

SQL Manager.net™

EMS® Software Development



SQL Manager for Oracle User's Manual

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SQL Manager for Oracle

User's Manual

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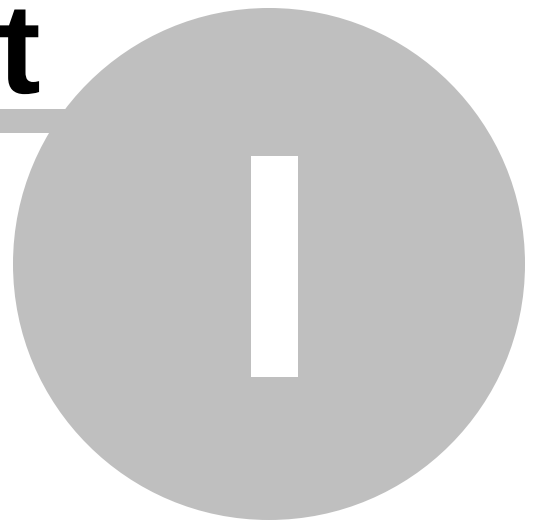
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Part



1 Welcome to SQL Manager for Oracle!

EMS SQL Manager for Oracle is a high performance tool for Oracle database server development and administration. SQL Manager for Oracle works with any Oracle versions from 8.1.7 to 21c and supports the latest Oracle database features including compressed, OLAP, read-only/read-write tables, invisible indexes, compound triggers, triggers with FOLLOWS clause and others. It offers plenty of powerful tools for experienced users such as PL/SQL code debugger, Backup/Restore database wizards, Query designer, Database statistics to satisfy all user needs. SQL Manager has advanced graphical user interface with a 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

- Latest Oracle database version support
- Rapid database management and navigation
- Powerful tools to make your work with Oracle database as easy as it can be
- Easy-to-use wizards performing Oracle database administrative tasks
- Simple management of all Oracle database objects (including create/edit/drop operations)
- Effective security management
- Advanced data manipulation tools
- Excellent visual and text tools for query designing
- Impressive data export and import capabilities
- Visual Database Designer to handle database structure in a few clicks
- Report designer with clear in use report construction wizard
- Connection via local port forwarding through the SSH tunnel
- Support of Unicode data
- Modern graphical user interface with dark schema support

Product information

Homepage: <https://www.sqlmanager.net/products/oracle/manager>
Support Ticket System: <https://www.sqlmanager.net/support>
Register on-line at: <https://www.sqlmanager.net/products/oracle/manager/buy>

1.1 What's new

Version**SQL Manager for Oracle 3.7****Release date**

August 13, 2026

What's new in SQL Manager for Oracle?

- SQL Manager x64 for Oracle released.
- Subscription licensing has been implemented.
- Other fixes and enhancements.

1.2 System requirements

System requirements for SQL Manager for Oracle

- Microsoft Windows XP, Microsoft Windows Server 2003, Microsoft Windows Server 2008, Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2016, Microsoft Windows Server 2019, Microsoft Windows Vista, Microsoft Windows 7, Microsoft Windows 8/8.1, Microsoft Windows 10, Microsoft Windows 11, Microsoft Windows 11 ARM
- 512 Mb RAM (1 Gb or above is recommended)
- 200MB of available HD space for program installation
- Oracle Client 8.1.7 or higher. Its bitness must match the bitness of the installed SQL Manager for Oracle application.
- Local or remote Oracle Database Server 8.1.7 or higher

1.3 Feature matrix

The **FREE** *Lite version* of SQL Manager for Oracle does not include all features of the *Full version* and has some limitations concerning the number and size of the databases (4Gb) that can be registered and the number 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 Oracle you can [activate](#) a 14-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 Oracle for the first time** on your PC:

- download the SQL Manager for Oracle distribution package from the [download page](#) available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- run *OraManagerFullSetup.exe* (**Full** version) or *OraManagerLiteSetup.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 **update an installed copy of SQL Manager for Oracle** you need to use the **Help | Check For Updates** main menu item.

Also you can use the full distribution package to upgrade your current version of SQL Manager for Oracle. In this case, you should repeat the steps you have made for the first-time installation.

See also:

[SQL Manager FAQ](#)

1.5 Purchasing

All purchases are processed by **PayPro Global** registration service. The **PayPro Global** order process is protected by a secure connection, making online 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 Francs by Credit Card (Visa, MasterCard/ EuroCard, American Express, Diners Club), Bank/Wire Transfer.

If you want to review your order information or 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 the purchase, you will be able to download the registration keys immediately. You will also receive a copy of the registration keys by email. Please make sure to enter a valid email address when placing 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 Oracle (Business) + 1-Year Maintenance*	Register Now!
EMS SQL Manager for Oracle (Business) + 2-Year Maintenance*	
EMS SQL Manager for Oracle (Business) + 3-Year Maintenance*	
EMS SQL Manager for Oracle (Individual & Non-profit) + 1-Year Maintenance*	
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EMS SQL Manager for Oracle (Individual & Non-profit) 1 Month Subscription*	
EMS SQL Manager for Oracle (Individual & Non-profit) 1 Year Subscription*	
EMS SQL Manager for Oracle (Trial version)	Download Now!
EMS SQL Manager for Oracle Freeware	Download Now!

* **EMS Maintenance/Subsription Program** provides the following benefits:

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

of the software

A *perpetual license* with a maintenance term is bought once and lets the software run indefinitely. After your maintenance expires, you will not be able to update your software or get technical support, however you will still be able to use the program. To protect your investment and have your software up-to-date, you need to renew your maintenance.

A *subscription license* gives you the right to use the software and receive updates and support for as long as it's active. When the subscription expires, the software stops working (after a short grace period for renewal) — unlike a perpetual license.

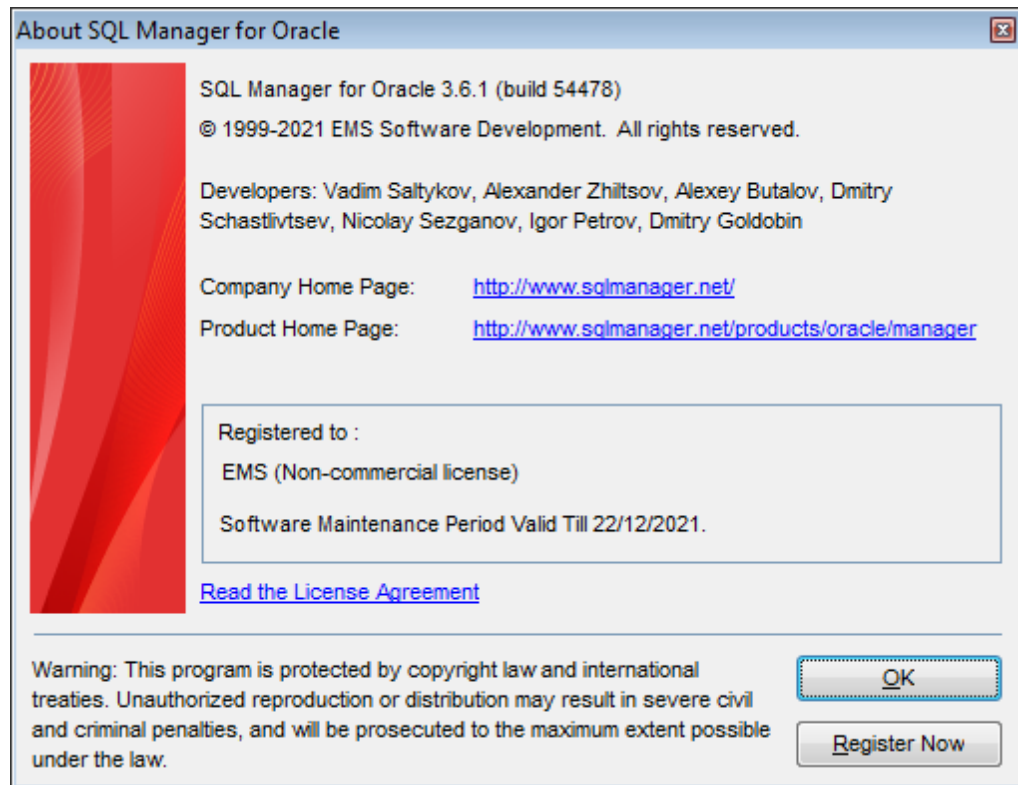
You can easily renew your maintenance/subscription on-line through our [Customer Portal](#). After renewal, you will receive a confirmation e-mail with all the necessary information.

See also:

[How to register SQL Manager](#)

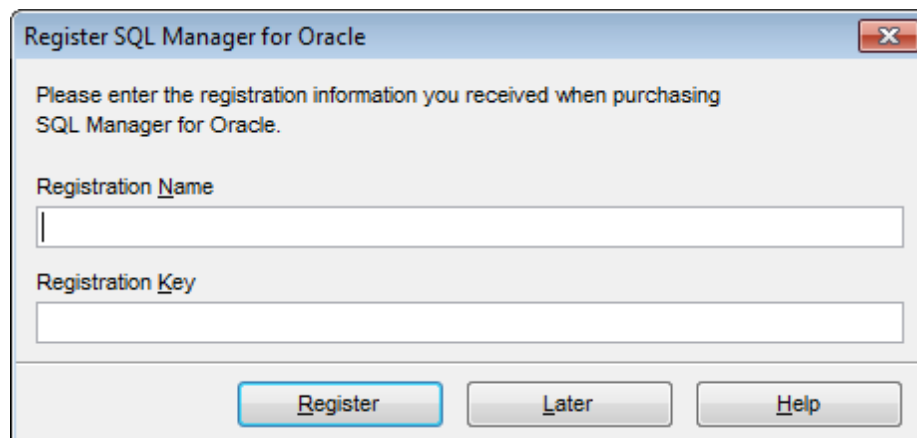
1.6 How to register SQL Manager

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



To register your newly purchased copy of EMS SQL Manager for Oracle:

- 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 Oracle** dialog (use the **Help | About** menu item to open this dialog).



See also:

[Registration](#)

1.7 FAQ

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

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- [What is the difference between Full and Lite versions of EMS SQL Manager for Oracle?](#)
- [What do I need to start working with EMS SQL Manager for Oracle?](#)
- [What is the difference between the Export/Import functions in SQL Manager and the Data Export/Import utilities?](#)
- [What is the difference between the Design Query module in SQL Manager and the SQL Query for Oracle standalone utility?](#)
- [What is the difference between the Extract Database function in SQL Manager for Oracle and the DB Extract for Oracle standalone utility?](#)

Common questions

- [I can't modify DDL. Why?](#)
- [I can't configure connection to Oracle server via SSH. Which values do I need to input in the SSH section of the Database Registration Info dialog?](#)
- [When I create database objects, their names are always converted to upper case. How I can prevent it?](#)
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- [I need to perform some changes in database objects of my test database and then make the same changes on another database. Are there any tools for this purpose in SQL Manager for Oracle?](#)
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Export/Import questions

- [I am trying to export a table, but text fields are not exported.](#)
- [What is the difference between the "Extract Database" and "Export as SQL Script" functions?](#)
- [How can I change the default directory where exported data will be saved?](#)

Question/answer list

Product questions

Q: What is EMS SQL Manager for Oracle?

A: EMS SQL Manager for Oracle is a powerful tool for Oracle Database administration and development. SQL Manager for Oracle supports all of the latest Oracle features. It offers plenty of powerful tools for experienced users to satisfy all their needs. SQL Manager for Oracle 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 and Lite versions of EMS SQL Manager for Oracle?

A: These editions of SQL Manager for Oracle differ in price and features. To register SQL Manager for Oracle, 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 Oracle?

A: First of all, you must have an opportunity to connect to some instance of Oracle server to work with SQL Manager. Besides, you need your workstation to satisfy the [system requirements](#) of SQL Manager for Oracle.

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 Oracle utilities include some additional features which are not available in SQL Manager, such as:

- export/import data from/to several tables simultaneously;
- 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 Design Query module in SQL Manager and the SQL Query for Oracle standalone utility?

A: First of all, SQL Query for Oracle 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 Oracle and the DB Extract for Oracle standalone utility?

A: The DB Extract for Oracle utility includes some additional features which are not available in SQL Manager, such as:

- a console application for performing extract in one-touch;
- faster extraction speed.

[Scroll to top](#)

Common questions

Q: I can't modify DDL. Why?

A: The DDL tab of the SQL Manager editors is read-only. It displays object structure as SQL text and reflects the operations you perform over the object under other editor tabs. To modify an object, you can copy the text to the clipboard and edit it using [Query data](#). For more details refer to [Viewing object DDL structure](#).

Q: I can't configure connection to Oracle server via SSH. Which values do I need to input in the SSH section of the Database Registration Info dialog?

A: To setup the connection via SSH tunnel, you need to input the following: within the [SSH Tunneling](#) section:

- **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
- **SSH password** is the Linux/Windows user password

within the [Connection](#) section:

- **User name** is an Oracle user name
- **Password** is password for Oracle user

For more details refer to [SSH tunneling options](#).

Q: When I create database objects, their names are always converted to upper case. How I can prevent it?

A: Please switch off the "Convert created objects' names to upper case" option within the [Object Editors](#) section of the [Environment Options](#) dialog.

Q: *How can create a report?*

A: To create a report, you can use the [Create Report wizard](#) or [Report Designer](#). To create a simple report based on a query, you need to select "Master Data band" on the [Selecting report bands](#) step of the wizard and specify the query for your report. After that you need to set the remaining options on subsequent steps of the wizard and press Run.

Q: *How can I customize data formats in grid?*

A: You can customize all display formats: integer, float, date, time and date/time using the [Color & Formats](#) page of the [Environment Options](#) dialog.

Q: *I need to perform some changes in database objects of my test database and then make the same changes on another database. Are there any tools for this purpose in SQL Manager for Oracle?*

A: The [Database Registration Info](#) dialog provides the [Logs](#) section where you can enable logging metadata changes performed over the database and/or SQL queries executed in [Query Data](#).

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

[Scroll to top](#)

Export/Import questions

Q: *I am trying to export a table, but text fields are not exported.*

A: Fields of types BLOB, CLOB, NCLOB, BFILE, LONG, LONG ROW and XML 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 Oracle Database. Use [Extract Database Wizard](#) to copy metadata and/or data to a database on Oracle afterwards.

Q: *How can I change the default directory where exported data will be saved?*

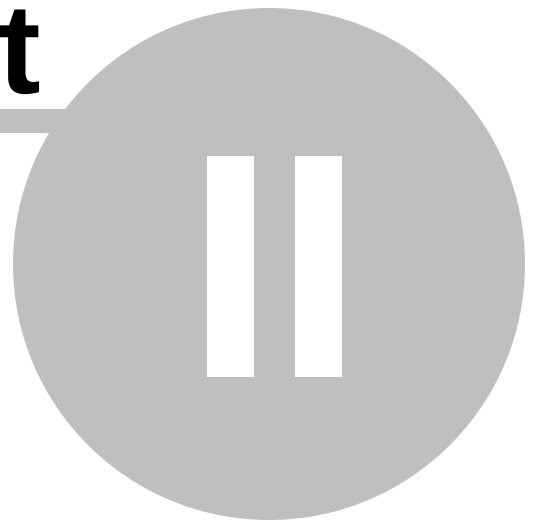
A: Follow the steps below to change the default directory:

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'.

[Scroll to top](#)

If you still have any questions, contact us at our [Support Center](#).

Part



2 Getting Started

SQL Manager for Oracle provides you with an ability to contribute to efficient Oracle 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 Oracle. 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 Oracle!

See also:

[Database Explorer](#)

[Database Management](#)

[Database Objects Management](#)

[Query Management Tools](#)

[Data Management](#)

[Import/Export Tools](#)

[Database Tools](#)

[Services](#)

[Options](#)

[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 to configure environment style and the language.

Appearance theme

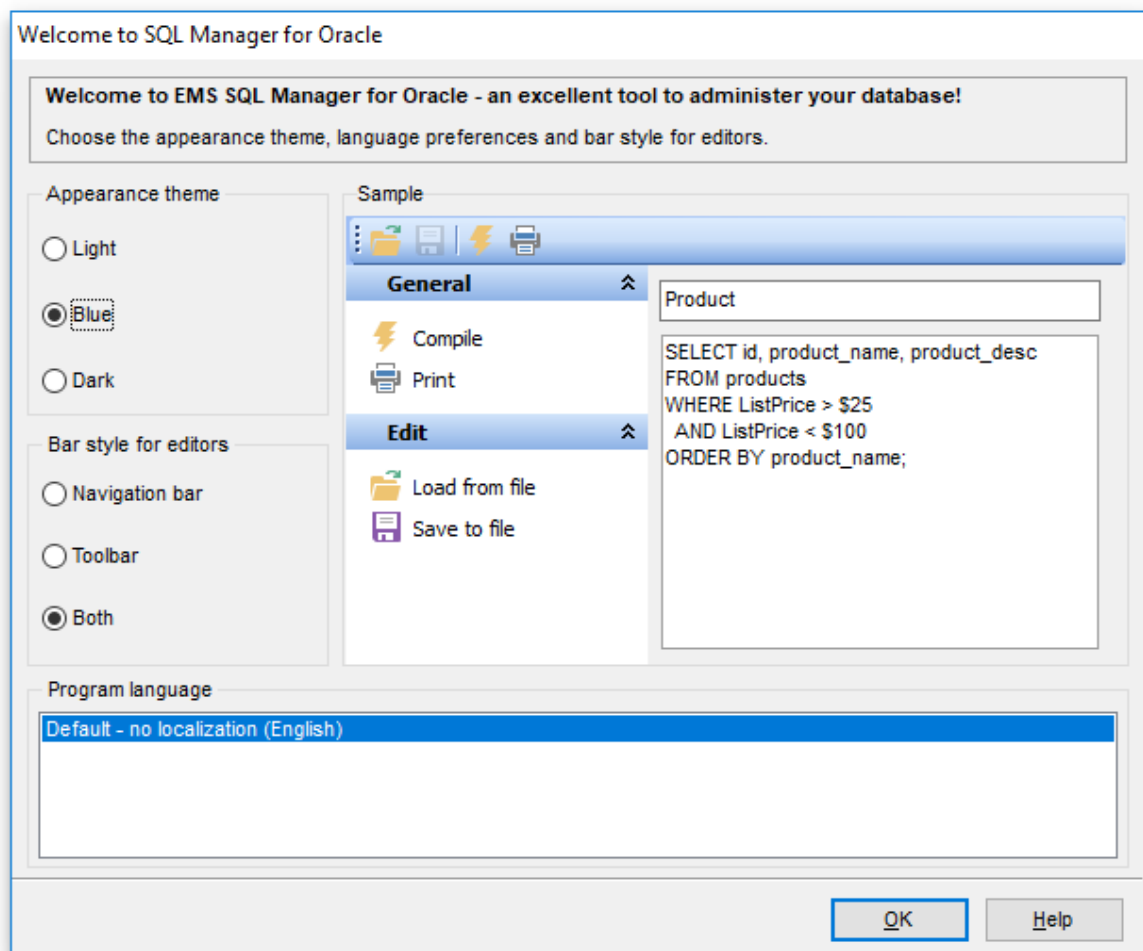
Select the main color theme for the application: Light, Blue or Dark.

Bar style for editors

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.



Sample

See the example of selected options for interface.

See also:

[First time started](#)

[Using Desktop Panel](#)

[Database navigation](#)

[Working with database objects](#)

[Using context menus](#)

[Working with windows](#)

2.2 First time started

This is how SQL Manager for Oracle looks when you start it for the first time. Use the [Desktop panel](#) to fulfill any of common tasks: [Manage existing database\(s\)](#), [Edit local naming parameters](#) using [TNS Editor](#), and several tasks that do not require database registration, i.e. [Execute SQL Script](#), accessing the **reference system** or using available **Internet resources**.

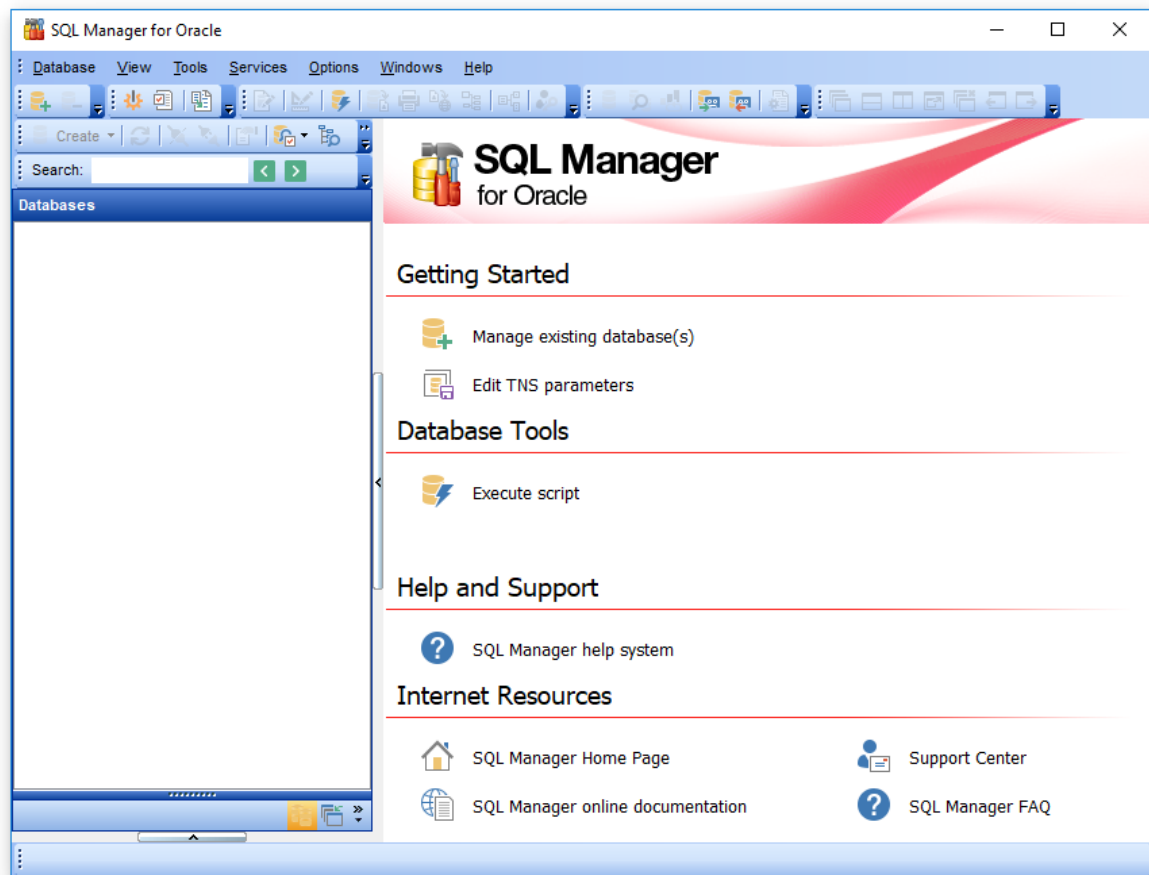
The [main menu](#) allows you to perform various **Database** operations, open [To-Do List](#) and activate/deactivate [Database Explorer](#), [SQL Assistant](#) and various [toolbars](#) within the **View** menu, manage your databases using items of the **Tools** and **Services** menus, [customize](#)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

See the [How to...](#) chapter to view brief instructions on how to perform some operations on databases, database objects, etc.

To start working with your Oracle server, you should first register one or several databases using [Register Database Wizard](#).

By default the corresponding  **Register Database** button is 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](#)

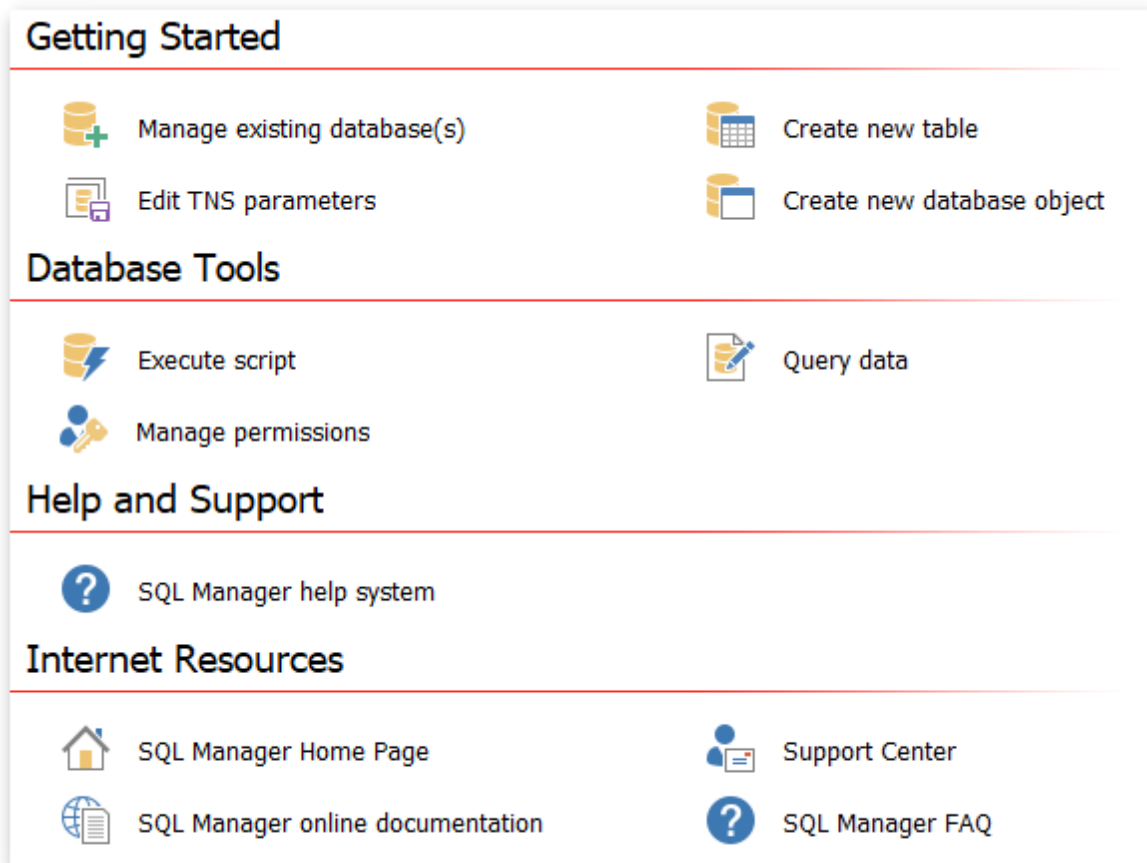
[Working with database objects](#)

[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 Oracle. The working area of **Desktop Panel** is divided into four sections: *Getting Started*, *Database Tools*, *Help and Support*, *Internet Resources*.



Getting Started

-  [register](#) existing database(s) to operate them afterwards in SQL Manager
-  [edit local naming parameters](#) using [TNS Editor](#)
-  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

-  execute a script using [Execute Script Editor](#)
-  [execute a SQL query](#) (this item is available if there is at least one active database connection)



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

Help and Support



show this help file

Internet Resources



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](#)

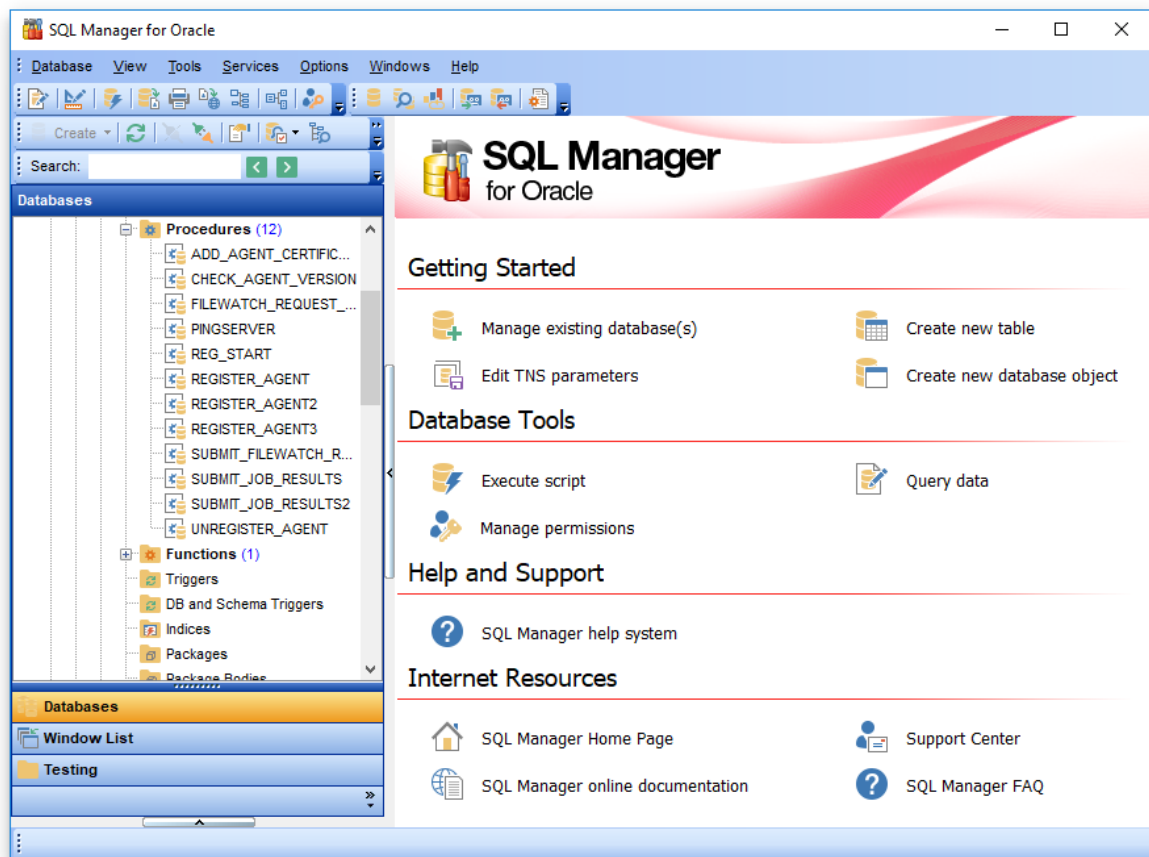
[Working with database objects](#)

[Using context menus](#)

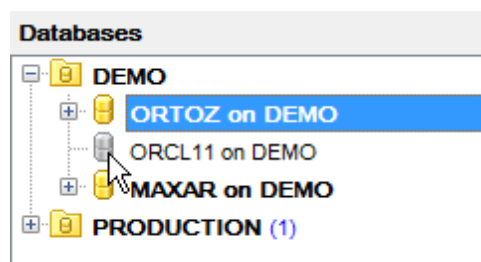
[Working with windows](#)

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 database groups** option is checked on the [Environment Options](#) | [DB Explorer](#) page, the group nodes are also displayed in the tree (alternatively, you can use the **Show Database Groups** item of the [Database context menu](#), or the drop-down menu of the **View Mode**  toolbar button for the same purpose). If necessary, you can also specify that empty schemas should be hidden in the tree: use the corresponding option available on the [DB Explorer](#) page of the [Environment Options](#) dialog.



[DB Explorer](#) displays all registered hosts and databases. Connected/disconnected hosts and databases can be easily distinguished in the tree: aliases of disconnected hosts and databases are grayed out.

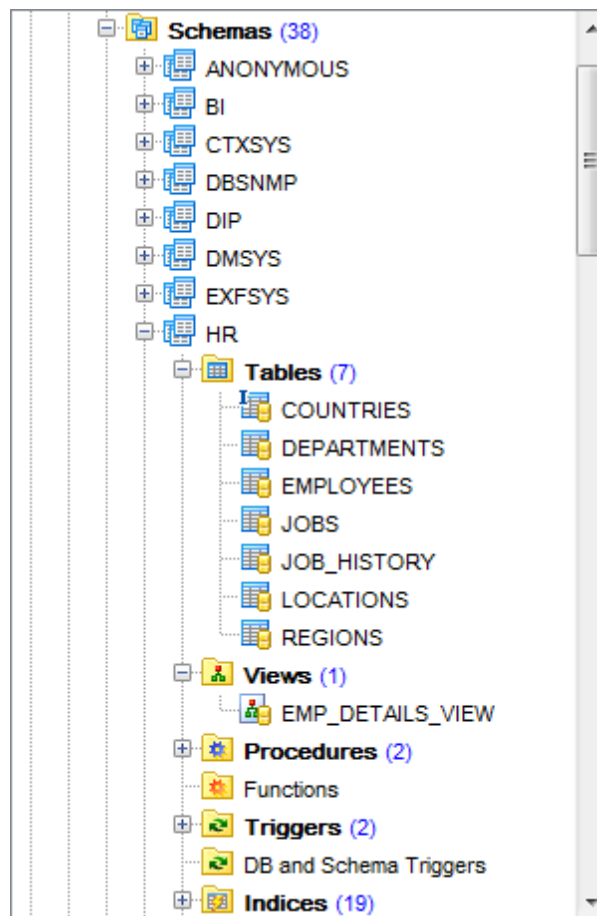


To [connect](#) to a database, simply double-click its alias (or select the database alias in [DB Explorer](#) and press **Enter**). If the connection is successful, the database node expands into a tree of objects.

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

For your convenience objects having different type (for tables: *Index-organized*, *Clustered*, *Object*, *Partitioned*, *Temporary*), status (e.g. enabled/disabled) are displayed with different icons in [Database Explorer](#).

Database Explorer also allows you to distinguish invalid database objects by their icons which are marked with a red cross. In the screenshot below the view 'VIEW1' is marked as invalid because of some errors in its SQL definition, or the referenced table has been [dropped](#) from the database.



See also:

[Selecting style and language](#)

[First time started](#)

[Using Desktop Panel](#)

[Working with database objects](#)

[Using context menus](#)

[Working with windows](#)

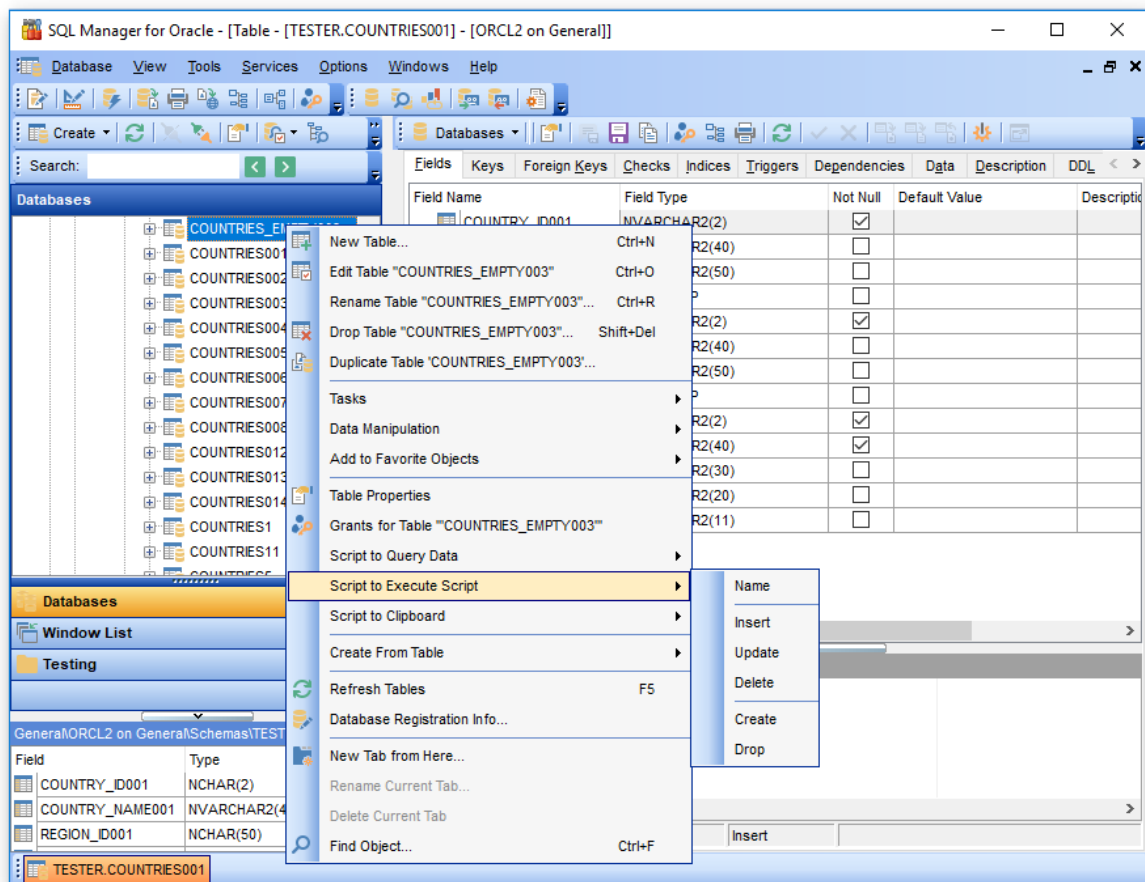
2.5 Working with database objects

The nodes of the [DB Explorer](#) tree allow you to access [objects of the selected database](#). If Oracle 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** (fields, 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 Oracle: 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.

- [DB Group context menu](#)
- [Database context menu](#)
- [Object context menu](#)

See also:

[Selecting style and language](#)

[First time started](#)

[Using Desktop Panel](#)

[Database navigation](#)

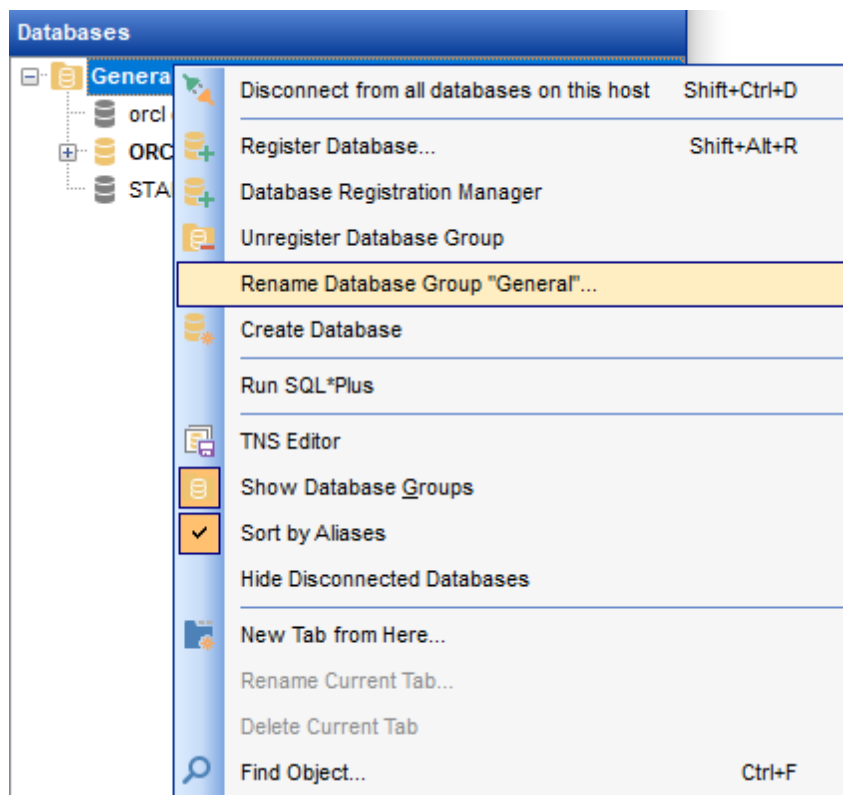
[Working with database objects](#)

[Working with windows](#)

2.6.1 DB Group context menu

The **context menu of a DB Group** in the [DB Explorer](#) tree allows you to:

- register a new database using [Register Database Wizard](#);
- unregister the selected database group;
- rename the database group;
- [create database](#);
- run SQL *Plus;
- edit [local naming parameters](#) using [TNS Editor](#) ;
- configure representation of DB Groups and databases in [Database Explorer](#);
- create a new tab for the selected database group [to access it through this tab quickly](#) and/or manage the existing tab;
- [search](#) for an object within the tree.



See also:

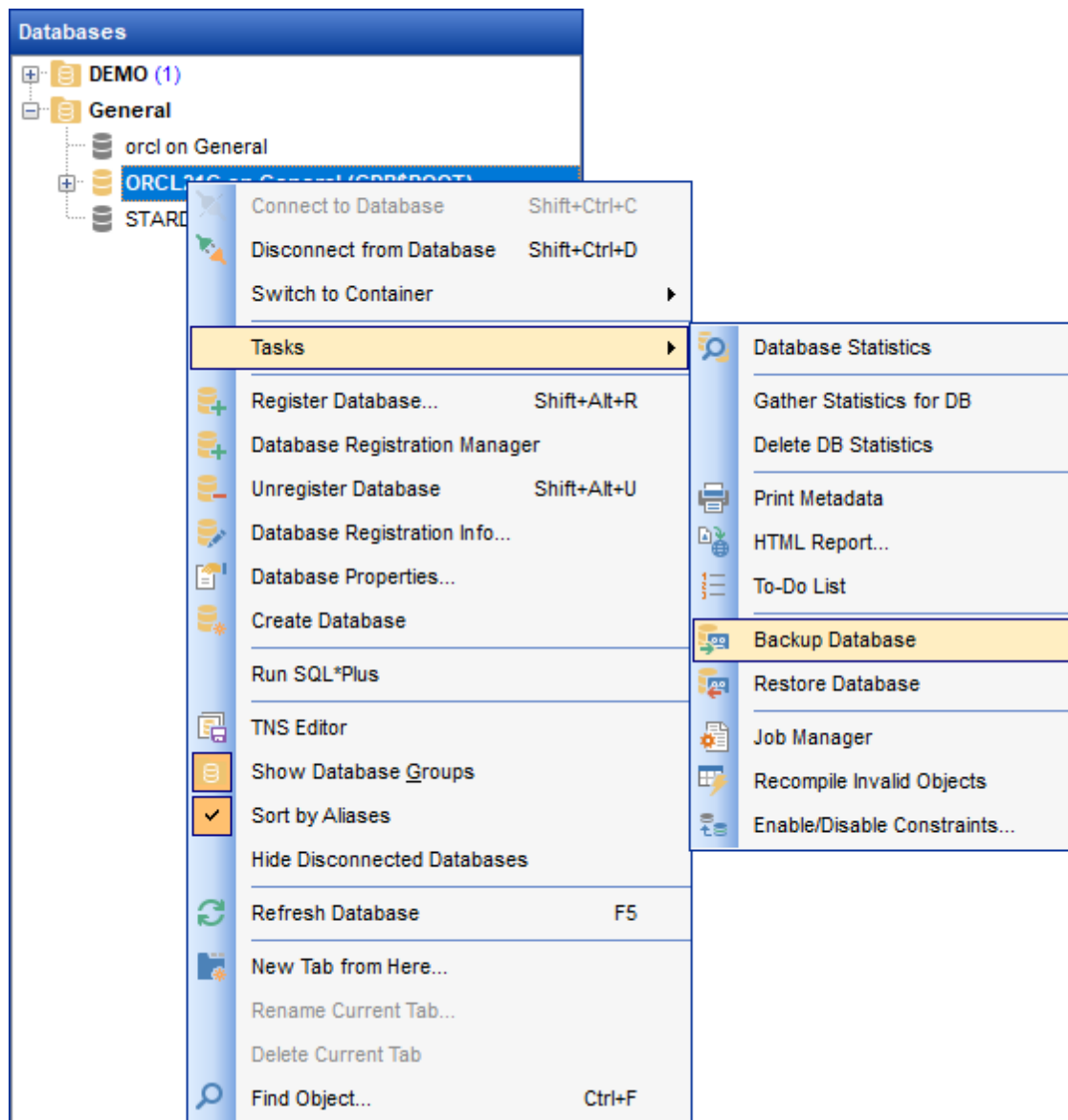
[Database context menu](#)

[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);
- access [database tools](#) available in the **Tasks** submenu;
- drop the selected database;
- register a new database using [Register Database Wizard](#);
- unregister the selected database;
- unregister the database group to which the database belongs;
- view/edit the selected database registration information within the [Database Registration Info](#) dialog;
- edit [local naming parameters](#) using [TNS Editor](#);
- configure representation of DB Groups and databases in [Database Explorer](#);
- refresh the selected database;
- 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.

**See also:**

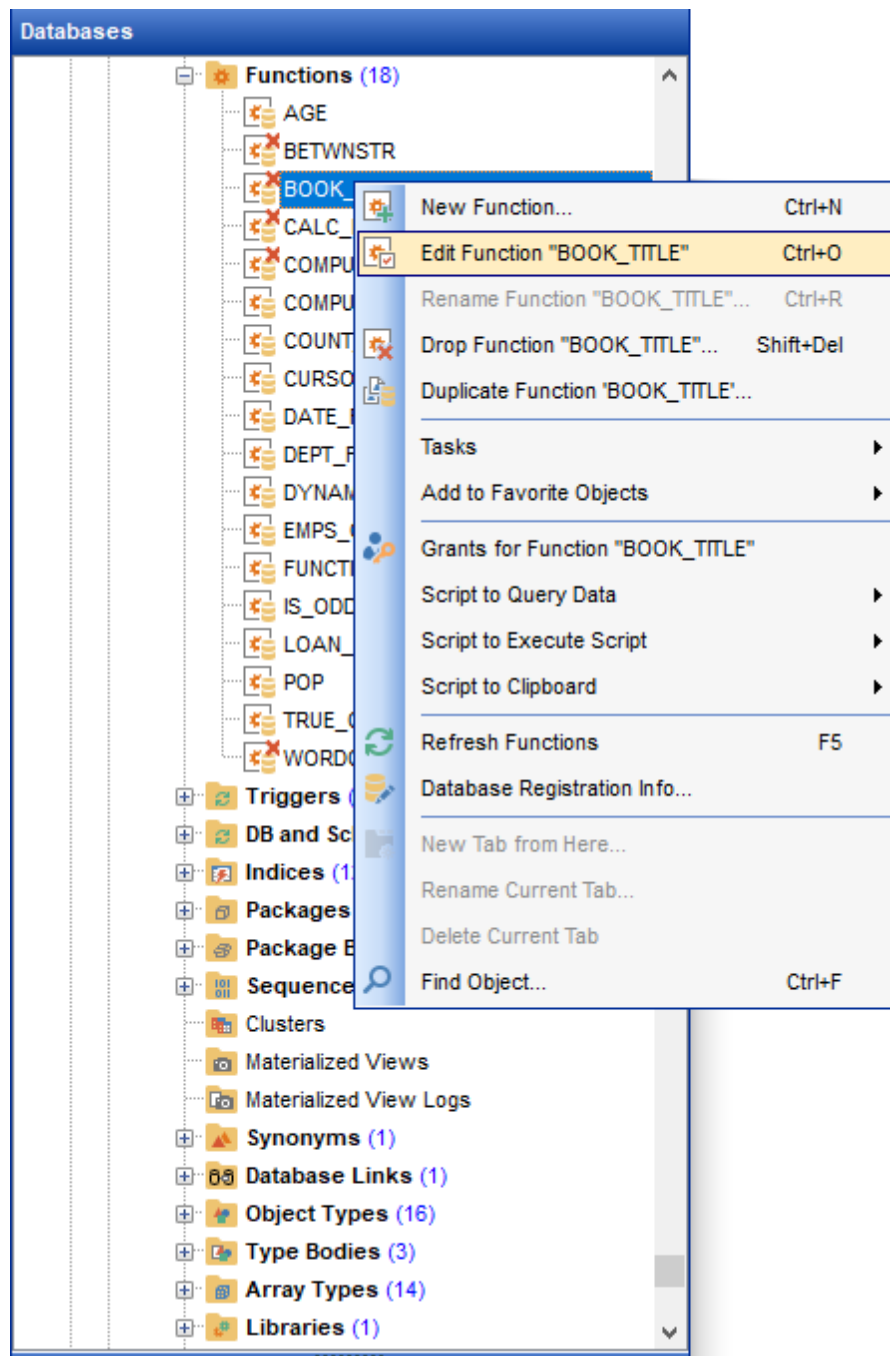
[DB Group context menu](#)

[Object context menu](#)

2.6.3 Object context menu

The **context menu of an object** (e.g. *table*) 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);
- access common **Tasks** applied to this object;
- perform [data manipulation](#) operations (for [tables](#) and [views](#));
- define [grants](#) for the selected object;
- generate the object script and open it in [Query data](#);
- generate the object script and copy its text to Windows clipboard;
- 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:

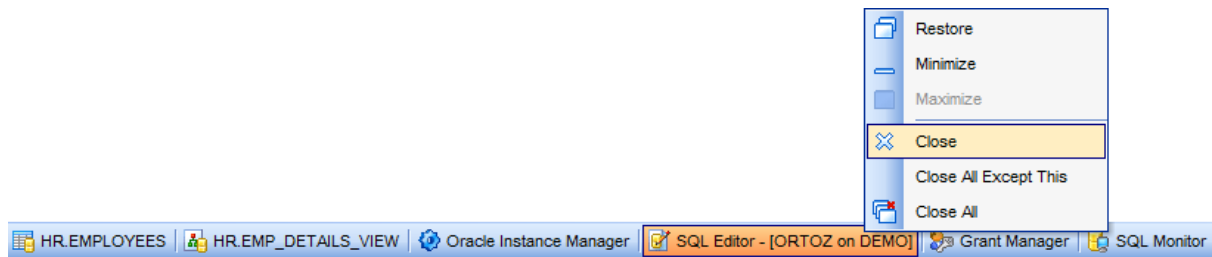
[DB Group context menu](#)

[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.

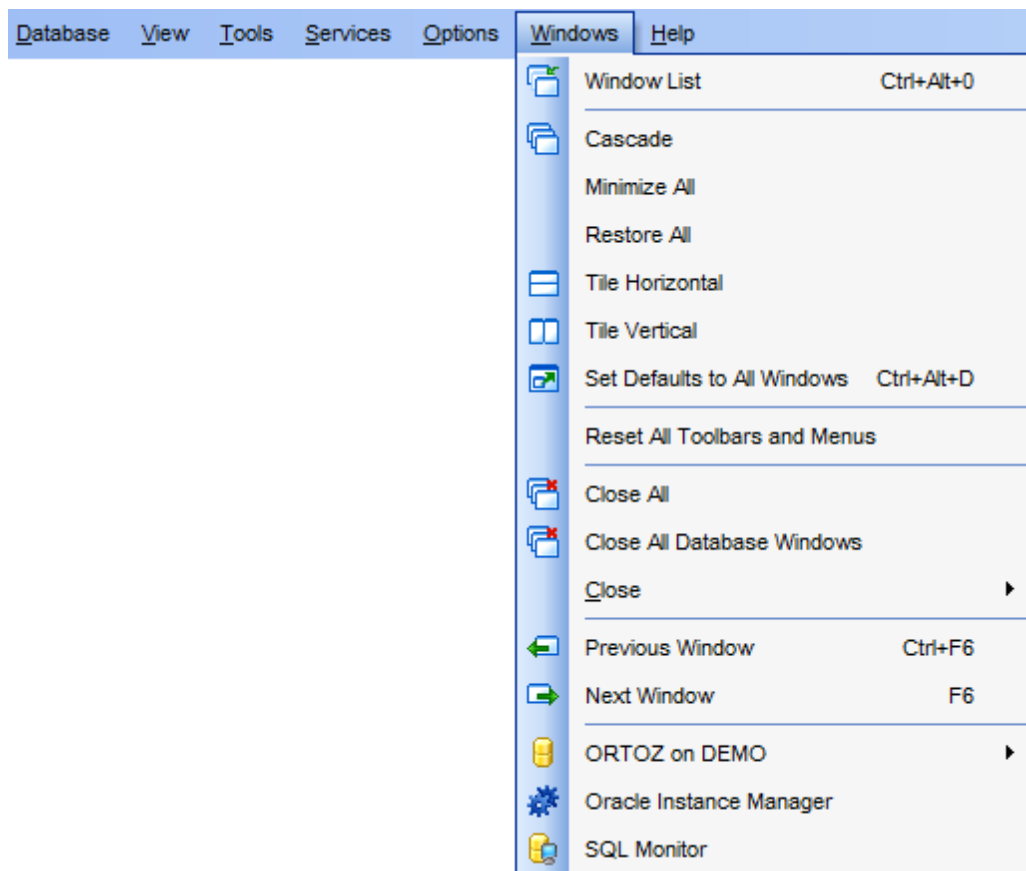
To activate the window you need, simply click one of the window buttons. To perform some additional actions with the window, right-click its tab and select the corresponding menu item from the popup menu.



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

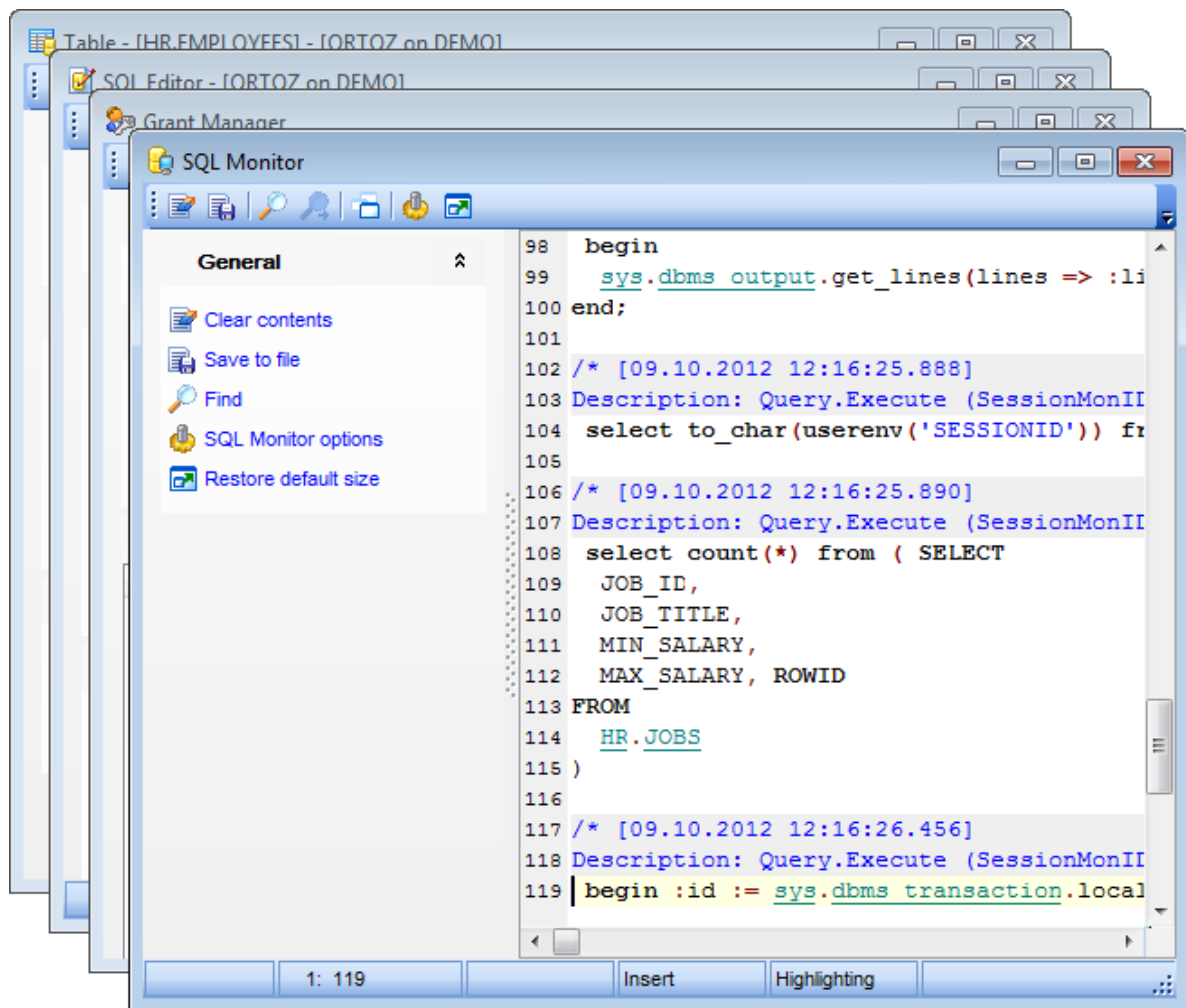
The **Number of open editors is restricted** option available in the [Environment Options](#) options dialog allows you to set the maximum number of editors that may be opened simultaneously. When the number of editors exceeds the specified value, the previously opened editors will be closed automatically.

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

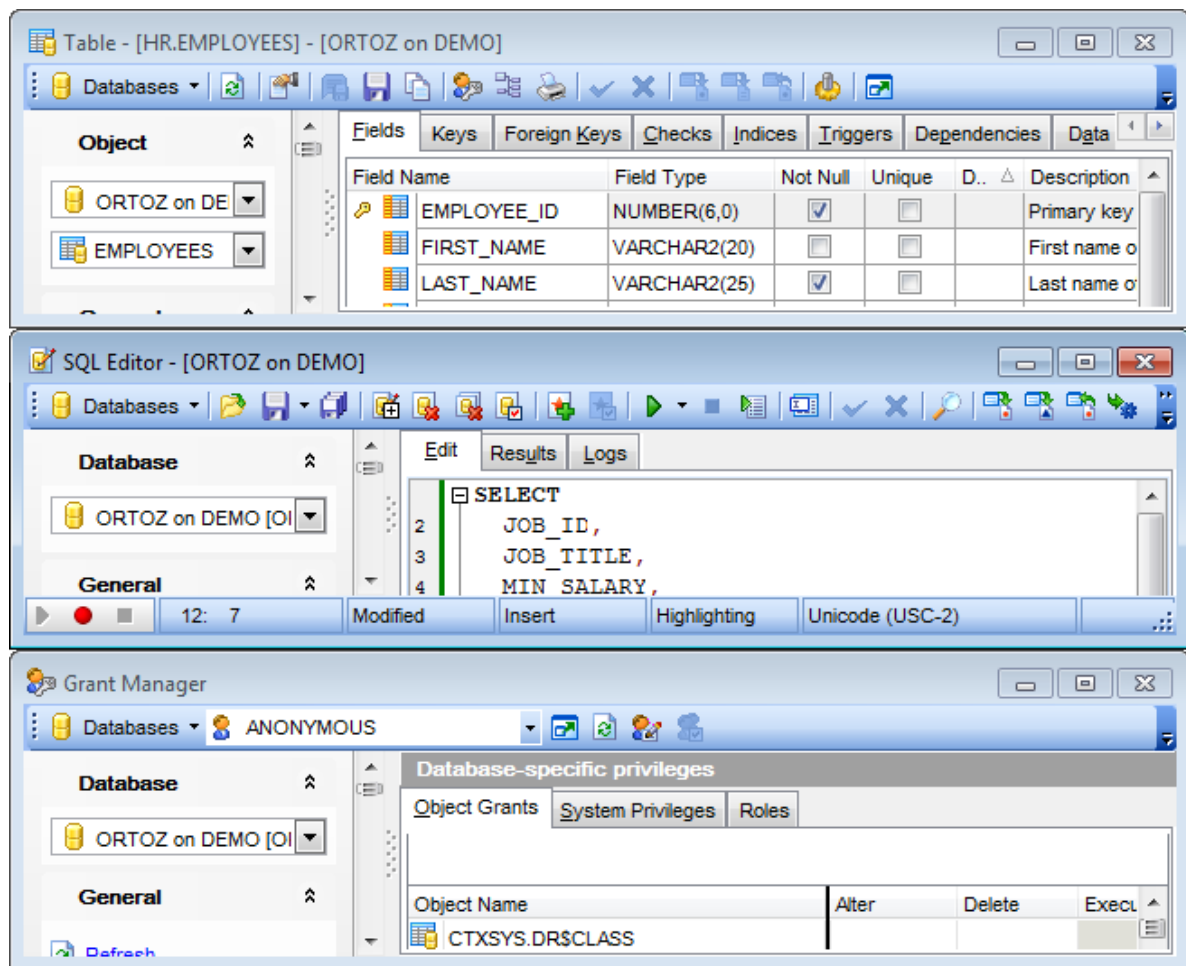


The **Windows** menu allows you to:

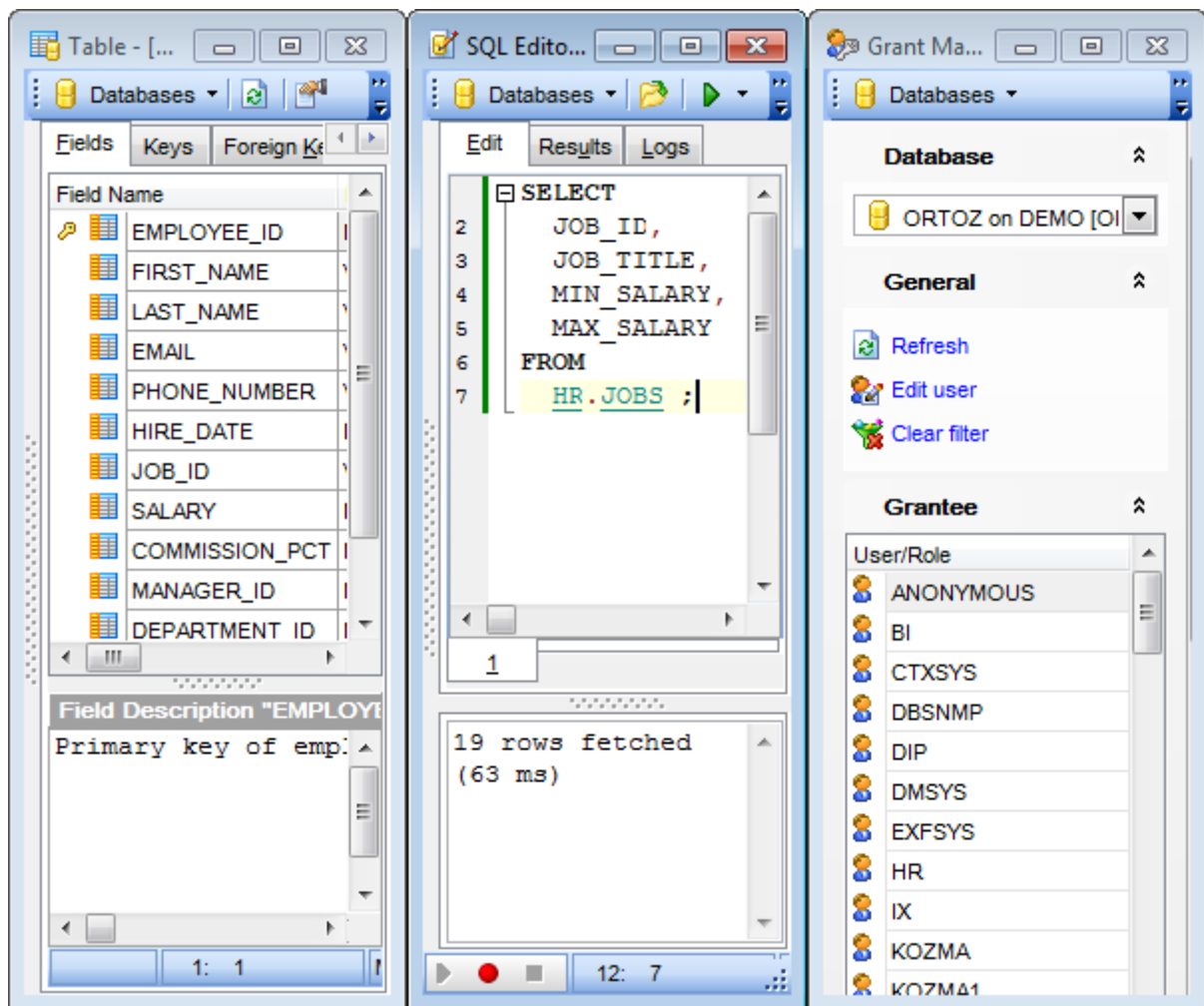
- view the [Windows List](#) within the corresponding [tab](#) of DB Explorer;
- set all current windows *cascade*:



- 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 database windows (closes all windows owned by the database selected in the windows list);
- 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](#)

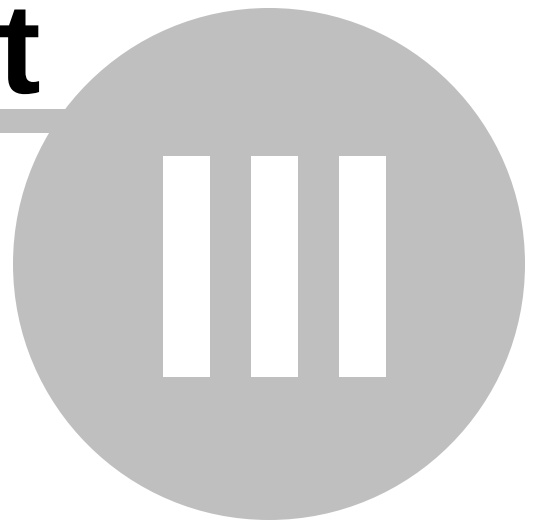
[Using Desktop Panel](#)

[Database navigation](#)

[Working with database objects](#)

[Using context menus](#)

Part



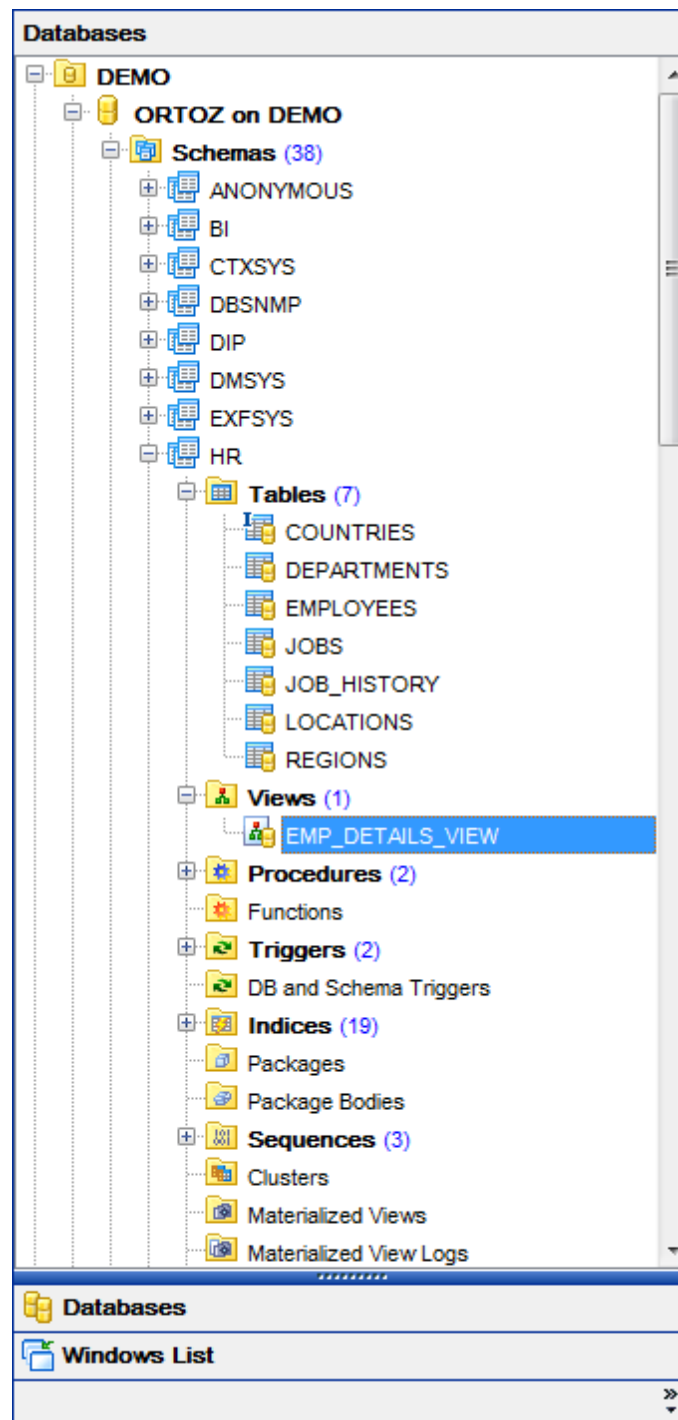
3 Database Explorer

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

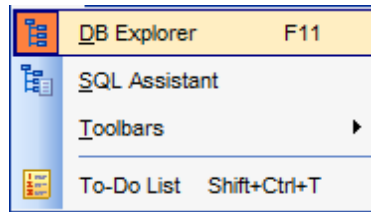
The following list contains the most frequently used features provided by Database Explorer.

