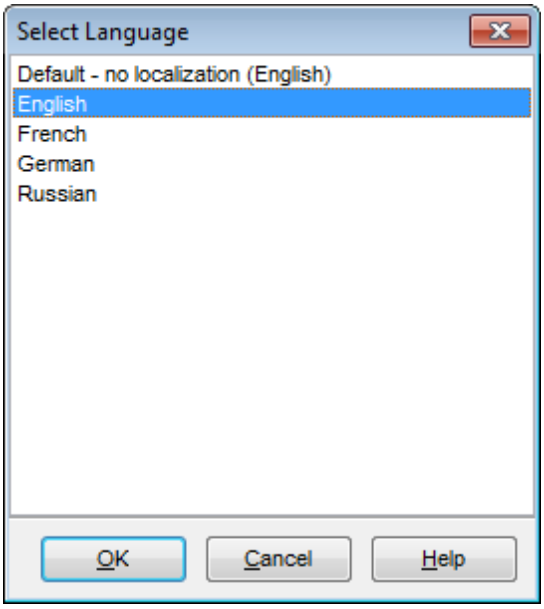
12.5.2 Select Program Language

The **Select Language** dialog allows you to select a language for **SQL Manager for MySQL** localization.

To open this dialog, select the **Options |** **Select Program Language...** main menu item.



The dialog displays the list of available languages configured on the Environment Options | Localization page. Select a language from the list and click **OK** to confirm your choice and close the dialog.



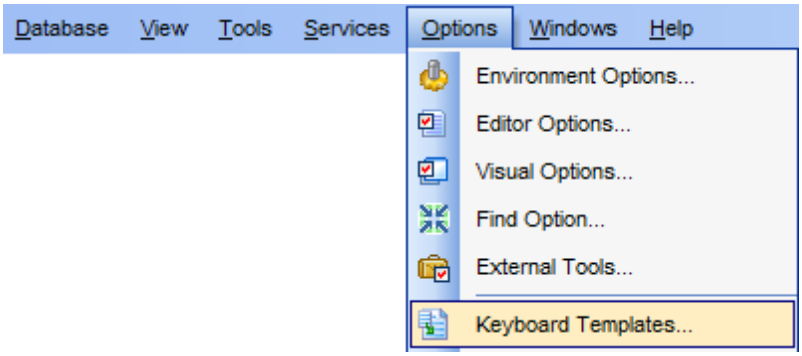
See also:

Localization Editor
Localization

12.6 Keyboard Templates

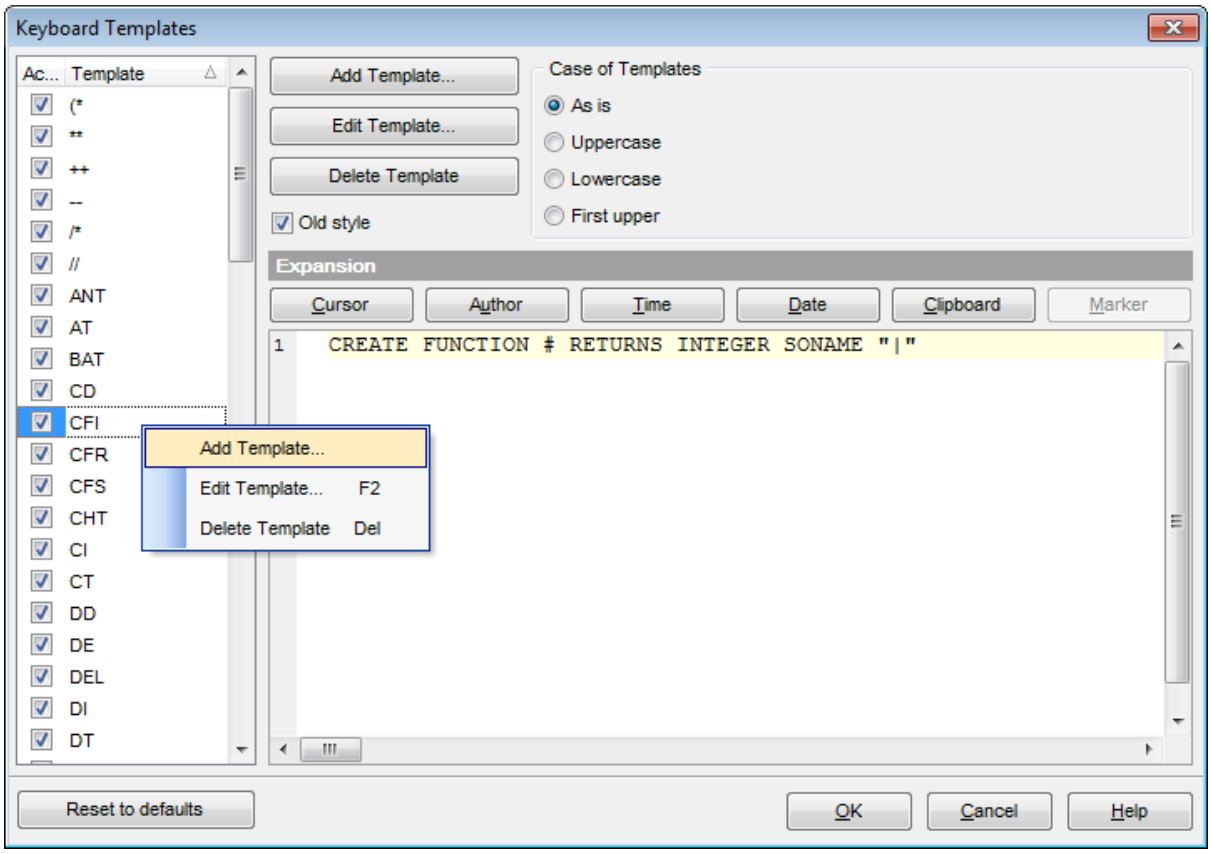
The **Keyboard Templates** window allows you to create new keyboard templates for quicker typing regularly used expressions and to edit the existing ones.

To open this window, select the **Options | Keyboard Templates...** main menu item.



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 (*As is*, *Uppercase*, *Lowercase*, *First upper*).

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 *Cursor*, *Author*, *Time*, *Date*, *Clipboard*, *Marker* buttons.

Hint: Add/edit/delete template items are also available in the *context menu* of the template list on the right.

☑ **Old style**
This option specifies whether the selected keyboard template expansion should conform to the template specifications used in the earlier versions of **SQL Manager for MySQL**.

Once you have defined the templates, you can use them in SQL Editor. First of all, make sure that the ☑ **Auto launch keyboard templates** option is selected on the Quick Code page of the Editor Options dialog. When editing SQL text in SQL Editor, type a template name and use the *Ctrl+J* shortcut: the text associated with the template (**Expansion**) will be inserted automatically.

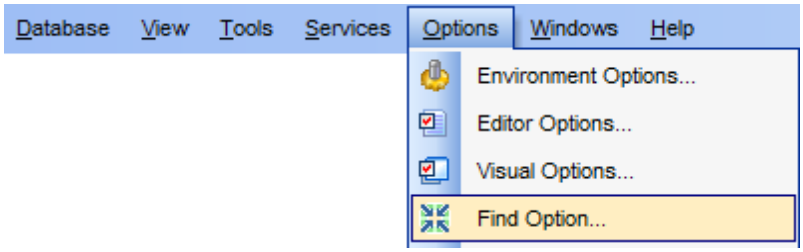
Hint: The **Reset to defaults** button which is available at the bottom of the **Keyboard Templates** dialog allows you to discard all changes and restore the settings to their defaults.

See also:
Quick Code
SQL Manager shortcuts

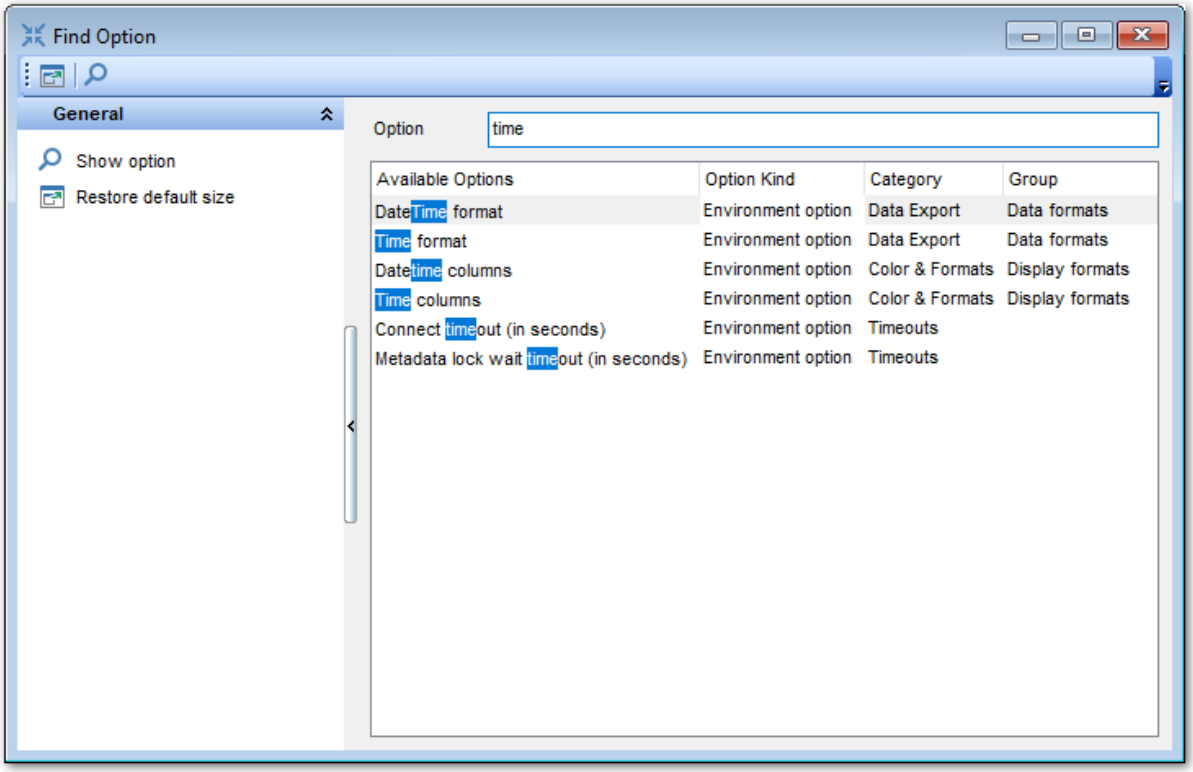
12.7 Find Option dialog

The **Find Option** dialog allows you to search for **SQL Manager** options easily.

To open this dialog, select the **Options | Find Option** main menu item.



Option
In this field you can enter the name of the option to search for within the entire set of **SQL Manager** options.

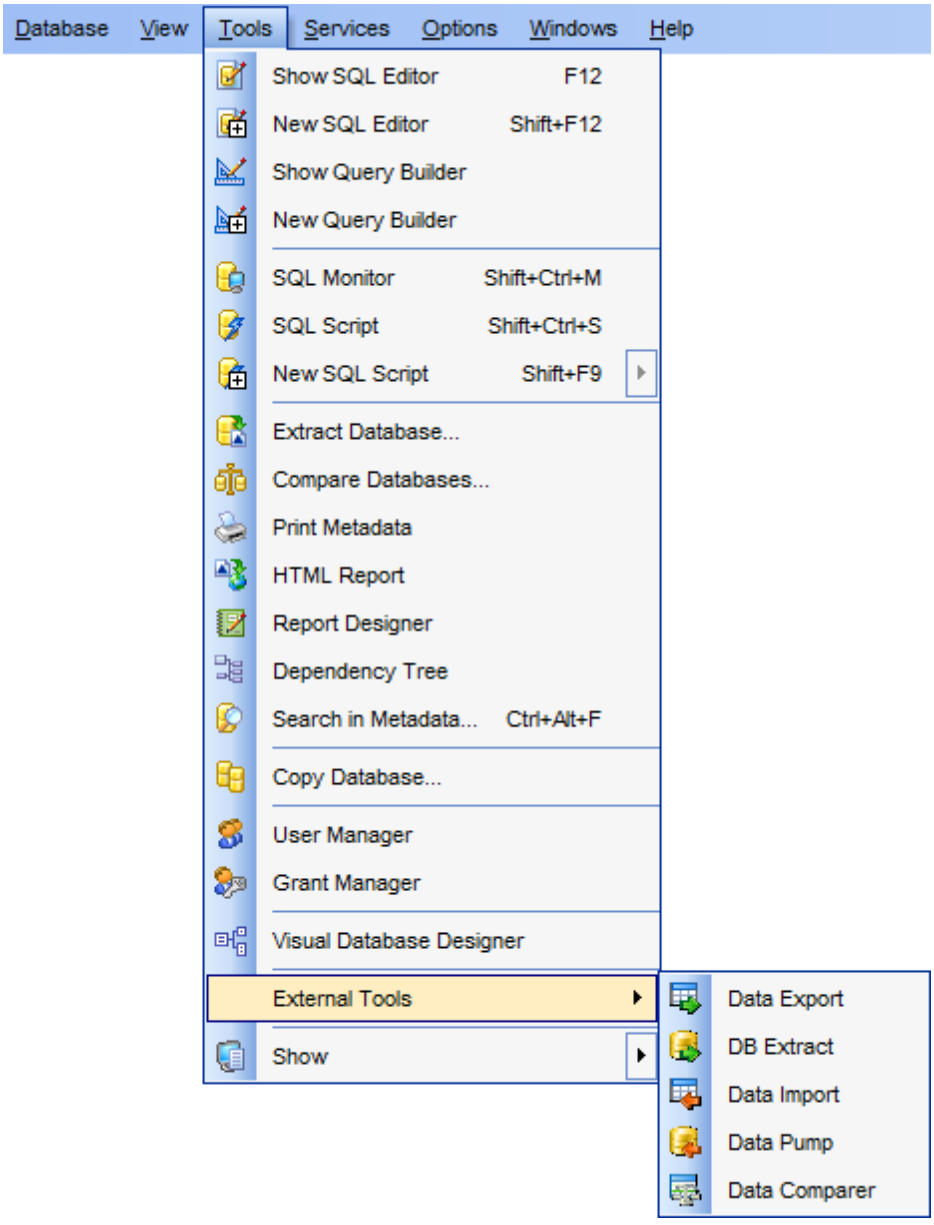


The **Available options** area lists all options by categories according to the specified name. The **Option Kind**, **Category** and **Group** columns specify option type and location. Select the required option in the list and click **Show Option** to open the corresponding dialog where you can view/edit the value of this option. For your convenience the required option is marked with an animated icon.

12.8 External tools

When using **SQL Manager for MySQL**, you can add **external Windows applications** to make your work more efficient.

- External Tools dialog
- External Tool Info editor



Adding External Tools

In order to add an external program:

- select the **Options | External Tools...** main menu item;
- click the **Add...** button in the External Tools dialog;

- specify parameters of the new external tool within the External Tool Info editor;
- confirm adding the new external tool by clicking **OK** in the External Tool Info editor and the External Tools dialog.

This adds the icon and the title of the application you have selected to the **Tools | External Tools** submenu. Now you can run this tool quickly without closing **SQL Manager** .

Removing External Tools

In order to remove an external program:

- select the **Options | External Tools...** main menu item;
- select the tool to be removed in the **Tools** list of the External Tools dialog;
- press the **Del** key or click the **Delete** button within the dialog;
- click **OK** to confirm removing the tool and closing the dialog.

The selected tool has been removed and is no longer accessible from the **Tools | External Tools** submenu.

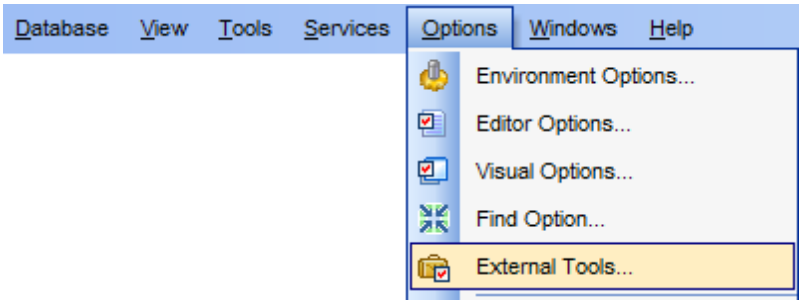
See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
How To...

12.8.1 External Tools dialog

The **External Tools** dialog allows you to manage the list of external applications which can be easily run from within **SQL Manager** environment.

To open this dialog, select the **Options | External Tools...** main menu item.

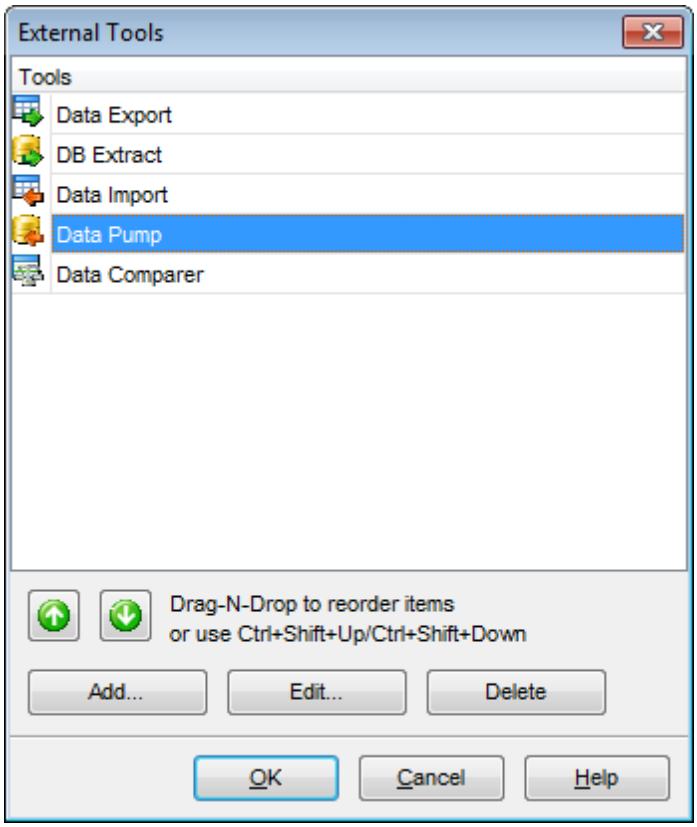


Tools
Lists all added external applications.

Add...
Opens the External Tool Info editor for adding a new tool to the **Tools | External Tools** submenu.

Edit...
Opens the External Tool Info editor for editing the title, the hot key, the path to the executable file, the working directory and execution parameters of the tool currently selected in the **Tools** list.

Delete
Removes the selected tool from the list of **SQL Manager for MySQL** external tools.



To change the order of tools in the list, use the  arrow buttons at the bottom area of the dialog, or use the *Ctrl+Shift+Up / Ctrl+Shift+Down* shortcuts. You can also drag-and-drop items within the list box to change their positions.

See also:

External Tool Info editor

12.8.2 External Tool Info editor

The **External Tool Info** editor allows you to set common parameters of running added external programs from within **SQL Manager** environment. This dialog is used both when adding external tools and editing their parameters (see Add External Tool and External Tools).

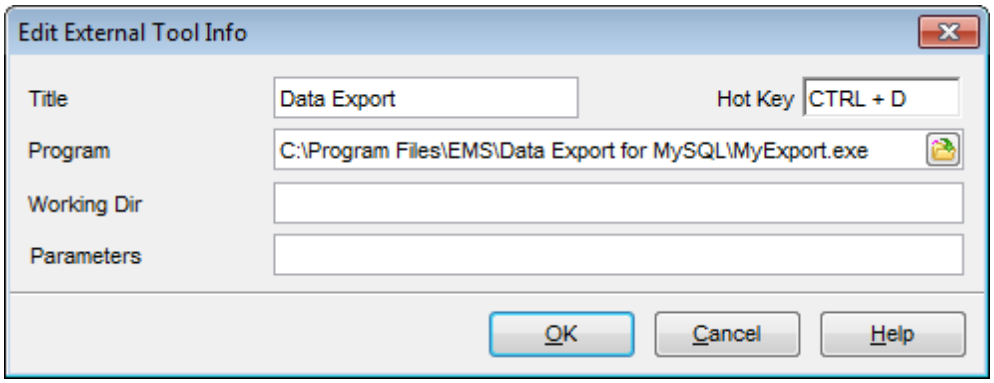
Title
Enter the title to be displayed in the **Tools | External Tools** submenu of **SQL Manager**.

Hot Key
Press a key or a key combination to set it as a hot key for running the tool.

Program
Use the **Explorer** button to specify the path to the **.exe* file of the external program.

Working Dir
Set the default working directory of the program.

Parameters
This box stores parameters for the program execution (if required).



See also:
External Tools dialog

Part XII

13 How To...

The succeeding pages of this chapter are intended to provide you with brief instructions on how to perform this or that operation correctly using **SQL Manager for MySQL**.

Connect to hosting provider's database
Create a simple report in Report Designer
Transfer program settings
Update SQL Manager
Report bugs and suggestions

See also:

Getting Started
Database Explorer
Database Management
Database Objects Management
Query Management Tools
Data Management
Import/Export Tools
Database Tools
Server Tools
Personalization
External Tools

13.1 Work with Databases

13.1.1 Connect to a database

If you want to connect to a database that is not registered yet then perform the following operations:

1. Launch the Register Database wizard by selecting the **Database | Register Database...** main menu item.
2. If a host where the database is located have not been registered yet then type in its name in the **Host name** field on the first step of the wizard. Otherwise, select the necessary host from the drop-down list.

Note: To register several databases at once uncheck the **Register a single database** option. In this case you will proceed to the Selecting databases step of the wizard where you will define databases want to be registered.

3. On the last step of the wizard set database name and specify specific options.
4. The registered database(s) is/are now displayed in the DB Explorer. To connect to the database double-click its alias or select the **Connect to Database** item of the database context menu.

13.1.2 Create a database

To create a database on the registered server perform the following operations:

1. Launch the Create Database wizard by selecting **Database | Create Database** main menu item.
2. On the first step specify a name for a newly created database.
3. On the second step set the necessary **connection parameters** for the database being created. Use the corresponding boxes and options: *Host name*, *User name* and *Password*.
4. Click the **Next** button to view the result SQL statement. If you have checked the **Register After Creating** box on the first step of the wizard then the Database Registration Info dialog will appear after creating a new database.

13.1.3 Edit database connection parameters

If you have made a mistake when creating and registering a database or the information provided is incomplete then it can be edited using the Database Registration Info dialog. You can view this information both for connected or disconnected database.

To open the dialog, select the database or any of its objects in the DB Explorer tree, then select the **Database | Database Registration Info...** main menu item, or right-click the database alias in DB Explorer and use the **Database Registration Info...** context menu item.

The connection parameters can be changed on the **Connections** tab of the dialog. Here you can define or redefine the following properties in the corresponding boxes: *Host name*, *Port*, *User name*, *Password*, *Named pipe*, *Database name*, *Database alias*, *Client charset* and *Font charset*.

13.1.4 Make work with a database faster

If your database contains too many objects or if connection to the database is slow you can increase work speed by uncheking the **Refresh objects on connection** option when registering database or editing the Database Registration Info.
Also you can uncheck the **Restore desktop on connect** option in the Preferences section of the Environment Options.

13.1.5 Design a visual database structure

To design your database visually you may use the Visual Database Designer. It allows you to create, edit and drop tables and table columns, set relations between tables and perform other operations you may need to achieve your purpose.
To create a new object right-click within the diagram area and then choose the **Create** item of the context menu. After that a new object will appear on a diagram.
After you have finished designing your diagram you can click a Compile button to create this structure physically.

13.1.6 View an ER diagram

The relationship diagram is built using the reverse engineering operation.
To view an ER diagram of a scheme you should follow the steps:

1. Run Visual Database Designer;
2. Click the **Reverse Engineer** button on the main toolbar or use the corresponding item of the context menu.
3. Choose schemas to reverse engineer from.

The created diagram can be saved as a **.myd* file (**Save Diagram** button) or as an image (**Save as Picture** button).

13.1.7 Create a database copy

In order to create a copy of the whole database or of separate objects you can:

1. Extract DB objects structure and data into SQL script using the Extract Database Wizard. The result script can be used to copy or restore your database. If the ☑ **Generate CREATE DATABASE statement** option was not checked while customizing script options then you need to create a database before performing the extract script. It is better to execute a script from file using the SQL Script Editor.
2. Create a database copy with the help of the Copy Database Wizard.
3. Create copies of separate database objects by using the Duplicate Object Wizard.

13.1.8 Document a database

There are several ways to document a database:

1. You can generate a detailed HTML report of the selected database objects using HTML Report Wizard.
2. You can generate and print metadata reports of any database object(s). Generated reports can be exported to any of the available formats: *HTML file*, *Excel file*, *Text file*, *RTF file*, *CSV file*, *HTML file*, *BMP image*, *Excel table (OLE)*, *JPEG image*, *TIFF image*.
3. You can save the Visual Database Designer diagram as a **.myd* file for future use. A diagram is saved with the objects XML files. If necessary, you can also save the diagram as an image.

13.1.9 Save metadata reports to file

To save a metadata report in a file of any supported format (**.txt*, **.csv*, **.pdf*, **.html*) you should do the following:

1. Open the Print Metadata window by selecting the **Tools | Print Metadata** item of the main menu.
2. Mark the needed objects and define printing settings and click the **Preview** button on the navigation bar or toolbar.
3. In the opened Preview window click **Export** and select from the drop-down list the needed file format for report saving. When done, specify file name and location.

13.1.10 Log database changes

If you want to perform metadata changes logging and SQL query logging you need to:

1. Check the ☑ **Enable log of metadata changes** and specify the path to the **.sql* file to store the metadata logs.
2. Check the ☑ **Enable log of SQL Editor queries** and specify the path to the **.sql* file to store the logs of SQL queries: date/time of query execution, SQL text, execution result or errors (if any).

This can be done in the Database Registration Info | Logs window.

13.1.11 Get an SQL dump

To get an SQL dump (an **.sql* file) of your database use the Extract Database Wizard that will extract database objects and/or data to an SQL script, e.g. for backup purposes.

13.1.12 Synchronize two databases

The synchronization between two databases can be done with a help of the Compare Databases Wizard. This wizard allows you to compare databases and create a script to deploy changes from one database into another one.

To run the wizard use the **Tools |** **Compare Databases...** item of the main menu.

13.2 Work with Database Objects

13.2.1 Group objects

If you want to group objects you can do it in one of the following ways:

Using favorite objects (situated in the DB Explorer tree)

1. Click create **New Sub Folder** in the **Favorite Objects** folder using the corresponding item of the context menu
2. Define its name and drag-and-drop necessary objects there or use the **Add Object** item of the created folder context menu. Pick the objects to add to folder from the appeared dialog.

Using DB Explorer tabs

1. Right-click the necessary object in the DB Explorer.
2. Choose the  **New Tab from Here** item of the object context menu and define the name of the tab.
3. Now your objects are stored on the separate tab of a DB Explorer.

Note: If object is not a tree node, it cannot be placed on separate tab.

13.2.2 Find objects

In order to search for objects you need you can:

1. Call the **Find Object** dialog by right-clicking the **Database** alias, any database object group nodes or objects in the **DB Explorer** tree and select the **Find Object...** context menu item.
2. Call the **Find Object** dialog by using the *Ctrl+F* shortcut.
3. Type in the first letters in the edit-box of the Search Panel, and the corresponding object will be highlighted in the tree, as displayed in the picture below.

Note: Objects among which the search is performed should be updated and the object node should be expanded.

4. Launch the Search in Metadata tool by selecting the **Tools | Search in Metadata** main menu item, or using the *Ctrl+Alt+F* shortcut. After the search is complete, the **Explorer** group on the Navigation bar displays the tree of database objects in which the search string is found, and allows you to view metadata of the required object or its fragment.

13.2.3 View dependecies

If you want to view all the object dependencies then:

1. Use a dependencies tab in the Table Editor.
2. Use the Dependency Tree tool.

These tools may be useful when you can't find an object that prevents your from dropping a table.

13.2.4 Get an object DDL

In order to get an object DDL you can:

1. Right-click the object in the DB explorer tree and select the **Script to New SQL Editor | Create** context menu item.
2. Right-click the object and select the **Edit <object> <object_name>...** context menu item or double-click the object and then proceed to the DDL tab in the opened object editor window.

13.3 Work with Data

13.3.1 View tables with many records

If your table contains a lot of records you can minimize dataset loading time by:
1. Setting the number of records to be selected;
2. Enabling **Load visible records** in order to load only a fixed number of dataset records into memory

These options can be set only for the selected database on the Data Options page of the Database Registration Info.
Default settings for newly registered databases can be defined on the Grid | Data Options page of the Environment Options dialog.

You can set the maximum number of visible records in the **Record Limit** counter 

located on the Data View toolbar. Press **Enter** or click the data grid to apply changes.

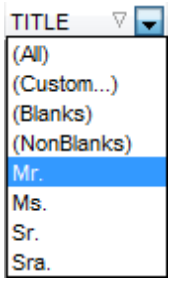
If the number of records exceeds the maximum number, the **Fetch all** button becomes active. It allows viewing all records in a table.
Use the Grid Mode tab of the Data View context menu to set the display mode. You can choose among the *Load All Rows*, *Load Visible Rows* and *Default* modes.

13.3.2 Set data filter

Quick Filtering (by the current value in a cell)

Open the context menu of the needed column and choose the **Quick Filter** item. Then choose a filter condition in the opened submenu.

Filtering by Column

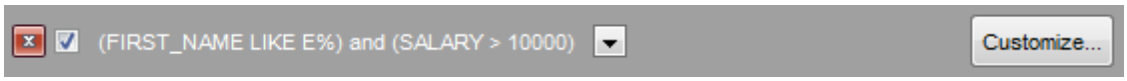


Open the drop-down list on the column title and choose a filter condition from the list.
You can set advanced conditions by using the **Custom...** menu item.
When choosing this item, the special window for setting filter conditions opens.

Advanced Filtering

You can set advanced filter options by pressing the button on the toolbar of the Data View and set filter parameters in the Filter Builder. Apply the set conditions by pressing the **Apply** button.

If a filter is set for a table, the special bar appears in the lower part of the table where you can see filter conditions and the history of filter changes opened by pressing the drop-down list.



Disable Filtering

To cancel filtering, open the context menu of the column and choose the **Disable filter** item.
Or press the button on the filter toolbar.

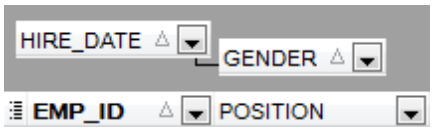
13.3.3 Sort and group data

In order to sort data, do the following:

1. Open data at the **Data** or **Results** tab.
2. Choose the column by which you need to sort data and click the column title.
3. If the column was not sorted, the first click will sort it in the ascending order and the second one - in the descending order.

Note: To cancel the sorting, open the context menu by right-clicking the necessary column and choose the **Clear Sorting** item, or press the *Ctrl* button and click the column title.

To enable grouping, drag the column title to the special grouping bar above the grid.



Note: To disable grouping, drag the column title from the group bar back to the table.

13.3.4 Export/import data

You can *export* data from a database table into an external file of any supported format by means of the Export Data Wizard.

There are several ways to launch Export Data Wizard

1. Open the **Data** or **Results** tab, press **Export Data** on one of the Data View toolbars.
2. Open the **Data** or **Results** tab, choose **Data Manipulation | Export Data** in the Data Grid context menu.
3. Open the table context menu in the DB Explorer, choose the **Data Manipulation | Export Data** item.
4. Open the **Data** or **Results** tab and use the shortcut **Shift+Ctrl+E**.