- [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.



NOTE: 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 current **DB Explorer** tree branch and switch to the parent node.

Note that you can change database and database groups 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](#)

[Services](#)

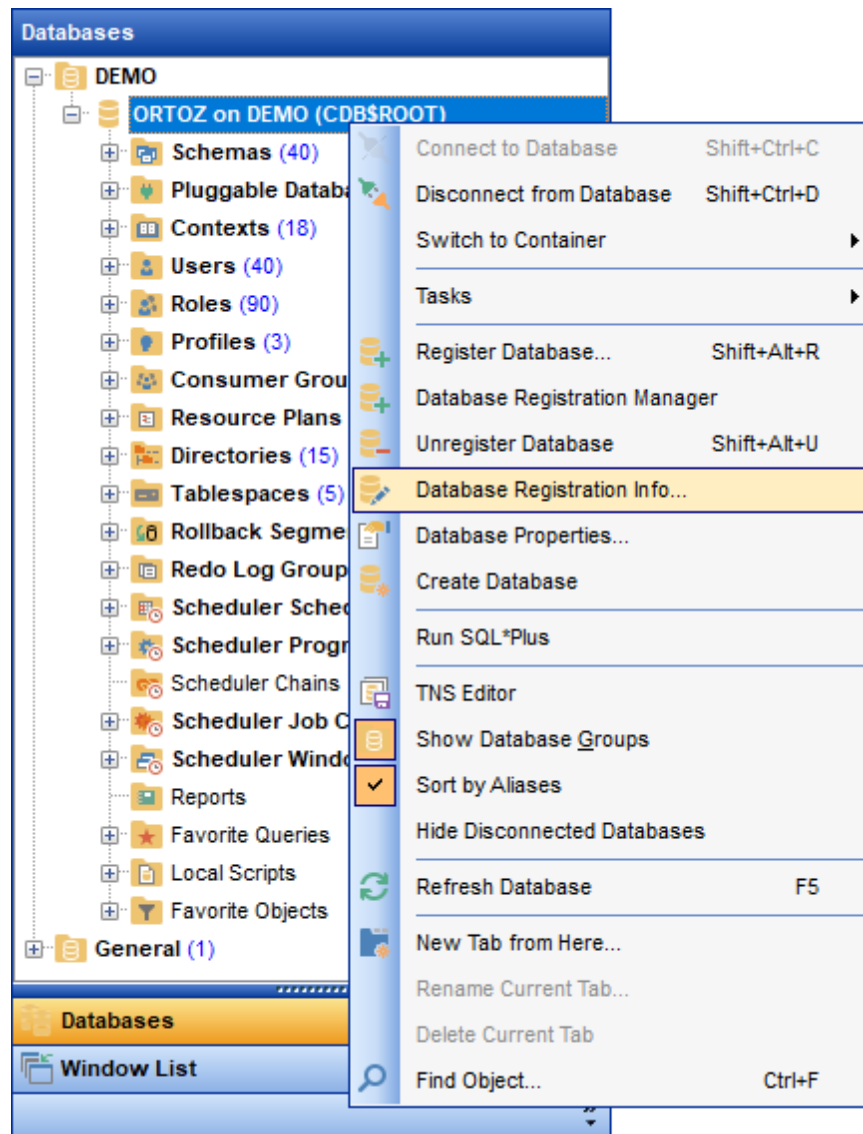
[Options](#)

[How To...](#)

3.1 Managing database registration info

After you have created and/or registered your database in SQL Manager for Oracle, 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:

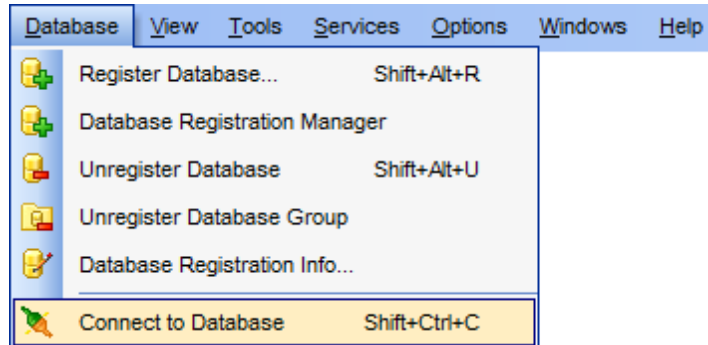
[Register Database](#)

[Database Registration Info](#)

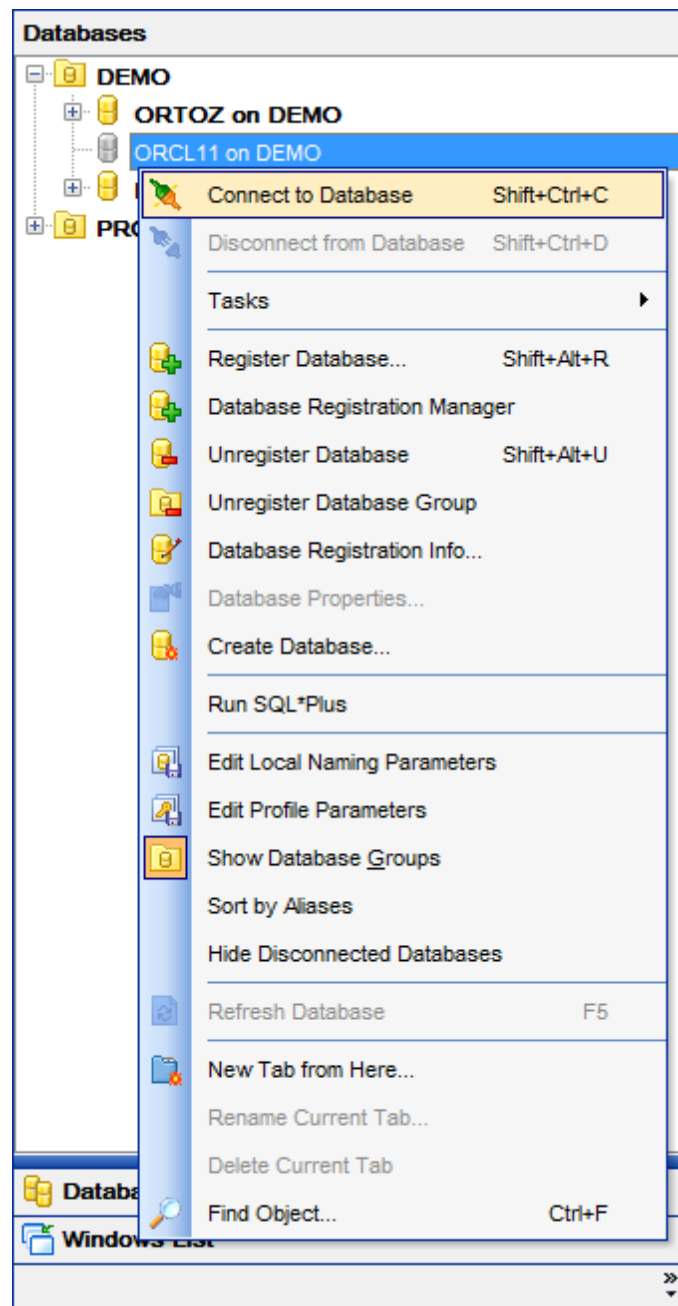
[Database Registration Manager](#)

3.2 Connecting to databases

When the [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 [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](#)

[Database Registration Manager](#)

3.3 Operations with database objects

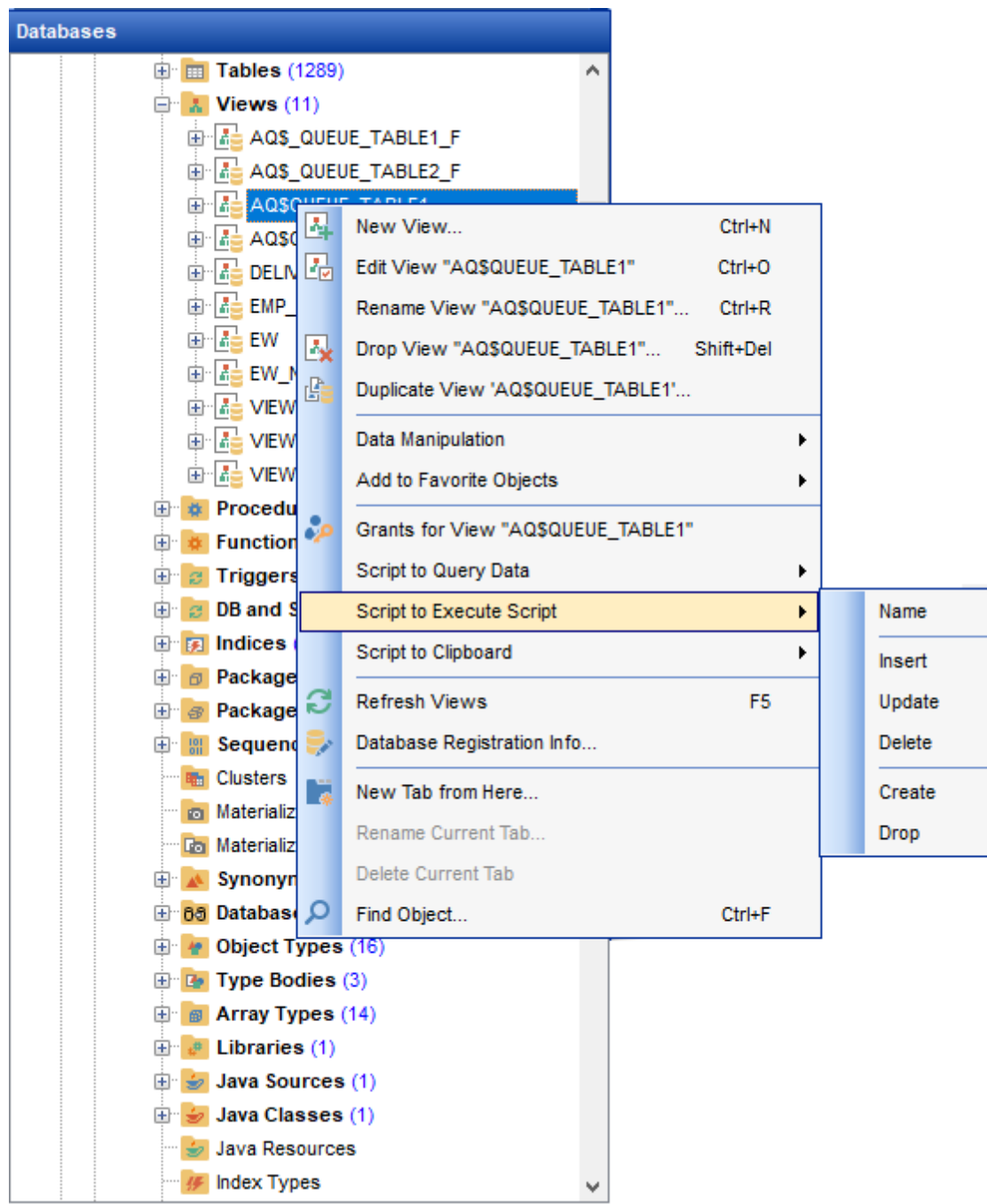
Database Explorer allows you to perform various operations with [database objects](#).

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:

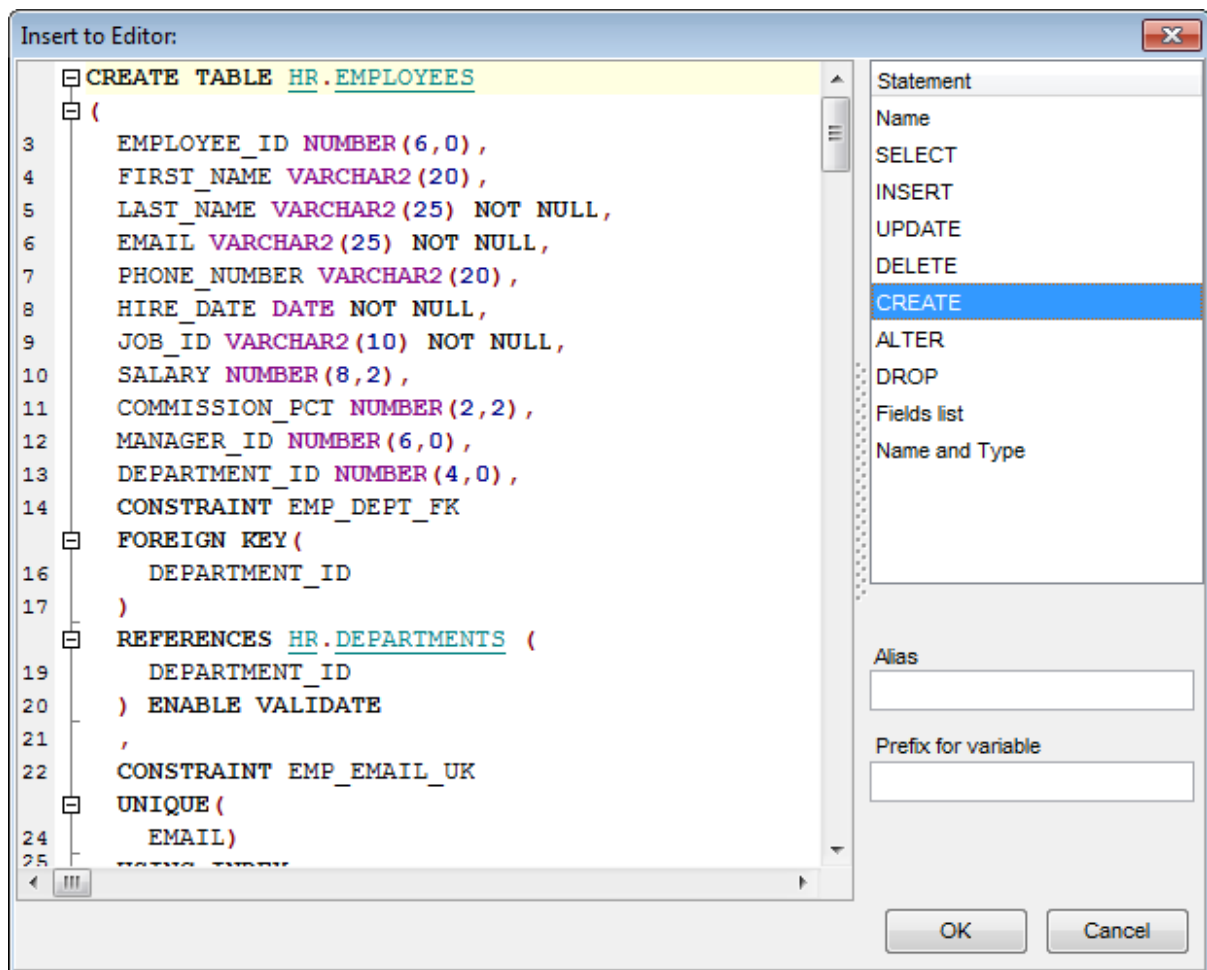
- create a new object (the **New <object>...** item);
- edit currently selected object (the **Edit <object_name>...** item);
- rename currently selected object (the **Rename <object_name>...** item);
- drop the selected object from the database (the **Drop <object_name>...** item);
- duplicate the selected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

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 [Query data](#), [Design Query](#) or [Execute 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*, *Fields 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 Query Data area](#)).

**See also:**

[Database Objects Management](#)

[Query Data](#)

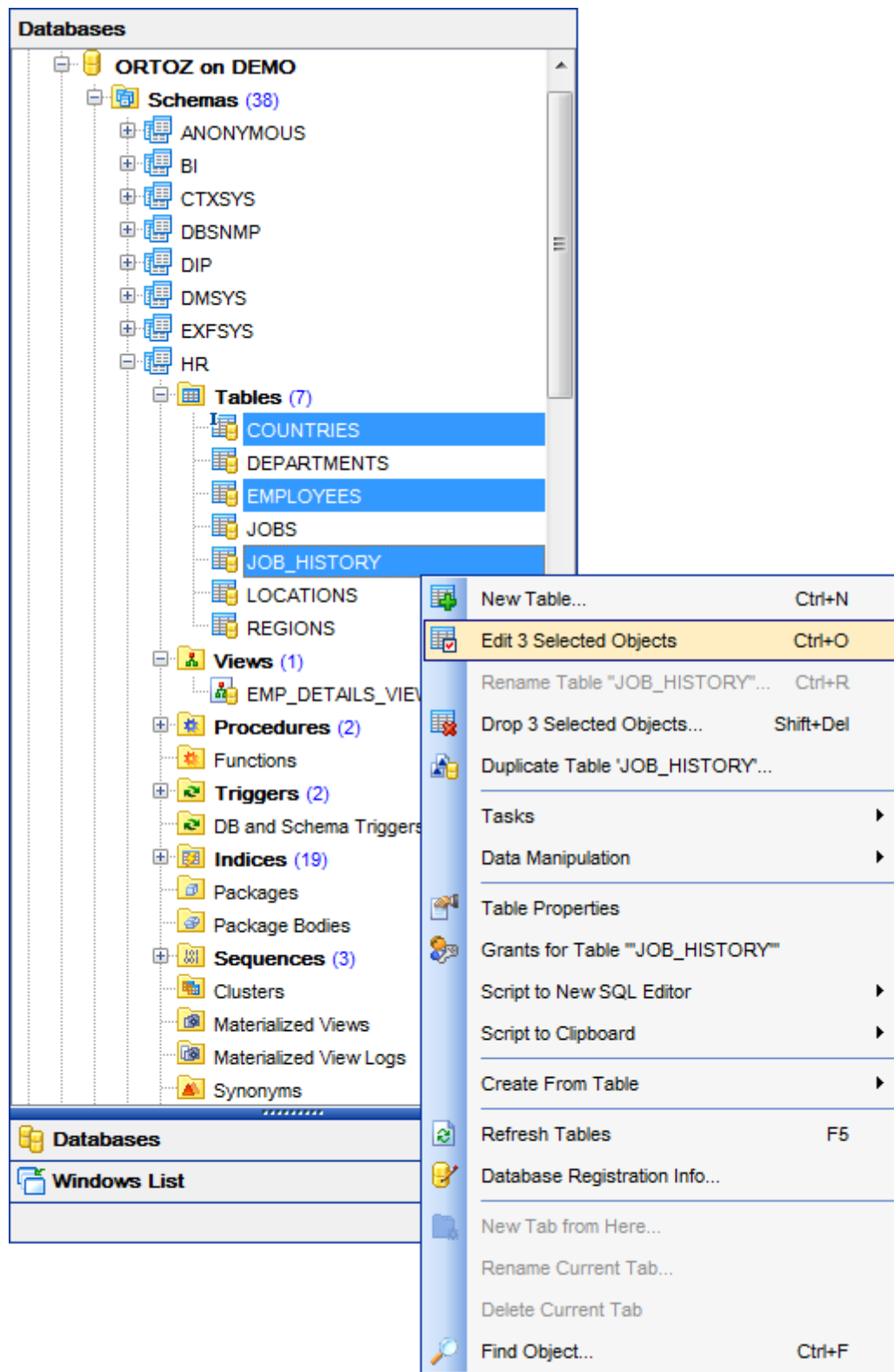
[Selecting multiple objects](#)

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 Objects Management](#)[Managing Favorite objects](#)

3.5 Using tabs for database navigation

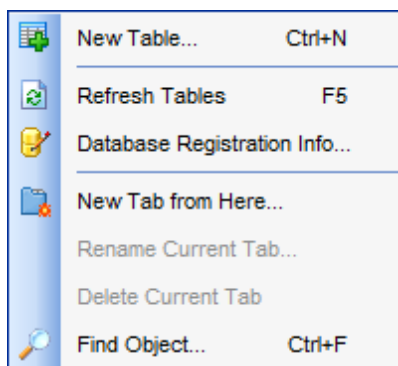
To make your work with **Database Explorer** even more convenient, the capability of **working with several tabs** is implemented.

You can use tabs when you wish to work with a particular node of the DB Explorer tree only: with one specific schema, or with tables of some schema, or with specific database [favorite objects](#). 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

- 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.

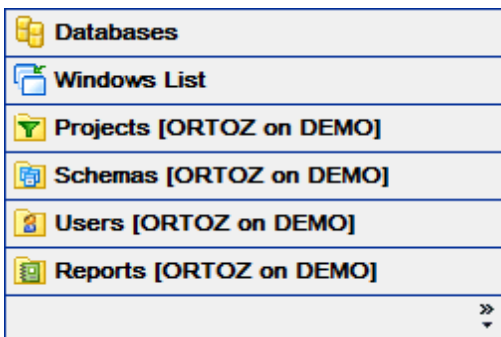


The specified tabs can be displayed in either of the two views:

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



- as *tabs* with captions:

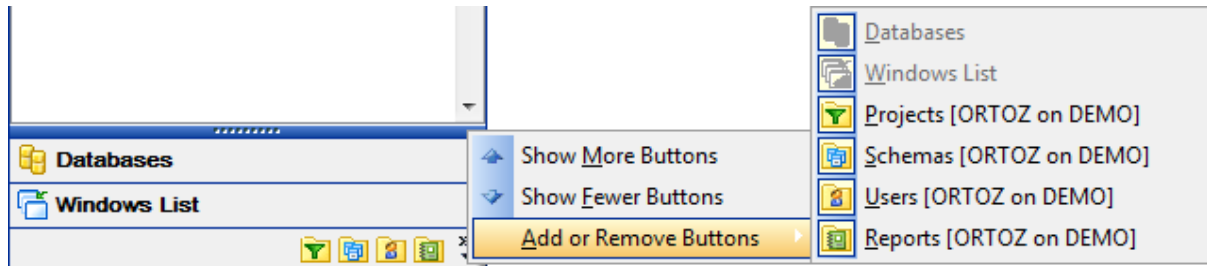


Hint: You can reorder items in the *tabs* view by dragging their captions up and down.

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.



Renaming tabs

- 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

- 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](#)

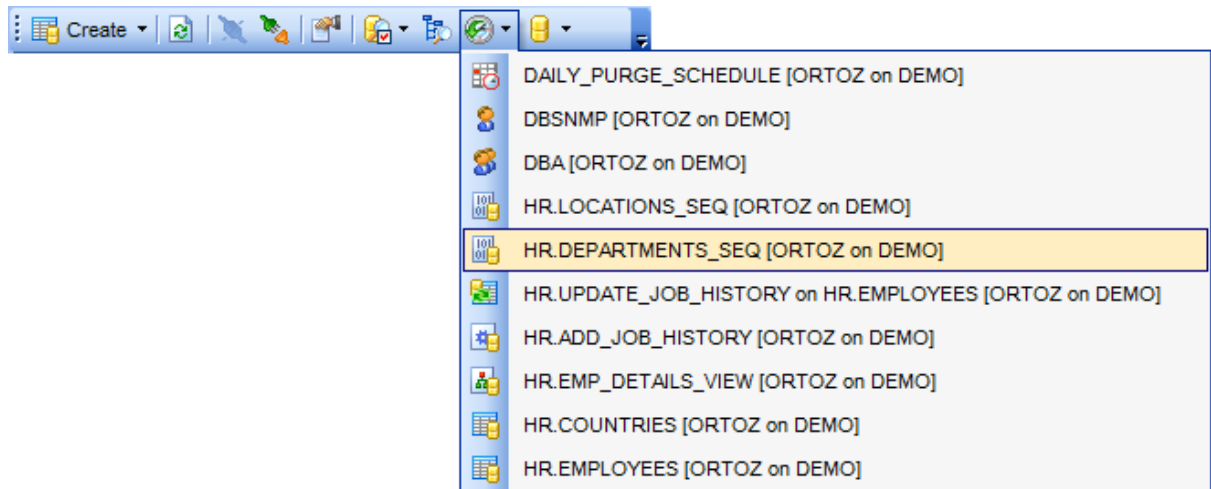
[Windows List](#)

[Database 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 database group are displayed. Select an object from this list to open it using its editor.



To change the number of objects that are considered 'recent' set the **Recent objects count** option value at [Environment Options](#).

See also:

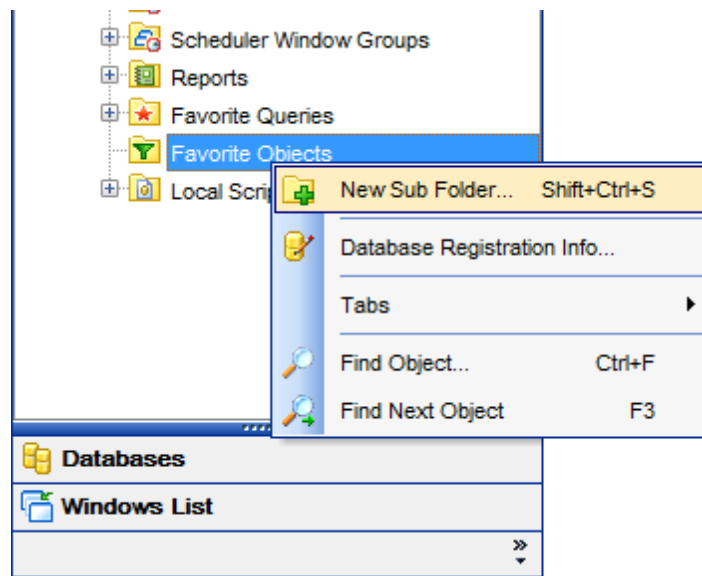
[Database Objects Management](#)

[Environment Options](#)

3.7 Managing Favorite objects

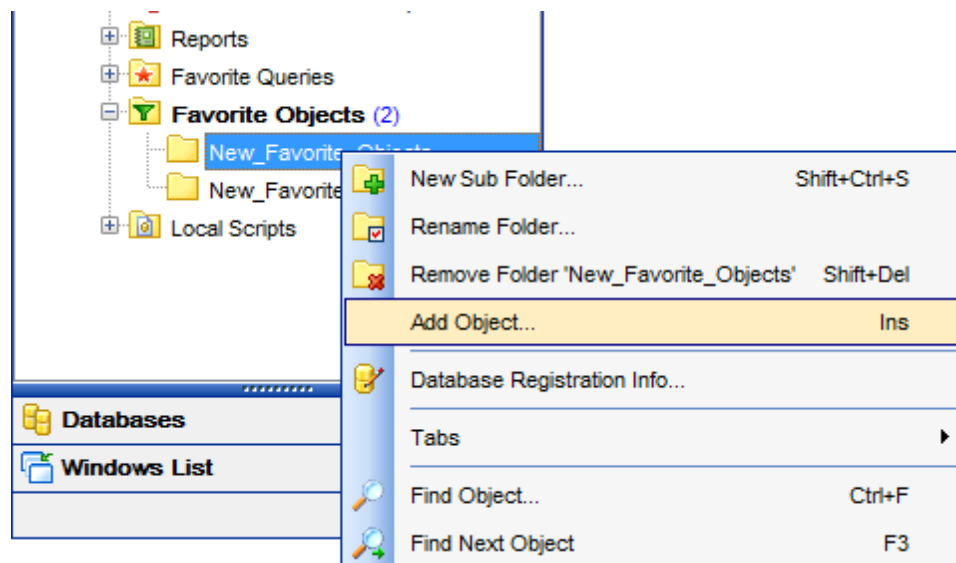
Use the **Favorite objects** node for each database to work with the selected objects of this database only. You can place any object from the database tree here.

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

- 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

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.

or

- right-click the desired object in DB Explorer and select the **Add to Favorite Objects** context menu item;

Removing objects 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 Objects Management](#)

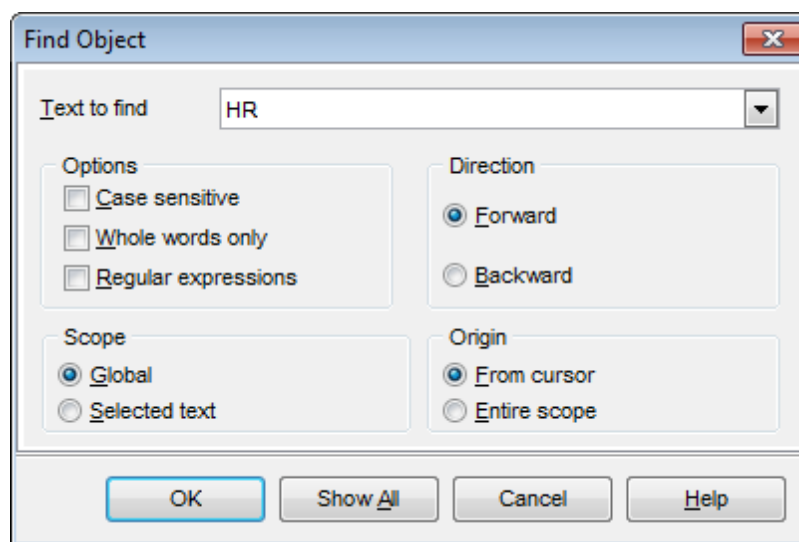
3.8 Searching within the tree

SQL Manager for Oracle 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 objects within the **DB Explorer** tree in either of the following ways:

- using the **Find Object** dialog

To call the **Find Object** dialog, right-click the **Database** alias, any database object group nodes or objects in the **DB Explorer** tree and select the **Find Object...** [context menu](#) item, or use the *Ctrl+F* [shortcut](#).

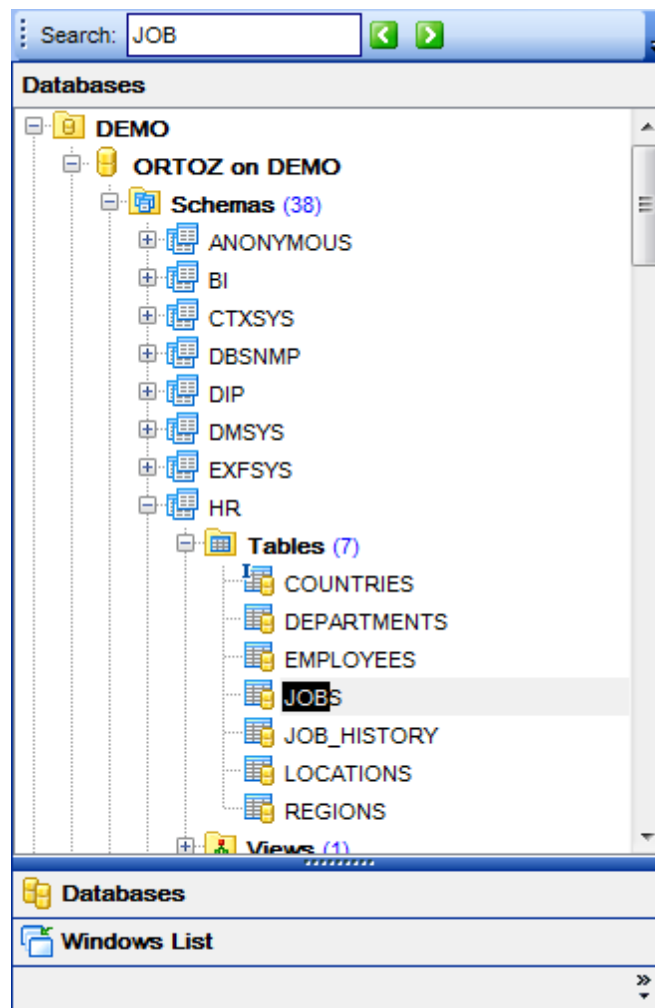


Available search options are similar to those provided by the **Find Text** dialog. For detailed description of the search options refer to the [Find Text dialog](#) page.

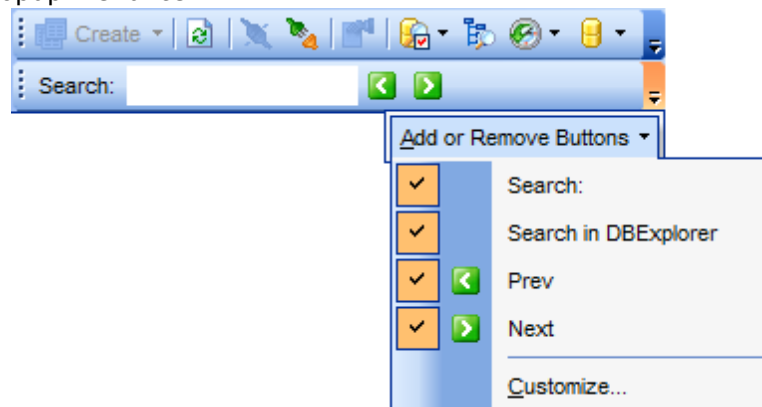
Note: You can specify whether the search will be performed within the entire tree or within the currently selected node only: toggle search mode using the  **Search by categories** button on the [Search Panel](#), or use the corresponding option available in the [Tools | DB Explorer](#) section of the [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. The  button toggles searching by category.



Click **More buttons...** on the right side of the toolbar and use the **Add or Remove Buttons** popup menu items to disable the panel by deselecting the checkbox at the corresponding popup menu item.

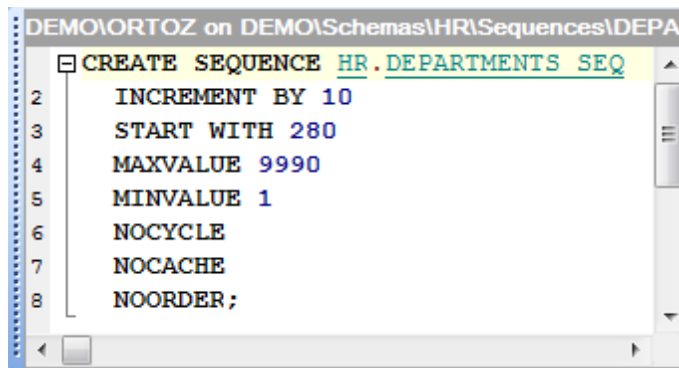


Hint: The **Search Panel** is dockable, i.e. you can drag it to any location within the **DB Explorer** form.

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.



Database and schemas

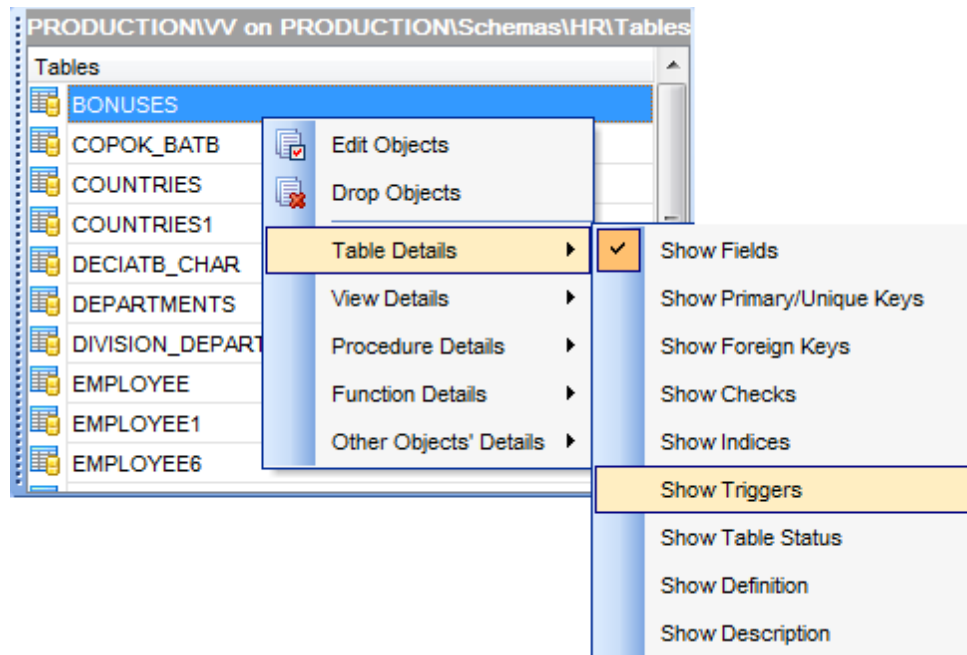
If you select a database or schema in DB Explorer, SQL Assistant displays the list of the database *object groups* and the *number of objects* in each group.

Objects 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 allows you to edit or drop the selected objects.

Tables and views

SQL Assistant displays the list of the table/view subobjects (e.g. *fields* and their *types*) by default. You can change the content of SQL Assistant clicking the **View Mode**  [toolbar](#) button or using the context menu of SQL Assistant.



Procedures and functions

SQL Assistant displays parameters list (arguments and types) by default. You can switch to displaying object definition at the popup menu.

Other objects

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 display object *Description*.

You can also use **SQL Assistant** to work with your queries quickly. You can drag-and-drop object aliases to the [Execute script](#) working area, in the same way as this operation is performed in **Database Explorer**.

See also:

[Database Objects Management](#)

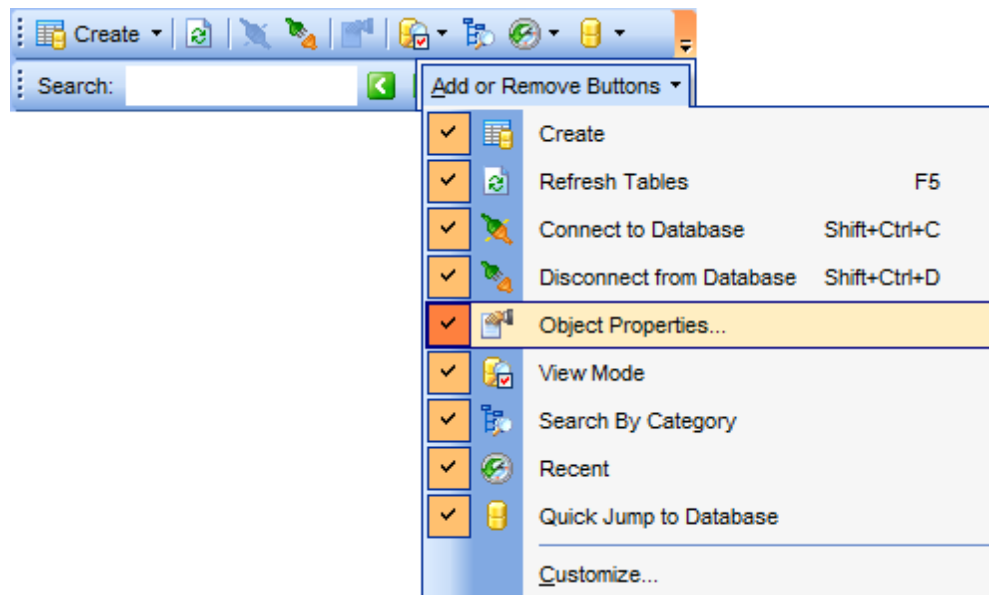
3.10 Configuring Database Explorer

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:

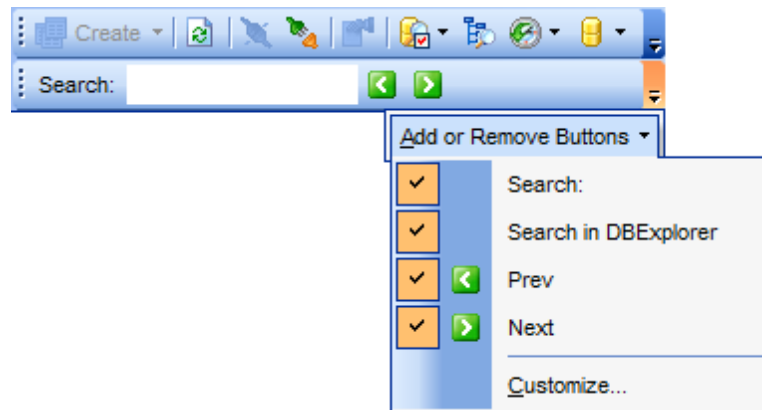
- [create](#) a new object;
- refresh the current tree branch;
- [connect](#) to a database;
- [disconnect](#) from a database;
- view the selected object properties;
- configure Database Explorer using the [View Mode](#) menu;
- view the list of [recently opened objects](#);
- jump to any of registered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



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.

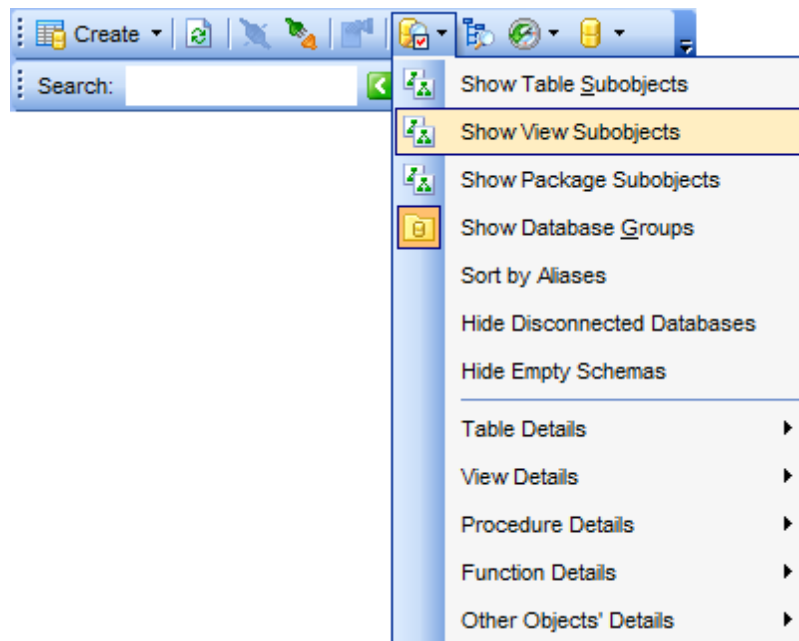


View Mode menu

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 view subobjects as child nodes of [views](#);
- show/hide package subobjects as child nodes of [packages](#);
- show/hide database group nodes for [registered databases](#);
- sort the list of databases by their aliases in the DB Explorer tree;
- show/hide [disconnected databases](#);
- show/hide empty schemas;
- configure table/view/procedure/function/other objects' details for the [SQL Assistant](#) area.



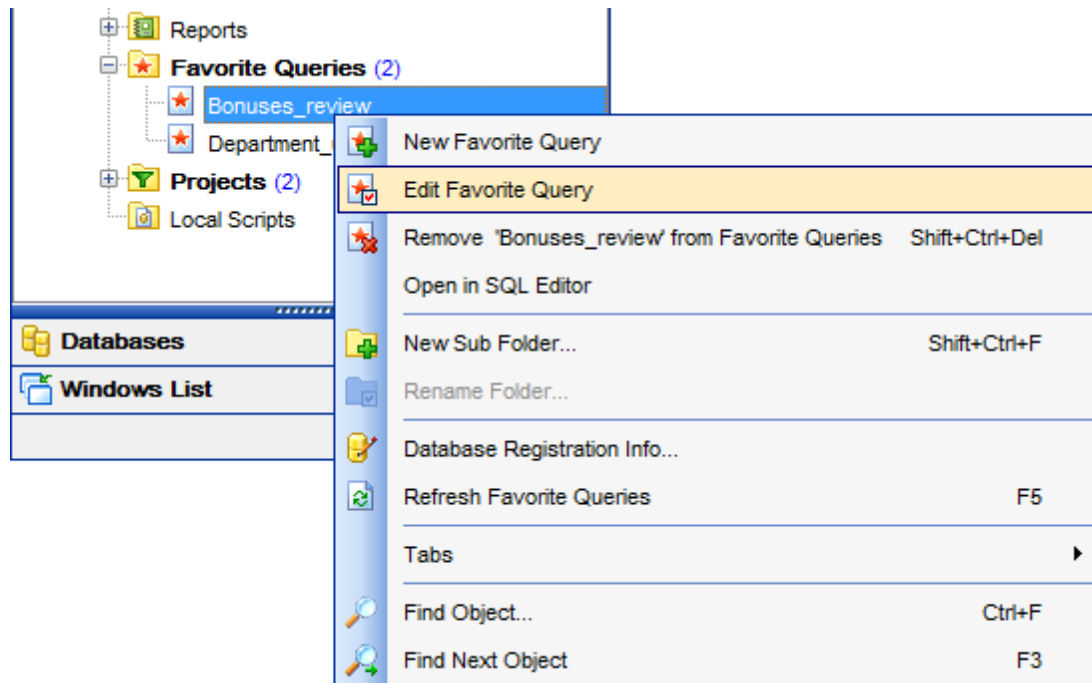
Use the [DB Explorer](#) section of the [Environment Options](#) dialog (**Options | Environment Options...**) to see more options to configure **Database Explorer**.

See also:[Customize toolbars and menus](#)[Environment Options](#)

3.11 Managing Favorite queries

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 [Query data 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

IV

4 Database Management

SQL Manager for Oracle provides a number of tools you may need to manage your Oracle databases.

Find the list of common database management operations for working in SQL Manager below.

Registering Databases

- select the **Database | Register Database...** [main menu](#) item or use the corresponding  **Register Database** [toolbar](#) button
- or
- right-click an existing database or database group 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 and Database Groups

- select the database (or the database group) to unregister in the [DB Explorer](#) tree;
- select the **Database | Unregister Database** (or **Database | Unregister Database Group**) [main menu](#) item or use the corresponding  **Unregister Database** [toolbar](#) button
- or
- right-click the database (or the database group) alias and select the **Unregister Database** (or **Unregister Database Group**) context menu item in the [DB Explorer](#) tree;
- confirm unregistering in the corresponding dialog window.

Creating Databases

- select the **Database | Create Database...** [main menu](#) item or use the corresponding **Create Database**  [toolbar](#) button
- or
- right-click an existing database or database group alias and select the **Create Database...** context menu item in the [DB Explorer](#) tree;
- set all the necessary options using [Create Database wizard](#) which guides you through the entire process of Database creation.

Connecting to Databases

- 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

- 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

- 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 TNS file

- right-click the database or database group alias and select the **TNS Editor** context menu item;
- use the [TNS Editor](#) to view/edit local naming parameters.

See also:

[Getting Started](#)

[Database Explorer](#)

[Database Objects Management](#)

[Query Management Tools](#)

[Data Management](#)

[Import/Export Tools](#)

[Database Tools](#)

[Services](#)

[Options](#)

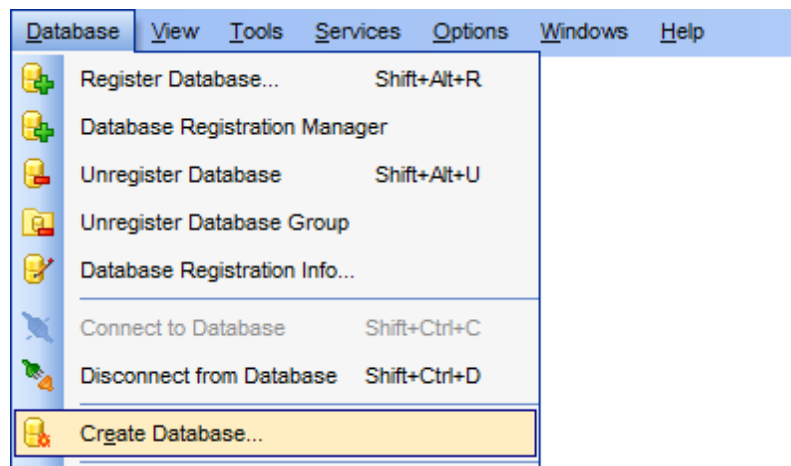
[How To...](#)

4.1 Create Database Wizard

Create Database wizard allows you to create a new Oracle database.

To start the wizard, select the **Database | Create Database...** [main menu](#) item, or use the **Create Database**  button on the main [toolbar](#).

- [Specifying database name](#)
- [Specifying memory parameters](#)
- [Defining additional settings](#)
- [Defining database directories](#)
- [Data storage and redo log settings](#)
- [Creating database scripts](#)



See also:

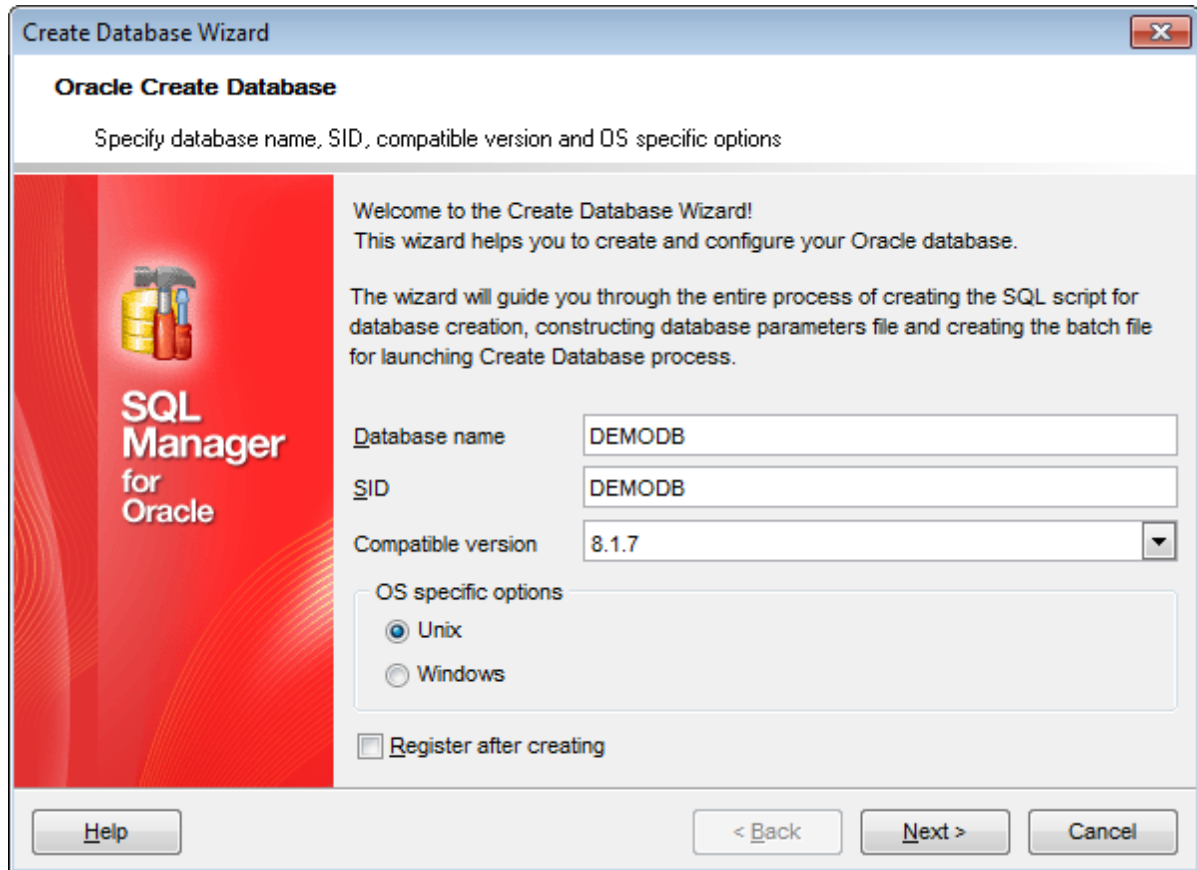
[Register Database wizard](#)

[Database Registration Info](#)

[Database Registration Manager](#)

4.1.1 Specifying database name

At this step you need to specify the *database name*, *SID*, Oracle compatible *version* and *OS specific options*.



Database name

Specify the name of the database to be created.

Note: The database name is case insensitive and is stored in uppercase ASCII characters.

SID

Specify a unique Oracle system identifier for your instance (*ORACLE_SID*).

Note: *ORACLE_SID* is used to distinguish this Oracle instance from other instances that you may create later and run concurrently on the same host computer.

Compatible version

Use the drop-down list to select the version of Oracle the new database will be compatible with. The database script will be generated by the application in accordance with the selected server version. Possible values are: 8.1.7, 9.0.1, 9.2.0, 10.1.0, 10.2.0, 11.1.0, 12.1, 12.2, 18.0).

OS specific options

Specify the operating system for the database being created: ☒ *Unix* or ☐ *Windows*. The result script will be generated in accordance with the selected operating system specifications.

☒ **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 [Specifying memory parameters](#) step of the wizard.

4.1.2 Specifying memory parameters

This step allows you to specify the *database template* and to define *memory parameters*.

The screenshot shows the 'Create Database Wizard' dialog box, specifically the 'Oracle Create Database' step. The title bar reads 'Create Database Wizard'. Below the title bar, the text 'Oracle Create Database' is displayed, followed by 'Specify memory parameters'. On the left side, there is a red vertical banner with the 'SQL Manager for Oracle' logo. The main area contains two sections: 'Database Template' and 'Memory parameters in megabytes'. In the 'Database Template' section, four radio buttons are listed: 'OLTP' (selected), 'General purpose', 'Data warehouse', and 'Standby database'. A 'View / Edit' button is located to the right of these options. In the 'Memory parameters in megabytes' section, five parameters are listed with corresponding spin boxes: 'Shared pool' (48), 'Processes' (150), 'Java pool' (32), 'Large pool' (8), and 'PGA' (24). A 'Set defaults' button is located to the right of these parameters. At the bottom of the dialog, there are four buttons: 'Help', '< Back', 'Next >', and 'Cancel'.

Database Template

Use this group to select a template with storage parameters that best meet your needs:

- ☒ *OLTP*
- ☐ *General purpose*
- ☐ *Data warehouse*
- ☐ *Standby database (for version 10.1.0 and higher)*

If you need to customize these parameters, press the **View/Edit** button to open the corresponding **Parameters** dialog.

The Parameters dialog box contains the following parameters:

Parameter Name	Value	Unit
db_block_size	16	Kb
db_cache_size	16	Mb
db_file_multiblock_read_count	32	
hash_join_enabled	TRUE	
pga_aggregate_target	32	Mb
query_rewrite_enabled	TRUE	
sort_area_size	1024	Mb
star_transformation_enabled	TRUE	
undo_retention	10800	

Buttons: OK, Cancel

Memory parameters in megabytes

Use the spinner controls and drop-down lists to specify memory parameters (in megabytes):

Shared pool

Processes

Java pool

Large pool

PGA

Primary database parameters

This group is available if the *Standby database* template is selected. Use the editing controls to specify primary database parameters:

SID (system identifier, for description see [Specifying database name](#))

Sys password (password for the SYS user)

The Primary database parameters dialog box contains the following fields:

Parameter Name	Value
SID	DEMO
Sys password	*****
☒ Primary in archivelog	
Log archive format	test_%s_%t_%r.arc

☒ Primary in archivelog

Use this option to define whether the primary database is in archivelog mode (i.e. the contents of a [redo log file group](#) is archived before the group can be reused). If it is, you need to specify its **Log archive format** in

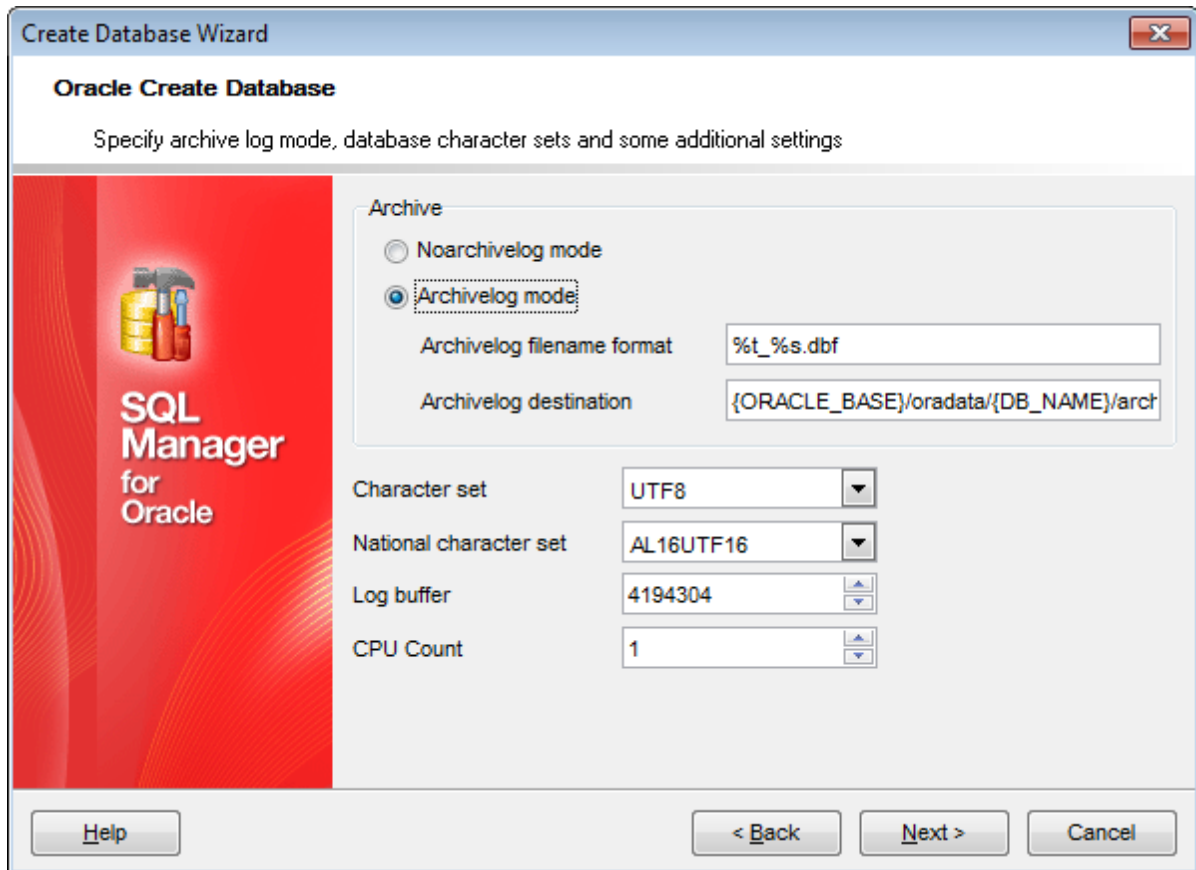
the corresponding field.

Click the **Next** button to proceed to the [Defining additional settings](#) step of the wizard.

4.1.3 Defining additional settings

Use this step to define additional database settings.

Note: This step is skipped if the  *Standby database* template is specified at the [Specifying memory parameters](#) step of the wizard.



Archive

Noarchivelog mode

If this mode is used, the contents of a [redo log file group](#) is not archived before the group can be reused. This mode does not allow the possibility of media recovery, i.e. the database can be completely recovered after an instance failure, but not after a disk failure. Also, the database can be [backed up](#) only while it is completely closed.

Archivelog mode

If this mode is used, the contents of a [redo log file group](#) is archived before the group can be reused. This mode prepares for the possibility of media recovery, i.e. the database can be completely recovered after both an instance failure and a disk failure. Also, the database can be [backed up](#) while it is open and available for use.

If the **Archivelog mode** is specified, you also need to define **archivelog filename format** size, **archivelog destination** using the corresponding controls, or use the default values.

Note: The specified paths and file names must comply with specifications of the operating system selected at the [first step](#) of the wizard.

Character set

Use the drop-down list to specify the character set the database will use to store data. The supported character sets depend on your operating system.