You can import data from external sources into a table or view using Import Data Wizard

1. Open the **Data** tab, press the **Import Data** button on one of the Data View toolbar .
2. Open the **Data** tab, choose **Data Manipulation | Import Data** in the Data Grid context menu.
3. Open the table context menu in the DB Explorer, choose the **Import Data** item.
4. Open the **Data** tab and use the shortcut **Ctrl+I**.

Note: Export and import data tolls are available in full version of SQL Manager for MySQL only.

13.3.5 Export filtered data

If you have set a filter in a Data View and want to export only this data then you need to uncheck ☑ **Perform data filtration on client in data view** option on the Database Registration Info | Data Options tab. In this case all the changes made by applying filters are performed on the MySQL server with the help of the *WHERE* clause used in SQL query. Otherwise your changes will just be displayed on your client machine but data will be exported into a file without applied filters.

13.3.6 Export data as SQL Script

You can export data from a database table into SQL script with INSERT INTO statements in one of the following ways:

1. Open the **Data** or **Results** tab, press the **Export Data as SQL Script** on one of the **Data View** toolbars and set export parameters in the opened Export as SQL Script Wizard.
2. Open the **Data** or **Results** tab, choose **Data Manipulation | Export Data as SQL Script** in the Data Grid context menu and set export parameters in the opened Export as SQL Script Wizard.
3. Open the table context menu in the DB Explorer, choose the **Data Manipulation | Export Data as SQL Script** item and set export parameters in the opened Export as SQL Script Wizard.

Note: In order to extract table DDL (CREATE TABLE statement), check the **Add CREATE TABLE statement** box at the Step 1.

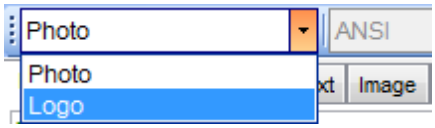
13.3.7 Edit data of master-detail tables

You can work with data in multi-level mode, that is you can view and modify it in several related tables simultaneously.
To manage grid levels, right-click the grid and select the **Grid Levels** context menu group. Click **Add Grid Level** in the menu to run the Create Grid Level wizard. After the level is added you can edit data of the related tables.

13.3.8 Add image to table

If you want to add an image to a table then do the following:

1. Open the table on the Data tab.
2. Go to the BLOB View section (the navigation buttons are located in the bottom part of the window) and then proceed to the Image tab.
3. If there are several BLOB fields, choose the required field from the Select BLOB Column drop-down list on the toolbar of the Blob View tab and press the **Load from File** button on the same toolbar.
4. Choose the needed image file in the appeared dialog.



Note: Adding images to table is possible only if table contains at least one BLOB field.

13.3.9 Set data display format

To set the format for displaying data open the **Options |** **Environment Options** dialog from the main program menu, proceed to the Color & Formats tab and define or choose the display format for some data types in the **Display formats** section.

13.4 Work with Queries and Scripts

13.4.1 Create SQL statements rapidly

There are two options for creating SQL queries rapidly:

In the DB Explorer

1. Right-click a table in the DB Explorer
2. Choose Script to New SQL Editor context menu item.
3. Select the necessary query type.

In the Visual Query Builder

1. Open Visual Query Builder.
2. On the **Builder** tab drag an object from the DB Explorer tree to the diagram area.
3. Choose necessary columns to include in the query by checking the corresponding box located to the left from the column name in the list, or just by double-clicking it. To include all columns of the table/view, check the box located to the left of the table/view caption.
4. Associate two objects by their columns.Drag a column from one object list to another. This will set a link between these objects by the selected columns. It is indicated by a bidirectional arrow between the linked columns.
5. Edit link properties. Double-click the linking arrow or right-click it and select the **Property** popup menu item. The **Link properties** dialog allows you to change the association condition by choosing it from the drop-down list.
6. You can view and edit your SQL statement on the **Edit** tab of the Visual Query Builder.

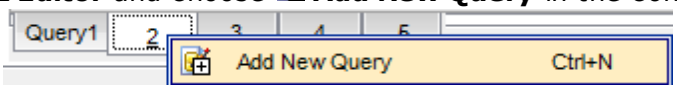
13.4.2 Control a query productivity

You can view a query productivity on the query plan. It allows you to view the sequence of actions performed by the database server in the process of the query execution, and the amount of system resources used for the query execution.
To view the **Plan** of a query, open the query in **SQL Editor** and use the **Show estimated execution plan** item of the Navigation bar or toolbar.
If necessary, you can specify that the **Plan** tab appears automatically upon query execution in SQL Editor: select the **Show actual execution plan on query execution** option available within the Tools | SQL Editor section of the Environment Options dialog.

13.4.3 Work with several queries at once

SQL Editor provides a possibility to open and edit several queries. You can create tabs in the lower part of the **SQL Editor**, each tab may contain a separate query. There are several ways for creating tabs:

1. Open **SQL Editor** and choose **Add New Query** on one of the toolbars.
2. Open **SQL Editor** and choose **Add New Query** in the context menu of the existing tab.



3. Use the shortcut **Ctrl + N**.

Note: Each tab can be renamed and any query can be added to Favorite Queries.

13.4.4 Save most frequently used queries

Use the Favorite Queries feature to store your most frequently used SQL queries. To access the list of your favorite queries you can use the **Favorite Queries** node of DB Explorer or create a separate tab for your Favorite queries.

Using the context menu you can create a new Favorite query or edit an existing one using Favorites editor, open any of the existing queries in SQL Editor or remove a query if you don't need it any longer.

13.4.5 Execute queries with parameters

If you want to use queries with parameters then you should check ☑ **Allow using parameters in query text** option in the Environment Options | Tools.
This feature allows you to specify different values within a query in a popup dialog just before the query execution. Use the colon (':') character before an identifier (e.g. :P1) to specify a parameter within the query.

13.4.6 Export query results into file

When executing queries, their results can be displayed on the **Edit** or **Results** tab in the Data View.
You can copy data from database tables into an external file of any supported format in one of the following ways:

1. Open the **Data** or **Results** tab, press **Export Data** on one of the Data View toolbars and define export parameters in the opened Data Export Wizard.
2. Open the **Data** or **Results** tab, choose **Data Manipulation | Export Data** in the Data Grid context menu and define export parameters in the opened Data Export Wizard.
3. Open the table context menu in the DB Explorer, choose the **Export Data** item and define export parameters in the opened Data Export Wizard.
4. Open the **Data** or **Results** tab and use the shortcut Ctrl+E.

13.4.7 Execute scripts

SQL Script allows you to create, view, edit and execute SQL scripts. To open SQL Script Editor select the **Tools | SQL Script...** main menu item. This tool is intended for work with a great number of SQL statements and with scripts that are stored in files. For instance, you can execute a script directly from a file without loading it to the Editor window. This reduces memory usage. However SQL Script allows just to estimate whether the execution of script statements will be successful, but it does not return query result.

Note: To execute SQL scripts you should use SQL Script, not SQL Editor. The latter is intended for creating, editing and executing SQL statements. It also provides a possibility to view query result, perform various operations with it (data import, data export, etc.) and manage transactions.

13.4.8 Execute a large SQL script

If you need to execute a large SQL script it's not necessary to load it from file to the SQL Script Editor window as it can take a lot of time. Instead you can execute script directly from **.sql*, **.zsql* or **.txt* file. In order to do this click the **Execute script from file** button of the Navigation bar and Toolbar in SQL Script editor.

13.4.9 Make SQL script work faster

In order to make the SQL script work faster, you can disable some functions.

Parsing

Choose and disable the **Disable Parsing** item on one of SQL Script Editor toolbars.

Automatic Creation of Hierarchical Text Structure

Uncheck the **Use code folding** box in the Display section of the **Editor options**.

Syntax Highlight and Quick Code for Aliases

Choose **Options** | **Editor options** in the main program menu, proceed to the General tab and uncheck the **Resolve aliases** box - the syntax highlight and quick code for aliases will be disabled.

13.4.10 Customize work with Query/Script text

To customize work with a query/script text you may:

Use Internal Link
This means that the name of the object existing on a database is highlighted in a query/script text. Such an object can be opened by holding the *Ctrl* key and clicking the object with a mouse.

Add Text Template
Keyboard templates allow you to type regularly used expressions and edit the existing ones quicker. Once you have defined the templates, you can use them in SQL Editor. When editing SQL text in SQL Editor, type a template name and use the *Ctrl+J* shortcut: the text associated with the template will be inserted automatically.

Use Automatic Completion (Object List)
You can call the autocompletion list by starting entering the first characters of the text and using the shortcut *Ctrl + Space*.

Customize Autocompletion List
Choose **Options** | **Editor options** in the main program menu, proceed to the Code Completion tab and define the list and quick code parameters.

Apply Automatic Formatting of Query/Script
Choose **Quick Code** | **Format** in the SQL Editor/SQL Script context menu or the *Shift+Ctrl+F* shortcut to apply automatic formatting.

Set Font and Query/Script Format at the Display tab
Choose **Options** | **Editor options** in the main program menu, proceed to the Display tab and define common font and format parameters for SQL Editor/SQL Script.

Set Font and Query/Script Format at the Highlight tab
Choose **Options** | **Editor options** in the main program menu, proceed to the Color Scheme tab and define font options for each element.
Note: If some font parameters are defined on the **Highlight** tab, they will be applied to the query/script text and not the ones defined on the **Display** tab.

13.4.11 View executed queries and scripts

To view all queries and scripts sent to the server you need to launch SQL Monitor. It will show you the log of database operations and SQL queries as items, each consisting of 3 parts: *Executed* (the date and time of the operation), *Operation* (SQL statement sent to the server), *Result* (the result of the operation).

Note: SQL Monitor only displays scripts and queries executed in SQL Manager for MySQL during current session.

13.5 Manage privileges

To define grants on database objects:

- select the **Tools | Grant Manager** main menu item, or use the corresponding  toolbar button to open Grant Manager;
- select the object type using the drop-down list on the toolbar;
- select a user from the **Privileges for** pane of the Navigation bar;
- edit user privileges using Grant Manager.

To define grants on tables, you can also:

- right-click a table in DB Explorer and select the **Grants for Table <table_name>** item from the context menu;
- edit user privileges using Grant Manager.

13.6 Prevent connection timeout

To prevent connection timeout as well as to speed up table data viewing and prevent hanging you should choose 'Select only' mode when configuring the Grid | Data Options section of the Environment Options dialog.

13.7 Connect to hosting provider's database

If MySQL host is located on the web hosting provider's remote server and direct TCP/IP connection to this host is denied on the security grounds, but there is a "local" MySQL account that can be used in scripts (PHP, ASP etc.) or in PHPMyAdmin then HTTP tunneling can be used to connect to the hosting provider's database. HTTP tunneling is a connection type, when connection and data transmit between program and MySQL server is implemented by HTTP/HTTPS protocols. HTTP server (eg. Apache) and PHP with MySQL extension must be installed on the remote host. As a rule this software is offered by all hosting providers that allot hosting on Linux-based servers.

To create HTTP-tunnel you need to upload emsproxy.php script (included to program pack) to your webserver. Our program uses this script for transferring data through HTTP. The uploaded script file must be accessible on a URL address (for example in the directory with other scripts). If your webserver meets all the requirements listed above and the script was copied correctly then on opening the 'http://<your_webserver_name>/emsproxy.php' page you will see: 'EmsProxy v1.31' (version can be different). To register a database with HTTP connection you need to configure the following settings in the Register Database Wizard:

1. Select ☑ **Use tunneling** and ◉ **HTTP tunneling**;

2. Define **URL** (*emsproxy.php* script file is located)

Script implements connection to MySQL server using authorization information defined in SQL Manager. Script also gets all further queries from SQL Manager to perform and to send results back to SQL Manager. Script itself doesn't require authorization. Thereby, to create an HTTP-tunnel you need only MySQL account. Host from which the connection to my sql is performed is a host, where HTTP-server is running.

13.8 Create a simple report in Report Designer

To create a report using Report Designer:

1. Select the **Tools |** **Report Designer** main menu item.
2. In the opened **Report Designer** select the **File |** **New Report** main menu item, or click the **New Report** item of the navigation bar. The following objects will be added to the newly created report: **ReportTitle**, **MasterData** and **PageFooter**.
3. Connect to data source.
4. Add ADOTable or ADOQuery object.
5. Link ADOTable or ADOQuery with ADODatabase.
6. Place database columns on the Page1. Move the required columns from Data Tree to **Band MasterData**.

13.9 Transfer program settings

If you want to apply current program settings (wholly or partially) to SQL Manager for MySQL installed on another machine you can save them into a single **.reg* file. This can be done by means of the Save Settings Wizard.

Note: Favorite Queries are not saved in this case. To get access to your queries from another machine please store them in the database. To save a favorite query in a database select the *Database* from the drop-down list in the **Storage** field when creating or editing a favorite query.

13.10 Update SQL Manager

SQL Manager for MySQL can be updated in the following ways:

1. Download the SQL Manager for MySQL distribution package from the download page, then extract archive to the preferable directory (e.g. c:\unzipped). Close SQL Manager for MySQL if it's opened and run *MsManagerFullSetup.exe* or *MsManagerLiteSetup.exe*.
2. Select the **Help |** SQL Manager Direct, then press the **Update** button. If new SQL Manager for MySQL version is released it will be offered for downloading. Click Yes in the dialog window to update SQL Manager for MySQL automatically.

13.11 Report bugs and suggestions

1. Before reporting bugs and suggestions make sure you are using the latest version of the SQL Manager for MySQL.
2. If so then you may contact us via Members Area on http://www.sqlmanager.net/, via **Help** main menu or by sending an email to support@sqlmanager.net.
3. Please, don't forget to mention your OS version, MySQL version and program version.
4. Describe the steps to reproduce the bug in detail and illustrate them with screenshots.

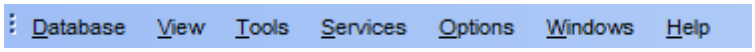
Part

14 Appendix

14.1 Program interface

Main menu

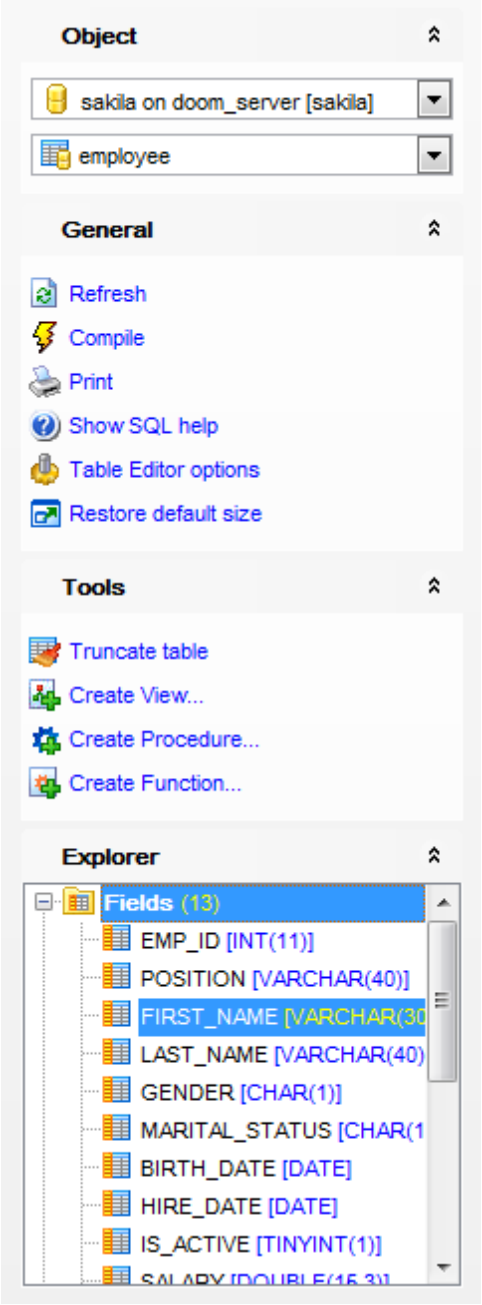
The main menu allows you to perform various **Database** operations, open To-Do List and activate/deactivate Database Explorer, SQL Assistant and various toolbars within the **View** menu, manage your databases using items of the **Tools** and **Services** menus, customize the application using the **Options** menu, manage SQL Manager **Windows** using Window List and other tools, and access Registration information and product documentation, update the product to the latest version using the corresponding items available within the **Help** menu.