National character set

Use the drop-down list to specify the national character set to be used to store data in [columns](#) specifically defined as *NCHAR*, *NCLOB*, or *NVARCHAR2*.

You also need to define **log buffer** size, **CPU count** using the corresponding controls, or use the default values.

Click the **Next** button to proceed to the [Defining special directories and filenames](#) step of the wizard.

4.1.4 Defining database directories

At this step you should specify common and special directories.

The screenshot shows the 'Create Database Wizard' window with the title 'Oracle Create Database'. The subtitle is 'Define database directories'. On the left is a red sidebar with the 'SQL Manager for Oracle' logo. The main area is divided into two sections: 'Common directories' and 'Special directories'. Under 'Common directories', there are four fields: 'Oracle base' (C:\oracle\ORABASE), 'Oracle home' (C:\oracle\ORAHOME), 'Init parameters' ({ORACLE_BASE}\admin\{DB_NAME}\pfile\init{SID}.ora), and 'Server parameters' ({ORACLE_HOME}\database\spfile{SID}.ora). Under 'Special directories', there are three fields: 'User trace' ({ORACLE_BASE}\admin\{DB_NAME}\udump), 'Background trace' ({ORACLE_BASE}\admin\{DB_NAME}\bdump), and 'Core dumps' ({ORACLE_BASE}\admin\{DB_NAME}\cdump). At the bottom right is a 'Set defaults' button. At the bottom of the window are 'Help', '< Back', 'Next >', and 'Cancel' buttons.

Common directories

Oracle base

Use this field to specify the directory where Oracle base files will be stored.

Oracle home

Use this field to specify the Oracle home directory.

The **Init parameters** and **Server parameters** fields indicate the location of the initialization parameter file (*init{SID}.ora*) and server parameter file (*spfile{SID}.ora*) respectively and are read-only.

Note: The specified paths and file names must comply with specifications of the operating system selected at the [first step](#) of the wizard.

Special directories

This group is available if the ☒ *OLTP*, ☒ *General purpose*, or ☒ *Data warehouse* database template is selected at the [Specifying memory parameters](#) step.

Use this group to define paths to the **User trace**, **Background trace** and **Core dumps** logs, or press the **Set defaults** button to use the pre-defined values.

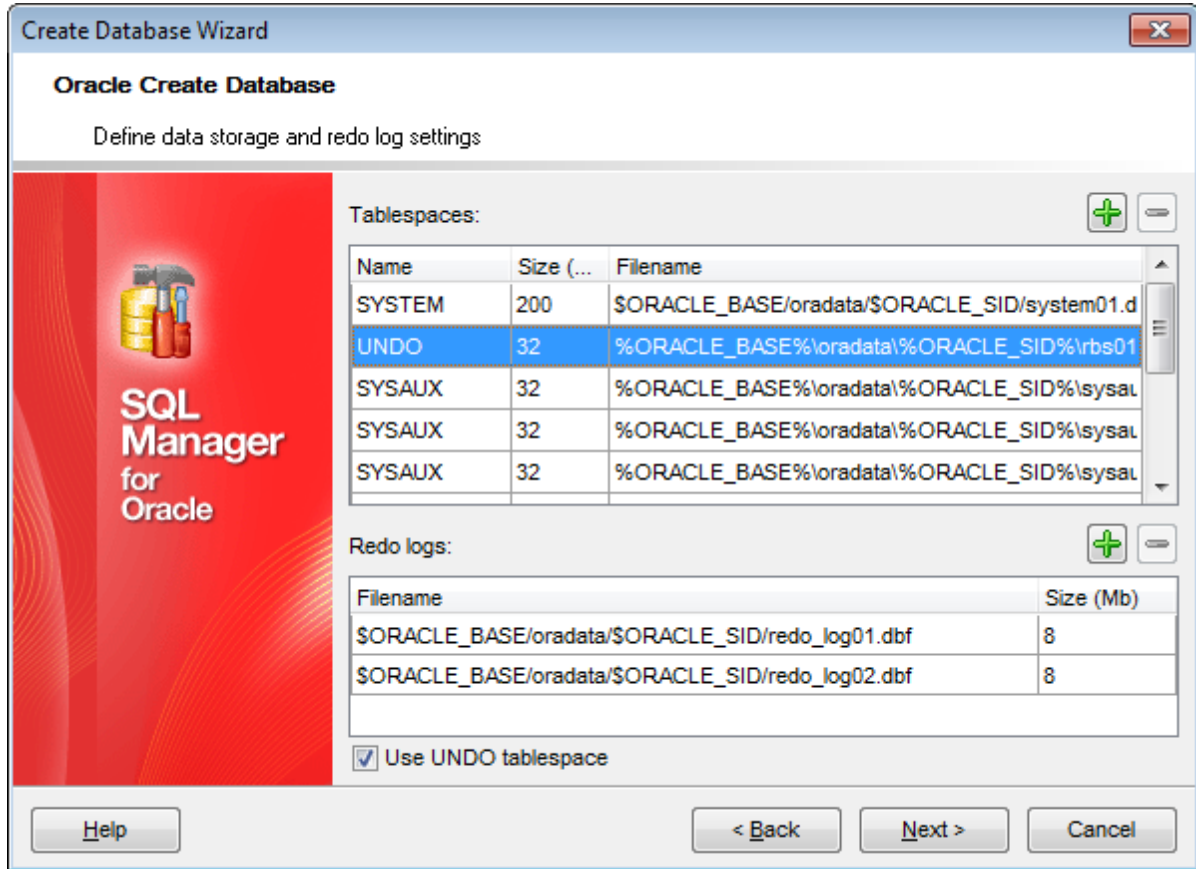
Note: The specified paths and file names must comply with specifications of the operating system selected at the [first step](#) of the wizard.

Click the **Next** button to proceed to the [Data storage and redo log settings](#) step of the wizard.

4.1.5 Data storage and redo log settings

This step allows you to manage [tablespaces](#) and [redo logs](#).

Note: This step is skipped if the  *Standby database* template is specified at the [Specifying memory parameters](#) step of the wizard.



Create Database Wizard

Oracle Create Database

Define data storage and redo log settings

Tablespaces:

Name	Size (...)	Filename
SYSTEM	200	\$ORACLE_BASE/oradata/\$ORACLE_SID/system01.d
UNDO	32	%ORACLE_BASE%\oradata%\ORACLE_SID%\rbs01
SYSAUX	32	%ORACLE_BASE%\oradata%\ORACLE_SID%\sysau
SYSAUX	32	%ORACLE_BASE%\oradata%\ORACLE_SID%\sysau
SYSAUX	32	%ORACLE_BASE%\oradata%\ORACLE_SID%\sysau

Redo logs:

Filename	Size (Mb)
\$ORACLE_BASE/oradata/\$ORACLE_SID/redo_log01.dbf	8
\$ORACLE_BASE/oradata/\$ORACLE_SID/redo_log02.dbf	8

☒ Use UNDO tablespace

Help < Back Next > Cancel

Use the  **Add item** button to add the corresponded item.

Use the  **Remove item** button to delete the selected item.

Note: There are several system tablespaces that cannot be removed from the list: *SYSTEM*, *UNDO*, *SYSAUX*, *TEMP*.

The **Add Tablespace** allows you to define properties for a newly added [tablespace](#).

Tablespace name

Specify the name of the tablespace to be created.

File Name

Specify the tempfile to make up the temporary tablespace.

Size (Mb)

Specify the tablespace size (in megabytes).

Extent management

☒ **Dictionary**

Use this option if you want the tablespace to be managed using dictionary tables. In this case you should set the **Default storage** parameters.

☒ **Locally**

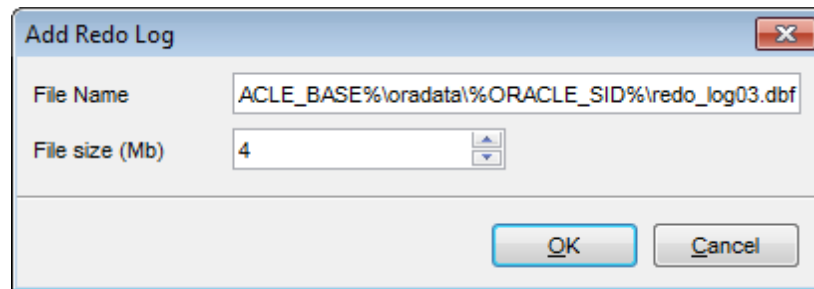
Select this option if you want the tablespace to be locally managed. Locally managed tablespaces have some part of the tablespace set aside for a bitmap.

Default storage

This group is available only for a locally managed tablespace. Using these controls you can specify the default storage parameters for all objects created in the tablespace: *Initial extent*, *Next extent*, *Percent increase*, *Minimum extents*, *Maximum extents*, *Minimum extent size*.

For more information see [Storage attributes](#).

The **Add Redo Log** allows you to define properties for a newly added [redo log file](#).



File Name

Specify the path and name of the redo log file to be added.

File size (Mb)

Specify the redo log file size (in megabytes).

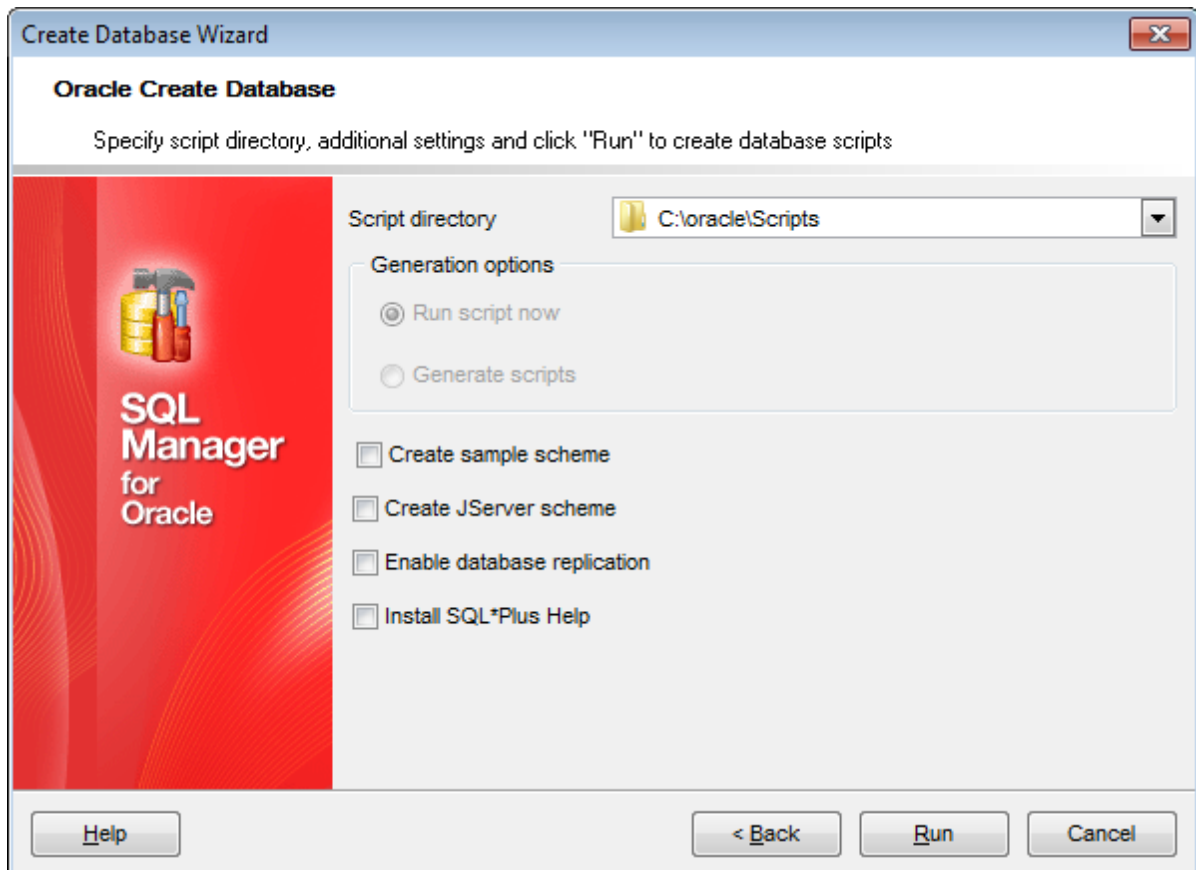
Note: There should be no less than two redo logs in a database.

Click the **Next** button to proceed to the [Creating database scripts](#) step of the wizard.

4.1.6 Creating database scripts

At the final step of the wizard you need to specify *script generation options* and some additional settings.

If the ☒ *OLTP*, ☒ *General purpose*, or ☒ *Data warehouse* database template is specified at the [Specifying memory parameters](#) step of the wizard, you should specify script directory, generation options and other options.



Script directory

Use this field to specify the *CREATE DATABASE* script location.

Generation options

☒ Run script now

Select this option execute the generated script to create the database immediately.

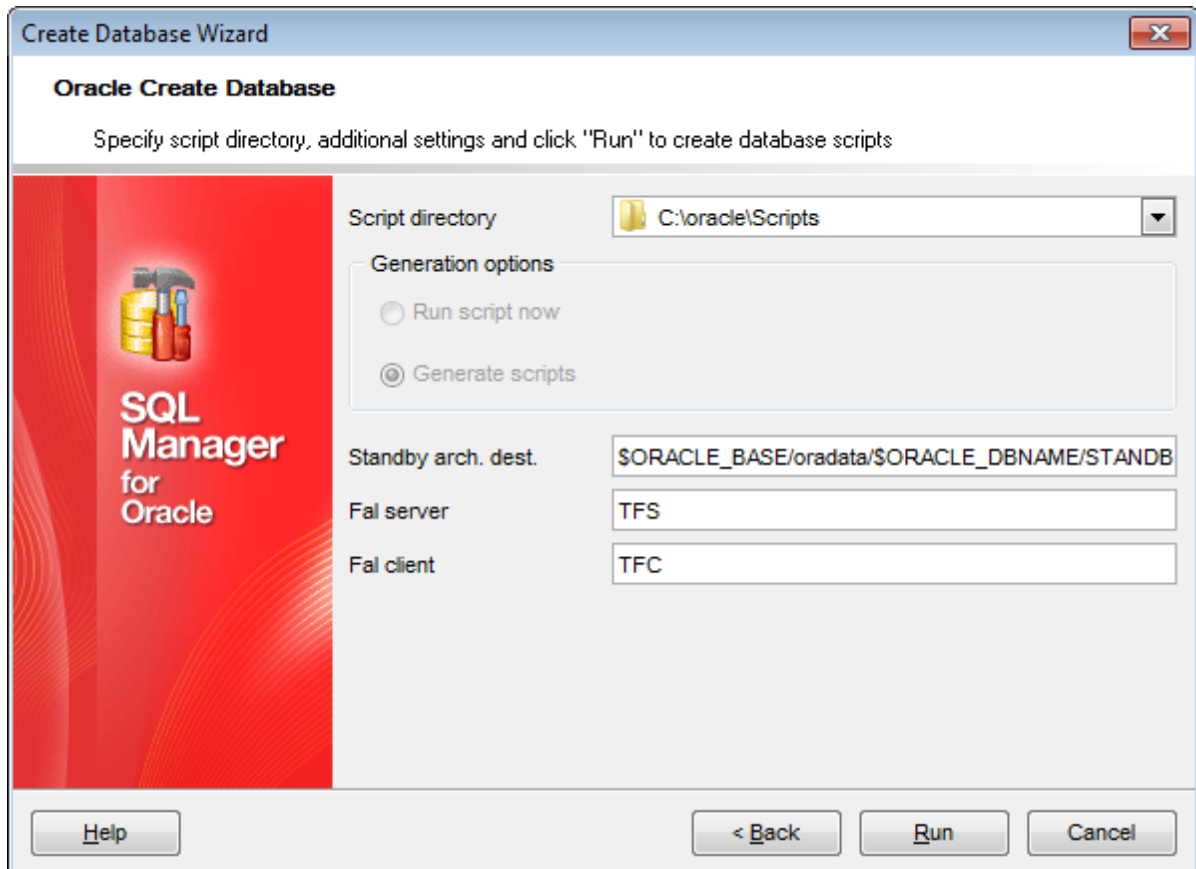
☐ Generate scripts

Select this option to generate database creation scripts for future use.

In case you intend to ☒ **Create sample scheme**, ☒ **Create JServer scheme**, ☒ **Enable database replication**, ☒ **Install SQL*Plus Help**, enable the corresponding options.

If the ☒ *Standby database* template is specified at the [Specifying memory parameters](#)

step of the wizard, you should specify script directory and options specific for a standby database.

**Script directory**

Use this field to specify the *CREATE DATABASE* script location.

You need to specify **Standby archive destination**, **Fal server** and **Fal client** to finish database customization.

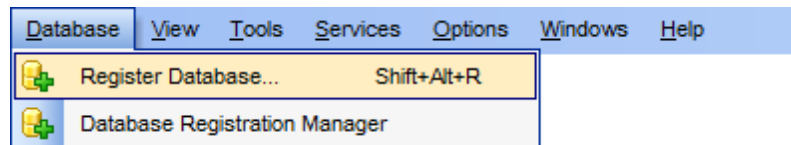
When all settings are done, click the **Run** button to complete the operation.

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:

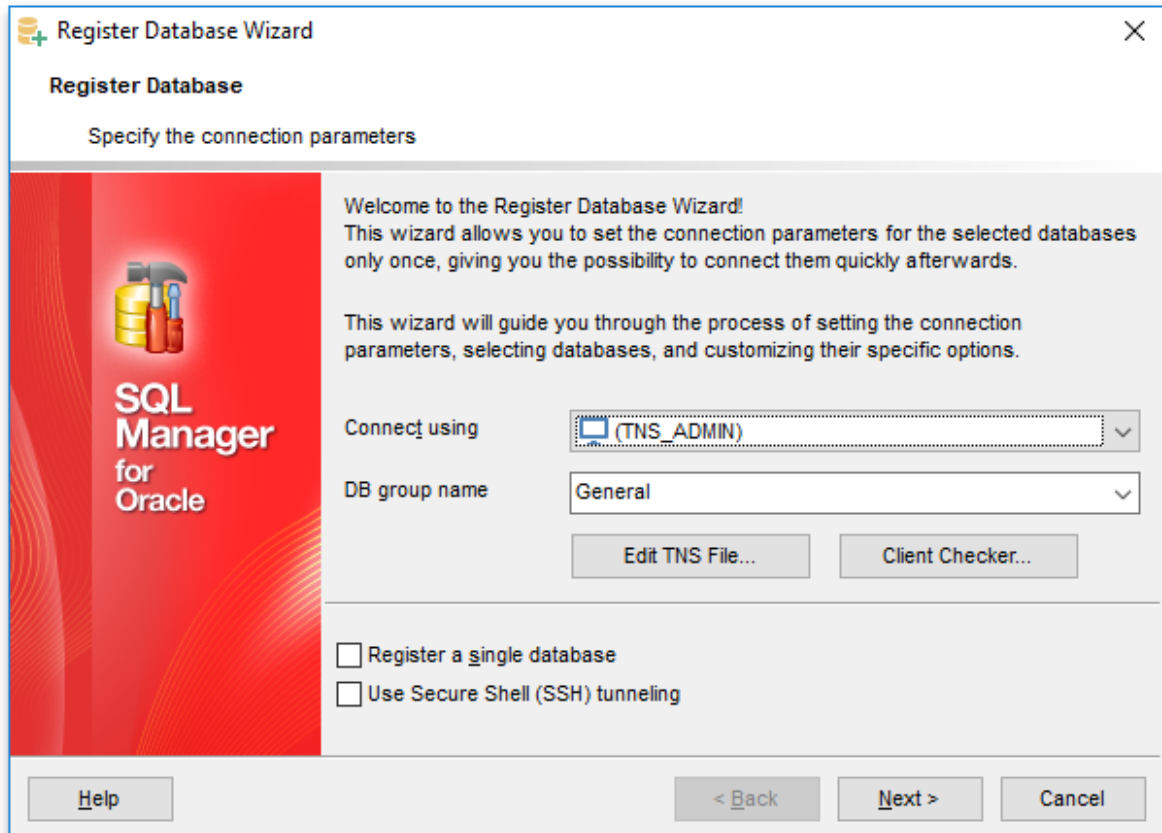
[Create Database wizard](#)

[Database Registration Info](#)

[Database Registration Manager](#)

4.2.1 Setting connection parameters

Use this step of the wizard to set the necessary **connection parameters** for the new database and optional database group alias.



Connect using

Specify your **Oracle Home** storage for this connection. If there are several database homes set on your local system, you can use the arrow-down  button to select one from the drop-down list.

Choose [Connection string](#) if you need to connect to a database that is absent in the TNS file.

Note: If no database are registered in Oracle Client (DB list is empty in this case), then you need to [add registration info manually](#).

DB group name

Specify a new database group for the database being registered, or select one from the drop-down list called by pressing the arrow-down  button.

Edit TNS File...

If necessary, use this button to call the [Local Naming Parameters](#) editor window.

Client Checker...

If necessary, use this button to call the [Oracle Client Checker](#) dialog.

☒ Register a single database

Check this option if you wish to register only one database during the current session of the wizard.

☒ Use Secure Shell (SSH) tunneling

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

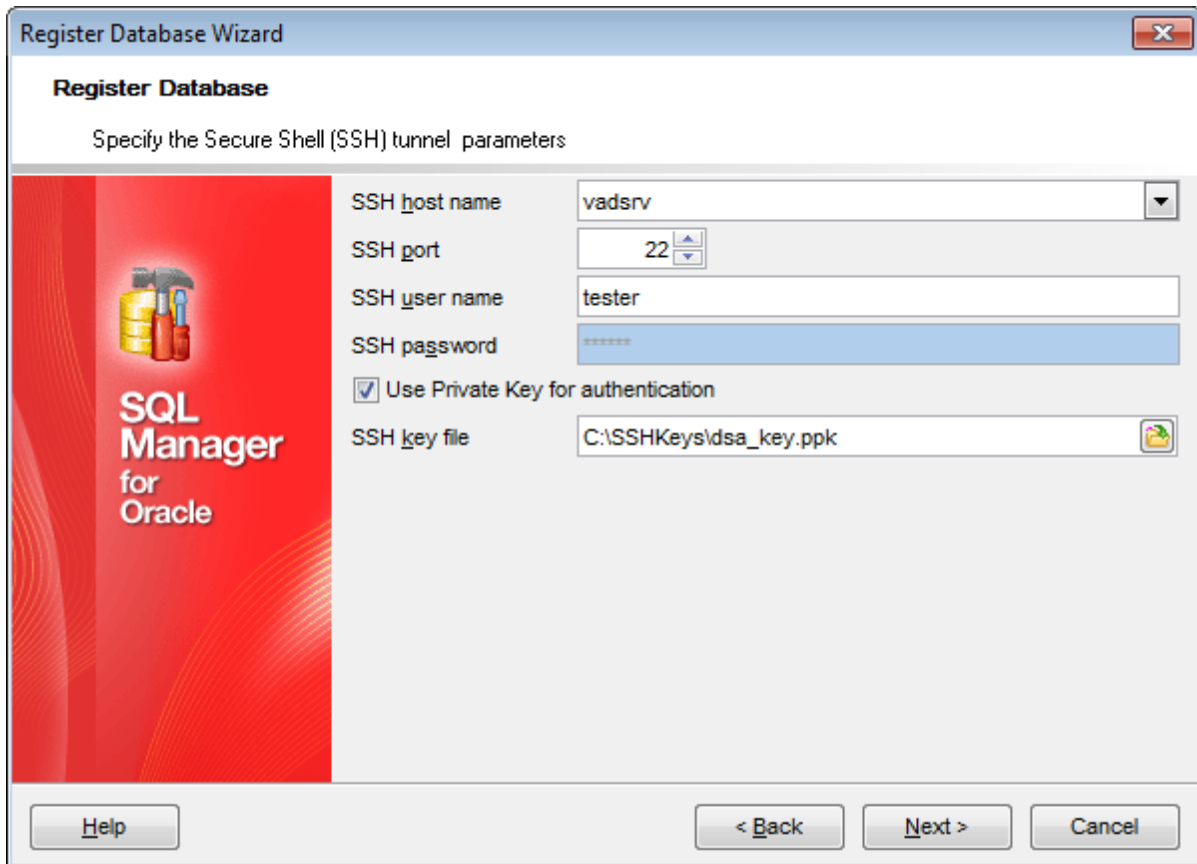
If this option is checked, you should set tunneling parameters at the [Specifying tunneling parameters](#) step of the wizard.

4.2.2 Specifying tunneling parameters

This step appears if the **Use Secure Shell (SSH) tunneling** option is enabled at the [Setting connection parameters](#) step.

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.

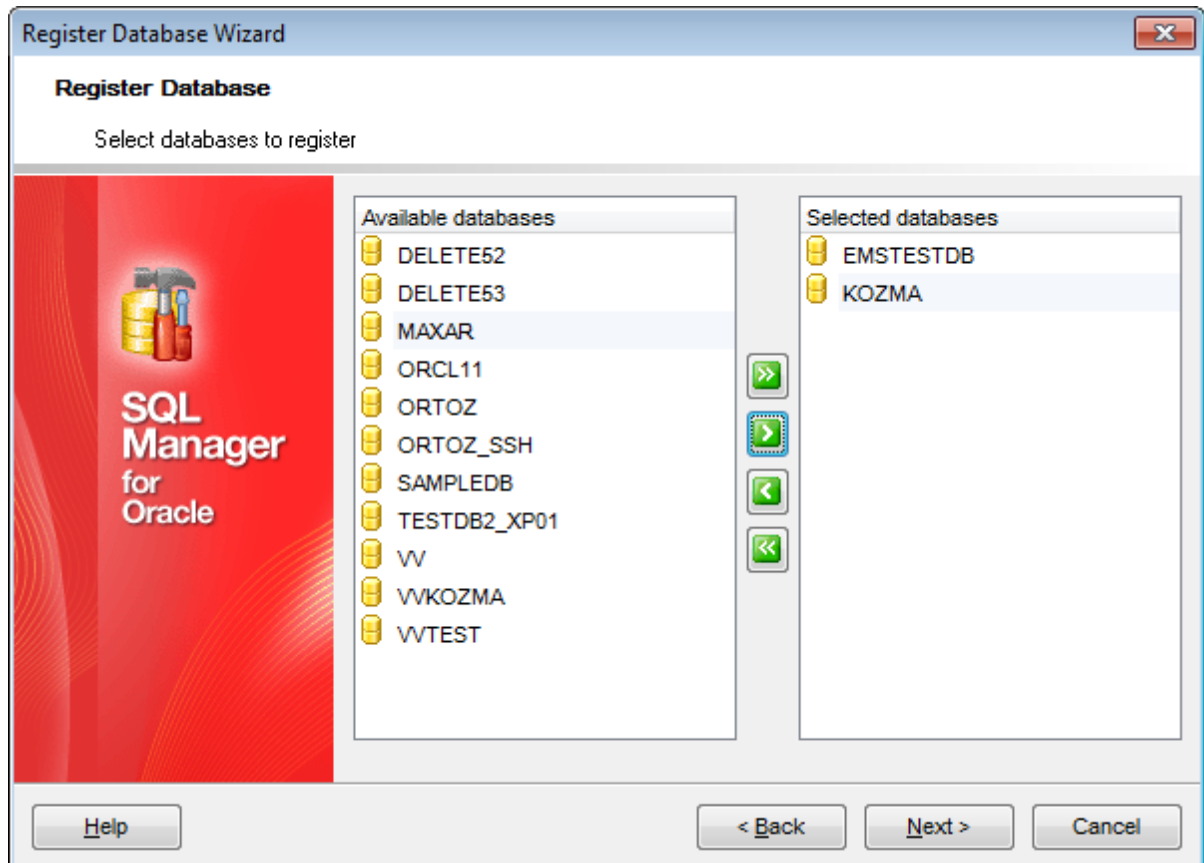


Click the **Next** button to proceed to the [Setting specific options](#) step or to the [Selecting databases](#) step of the wizard, depending on whether the ☒ **Register a single database** option has been selected or not.

4.2.3 Selecting databases

This step of the wizard allows you to select the database(s) that are registered in the TNS file.

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.



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 *Connect*, *General*, *Logs* tabs).

The screenshot shows the 'Register Database Wizard' dialog box. The 'General' tab is selected. The 'Database name' field is set to 'SAMPLEDB'. The 'Database alias' field is set to 'SAMPLEDB on DEMO'. The 'Authentication' section shows 'Server authentication' selected, with 'User name' set to 'SYS' and 'Password' masked with asterisks. The 'Connect as' dropdown is set to 'SYSDBA'. A warning message states: 'Warning: Windows authentication is only supported in version 9.0.0 and higher.' The 'Connect' tab is also visible, and the 'Logs' tab is disabled. The 'Finish' button is highlighted.

Database name

Type in or use the drop-down list to select the database name to be registered (if more than one Oracle database are registered in the TNS file).

Note: If no database are registered in Oracle Client (DB list is empty in this case), then you need to [add registration info manually](#).

If **Connect using -> Connection string** was selected at the [Setting connection parameters](#) step, the **Connection string** field will substitute the **Database name** field.

Press the arrow-down  button to open the popup dialog allowing you to specify the connection parameters.

The screenshot shows a standard Oracle connection dialog box. It has a light gray background and a white border. The fields are arranged vertically on the left, with their corresponding input controls on the right. The 'Protocol' field is a dropdown menu currently showing 'TCP'. The 'Host' field is a text box. The 'Port' field is a text box containing '1521'. The 'Server' field is a dropdown menu currently showing 'DEDICATED'. The 'Service name' field is a text box. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

Protocol - specify the protocol that will be used for connection to the database. Possible values are: *TCP* (by default), *TCPS*, *SDP*, *IPC*, *NMP*, *SPX*.

Host - specify the domain name or IP address (for a remote Oracle server), or type in *localhost* (for a local Oracle server).

Port - define the port used for connection to the database (*1521* by default).

Server - you should select either *DEDICATED* or *SHARED* server type from this drop-down list. Server type affects memory allocation. Select *DEDICATED* to use private memory allocation.

Service name - specify a valid instance name in this field.

Database alias

Enter the alias to be used to display the database in [DB Explorer](#) and SQL Manager tools.

The **Connect tab** allows you to specify authentication parameters:

Authentication

Specify the type of authentication to be used for the connection: ☒ *Windows* authentication or ☐ *Server* authentication.

If ☒ *Windows authentication* is selected as the *authentication type*, the following **conditions** must be fulfilled:

- for **privileged users** (*SYSDBA*, *SYSOPER*):

- 1) if the user can be in *ORA_DBA* server group, then he can connect to any database;
- 2) if the user can be in *ORA_XXX_DBA* server group, then he can connect to the *XXX* database;
- 3) if *SQLNET.AUTHENTICATION_SERVICES=(NTS)*, then only privileged users gain the connection privilege;

- for **unprivileged users**:

- 1) correct *os_authent_prefix* parameter value (*OPS\$* by default) is needed to make search of a user in database possible. This parameter value can be defined in *init.ora* file or using the *ALTER DATABASE* command;
- 2) if the server is installed in a domain, parameter *HKLM/SOFTWARE/ORACLE/HOME<%>/OSAUTH_PREFIX_DOMAIN = TRUE* should be added to the registry (it is absent by default);
- 3) parameter *remote_os_authent = TRUE* should be defined in the *init.ora* or *sqlnet.ora* file;
- 4) parameter *SQLNET.AUTHENTICATION_SERVICES* value should be correct but not equal to (*NTS*). This parameter should also be defined in the *init.ora* or *sqlnet.ora* file.

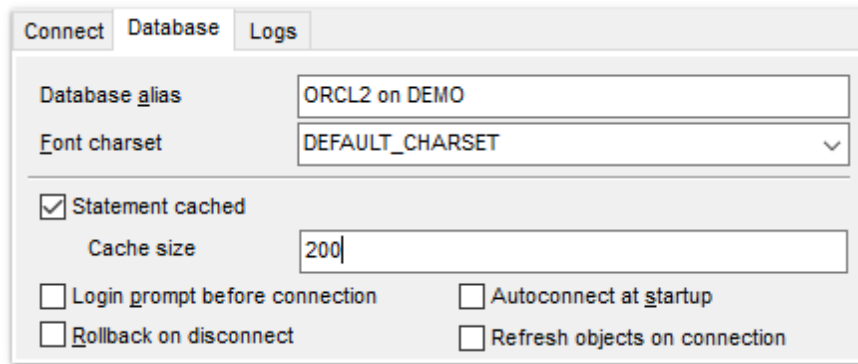
Note that Windows authentication is only supported in Oracle version 9.0 and higher.

If ☒ *Server authentication* is selected as the *authentication type*, you should also provide *authorization* settings: **User name** and **Password**. Server Authentication stores

logins and passwords in the server and does not depend upon Windows. The default superuser name is 'SYS' (for Oracle 9.0 and higher) and the default password is 'change_on_install'.

Connect as

Select the type of connection to be established: *Normal* (by default), *SYSDBA*, *SYSOPER*.



The screenshot shows the 'Connect' tab of a dialog box. It has three tabs: 'Connect', 'Database', and 'Logs'. The 'Connect' tab is active. It contains the following fields and options:

- Database alias:** A text box containing 'ORCL2 on DEMO'.
- Font charset:** A dropdown menu showing 'DEFAULT_CHARSET'.
- Statement cached:** A checked checkbox.
- Cache size:** A text box containing '200'.
- Login prompt before connection:** An unchecked checkbox.
- Autoconnect at startup:** An unchecked checkbox.
- Rollback on disconnect:** An unchecked checkbox.
- Refresh objects on connection:** An unchecked checkbox.

The **Database tab** allows you to set common database registration options:

Database alias

Edit the database alias to be displayed in DB Explorer.

Font charset

Specify the character set to be used to display data in the [grid](#). Use the drop-down list to select the required charset value, or leave this option unchanged to apply the default charset.

☒ Statement cached

This option indicates whether or not the session will use a client-side statement cache. Note that this option is applicable to Oracle Net 9.2 and later, it is ignored for older Oracle versions.

Cache size

Specify the maximum number of cached statements. The least recently used statements will be removed from the cache when this maximum is reached.

☒ Login prompt before connection

Enables SQL Manager for Oracle to [prompt](#) for user name and password each time you [connect](#) to the database.

☒ Autoconnect at startup

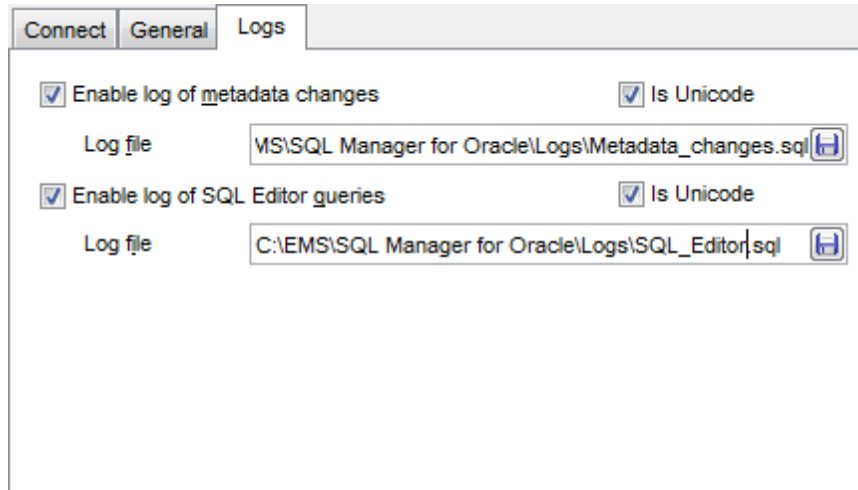
With this option set, [connection](#) to the registered database is established automatically at application startup.

☒ Rollback on disconnect

If this option is selected, all active transactions are rolled back upon disconnect from the server.

☒ 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.



The **Logs tab** allows you to set log options for the database:

☒ **Enable log of metadata changes**

Check this option if you wish to log metadata changes of your database in a 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 data queries**

Check this option if you wish to log your [Query data](#) queries in a file.

Log file

This field is enabled if the **Enable log of Query Data 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.

☒ **Is Unicode**

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

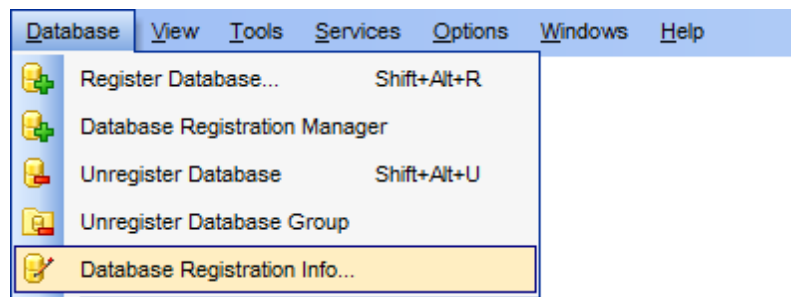
Click the **Run** button when done to start working with the newly registered database in SQL Manager for Oracle.

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 common database options](#)
- [Setting display options](#)
- [Setting default directories](#)
- [Setting log options](#)
- [Setting SSH tunneling options](#)
- [Setting data options](#)
- [Find Option](#)



See also:

[Create Database wizard](#)

[Register Database wizard](#)

[Database Registration Manager](#)

4.3.1 Connection

The **Connection** section of the **Database Registration Info** dialog allows you to view and/or edit the authentication parameters and the connection properties.

The screenshot shows the 'Database Registration Info' dialog box with the 'Connection' tab selected. The left sidebar contains a tree view with options: Connection, Options, Display Options, Directories, Logs, SSH Tunneling, Data Options, and Find Option. The main area displays the following settings:

- Warning:** Windows authentication is only supported in version 9.0.0 and higher.
- Authentication:**
 - ☐ Windows authentication
 - ☒ Server authentication
- User name:** tester
- Password:** (masked with dots)
- Connect as:** Normal
- Connect using:** (TNS_ADMIN)
- Database name:** ORCL2
- Database alias:** ORCL2 on General
- DB group name:** General
- Font charset:** DEFAULT_CHARSET

Buttons at the bottom include 'Test Connection', 'Load Connection Info', 'Edit TNS File...', 'Client Checker...', 'OK', 'Cancel', and 'Help'.

Authentication

Specifies the type of authentication used for the connection:

☒ Windows authentication

Select this type if you wish to use Windows Integrated Security for the connection.

☒ Server authentication

Select this type if you wish to use Oracle server authentication for the connection. Server Authentication stores logins and passwords in the server and does not depend upon Windows.

User name

If necessary, edit the user name used to access the database (server authentication).

Password

If necessary, edit the password used to access the database (server authentication).

Connect as

Select the privilege type to be used for the connection: *Normal* (by default), *SYSDBA*, *SYSOPER*.

Connect using

Specify your Oracle Home storage for this connection. If there are several database homes set on your local system, you can use the arrow-down button to select one from the drop-down list.

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.

DB group name

Select the group name to be displayed in DB Explorer.

Font charset

Stores the character set used to display data in the [grid](#).

If necessary, use the **Edit TNS File...** button to open [TNS Editor](#).

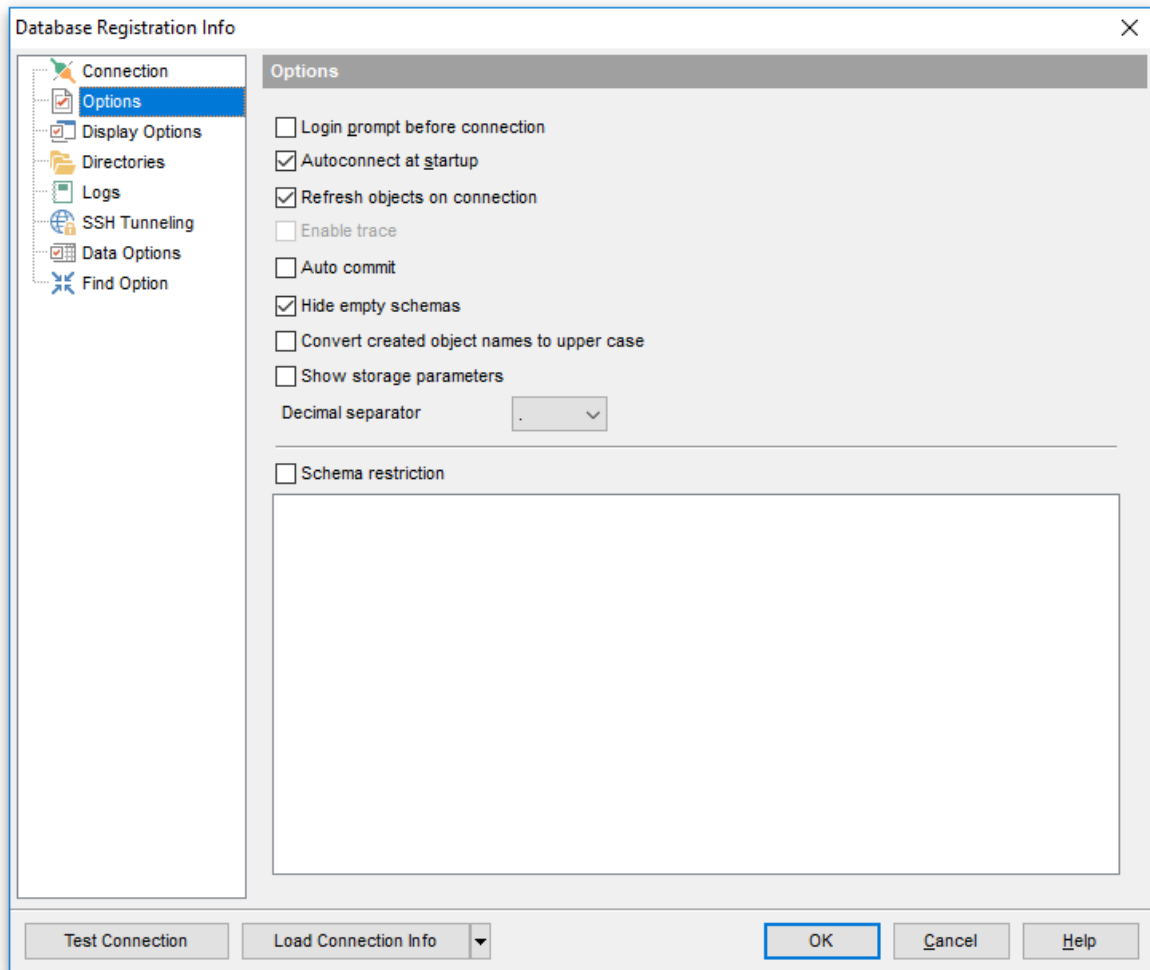
You can also click the **Client Checker...** button to check whether the client(s) is identified by the application and view the status and details for the client(s) using the [Oracle Client Checker](#) dialog.

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

4.3.2 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 Oracle to [prompt](#) for user name and password each time you [connect](#) to the database.

☒ **Autoconnect at startup**

Check this option to specify that SQL Manager for Oracle 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.

☒ **Enable trace**

Creates a trace log file at the client side which allows you to view statistics data on sessions, connections, etc.

☒ **Auto commit**

When checked, transactions are committed automatically.

☒ **Hide empty schemas**

This option allows you to specify whether schemas containing no objects will be displayed in the [DB Explorer](#) tree.

☒ **Convert created objects' names to upper case**

Enable this option if you need to convert the names of all newly created objects to the upper case automatically.

☒ **Show storage parameters**

With this option enabled storage parameters for objects are displayed in DDL.

Decimal separator

Define the separator which will be used for floating point type values. Possible separators are: dot ("."), comma (",").

☒ **Schema restriction**

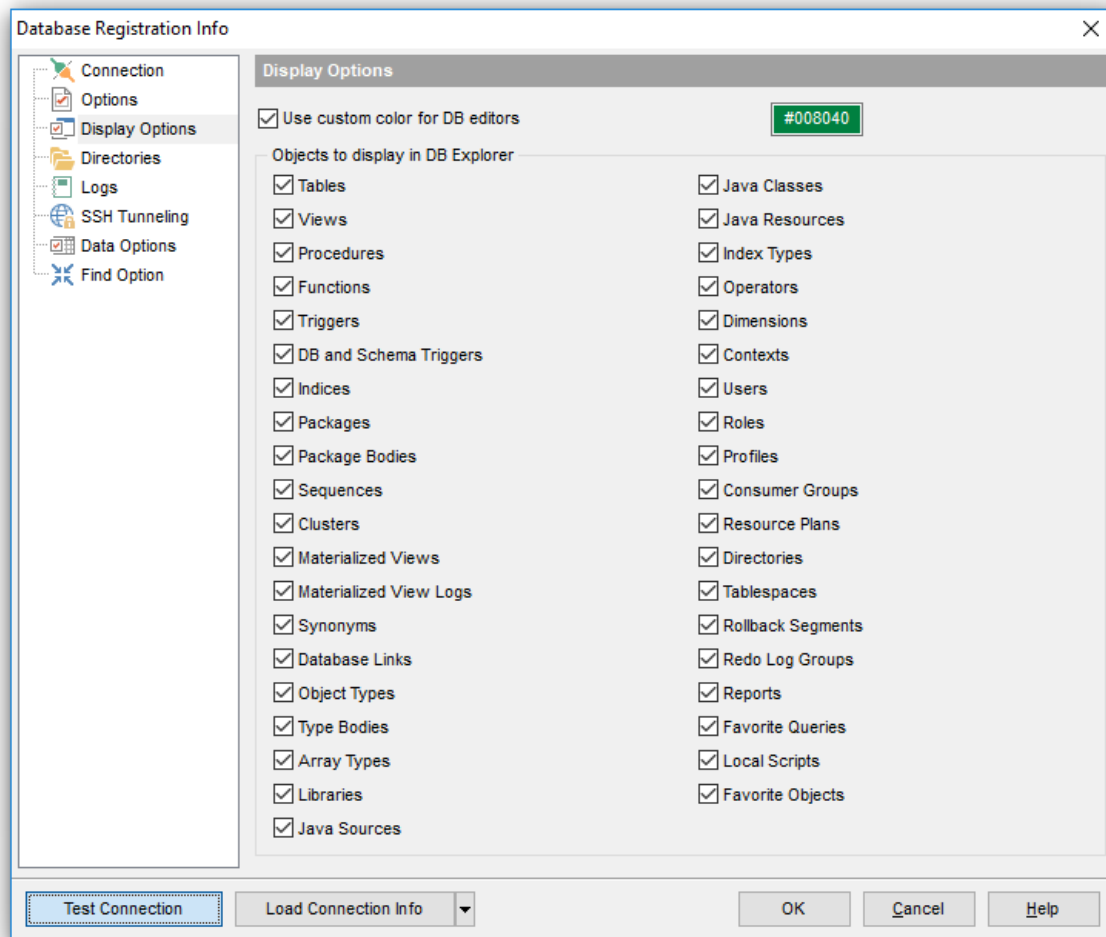
This option allows you to hide schemas and disable refreshing their objects. Select the schemas for displaying in DB Explorer. Note that the current and PUBLIC schemas are allowed by default and cannot be restricted.

4.3.3 Display options

The **Display Options** section of the **Database Registration Info** dialog allows you to specify which [objects](#) will be displayed in the [Database Explorer](#) tree.

☒ **Use custom color for DB editors**

With this option checked the text color for editor tabs is black. To apply user font color uncheck the option and select the color.



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

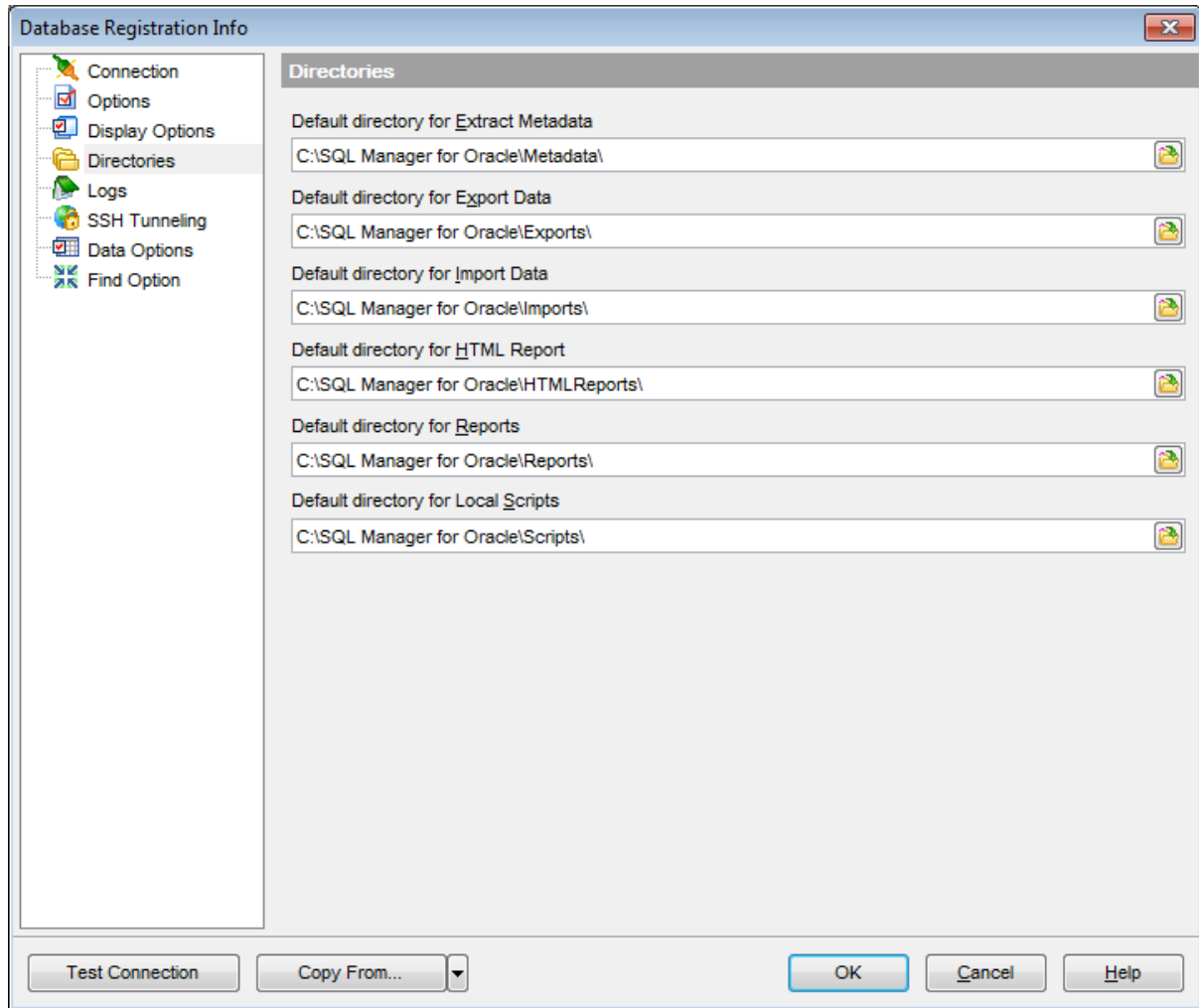
See also:

[Database Explorer](#)

[Database Objects Management](#)

4.3.4 Default directories

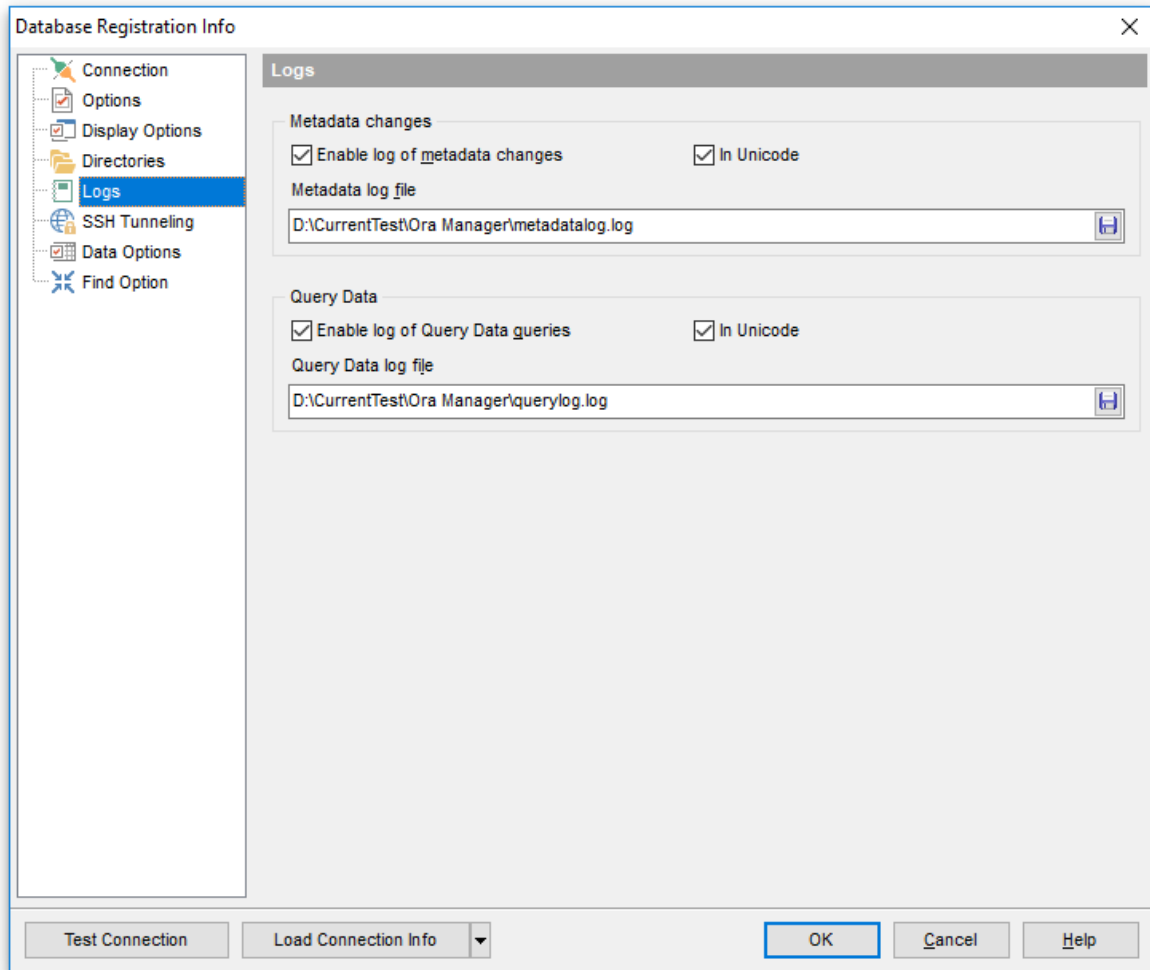
The **Directories** section of the **Database Registration Info** dialog allows you to set the directories to be used by default for [database extract](#), [data export](#), [data import](#), [saving HTML reports](#), [creating reports](#), saving [scripts](#) operations.



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 [Query data](#) logging, if necessary.

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



See also:

[Default directories](#)

4.3.6 SSH tunneling options

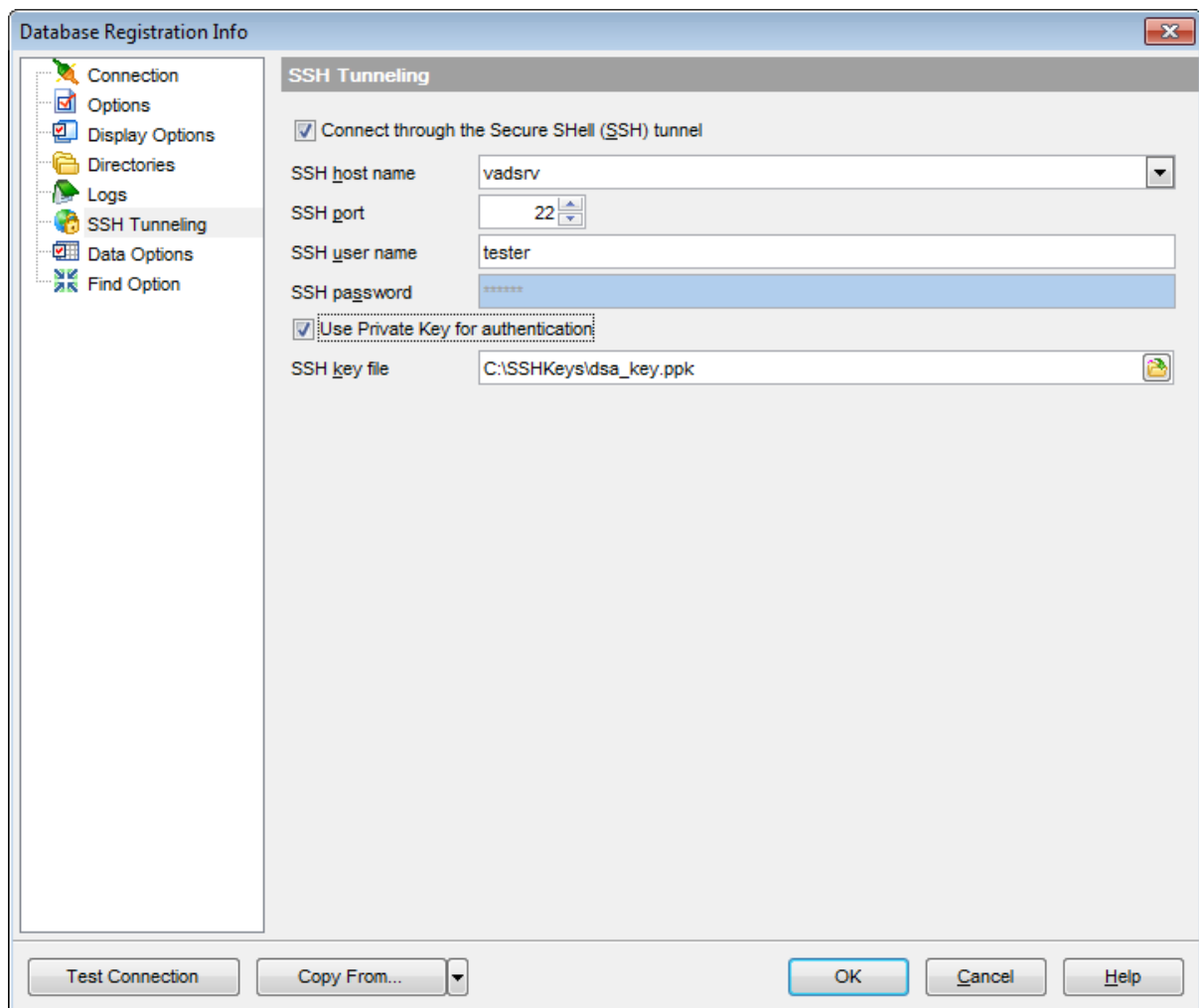
The **SSH Tunneling** section of the **Database Registration Info** dialog allows you to enable/disable SSH tunneling for connection to the database and set all the necessary SSH tunneling parameters.

☒ **Connect through the Secure Shell (SSH) tunnel**

Select this option to establish connection to an intermediate SSH server and forward all Oracle 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.



See also:

[SSH connection properties](#)

4.3.7 Data options

The **Data Options** section 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.

Advanced

☒ **Use separate connection for each data view within a database**

Select this option to use a separate connection for each [data view](#) within a database. Disabling 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.

☒ **Timeout for query execution**

Define time limit for query execution (ms). If query execution takes longer time than specified, than the operation will be aborted. Specify '-1' for unlimited timeout.

☒ **Timestamp as string**

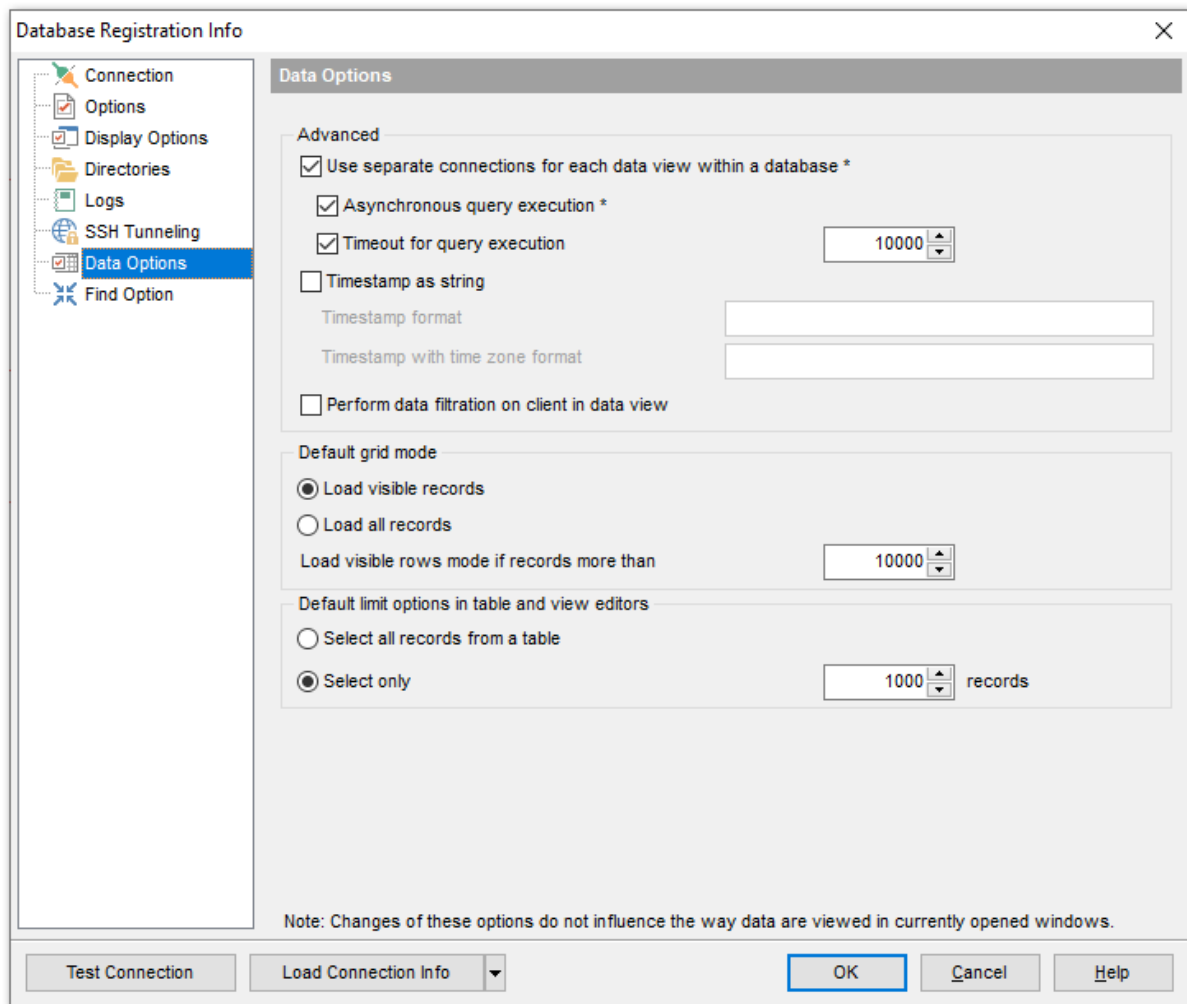
Display Timestamp type as strings.

Also you can set *Timestamp* and *Timestamp with time zone* formats in the appropriate fields.

☒ **Perform data filtration on client in data view**

If enabled, data are filtered by SQL Manager for Oracle (on the client side).

If disabled, SQL filter is used in [data view](#). In this case filtering is performed on the Oracle server with the help of the *WHERE* clause used in SQL query.



Default grid mode

These options allow you to define the grid mode for data which will be used by default. It can be changes individually for each table from the [context menu](#) of the grid.