Note: To learn how to configure **SQL Manager** menus, refer to the Customize toolbars and menus page.

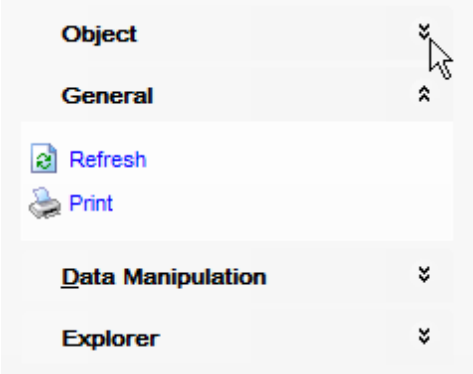
Navigation bars in object editors and program tools

Navigation bars are interface elements that enable users to quickly locate tools they need. Navigation bar items are displayed within a group with the help of links. A typical Navigation bar of **SQL Manager** contains links to commonly accessed tools (*refresh*, *print*, *restore default size* of the window), *options* pertaining to the editor or tool, and specific tools.



Navigation bar panes (groups) can be **expanded**/**collapsed**. When expanded, a pane provides access to its links; when collapsed, panes are displayed as headers only.

To expand/collapse a pane, click the pane header. The icons indicate the current pane state (collapsed/expanded respectively).



Note: Depending on the current tab selection, Navigation bars in most of the program tools expand to one or more additional panes with tab-specific actions that can be useful for working with the object or service.

Hint: Most items of the Navigation bars are also available on the Toolbars.

Toolbars in the main program window, object editors and program tools

A **toolbar** is a horizontal row or vertical column of selectable image buttons that give the user a constantly visible reminder of and an easy way to select certain application functions. Most **SQL Manager** editors and tools are supplemented with toolbars.

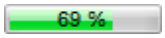
To enable the **toolbars** in **SQL Manager for MySQL**, open the Environment Options dialog, proceed to the Windows section there and select *Toolbar* (if you need the toolbar only) or *Both* (if you need both the toolbar and the Navigation bar) in the **Bar style for child forms** group.

Hint: Most **SQL Manager** toolbars are dockable, i.e. you can place a toolbar to any available location within the parent window.

To learn how to configure toolbar items, refer to the Customize toolbars and menus page.

Progress bars

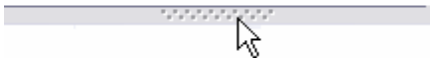
A **progress bar** is an interface element that conveys the progress of a task or service. Several **SQL Manager** editors (e.g. SQL Script),tools (e.g. Dependency Tree) and wizards (e.g. Import Data Wizard) are supplemented with progress bars indicating the progress of lengthy operations.



The graphic of **SQL Manager** progress bars is accompanied by a textual representation of the progress in the percent format.

Splitters

Splitter controls are used to resize docked controls at run time. In **SQL Manager for MySQL** the splitter controls are used on the main form, DB Explorer, and in program tools and editors as a separator between the working area and Navigation bars, status bars, etc.

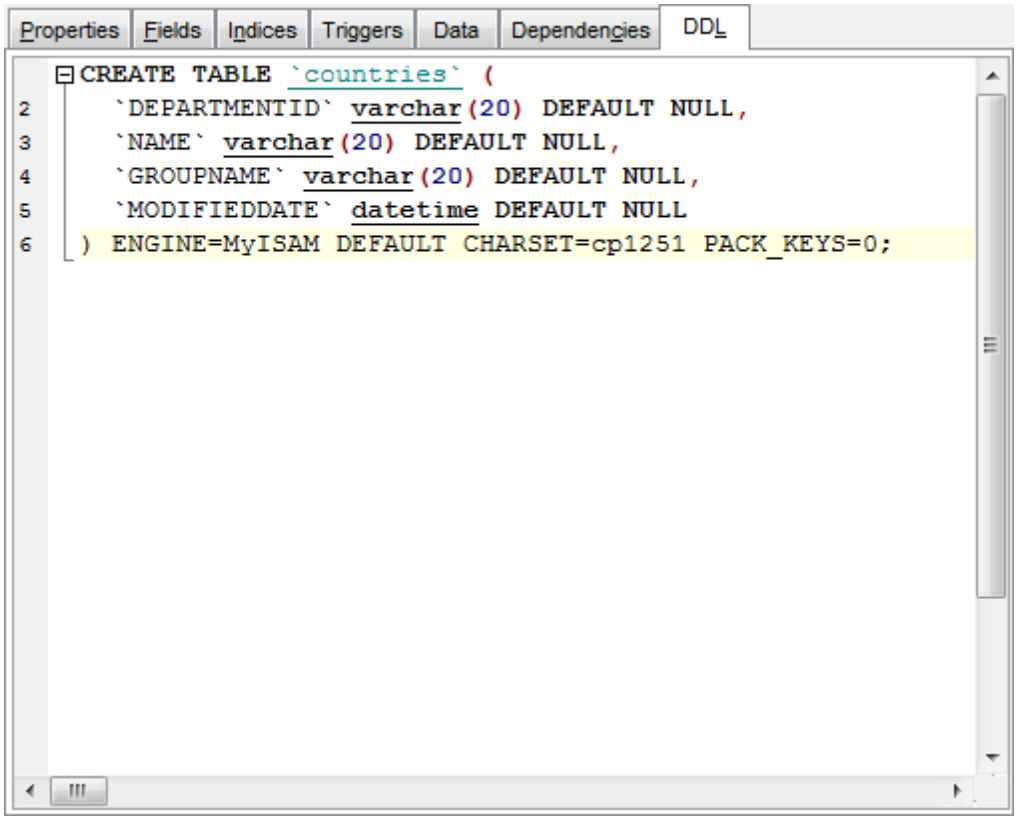


Incremental Search bar

Incremental search bar is the tool which is available in the status bar area of some **SQL Manager** tools. The bar is normally called through the *Ctrl+I* shortcut. Type in the first letters of the search string, and the corresponding string will be highlighted in the search scope.

14.2 Viewing object DDL structure

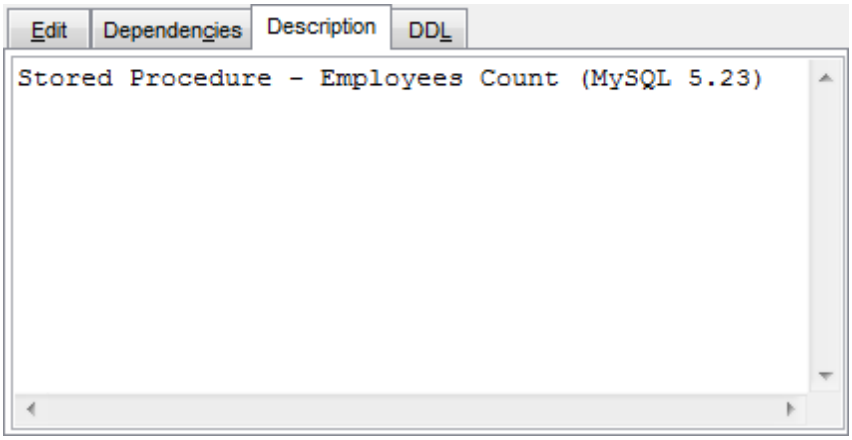
The **DDL** (Data Definition Language) tab displays the SQL statement for creating the object with all its subobjects, if any. This text is read-only. If you want to change the object definition, use the appropriate editor tabs instead, or copy the text to the Windows Clipboard to paste it in the SQL Editor or SQL Script Editor.



Hint: If more convenient, you can use the **Save DDL to file** and **Open DDL in SQL Editor** items available on the DDL pane within the Navigation bar of object editors.

14.3 Editing object description

The **Description** tab allows you to view and edit the comment for the object (optional).

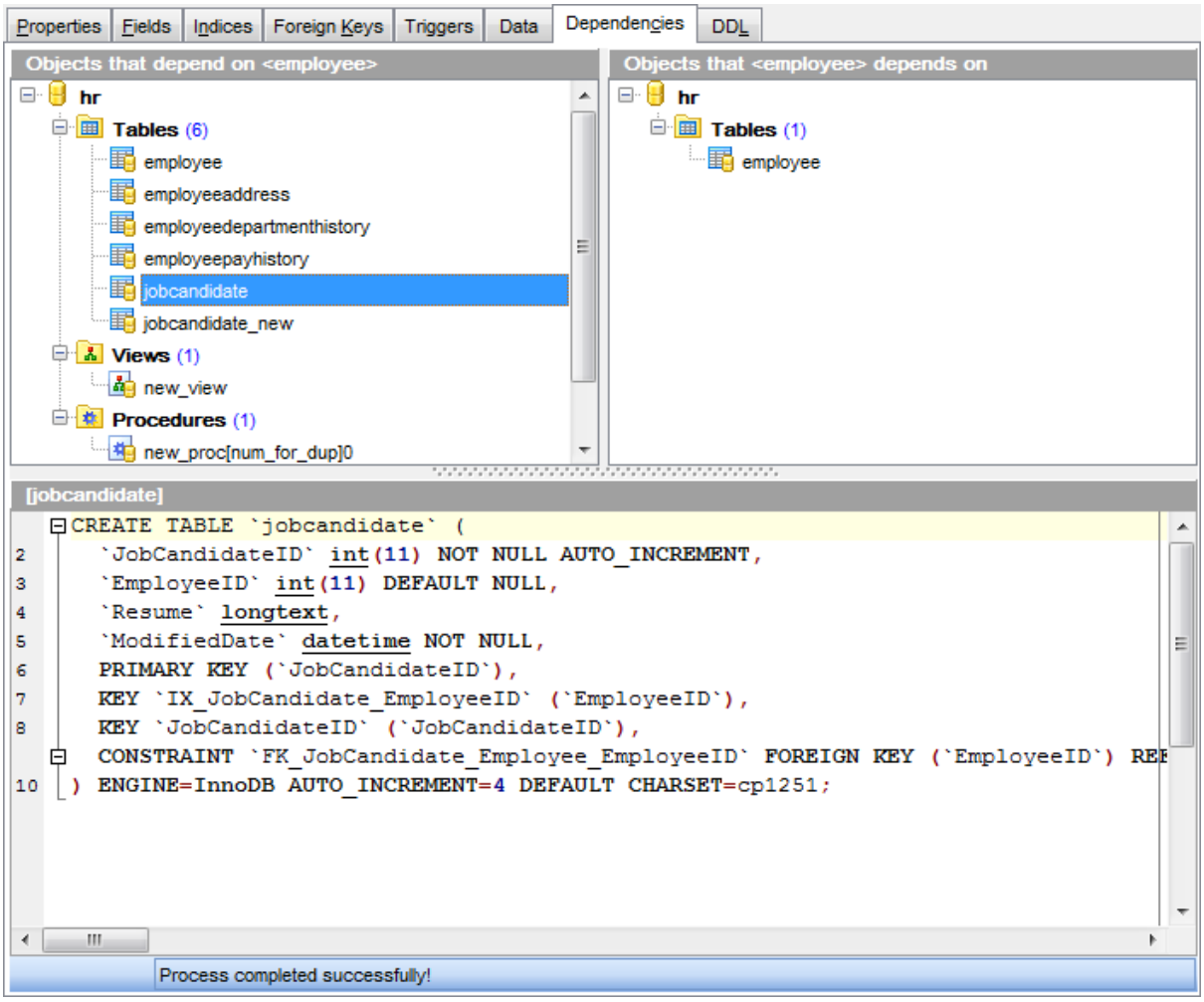


You can save changes made in this area by clicking the **Compile** item on the Navigation bar.

14.4 Browsing object dependencies

The **Dependencies** tab allows you to view objects that depend on the object being edited, and the objects that the edited object depends on.

While the tree of dependencies is built, the progress bar is displayed in the status area of the editor window.



Hint: To open a dependent object or a depending object in its editor, you can simply double-click the object alias in the **Objects that <object_name> depends on** and **Objects that depend on <object_name>** lists.

See also:

Dependency Tree

14.5 Changing Metadata window

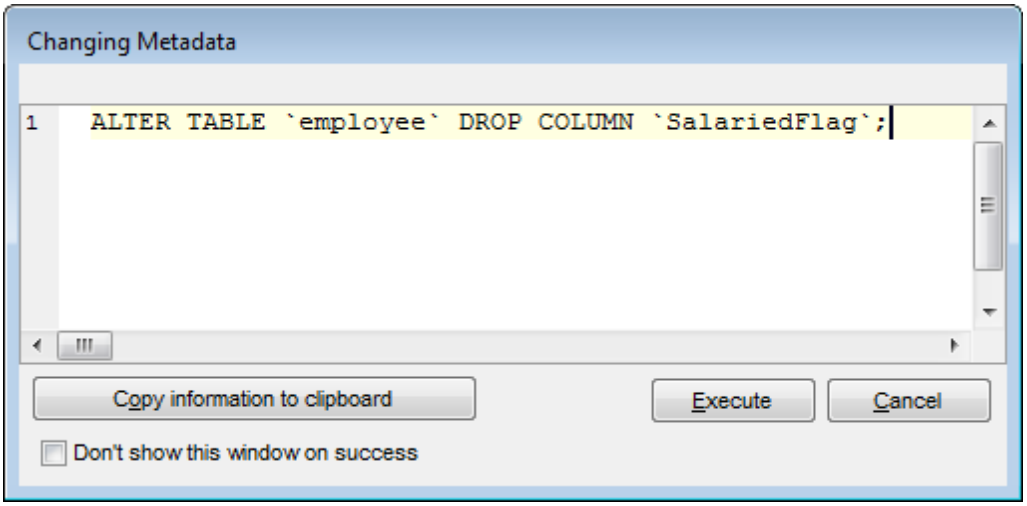
The **Changing Metadata** window is used to trace the errors and edit SQL statements during their compilation. The compilation window appears each time metadata is changed, both when the compilation is successful and when there are compilation errors. To hide this window for successful metadata changes, select the ☑ **Don't show this window on success** option.

Compile SQL
This area displays the SQL statement pending to be executed to perform metadata changing. In this area you can view and edit the SQL statement.
In case of a compilation error the **Error** tab also becomes visible - here you can view the error description returned by the server.

Commit
This button starts execution of the statement(s). Click it to commit the current transaction. This button is available only if there were no errors in compilation.

Rollback
This button cancels the script execution and allows you to return to the previous stage (editor window or DB Explorer).

Rollback and Recompile
This button calls for recompilation with the changes you made in the **Compile SQL** area. Use this button after correcting the SQL statement.



If necessary, you can **copy information to clipboard** and save it in a text editor afterwards (the button is only enabled when a compilation error occurs).

If you want this window to appear only in case of an error, uncheck the ☑ **Confirm metadata changing (Changing Metadata Window)** option (checked by default) available within the **Confirmations** section of the Environment Options dialog.

14.6 Find Text dialog

The **Find Text** dialog is provided for quick and flexible searching for specified text within the working area of **SQL Manager** editors.

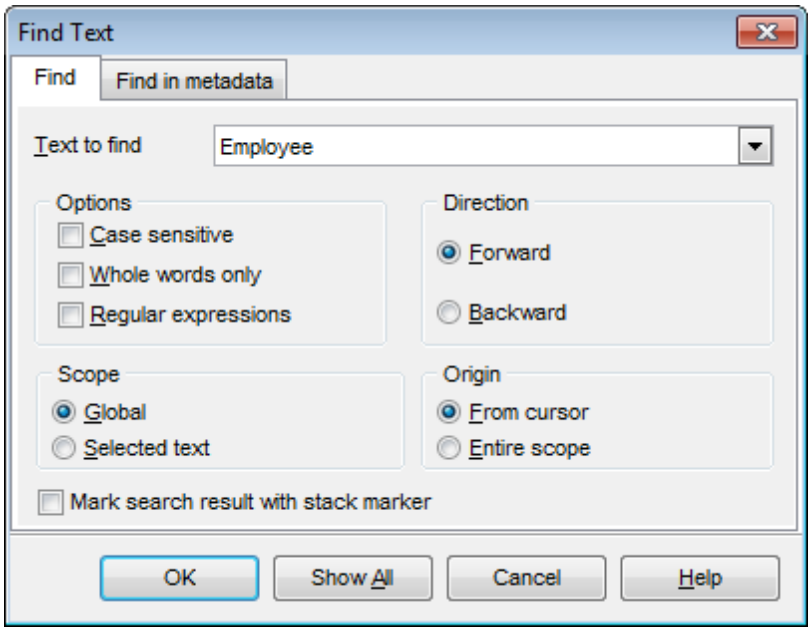
Text to find
Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

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 **Text to find** field.
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 working area.

Backward
Searches from the current position to the beginning of the working area.

Scope

Global
Searches within the entire 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

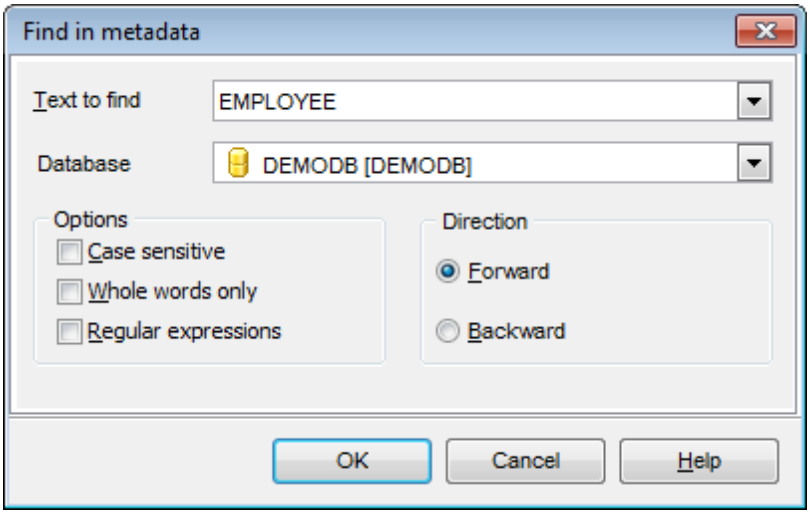
From cursor
The search starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

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.

Click the **Show All** button to highlight every occurrence of the search string.

Find in metadata



This tab allows you to define options for search in metadata.

Use the **Database** drop-down list to select database to search in.

14.7 Replace Text dialog

The **Replace Text** dialog is provided for searching and replacing text within the working area of **SQL Manager** editors.

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.

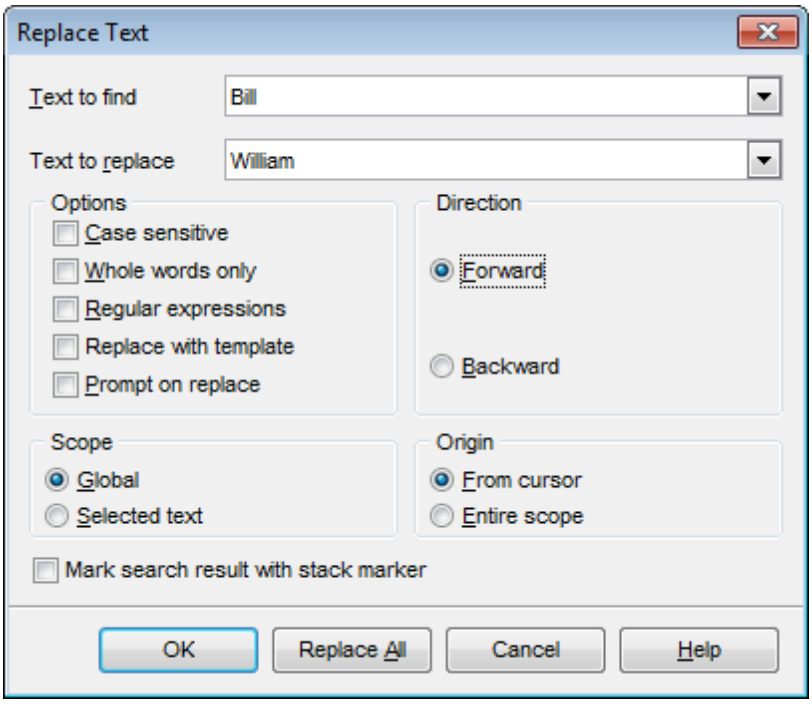
☑ **Whole words only**
Use this option to search for words only (with this option off, the search string might be found within longer words.)

☑ **Regular expressions**
Recognizes regular expressions in the **Text to find** field.

☑ **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#Regular-Expressions.

☑ **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 working area.

Backward
Searches and replaces from the current position to the beginning of the working area.

Scope

Global
Searches and replaces within the entire 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.

14.8 Format specifiers

The following format specifiers are supported in the format string:

Float/Integer format

0
Digit place holder. If the value being formatted has a digit in the position where the '0' appears in the format string, then that digit is copied to the output string. Otherwise, a '0' is stored in that position in the output string.

#
Digit placeholder. If the value being formatted has a digit in the position where the '#' appears in the format string, then that digit is copied to the output string. Otherwise, nothing is stored in that position in the output string.

.
Decimal point. The first '.' character in the format string determines the location of the decimal separator in the formatted value; any additional '.' characters are ignored.

,
Thousand separator. If the format string contains one or more ',' characters, the output will have thousand separators inserted between each group of three digits to the left of the decimal point. The placement and number of ',' characters in the format string does not affect the output, except to indicate that thousand separators are wanted.

E+
Scientific notation. If any of the strings 'E+', 'E-', 'e+', or 'e-' are contained in the format string, the number is formatted using scientific notation. A group of up to four '0' characters can immediately follow the 'E+', 'E-', 'e+', or 'e-' to determine the minimum number of digits in the exponent. The 'E+' and 'e+' formats cause a plus sign to be output for positive exponents and a minus sign to be output for negative exponents. The 'E-' and 'e-' formats output a sign character only for negative exponents.

Date/Time format

c
Displays the date using the format using the Short Date Format, followed by the time using the Long Time Format. The time is not displayed if the date-time value indicates midnight precisely.

d
Displays the day as a number without a leading zero (1-31).

dd
Displays the day as a number with a leading zero (01-31).

ddd
Displays the day as an abbreviation (Sun-Sat) using the strings of the Short Day Names.

dddd

Displays the day as a full name (Sunday-Saturday) using the strings of the Long Day Names.

ddddd
Displays the date using the Short Date Format.

dddddd
Displays the date using the Long Date Format.

e
Displays the year in the current period/era as a number without a leading zero (Japanese, Korean and Taiwanese locales only).

ee
Displays the year in the current period/era as a number with a leading zero (Japanese, Korean and Taiwanese locales only).

g
Displays the period/era as an abbreviation (Japanese and Taiwanese locales only).

gg
Displays the period/era as a full name. (Japanese and Taiwanese locales only).

m
Displays the month as a number without a leading zero (1-12). If the m specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.

mm
Displays the month as a number with a leading zero (01-12). If the mm specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.

mmm
Displays the month as an abbreviation (Jan-Dec) using the strings given of the Short Month Names.

mmmm
Displays the month as a full name (January-December) using the strings of the Long Month Names.

yy
Displays the year as a two-digit number (00-99).

yyyy
Displays the year as a four-digit number (0000-9999).

h
Displays the hour without a leading zero (0-23).

hh
Displays the hour with a leading zero (00-23).

n
Displays the minute without a leading zero (0-59).

nn
Displays the minute with a leading zero (00-59).

s
Displays the second without a leading zero (0-59).

ss
Displays the second with a leading zero (00-59).

z
Displays the millisecond without a leading zero (0-999).

zzz
Displays the millisecond with a leading zero (000-999).

t
Displays the time using the Short Time Format.

tt
Displays the time using the Long Time Format.

am/pm
Uses the 12-hour clock for the preceding h or hh specifier, and displays 'am' for any hour before noon, and 'pm' for any hour after noon. The am/pm specifier can use lower, upper, or mixed case, and the result is displayed accordingly.

a/p
Uses the 12-hour clock for the preceding h or hh specifier, and displays 'a' for any hour before noon, and 'p' for any hour after noon. The a/p specifier can use lower, upper, or mixed case, and the result is displayed accordingly.

ampm
Uses the 12-hour clock for the preceding h or hh specifier, and displays the contents of the TimeAMString global variable for any hour before noon, and the contents of the TimePMString global variable for any hour after noon.

/
Displays the date separator character using the Date Separator.

:
Displays the time separator character using the Time Separator.

'xx'/"xx"
Characters enclosed in single or double quotes are displayed as-is, and do not affect formatting.

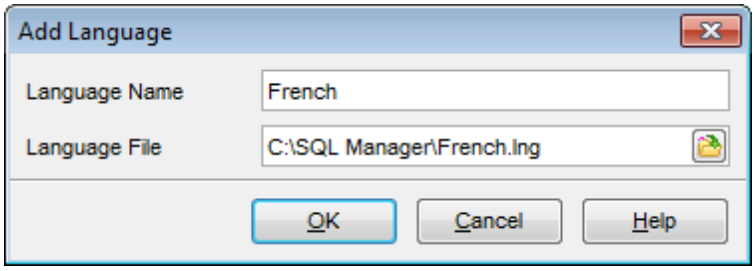
14.9 Language Info Editor

The **Language Info Editor** dialog allows you to set the language name and specify the corresponding **.lng* localization file. This dialog is opened when you add or edit a language (see Environment Options | Localization).

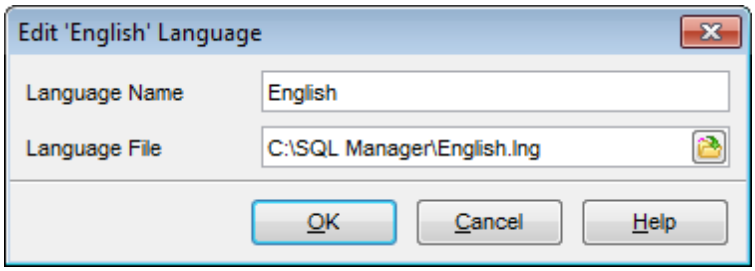
Language Name
The name of the language that is displayed in the Select Program Language dialog and within the **Available Languages** list of the Environment Options | Localization section.

Language File
The **.lng* file containing the translated string resources. See the *%program_directory%\Languages* folder to find already existing localization files.

Adding a language
The *Add language* dialog allows you to specify your own localization file and set the language name.



Editing a language
The *Edit language* dialog allows you to change the language name or select another localization file for the specified language.



14.10 Using templates

For your convenience the ability to use templates is provided by **SQL Manager for MySQL**. A template is a named collection of wizard options stored in a file.

Instead of performing a long chain of routine steps all the time you can save all the options of the wizard for future use as a template file. Select the **Templates | Save Template** drop-down menu item, specify the template file name and set an optional comment for the template file.
When starting the wizard next time, you can load the template by selecting the **Templates | Load Template** drop-down menu item.

14.11 Supported file formats

MS Excel 97-2003
The most popular e-table format used by Microsoft® Excel (*.xls). The result files are fully compatible with Microsoft® Excel versions 97-2003 and XP.

MS Access 97-2003
File of Microsoft® Access format (*.mdb) with an ADO connection used.

MS Access
File of Microsoft® Access format (*.accdb).

MS Word 97-2003
One of the most popular text processing formats used by Microsoft® Word (*.doc). The result files are fully compatible with Microsoft® Word versions 97-2003 and XP.

RTF
Rich Text Format (*.rtf) supported by many text processing programs (e.g. WordPad).

HTML
Hyper Text Markup Language file format (*.html, *.htm), complete compatibility with HTML 4.0 specification.

PDF
A standard format in electronic publishing (*.pdf).

Text file
Plain text file format (*.txt).

CSV file
Comma-Separated Value file format (*.csv).

DIF file
Data Interchange File (*.dif) format.

SYLK
Symbolic Links (*.slk) file format.

Note: all the text formats including *Text file*, *CSV*, *DIF*, *SYLK* are usually used as working or interchange formats.

LaTeX
A specific file format (*.tex) which is a popular (especially among mathematicians and physicists) macroextension of *TeX* pack developed by D.Knut.

XML
A markup language for documents containing structured information (*.xml).

DBF
Database file format (*.dbf) used by dBASE and a number of xBASE applications.

MS Excel
The contemporary e-table format used by Microsoft® Excel 2007 (*.xlsx). The result files

are fully compatible with Microsoft® Excel.

MS Word
The contemporary text processing format used by Microsoft® Word 2007 (*.docx*). The result files are fully compatible with Microsoft® Word.

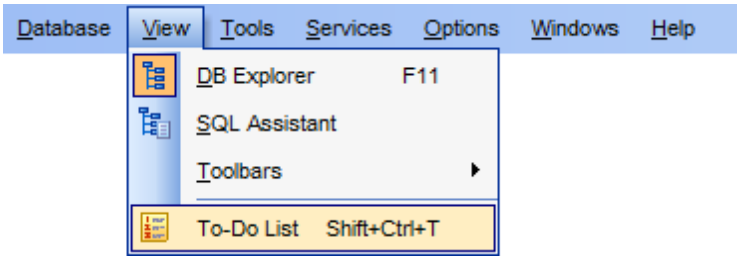
ODF Spreadsheets
OASIS Open Document Format for Office Applications - open document file format for spreadsheets (*.ods*) used by a number of applications including OpenOffice.org and KOffice.

ODF text
OASIS Open Document Format for Office Applications - open document file format for word processing (*.odt*) documents used by a number of applications including OpenOffice.org and KOffice.

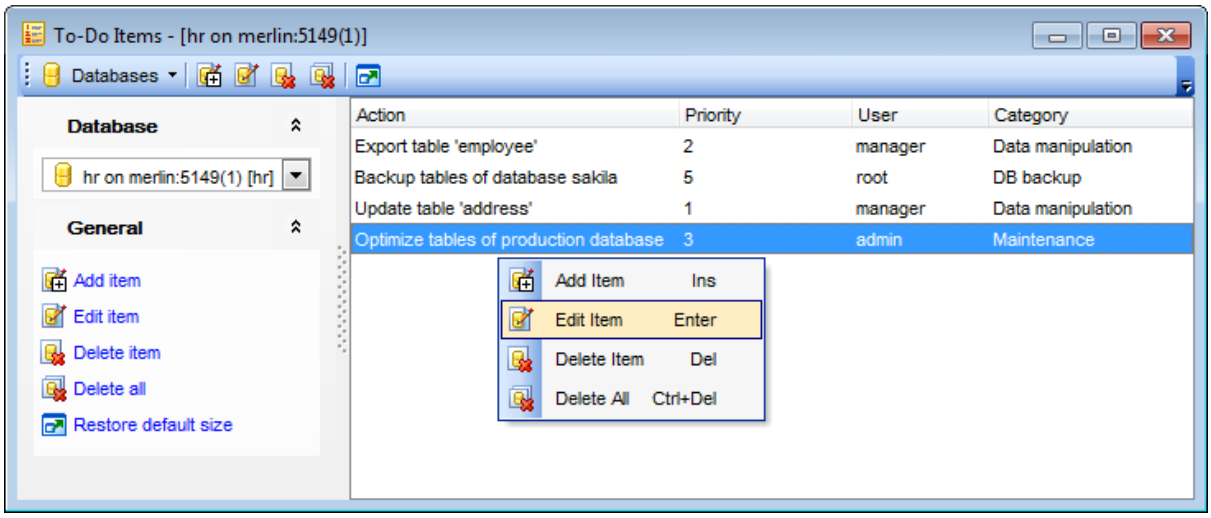
14.12 To-Do List

The **To-Do List** window allows you to make up a list of tasks for the database.