• Load visible records

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 supported in this 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.

Default limit options in table and view editors

• Select all records from a table

All records are selected by default. This option increases the grid performance.

• Select only

The Limit criteria is applied to the select query. Only the specified number of records is

selected.

See also:

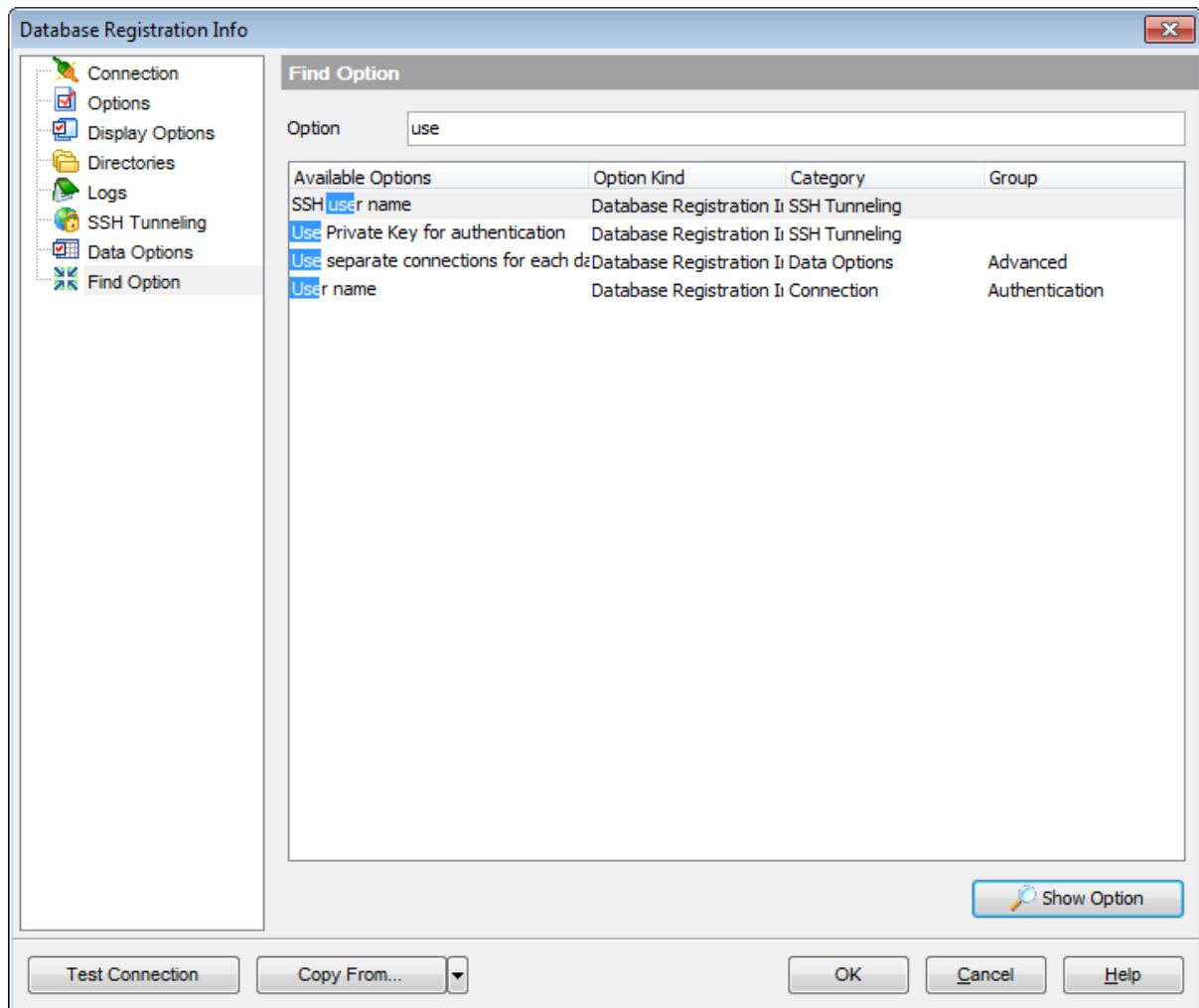
[Data View](#)

4.3.8 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.

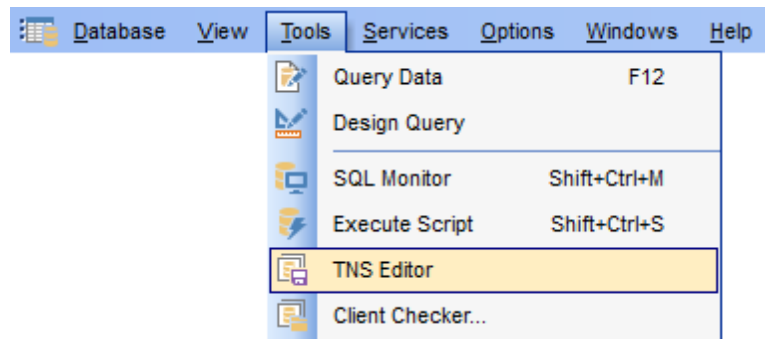
4.4 TNS Editor

Local naming parameters are gathered in the TNS file which is a configuration file that contains net service names mapped to connect descriptors to local naming method, or net service names mapped to listener protocol addresses.

TNS Editor allows you to view and edit the TNS file.

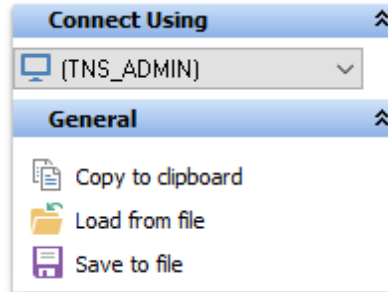
To open TNS editor

- select **Tools** |  **TNS Editor** from the [main menu](#)
or
- right-click the database or database group in [DB Explorer](#) and select the  **TNS Editor** context menu item.
- [Using Navigation bar and Toolbar](#)
- [Viewing file contents](#)



4.4.1 Using Navigation bar and Toolbar

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



Connect Using

 select an Oracle Home or connection string

General

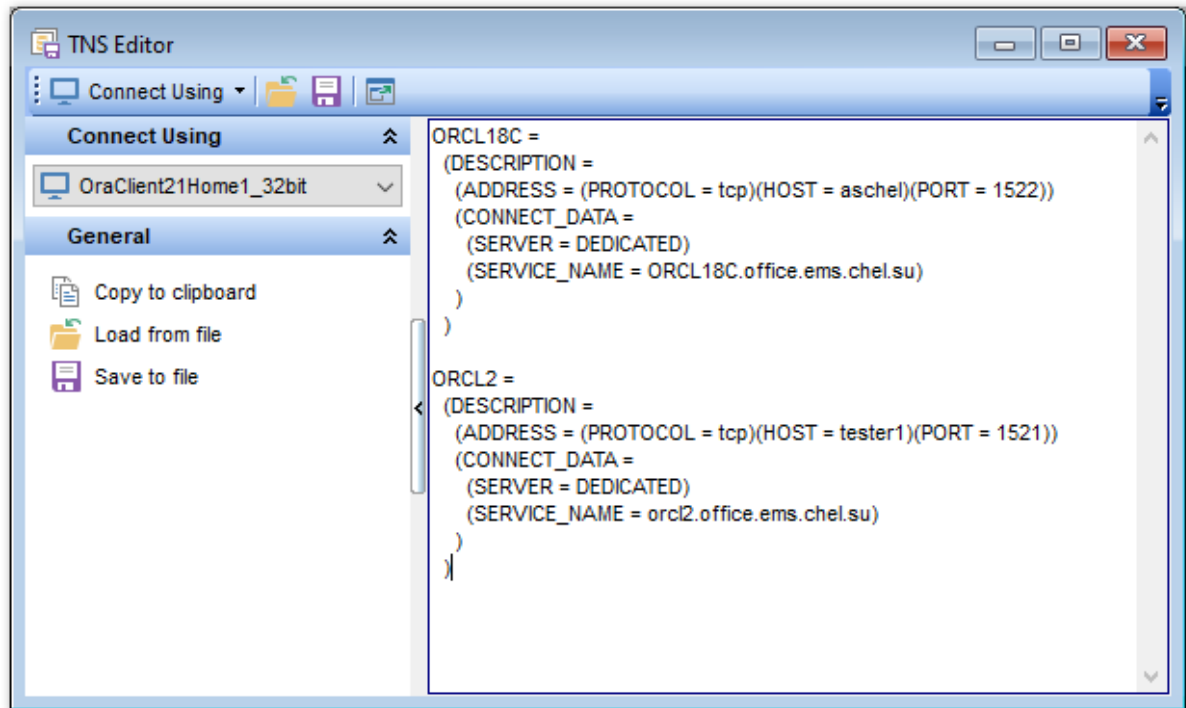
-  copy content to clipboard
-  load content from an external *.ora file
-  save file content

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

4.4.2 Viewing file contents

In the editor you can see TNS file content and edit text manually.

Using the [Navigation bar](#) you can save the content to a file or copy the selected text to Windows clipboard.

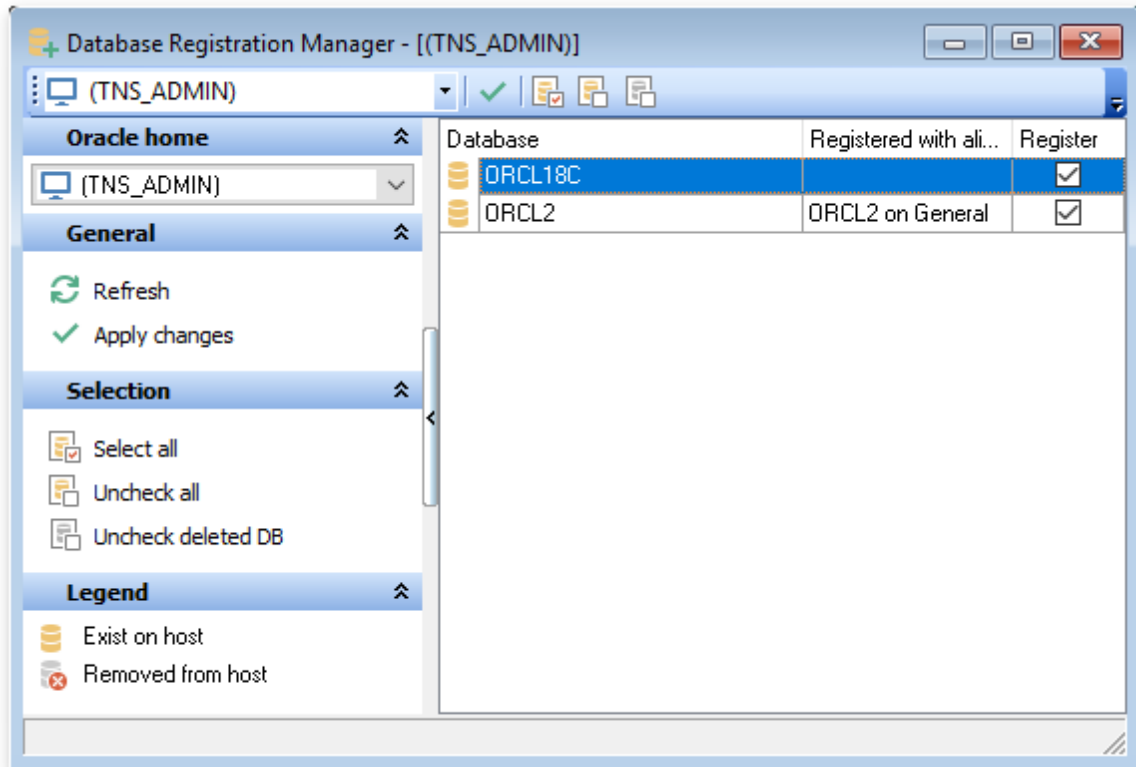


4.5 Database Registration Manager

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

To open Database Registration Manager

- use the corresponding item of the [database context menu](#) in DB Explorer or
- open Database --> Database Registration Manager from the main menu



The table contains all databases located in the selected group. You can change **Oracle home** selection using the appropriate drop-down list in the [navigation bar](#).

Check all databases to be registered.

For automatic registration of the selected databases click the **Apply changes** button.

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.

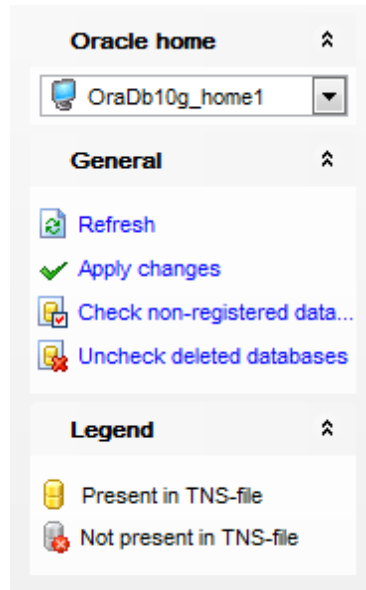
See also:

[Register Database Wizard](#)

[Database Registration Info](#)

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:

Oracle home

select a group

General

Refresh the list of databases

Apply changes to register selected databases

Selection

Select all selects all databases located in the group, but not [registered in <PRODUCT_TITLE>](#)

Uncheck all databases to unregister them

Uncheck deleted DB unchecks databases removed from the server

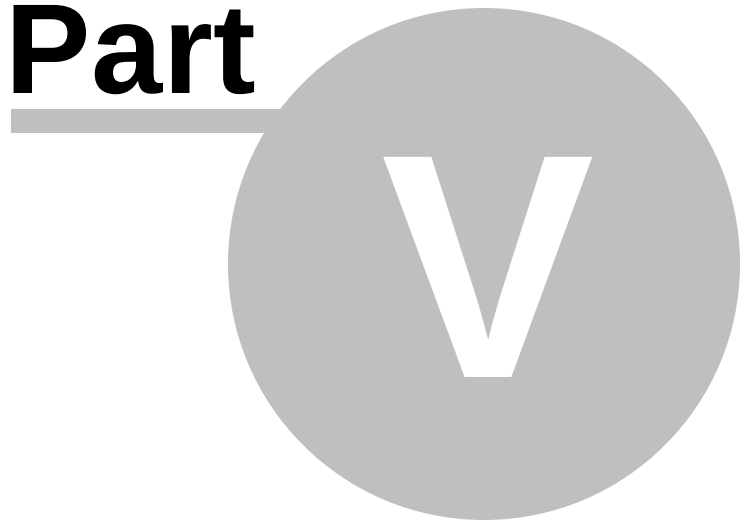
Legend

Exist on host

Removed from host

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

Part



5 Database Objects

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

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

Note: Before working with database objects in SQL Manager for Oracle you should [connect to the database](#) first.

Creating Database Objects

- 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

- 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

- 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 only for [triggers](#), tables, views, sequences, private synonyms (for schema owners).

Dropping Database Objects

- 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;

Shift+Del to drop the object from the database.

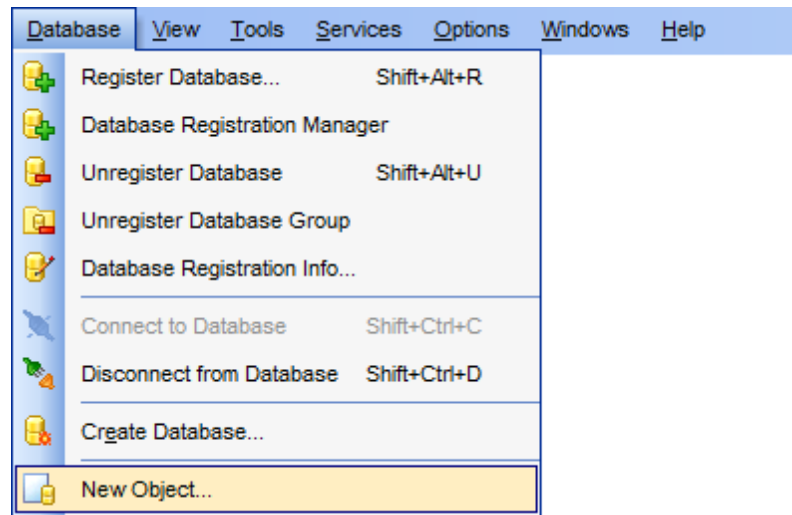
See also:

[Getting Started](#)
[Database Explorer](#)
[Database Management](#)
[Query Management Tools](#)
[Data Management](#)
[Import/Export Tools](#)
[Database Tools](#)
[Services](#)
[Options](#)
[How To...](#)

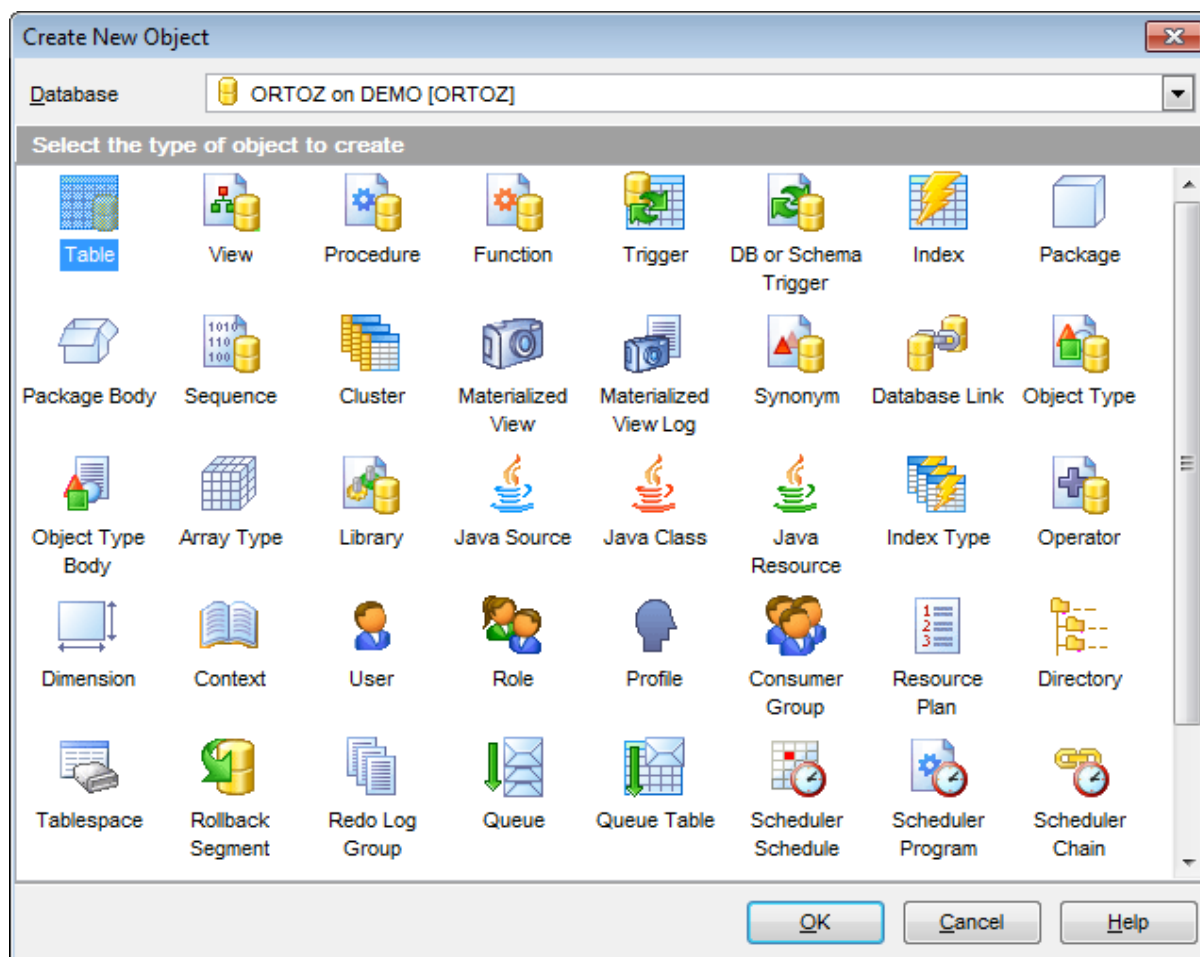
5.1 New Object

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.



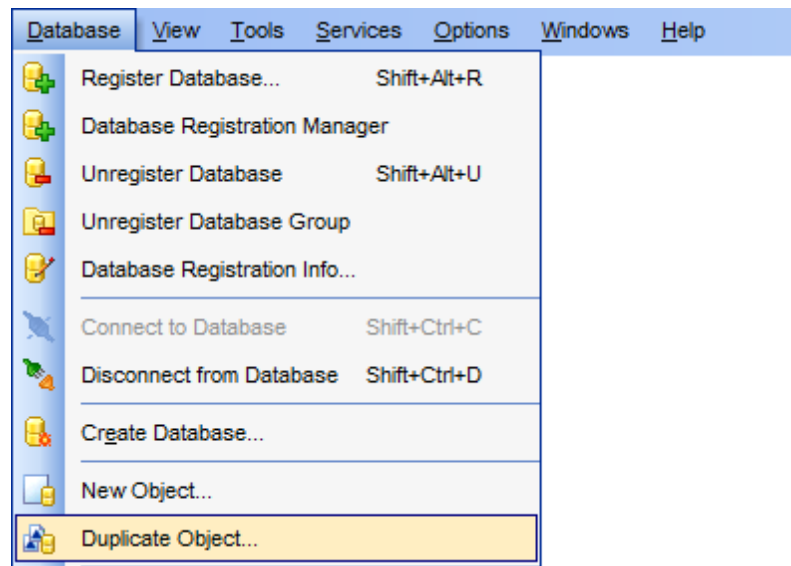
Use the **Database** drop-down list to select the alias of the database where the new object should be created. Pick an object type icon and click **OK** to invoke the corresponding wizard or dialog.

**See also:**[Operations with database objects](#)[Duplicate Object Wizard](#)[Schema Objects](#)[Non-schema Objects](#)[Users and Roles](#)

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](#)
- [Modifying the new object's definition](#)

See also:

[Operations with database objects](#)

[New Object](#)

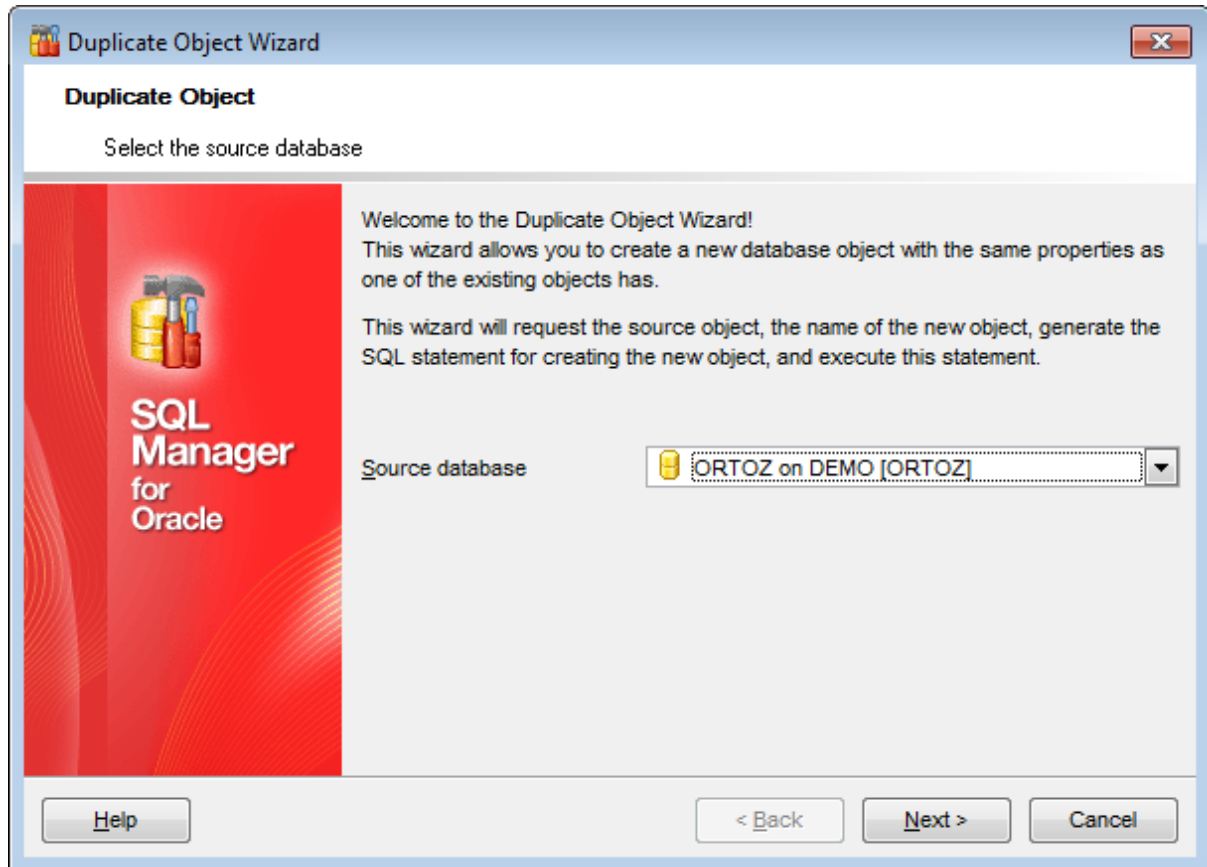
[Schema Objects](#)

[Non-schema Objects](#)

[Users and Roles](#)

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.



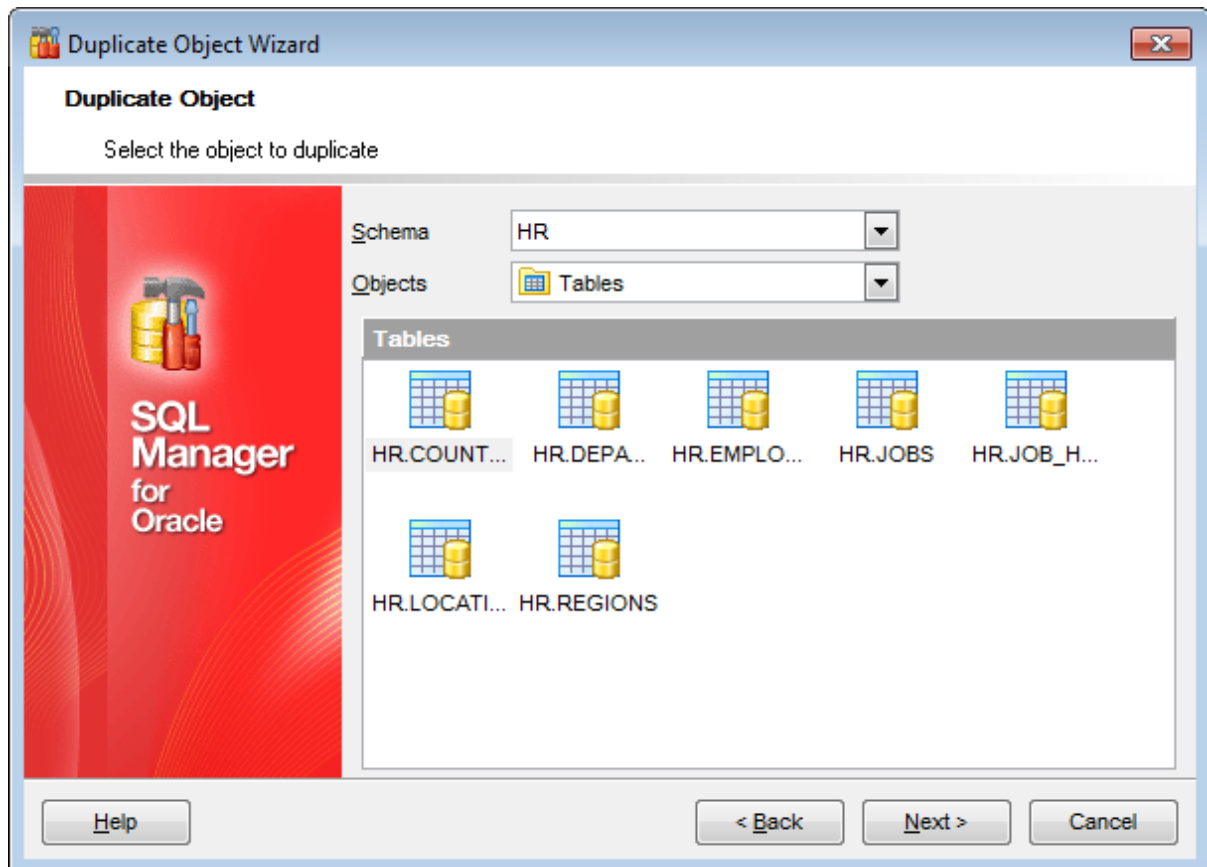
Click the **Next** button to proceed to the [Selecting object to duplicate](#) step of the wizard.

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*.

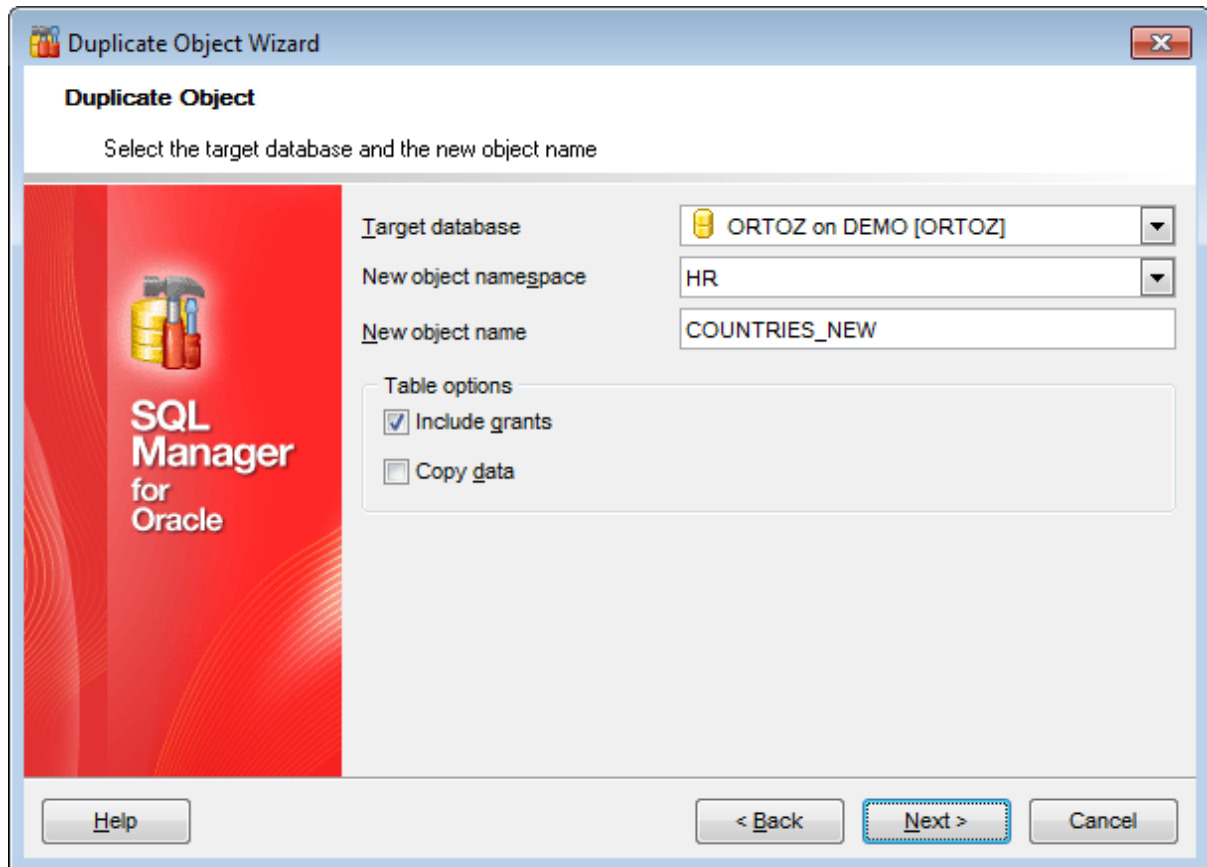


Click the **Next** button to proceed to the [Selecting destination database](#) step of the wizard.

5.2.3 Selecting destination database

Select the **target database** and **object namespace (schema)** to create the new object in, set the **name** of the new database object.

Check the ☒ **Include grants** option to duplicate grants currently defined for the object.
Check the ☒ **Copy data** option to copy data from the source table to the new one.

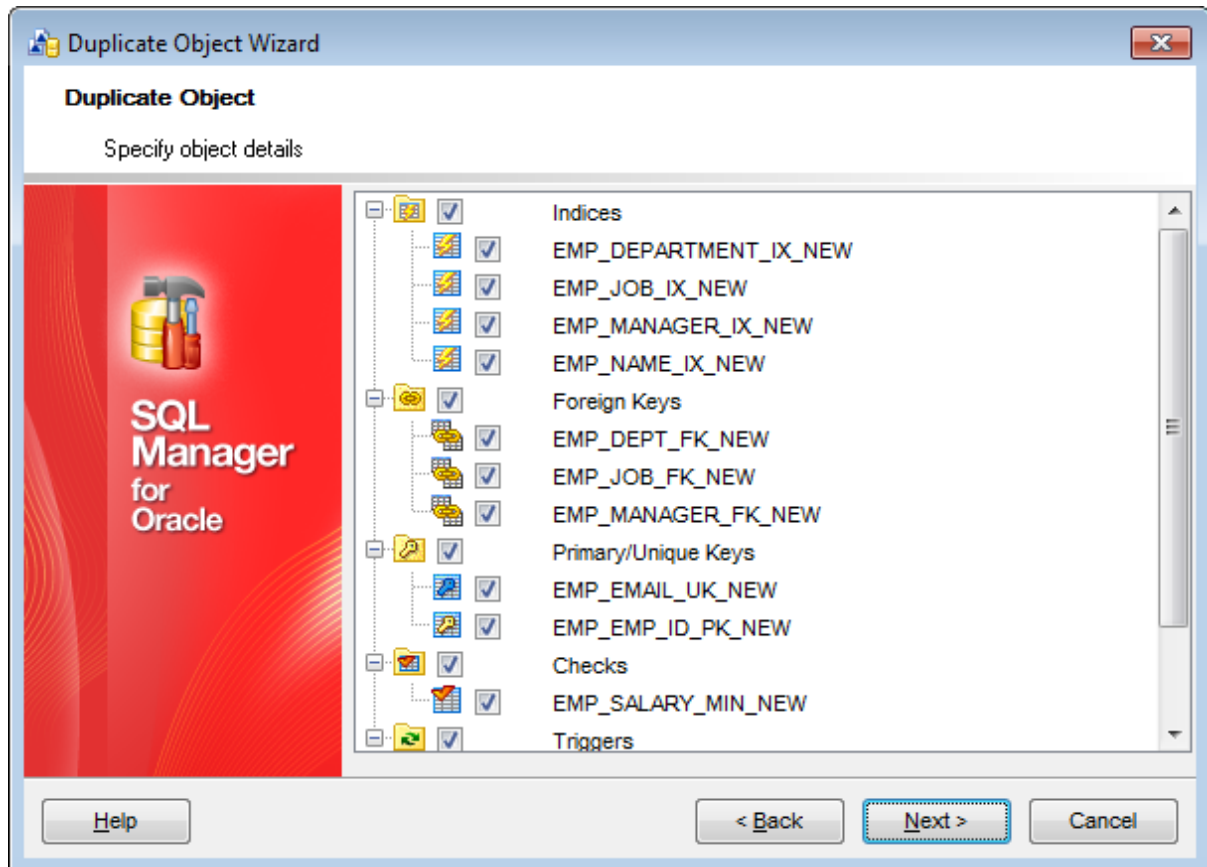


Click the **Next** button to proceed to the [Selecting table subobjects](#) step of the wizard.

5.2.4 Selecting table subobjects

Specify **object details** (subobjects, dependent objects) to be duplicated in the target object.

Note: This step is available when duplicating tables only.

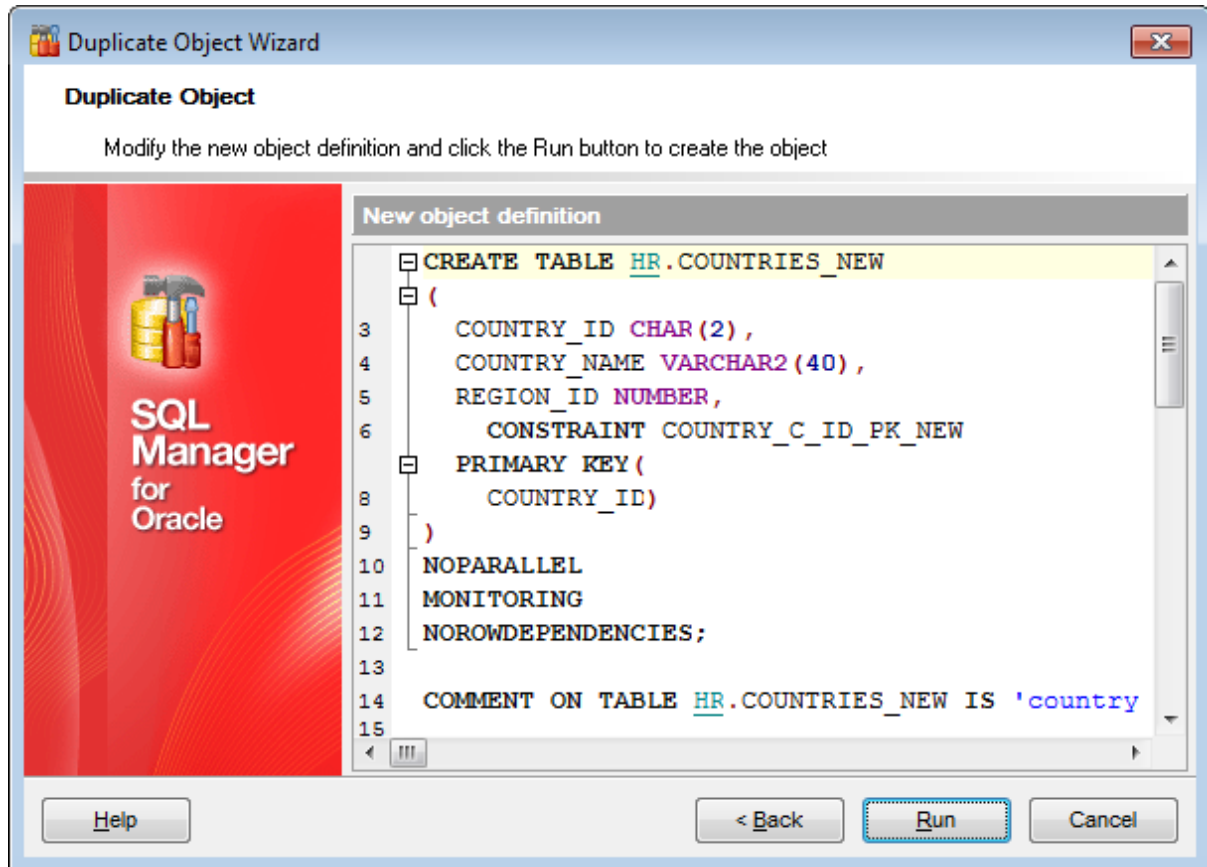


Click the **Next** button to proceed to the [Modifying the new object's definition](#) step of the wizard.

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 Schema objects

A **schema** is a collection of logical structures of data, or **schema objects**. A schema is owned by a database user. Each user can own a single schema. Schema objects can be created and manipulated with SQL and include the following types of objects:

- [Tables](#)
- [Views](#)
- [Procedures](#)
- [Functions](#)
- [Triggers](#),
- [DB and Schema Triggers](#)
- [Indexes](#)
- [Packages](#), [Package Bodies](#)
- [Sequences](#)
- [Clusters](#)
- [Materialized Views](#), [Materialized View Logs](#)
- [Synonyms](#)
- [Database Links](#)
- [Object Types](#), [Object Type Bodies](#)
- [Array Types](#)
- [Libraries](#)
- [Java Sources](#), [Java Classes](#), [Java Resources](#)
- [Index Types](#)
- [Operators](#)
- [Dimensions](#)
- [Queues](#)
- [Queue Tables](#)

Use the [DB Explorer](#) tree to [navigate](#) within the existing schemas and their objects.

See also:

[Operations with database objects](#)

[New Object dialog](#)

[Duplicate Object Wizard](#)

[Non-schema Objects](#)

[Users and Roles](#)

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

- 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.

Editing Tables

- 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](#).

Dropping Tables

- 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;

Shift+Del to drop the object from the database.

5.3.1.1 New table

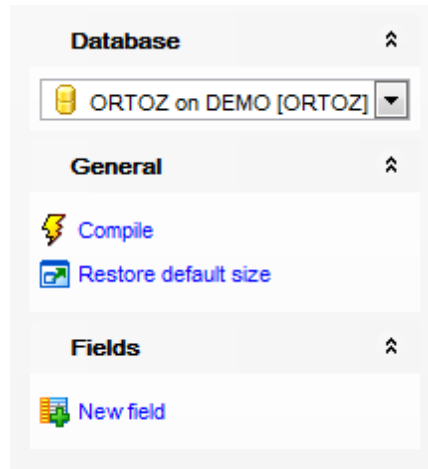
The **New Table** window is a mode of [Table Editor](#) that opens automatically when you create a new table (see [Create table](#) for details) and allows you to create a new table, set table [properties](#), specify table [fields](#) and edit table description.

To call **Table Editor** for creating a new table, you can right-click the **Tables** node or any object within this node in the [DB Explorer](#) tree and use the *Ctrl+N* [shortcut](#).

- [Using Navigation bar and Toolbar](#)
- [Setting table properties](#)
- [Specifying table fields](#)
- [Setting physical attributes](#)
- [Setting overflow attributes](#)
- [Partitioning](#)

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

 select a database to create a new table in

General

 [compile](#) the newly created table

 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 table:

Fields

 [add](#) a new field

 [edit](#) selected field

 [drop](#) selected field(s)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.1.1.2 Setting table properties

Use the **Table** tab of **Table Editor** to specify new table properties.

Table name

Specify the name of the table to be created. Note that the table name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the table will be created.

The screenshot shows the 'New Table - [ORTOZ on DEMO]' dialog box. The 'Table' tab is active, displaying the following fields and options:

- Table name:** A text field containing 'TABLE'.
- Schema:** A drop-down list showing 'SYS'.
- Organization:** A group of radio buttons:
 - ☒ Regular
 - ☐ Index-organized
 - ☐ Global temporary
 - ☐ External
 - ☐ Clustered
 - ☐ Blockchain
- Type information:**
 - ☐ Object table
 - Owner:** A drop-down list.
 - Type:** A drop-down list.
- Logging:** ☐
- Monitoring:** ☐
- Partitioning:** ☐

Organization

This group allows you to specify the order in which the data rows of the table are stored:

- ☒ [Regular](#)
- ☐ [Global temporary](#)
- ☐ [Clustered](#)
- ☐ [Index-organized](#)
- ☐ [External](#)
- ☐ [Blockchain](#)

Type information

☒ **Object table**

Defines that an *object table* (which is a table that uses an [object type](#) for a column definition) should be created. An object table is explicitly defined to hold object instances of a particular type.

Owner

Use the drop-down list to select the schema in which the object type is located.

Type

Use the drop-down list to select the [object type](#) that will be used by the object table.

The columns of an object table correspond to the top-level attributes of type which is specified in the **Type** field. Each row will contain an object instance, and each instance will be assigned a unique, system-generated object identifier when a row is inserted.

The properties below vary according to the selected *table organization type*. For details see [Table Properties](#).

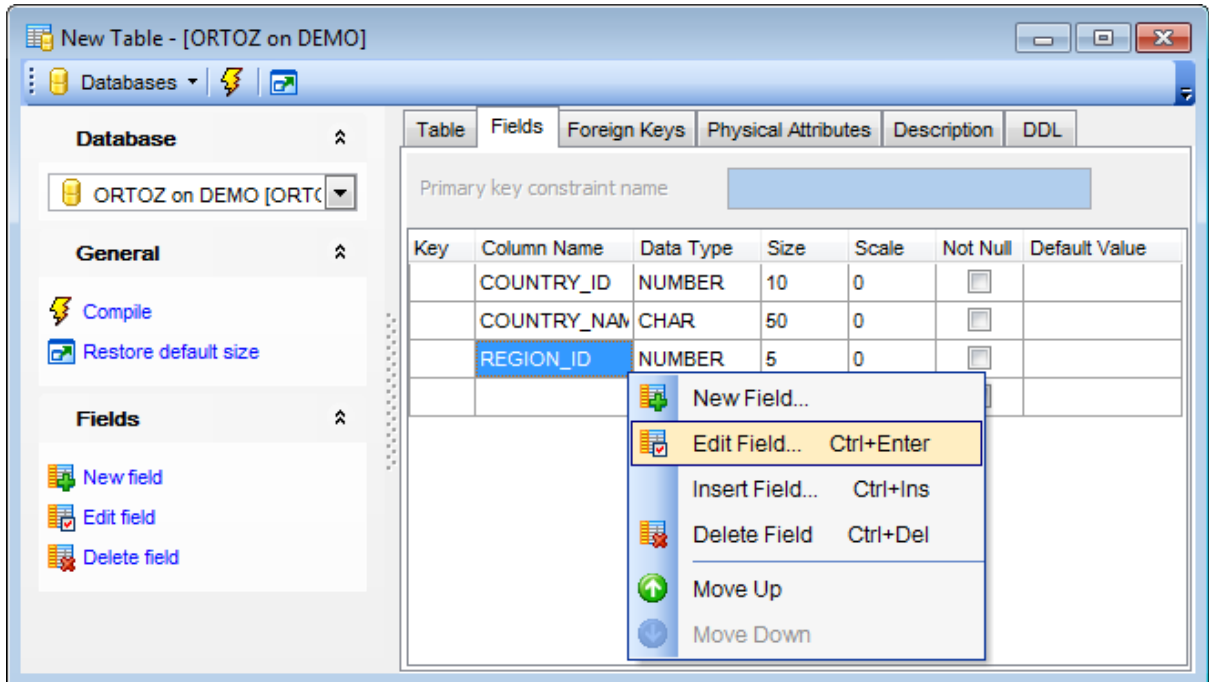
To compile the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.1.1.3 Specifying fields

The **Fields** tab is intended for setting up table [fields](#). Double-click a field to open [Field Editor](#) for editing the field.

Right-click within the **Table Fields** area to display the context menu allowing you to *add*, *insert*, *edit*, *delete*, and *reorder* fields.

Field management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Fields** list provides the following attributes of each field of the table:

Key
 Column Name
 Data Type
 Size
 Scale
 Not Null
 Default Value

Click within the **Key** column to specify a primary key field, and type the name of the **primary key constraint name** in the corresponding edit box.

For details see [Fields](#).

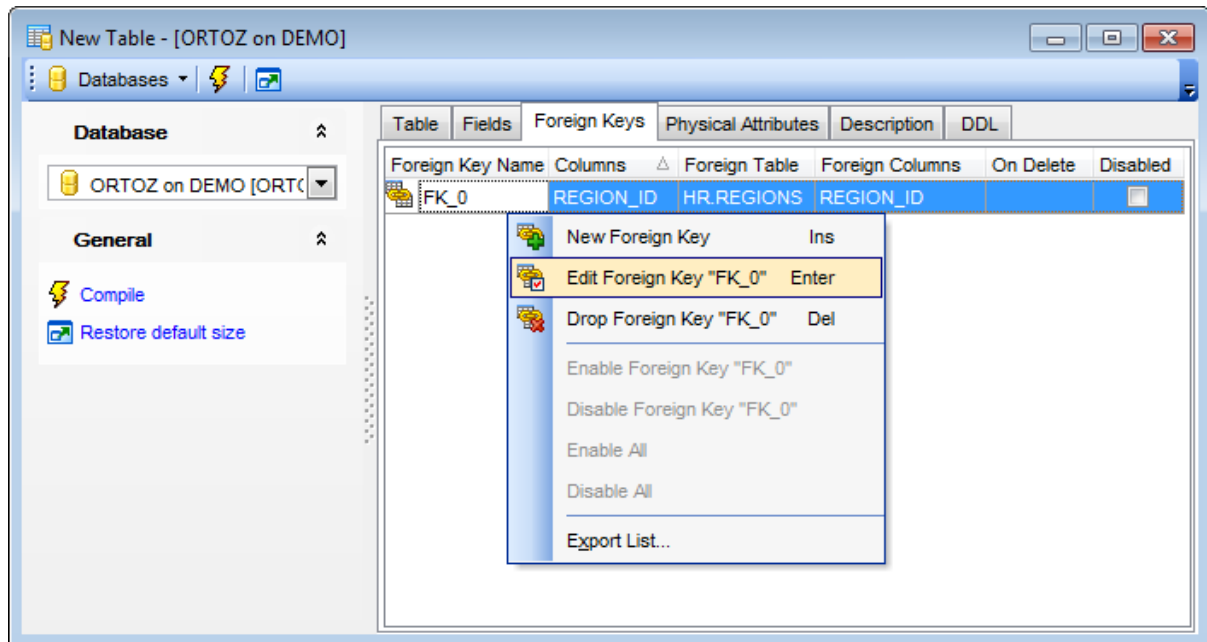
To compile the table, use the ⚡ **Compile** item available within the [Navigation bar](#).

5.3.1.1.4 Specifying foreign keys

The **Foreign Keys** tab is provided for setting up table foreign keys.

Double-click a foreign key to open the [Foreign Key Editor](#) for editing the foreign key.

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



The **Foreign Keys** list provides the following attributes of each foreign key of the table:

Foreign Key Name

Columns

Foreign Table

Foreign Columns

On Delete

Disabled

For details see [Foreign Keys](#).

5.3.1.1.5 Setting physical attributes

The **Physical attributes** tab is provided for setting up physical attributes for the new table.

The physical properties relate to the treatment of extents and segments and to the storage characteristics of the table.

The screenshot shows the 'New Table - [ORTOZ on DEMO]' dialog box with the 'Physical Attributes' tab selected. The left sidebar shows the 'Database' dropdown set to 'ORTOZ on DEMO' and the 'General' tab selected. The main area contains the following settings:

- Physical attributes**
 - Tablespace: < Default >
 - Buffer pool: < UNSPECIFIED > ☐ Cache
 - Initial number of transactions: DEFAULT ☐ Row dependencies
- Extents**
 - Initial extent: DEFAULT bytes
 - Next extent: DEFAULT bytes
 - Percent increase: DEFAULT %
 - Minimum extents: DEFAULT
 - Maximum extents: DEFAULT
- Space usage**
 - Percent free: DEFAULT
 - Percent used: DEFAULT
- Free lists**
 - Free lists: DEFAULT
 - Groups: DEFAULT
- Parallel**
 - ☒ Default ☐ No parallel ☐ Parallel
 - Parallel options:
 - Degree: DEFAULT
 - Instances: 0
- Data storage options**
 - ☐ Compress data ☐ Enable row movement ☐ Read-only
 - Compress for:
 - ☒ Basic ☐ Advanced

For more information refer to the [Storage attributes](#) page.

5.3.1.1.6 Setting overflow attributes

The **Overflow Attributes** tab is provided for setting up overflow attributes for the new [index-organized table](#).

This tab allows you to instruct the database that index-organized table data rows exceeding the specified threshold are placed in the data segment specified within this tab.

The screenshot shows the 'New Table - [ORTOZ on DEMO]' dialog box with the 'Overflow Attributes' tab selected. The 'Overflow column' is set to 'COUNTRY_ID'. The 'Physical attributes' section includes 'Tablespace' (Default), 'Buffer pool' (UNSPECIFIED), and 'Initial number of transactions' (DEFAULT). The 'Extents' section includes 'Initial extent', 'Next extent', 'Minimum extents', 'Maximum extents' (all DEFAULT), and 'Percent increase' (DEFAULT). The 'Space usage' section includes 'Percent free' and 'Percent used' (both DEFAULT). The 'Free lists' section includes 'Free lists' and 'Groups' (both DEFAULT). The 'Parallel' section has 'Default' selected. The 'Parallel options' section includes 'Degree' (DEFAULT) and 'Instances' (0).

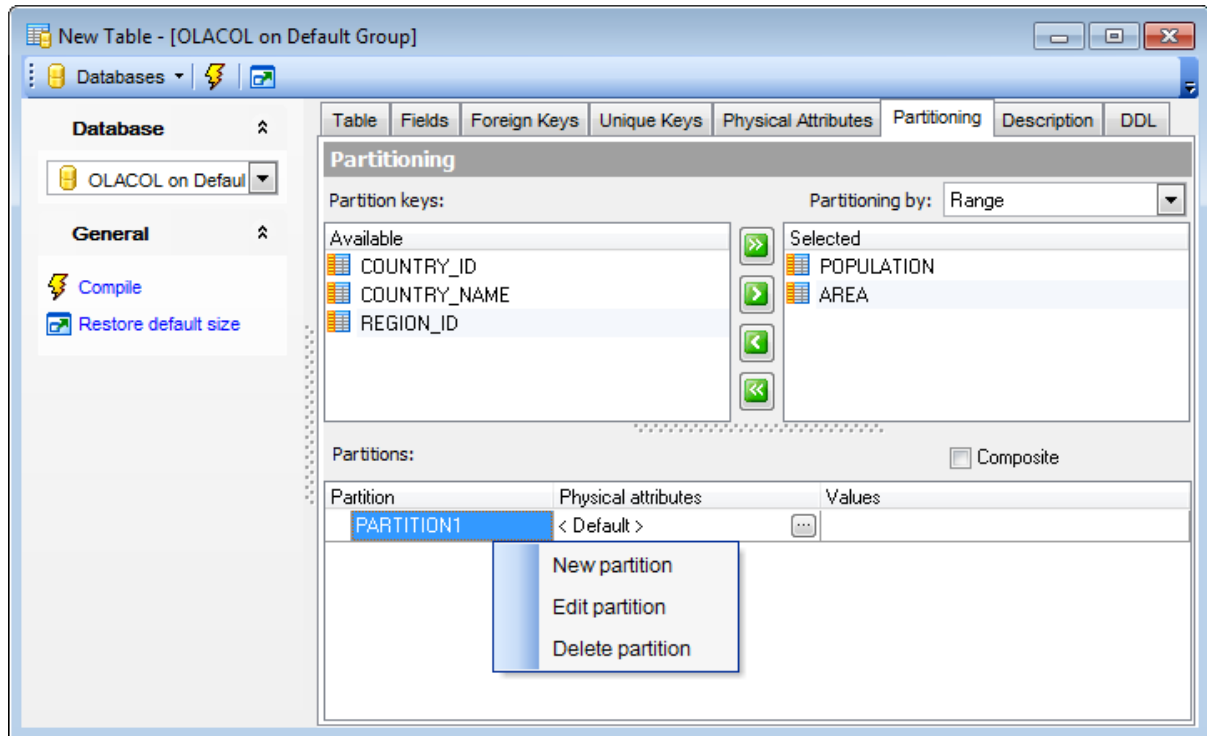
Overflow column

Use the drop-down list to specify a column at which to divide an index-organized table row into index and overflow portions. The primary key columns are always stored in the index. The overflow column can be either the last primary key column or any non-primary key column. All non primary key columns that follow the overflow column are stored in the overflow data segment.

For more information refer to the [Storage attributes](#) page.

5.3.1.1.7 Partitioning

The **Partitioning** tab is provided for setting up partitioning parameters for a partitioned table.



Partitioning by

Range

Select this item to partition the table on ranges of values from the column list. For an [index-organized table](#), the column list must be a subset of the primary key columns of the table.

Hash

Select this item to specify that the table is to be partitioned using the hash method. Oracle Database assigns rows to partitions using a hash function on values found in columns designated as the partitioning key.

List

Select this item to partition the table on lists of literal values from column. List partitioning is useful for controlling how individual rows map to specific partitions.

Reference

Select this item to partition the table by reference. Partitioning by reference is a method of equipartitioning the table being created (the *child table*) by a referential constraint to an existing partitioned table (the *parent table*).

System

Select this item to create system partitions. System partitioning does not entail any partitioning key columns, nor do system partitions have any range or list bounds or hash algorithms. Rather, they provide a way to equipartition dependent tables such as nested table or domain index storage tables with partitioned base tables.

Partition keys

Use this group to specify an ordered list of columns used to determine into which partition

a row belongs. These columns are the partitioning key.

To select a column, 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.

Composite

If this option is selected, the table is first partitioned by *range*, and then the partitions are further partitioned into *range*, *hash*, or *list* sub-partitions.

Sub-partition keys

Use this group to specify an ordered list of columns used to determine into which sub-partition a row belongs. These columns are the sub-partitioning key.

To select a column, 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.

Sub-partitioning by

Use the drop-down list to indicate the type of sub-partitioning you want for each composite range partition: *hash* or *list*.

Partitions

This area allows you to specify individual partitions. Right-click within the list area to call the **context menu** allowing you to *create a new* partition, *edit* or *delete* the selected partition.

Values

Specify the non-inclusive upper bound for the current partition. The value list is an ordered list of literal values corresponding to the column list.

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).

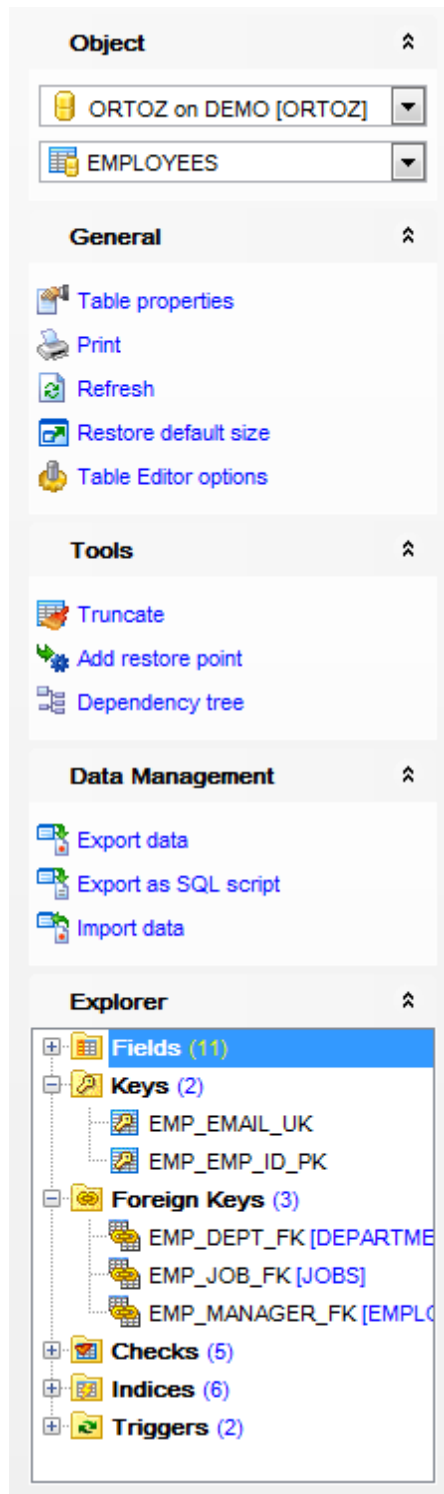
Table Editor allows you to create, edit and drop table's [fields](#), [indexes](#), [foreign keys](#) and other table subobjects, manage table [data](#), and much more.

To open a table in **Table Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar](#)
- [Managing table fields](#)
- [Managing table keys](#)
- [Managing table foreign keys](#)
- [Managing table checks](#)
- [Managing table indexes](#)
- [Managing table triggers](#)
- [Browsing object dependencies](#)
- [Working with table data](#)
- [Editing table description](#)
- [Viewing DDL definition](#)
- [Setting object permissions](#)
- [Table properties](#)

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

-  select a database
-  select a table for editing

General

-  view/edit [table properties](#)
-  set [printing options](#) to [print metadata](#) of the table
-  refresh the content of the active tab
-  adjust [Table Editor options](#)
-  restore the default size and position of the editor window
-  compile the table (if it is being modified)

Tools

-  call [Truncate Wizard](#) to truncate the table
-  add [restore point](#)
-  view the [dependency tree](#) for the table

Explorer

-  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:

Description

-  save object [description](#) to file
-  copy [description](#) to clipboard

Fields

-  [add](#) a new field
-  [edit](#) selected field
-  [drop](#) selected field(s)

Keys

-  [add](#) a new primary/unique key
-  [edit](#) selected primary/unique key
-  [drop](#) selected primary/unique key

Foreign Keys

-  [add](#) a new foreign key
-  [edit](#) selected foreign key
-  [drop](#) selected foreign key(s)

Checks

-  [add](#) a new check
-  [edit](#) selected check
-  [drop](#) selected check(s)

Indices

-  [add](#) a new index
-  [edit](#) selected index
-  [drop](#) selected index(-es)

Triggers

-  [add](#) a new trigger
-  [edit](#) selected trigger
-  [drop](#) selected trigger(s)

Data Management

-  commit transaction
-  rollback transaction
-  export data from the table using [Export Data Wizard](#)
-  export data from the table as Execute Script using [Export as SQL Script Wizard](#)
-  import data into the table using [Import Data Wizard](#)

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

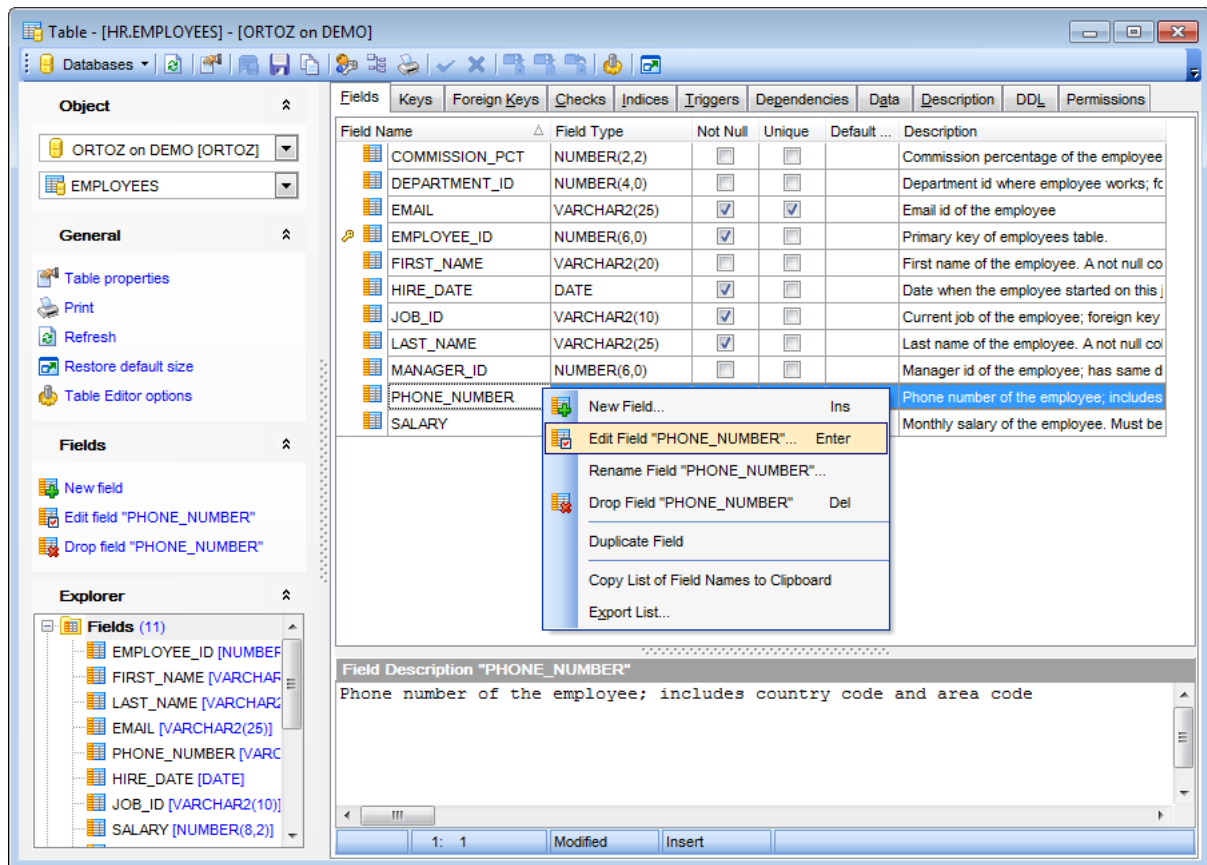
5.3.1.2.2 Managing fields

The **Fields** tab is intended for managing table fields.