To call this window, select the **View | To-Do List** main menu item, or use the *Shift+Ctrl+T* shortcut.

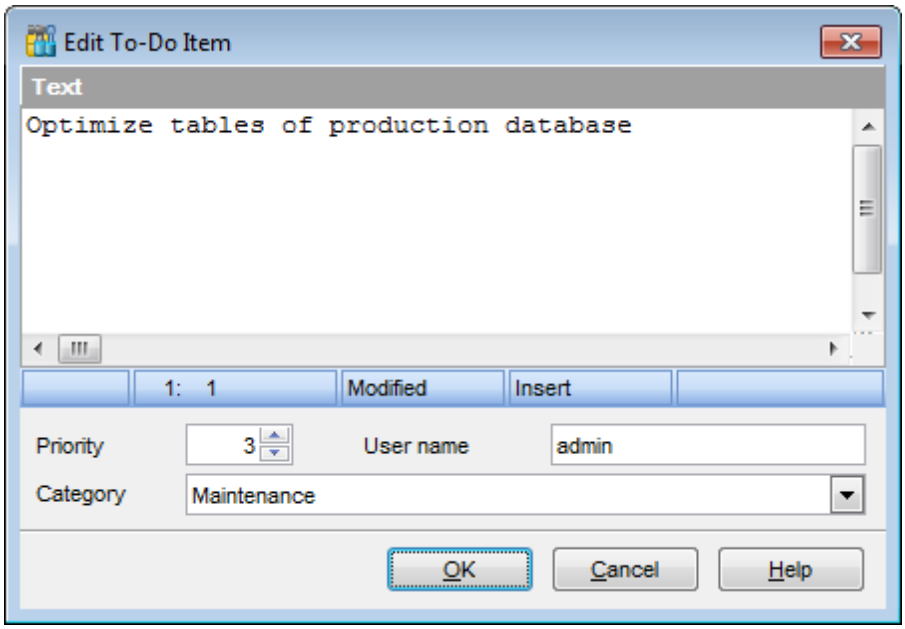


The task list is displayed in a form of a grid. Its columns (*Action*, *Priority*, *User*, *Category*) correspond to the task parameters. Click the column caption to sort the task list by the current parameter or change the sorting direction. Use the Navigation bar and context menu to *add*, *edit*, and *delete* to-do items.



Database
Select the database to apply the task list to. When switching between the databases you can view different task lists.

To add a task to this list, click the **Add Item** link on the Navigation bar, or select **Add Item** from the context menu. You can also use the *Ins* key for the same purpose. Define the task parameters and click **OK** to add the new task to the list.



Text
Optional text to describe the task.

Priority
Set a numeric value to indicate the priority of the task.

User Name
The database User name this task is applied to.

Category
Set a category for the task. Using categories may be useful for grouping tasks.

To modify a task, select the task in the list and click the **Edit Item** link of the Navigation bar, or select **Edit Item** in the context menu. You can also use the *Enter* key for the same purpose.

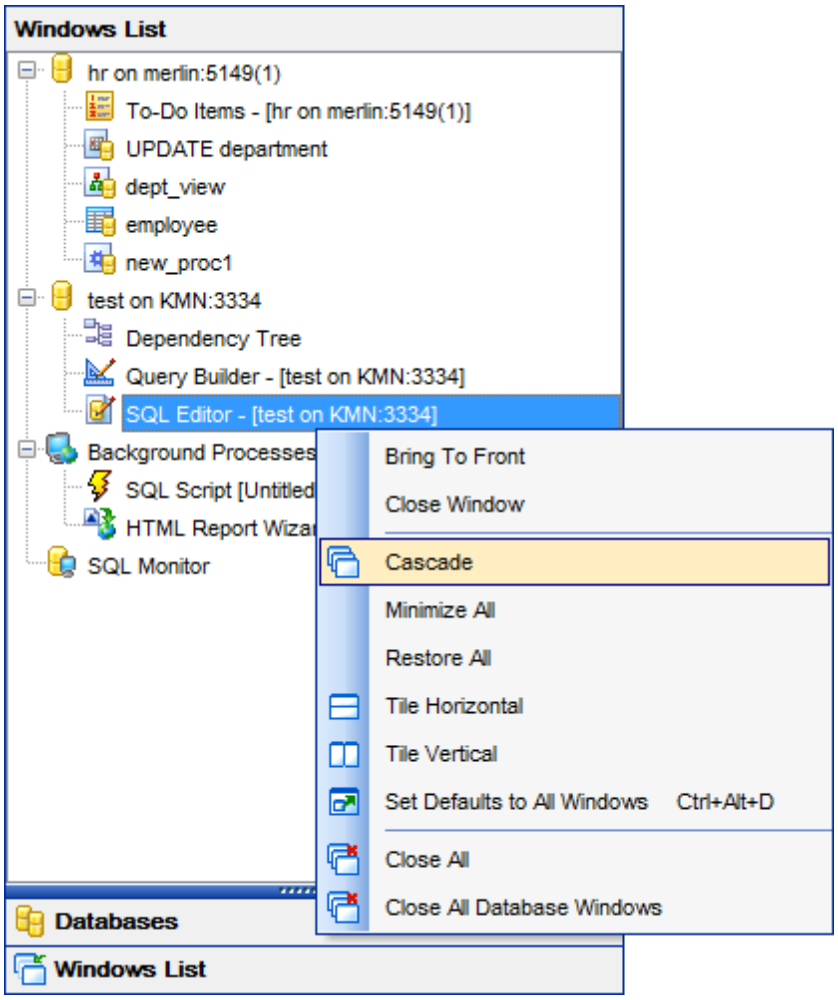
To remove a task, select the task in the list and click the **Delete Item** link of the Navigation bar, or select **Delete Item** in the context menu. You can also use the *Del* key for the same purpose.

To remove all tasks from To-Do List, click the **Delete all** link of the Navigation bar, or select **Delete all** in the context menu. You can also use the *Ctrl+Del* shortcut for the same purpose.

14.13 Windows List

The **Windows List** panel allows you to browse the list of windows that are currently opened within **SQL Manager for MySQL** IDE.

To activate this panel as a DB Explorer tab, select the **Windows | Window List** main menu item, or use the *Ctrl+Alt+0* shortcut.



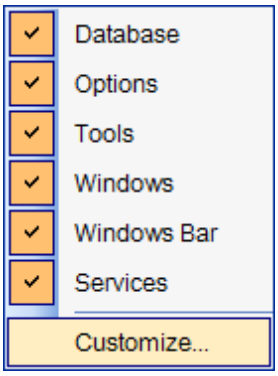
If necessary, you can right-click within the list area to call the **popup menu** which allows you to bring a window to foreground, close windows one by one or in groups, and to arrange the windows according to your preferences.

14.14 Customize toolbars and menus

For your convenience **SQL Manager for MySQL** provides **toolbars** and **menus** that you can customize, so the commands you use frequently are readily available and easily identifiable.

The **Customize** dialog allows you to create and personalize **SQL Manager** menus and toolbars.

To call this dialog, click **More buttons...** 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.



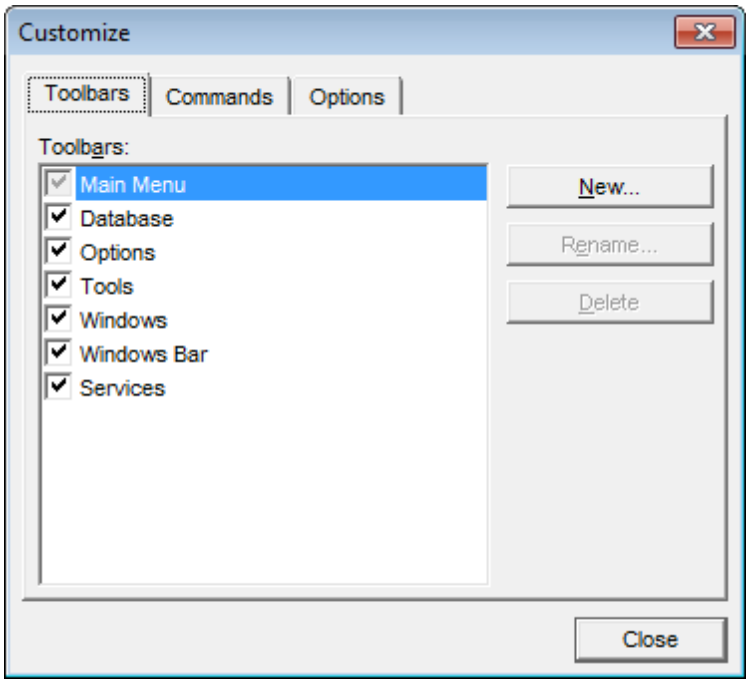
Toolbars

Toolbars
This list displays all currently existing toolbars of **SQL Manager** (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.

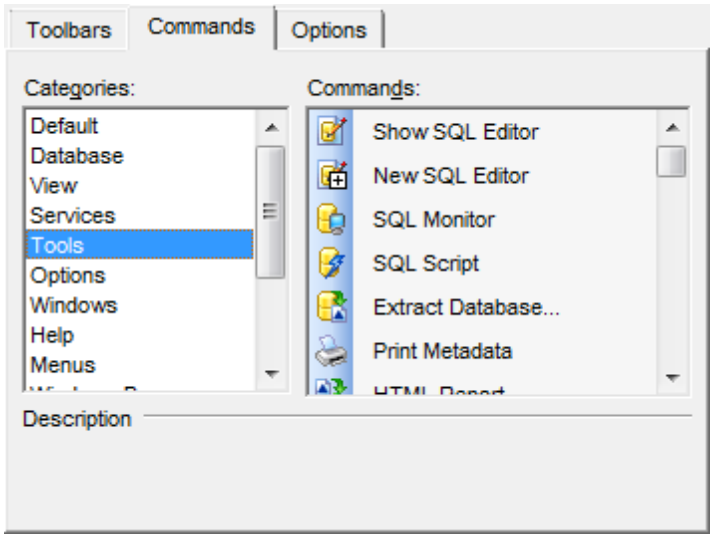
Delete
Use this button to delete the selected user-defined toolbar.



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. 'Database' or 'Tools') in the **Commands** list.

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



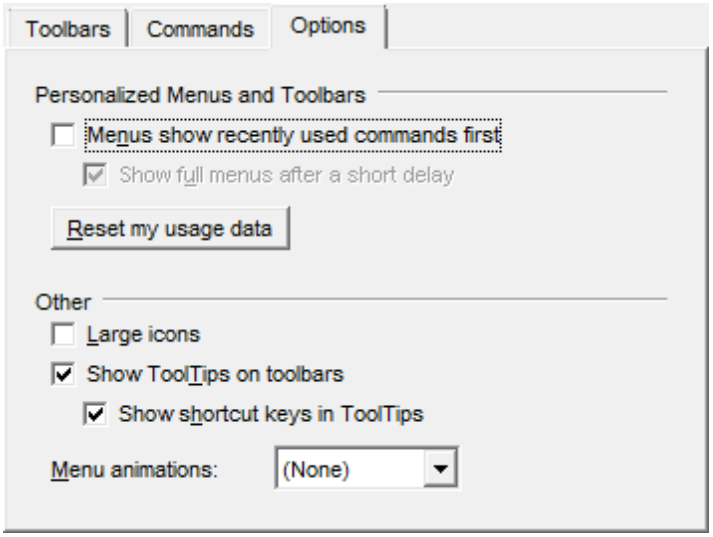
Options

Personalized Menus and Toolbars

Menus 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 **Menus 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)

14.15 SSH tunneling options

SSH (Secure Shell Host) protocol is used to heighten computer security when working with Unix systems on the Internet. SSH uses several encryption algorithms of different reliability. The spread of SSH is also related to the fact that a number of *nix operating systems (e.g. FreeBSD) include SSH server in their standard distributions. To learn more about SSH, please visit http://openssh.org.

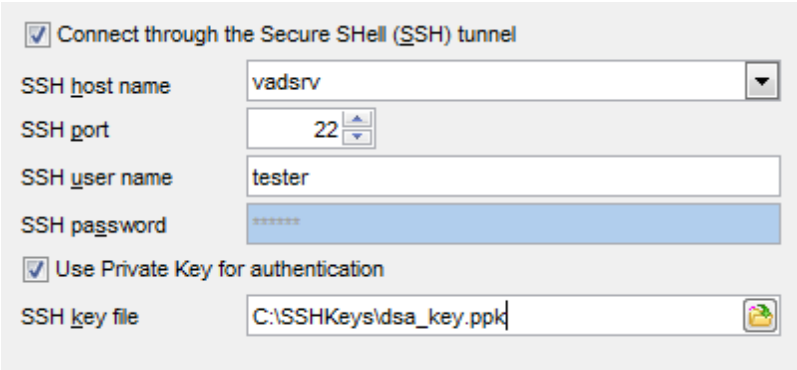
The SSH tunneling feature of **SQL Manager** is a means of ensuring secure connection to MySQL servers when working over insecure connection channels. You can also use SSH tunnel to get access to the remote MySQL servers when port 3306 is closed for external connections for some reasons.

The connection via SSH tunnel works in the following way.
First, a connection is established and the process of authentication between SSH client built in **SQL Manager** and remote MySQL server is performed. Then all incoming and outgoing information between the application and MySQL is transmitted through SSH server with the help of a communication port (regularly port 22), and SSH server transfers this information directly to MySQL server.

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 MySQL server)
- **SSH password** is the Linux/Windows user password

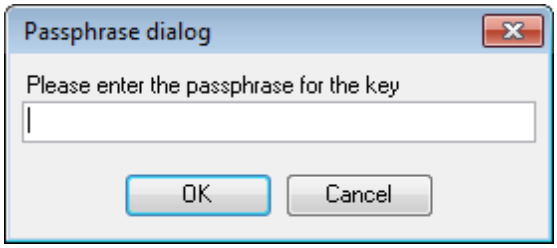
Please note that MySQL **host name** should be set relatively to the SSH server in this case. For example, if both MySQL and SSH servers are located on the same computer, you should specify *localhost* as **host name** instead of the server external host name or IP address.



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.

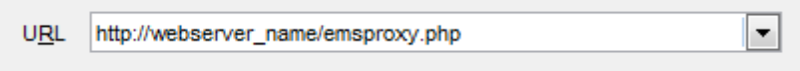


14.16 HTTP tunneling options

HTTP tunneling is a connection type, when connection and data transmit between program and MySQL server is implemented by HTTP/HTTPS protocols. Such connection type can be used when MySQL host is located on the web hosting provider's remote server and direct TCP/IP connection to this host is denied on the security grounds, but there is a "local" MySQL account that can be used in scripts (PHP, ASP etc.) or in PHPMyAdmin. HTTP connection uses port #80, which is also used for common work of web-browser. HTTP server (eg. Apache) and PHP with MySQL extension must be installed on the remote host. As a rule this software is offered by all hosting providers that allot hosting on Linux-based servers.

To create HTTP-tunnel you need to upload emsproxy.php script (included to program pack) to your webserver. Our program uses this script for transferring data through HTTP. The uploaded script file must be accessible on a URL address (for example in the directory with other scripts). If your webserver meets all the requirements listed above and the script was copied correctly then on opening the 'http://<your_webserver_name>/emsproxy.php' page you will see: 'EmsProxy v1.31' (version can be different). To register a database with HTTP connection you need to define the following parameters in Register Database Wizard:

URL
Address where *emsproxy.php* script file is located (e.g. http://mywebserver/emsproxy.php).



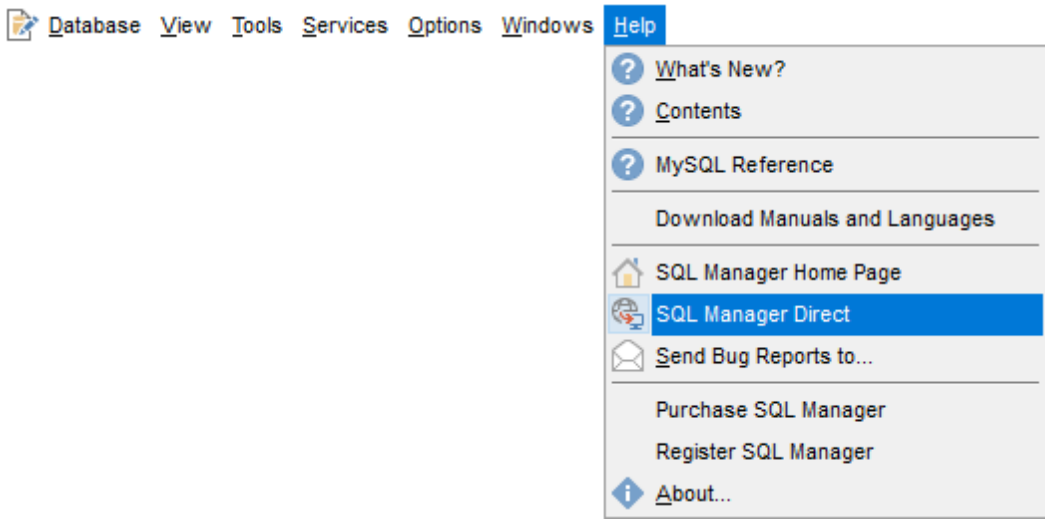
Script implements connection to MySQL server using authorization information defined in SQL Manager. Script also gets all further queries from SQL Manager to perform and to send results back to SQL Manager. Script itself (as opposed to SSH-server) doesn't require authorization. Thereby, to create an HTTP-tunnel you need only MySQL account. Host from which the connection to my sql is performed is a host, where HTTP-server is running. Basically (in most of common configurations of provided hosts) it's 'localhost' (i.e. HTTP-server and MySQL host are running on the same machine).

What if URL requires additional authorization? If it is a common website or proxy authorization (i.e. window with login/password form appears on opening URL-address) then the window requesting authorization info appears in SQL Manager when trying to connect to the database. Additional authorization can be caused by redirection to HTML-page requesting password and saving data to cookie are. Such cases are not supported.

14.17 SQL Manager Direct

SQL Manager Direct is a feature of **SQL Manager for MySQL** which provides you with quick access to the related Internet resources and allows you to keep your **SQL Manager** version up-to-date.

To open the **SQL Manager Direct** window, select the **Help | SQL Manager Direct** item from the main menu.



Links to sqlmanager.net resources provided by the **SQL Manager Direct** window are grouped into several sections:

- *SQL Manager for MySQL News*
- *General Information*
- *Downloads*
- *Related Products*

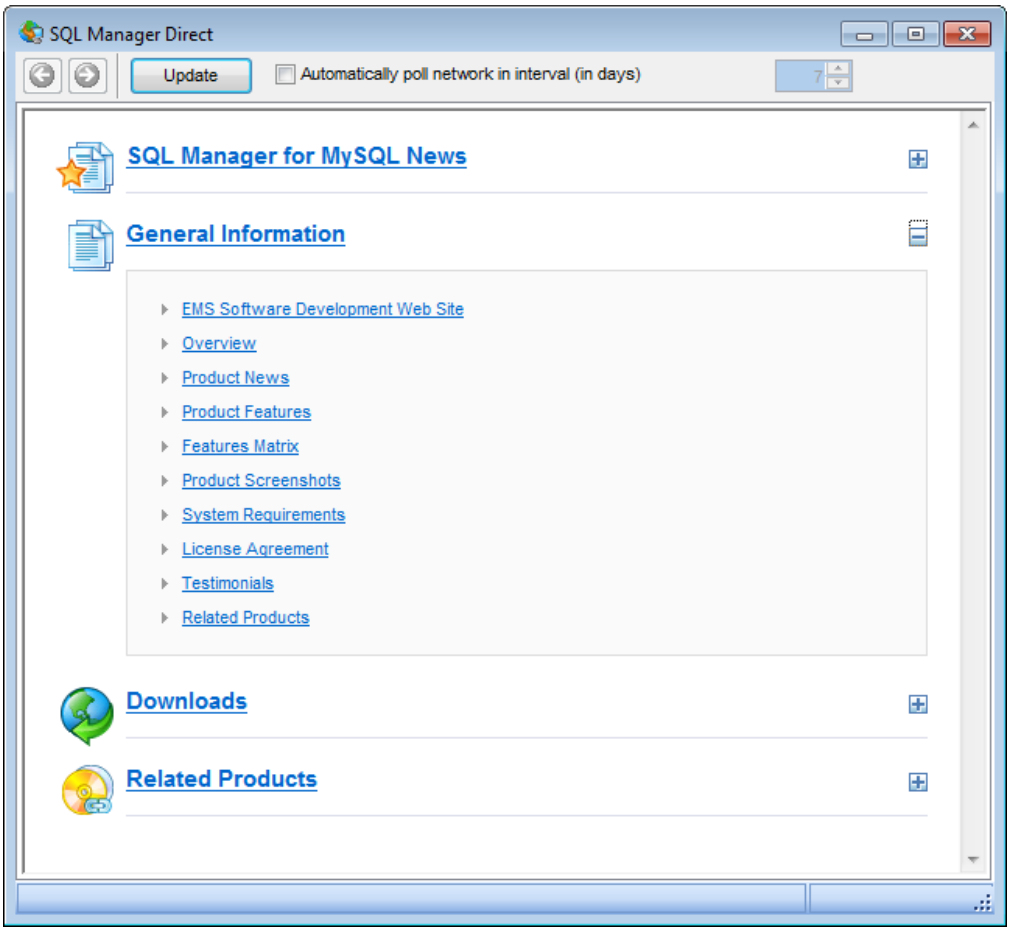
Upon a link selection you will be immediately forwarded to the corresponding resource.

SQL Manager for MySQL News
This section takes you directly to the latest EMS news column. Using the links you can get up-to-date news, product information and downloads from sqlmanager.net.

General Information
This section offers a number of links to product news, features, Feature Matrix, system requirements, testimonials and much more.

Downloads
Using links of this section you can download other product versions from the download page.

Related Products
This section allows you to browse the list of related products developed by EMS Database Management Solutions, Inc.



Use the  buttons to navigate in the same way as you normally do it using a web browser.

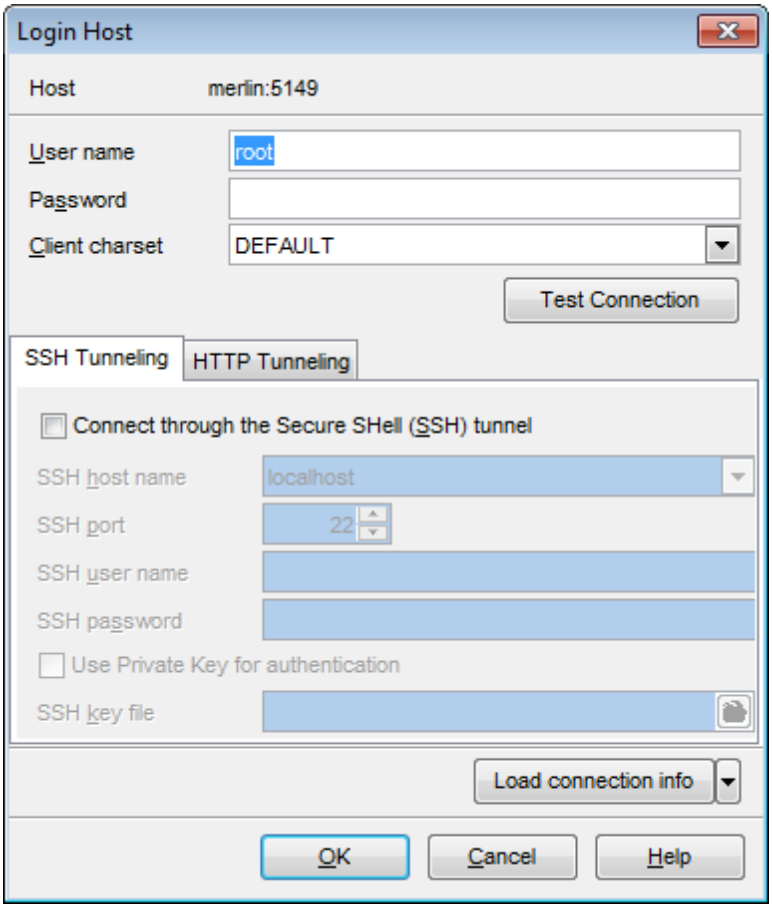
Click the **Update** button to refresh the page.

Automatically poll network in interval (in days)
If this option is selected, the page is refreshed automatically after the specified time interval. Use the spinner control to set the interval (in days).

In the **Status** area at the bottom of the **SQL Manager Direct** window you can find the status of your request to the sqlmanager.net website.

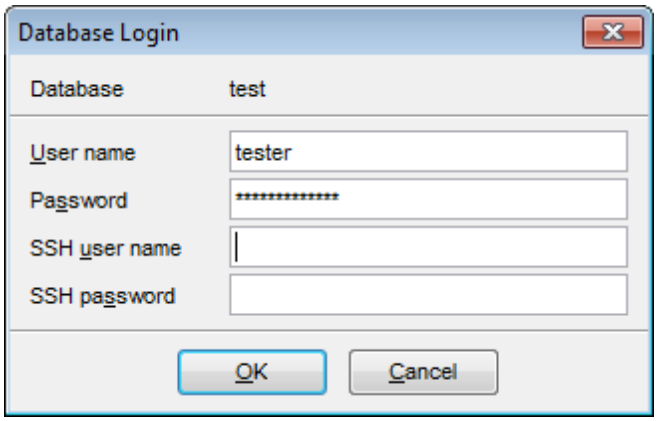
14.18 Login Host / Database Login dialogs

The **Login Host** dialog appears each time a request is sent to the server which requires authentication. The application prompts you to specify host connection parameters to access the specified host: *user name*, *password*, *client charset*, and SSH tunneling or HTTP tunneling settings (if used).



Once you have specified the connection properties, you can check whether it is possible to establish connection to the server: click the **Test Connection** button for this purpose. If connection is successful, you will get the *'Connected!'* message; otherwise an error message will be returned.

The **Database Login** dialog appears on attempt to connect to a database if the **Login prompt before connection** option is enabled on the Options page of the Database Registration Info dialog.

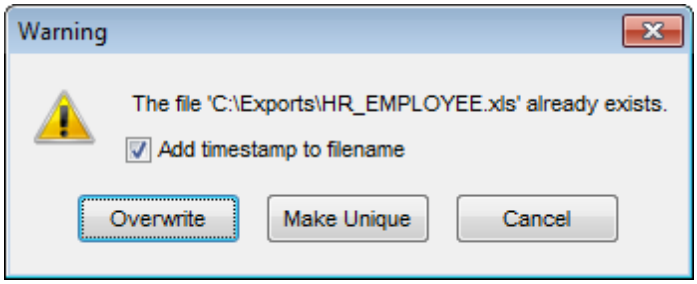


Note: The **SSH user name** and **SSH password** boxes are available only if SSH tunneling is used for the database connection.

Specify *user name* / *password*, *SSH user name* / *SSH password* (if necessary) and click **OK** to start working with the database.

14.19 Overwriting existing output file

If a file having the same name as specified for an output file generated by **SQL Manager** already exists, a warning dialog is displayed.

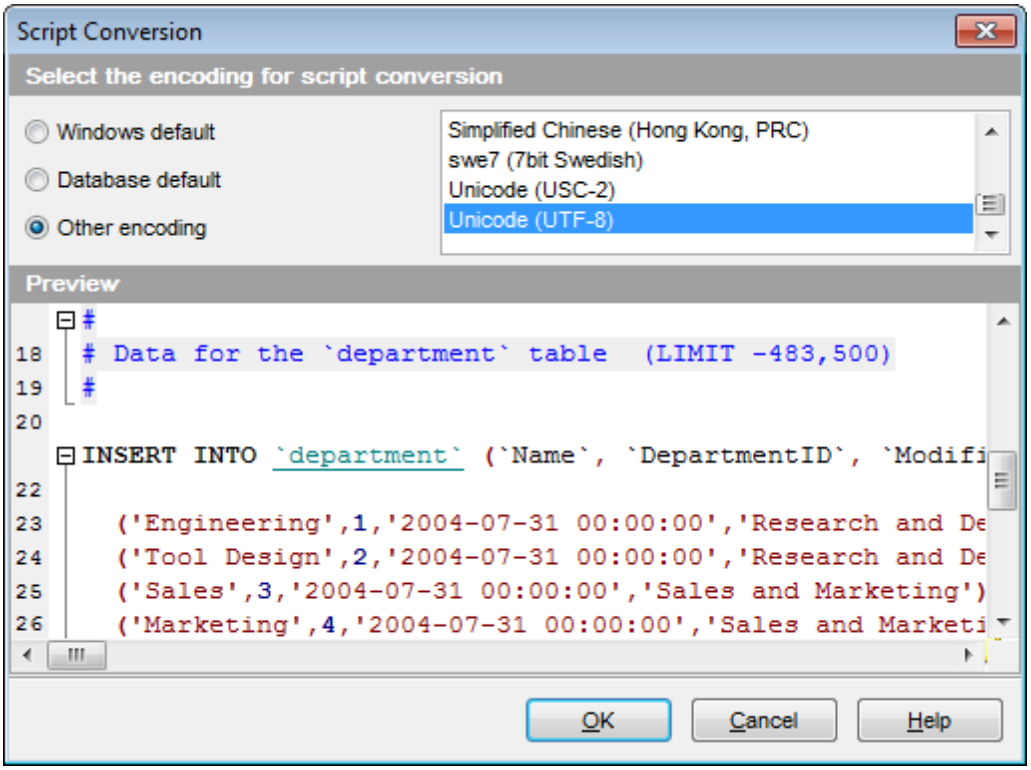


You can **Overwrite** the file, **Make** it **Unique**, or **Cancel** both and change the path or file name manually.

The application makes the file unique by adding the current timestamp to the specified file name if the ☑ **Add Timestamp to filename** option is enabled, or by adding a simple numeric postfix to the file name if this option is disabled.

14.20 Script conversion

The **Script conversion** dialog allows you to select encoding to be used for script conversion upon loading script to one of **SQL Manager** editors (SQL Editor, SQL Script Editor) from an external file.



Windows default
Specifies that the standard Windows encoding will be used for the script conversion.

Database default
Specifies that the default encoding of the database will be used for the script conversion.

Other encoding
Allows you to select the encoding that will be used for the script conversion.

Preview
This area displays the script with the current encoding parameters applied.

14.21 Storage engines reference

MySQL provides several **storage engines** that act as handlers for different table types. All MySQL storage engines include:

- those that handle transaction-safe tables;
- those that handle non-transaction-safe tables.

ISAM
It was the original storage engine which managed non-transactional tables. ISAM was deprecated in MySQL 4.1, and is not supported in the latest versions of the server. This engine was replaced with MyISAM.

MyISAM
It is the table handler that replaced ISAM. MyISAM manages non-transactional tables. It provides high-speed storage and retrieval, as well as fulltext searching capabilities.
Each MyISAM table is stored on disk in three files:
**.frm* - the file that stores the table format;
**.MYD* (MYData) - the data file;
**.MYI* (MYIndex) - the index file.

HEAP (also known as **MEMORY**)
This storage engine handle non-transactional tables and provides in-memory tables, i.e. the table data are only stored in memory.
Each MEMORY table is associated with one disk file. The file name begins with the table name and has the **.frm* extension to indicate that it stores the table definition.
MEMORY tables use hash indexes by default, which makes them fast, and very useful for creating temporary tables.