Double-click a field to open the [Field Editor](#) for editing the table field.

Right-click a field to display the context menu allowing you to *create new*, *edit*, *drop*, *rename*, or *duplicate* the selected field. Using the menu you can also [export](#) the list of the table fields to the any of supported [formats](#), or copy the list to clipboard.

Field management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Fields** list provides the following attributes of each field of the table:

Field Name
Field Type
Not Null
Unique
Default Value

For details see [Fields](#).

If necessary, you can also use the **Field Description** area to supply a *description* for each field.

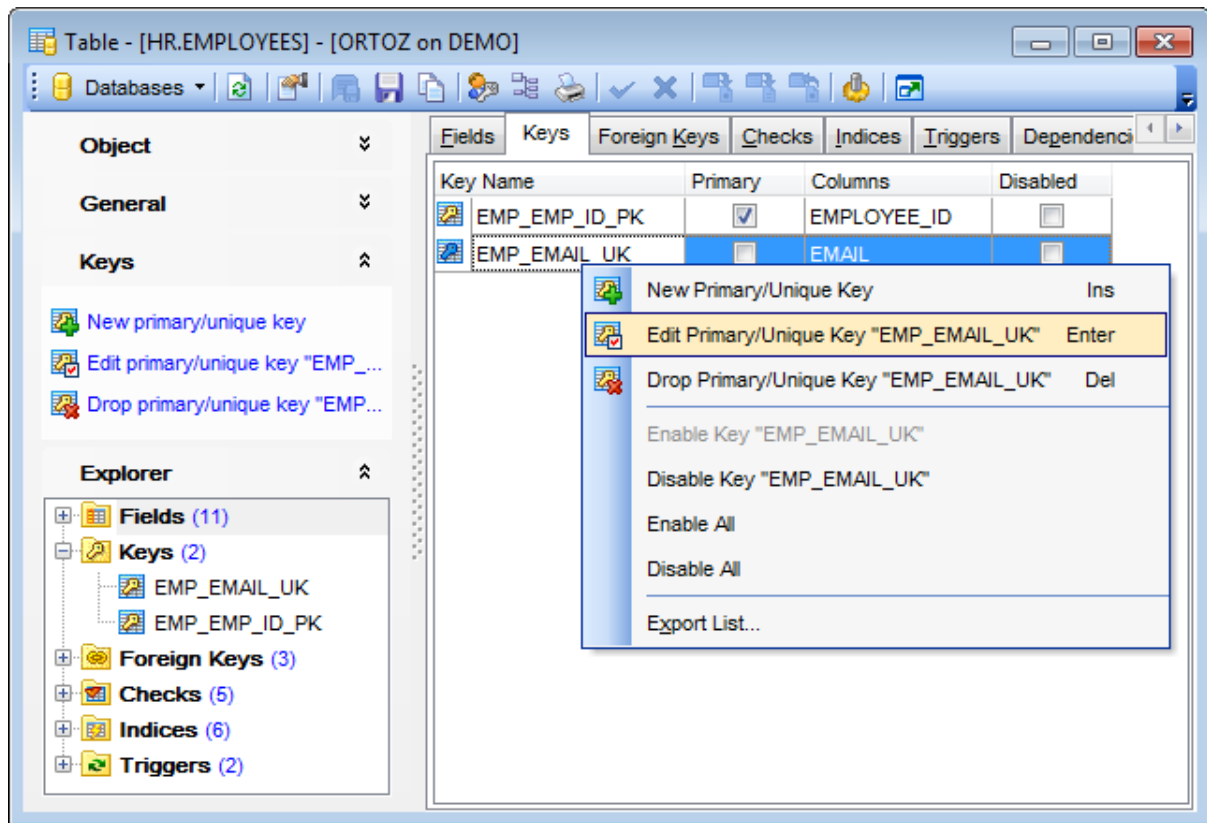
5.3.1.2.3 Managing keys

The **Keys** tab is provided for managing table keys.

Double-click a key to open the [Key Editor](#) for editing the table key.

Right-click a key to display the context menu allowing you to *create new, edit, drop, enable/disable* the selected key, or *enable/disable* all keys. Using the menu you can also [export](#) the list of the table keys to any of supported [formats](#).

Key management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Keys** list provides the following attributes of each key of the table:

Key Name
Columns
Primary
Disabled

For details see [Keys](#).

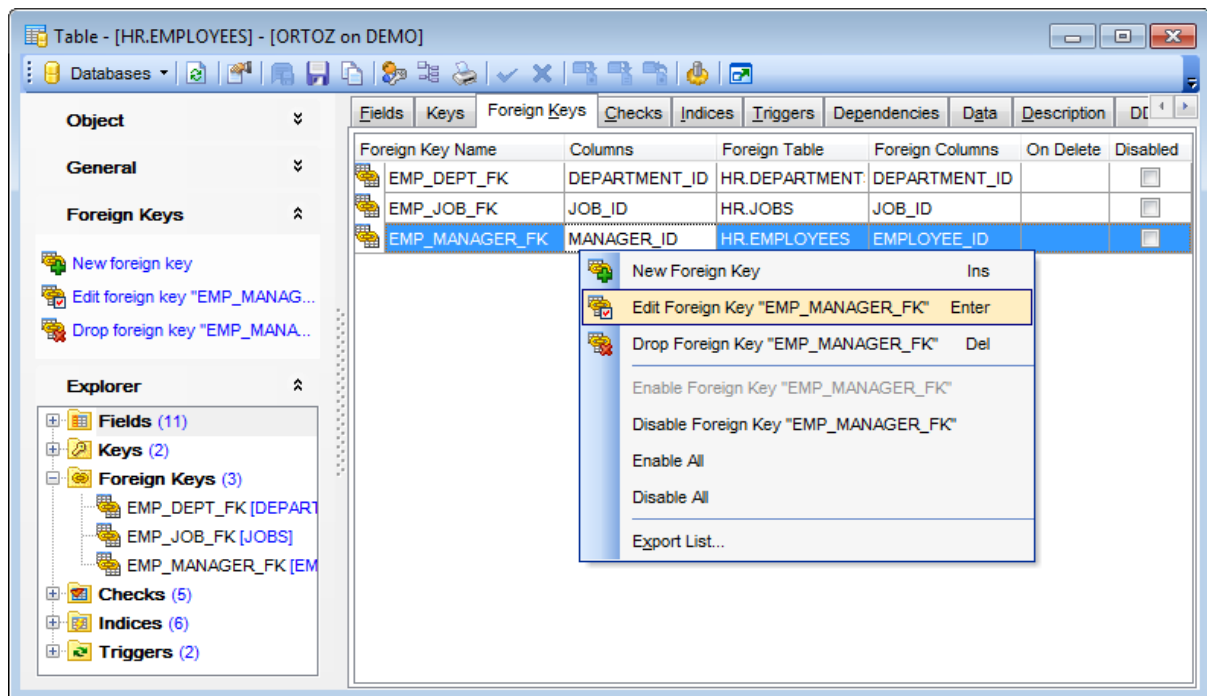
5.3.1.2.4 Managing foreign keys

The **Foreign Keys** tab is provided for managing table foreign keys.

Double-click a foreign key to open the [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*, *enable/disable* the selected foreign key, or *enable/disable* all foreign keys. Using the menu you can also [export](#) the list of the table foreign keys to any of supported [formats](#).

Foreign key management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Foreign Keys** list provides the following attributes of each foreign key of the table:

Foreign Key Name

Columns

Foreign Table

Foreign Columns

On Delete

Disabled

For details see [Foreign Keys](#).

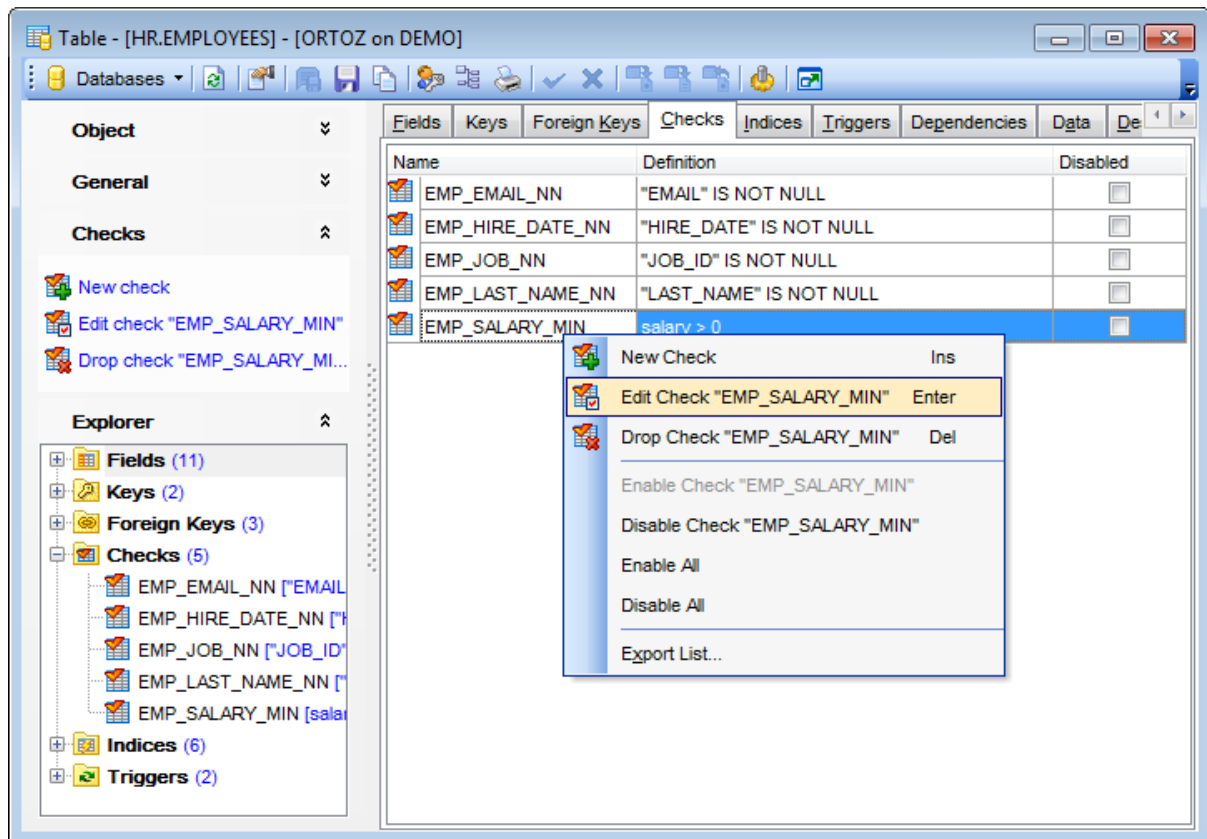
5.3.1.2.5 Managing checks

The **Checks** tab is provided for managing table checks.

Double-click a check to open the [Check Editor](#) for editing the table check.

Right-click a check to display the context menu allowing you to *create new, edit, drop, enable/disable* the selected check, or *enable/disable* all checks. Using the menu you can also [export](#) the list of the table checks to any of supported [formats](#).

Check management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Checks** list provides the following attributes of each check of the table:

Name

Definition

Disabled

For details see [Checks](#).

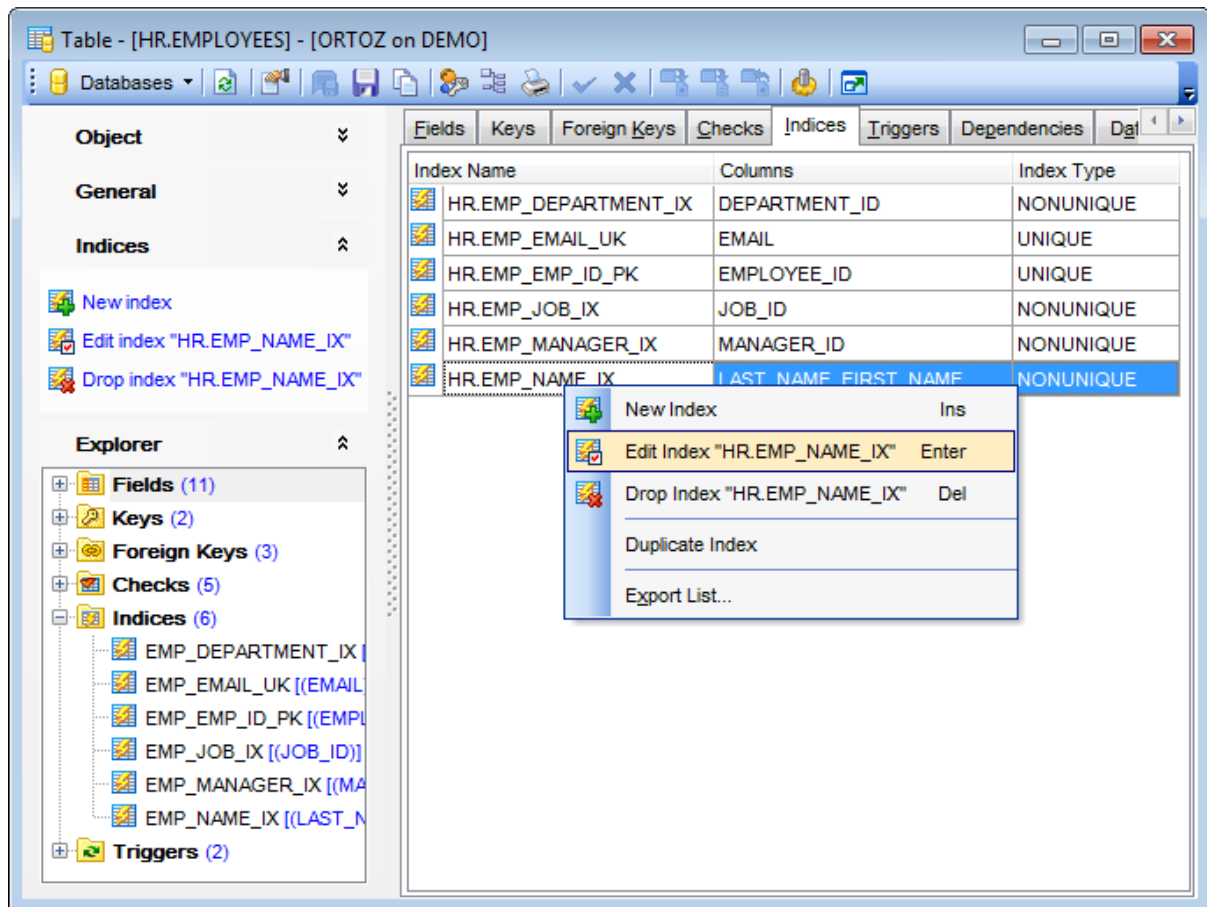
5.3.1.2.6 Managing indices

The **Indices** tab is provided for managing table indexes.

Double-click an index to open the [Index Editor](#) for editing the table index.

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

Index management tools are also available through the [Navigation bar](#) of **Table Editor**.



The **Indexes** list provides the following attributes of each index of the table:

Index Name

Columns

Index Type

For details see [Indexes](#).

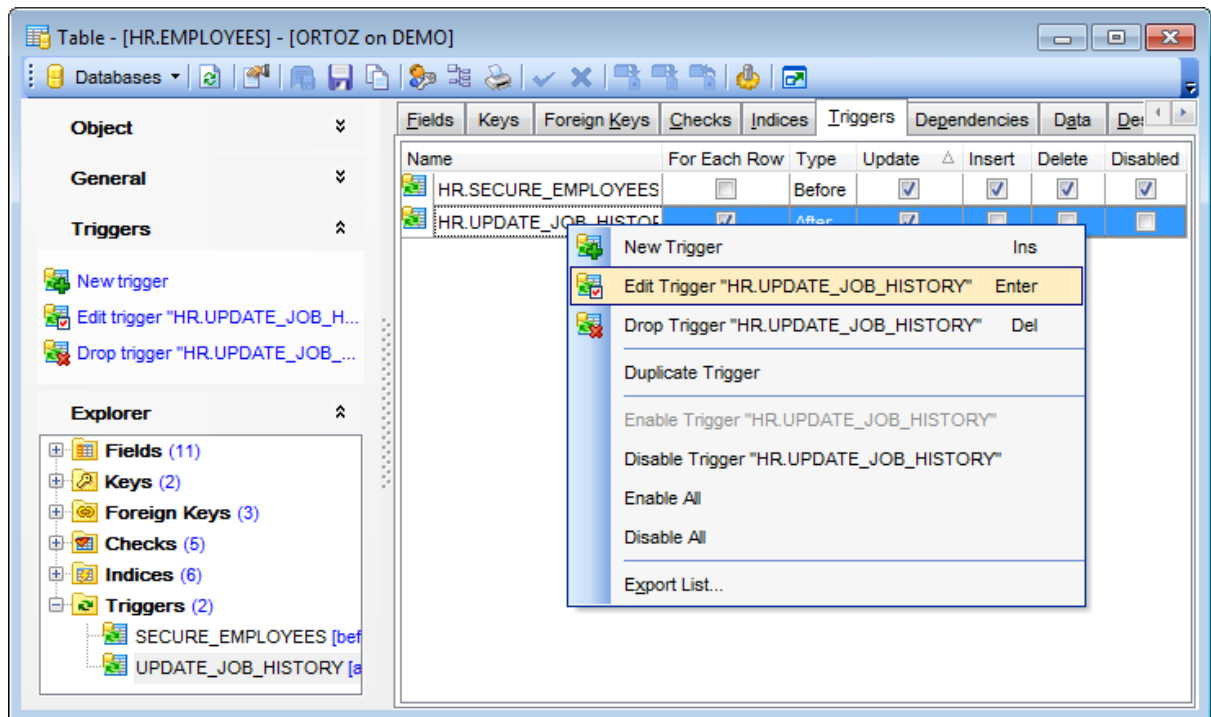
5.3.1.2.7 Managing triggers

The **Triggers** tab is provided for managing table triggers.

Double-click a trigger to open the [Trigger Editor](#) for editing the table trigger.

Right-click a trigger to display the context menu allowing you to *create new, edit, drop, enable/disable* the selected trigger, or *enable/disable* all triggers. Using the menu you can also [export](#) the list of the table triggers to any of supported [formats](#).

Trigger management tools are also available through the [Navigation bar](#) of **Table Editor**.



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

Name

Type

For Each Row

Insert

Update

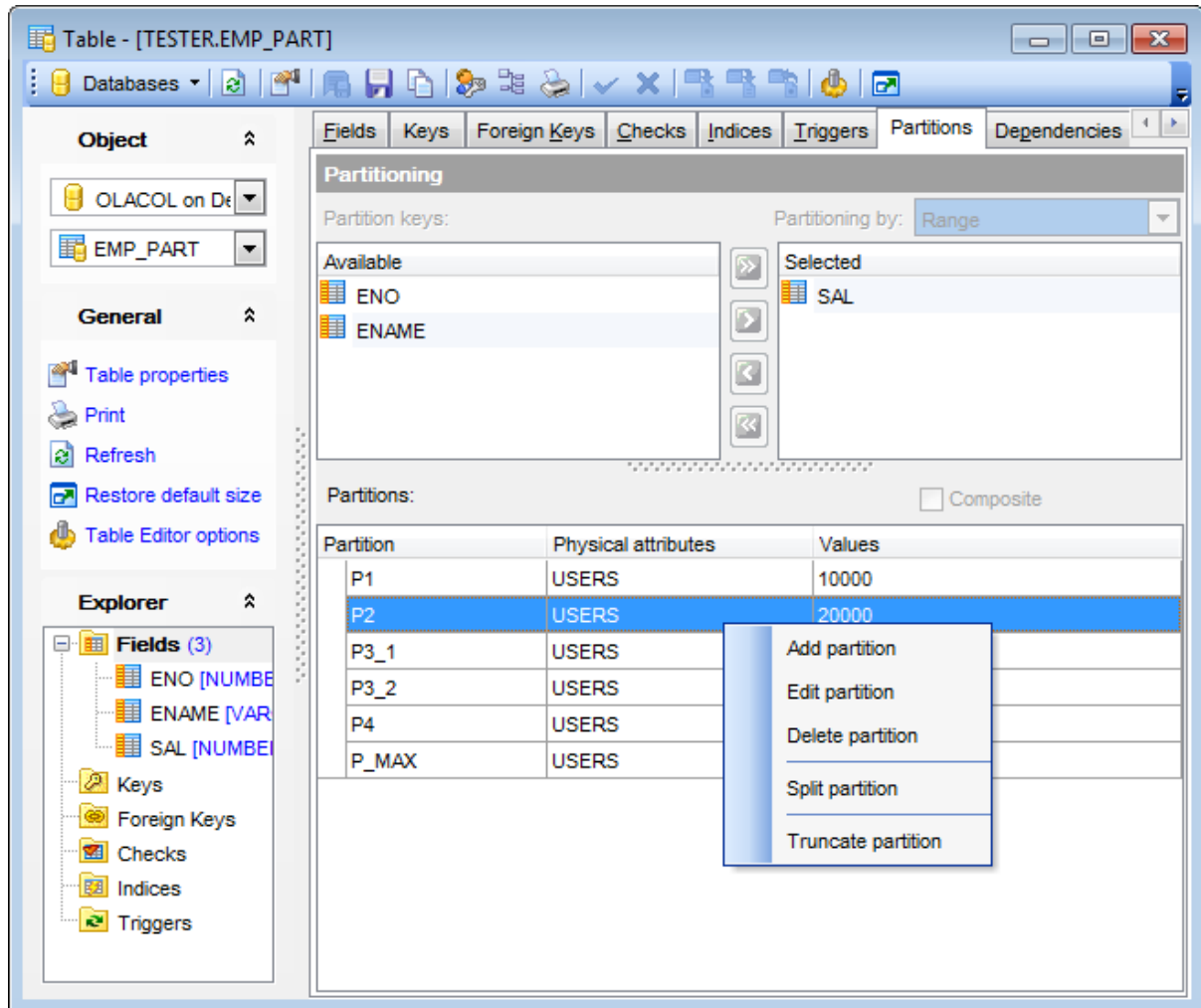
Delete

Disabled

For details see [Triggers](#).

5.3.1.2.8 Managing partitions

The **Partitions** tab is provided for managing table partitions.



Partitions

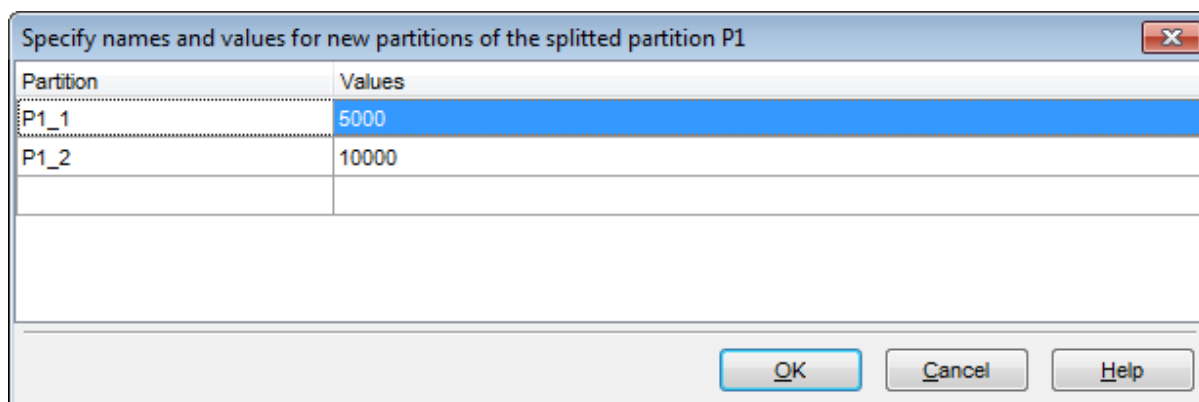
This area allows you to specify individual partitions. Right-click within the list area to call the **context menu** allowing you to *create a new* partition, *edit* or *delete* the selected partition. Several partitions can be deleted and truncated at the same time.

Using the context menu you can also:

- *Split partition*
- *Truncate partition*
- *Merge partitions*

To merge several partitions select them with the *Shift* button and click the **Merge partitions** context menu item. After that specify the name for the newly created result partition.

Use the **Split partition** item to redistribute the contents of a partition into two or more new partitions. The following dialog is opened on splitting a partition.



Partition	Values
P1_1	5000
P1_2	10000

OK Cancel Help

Define partitions names and values of the partition being splitted and click the **OK** button.

Use the **Truncate partition** context menu item to remove all rows from a table partition. Truncating a partition is similar to dropping a partition, except that the partition is emptied of its data, but not physically dropped.

For details see [Partitioning](#).

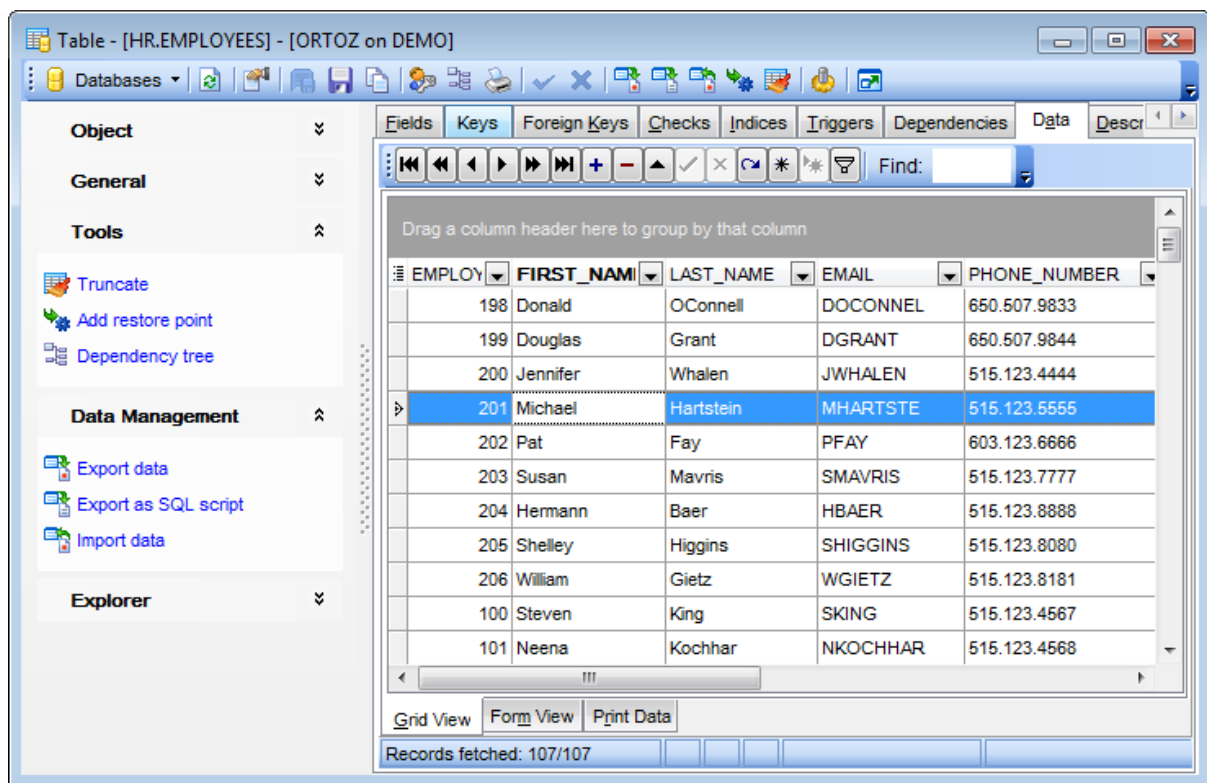
5.3.1.2.9 Working with table data

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](#).

Data management tools are also available through the [Navigation bar](#) 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.



Note: You can add a restore point before changing data, to get an opportunity to [flash back](#) to the current data state.

Click  **Add restore point** on the [Navigation bar](#) or [toolbar](#) to open the **Add restore point** dialog. For details see [Adding restore point](#).

See also:

[Working with view data](#)

[Data View](#)

5.3.1.3 Table Properties

The **Properties** tab allows you to view/edit common properties of the table: *Table name*, *Schema name*, *Organization type* (*Regular*, *Global Temporary*, *Clustered*, *Index-organized*, *External*, etc.), type-specific properties.

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](#).

Depending on the specified table organization the following specific properties can be set:

- [Regular table properties](#)
- [Global Temporary table properties](#)
- [Clustered table properties](#)
- [Index-organized table properties](#)
- [External table properties](#)
- [Blockchain properties](#)

5.3.1.3.1 Regular

A  **regular** table is a *HEAP*-organized table in which data rows are stored in no particular order.

Table	Fields	Foreign Keys	Unique Keys	Physical Attributes	Description	DDL
Table name: TABLE1 Schema: HR Organization: ☒ Regular ☐ Index-organized ☐ Global temporary ☐ External ☐ Clustered ☐ Blockchain Type information: ☐ Object table Owner: Type: ☐ Logging ☐ Monitoring ☐ Partitioning						

The following type-specific properties can be set for **Regular** tables:

☒ **Logging**

This option indicates that the creation of the table will be logged in the [redo log file](#).

☒ **Monitoring**

Use the option to start the collection of modification statistics on this table.

☒ **Partitioning**

Select this option to create a [partitioned](#) table.

See also:

[Physical Attributes](#)

[Partitioning](#)

5.3.1.3.2 Global Temporary

A  **Global Temporary** table is a temporary table and its definition is visible to all sessions with appropriate privileges. The data in a temporary table are visible only to the session that inserts the data into the table.

Table	Fields	Foreign Keys	Unique Keys	Physical Attributes	Description	DDL																																																								
<table> <tr> <td>Table name</td> <td colspan="6">TABLE1</td> </tr> <tr> <td>Schema</td> <td colspan="6">HR</td> </tr> <tr> <td colspan="7"> Organization ☐ Regular ☐ Index-organized ☒ Global temporary ☐ External ☐ Clustered ☐ Blockchain </td> </tr> <tr> <td colspan="7"> Type information ☒ Object table </td> </tr> <tr> <td>Owner</td> <td colspan="6">DMSYS</td> </tr> <tr> <td>Type</td> <td colspan="6">DM_ITEMSET</td> </tr> <tr> <td colspan="7"> <table> <tr> <td> Duration ☒ Transactions ☐ Session </td> <td colspan="6"> On commit ☒ Delete rows ☐ Preserve rows </td> </tr> </table> </td> </tr> </table>							Table name	TABLE1						Schema	HR						Organization ☐ Regular ☐ Index-organized ☒ Global temporary ☐ External ☐ Clustered ☐ Blockchain							Type information ☒ Object table							Owner	DMSYS						Type	DM_ITEMSET						<table> <tr> <td> Duration ☒ Transactions ☐ Session </td> <td colspan="6"> On commit ☒ Delete rows ☐ Preserve rows </td> </tr> </table>							Duration ☒ Transactions ☐ Session	On commit ☒ Delete rows ☐ Preserve rows					
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Schema	HR																																																													
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Duration ☒ Transactions ☐ Session	On commit ☒ Delete rows ☐ Preserve rows																																																													

The following type-specific properties can be set for **Global Temporary** tables:

Duration

The table segment and any data the table contains can be either session-specific or transaction-specific data. Use this group to specify whether the table segment and data are *session-* or *transaction-*specific.

On commit

This group specifies action performed over the table data on commit:

☒ *Delete rows*

This option is specified for a transaction-specific temporary table. Oracle will truncate the table (delete all its rows) after each commit.

☒ *Preserve rows*

This option is specified for a session-specific temporary table. Oracle will truncate the table (delete all its rows) when you terminate the session.

See also:

[Physical Attributes](#)

5.3.1.3.3 Clustered

A  **Clustered** table is the table that is part of a [cluster](#). The table columns correspond to the cluster columns. Generally, the cluster columns of a table are the column or columns that make up its primary key or a portion of its primary key.

Table	Fields	Foreign Keys	Unique Keys	Physical Attributes	Description	DDL																																																															
<table> <tr> <td>Table name</td> <td colspan="6">TABLE1</td> </tr> <tr> <td>Schema</td> <td colspan="6">HR</td> </tr> <tr> <td colspan="7"> Organization ☐ Regular ☐ Index-organized ☐ Global temporary ☐ External ☒ Clustered ☐ Blockchain </td> </tr> <tr> <td colspan="7"> Type information ☐ Object table </td> </tr> <tr> <td>Owner</td> <td colspan="6"></td> </tr> <tr> <td>Type</td> <td colspan="6"></td> </tr> <tr> <td>Cluster owner</td> <td colspan="6">SYS</td> </tr> <tr> <td>Cluster name</td> <td colspan="6">SMON_SCN_TO_TIME_AUX</td> </tr> <tr> <td>Table column name</td> <td colspan="3">THREAD</td> <td>Cluster column name</td> <td colspan="2">THREAD</td> </tr> </table>							Table name	TABLE1						Schema	HR						Organization ☐ Regular ☐ Index-organized ☐ Global temporary ☐ External ☒ Clustered ☐ Blockchain							Type information ☐ Object table							Owner							Type							Cluster owner	SYS						Cluster name	SMON_SCN_TO_TIME_AUX						Table column name	THREAD			Cluster column name	THREAD	
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Schema	HR																																																																				
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Cluster name	SMON_SCN_TO_TIME_AUX																																																																				
Table column name	THREAD			Cluster column name	THREAD																																																																

The following type-specific properties can be set for **Clustered** tables:

To create a clustered table, you need to specify *name* of the cluster and its *schema*.

Cluster owner

Use the drop-down list to select schema to contain the cluster.

Cluster name

Use the drop-down list to select name of the cluster for the clustered table.

Use the area below to specify one column from the table for each column in the cluster key.

See also:

[Physical Attributes](#)

5.3.1.3.4 Index-organized

In an  **index-organized table**, the data rows are held in an **index** defined on the primary key for the table. Oracle Database maintains the table rows, both primary key column values and non-key column values, in an **index** built on the primary key. Index-organized tables are therefore best suited for primary key-based access and manipulation.

Table	Fields	Overflow Attributes	Physical Attributes	Description	DDL																																																				
<table> <tr> <td>Table name</td> <td colspan="5">TABLE1</td> </tr> <tr> <td>Schema</td> <td colspan="5">HR</td> </tr> <tr> <td colspan="6"> Organization ☐ Regular ☒ Index-organized ☐ Global temporary ☐ External ☐ Clustered ☐ Blockchain </td> </tr> <tr> <td colspan="6"> Type information ☐ Object table Owner Type </td> </tr> <tr> <td colspan="6"> Index name C_CONT_IDX </td> </tr> <tr> <td colspan="6"> PCT threshold 1 </td> </tr> <tr> <td colspan="6"> ☐ Partitioning </td> </tr> <tr> <td colspan="6"> IOT Primary Constraint: <table> <tr> <th>Available</th> <th>Selected</th> </tr> <tr> <td> COUNTRY_ID COUNTRY_NAME </td> <td> CONTINENT_ID </td> </tr> </table> » > < « </td> </tr> </table>						Table name	TABLE1					Schema	HR					Organization ☐ Regular ☒ Index-organized ☐ Global temporary ☐ External ☐ Clustered ☐ Blockchain						Type information ☐ Object table Owner Type						Index name C_CONT_IDX						PCT threshold 1						☐ Partitioning						IOT Primary Constraint: <table> <tr> <th>Available</th> <th>Selected</th> </tr> <tr> <td> COUNTRY_ID COUNTRY_NAME </td> <td> CONTINENT_ID </td> </tr> </table> » > < «						Available	Selected	COUNTRY_ID COUNTRY_NAME	CONTINENT_ID
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COUNTRY_ID COUNTRY_NAME	CONTINENT_ID																																																								

The following type-specific properties can be set for **Index-organized** tables:

Index name

Use the edit box to specify the name of the index for this table.

PCT threshold

Specify the percentage of space reserved in the index block for an index-organized table row, or select *DEFAULT* from the drop-down list.

This value must be large enough to hold the primary key. All trailing columns of a row, starting with the column that causes the specified threshold to be exceeded, are stored in the [overflow segment](#).

☒ **Partitioning**

Select this option to create a [partitioned](#) table.

IOT Primary Constraint

This group allows you to specify a **primary key** column for the index-organized table, since the primary key uniquely identifies a row.

To select a column, 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.

See also:

[Physical Attributes](#)

[Overflow Attributes](#)

[Partitioning](#)

5.3.1.3.5 External

An **external table** is a read-only table whose metadata are stored in the database but whose data are stored outside the database. Among other capabilities, external tables let you query data without first loading them into the database.

Table	Fields	Foreign Keys	Unique Keys	Description	DDL																																																								
<table> <tr> <td>Table name</td> <td>TABLE1</td> </tr> <tr> <td>Schema</td> <td>HR</td> </tr> <tr> <td colspan="2">Organization</td> </tr> <tr> <td>☐ Regular</td> <td>☐ Index-organized</td> </tr> <tr> <td>☐ Global temporary</td> <td>☒ External</td> </tr> <tr> <td>☐ Clustered</td> <td>☐ Blockchain</td> </tr> <tr> <td colspan="2">Type information</td> </tr> <tr> <td>☐ Object table</td> <td></td> </tr> <tr> <td>Owner</td> <td></td> </tr> <tr> <td>Type</td> <td></td> </tr> <tr> <td>Type</td> <td>ORACLE_LOADER</td> </tr> <tr> <td>Default directory name</td> <td>WORK_DIR</td> </tr> <tr> <td>Reject limit</td> <td>1</td> </tr> <tr> <td colspan="2">Parallel</td> </tr> <tr> <td>☐ Default</td> <td>Parallel options</td> </tr> <tr> <td>☐ No parallel</td> <td>Degree 2</td> </tr> <tr> <td>☒ Parallel</td> <td>Instances 0</td> </tr> <tr> <td colspan="2">Locations:</td> </tr> <tr> <td colspan="2">Access parameters + -</td> </tr> <tr> <td>Directory</td> <td>Location</td> </tr> <tr> <td>DATA_PUMP_DIR</td> <td></td> </tr> <tr> <td>DBMS_OPTIM_ADMLDIR</td> <td></td> </tr> <tr> <td>DBMS_OPTIM_LOGDIR</td> <td></td> </tr> <tr> <td>JAVA\$JOX\$CUJS\$DIRECTORY\$</td> <td></td> </tr> <tr> <td>OPATCH_INST_DIR</td> <td></td> </tr> <tr> <td>OPATCH_LOG_DIR</td> <td></td> </tr> <tr> <td>OPATCH_SCRIPT_DIR</td> <td></td> </tr> <tr> <td>ORACLECLDIR</td> <td></td> </tr> </table>						Table name	TABLE1	Schema	HR	Organization		☐ Regular	☐ Index-organized	☐ Global temporary	☒ External	☐ Clustered	☐ Blockchain	Type information		☐ Object table		Owner		Type		Type	ORACLE_LOADER	Default directory name	WORK_DIR	Reject limit	1	Parallel		☐ Default	Parallel options	☐ No parallel	Degree 2	☒ Parallel	Instances 0	Locations:		Access parameters + -		Directory	Location	DATA_PUMP_DIR		DBMS_OPTIM_ADMLDIR		DBMS_OPTIM_LOGDIR		JAVA\$JOX\$CUJS\$DIRECTORY\$		OPATCH_INST_DIR		OPATCH_LOG_DIR		OPATCH_SCRIPT_DIR		ORACLECLDIR	
Table name	TABLE1																																																												
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Reject limit	1																																																												
Parallel																																																													
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ORACLECLDIR																																																													

The following type-specific properties can be set for **External** tables:

Type

This value indicates the access driver of the external table. The access driver is the API that interprets the external data for the database. Use the drop-down list to select one of the two access drivers provided by Oracle Database:

ORACLE_LOADER (lets you read table data from an external table and load it into a database);

ORACLE_DATAPUMP (lets you unload data, i.e. read data from a table in the database and insert it into an external table, and then reload it into an Oracle database)

Default directory name

Specify a default [directory](#) object corresponding to a directory on the file system where the external data sources may reside.

Reject limit

Specify how many conversion errors can occur during a query of the external data before an Oracle Database error is returned and the query is aborted, or select *DEFAULT* from the drop-down list.

Parallel

Use this group to specify the degree of parallel access to the external table.

☒ *Default*

☐ *No parallel* (serial execution)

☐ *Parallel* (select a degree of parallelism equal to the number of CPUs available on all participating instances)

Degree

Indicates the degree of parallelism, which is the number of parallel threads used in the parallel operation.

Locations

Use the **Add location**  and **Delete location**  buttons to manage external data sources. Normally, a data source is a file, but not necessarily. It is subject to the access driver to interpret this information in the context of the external data.

Click the **Access parameters** button to call the **Access Parameters** dialog that allows you to modify the default behavior of the access driver by setting values to the parameters of the access driver for this external table: [record](#) and [field parameters](#).

See also:

[Physical Attributes](#)

5.3.1.3.5.1 Record parameters

The **Records** tab of the **Access Parameters** dialog allows you to define a number of options pertaining to the data records of the external table.

The **Access Parameters** dialog box is used to configure how data is accessed from a datafile. It features two tabs: **Records** and **Fields**. The **Records** tab is currently active.

Records Tab Settings:

- Character set:** A text input field.
- Data endian:** A drop-down menu set to **LITTLE**.
- String size in:** A drop-down menu set to **CHARACTERS**.
- Byte order mark:** A drop-down menu set to **CHECK**.
- Skip:** A spin box set to **20**.
- Record length:**
 - ☒ **Fixed:** A spin box set to **0**.
 - ☐ **Variable:** A spin box set to **0**.
 - ☐ **Delimited by:** A text input field.
 - ☐ **Delimited by new line:** A text input field.
- Storage:**
 - ☒ **Read size:** A spin box set to **0**.
 - ☒ **Data cache:** A spin box set to **0**.
- Files:**
 - ☒ **Badfile:**
 - Directory: **WORK_DIR**
 - File: **ulcase1.bad**
 - ☒ **Discardfile:**
 - Directory: **WORK_DIR**
 - File: **ulcase1.dis**
 - ☒ **Logfile:**
 - Directory: **LOG_FILE_DIR**
 - File: **ulcase1.log**
- Load when:** A text area containing the SQL query: `empid != BLANKS`.

At the bottom right, there are **OK** and **Cancel** buttons.

Character set

Identifies the character set of the datafile.

Data endian

Use the drop-down list to specify the endianness of data whose byte order may vary depending on the platform that generated the datafile. Possible values are: *DEFAULT*, *LITTLE*, *BIG*.

String size in

Use the drop-down list to specify whether the lengths specified for character strings are in *bytes* or *characters*.

Byte order mark

Use the drop-down list to specify whether or not the datafile should be checked for the presence of a byte-order mark (BOM):

UNCHECK indicates that the datafile should not be checked for a BOM and that all the data in the datafile should be read as data;

CHECK indicates that the datafile should be checked for a BOM; this is the default behavior for a datafile in a Unicode character set.

Skip

Specify the number of records skipped in the datafile before loading. This value can only be specified when non-parallel access is made to the data.

Record length

This group allows you to specify record length for the external table.

☒ **Fixed**

If this option is selected, all records have a fixed size of length bytes specified in the spinner control.

☐ **Variable**

If this option is selected, the records have a variable length and each record is preceded by a character string containing a number with the count of bytes for the record specified in the spinner control.

☐ **Delimited by**

If this option is selected, the end of a record is identified by the characters specified in the edit box.

☐ **Delimited by newline**

If this option is selected, the end of a record is identified by the line feed.

Note: The actual value used is platform-specific. On UNIX platforms, NEWLINE is assumed to be "\n". On Windows NT, NEWLINE is assumed to be "\r\n".

Files☒ **Badfile**

This option allows you to specify the file to which records are written when they cannot be loaded because of errors. The purpose of the badfile is to have one file where all rejected data can be examined and fixed, so that it can be loaded.

Directory

Use the drop-down list to specify a [directory](#) object corresponding to a directory on the file system where the badfile will reside.

File

Use the edit box to specify a name for the badfile.

☒ **Discard file**

This option allows you to specify the file to which records are written that fail the condition in the **Load when** clause.

Directory

Use the drop-down list to specify a [directory](#) object corresponding to a directory on the file system where the discard file will reside.

File

Use the edit box to specify a name for the discard file.

☒ **Log file**

This option allows you to specify the file that contains messages generated by the external tables utility while it is accessing data in the datafile.

Directory

Use the drop-down list to specify a [directory](#) object corresponding to a directory on the file system where the log file will reside.

File

Use the edit box to specify a name for the log file.

Storage☒ **Read size**

This option allows you to specify the size of the read buffer. The size of the read buffer is a limit on the size of the largest record the access driver can handle.

☒ **Data cache**

This option allows you to specify the data cache size (in entries). By default, the data cache feature is enabled (for 1000 elements). To completely disable the data cache feature, set it to 0. The data cache feature is only available for direct path loads.

Load when

This area allows you to identify the records that should be passed to the database, e.g.
empid != BLANKS
(dept_id = "SPORTING GOODS" OR dept_id = "SHOES") AND total_sales != 0

5.3.1.3.5.2 Field parameters

The **Fields** tab of the **Access Parameters** dialog allows you to define a number of options pertaining to the fields of the external table.

Default field delimiter**Terminated by**

Define the delimiter to show that everything between the current position in the record and the next occurrence of the termination string is considered part of the field, or select *WHITESPACE* from the drop-down list.

Start / End

If you set these parameters, the access driver starts at the current position in the record and skips over all whitespace looking for the first delimiter. All whitespace between the current position and the first delimiter is ignored. Next, the access driver looks for the second enclosure delimiter (or looks for the first one again if a second one is not

specified). Everything between those two delimiters is considered part of the field.

☒ **Optionally**

This option determines whether the **Start** / **End** delimiters can be either both present or both absent.

Field definitions

Trim

This option is used to specify that spaces should be trimmed from the beginning of a text field, the end of a text field, or both. Spaces include blanks and other nonprinting characters such as tabs, line feeds and carriage returns. Use the drop-down list to select one of the following values: *DEFAULT*, *LDTRIM*, *LTRIM*, *RTRIM*, *LRTRIM*, *NOTRIM*.

☒ **Missing field values are null**

Indicates that if there is not enough data in a record for all fields, then those fields with missing data values are set to NULL.

☒ **Reject rows with all null fields**

Indicates that a row will not be loaded into the external table if all referenced fields in the row are null.

Access Parameters

Records Fields

Default field delimiter
 Terminated by: ,
 Start: 0
 End: 255
☐ Optionally

Field definitions
 Trim: LTRIM
☐ Missing fields values are null
☐ Reject rows with all null fields

Field List:

Field Name	Data Type	Size	Position	StartPos	EndPos
COUNTRY_ID	ORACLE NUMBER		Absolute		
COUNTRY_NAME	CHAR	20	Relative		
CONTINENT_ID	ORACLE NUMBER				

Date format
 Date format:
 Date mask:

Field delimiter
 Terminated by:
 Start:
 End:
 Trim:
 Scale: 0
☐ Optionally

Default value
☒ DefaultIf
☐ NullIf

OK Cancel

The **Field list** area identifies the fields in the datafile and their data types.

Field Name

Identifies the name of a field in the datafile.

Data Type

Indicates the data type of the field. If no data type is selected, the access driver assumes the data type is CHAR(255).

Size

Defines the maximum size for the **Data type**.

StartPos

Number of bytes or characters from the beginning of the record to where the field begins. It positions the start of the field at an absolute spot in the record rather than relative to the position of the previous field.

EndPos

Indicates the absolute byte or character offset into the record for the last byte of the field.

Note that the **Position** parameter should be specified if you use **StartPos** / **EndPos** parameters.

Date format

Use this group to specify the *date format* and *date mask* (for date/time fields).

Default value

Use this group to specify the *defaultIf* and *nullIf* parameters.

Field delimiter

Use this group to specify the delimiter parameters for each field selected in the **Field list**, if necessary: *Terminated by*, *Start / End*, *Trim*, *Max value*, *Optionally*.

Default value**DefaultIf**

Set the value to specify when the field is set to its default value.

NullIf

Set the value that specifies when the column associated with the field is set to NULL.

Field delimiter**Terminated by**

Define the delimiter to show that everything between the current position in the record and the next occurrence of the termination string is considered part of the field, or select *WHITESPACE* from the drop-down list.

Start / End

If you set these parameters, the access driver starts at the current position in the record and skips over all whitespace looking for the first delimiter. All whitespace between the current position and the first delimiter is ignored. Next, the access driver looks for the second enclosure delimiter (or looks for the first one again if a second one is not specified). Everything between those two delimiters is considered part of the field.

Trim

Select the type of whitespace trimming for character fields.

Scale

Set the location of the decimal point in the number.

☒ **Optionally**

This option determines whether the **Start** / **End** delimiters can be either both present or both absent.

5.3.1.3.6 Blockchain

Blockchain tables

Table	Fields	Foreign Keys	Unique Keys	Description	DDL
Table name: TABLE1 Schema: HR Organization ☐ Regular ☐ Index-organized ☐ Global temporary ☐ External ☒ Blockchain Type information ☐ Object table Owner: Type: Row would be deleted ☐ Never ☒ After 16 days at least ☐ Prevent to change this in the future Table would be dropped ☐ Never ☒ After 0 days of inactivity					

Row would be deleted

Specify how long the rows are protected from deletion.

☒ **Never**

The rows can be never deleted.

☒ **After ... days at least**

The rows are protected from deletion for the specified number of days.

☒ **Prevent to change this in future**

The specified number of days is locked and cannot be changed.

Table would be dropped

Specify how long the table is protected from being dropped. If the table has no rows it can still be dropped.

☒ **Never**

The table can be never dropped.

• **After ... days of inactivity**

The table can't be dropped until there have been no new rows inserted for the specified number of days.

5.3.1.4 Fields

Table/view/materialized view fields are managed within the **Fields** tab of [Table Editor](#)/[View Editor](#)/[Materialized View Editor](#).

Creating Fields

- open the table in [Table Editor](#);
- proceed to the **Fields** tab there;
- right-click the tab area and select the **New Field** context menu item, or press the *Ins* key;
- define the field properties using the [Field Editor](#) dialog.

Editing Fields

To edit an existing table field:

- open the table in [Table Editor](#);
- proceed to the **Fields** tab there;
- right-click the field and select the **Edit Field <field_name>** context menu item, or simply double-click the field;
- edit the field properties using the [Field Editor](#) dialog.

To change the name of a table field:

- open the table in [Table Editor](#);
- proceed to the **Fields** tab there;
- right-click a field and select the **Rename Object...** context menu item;
- specify a new name for the field in the **Rename Object...** dialog.

Dropping Fields

- open the table in [Table Editor](#);
- proceed to the **Fields** tab there;
- right-click the field and select the **Drop Field <field_name>** context menu item;
- confirm dropping in the dialog window.

5.3.1.4.1 Field Editor

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

To open a field in **Field Editor**, double-click it in the [DB Explorer](#) tree, or use the **Edit Check...** item of the context menu within the [Fields](#) tab of [Table Editor](#).

- [Setting field name and type](#)
- [Setting default value and comment](#)

5.3.1.4.1.1 Setting field name and type

Column name

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

The **Data type** tab defines the type of the field data.

The screenshot shows the 'Add new field' dialog box. The 'Column name' field contains 'ID'. Under 'Column type kind', 'Oracle built-in datatype' is selected. The 'Schema' dropdown is set to 'TESTER'. The 'Data Type' tab is active, showing 'Type' as 'NUMBER', 'Size' as 0, and 'Scale' as 0. Checkboxes for 'Not Null' and 'Autoincrement' are checked, while 'Unique', 'Virtual', and 'Default On Null' are unchecked.

Column type kind

This group allows you to select whether the field being create/edited is based on a standard (built-in) data type, an ANSI SQL data type, or a user-defined type.

• Oracle built-in datatype

Specifies that the field is based on a built-in Oracle data type.

Type

Here you can set the field type by selecting it from the drop-down list of built-in Oracle data types.

☒ **Ansi SQL datatype**

Specifies that the field is based upon a user-defined data type.

Type

Here you can set the field type by selecting it from the drop-down list of ANSI SQL data types.

Size

Specify the length of the field value (for certain types).

Scale

Defines the maximum number of decimal digits that can be stored to the right of the decimal point of the value (for numeric and decimal data types).

☒ **Not NULL**

Check this option to specify that the values for the column should never contain a null value. *NOT NULL* affects all INSERT and UPDATE operations on a column.

☒ **Unique**

Check this option to create a unique key on the field that provides entity integrity for a particular column or columns using a unique index.

☒ **Autoincrement**

Enable the option to create an autoincremental field using [trigger](#) and [sequence](#) for Oracle Database 11g and lower.

For Oracle Database 12c use the [Identity](#) tab to configure autoincrement properties.

☒ **Virtual**

Enable the option to create a calculated field. Use the **Column Expression** tab to define expression that will be used to calculate this field's values.

☒ **Default On Null**

Check this option to set [default](#) column value when it is explicitly set to NULL.

☒ **User-defined data type**

Specifies that the field is based upon a user-defined data type.

Schema

Use the drop-down list to select the schema containing the user-defined type.

Type

Use the drop-down list to select the user-defined type ([Array Type](#), [Index Type](#) or [Object Type](#)) for the field being created/edited.

5.3.1.4.1.2 Setting autoincrement options

If the field type is set to NUMBER and the ☒ **Autoincrement** option is checked then you can directly set options for creating an autoincrement field. The sequence with the specified options is created on creating such field.

This feature is enabled in Oracle Database 12c.

You can select an existing [sequence](#) for generating field values. Use the **Schema** and **Sequence** drop-down lists for this purpose.

If you want to configure new sequence manually then check the ☒ **Manual** option.

Check the ☒ **Generate always** option to increment the default value on every insertion and store the incremented value into the column.

For details on configuring other options see [Sequences](#).

5.3.1.4.1.3 Setting default value and comment

Use the **Default** and the **Comment** tabs of **Field Editor** to set values taken by default and optional text as a comment for the field.

5.3.1.5 Keys

An **integrity constraint** is a rule that restricts the values in a database.

A **unique constraint** prohibits multiple rows from having the same value in the same column or combination of columns but allows some values to be null. A unique constraint designates a column as a **unique key**.

A **primary key constraint** combines a *NOT NULL* constraint and a *unique constraint* in a single declaration. It prohibits multiple rows from having the same value in the same column or combination of columns and prohibits values from being null. A **Primary key** constraint designates a column as the primary key of a table.

Table/view keys are managed within the **Keys** tab of [Table Editor/View Editor](#).

Creating Keys

- open the table/view in [Table Editor/View Editor](#);
- proceed to the **Keys** tab there;
- right-click the tab area and select the **New Primary/Unique** context menu item;
- edit the key properties using [Key Editor](#).

Editing Keys

- open the table/view in [Table Editor/View Editor](#);
- proceed to the **Keys** tab there;
- right-click the key and select the **Edit Primary/Unique Key** context menu item, or simply double-click the key;
- view the key properties using [Key Editor](#).

Dropping Keys

- open the table/view in [Table Editor/View Editor](#);
- proceed to the **Keys** tab there;
- right-click the key and select the **Drop Primary/Unique Key** context menu item;
- confirm dropping in the dialog window.

5.3.1.5.1 Key Editor

Key Editor allows you to specify primary/unique key definition and set key options. It opens automatically when you create a new primary or unique key and is available on editing an existing one (see [Create key](#) and [Edit key](#) for details).

To open a primary/unique key constraint in **Key Editor**, double-click it in the [DB Explorer](#) tree, or use the **Edit Foreign Key...** item of the context menu within the [Keys](#) tab of [Table Editor](#) (or the [Keys](#) tab of [View Editor](#)).

- [Creating/editing key](#)
- [Setting storage attributes](#)
- [Setting key options](#)
- [Viewing DDL definition](#)

5.3.1.5.1.1 Creating/editing key

Use the **Primary/Unique Key** tab of **Key Editor** to create/edit a primary or unique key constraint and specify its properties.

Name

Specify the name of the key to be created, or view the name of the key being edited. Note that the key name must be unique within its schema.

☒ **System named**

If this option is selected, Oracle will generate the key name automatically when compiling the key definition.

Schema

Use the drop-down list to specify the schema in which the key will be created.

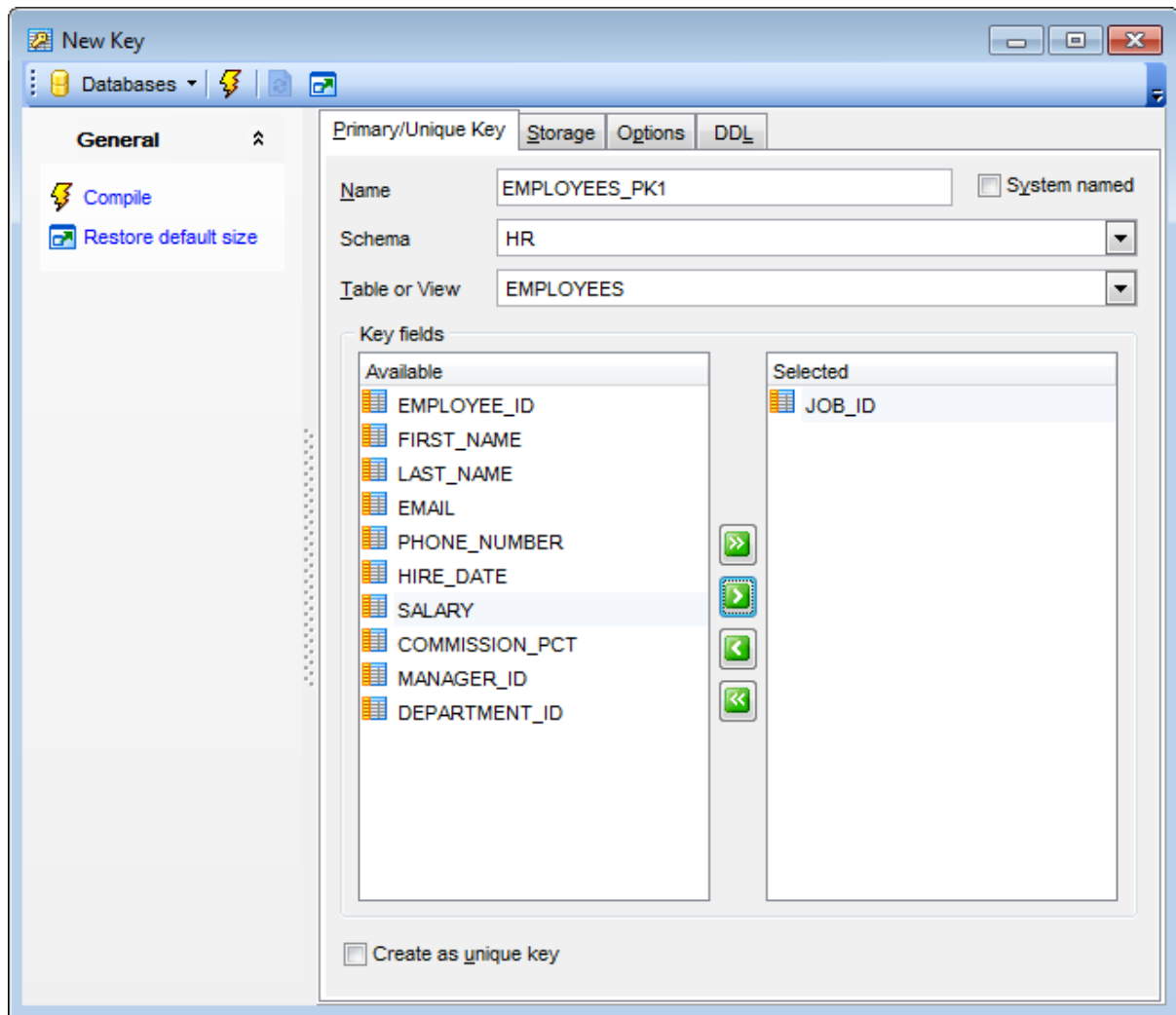


Table or View

Use the drop-down list to select the [table](#) or [view](#) for which the key is created.

The **Key fields** area allows you to specify one or more table/view columns for the key. To select a column, 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.

☒ Create as unique key

Designates the key as a unique key.

To [compile](#) the object, use the corresponding **Compile** item of the **Navigation bar**.

5.3.1.5.1.2 Storage options

The **Physical Attributes** / **Storage** tab available in object editors lets you specify how a [database object](#) should be stored in the database. Storage parameters affect both how long it takes to access data stored in the database and how efficiently space in the database is used.

The screenshot shows the 'Storage' tab of a configuration window. It contains several sections with dropdown menus and spinners. The 'Physical attributes' section has 'Tablespace' set to 'EXAMPLE', 'Buffer pool' set to 'KEEP', and 'Initial number of transactions' set to 'DEFAULT'. The 'Extents' section has 'Initial extent', 'Next extent', 'Minimum extents', and 'Maximum extents' all set to 'DEFAULT', and 'Percent increase' set to 'DEFAULT'. The 'Space usage' section has 'Percent free' set to 'DEFAULT'. The 'Free lists' section has 'Free lists' and 'Groups' both set to 'DEFAULT'.

Physical attributes

Tablespace

Use the drop-down list to select the [tablespace](#) where the object will be stored.

Buffer pool

This option allows you to specify a default buffer pool or cache for the object. All blocks for the object are stored in the specified cache. Use the drop-down list to select one of the following values:

KEEP: the buffer pool retains the schema object's data blocks in memory;

RECYCLE: the buffer pool eliminates data blocks from memory as soon as they are no longer needed.

DEFAULT: the buffer pool contains data blocks from schema objects that are not assigned to any buffer pool, as well as schema objects that are explicitly assigned to the *DEFAULT* pool.

Initial number of transactions

Specify the initial number of concurrent transaction entries allocated within each data block allocated to the database object, or select *DEFAULT* from the drop-down list.

Extents

An extent is a logical unit of database storage space allocation made up of a number of contiguous data blocks. One or more extents in turn make up a segment. When the existing space in a segment is completely used, Oracle allocates a new extent for the segment.

Initial extent

Specify the size (in bytes) of the first extent of the object. Oracle allocates space for this extent when you create the schema object, or select *DEFAULT* from the drop-down list.

Next extent

Specify the size (in bytes) of the next extent to be allocated to the object, or select *DEFAULT* from the drop-down list.

Percent increase

Specify the percent by which the third and subsequent extents grow over the preceding extent, or select *DEFAULT* from the drop-down list (the default value is 50, meaning that each subsequent extent is 50 per cent larger than the preceding extent)

Minimum extents

Specify the total number of extents to allocate when the object is created, or select *DEFAULT* from the drop-down list. This parameter lets you allocate a large amount of space when you create an object, even if the space available is not contiguous.

Maximum extents

Specify the total number of extents, including the first, that Oracle can allocate for the object, or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Space usage

Parameters of this group allow you to control the use of free space for inserts and updates to the rows in all the data blocks of a particular segment.