MERGE (also known as **MRG_MyISAM**)
This storage engine handles a collection of identical (i.e. having identical column and index information) MyISAM tables that can be used as one table.
When one creates a MERGE table, two files are created on disk:
**.frm* - the file that stores the table format;
**.MRG* - the file which contains the names of the tables that should be used as one.

InnoDB
This storage engine handles transaction-safe tables with row locking and foreign key support (since MySQL version 3.23.44 only).
Being a transaction-safe (ACID compliant) storage engine, InnoDB has commit, rollback, and crash recovery capabilities. Locking is performed on the row level; also, an Oracle-style consistent non-locking read in SELECT statements is provided. These features increase multi-user concurrency and performance.
The FOREIGN KEY constraints supported by InnoDB can freely mix InnoDB tables with tables from other MySQL storage engines, even within the same statement.
InnoDB has been designed for maximum performance when processing large data volumes. Tables and indexes are stored in a tablespace which may consist of several files (or raw disk partitions). InnoDB tables can be of any size even on operating systems where file size is limited to 2GB.

BDB (also known as **BerkeleyDB**)
This storage engine is provided by Sleepycat Software. The BerkeleyDB transactional storage engine handles transaction-safe tables with page locking. BDB tables are capable of COMMIT and ROLLBACK operations on transactions.

BerkeleyDB is not supported in the latest versions of the server.

EXAMPLE
This is a stub engine: its purpose is to serve as an example in the MySQL source code that illustrates how to begin writing new storage engines.
An EXAMPLE table is stored in a table format (*.frm) file on disk. No data can be stored into the table, and retrievals return an empty result.
Indexing is not supported either.
As such, the EXAMPLE storage engine is primarily of interest to developers.

FEDERATED
This storage engine was added in MySQL 5.0.3. Data are stored in a remote database, and the FEDERATED storage engine enables data to be accessed from a remote MySQL database on a local server without using replication or cluster technology.
When using a FEDERATED table, queries on the local server are automatically executed on the remote (federated) tables. No data are stored in the local tables.
The FEDERATED table definition is the same as with standard storage engines (such as MyISAM or InnoDB, where each table consists of the table definition and the associated data), but the physical storage of the data is handled on a remote server.
SELECT statements and INSERT, UPDATE, DELETE operations are sent to the remote server for execution, where they update the data file on the remote server or return matching rows from the remote server.

ARCHIVE
This storage engine is used for storing large amounts of data without indexes with a very small footprint.
When an ARCHIVE table is created, the server creates the following files in the database directory:
*.frm - a table format file;
*.ARZ - data files;
*.ARM - metadata files;
*.ARN - the file that appears during optimization operations.
Rows are compressed as they are inserted. The ARCHIVE engine uses zlib lossless data compression. On retrieval, rows are uncompressed on demand; there is no row cache.

CSV
This storage engine stores data in text files using comma-separated values format.
When an CSV table is created, the server creates two files in the database directory:
*.frm - a table format file;
*.CSV - a data file (a plain text file);
*.CSM - a Meta-file that stores the state of the table and the number of rows that exist in the table (in MySQL 5.1.9 and later).
When data are stored into the table, the storage engine saves them into the data file in the comma-separated values format.
The CSV storage engine does not support indexing.

BLACKHOLE
This storage engine accepts data but throws it away and does not store it, therefore retrievals always return an empty result.
When an BLACKHOLE table is created, the server creates a table format (*.frm) file in the database directory.
The BLACKHOLE storage engine supports all kinds of indexes.
Inserts into a BLACKHOLE table do not store any data, but if the binary log is enabled, the

SQL statements are logged (and replicated to slave servers). This can be useful as a repeater or filter mechanism.

FALCON
This storage engine has been designed to meet modern database requirements, and particularly for use within high-volume web serving or other environment that requires high performance, while still supporting the transactional and logging functionality required in this environment. Falcon has been specially developed for systems that are able to support larger memory architectures and multi-threaded or multi-core CPU environments. Most 64-bit architectures are ideal platforms for the FALCON engine, where there is a larger available memory space and 2-, 4- or 8-core CPUs available. Falcon supports all of the standard column data types supported by MySQL.

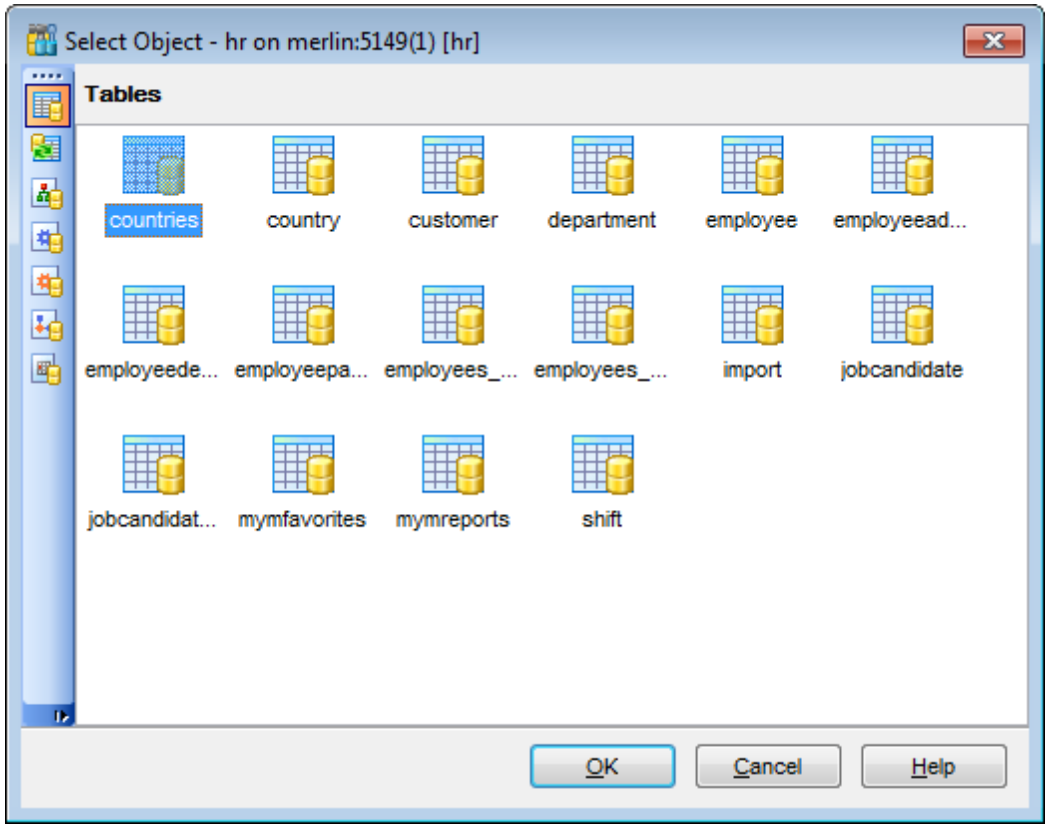
NDB Cluster
It is the storage engine used by MySQL Cluster to implement tables that are partitioned over many computers.

GEMINI
It is a table type developed by NuSphere Company. GEMINI is not released under an Open Source license.

For details refer to the official MySQL documentation.

14.22 Select Object dialog

The **Select Object** dialog appears each time the application requests a database object selection, e.g. upon a root object selection for the Dependency Tree tool, or when choosing an object to be added to a project.



First select the object type in the list on the left-hand side of the window. Pick the object you need and click **OK** the apply your selection.

14.23 SQL Manager shortcuts

Database management:

Shift+Ctrl+R	Register a MySQL host using Register Database Wizard
Shift+Alt+R	Register a database using Register Database Wizard
Shift+Alt+U	Unregister the selected database
Shift+Ctrl+C	Connect to a database
Shift+Ctrl+D	Disconnect from a database

Database objects management:

Ctrl+N	Create a new object (the object type depends on the current selection)
Ctrl+O	Edit the selected object in its editor
Ctrl+R	Rename the selected object
Shift+Del	Drop the selected object
Ctrl+Shift+C	Collapse the current DB Explorer tree branch and switch selection to the parent tree node

SQL Manager tools:

F11	View/hide Database Explorer
Ctrl+F	Search for an item in the DB Explorer tree
Shift+Ctrl+T	Open the To-Do List window
F12	Show SQL Editor
Shift+F12	Open a new instance of SQL Editor
Shift+Ctrl+M	Open SQL Monitor
Shift+Ctrl+S	Open SQL Script Editor
Shift+Ctrl+L	Open Localization Editor
Ins	Add a new table subobject (the subobject type depends on the current tab selection)
Ctrl+Ins	Add a parameter in Procedure Editor and Function Editor
Ctrl+Del	Remove a parameter in Procedure Editor and Function Editor
Ctrl+Up	Move an argument up in Procedure Editor and Function Editor
Ctrl+Down	Move an argument down in Procedure Editor and Function Editor
Ctrl+I	Start incremental search

SQL Editor and SQL Script (fixed and default):

F9	Execute query/script
Alt+F9	Execute selected only
Ctrl+Alt+F9	Execute under cursor
Ctrl+Alt+F2	Reset execution point (SQL Editor only)
Shift+Ctrl+<digit>	Toggle bookmark #*<digit>*
Ctrl+<digit>	Go to bookmark #*<digit>*
Ctrl+Q,N	Go to next bookmark
Ctrl+Q,P	Go to previous bookmark
F2	Drop marker to current position
Esc	Collect marker (jump back)

Shift+Esc	Swap marker to current position
Ctrl+Z; *Alt+BkSp*	Undo
Shift+Ctrl+Z; *Shift+Alt+BkSp*	Redo
Ctrl+F	Search for text using the Find Text dialog
Ctrl+R	Replace text using the Replace Text dialog
F3	Search next
Ctrl+I	Start incremental search
Alt+G	Go to line number (an input number dialog prompts for the number)
Ctrl+L	Load a script from an external file
Ctrl+S	Load the script to an external file
Shift+Ctrl+F	Format the SQL text using SQL Formatter
Alt+<symbol>	Switch to the query with *<&symbol>* in its name (SQL Editor only)
Ctrl+J	Insert a keyboard template
Ctrl+D	Toggle query results display mode (at the Edit tab or at a separate one)
Ctrl+Alt+Left	Switch to the next tab of SQL Editor
Ctrl+Alt+Right	Switch to the previous tab of SQL Editor
Ctrl+Alt+PgUp	Switch to the last tab of SQL Editor
Ctrl+Alt+PgDown	Switch to the first tab of SQL Editor
Ctrl+Q,S	Move cursor to beginning of line
Ctrl+Q,D	Move cursor to end of line
Ctrl+Q,R	Move cursor to absolute beginning
Ctrl+Q,C	Move cursor to absolute end
Ctrl+O,N	Normal selection mode
Ctrl+O,L	Line selection mode
Ctrl+O,C	Column selection mode
Shift+Ctrl+Left	Select the previous word
Shift+Ctrl+Right	Select the next word
Shift+Home	Select text to the beginning of the line
Shift+End	Select text to the end of the line
Shift+PageUp	Select one page up
Shift+PageDown	Select one page down
Shift+Ctrl+PageUp	Select text to the first line on the page
Shift+Ctrl+PageDown	Select text to the last line on the page
Shift+Ctrl+Home	Select text to the absolute beginning
Shift+Ctrl+End	Select text to the absolute end
Shift+Alt+Left	Select column symbol-by-symbol to the left
Shift+Alt+Right	Select column symbol-by-symbol to the right
Shift+Alt+Up	Select column upwards
Shift+Alt+Down	Select column downwards
Shift+Ctrl+Alt+Left	Select column word-by-word to the left
Shift+Ctrl+Alt	Select column word-by-word to the right

+Right	
Shift+Alt+Ho	Select column to the beginning of line
me	
Shift+Alt+End	Select column to the end of line
Shift+Alt+Pag	Select column to the beginning of the page
eUp	
Shift+Alt+Pag	Select column to the end of the page
eDown	
Shift+Ctrl+Alt	Select column from the current cursor position to the beginning of the first
+Home	line
Shift+Ctrl+Alt	Select column from the current cursor position to the beginning of the last
+End	line
Ctrl+Up	Scroll up one line with cursor position unchanged
Ctrl+Down	Scroll down one line with cursor position unchanged
Alt+Down,	Toggle case of a current word
Alt+Up	
Ctrl+Alt+Up	Toggle case to upper of a current selection or char
Ctrl+Alt+Dow	Toggle case to lower of a current selection or char
n	
Ctrl+G+T	Toggle folding
Ctrl+G,Ctrl+F	Collapse block at current line
Ctrl+G,Ctrl+E	Expand block at current line
Ctrl+G,Ctrl+C	Collapse/Expand block at current line
Ctrl+G,Ctrl+M	Collapse all blocks in the text
Ctrl+G,Ctrl+P	Expand all blocks in the text
Ctrl+=	Collapse/expand the nearest block
Shift+Ctrl+B	Jump to matching bracket (change range side)
Shift+Ctrl+I	Indent selected block
Shift+Ctrl+U;	Unindent selected block
Shift+Tab	
Ctrl+/	Comment/uncomment selected block
Ctrl+Space	Show code completion
Ctrl+Alt+Spac	Show character map
e	
Ctrl+Alt+P	Show procedures
Ctrl+Alt+N	Show functions
Ctrl+Alt+V	Show views
Ctrl+Alt+S	Show SQL keywords
Ctrl+Alt+T	Show tables
Ctrl+Alt+U	Show user-defined functions
Ctrl+Alt+G	Show triggers
Ctrl+Alt+E	Show events
Ctrl+Alt+Ente	Select table in DB Explorer
r	
Shift+Ctrl+Sp	Show code parameters
ace	
Ctrl+C;	Copy selection to Clipboard
Ctrl+Ins	
Ctrl+X;	Cut selection to Clipboard
Shift+Del	
Ctrl+V;	Paste Clipboard to current position
Shift+Ins	
Ctrl+Del	Delete from cursor to the next word
Ctrl+BkSp	Delete from cursor to the end of the previous word
Ctrl+B	Delete from cursor to the beginning of the line

Shift+Ctrl+Y	Delete from cursor to the end of the line
Ctrl+Y	Delete the current line
Ctrl+M; *Enter;* *Shift+Enter*	Break line at current position, move caret to a new line
Ctrl+Alt+I	Insert Tab char
Shift+Ctrl+R	Start macro recording
Shift+Ctrl+P	Play macro
Alt+End	Skip misprint
Ctrl+Alt+End	Skip all misprints
Alt+Home	Correct all misprints
F5	Toggle breakpoint
Shift+F5	Enable breakpoint
Ctrl+F1	Show original help

Print Data View:

Ctrl+O	Load a printing report from a file
Ctrl+S	Save the report to file
Ctrl+P	Open the Print dialog
Ctrl+Home	Go to the first page
Ctrl+Up	Go to the previous page
Ctrl+Down	Go to the next page
Ctrl+End	Go to the last page
Ctrl+D	Open Report Formatter
Ctrl+	Zoom 100%
Ctrl+0	Zoom page width
Ctrl+1	Whole page
Ctrl+2	Two pages
Ctrl+4	Four pages
Ctrl+W	Widen to source width
Ctrl+M	Show/hide margins
Ctrl+K	Set background color for the report

Working with windows, menus and tabs:

Ctrl+Tab	Switch to the next tab
Ctrl+Alt-0	Open Windows List
Ctrl+Alt+D	Set defaults to all windows
Ctrl+F6	Switch to the previous window
F6	Switch to the next window
Ctrl+W	Close the active window
Ctrl+Down	Expand a collapsed menu

Credits

Software Developers:

Alexey Butalov

Alexander Zhiltsov

Dmitry Schastlivtsev

Dmitry Goldobin

Alexander Paklin

Michael Kuzevanov

Technical Writers:

Dmitry Doni

Semyon Slobodenyuk

Olga Ryabova

Cover Designer:

Tatyana Makurova

Translators:

Anna Shulkina

Sergey Fominykh

Team Coordinators:

Alexey Butalov

Alexander Chelyadin

Roman Tkachenko