Percent free

This parameter sets the minimum percentage of a data block to be reserved as free space for possible updates to rows that already exist in that block. Specify a value, or select *DEFAULT* from the drop-down list.

Free lists**Free lists**

Specify the number of free lists that can be contained in each free list group, or select *DEFAULT* from the drop-down list (the default and minimum value for this parameter is 1, meaning that each free list group contains one free list).

Groups

Specify the number of groups of free lists for the database object being created, or select *DEFAULT* from the drop-down list (the default and minimum value for this parameter is 1).

5.3.1.5.1.3 Setting key options

Use the **Options** tab of **Key Editor** to specify the primary/unique key constraint options.

The screenshot shows the 'Options' tab of a constraint configuration dialog. It contains several sections: 'Status' with 'Disabled' and 'Enabled' radio buttons (the latter is selected); 'Validation' with 'No validate' and 'Validate' radio buttons (the latter is selected); 'Deferrable' with a checked checkbox and two radio buttons 'Initially immediate' (selected) and 'Initially deferred'; 'Rely' with 'No rely' (selected) and 'Rely' radio buttons; and 'Exceptions processing' with 'Schema' and 'Table or view' dropdown menus.

Status

Use this group to toggle the constraint status:

- ☒ *Disabled* (disables the integrity constraint)
- ☒ *Enabled* (applies the constraint to the data in the table or view)

Validation

Options of this group correlate with the corresponding server constraint behaviour parameters - *VALIDATE* and *NOVALIDATE*:

- ☒ *No validate* (ensures that all new DML operations on the constrained data comply with the constraint)
- ☒ *Validate* (specifies that all old and new data also complies with the constraint)

☒ Deferrable

Select this option to enable the deferrable group which allows you to specify one of the following:

- ☒ *Initially immediate* (indicates that Oracle should check this constraint at the end of each subsequent SQL statement)
- ☒ *Initially deferred* (indicates that Oracle should check this constraint at the end of subsequent transactions)

Rely

Use this group to specify whether a constraint in *NOVALIDATE* mode is to be taken into account for query rewrite:

- ☒ *No rely*
- ☒ *Rely* (activate an existing constraint in *NOVALIDATE* mode for query rewrite in an unenforced query rewrite integrity mode)

Note: This group is only available on editing an existing primary/unique constraint.

Exceptions processing

This group lets you define exception handling, i.e. specify a table into which Oracle places the rowids of all rows violating the primary/unique constraint. Use the **Schema** and **Table or view** drop-down lists to specify the table into which exceptions will be stored.

5.3.1.6 Foreign Keys

An **integrity constraint** is a rule that restricts the values in a database.

A **foreign key constraint** requires values in one table to match values in another table. 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*.

Table/view foreign keys are managed within the **Foreign Keys** tab of [Table Editor/View Editor](#).

Creating Foreign Keys

- open the table/view in [Table Editor/View 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 [Foreign Key Editor](#).

Editing Foreign Keys

- open the table/view in [Table Editor/View 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 [Foreign Key Editor](#).

Dropping Foreign Keys

- open the table/view in [Table Editor/View 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 options. It opens automatically when you create a new foreign key and is available on editing an existing one (see [Create foreign key](#) and [Edit foreign key](#) for details).

To open a foreign key constraint 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](#) (or the [Foreign keys](#) tab of [View Editor](#)).

- [Creating/editing foreign key](#)
- [Setting foreign key options](#)
- [Viewing DDL definition](#)

5.3.1.6.1.1 Creating/editing foreign key

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

Name

Specify the name of the foreign key to be created, or view the name of the foreign key being edited. Note that the foreign key name must be unique within its schema.

☒ **System named**

If this option is selected, Oracle will generate the foreign key name automatically when compiling the foreign key definition.

Schema

Use the drop-down list to specify the schema in which the foreign key will be created.

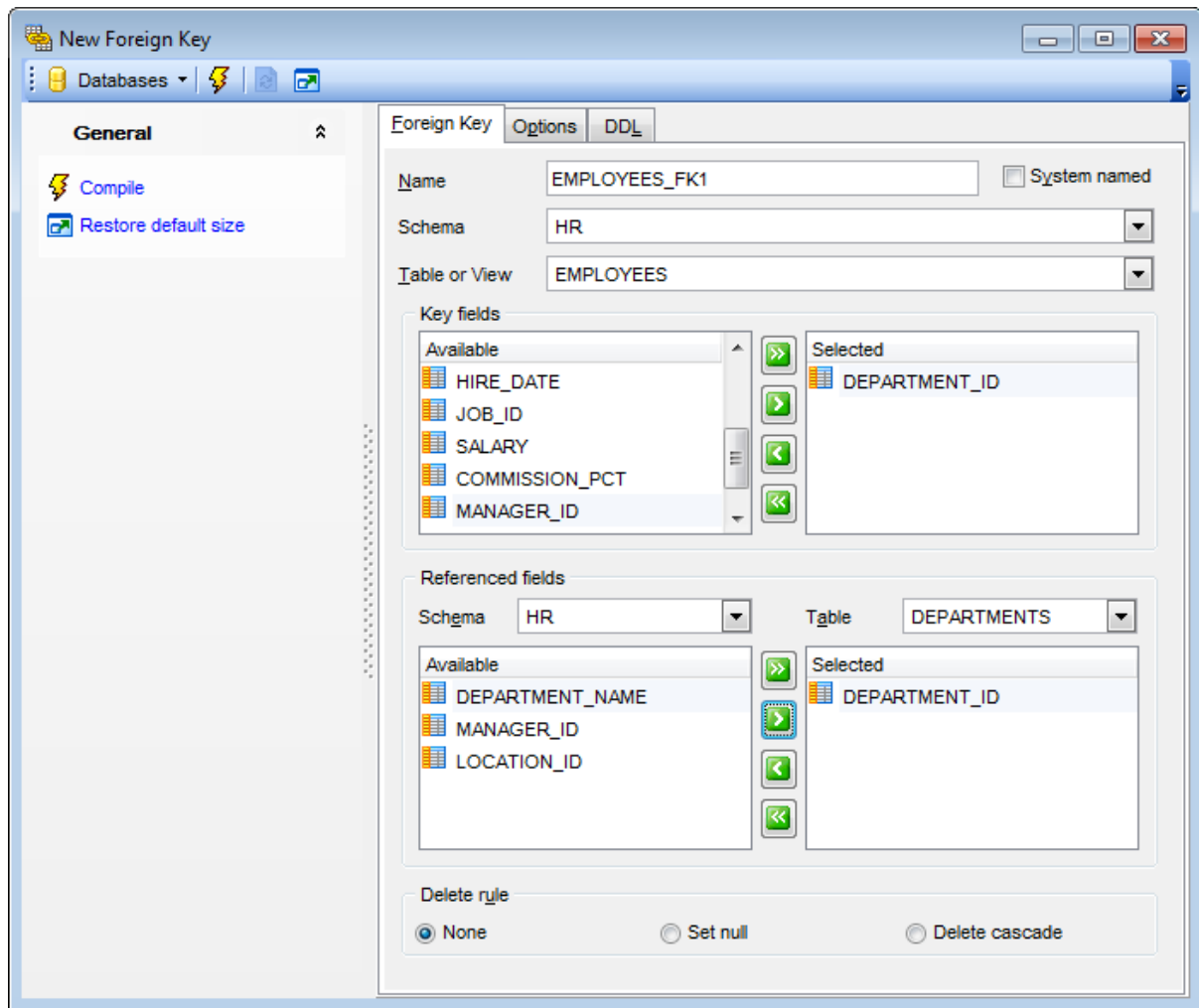


Table or View

Use the drop-down list to select the [table](#) or [view](#) for which the foreign key is created.

The **Key fields** area allows you to specify one or more table/view columns for the foreign key.

To select a column, 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.

The **Referenced fields** area allows you to specify one or more table columns to be referenced by the foreign key.

Schema / Table

Use the drop-down lists to select the schema and the foreign table.

To select a column, 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.

Delete rule

☒ None

Produce an error indicating that the deletion would create a foreign key constraint violation.

☒ *Set NULL*

Set the referencing column(s) to null.

☒ *Delete cascade*

Delete any rows referencing the deleted row.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the **Navigation bar**.

5.3.1.6.1.2 Setting foreign key options

Use the **Options** tab of **Foreign Key Editor** to specify the foreign key constraint options.

Status

Use this group to toggle the constraint status:

- ☒ *Disabled* (disables the integrity constraint)
- ☒ *Enabled* (applies the constraint to the data in the table or view)

Validation

Options of this group correlate with the corresponding server constraint behaviour parameters - *VALIDATE* and *NOVALIDATE*:

- ☒ *No validate* (ensures that all new DML operations on the constrained data comply with the constraint)
- ☒ *Validate* (specifies that all old and new data also complies with the constraint)

☒ **Deferrable**

Select this option to enable the deferrable group which allows you to specify one of the following:

- ☒ *Initially immediate* (indicates that Oracle should check this constraint at the end of each subsequent SQL statement)
- ☒ *Initially deferred* (indicates that Oracle should check this constraint at the end of subsequent transactions)

Rely

Use this group to specify whether a constraint in *NOVALIDATE* mode is to be taken into account for query rewrite:

- ☒ *No rely*
- ☐ *Rely* (activate an existing constraint in *NOVALIDATE* mode for query rewrite in an unenforced query rewrite integrity mode)

Note: This group is only available on editing an existing foreign key constraint.

Exceptions processing

This group lets you define exception handling, i.e. specify a table into which Oracle places the rowids of all rows violating the foreign key constraint. Use the **Schema** and **Table or view** drop-down lists to specify the table into which exceptions will be stored.

5.3.1.7 Checks

An **integrity constraint** is a rule that restricts the values in a database.

A **check constraint** requires a value in the database to comply with a specified condition. A **check** specifies an expression producing a Boolean result which new or updated rows must satisfy for an insert or update operation to succeed. Expressions evaluating to TRUE or UNKNOWN succeed. Should any row of an insert or update operation produce a FALSE result an error exception is raised and the insert or update does not alter the database.

Table checks are managed within the **Checks** tab of [Table Editor](#).

Creating Checks

- open the table in [Table Editor](#);
- proceed to the **Checks** tab there;
- right-click the tab area and select the **New Check Constraint** context menu item, or press the *Ins* key;
- define the check properties using [Check Editor](#).

Editing Checks

- open the table in [Table Editor](#);
- proceed to the **Checks** tab there;
- right-click the check and select the **Edit Check <check_name>** context menu item, or simply double-click the check;
- edit the check properties using [Check Editor](#).

Dropping Checks

- open the table in [Table Editor](#);
- proceed to the **Checks** tab there;
- right-click the check and select the **Drop Check <check_name>** context menu item;
- confirm dropping in the dialog window.

5.3.1.7.1 Check Editor

Check Editor allows you to specify check definition and set check options. It opens automatically when you create a new check and is available on editing an existing one (see [Create check](#) and [Edit check](#) for details).

To open a check constraint in **Check Editor**, double-click it in the [DB Explorer](#) tree, or use the **Edit Check...** item of the context menu within the [Checks](#) tab of [Table Editor](#).

- [Creating/editing check](#)
- [Setting check options](#)
- [Viewing DDL definition](#)

5.3.1.7.1.1 Creating/editing check

Use the **Check** tab of **Check Editor** to create/edit a check constraint and specify its properties.

Name

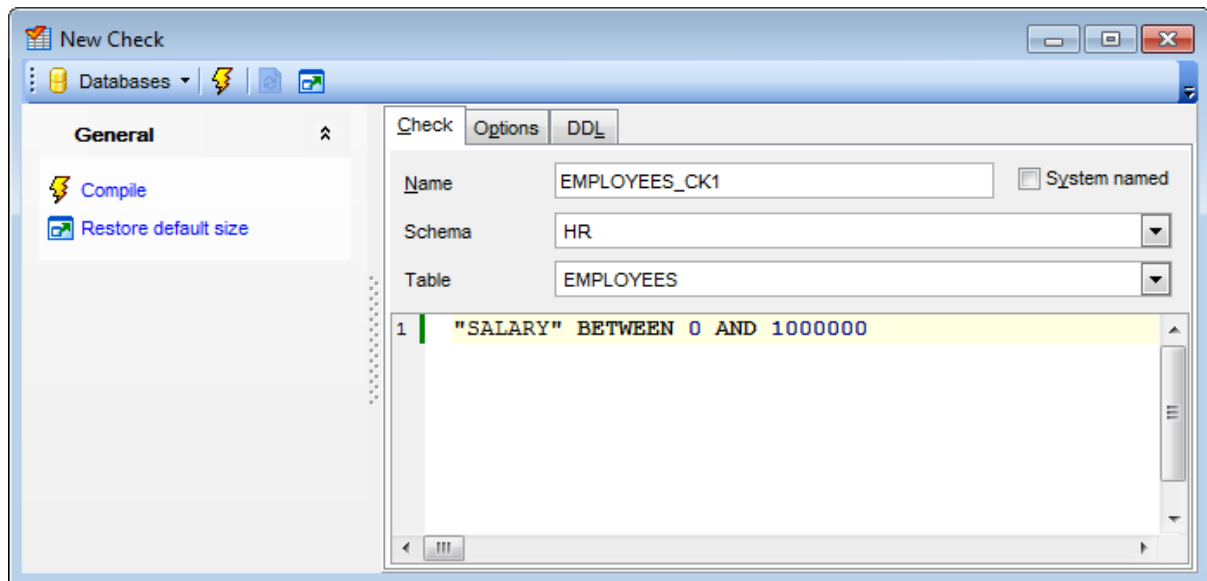
Specify the name of the check to be created, or view the name of the check being edited. Note that the check name must be unique within its schema.

☒ **System named**

If this option is selected, Oracle will generate the check name automatically when compiling the check definition.

Schema

Use the drop-down list to specify the schema in which the check will be created.

**Table**

Use the drop-down list to select the [table](#) for which the check is created.

The lower area represents the condition implied by the check constraint. You can specify any logical expression that returns *TRUE* or *FALSE* based on the logical operators.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the **Navigation bar**.

5.3.1.7.1.2 Setting check options

Use the **Options** tab of **Key Editor** to specify the primary/unique key constraint options.

The screenshot shows the 'Options' tab of the 'Key Editor' dialog. It contains several sections:

- Status**: Radio buttons for 'Disabled' (selected) and 'Enabled'.
- Validation**: Radio buttons for 'No validate' (selected) and 'Validate'.
- Deferrable**: A checkbox (unchecked) and radio buttons for 'Initially immediate' (selected) and 'Initially deferred'.
- Rely**: Radio buttons for 'No rely' (selected) and 'Rely'.
- Exceptions processing**: Two dropdown menus labeled 'Schema' and 'Table or view'.

Status

Use this group to toggle the constraint status:

- ☒ *Disabled* (disables the integrity constraint)
- ☐ *Enabled* (applies the constraint to the data in the table)

Validation

Options of this group correlate with the corresponding server constraint behaviour parameters - *VALIDATE* and *NOVALIDATE*:

- ☒ *No validate* (ensures that all new DML operations on the constrained data comply with the constraint)
- ☐ *Validate* (specifies that all old and new data also complies with the constraint)

☒ Deferrable

Select this option to enable the deferrable group which allows you to specify one of the following:

- ☒ *Initially immediate* (indicates that Oracle should check this constraint at the end of each subsequent SQL statement)
- ☐ *Initially deferred* (indicates that Oracle should check this constraint at the end of subsequent transactions)

Rely

Use this group to specify whether a constraint in *NOVALIDATE* mode is to be taken into account for query rewrite:

- ☒ *No rely*
- ☐ *Rely* (activate an existing constraint in *NOVALIDATE* mode for query rewrite in an unenforced query rewrite integrity mode)

Note: This group is only available on editing an existing check constraint.

Exceptions processing

This group defines exception handling for integrity constraints. The group is not available for check constraints.

5.3.2 Views

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).

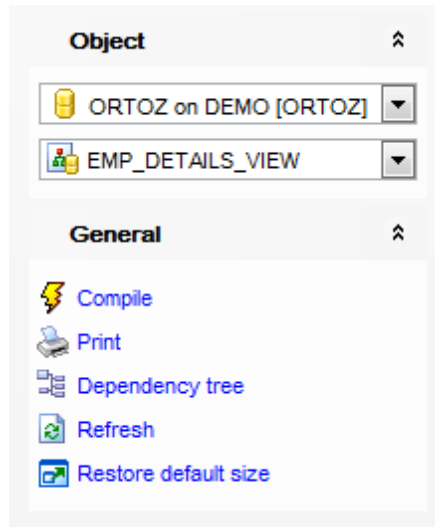
View Editor allows you to create new views and define their properties (view name and the SELECT statement it implements). It opens automatically when you create a new view and is available on editing an existing one.

To open a view in **View Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing view](#)
- [Managing fields](#)
- [Managing keys](#)
- [Managing foreign keys](#)
- [Managing triggers](#)
- [Working with data](#)
- [Browsing object dependencies](#)
- [Editing object description](#)
- [Setting object permissions](#)
- [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**.



Object

- select a database
- select a view for editing

General

- [compile](#) the view (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the view
- edit the view query using [Design Query](#)
- refresh the content of the active tab
- restore the default size and position of the editor window

View

- view the [dependency tree](#) for the view

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:

Keys

- [add](#) a new primary/unique key
- [edit](#) selected primary/unique key
- [drop](#) selected primary/unique key

Foreign Keys

- [add](#) a new foreign key
- [edit](#) selected foreign key
- [drop](#) selected foreign key(s)

Triggers

-  [add](#) a new trigger
-  [edit](#) selected trigger
-  [drop](#) selected trigger(s)

Data Management

-  commit transaction
-  rollback transaction
-  export data from the view using [Export Data Wizard](#)
-  export data from the view as Execute Script using [Export as SQL Script Wizard](#)
-  [import data](#) into the base table
-  add [restore point](#)

Description

-  save object [description](#) to file
-  copy [description](#) to clipboard

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.2.2 Creating/editing view

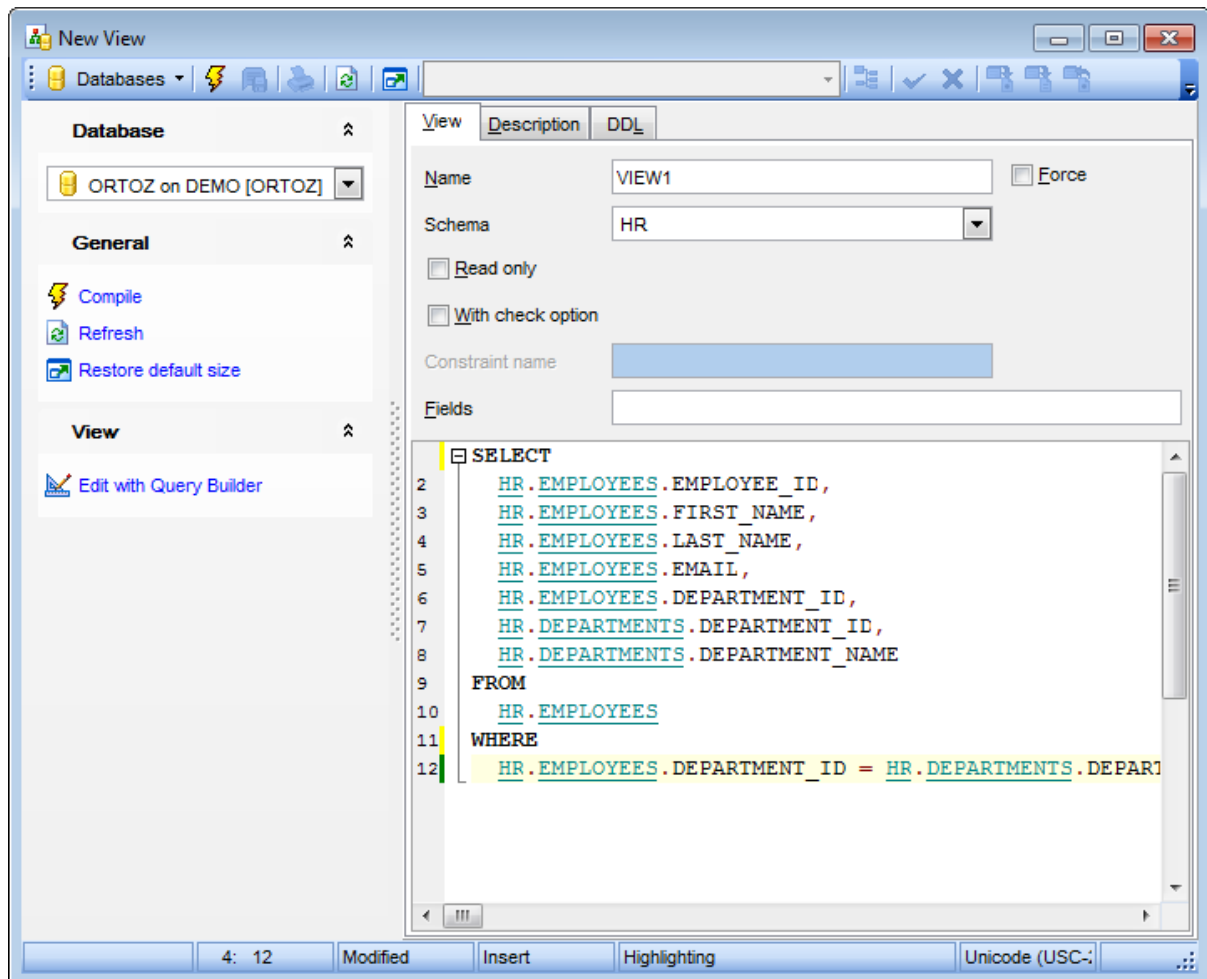
Use the **View** tab of **View Editor** to create/edit a view and specify its properties.

Name

Specify the name of the view to be created. Note that the view name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the view will be created.



☒ Force

Select this option if you want to create the view regardless of whether the base tables of the view or the referenced object types exist or the owner of the schema containing the view has privileges on them.

☒ Read only

This option indicates that the view cannot be updated.

☒ With check option

When enabled, this option indicates that Oracle prohibits any changes to the table or view that would produce rows that are not included in the subquery.

Constraint name

Use this edit box to specify the name of the *CHECK OPTION* constraint.

Fields

Specify names for the expressions selected by the defining query of the view, i.e. give new names to the view fields separating them with a comma. The number of aliases must match the number of expressions selected by the view.

The lower area of the editor window allows you to specify the *SELECT* statement implemented by the view, i.e. specify a subquery that identifies columns and rows of the table(s) that the view is based on. The **DDL** tab will display the changes made to the view specification.

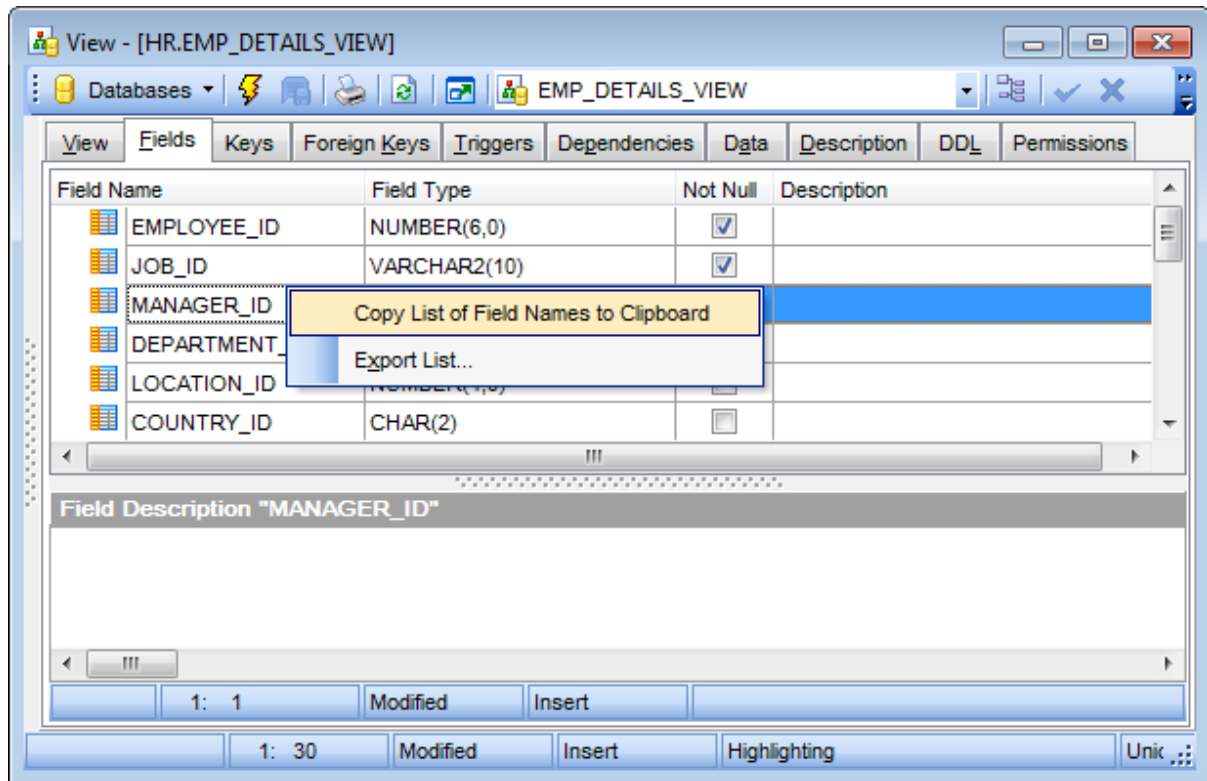
For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.2.3 Managing fields

The **Fields** tab is provided for viewing fields represented in the view. Note that the tab is only available when you edit an existing view.

Right-click a field to display the context menu allowing you to [export](#) field name list or copy it to clipboard.



The **Fields** list provides the following attributes of each field of the view:

Field Name

Field Type

Not Null

Description

For details see [Fields](#).

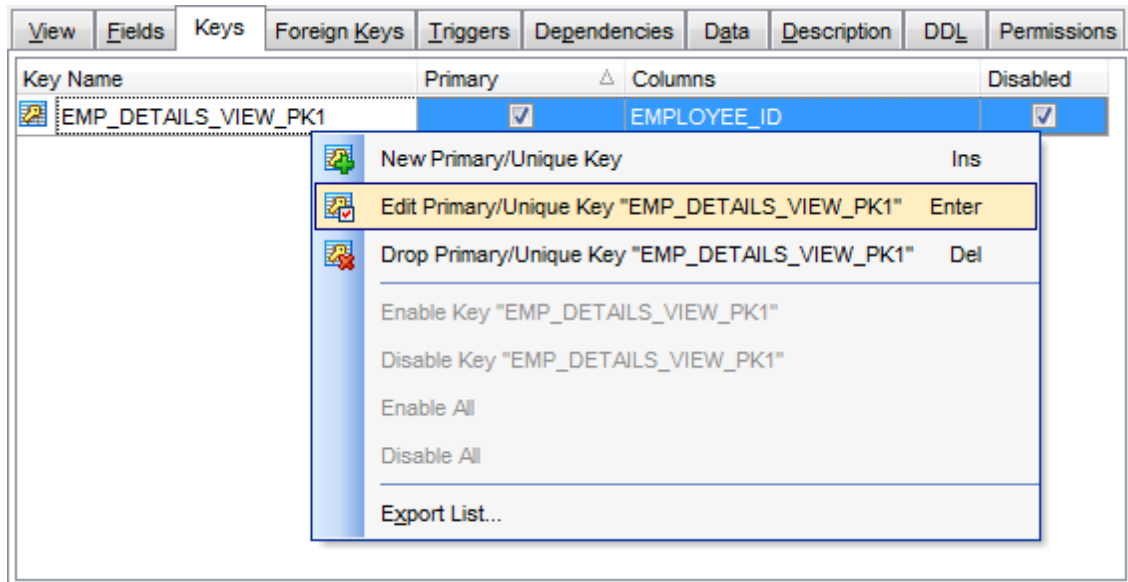
If necessary, you can also use the **Field Description** area to supply a *description* for each field.

5.3.2.4 Managing keys

The **Keys** tab is provided for managing view keys. Note that the tab is only available when you edit an existing view.

Double-click a key to open the [Key Editor](#) for editing the key.

Right-click a key to display the context menu allowing you to *create new, edit, or drop* the selected key. Using the menu you can also [export](#) the list of the view keys to any of supported [formats](#).



The **Keys** list provides the following attributes of each key of the view:

Key Name
Columns
Primary
Disabled

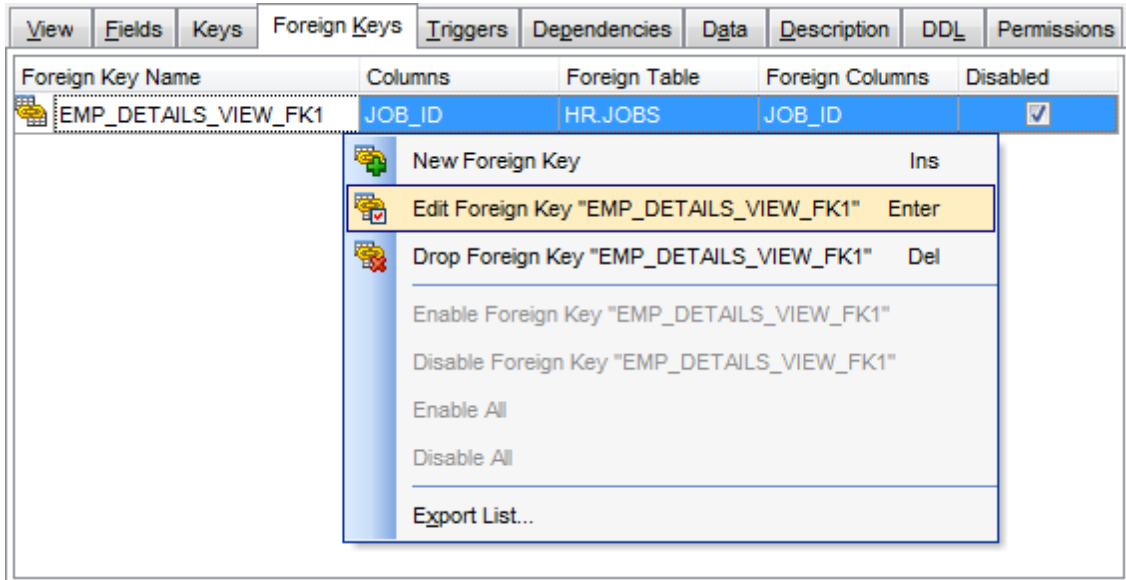
For details see [Keys](#).

5.3.2.5 Managing foreign keys

The **Foreign Keys** tab is provided for managing view foreign keys. Note that the tab is only available when you edit an existing view.

Double-click a foreign key to open the [Foreign Key Editor](#) for editing the foreign key.

Right-click a foreign key to display the context menu allowing you to *create new*, *edit*, or *drop* the selected foreign key. Using the menu you can also [export](#) the list of the view foreign keys to any of supported [formats](#).



The **Foreign Keys** list provides the following attributes of each foreign key of the view:

Foreign Key Name

Columns

Foreign Table

Foreign Columns

Disabled

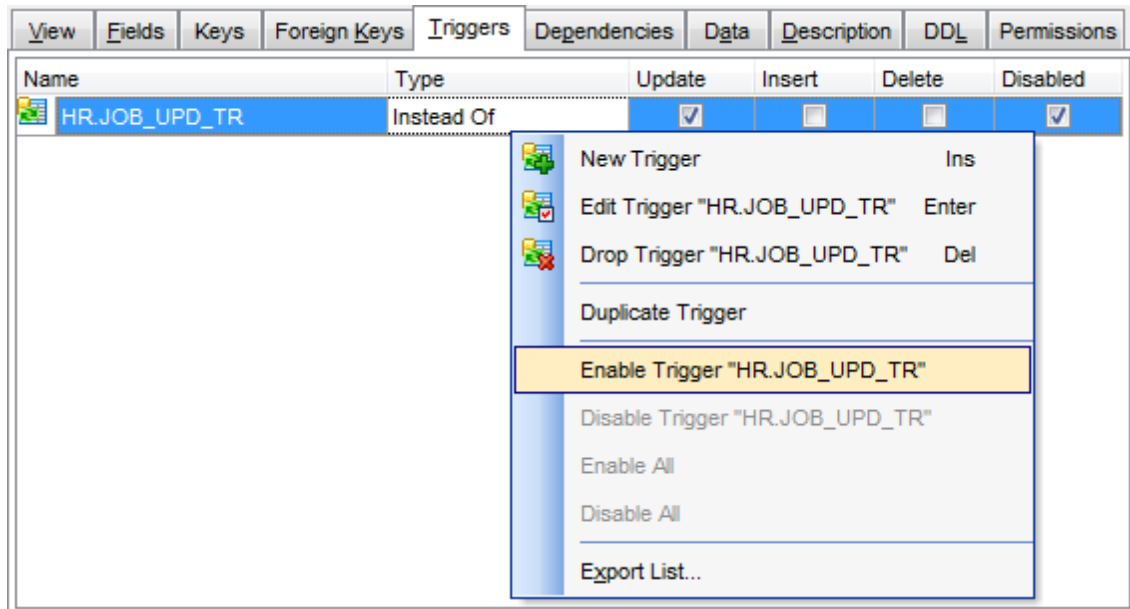
For details see [Foreign Keys](#).

5.3.2.6 Managing triggers

The **Triggers** tab is provided for managing view triggers. Note that the tab is only available when you edit an existing view.

Double-click a trigger to open the [Trigger Editor](#) for editing the trigger.

Right-click a trigger to display the context menu allowing you to *create new, edit, drop, duplicate, enable/disable* the selected trigger, or *enable/disable* all triggers. Using the menu you can also [export](#) the list of the view triggers to any of supported [formats](#).



The **Triggers** list provides the following attributes of each trigger of the view:

Name
For Each Row
Type
Insert
Update
Delete
Disabled

For details see [Triggers](#).

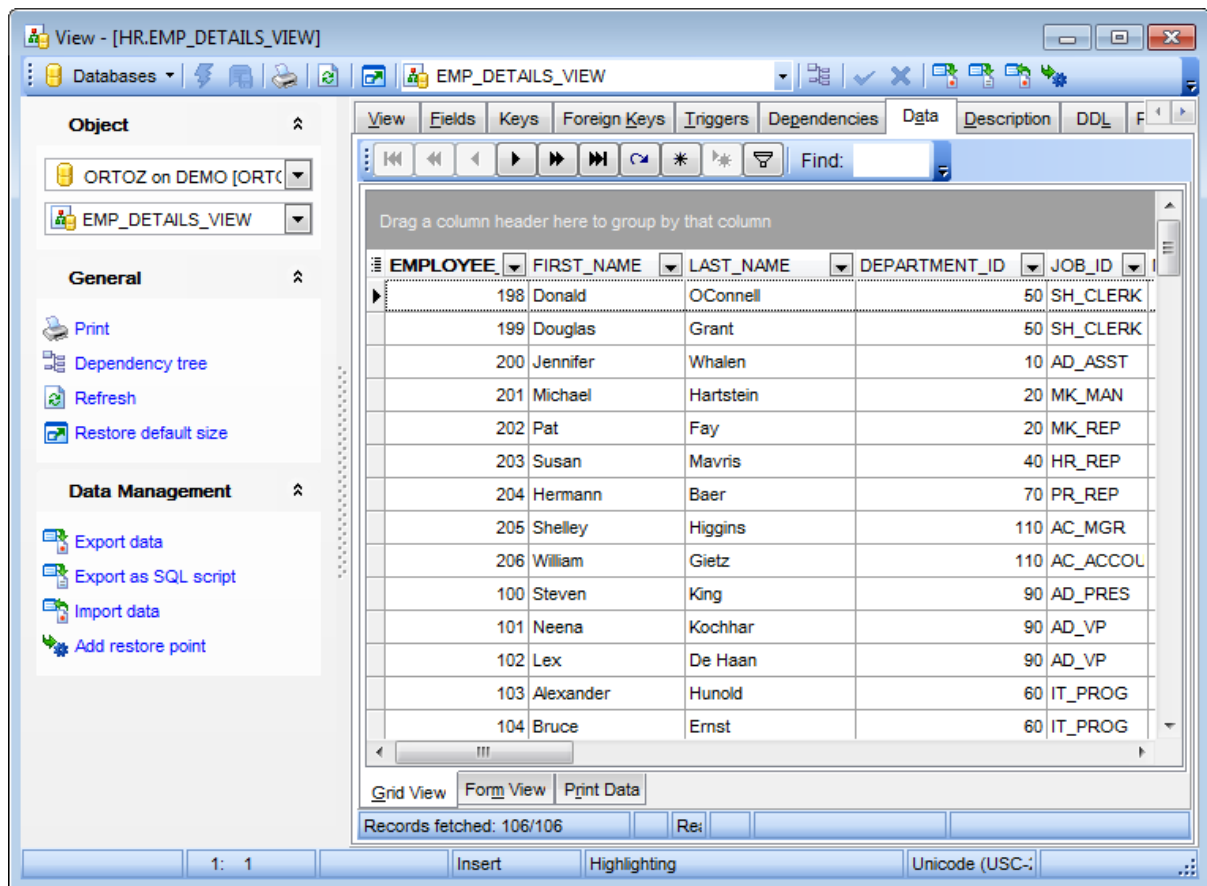
5.3.2.7 Working with data

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](#).

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**.



Note: You can add a restore point before changing data, to get an opportunity to [flash back](#) to the current data state.

Click  **Add restore point** on the [Navigation bar](#) or [toolbar](#) to open the **Add restore point** dialog. For details see [Adding restore point](#).

See also:[Working with table data](#)[Data View](#)

5.3.3 Procedures

A **procedure** is a group of PL/SQL statements that you can call by name. A *call specification* (sometimes called *call spec*) declares a Java method or a third-generation language (3GL) routine so that it can be called from SQL and PL/SQL. The call spec tells Oracle which Java method to invoke when a call is made. It also tells the database what type conversions to make for the arguments and return value.

=

Procedure Editor allows you to create a 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 procedure in **Procedure Editor**, double-click it in the [DB Explorer](#) tree.

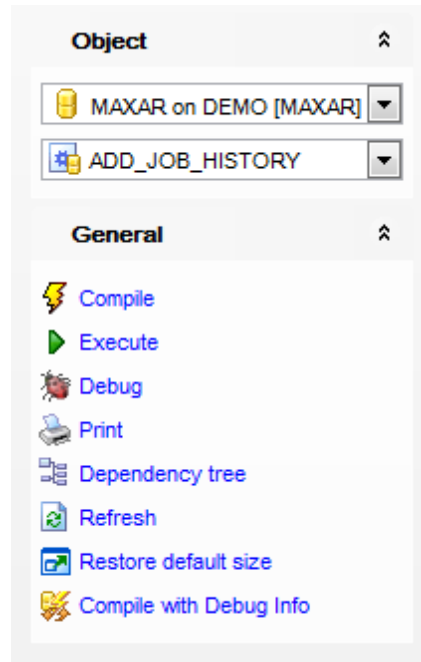
- [Using Navigation bar and Toolbar](#)
- [Creating/editing procedure](#)
- [Browsing procedure parameters](#)
- [Specifying input parameters](#)
- [Executing procedure/function](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

See also:

[Using PL/SQL Code Debugger](#)

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

- select a database
- select a procedure for editing

General

- [compile](#) the procedure (if it is being created/modified)
- [execute](#) the procedure
- [debug](#) the procedure
- set [printing options](#) to [print metadata](#) of the procedure
- view the [dependency tree](#) for the procedure
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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:

Data Management

- commit transaction
- rollback transaction

DDL



save [DDL](#) to file

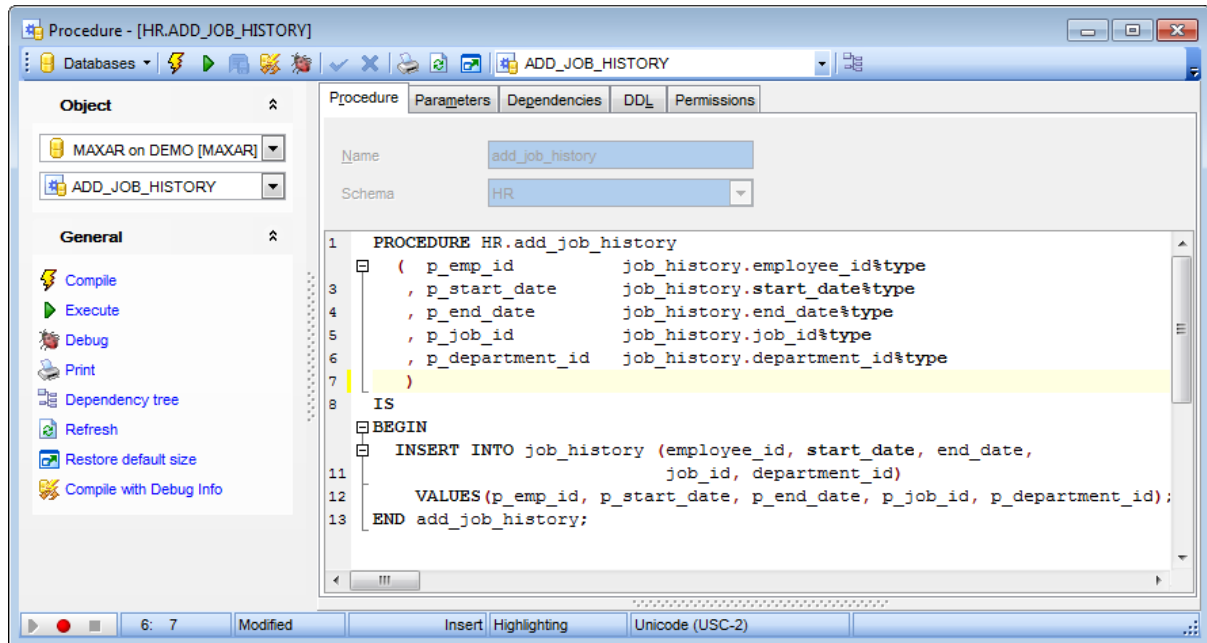


open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.3.2 Creating/editing procedure

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



Name

View the name of the procedure being edited or created.

Schema

View schema in which the procedure will be created.

The lower area of the editor window allows you to specify the procedure definition. The **DDL** tab will display the changes made to the procedure specification.

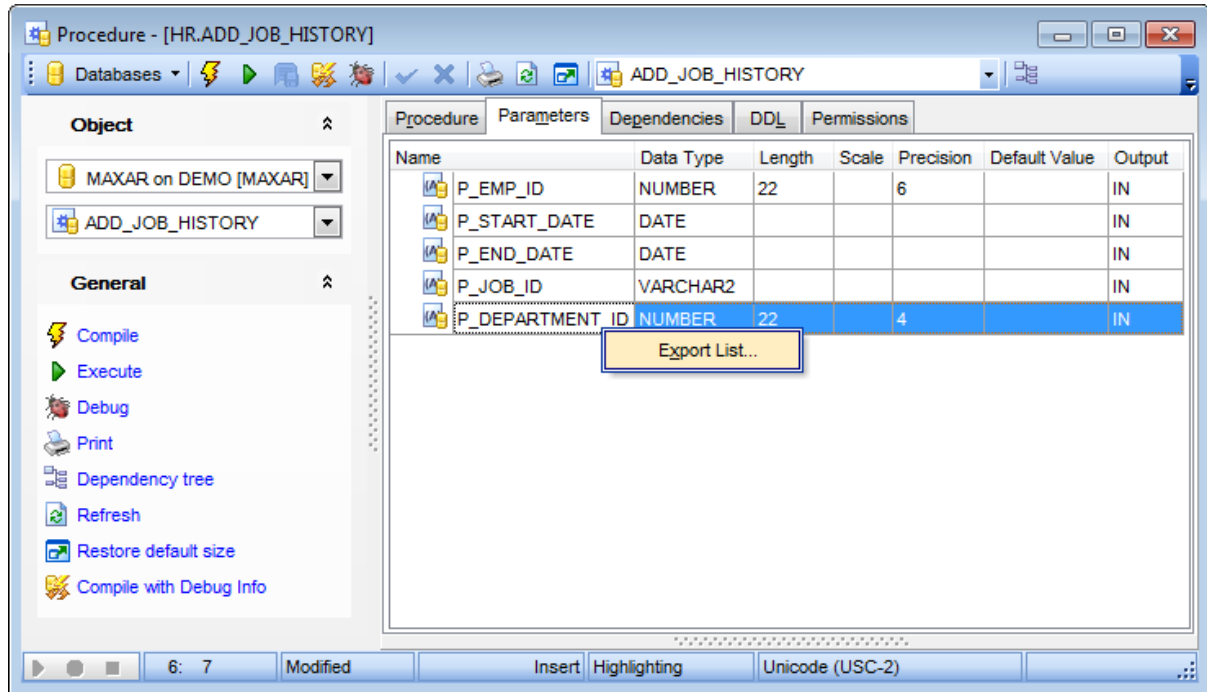
For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.3.3 Browsing procedure parameters

The **Parameters** tab is provided for browsing the list of parameters of the stored procedure.

Right-click the list to display the popup menu allowing you to [export](#) this list to any of supported [formats](#).



The parameter list provides the following attributes of each parameter used in the procedure:

Name
Data Type
Length
Scale
Precision
Default Value
Output

To [execute](#) a procedure, you can use the ► **Execute** item available within the [Navigation bar](#).

5.3.3.4 Specifying input parameters

If the stored procedure (or user-defined function) has parameters, the **Input Parameter dialog** appears before the procedure execution. It allows you to specify the data type, ANSI/Unicode string and values for all procedure parameters. After changes are done, click the **OK** button to execute the stored procedure, or the **Cancel** button to abort the execution.

Parameter	Null	Data Type	Value
P_EMP_ID	☐	Number	10
P_START_DATE	☐	Date/time	01.10.2012
P_END_DATE	☒	Number	0
P_JOB_ID	☒	Number	0
P_DEPARTMENT_ID	☒	Number	0

Buttons: OK, Cancel, Help

See also:

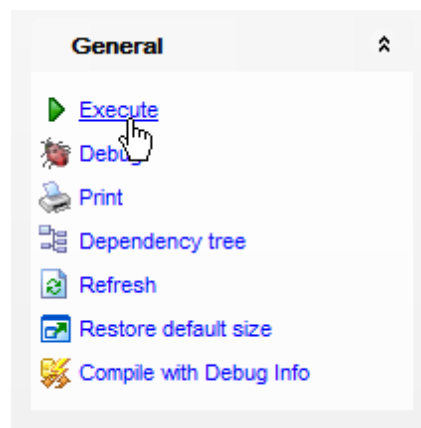
[Executing procedure/function](#)

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

See also:

[Specifying input parameters](#)

[Procedure Editor](#)

[Function Editor](#)

5.3.4 Functions

A **stored function** (also called a **user function** or **user-defined function**) is a set of PL/SQL statements you can call by name. Stored functions are very similar to [procedures](#), except that a function returns a value to the environment in which it is called. User functions can be used as part of a SQL expression.

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.

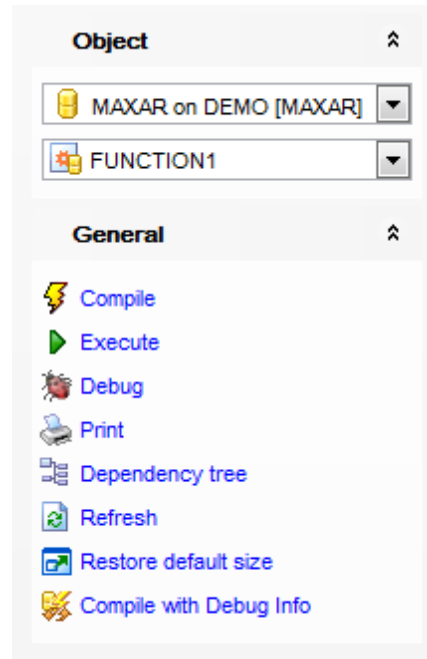
- [Using Navigation bar and Toolbar](#)
- [Creating/editing function](#)
- [Browsing function parameters](#)
- [Executing procedure/function](#)
- [Browsing object dependencies](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

See also:

[Using PL/SQL Code Debugger](#)

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

- select a database
- select a function for editing

General

- [compile](#) the function (if it is being created/modified)
- [execute](#) the function
- [debug](#) the function
- set [printing options](#) to [print metadata](#) of the function
- view the [dependency tree](#) for the function
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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:

Data Management

- commit transaction
- rollback transaction

DDL



save [DDL](#) to file

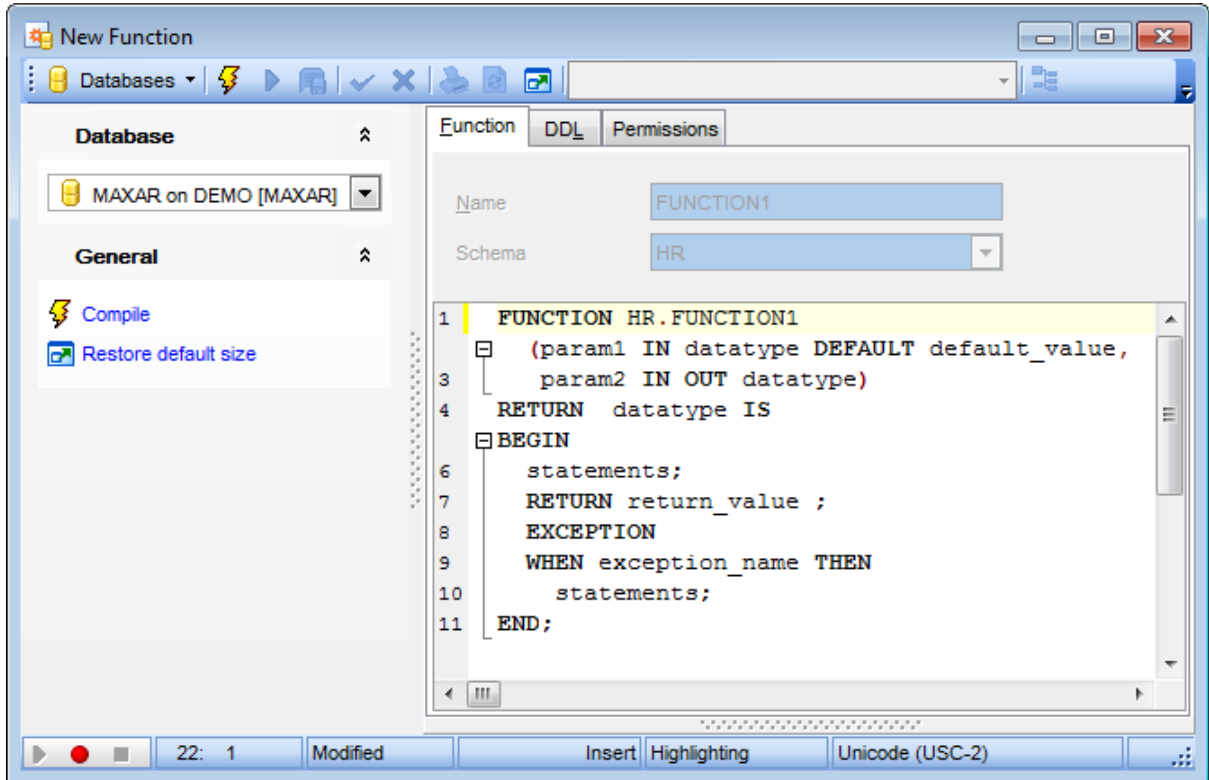


open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.4.2 Creating/editing function

Use the **Function** tab of **Function Editor** to create/edit a user-defined function and specify its properties.



Name

Specify the name of the function to be created, or view the name of the function being edited. Note that the function name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the function will be created.

The lower area of the editor window allows you to specify the function definition. The **DDL** tab will display the changes made to the function specification.

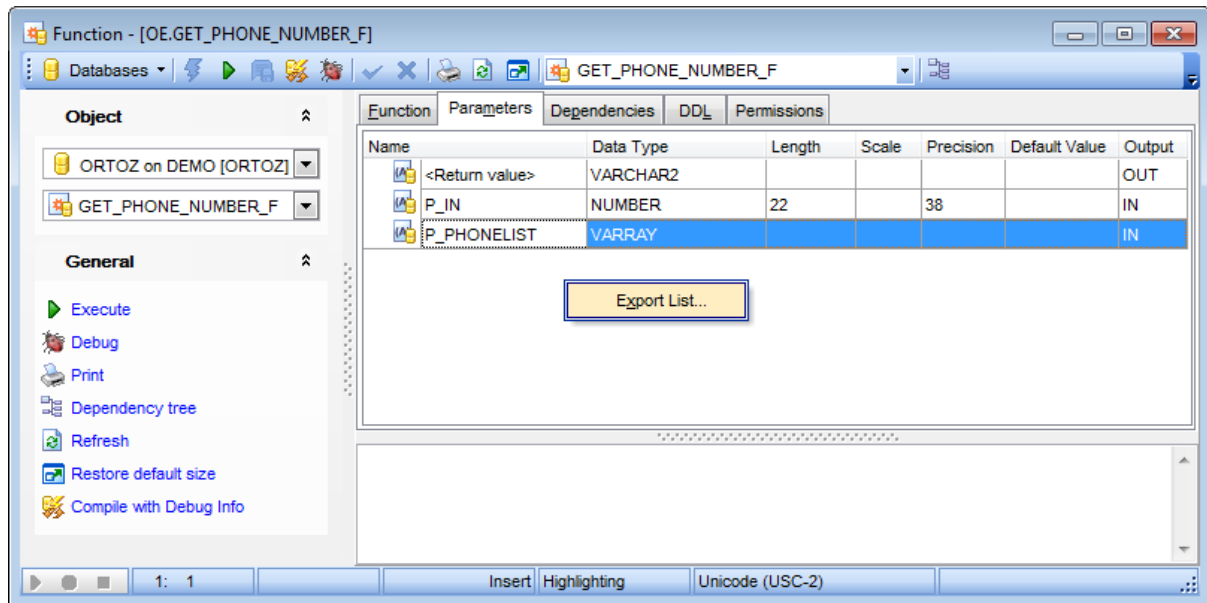
For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.4.3 Browsing function parameters

The **Parameters** tab is provided for browsing the list of parameters of the user-defined function.

Right-click the list to display the popup menu allowing you to [export](#) this list to any of supported [formats](#).



The parameter list provides the following attributes of each parameter used in the function:

Name
Data Type
Length
Scale
Precision
Default Value
Output

To [execute](#) a function, you can use the ► **Execute** item available within the [Navigation bar](#).

5.3.5 Triggers

A **trigger** is an anonymous PL/SQL block or a call to a [procedure](#) implemented in PL/SQL or Java.

Oracle automatically executes a trigger when specified conditions occur.

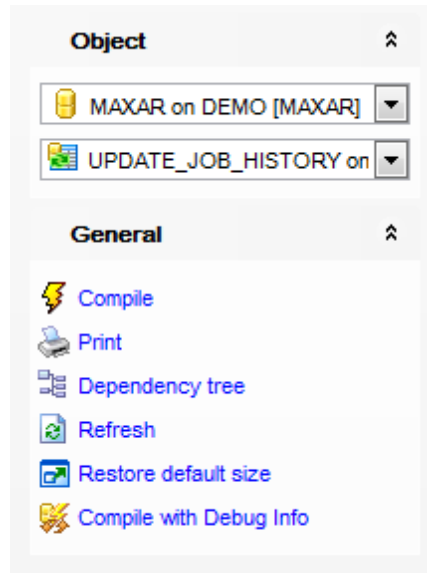
Trigger Editor allows you to define trigger properties. It opens automatically when you create a new trigger and is available on editing an existing one.

To open a trigger in **Trigger Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing trigger](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.5.1 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

- select a database
- select a trigger for editing

General

- [compile](#) the trigger (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the trigger
- view the [dependency tree](#) for the trigger
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.5.2 Creating/editing trigger

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

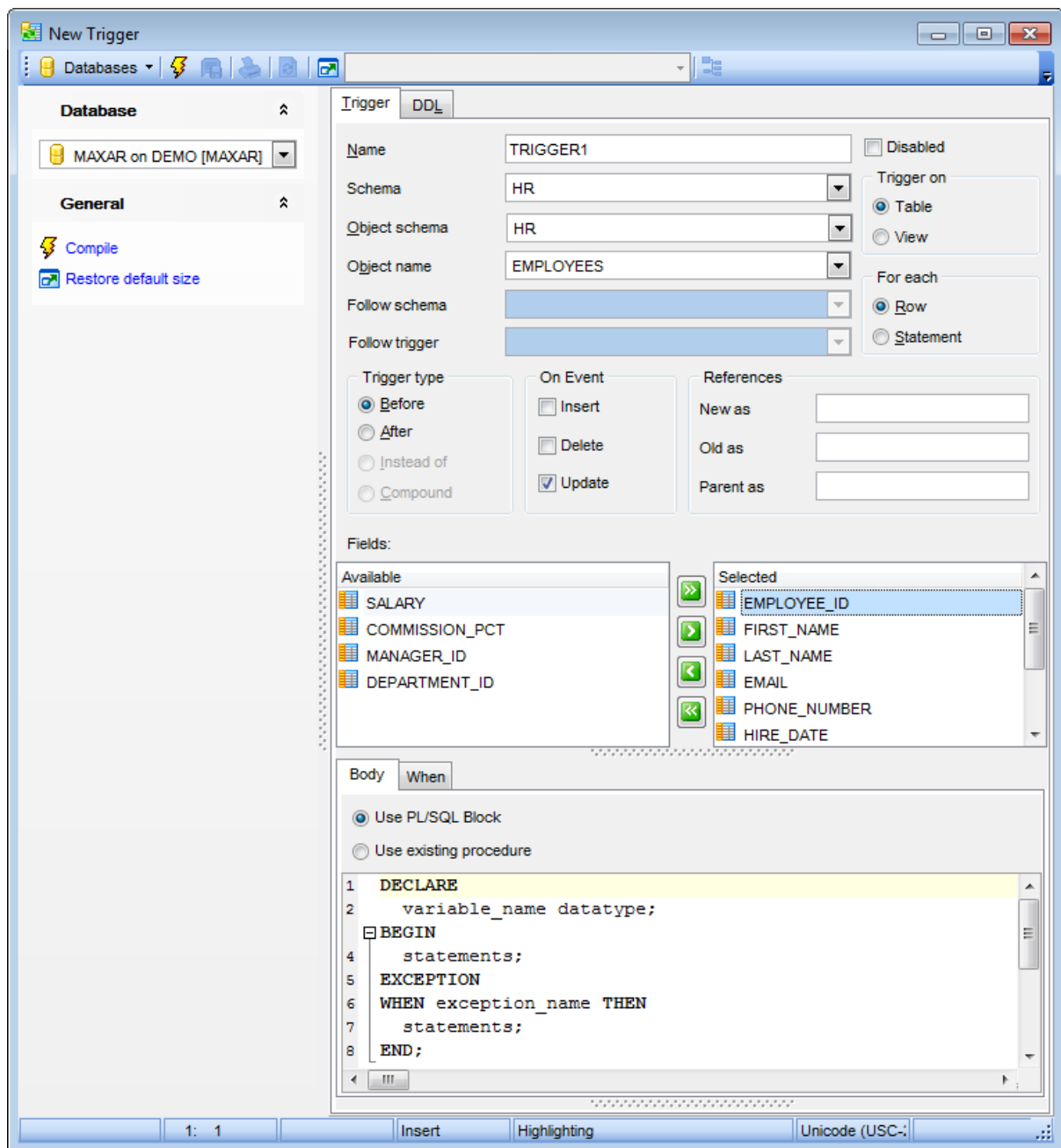
Note: Trigger can be launched/stopped within the appropriate object context menu item in the [DB Explorer](#).

Name

Specify the name of the trigger to be created, or view the name of the trigger being edited. Note that the trigger name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the trigger will be created.



Object schema

Use the drop-down list to specify the schema containing the [table/view](#) for which the trigger is defined.

Object name

Use the drop-down list to identify the [table/view](#) for which the trigger is created.

The *FOLLOWS* group is available for Oracle 11.

This group allows you to specify the relative firing order of triggers of the same type.

Follow schema

Use the drop-down list to specify the schema containing the trigger to be fired before the trigger being created/edited.

Follow trigger

Use the drop-down list to select the trigger after which the trigger being created/edited should fire.

☒ **Disabled**

Disables the trigger immediately after it is created. A disabled trigger still exists as an object in the database, but does not fire.

Trigger on

This group allows you to specify the database object on which the trigger is defined:

- ☒ *Table*
- ☐ *View*

For each

Specify whether a *row trigger* or *statement trigger* is to be defined:

- ☒ *Row*

Designates the trigger as a *row trigger*. Oracle fires a row trigger once for each row that is affected by the triggering statement and meets the optional trigger constraint defined in the *WHEN* condition.

- ☐ *Statement*

Designates the trigger as a *statement trigger*. Oracle fires a statement trigger only once when the triggering statement is issued if the optional trigger constraint is met.

Trigger type

This group allows you to specify when the trigger should fire:

- ☒ *Before* (indicates that the trigger will fire before executing the triggering event; for row triggers, the trigger is fired before each affected row is changed)
- ☒ *After* (indicates that the trigger will fire after executing the triggering event, for row triggers, the trigger is fired after each affected row is changed)
- ☒ *Instead of* (only available for views; indicates that the trigger will fire instead of executing the triggering event)
- ☒ *Compound* (defines a compound trigger on a DML event; the body of a *COMPOUND* trigger can have up to four sections, so that you can specify a before statement, before row, after row, or after statement operation in one trigger)

On Event

Use this group to specify DML statements that can cause the trigger to fire. Oracle fires the trigger in the existing user transaction.

☒ **Insert**

The trigger is fired whenever an *INSERT* statement adds a row to a table or adds an element to a nested table.

☒ **Delete**

The trigger is fired whenever a *DELETE* statement removes a row from the table or removes an element from a nested table.

☒ **Update**

The trigger is fired whenever an *UPDATE* statement changes a value in one of the columns of the table or nested table.

References

Use this group to specify the correlation names. You can use correlation names in the *PL/SQL block* and *WHEN* condition of a row trigger to refer specifically to old and new values of the current row.

If your row trigger is associated with a table named *OLD* or *NEW*, use the **Old as** and **New as** boxes to specify different correlation names to avoid confusion between the table name and the correlation name. If the trigger is defined on a nested table, then *OLD* and *NEW* refer to the row of the nested table, and *PARENT* refers to the current row of the parent table.

Fields

This section allows you to select fields for which trigger will fire. Use the navigation buttons to fill **Selected** area with required fields. Note that this feature is available only with ☒ **Update** option checked in the **On event** section.

Body

Use this tab to specify the trigger body which consists of an optional list of local variables and their data types and a block of statements in Oracle procedure and trigger language, bracketed by *BEGIN* and *END*. These statements are executed when the trigger fires.

Select the trigger code source: it can be a *PL/SQL block* or a *stored procedure* call.

PL/SQL Block

Specify the *PL/SQL block* or *PL/SQL compound trigger block* that Oracle executes to fire the trigger.

Use existing procedure

This option allows you to call a [stored procedure](#) rather than specifying the trigger code inline as a PL/SQL block.

When

Use this tab to specify the trigger condition, which is a SQL condition that must be satisfied for the database to fire the trigger. This condition must contain correlation names and cannot contain a query.

query

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.6 DB and Schema Triggers

A **database trigger** is:

- a stored PL/SQL block associated with a schema, or the database or
 - an anonymous PL/SQL block or a call to a [procedure](#) implemented in PL/SQL or Java
- Oracle automatically executes a trigger when specified conditions occur.

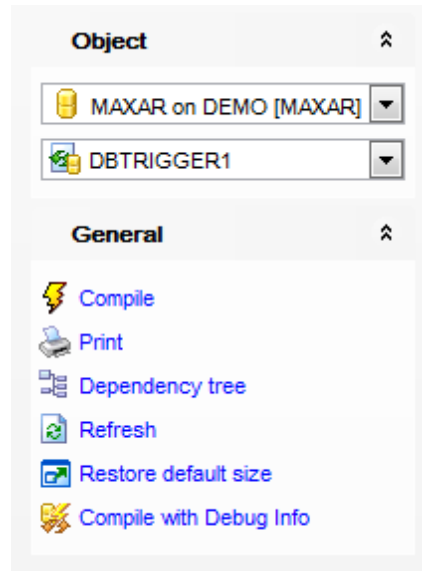
DB/Schema Trigger Editor allows you to define database and schema trigger properties. It opens automatically when you create a new database or schema trigger and is available on editing an existing one.

To open a database or schema trigger in **DB/Schema Trigger Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing DB/schema trigger](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.6.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **DB/Schema Trigger Editor** allows you to:

Object

- select a database
- select a database/schema trigger for editing

General

- [compile](#) the trigger (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the trigger
- view the [dependency tree](#) for the trigger
- refresh the content of the active tab
- 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

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.6.2 Creating/editing DB/schema trigger

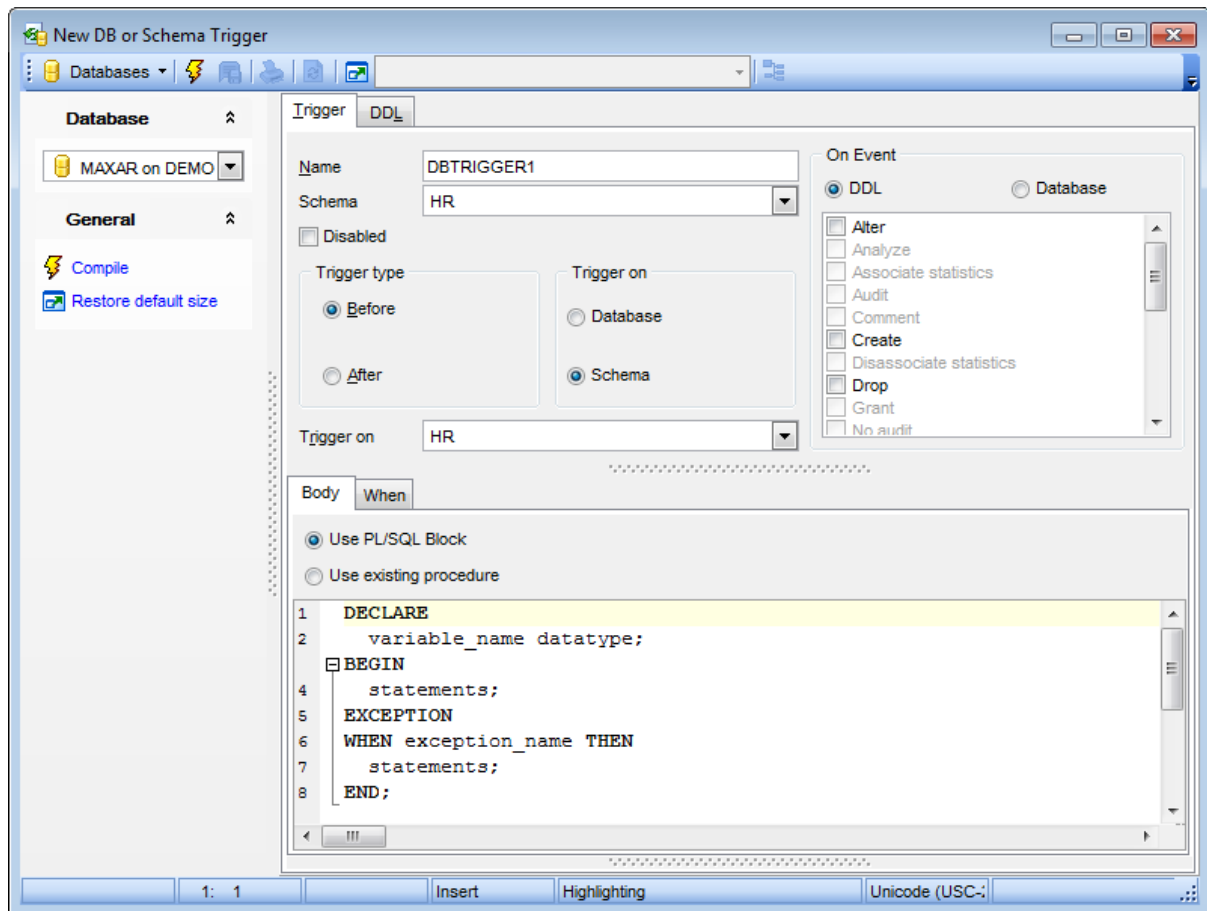
Use the **Trigger** tab of **DB/Schema Trigger Editor** to create/edit a database or schema trigger and specify its properties.

Name

Specify the name of the database or schema trigger to be created, or view the name of the trigger being edited. Note that the trigger name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the trigger will be created.



☒ Disabled

Disables the database/schema trigger immediately after it is created. A disabled trigger still exists as an object in the database, but does not fire.

Trigger type

This group allows you to specify when the trigger should fire:

- ☒ **Before** (indicates that the trigger will fire before executing the triggering event)
- ☒ **After** (indicates that the trigger will fire after executing the triggering event)

Trigger on

This group allows you to specify whether a database or schema trigger is defined:

- ☒ **Database** (defines the trigger on the entire database; the trigger fires whenever any

database [user](#) initiates the triggering event)

☒ **Schema** (defines the trigger on the current schema; the trigger fires whenever any [user](#) connected as the specified schema initiates the triggering event; use the drop-down list to select the schema)

On Event

Specify whether the type of event for the trigger:

☒ **DDL**

Indicates that the trigger will fire whenever any of specified DDL statements is issued. Specify one or more types of DDL statements that can cause the trigger to fire. Oracle fires the trigger in the existing user transaction.

☒ **Database**

Indicates that the trigger will fire when a specified database event occurs. Specify one or more particular states of the database that can cause the trigger to fire. For each of the triggering events, Oracle opens an autonomous transaction scope, fires the trigger, and commits any separate transaction (regardless of any existing user transaction).

Body

Use this tab to specify the trigger body which consists of an optional list of local variables and their data types and a block of statements in Oracle procedure and trigger language, bracketed by *BEGIN* and *END*. These statements are executed when the trigger fires.

Select the trigger code source: it can be a *PL/SQL block* or a *stored procedure* call.

☒ **Use PL/SQL block**

Specify the *PL/SQL block* that Oracle executes to fire the trigger.

☒ **Use existing procedure**

This option allows you to call a [stored procedure](#) rather than specifying the trigger code inline as a PL/SQL block.

When

Use this tab to specify the trigger condition, which is a SQL condition that must be satisfied for the database to fire the trigger. This condition must contain correlation names and cannot contain a query.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.7 Indexes

An **index** is a schema object that contains an entry for each value that appears in the indexed column(s) of the [table](#) or [cluster](#) and provides direct, fast access to rows.

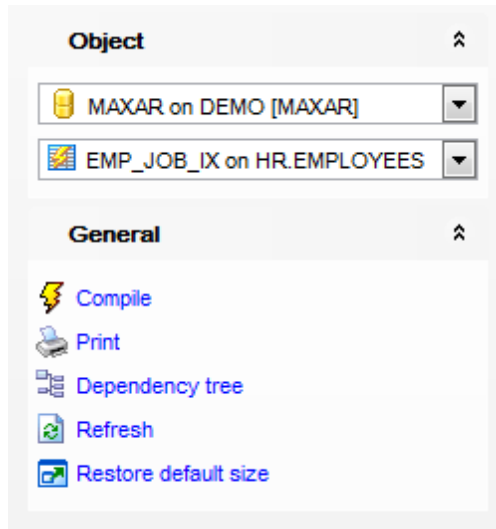
Index Editor allows you to define index properties. It opens automatically when you create a new index and is available on editing an existing one.

To open an index in **Index Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing index](#)
- [Partitions](#)
- [Setting storage attributes](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.7.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select an index for editing

General

- [compile](#) the index (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the index
- view the [dependency tree](#) for the index
- refresh the content of the active tab
- 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 index:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.7.2 Creating/editing index

Use the **Index** tab of **Index Editor** to create/edit an index and specify its properties.

Name

Specify the name of the index to be created, or view the name of the index being edited. Note that the index name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the index will be created.

The screenshot shows the 'New Index' dialog box with the following details:

- Database:** MAXAR on DEMO
- General:** Compile, Restore default size
- Index Tab:**
 - Name:** INDEX1
 - Schema:** HR
 - Table schema:** HR
 - Table name:** EMPLOYEES
 - Specify partitioning:** NON-PARTITIONED
 - Options:** No sort, Reverse, Logging
 - Index type:** Table index (selected), Cluster index
 - Uniqueness:** Unique (selected), Non-Unique
 - Key compress:** No Compress, Compress (selected) with value 1
- Table Columns:**

Name	Type
FIRST_NAME	VARCHAR2
LAST_NAME	VARCHAR2
EMAIL	VARCHAR2
PHONE_NUMBER	VARCHAR2
HIRE_DATE	DATE
JOB_ID	VARCHAR2
SALARY	NUMBER
COMMISSION_PCT	NUMBER
- Index Columns:**

Name	Type	Order
MANAGER_ID	NUMBER	DESC
DEPARTMENT_ID	NUMBER	DESC
EMPLOYEE_ID	NUMBER	ASC

Table schema / Cluster schema

Use the drop-down list to specify the schema containing the [table/cluster](#) on which the index is defined.

Table name / Cluster name

Use the drop-down list to identify the [table/cluster](#) for which the index is created.

Specify partitioning

Use the drop-down list to select the partitioning of the index:

GLOBAL (indicates that the partitioning of the index is user defined and is not equipartitioned with the underlying table)

LOCAL (indicates that the index is partitioned on the same columns, with the same number of partitions and the same partition bounds as the table)

NON-PARTITIONED

Options

☒ **Logging**

Specify whether the creation of the index will be logged or not in the [redo log file](#).

☒ **Reverse**

Enable this option to store the bytes of the index block in reverse order, excluding the rowid.

☒ **No sort**

Select this option to indicate to the database that the rows are already stored in the database in ascending order, so that Oracle does not have to sort the rows when creating the index.

☒ **Invisible**

Check this option to set the index invisible for the cost-based optimizer. This option is only supported in Oracle version 11.0 and higher.

Index type

This group allows you to specify the index type:

- ☒ *Table index*
- ☐ *Cluster index*

Uniqueness

This group allows you to specify the uniqueness property for the index:

- ☒ *Unique* (indicates that the value of the column(s) upon which the index is based must be unique)
- ☐ *Non-Unique*

Key compress

- ☒ *No Compress*

Disables key compression.

- ☐ *Compress ... columns*

Enables key compression, which eliminates repeated occurrence of key column values and may substantially reduce storage. Use the spinner control to specify the prefix length (number of prefix columns to compress).

The **Columns** area allows you to specify one or more table columns for the index.

To select a column, you need to move it from the **Table Columns** list to the **Index Columns** list. Use the     buttons or drag-and-drop operations to move the columns from one list to another.

Use the   buttons to move the columns up and down within the **Index Columns** list.

Use the  **Add expression** and  **Delete expression** buttons to add/delete the expression built from columns of table, constants, SQL functions, and user-defined functions.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.8 Packages

A **package** is an encapsulated collection of related [procedures](#), [functions](#), and other program objects stored together in the database. The package specification declares these objects. The [package body](#), specified subsequently, defines these objects.

Packages are an alternative to creating [procedures](#) and [functions](#) as standalone schema objects.

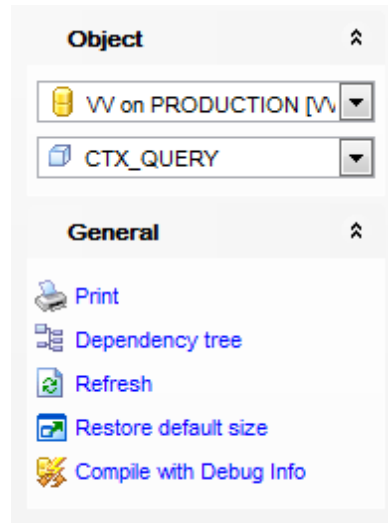
Package Editor allows you to define package properties. It opens automatically when you create a new package and is available on editing an existing one.

To open a package in **Package Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing package](#)
- [Browsing object dependencies](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.8.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a package for editing

General

- [compile](#) the package (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the package
- view the [dependency tree](#) for the package
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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 package:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.8.2 Creating/editing package

Use the **Package** tab of **Package Editor** to create/edit the specification of a package.

Name

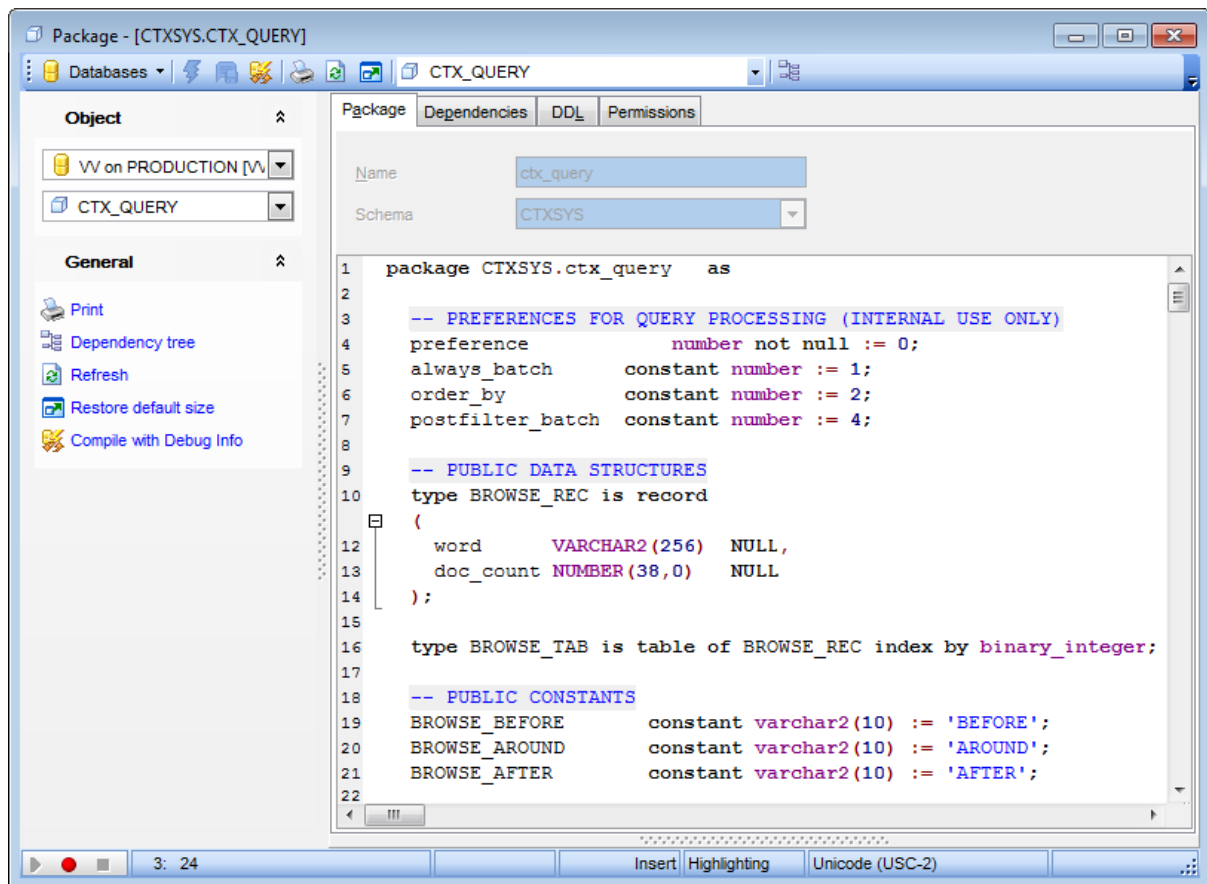
Specify the name of the package to be created, or view the name of the package being edited. Note that the package name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the package will be created.

The lower area of the editor window allows you to specify the package definition, which can contain type definitions, cursor declarations, variable declarations, constant declarations, exception declarations, PL/SQL subprogram specifications, and call specifications, which are declarations of a C or Java routine expressed in PL/SQL. The **DDL** tab will display the changes made to the package specification.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).



To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.9 Package Bodies

Package body is a body of a stored [package](#), which is an encapsulated collection of related [procedures](#), [stored functions](#), and other program objects stored together in the database. The package body defines these objects. The package specification, defined while [creating package](#), declares these objects.

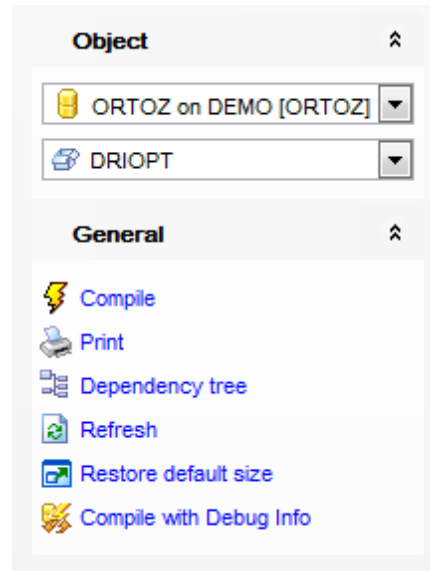
Package Body Editor allows you to define package body properties. It opens automatically when you create a new package body and is available on editing an existing one.

To open a package body in **Package Body Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing package body](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.9.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Package Body Editor** allows you to:

Object

-  select a database
-  select a package body for editing

General

-  [compile](#) the package body (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the package body
-  view the [dependency tree](#) for the package body
-  refresh the content of the active tab
-  restore the default size and position of the editor window
-  [compile with debug info](#)

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 package body:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.9.2 Creating/editing package body

Use the **Package Body** tab of **Package Body Editor** to create/edit the specification of a package body.

Name

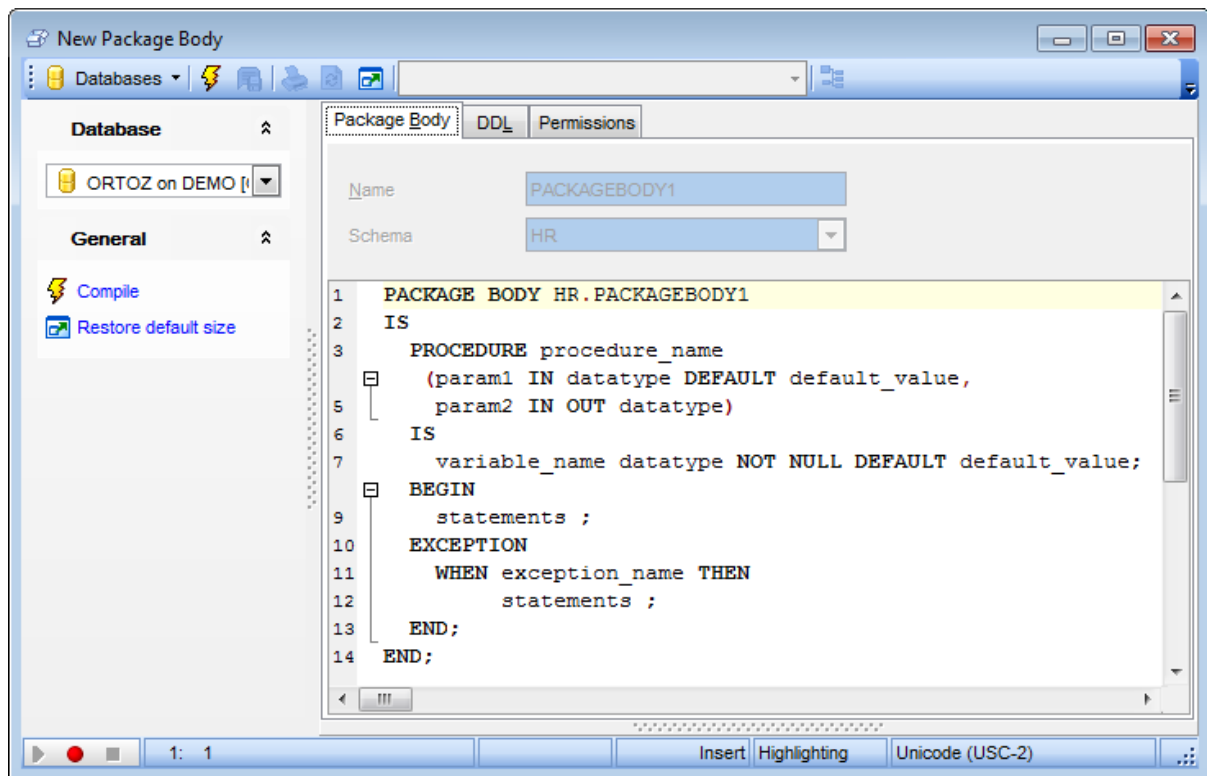
Specify the name of the package body to be created, or view the name of the package body being edited. Note that the package body name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the package body will be created.

The lower area of the editor window allows you to specify the package body definition, which can contain PL/SQL subprogram bodies or call specifications, which are declarations of a C or Java routine expressed in PL/SQL. The **DDL** tab will display the changes made to the package body specification.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).



To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.10 Sequences

A **Sequence** is a database object from which multiple users may generate unique integers. You can use sequences to automatically generate primary key values. When a sequence number is generated, the sequence is incremented, independent of the transaction committing or rolling back. If two users concurrently increment the same sequence, then the sequence numbers each user acquires may have gaps, because sequence numbers are being generated by the other user. One user can never acquire the sequence number generated by another user. After a sequence value is generated by one user, that user can continue to access that value regardless of whether the sequence is incremented by another user.

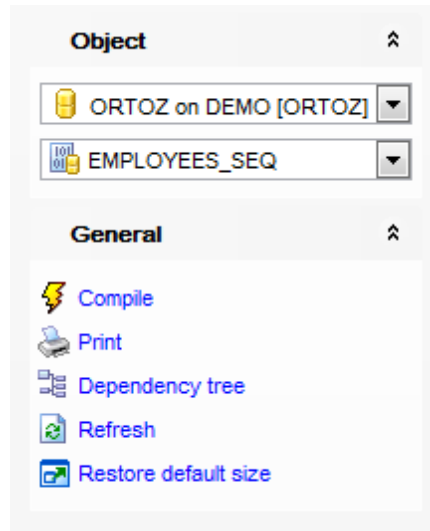
Sequence Editor allows you to define sequence properties. It opens automatically when you create a new sequence and is available on editing an existing one.

To open a sequence in **Sequence Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing sequence](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.10.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a sequence for editing

General

-  [compile](#) the sequence (if it is being created)
-  set [printing options](#) to [print metadata](#) of the sequence
-  view the [dependency tree](#) for the sequence
-  refresh the content of the active tab
-  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 sequence:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.10.2 Creating/editing sequence

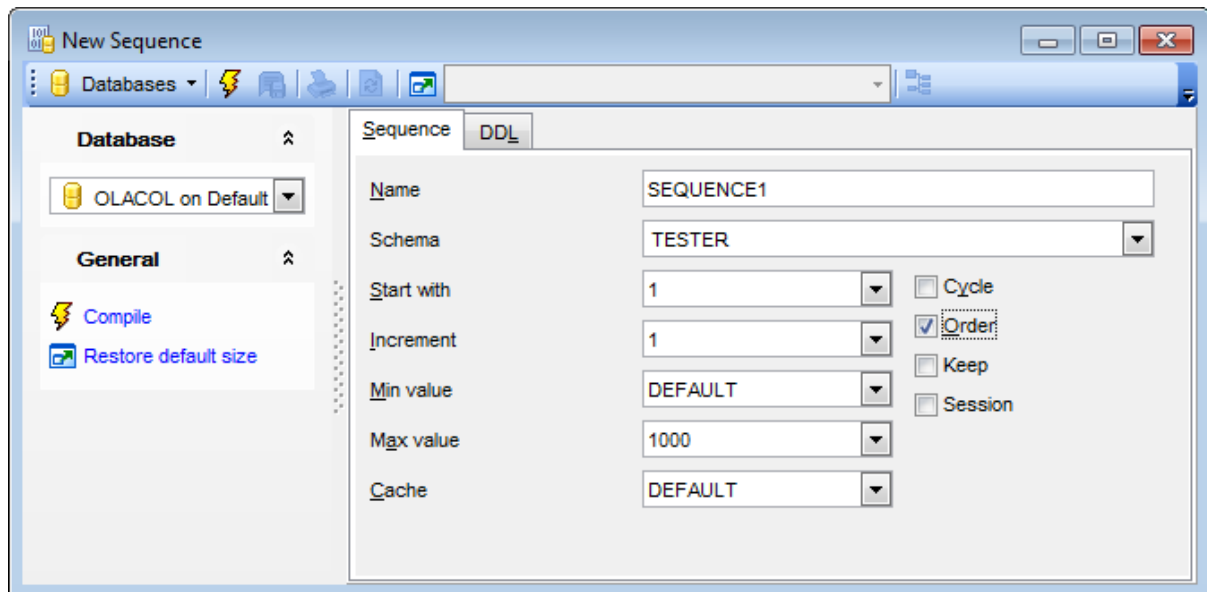
Use the **Sequence** tab of **Sequence Editor** to create/edit a sequence and specify its properties.

Name

Specify the name of the sequence to be created, or view the name of the sequence being edited. Note that the sequence name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the sequence will be created.



Start with

Specify the first sequence number to be generated, or select *DEFAULT* from the drop-down list. Use this setting to start an ascending sequence at a value greater than its minimum or to start a descending sequence at a value less than its maximum.

Increment

Specify which value is added to the current sequence value to create a new value, or select *DEFAULT* from the drop-down list. A positive value will make an ascending sequence, a negative one - a descending sequence. The default value is 1.

Min value

Specify the minimum value of the sequence, or select *DEFAULT* from the drop-down list.

Max value

Specify the maximum value for the sequence, or select *DEFAULT* from the drop-down list.

Cache

Specify how many sequence numbers are to be preallocated and stored in memory for faster access, or select *DEFAULT* or *NOCACHE* from the drop-down list.

☒ Cycle

This option indicates that the sequence continues to generate values after reaching

either its maximum or minimum value. After an ascending sequence reaches its maximum value, it generates its minimum value. After a descending sequence reaches its minimum, it generates its maximum value.

☒ **Order**

Use this option to guarantee that sequence numbers are generated in order of request.

☒ **Keep**

Check this option if you want NEXTVAL to retain its original value during replay for Application Continuity.

☒ **Session**

Check this option to create a session sequence, which is a special type of sequence that is specifically designed to be used with global temporary tables that have session visibility. A session sequence returns a unique range of sequence numbers only within a session, but not across sessions.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.11 Clusters

A **Cluster** is a schema object that contains data from one or more [tables](#), all of which have one or more columns in common. Oracle stores together all the rows from all the tables that share the same cluster key.

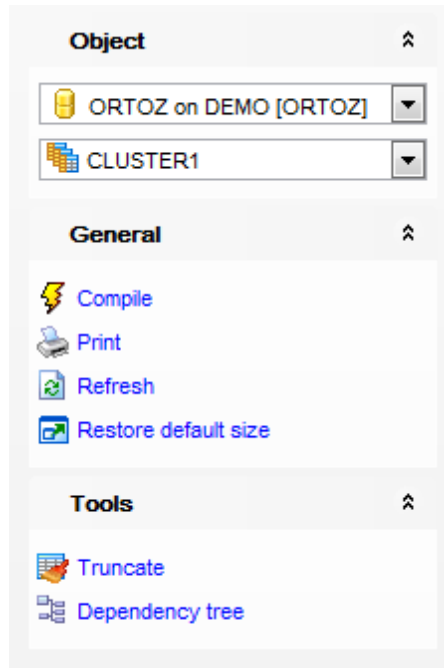
Cluster Editor allows you to define cluster properties. It opens automatically when you create a new cluster and is available on editing an existing one.

To open a cluster in **Cluster Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing cluster](#)
- [Setting storage attributes](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.11.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a cluster for editing

General

- [compile](#) the cluster (if it is being created)
- set [printing options](#) to [print metadata](#) of the cluster
- view the [dependency tree](#) for the cluster
- refresh the content of the active tab
- restore the default size and position of the editor window

Tools

- call [Truncate Wizard](#) to truncate the cluster

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 cluster:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable/disable Toolbars and Navigation bars at [Environment Options](#).

5.3.11.2 Creating/editing cluster

Use the **Cluster** tab of **Cluster Editor** to create/edit a cluster and specify its properties.

Name

Specify the name of the cluster to be created, or view the name of the cluster being edited. Note that the cluster name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the cluster will be created.

New Cluster

Database: ORTOZ on DEMO

General

Compile

Restore default size

Tools

Truncate

Cluster columns

Add column

Insert column

Delete column

Cluster | Storage | DDL | Permissions

Name: CLUSTER1

Schema: SYS

Cluster size: DEFAULT

Hash Cluster options

Number of hash keys: 2

Hash Function:

☒ Default

☐ Expression

Name	Type	Size	Scale
col_01	CHAR		10
col_02	DATE		

Add column

Insert column

Delete column

Cluster size

Specify the amount of space (in bytes) reserved to store all rows with the same cluster key value or the same hash value, or select *DEFAULT* from the drop-down list. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

Define the type of the cluster:

☒ Index cluster

Specifies an *Index cluster*. Oracle stores together rows having the same cluster key value. Each distinct cluster key value is stored only once in each data block, regardless of the number of tables and rows in which it occurs.

☒ Hash cluster

Specifies a *Hash cluster*. Oracle stores together rows that have the same hash key value. The hash value for a row is the value returned by the hash function of the cluster.

Hash Single-Table

Specifies a *Hash Single-Table*, i.e. the cluster is a type of hash cluster containing only one table. This cluster type can provide faster access to rows than would result if the table were not part of a cluster.

If you choose to create a hash cluster, you should specify [Hash Cluster options](#).

Number of hash keys

Use the spinner control to specify the number of hash values for the hash cluster. The minimum value for this parameter is 2.

Hash Function

Specify the hash function for the hash cluster:

Default

Indicates that an internal hash function will be used for the hash cluster.

Expression

Specify an expression to be used as the hash function for the hash cluster.

Cluster columns

The list displays columns in the cluster key as a grid with the following columns: *Name*, *Type*, *Size*, *Scale*. You can specify up to 16 cluster key columns. These columns must correspond in both datatype and size to columns in each of the [clustered tables](#), although they need not correspond in name.

Right-click an item within the list to call the **context menu** allowing you to *add* a new column, *insert* a column, or *delete* the selected column from the list.

Column management tools are also available through the [Navigation bar](#) of **Cluster Editor**.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.12 Materialized Views

A **Materialized view** is a database object that contains the results of a query. The *FROM* clause of the query can name [tables](#), [views](#), and other materialized views. Collectively these objects are called *master tables* (a replication term) or *detail tables* (a data warehousing term).

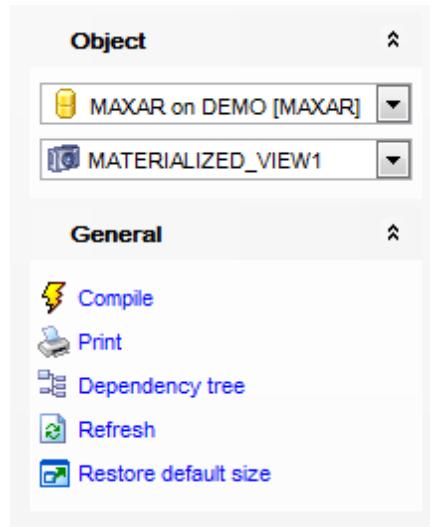
Materialized View Editor allows you to define materialized view properties. It opens automatically when you create a new materialized view and is available on editing an existing one.

To open a materialized view in **Materialized View Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing materialized view](#)
- [Managing fields](#)
- [Setting Refresh parameters](#)
- [Setting storage attributes](#)
- [Setting USING INDEX parameters](#)
- [Working with data](#)
- [Browsing object dependencies](#)
- [Editing object description](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.12.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a materialized view for editing

General

-  [compile](#) the materialized view (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the materialized view
-  edit the materialized view query using [Design Query](#)
-  refresh the content of the active tab
-  restore the default size and position of the editor window

View

-  view the [dependency tree](#) for the materialized view

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 materialized view:

Data Management

-  commit transaction
-  rollback transaction
-  export data from the materialized view using [Export Data Wizard](#)
-  export data from the materialized view as Execute Script using [Export as SQL Script Wizard](#)
-  [import data](#)

Description

save object [description](#) to file



copy [description](#) to clipboard

DDL

save [DDL](#) to file



open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.12.2 Creating/editing materialized view

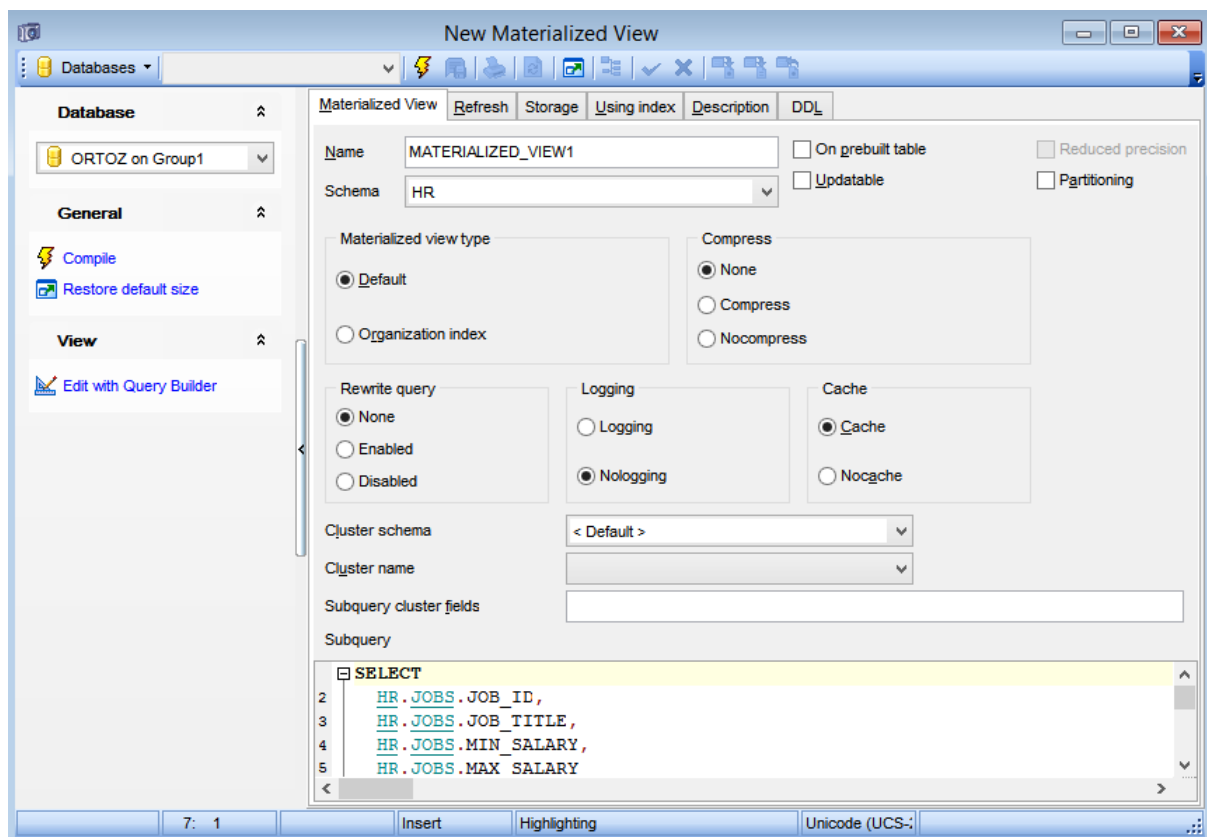
Use the **Materialized view** tab of **Materialized View Editor** to create/edit a materialized view and specify its properties.

Name

Specify the name of the materialized view to be created, or view the name of the materialized view being edited. Note that the materialized view name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the materialized view will be created.



☒ On prebuilt table

The option lets you register an existing [table](#) as a preinitialized materialized view. This option is particularly useful for registering large materialized views in a data warehousing environment.

☒ Updatable

Select this option to allow a subquery, primary key, object, or rowid materialized view to be updated.

☒ Reduced precision

Select this option to authorize the loss of precision, if the precision of the table or materialized view columns do not exactly match the precision returned by subquery.

Partitioning

Select this option to create a partitioned materialized view.

Materialized view type

Select the type of index organization for the materialized view:

- ☒ *Default*
- ☐ *Organization index*

Specifies an index-organized materialized view. In such a materialized view, data rows are stored in an index defined on the primary key of the materialized view.

Compress

Use these options to instruct the database whether to compress data segments to reduce disk and memory use:

- ☒ *None*
- ☐ *Compress*
- ☐ *Nocompress*

Rewrite query

This group allows you to specify whether the materialized view is eligible to be used for query rewrite:

- ☒ *None*
- ☐ *Enabled*
- ☐ *Disabled*

Logging

Use this group to establish the logging characteristics for the materialized view (the default is the logging characteristic of the [tablespace](#) in which the materialized view resides):

- ☒ *Logging*
- ☐ *Nologging*

Cache

These attributes can be used for data that will be accessed frequently:

- ☒ *Cache*

Specifies that the blocks retrieved for this table are placed at the most recently used end of the least recently used (LRU) list in the buffer cache when a full table scan is performed. This attribute is useful for small lookup tables.

- ☐ *Nocache*

Specifies that the blocks are placed at the least recently used end of the LRU list.

Cluster schema / Cluster name / Subquery cluster fields

This group of controls allows you create the materialized view as part of the specified [cluster](#). A cluster materialized view uses the space allocation of the cluster.

The **Subquery** area of the editor window allows you to specify the defining query of the materialized view. When you create the materialized view, Oracle Database executes this subquery and places the results in the materialized view. This subquery is any valid SQL subquery.

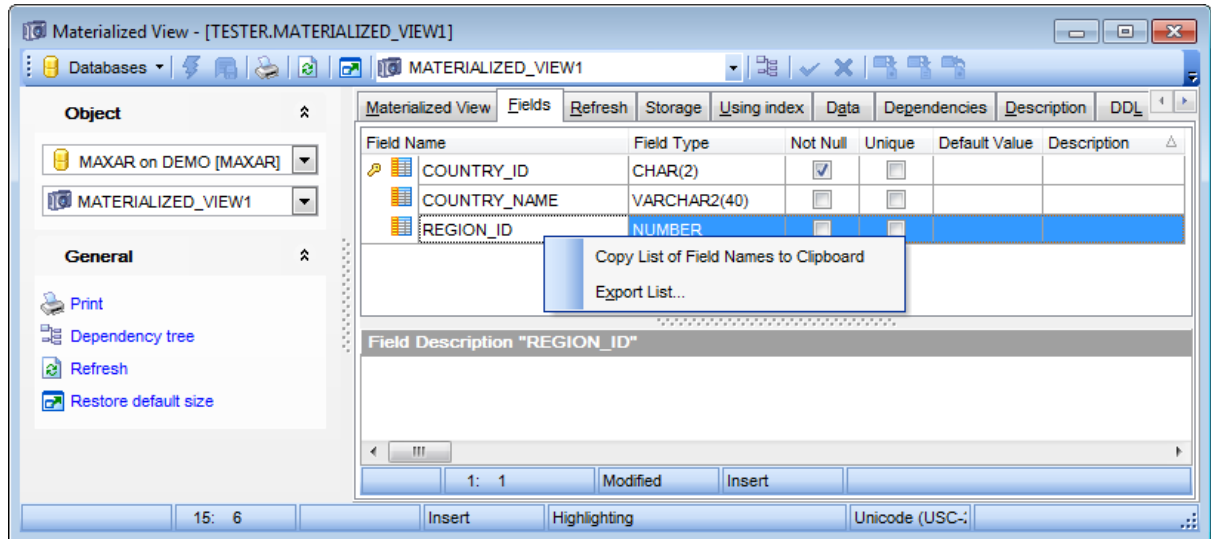
For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.12.3 Managing fields

The **Fields** tab is provided for viewing fields represented in the materialized view. Note that the tab is only available when you edit an existing materialized view.

Right-click a field to display the context menu allowing you to [export](#) field name list or copy it to clipboard.



The **Fields** list provides the following attributes of each field of the materialized view:

Field Name
Field Type
Not Null
Unique
Default Value
Description

For details see [Fields](#).

If necessary, you can also use the **Field Description** area to supply a *description* for each field.

5.3.12.4 Setting refresh parameters

The **Refresh** tab allows you to specify the default methods, modes, and times for the database to refresh the materialized view. If the master tables of a materialized view are modified, then the data in the materialized view must be updated to make the materialized view accurately reflect the data currently in its master tables. Here you can schedule the times and specify the method and mode for the database to refresh the materialized view.

Refresh

This group allows you to enable/disable refresh for the materialized view:

- ☒ Do not define refresh options
- ☒ Define refresh options

The screenshot shows the 'Refresh' tab in the SQL Manager for Oracle. The 'Define refresh options' radio button is selected. The 'Refresh type' section has 'Force' selected. The 'Refresh time type' section has 'Automatic' selected. The 'Refresh method' section has 'Primary key' selected. At the bottom, the 'Start with' field is set to 'TO_DATE('10.17.2012 14:23:3' and the 'Next' field is set to 'TO_DATE('10.18.2012 14:23:4'.

Refresh type

Specify the preferable refresh type:

- ☒ None
- ☒ Never (prevents the materialized view from being refreshed with any Oracle Database refresh mechanism or packaged procedure)
- ☒ Fast (indicates the incremental refresh method, which performs the refresh according to the changes that have occurred to the master tables)
- ☒ Complete (indicates the complete refresh method, which is implemented by executing the defining query of the materialized view)
- ☒ Force (indicates that when a refresh occurs, Oracle Database will perform a fast refresh if one is possible or a complete refresh if fast refresh is not possible)

Refresh time type

Specify the preferable refresh time type:

- ☒ None
- ☒ On commit (indicates that a fast refresh is to occur whenever the database commits a transaction that operates on a master table of the materialized view)
- ☒ On demand (indicates that the materialized view will be refreshed on demand by calling

one of the refresh procedures)

☒ *Automatic* (indicates that the materialized view will be refreshed automatically at the specified time)

Refresh method

Specify the preferable refresh method:

☒ *None*

☐ *Primary key* (specifies a primary key materialized view which allows materialized view master table to be reorganized without affecting the eligibility of the materialized view for fast refresh)

☐ *RowID* (specifies a rowid materialized view which is useful if the materialized view does not include all primary key columns of the master table)

Specify the *START WITH* and *NEXT* values for automatic refresh using the corresponding controls. For your convenience the *date editor* is implemented: click the arrow-down button to call the *date editor* popup window.

Start with

Specify a datetime expression for the first automatic refresh time.

Next

Specify a datetime expression for calculating the interval between automatic refreshes.

5.3.12.5 Setting USING INDEX parameters

The **Using index** tab allows you to establish parameters for the default [index](#) Oracle uses to maintain the materialized view data.

Using index

This group allows you to enable/disable using index and setting index storage attributes for the materialized view:

- ☒ Do not define index storage
- ☒ Using index
- ☒ Using no index

If **Using index** is not specified, then default values are used for the index. Oracle uses the default index to speed up incremental (FAST) refresh of the materialized view.

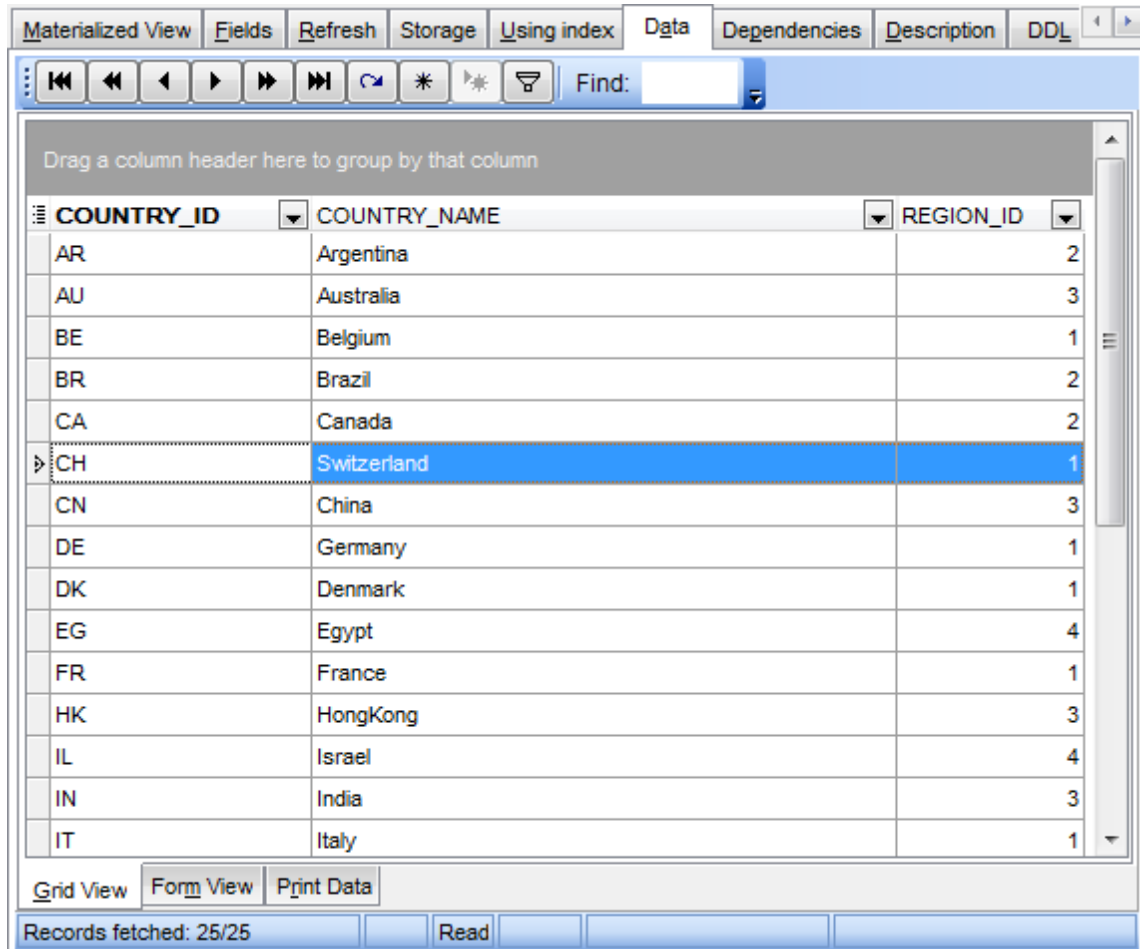
The screenshot shows the 'Using index' tab in the SQL Manager for Oracle. The tab is selected, and the 'Using index' radio button is checked. The 'Physical attributes' section includes 'Tablespace' (set to '< Default >'), 'Buffer pool' (set to '<UNSPECIFIED>'), and 'Initial number of transactions' (set to 'DEFAULT'). The 'Extents' section includes 'Initial extent' (set to 'DEFAULT'), 'Next extent' (set to 'DEFAULT'), 'Percent increase' (set to 'DEFAULT'), 'Minimum extents' (set to 'DEFAULT'), and 'Maximum extents' (set to 'DEFAULT'). The 'Space usage' section includes 'Percent free' (set to 'DEFAULT') and 'Percent used' (set to 'DEFAULT'). The 'Free lists' section includes 'Free lists' (set to 'DEFAULT') and 'Groups' (set to 'DEFAULT').

Specify *Physical attributes*, *Extents*, *Space usage* and *Free lists* for the index. For details refer to the [Storage attributes](#) page.

5.3.12.6 Working with data

The **Data** tab displays the materialized view data as a grid by default (see [Data View](#) for details). Note that the tab is only available when you edit an existing materialized view. The context menu of this tab allows you to [Export Data](#), [Import Data](#), [Export as SQL Script](#).

Data management tools are also available through the [Navigation bar](#) of **Materialized View Editor**.

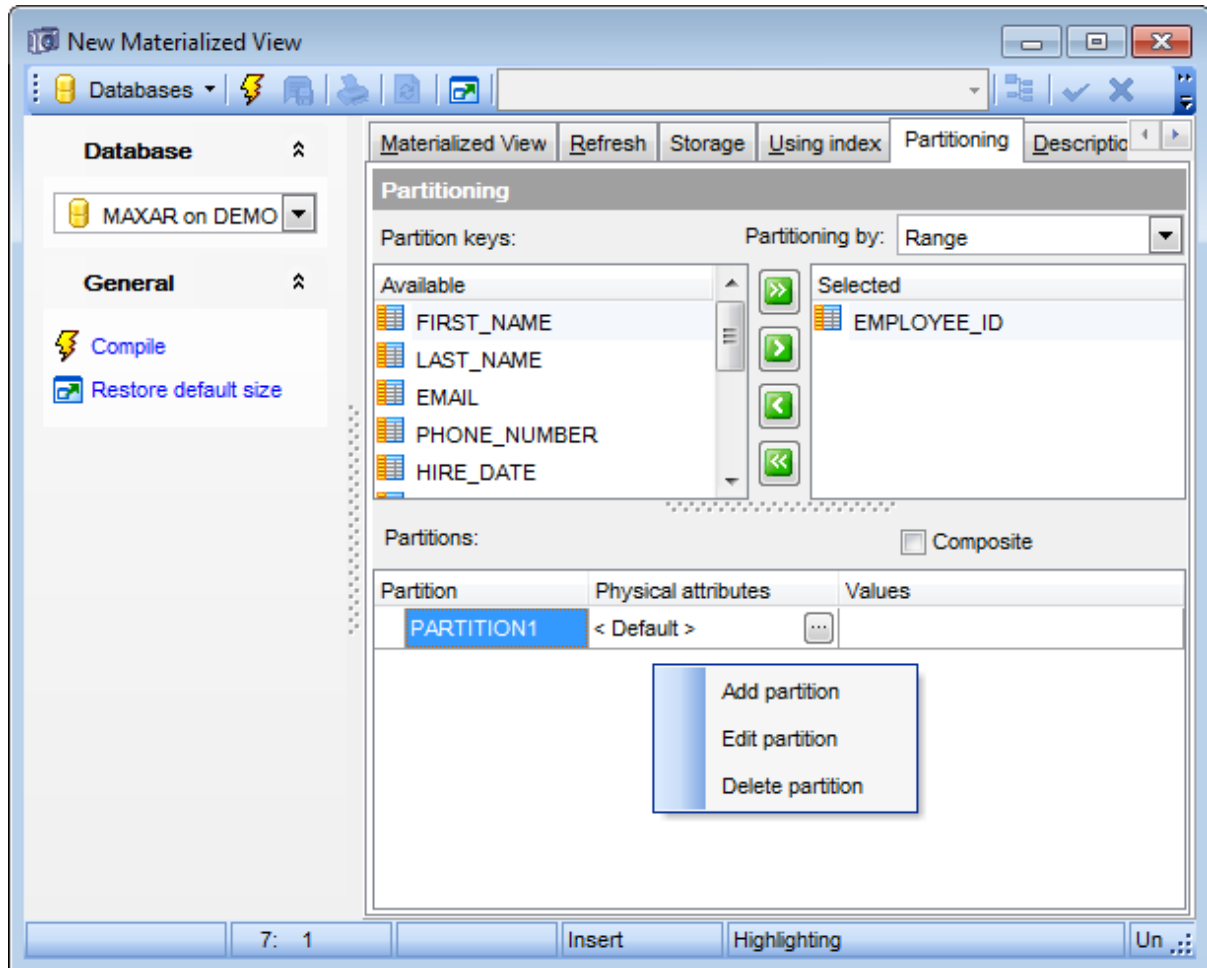


See also:

[Working with table data](#)

5.3.12.7 Partitioning

The **Partitioning** tab is provided for setting up partitioning parameters for a partitioned materialized view. It appears when the ☒ **Partitioning** option is enabled at the [main](#) tab of the editor.



Partitioning by

Range

Select this item to partition the materialized view on ranges of values from the column list. For an index-organized materialized view, the column list must be a subset of the primary key columns of the materialized view.

Hash

Select this item to specify that the materialized view is to be partitioned using the hash method. Oracle Database assigns rows to partitions using a hash function on values found in columns designated as the partitioning key.

List

Select this item to partition the materialized view on lists of literal values from column. List partitioning is useful for controlling how individual rows map to specific partitions.

Partition keys

Use this group to specify an ordered list of columns used to determine into which partition a row belongs. These columns are the partitioning key.

To select a column, 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.

Composite

If this option is selected, the materialized view is first partitioned by *range*, and then the partitions are further partitioned into *range*, *hash*, or *list* sub-partitions.

Sub-partition keys

Use this group to specify an ordered list of columns used to determine into which sub-partition a row belongs. These columns are the sub-partitioning key.

To select a column, 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.

Sub-partitioning by

Use the drop-down list to indicate the type of sub-partitioning you want for each composite range partition: *hash* or *list*.

Partitions

This area allows you to specify individual partitions. Right-click within the list area to call the **context menu** allowing you to *create a new* partition, *edit* or *delete* the selected partition.

Values

Specify the non-inclusive upper bound for the current partition. The value list is an ordered list of literal values corresponding to the column list.

5.3.13 Materialized View Logs

A **Materialized view log** is a table associated with the master table of a [materialized view](#).

When DML changes are made to master table data, Oracle Database stores rows describing those changes in the materialized view log and then uses the materialized view log to refresh materialized views based on the master table.

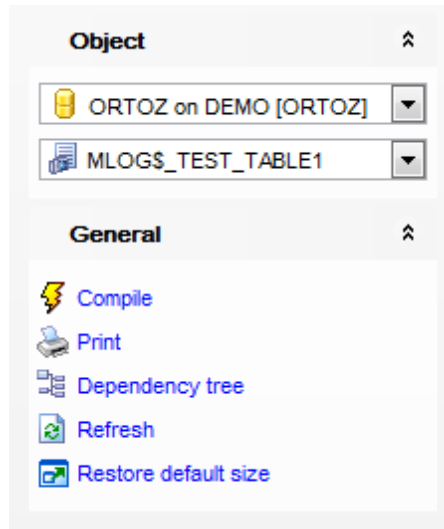
Materialized View Log Editor allows you to define materialized view log properties. It opens automatically when you create a new materialized view log and is available on editing an existing one.

To open a materialized view log in **Materialized View Log Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing materialized view log](#)
- [Setting storage attributes](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.13.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a materialized view log for editing

General

- [compile](#) the materialized view log (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the materialized view log
- edit the materialized view log query using [Design Query](#)
- refresh the content of the active tab
- restore the default size and position of the editor window

View

- view the [dependency tree](#) for the materialized view log

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 materialized view log:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.13.2 Creating/editing materialized view log

Use the **Materialized view log** tab of **Materialized View Log Editor** to create/edit a materialized view log and specify its properties.

Log table name

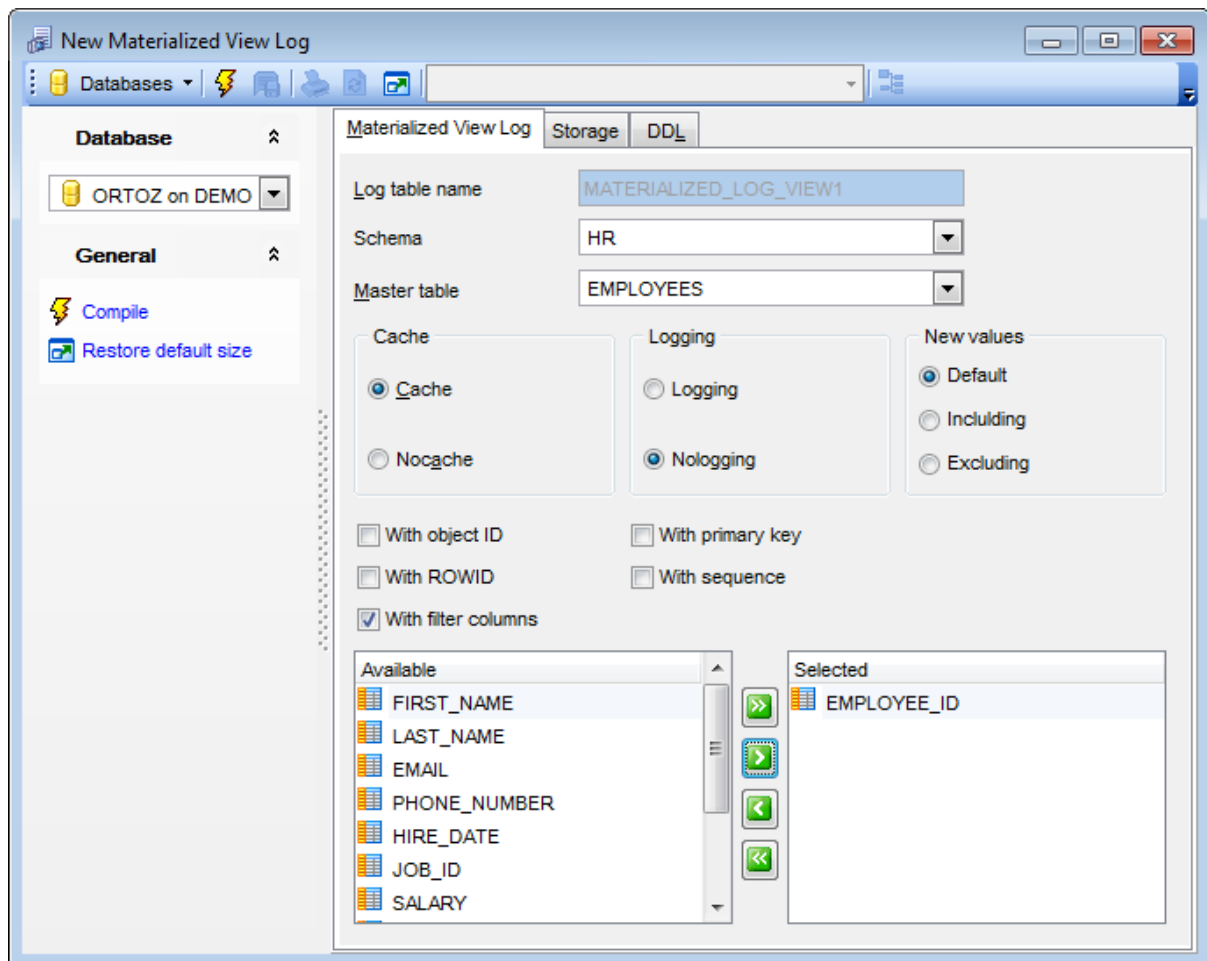
Displays the name of the materialized view log table.

Schema

Use the drop-down list to specify the schema containing the materialized view log master table.

Master table

Use the drop-down list to specify the name of the master table for which the materialized view log is to be created.



Cache

These attributes can be used for data that will be accessed frequently:

☒ Cache

Specifies that the blocks retrieved for this log are placed at the most recently used end of the least recently used (LRU) list in the buffer cache when a full table scan is performed. This attribute is useful for small lookup tables.

 Nocache

Specifies that the blocks are placed at the least recently used end of the LRU list.

Logging

This group allows you to establish the logging characteristics for the materialized view log:

 Logging

 Nologging

New values

This group allows you to determine whether Oracle saves both old and new values for update DML operations in the materialized view log.

 Default

Specifies the default behavior for new values.

 Including

Specifies that both new and old values are saved in the log.

 Excluding

Disables the recording of new values in the log. You can use this option to avoid the overhead of recording new values.

With ...

Use the **With** group to indicate whether the materialized view log should record the *primary key*, *rowid*, *object ID*, or a combination of these row identifiers when rows in the master are changed.

 With object ID

Indicates that the system-generated or user-defined object identifier of every modified row should be recorded in the materialized view log.

 With primary key

Indicates that the primary key of all rows changed should be recorded in the materialized view log.

 With ROWID

Indicates that the rowid of all rows changed should be recorded in the materialized view log.

 With sequence

Indicates that a sequence value providing additional ordering information should be recorded in the materialized view log. Sequence numbers are necessary to support fast refresh after some update scenarios.

 With filter columns

Select this option to include the filter columns whose values you want to be recorded in the materialized view log.

Fields for materialized view log

This group allows you to specify the fields whose values should be recorded in the materialized view log for all rows that are changed.

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

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.14 Synonyms

A **Synonym** is an alternative name for a [table](#), [view](#), [sequence](#), [procedure](#), [stored function](#), [package](#), [materialized view](#), [Java class](#) schema object, user-defined [object type](#), or another synonym. Synonyms can be used in place of their referenced base object in a number of SQL statements and expression contexts.

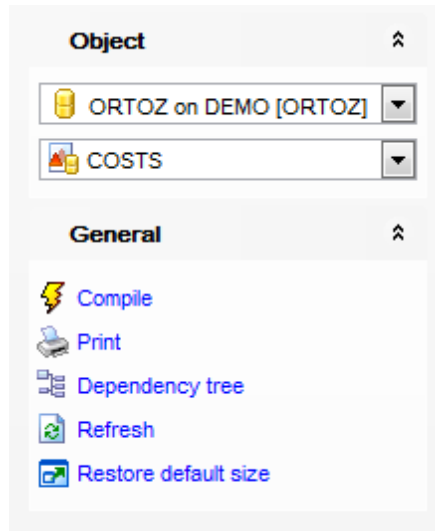
Synonym Editor allows you to define synonym properties. It opens automatically when you create a new synonym and is available on editing an existing one.

To open a synonym in **Synonym Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing synonym](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.14.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a synonym for editing

General

-  [compile](#) the synonym (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the synonym
-  view the [dependency tree](#) for the synonym
-  refresh the content of the active tab
-  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 synonym:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.14.2 Creating/editing synonym

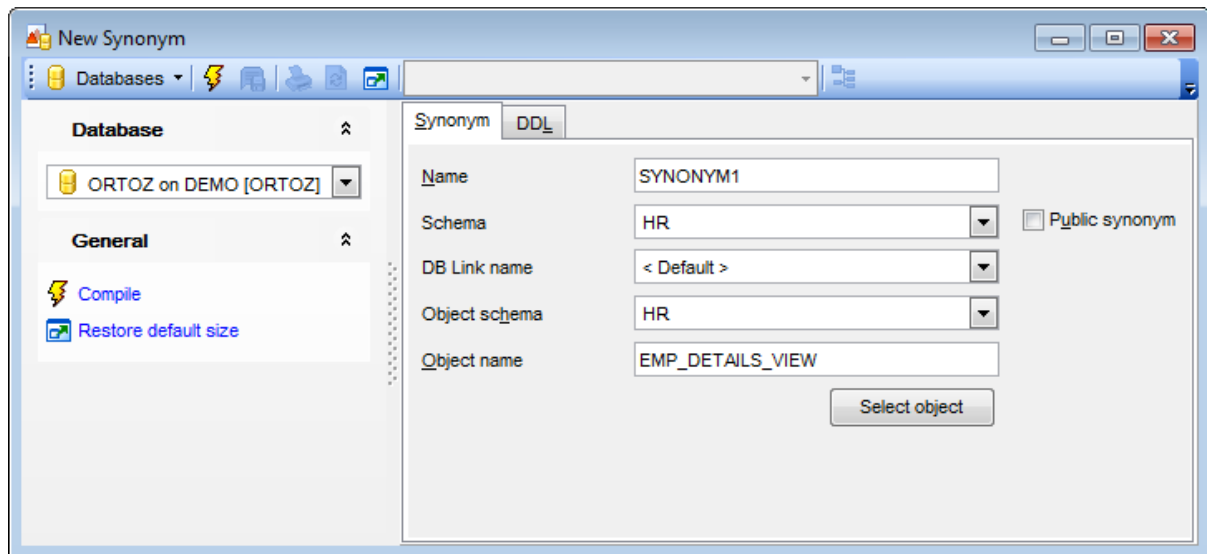
Use the **Synonym** tab of **Synonym Editor** to create/edit a synonym and specify its properties.

Name

Specify the name of the synonym to be created, or view the name of the synonym being edited. Note that the synonym name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the synonym will be created.



☒ Public synonym

Select this option to create a public synonym. Public synonyms are accessible to all [users](#). However, each user must have appropriate privileges on the underlying object in order to use the synonym.

DB Link name

You can use this drop-down list to specify a complete or partial [database link](#) to create a synonym for a schema object on a remote database where the object is located.

Object schema

Use the drop-down list to select the schema where the base object resides.

Object name

Type in the name of the base object to be referenced by the synonym, or click the **Select object** button to specify an object using the [Select object](#) dialog.

To [compile](#) the object, use the corresponding **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.15 Database Links

A **Database link** is a schema object in one database that enables you to access objects on another database. The other database need not be an Oracle system. However, to access non-Oracle systems, you must use Oracle Heterogeneous Services.

After you have created a database link, you can use it to refer to *tables* and *views* on the other database.

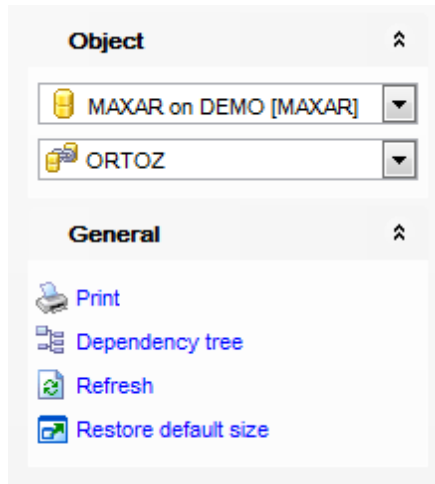
Database Link Editor allows you to define database link properties. It opens automatically when you create a new database link and is available on editing an existing one.

To open a database link in **Database Link Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing database link](#)
- [Viewing DDL definition](#)

5.3.15.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Database Link Editor** allows you to:

Object

- select a database
- select a database link for editing

General

- [compile](#) the database link (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the database link
- view the [dependency tree](#) for the database link
- refresh the content of the active tab
- 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 database link:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

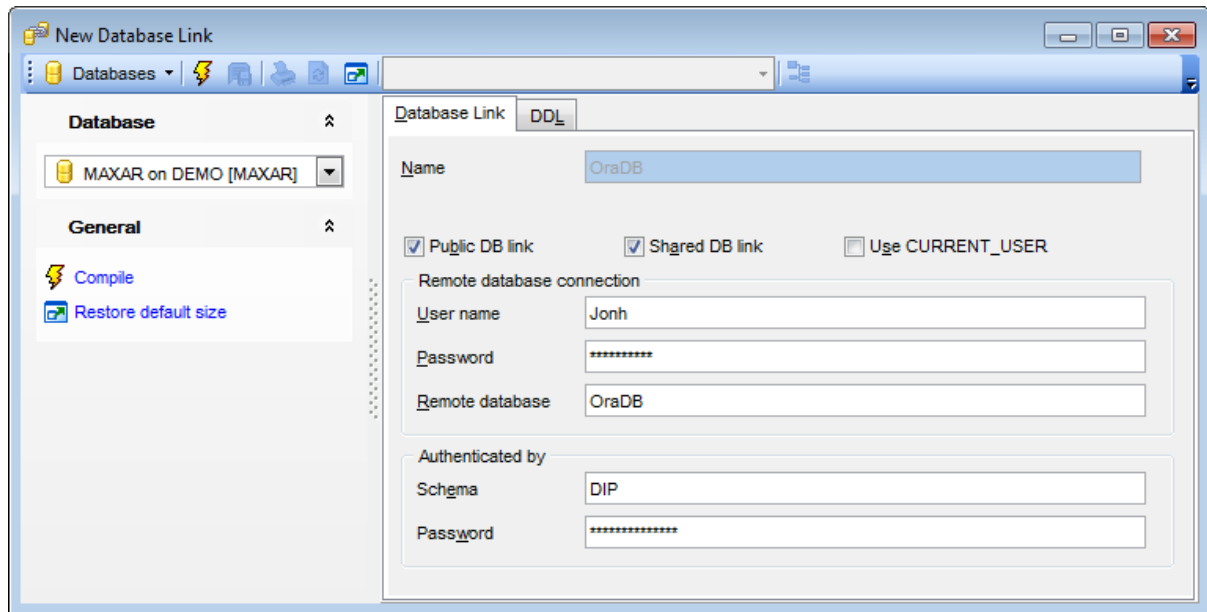
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.15.2 Creating/editing database link

Use the **Database Link** tab of **Database Link Editor** to create/edit a database link and specify its properties.

Name

Displays the unique name to be used across the database to represent the DB link.



☒ Public DB link

Use this option to create a public database link available to all users.

☒ Shared DB link

Select the option to use a single network connection to create a public database link that can be shared among multiple users.

☒ Use CURRENT_USER

Use this option to create a *current user database link*.

The current user must be a global user with a valid account on the remote database. If the database link is used directly, i.e. not from within a stored object, the current user is the same as the connected [user](#).

Remote database connection

This group allows you to specify connection parameters for the remote database.

User name / Password

Specify the *username* and *password* used to connect to the remote database.

Remote database

Specify the service name of a remote database.

Authenticated by

Parameters of this group authenticate the user to the remote server and are required for

security.

Schema / Password

Specify the *username* and *password* on the target instance.

The specified username and password must be a valid username and password on the remote instance. The username and password are used only for authentication.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.16 Object Types

An **Object type** defines the *name* of the object type, its *attributes* (the variables that form the data structure), *methods* (the member subprograms that define the behavior of the object), and *other properties*.

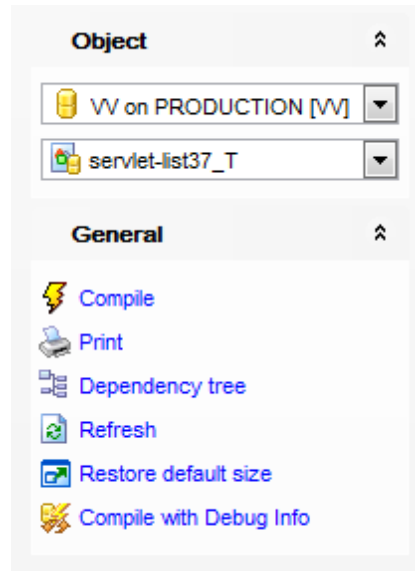
Object Type Editor allows you to specify user-defined object type properties. It opens automatically when you create a new object type and is available on editing an existing one.

To open an object type in **Object Type Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing object type](#)
- [Browsing object dependencies](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.16.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Object Type Editor** allows you to:

Object

- select a database
- select an object type for editing

General

- [compile](#) the object type (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the object type
- view the [dependency tree](#) for the object type
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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 object type:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable/disable Toolbars and Navigation bars at [Environment Options](#).

5.3.16.2 Creating/editing object type

Use the **Object Type** tab of **Object Type Editor** to create/edit the specification of an *object type*, a *SQLJ object type*, or an *incomplete object type*.

Name

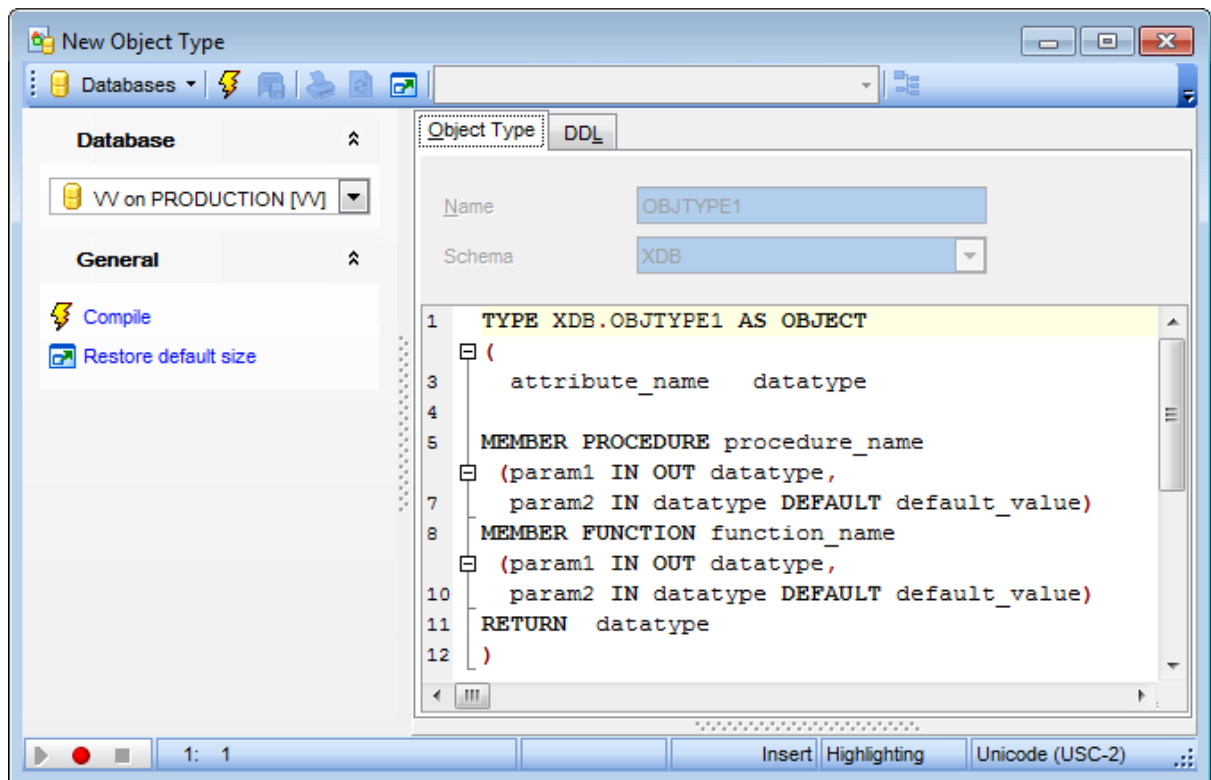
Specify the name of the object type to be created, or view the name of the object type being edited. Note that the object type name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the object type will be created.

The lower area of the editor window allows you to specify the object type definition. The variables that form the data structure are called *attributes*. The member subprograms that define the behavior of the object are called *methods*. The keywords **AS OBJECT** are required when creating an object type. The **DDL** tab will display the changes made to the object type definition.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query Data area](#) and [Using the context menu](#).



To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

For more information on *object types* refer to the official Oracle documentation.

5.3.17 Object Type Bodies

You can create an **Object type body** to define or implement the member methods defined in the [object type](#) specification. The *object type* defines the name of the object type, its attributes, methods, and other properties. The *object type body* contains the code for the methods that implement the type.

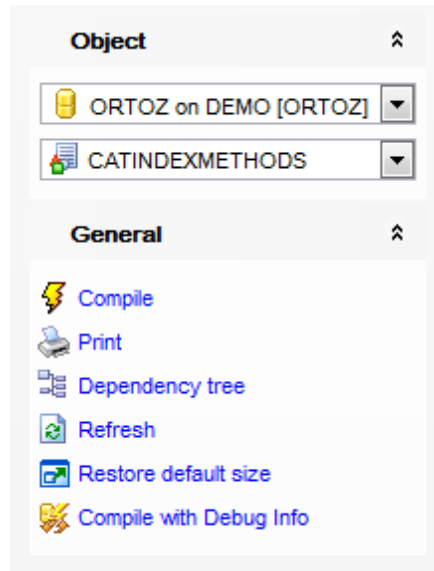
Object Type Body Editor allows you to define object type body properties. It opens automatically when you create a new object type body and is available on editing an existing one.

To open an object type body in **Object Type Body Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing object type body](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.17.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Object Type Body Editor**.



The **Navigation bar** of **Object Type Body Editor** allows you to:

Object

- select a database
- select an object type body for editing

General

- [compile](#) the object type body (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the object type body
- view the [dependency tree](#) for the object type body
- refresh the content of the active tab
- restore the default size and position of the editor window
- [compile with debug info](#)

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 object type body:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

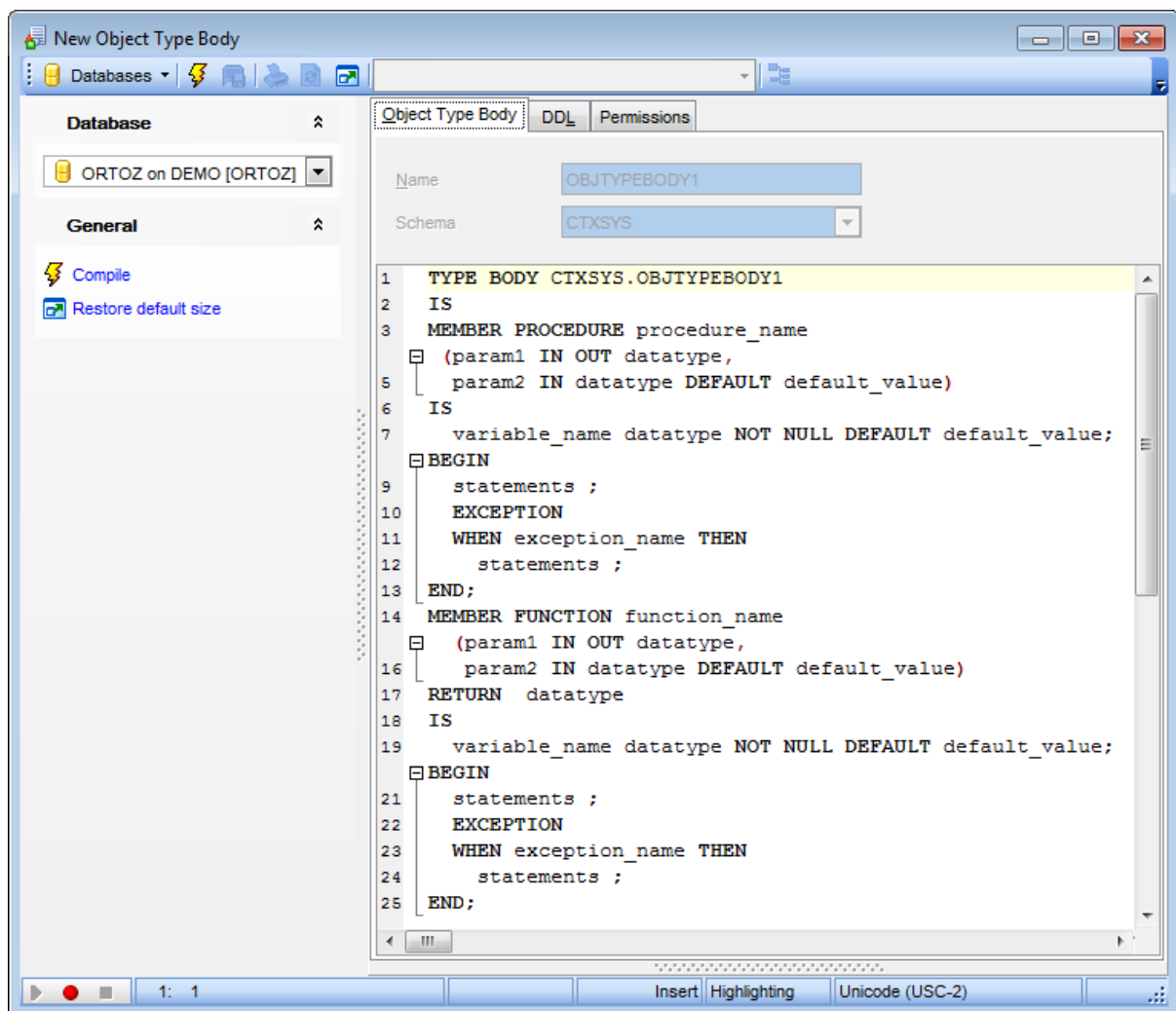
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.17.2 Creating/editing object type body

Use the **Object Type Body** tab of **Object Type Body Editor** to create/edit an object type body and specify its definition.

The object type body contains the code for the methods that implement the [object type](#). For each method specified in an object type specification for which you did not specify the call specification, you must specify a corresponding method body in the object type body.

For your convenience the **code folding**, **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query data editor](#) and [Using the context menu](#).



To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

For more information on *object type bodies* refer to the official Oracle documentation.

5.3.18 Array Types

Oracle provides **varying array (varray) type** as an ordered set of elements, each of which has the same datatype, and the **nested table type**. Array Type Editor allows you to create the specification of a *varray type* or a *named nested table type* easily and quickly.

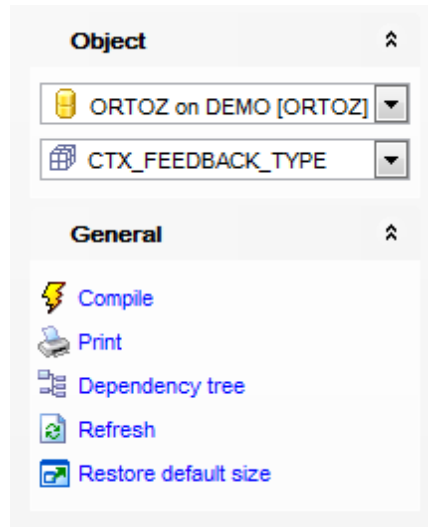
Array Type Editor allows you to define array type properties. It opens automatically when you create a new array type and is available on editing an existing one.

To open an array type in **Array Type Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing array type](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.18.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Array Type Editor** allows you to:

Object

-  select a database
-  select an array type for editing

General

-  [compile](#) the array type (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the array type
-  view the [dependency tree](#) for the array type
-  refresh the content of the active tab
-  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 array type:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.18.2 Creating/editing array type

Use the **Array Type** tab of **Array Type Editor** to create/edit an array type and specify its properties.

Name

Specify the name of the new array type or nested table type, or view the name of the array type / nested table type being edited. Note that the type name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the array type or nested table type will be created.

The screenshot shows the 'New Array Type' dialog box. On the left, the 'Database' dropdown is set to 'ORTOZ on DEMO [ORTOZ]'. Below it, the 'General' tab is active, showing a 'Compile' button and a 'Restore default size' button. The main area is divided into two tabs: 'Array Type' and 'DDL'. The 'Array Type' tab is selected, showing the following fields: 'Name' (ARRAY1), 'Schema' (CTXSYS), 'Array size' (8), and 'Data Type' (BFILE). The 'VArray' radio button is selected, and the 'Nested table' radio button is unselected. The 'Data Type' section also includes fields for 'Object schema', 'Object', 'Size', and 'Scale', which are currently empty.

☒ Varray

Specifies the *varray type* (a type composed of an ordered set of elements, each of which has the same datatype).

Array size

Use the spinner control to specify a maximum limit for the array.

☐ Nested table

Specifies the *nested table type*.

Data type Type

Use the drop-down list to select a built-in datatype, *REF* or *<nested_object>*.

If data type is an object type, then the **nested table type** describes a table whose columns match the name and attributes of the object type. If defined data type is a scalar type, then the **nested table type** describes a table with a single, scalar type column called *COLUMN_VALUE*.

Object schema

Use the drop-down list to select the *schema* containing the *REF* or [object type](#).

Object

Use the drop-down list to select the *REF* or *object type*.

Size / Scale

Use the spinner controls to specify the *size* and/or *scale* (for numeric data types).

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.19 Libraries

A **Library** is a schema object associated with an operating system shared library.

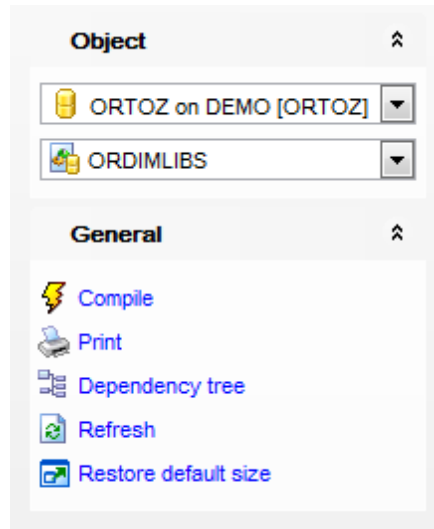
Library Editor allows you to define library properties. It opens automatically when you create a new library and is available on editing an existing one.

To open a library in **Library Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing library](#)
- [Browsing object dependencies](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.19.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a library for editing

General

- [compile](#) the library (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the library
- view the [dependency tree](#) for the library
- refresh the content of the active tab
- 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 library:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.19.2 Creating/editing library

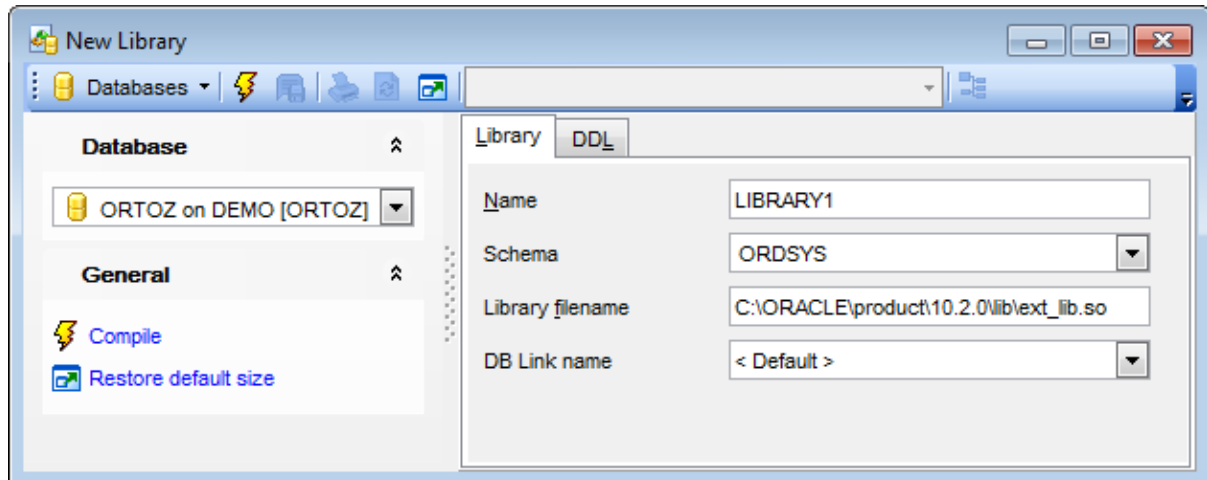
Use the **Library** tab of **Library Editor** to create/edit a library and specify its properties.

Name

Specify the name that will represent the library to be created, or view the name of the library being edited. Note that the library name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the library will be created.



Library filename

Specify the path and name of the shared library recognized by the operating system.

DB Link name

Use the drop-down list to specify a [DB link](#) (*AGENT*) if you want external procedures to be run from a database link other than the server.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.20 Java Sources

Oracle allows you to use the *CREATE JAVA* statement to create specific schema objects containing *Java sources*, *Java classes*, or *Java resources*. Java Source Editor provides you with an ability to create a schema object containing a **Java source** easily and quickly.

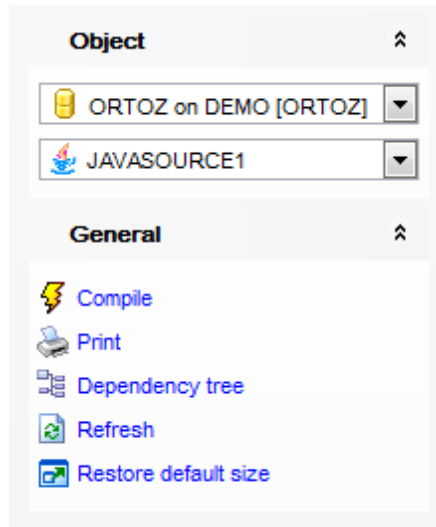
Java Source Editor allows you to define Java source properties. It opens automatically when you create a new Java source and is available on editing an existing one.

To open a Java source in **Java Source Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing Java source](#)
- [Viewing DDL definition](#)

5.3.20.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Java Source Editor** allows you to:

Object

-  select a database
-  select a Java source for editing

General

-  [compile](#) the Java source (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the Java source
-  view the [dependency tree](#) for the Java source
-  refresh the content of the active tab
-  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 Java source:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.20.2 Creating/editing Java source

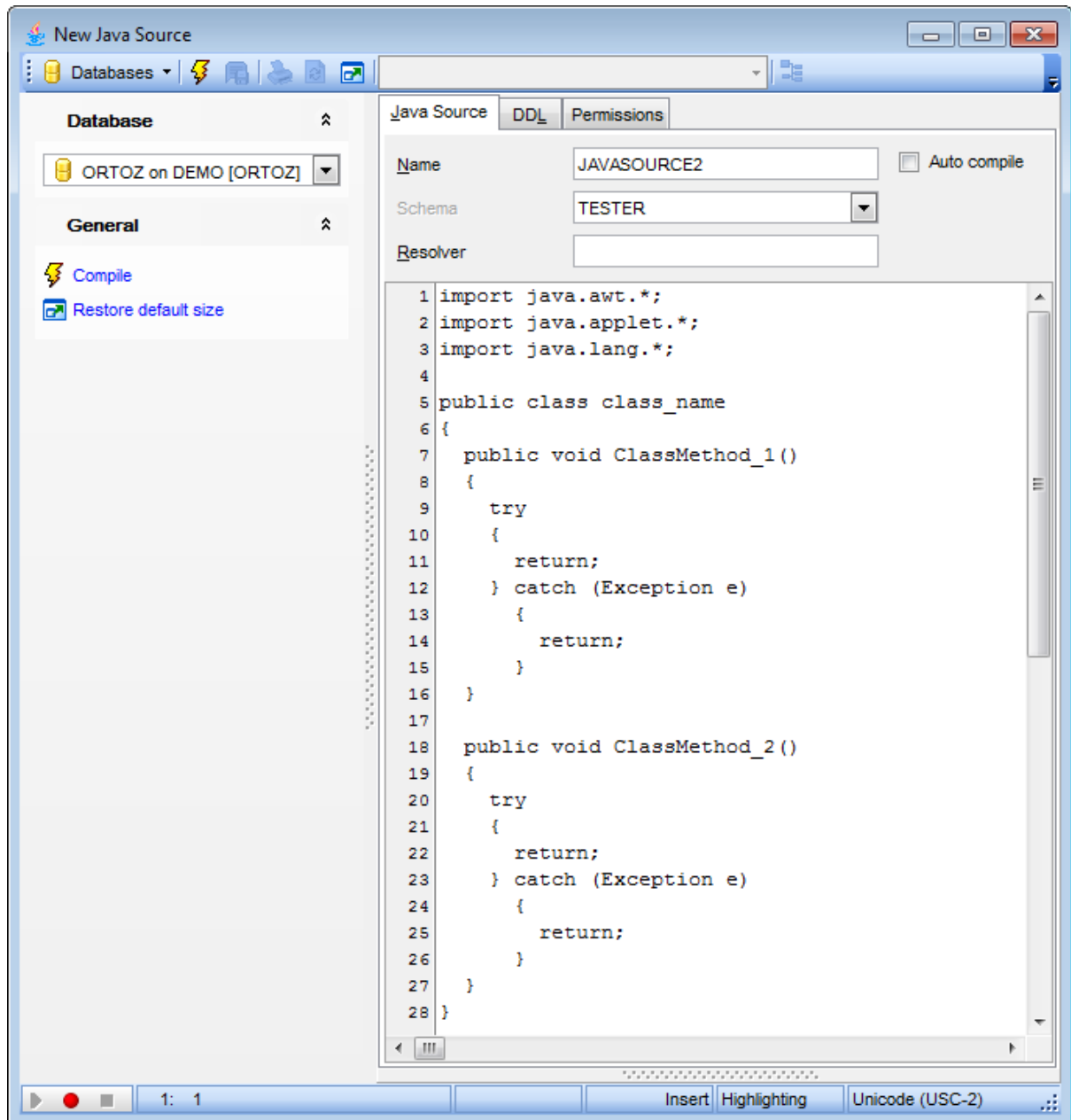
Use the **Java Source** tab of **Java Source Editor** to specify Java source properties.

Name

This field specifies the name of the schema object in which the source code is held. Upon successful creation of the Java source Oracle creates additional schema objects to hold each of the [Java classes](#) defined by the source.

Schema

This field specifies the schema in which the object containing the Java source code resides.



 Auto compile

If this option is selected, Java source compilation occurs automatically.

Resolver

Specify a mapping of the fully qualified Java name to the Java source schema object.

The lower area of the editor window allows you to specify a sequence of characters for the Java source. The **DDL** tab will display the changes made to the Java source code within the AS clause.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.21 Java Classes

Oracle allows you to use the *CREATE JAVA* statement to create specific schema objects containing *Java sources*, *Java classes*, or *Java resources*. Java Class Editor provides you with an ability to create a schema object containing a **Java class** easily and quickly.

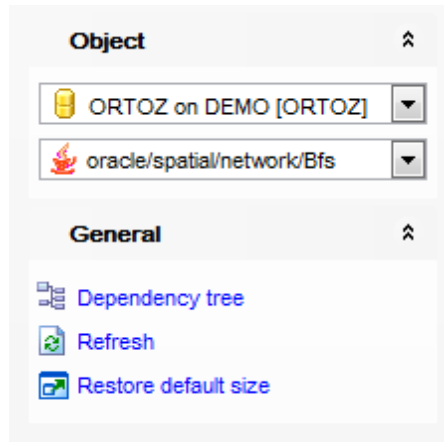
Java Class Editor allows you to define Java class properties. It opens automatically when you create a new Java class and is available on editing an existing one.

To open a Java class in **Java Class Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing Java class](#)
- [Browsing object dependencies](#)

5.3.21.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Java Class Editor** allows you to:

Object

-  select a database
-  select a Java class for editing

General

-  [compile](#) the Java class (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the Java class
-  view the [dependency tree](#) for the Java class
-  refresh the content of the active tab
-  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 Java class:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

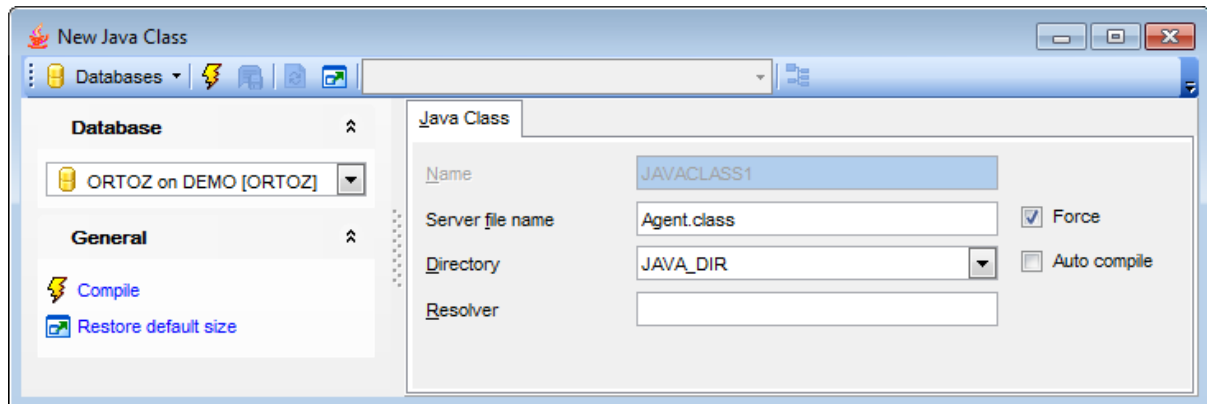
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.21.2 Creating/editing Java class

Use the **Java Class** tab of **Java Class Editor** to specify Java class properties.

Name

This field displays the name of the Java class.



Server file name

Specify the name of a previously created server file on the operating system.

Directory

Use the drop-down list to specify the [directory](#) object for the file containing the binary sequence.

Resolver

Specify a mapping of the fully qualified Java name to the Java class schema object.

☒ Force

With this option deselected, the results of this CREATE command will be rolled back if **Auto compile** (*RESOLVE* or *COMPILE*) is specified and the resolution or compilation fails. With the option selected, no action is taken if the resolution or compilation fails; therefore, the created schema object remains.

☒ Auto compile

If this option is selected, resolution of referenced names to other class schema objects occurs automatically.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.22 Java Resources

Oracle allows you to use the *CREATE JAVA* statement to create specific schema objects containing *Java sources*, *Java classes*, or *Java resources*. Java Resource Editor provides you with an ability to create a schema object containing a **Java resource** easily and quickly.

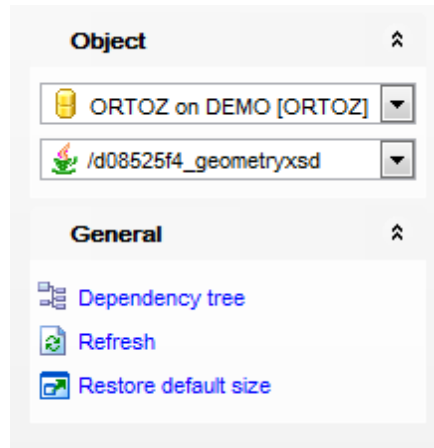
Java Resource Editor allows you to define Java resource properties. It opens automatically when you create a new Java resource and is available on editing an existing one.

To open a Java resource in **Java Resource Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing Java resource](#)
- [Browsing object dependencies](#)

5.3.22.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Java Resource Editor** allows you to:

Object

- select a database
- select a Java resource for editing

General

- [compile](#) the Java resource (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the Java resource
- view the [dependency tree](#) for the Java resource
- refresh the content of the active tab
- 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 Java resource:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.22.2 Creating/editing Java resource

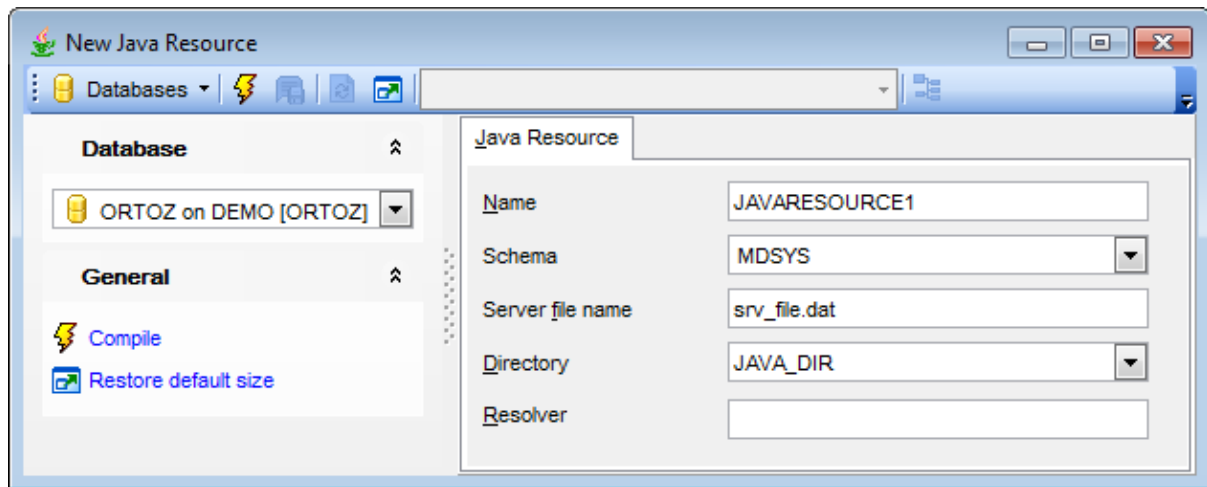
Use the **Java Resource** tab of **Java Resource Editor** to specify Java resource properties.

Name

This field specifies the name of the schema object to hold the Java resource.

Schema

This field specifies the schema in which the object containing the Java resource file resides.



Server file name

Specify the name of a previously created server file on the operating system.

Directory

Use the drop-down list to specify the [directory](#) object for the file containing the binary sequence.

Resolver

Specify a mapping of the fully qualified Java name to the Java resource schema object.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.23 Index Types

Index type is an object that specifies the routines that manage a domain (application-specific) index. Index types reside in the same namespace as [tables](#), [views](#), and other [schema objects](#). The index type name is bound to an implementation type, which in turn specifies and refers to user-defined index [functions](#) and [procedures](#) that implement the index type.

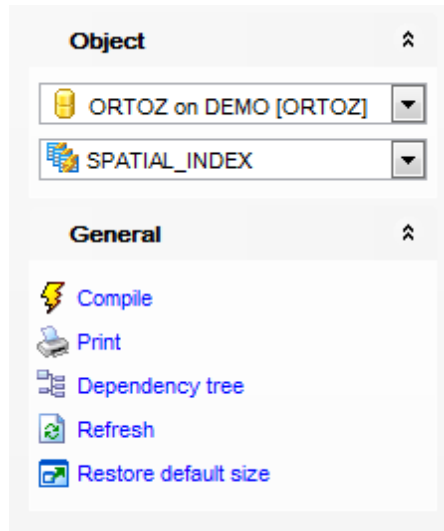
Index Type Editor allows you to define index type properties. It opens automatically when you create a new index type and is available on editing an existing one.

To open an index type in **Index Type Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing index type](#)
- [Browsing object dependencies](#)
- [Editing object description](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.23.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Index Type Editor** allows you to:

Object

- select a database
- select an index type for editing

General

- [compile](#) the index (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the index type
- view the [dependency tree](#) for the index type
- refresh the content of the active tab
- 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 index type:

Description

- save object [description](#) to file
- copy [description](#) to clipboard

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.23.2 Creating/editing index type

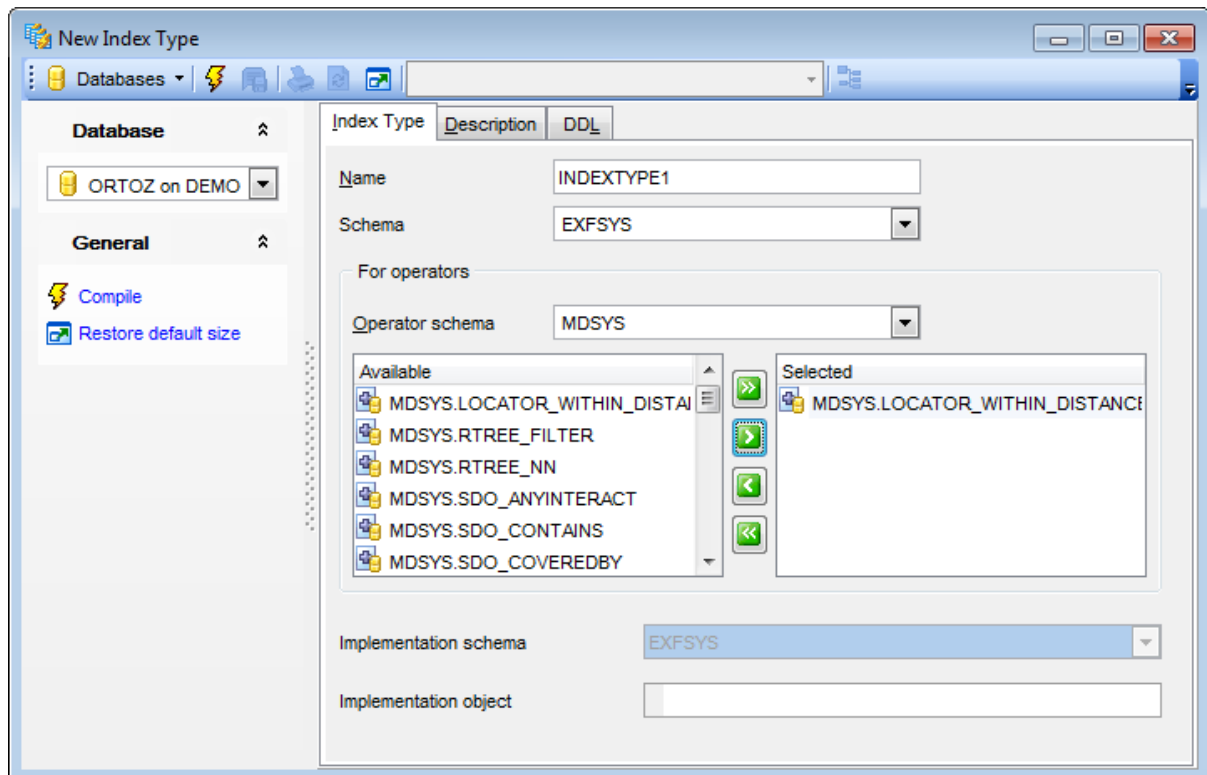
Use the **Index type** tab of **Index Type Editor** to create/edit an index type and specify its properties.

Name

Specify the name of the index type to be created, or view the name of the index type being edited. Note that the index type name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the index type will be created.



For operators

This group allows you to specify the list of [operators](#) supported by the index type.

Operator schema

Use the drop-down list to select the *schema* containing operator(s) for the index type.

To select an operator, you need to move it from the **Available** list to the **Selected** list.

Use the  buttons or drag-and-drop operations to move the operators from one list to another.

Implementation schema

Displays the schema containing the implementation type (must reside in the same schema as the index type).

Implementation object

Type in the name of the type that provides the implementation for the new index type.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.24 Operators

Operators can be referenced by [index types](#) and by [SQL queries](#) and DML statements. The operators, in turn, reference [functions](#), [packages](#), [types](#) and other user-defined objects.

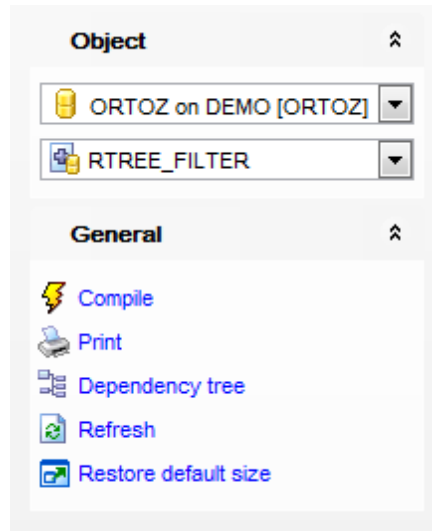
Operator Editor allows you to define operator properties. It opens automatically when you create a new operator and is available on editing an existing one.

To open an operator in **Operator Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing operator](#)
- [Adding operator binding](#)
- [Browsing object dependencies](#)
- [Editing object description](#)
- [Setting object permissions](#)
- [Viewing DDL definition](#)

5.3.24.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select an operator for editing

General

- [compile](#) the operator (if it is being created/modified)
- save the operator [description](#) (if it has been modified)
- set [printing options](#) to [print metadata](#) of the operator
- view the [dependency tree](#) for the operator
- refresh the content of the active tab
- 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 operator:

Description

- save object [description](#) to file
- copy [description](#) to clipboard

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.24.2 Creating/editing operator

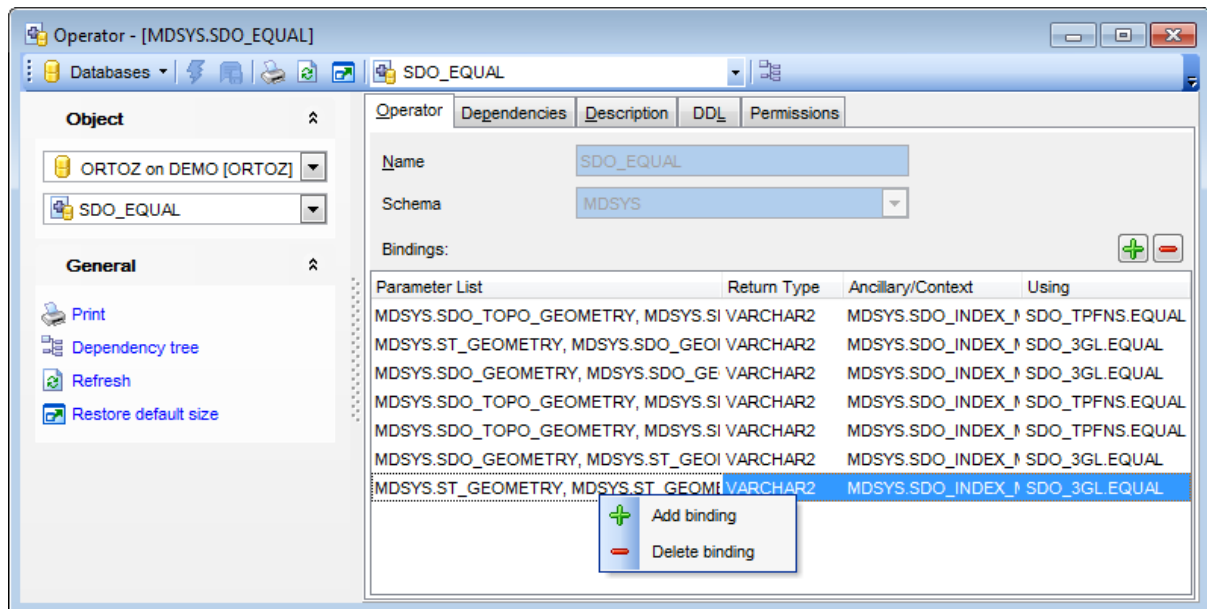
Use the **Operator** tab of **Operator Editor** to create/edit an operator and specify its properties.

Name

Specify the name of the operator to be created, or view the name of the operator being edited. Note that the operator name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the operator will be created.



Bindings

The list displays the existing operator bindings as a grid with the following columns: *Parameter List*, *Return Type*, *Ancillary/Context*, *Using*.

Right-click an item within the list to call the **context menu** allowing you to *add* a new binding and specify its properties using the [Add Operator Binding](#) dialog or *delete* the selected binding from the list.

Binding management tools are also available through the **Add binding**  and **Delete binding**  buttons.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.24.3 Adding operator binding

The **Add Operator Binding** dialog allows you to define operator binding parameters in groups: *Argument types*, *Implementation*, *Implementation type*.

Argument types

This group allows you to add/remove parameter data types for binding the operator to a function.

Object types schema name

Use the drop-down list to specify the schema containing [object types](#).

To select an object type, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the types from one list to another.

Return type

Use the drop-down list to specify the return data type for the binding.

Implementation

Use this group to describe the implementation of the binding.

Implementation object schema

Use the drop-down list to specify the schema containing the binding implementation object.

Implementation object name

Type in the name of the function that provides the implementation for the binding, or click the **Select object** button to specify a [function](#), a [package body](#) or an [object type](#) using the [Select object](#) dialog.

Implementation type☒ **Ancillary**

Use this type to indicate that the operator binding is ancillary to the specified primary operator binding. In this case you should fill the **Ancillary operator schema** and **Ancillary operator** fields.

☒ **Context**

Use this type to describe the functional implementation of a binding that is not ancillary to a primary operator binding. In this case you should fill the **Scan context schema** and **Scan context** fields.

5.3.25 Dimensions

A **Dimension** defines a parent-child relationship between pairs of column sets, where all the columns of a column set must come from the same [table](#). However, columns in one column set (called a level) can come from a different table than columns in another set. The optimizer uses these relationships with [materialized views](#) to perform query rewrite.

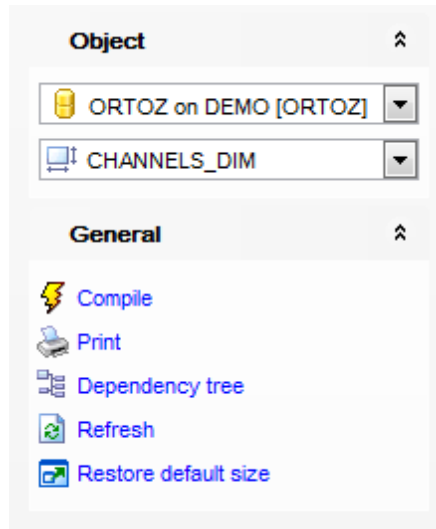
Dimension Editor allows you to define dimension properties. It opens automatically when you create a new dimension and is available on editing an existing one.

To open a dimension in **Dimension Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing dimension](#)
- [Adding dimension level](#)
- [Adding dimension hierarchy](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.3.25.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a dimension for editing

General

-  [compile](#) the dimension (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the dimension
-  view the [dependency tree](#) for the dimension
-  refresh the content of the active tab
-  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 dimension:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.25.2 Creating/editing dimension

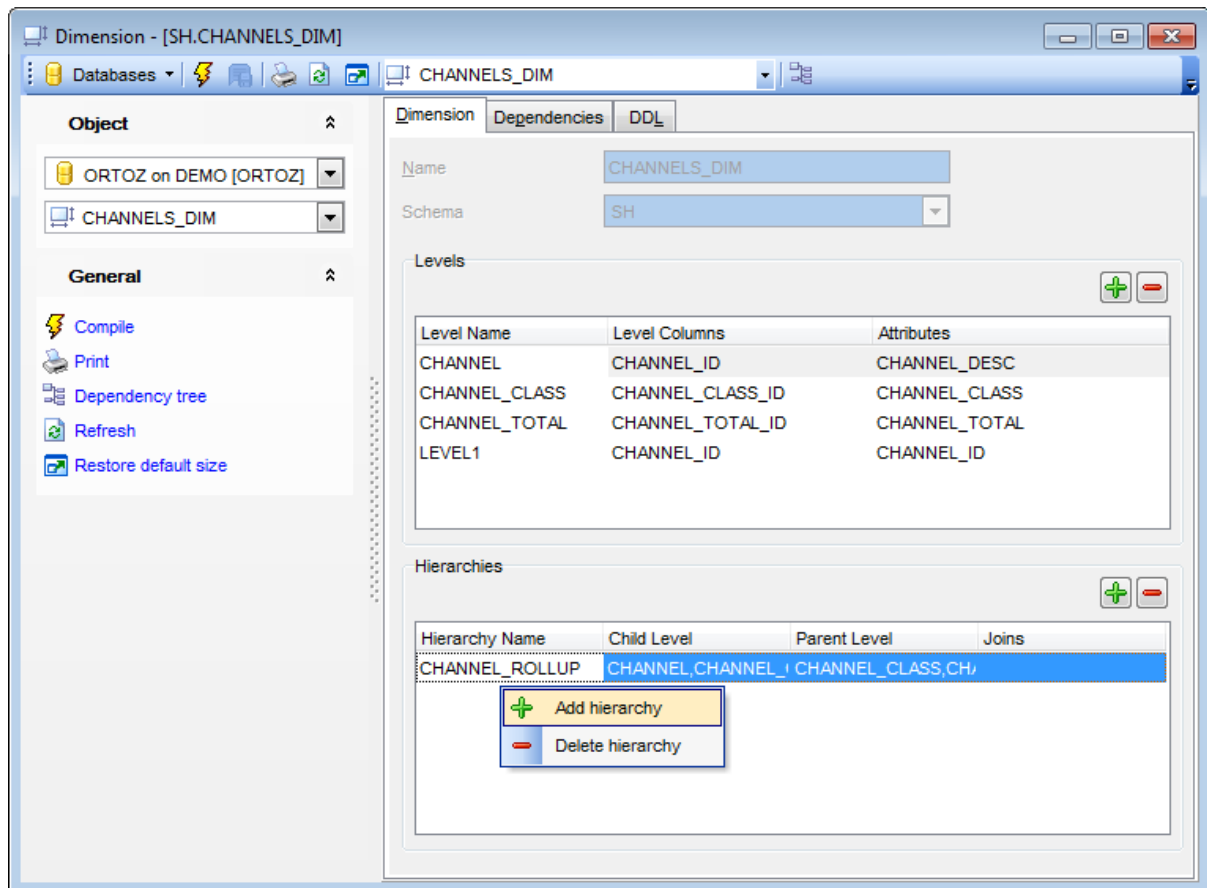
Use the **Dimension** tab of **Dimension Editor** to create/edit a dimension and specify its properties.

Name

Specify the name of the dimension to be created, or view the name of the dimension being edited. Note that the dimension name must be unique within its schema.

Schema

Use the drop-down list to specify the schema in which the dimension will be created.



Levels

A level defines dimension hierarchies and attributes. The list displays the existing levels as a grid with the following columns: *Level Name*, *Level Columns*, *Attributes*.

Right-click an item within the list to call the **context menu** allowing you to *add* a new level and specify its properties using the [Add Dimension Level](#) dialog or *delete* the selected level from the list.

Level management tools are also available through the **Add level**  and **Delete level**  buttons.

Hierarchies

The list displays the dimension hierarchies as a grid with the following columns: *Hierarchy Name, Child Level, Parent Level, Joins*.

Right-click an item within the list to call the **context menu** allowing you to *add* a new hierarchy and specify its properties using the [Add Dimension Hierarchy](#) dialog or *delete* the selected hierarchy from the list.

Hierarchy management tools are also available through the **Add hierarchy**  and **Delete hierarchy**  buttons.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.3.25.3 Adding dimension level

The **Add Dimension Level** dialog allows you to specify dimension level properties.

Level name

Specify the name of the level to be added.

Level column(s)

This group allows you to specify the column(s) in the level. You can specify up to 32 columns.

Table schema / Table name

Use the drop-down lists to select the *schema* and the *table* to select columns for the level.

To select a column, 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.

Attribute column(s)

This group allows you to specify the columns that are uniquely determined by a hierarchy level. The columns in level must all come from the same table as the dependent columns. To select a column, 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.

5.3.25.4 Adding dimension hierarchy

The **Add Dimension Hierarchy** dialog allows you to define a linear hierarchy of levels in the dimension. Each hierarchy forms a chain of parent-child relationships among the existing [levels](#) in the dimension. Hierarchies in a dimension are independent of each other.

Add Dimension Hierarchy

Hierarchy name:

Hierarchy levels

Level as Child	Level as Parent
CHANNEL	CHANNEL
CHANNEL_CLASS	CHANNEL_CLASS
CHANNEL_TOTAL	CHANNEL_TOTAL
LEVEL1	LEVEL1

Links Between Child and Parent Levels

CHANNEL CHILD OF CHANNEL_CLASS

Join keys

Table schema: Level to reference:

Table name:

Available Columns	Selected Columns
PROD_ID	CHANNEL_ID
CUST_ID	
TIME_ID	
PROMO_ID	
QUANTITY_SOLD	

Join Key Column(s)	Level to Reference
CHANNEL_ID	CHANNEL

Hierarchy name

Specify the name of the hierarchy. This name must be unique in the dimension.

Hierarchy levels

Specify the name of a [level](#) that has a $n:1$ relationship with a parent level:

- select a child level in the **Level as Child** list;
- select the corresponding parent level in the **Level as Parent** list;
- click the **Add** button to set relationship between the selected levels;
- the pair of levels appears in the list below;
- repeat the operation for all the necessary levels.

To remove a relationship, select the pair of levels in the list below and press the **Remove** button.

Join keys

Here you can specify an inner join relationship for a dimension whose columns are contained in multiple tables. Setting this relationship is required and permitted only when the columns specified in the hierarchy are not all in the same table.

Table schema / Table name

Use the drop-down lists to select the *schema* and the *table* to select columns for the join relationship.

Level to reference

Use the drop-down list to specify the name of a parent level.

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.

Specify one or more columns that are join-compatible with columns in the parent level and press the **Add** button. To remove a column, select it in the **Join key column(s)** list and press the **Remove** button.

5.3.26 Queue

Queue is an abstract storage unit used by a messaging system to store messages.

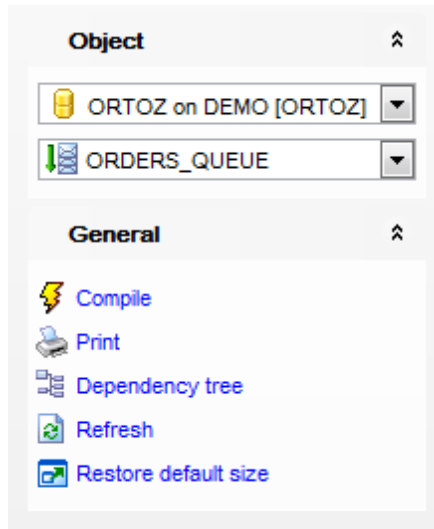
Queue Editor allows you to define queue properties. It opens automatically when you create a new queue and is available on editing an existing one.

To open a queue in **Queue Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing queue](#)
- [Adding Subscribers](#)
- [Schedules](#)
- [Viewing DDL definition](#)

5.3.26.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a queue for editing

General

-  [compile](#) the queue (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the queue
-  view the [dependency tree](#) for the queue
-  refresh the content of the active tab
-  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 Java resource:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.26.2 Creating/editing queue

Use the **Queue** tab of **Queue Editor** to create/edit a queue and specify its properties.

Name

Name of the queue that is to be created.

Schema

Use the drop-down list to specify the schema in which the queue will be created.

The screenshot shows the 'New Queue' dialog box. On the left, there's a 'Database' section with a dropdown set to 'ORTOZ on DEMO [ORTOZ]' and a 'General' section with 'Compile' and 'Restore default size' buttons. The main area has tabs for 'Queue', 'Subscribers', 'Schedules', 'Description', and 'DDL'. The 'Queue' tab is selected, displaying the following fields:

- Name:** QUEUE1
- Schema:** IX
- Queue table name:** (empty dropdown)
- Queue type:** NORMAL_QUEUE
- Max retries:** 0
- Retry delay:** 0
- Retention time:** 0
- Enqueue enabled:** ☐
- Dequeue enabled:** ☒

Queue table name

Name of the queue table that will contain the queue.

Queue type

Use this drop-down list to define queue type: *normal queue*, *exception queue* or *non-persistent queue*.

Max retries

Limits the number of times a dequeue with the REMOVE mode can be attempted on a message.

Retry delay

Delay time, in seconds, before this message is scheduled for processing again after an application rollback.

Retention time

Number of seconds for which a message is retained in the queue table after being dequeued from the queue.

☒ Enqueue enabled

Check the option to enable enqueue operations with this queue.

 Dequeue enabled

Check the option to enable dequeue operations with this queue.

5.3.26.3 Adding Subscribers

This tab allows you to define subscribers.

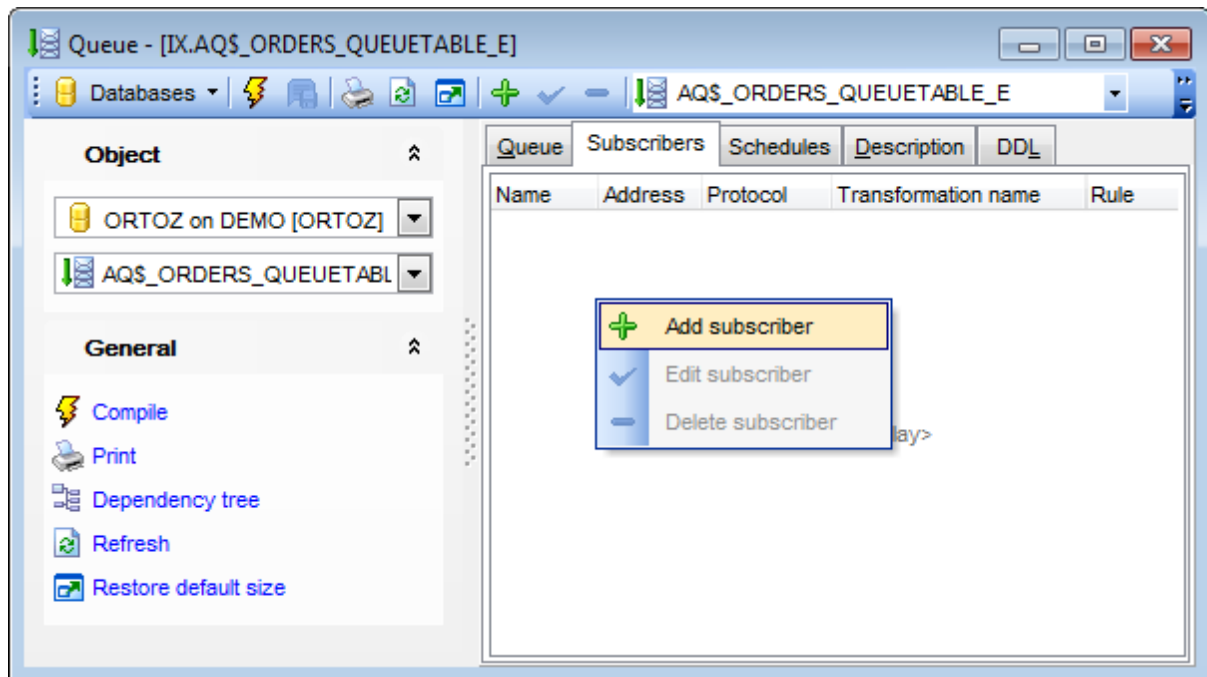


Table contains the list of persons who will receive queue messages.

To create a subscriber use the **+ Add subscriber** item of the context menu.

Name

Defines subscriber's name.

Address

Protocol-specific address of the recipient. If the protocol is 0, then the address is of the form [schema.]queue[@dblink]. For example, a queue named emp_messages in the HR queue at the site dbs1.net has the address: hr.emp_messages@dbs1.net

Protocol

Protocol to interpret the address and propagate the message. Protocols 1-127 are reserved for internal use. If the protocol number is in the range 128 - 255, the address of the recipient is not interpreted by Oracle Streams AQ.

Transformation name

Specifies a transformation that will be applied when this subscriber dequeues the message. The source type of the transformation must match the type of the queue. If the subscriber is remote, then the transformation is applied before propagation to the remote queue.

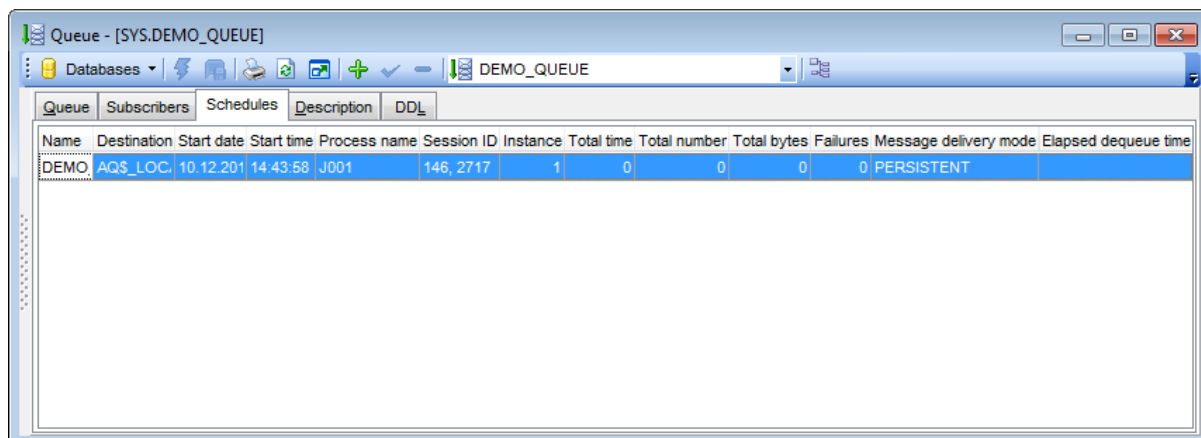
Rule

A conditional expression based on the message properties, the message data properties and PL/SQL functions. A rule is specified as a Boolean expression using syntax similar to the WHERE clause of a SQL query.

It is possible to  **Edit** and  **Delete** subscribers. Select the needed subscriber and use the corresponding context menu item.

5.3.26.4 Schedules

This tab displays detailed information about queue events.



Name	Destination	Start date	Start time	Process name	Session ID	Instance	Total time	Total number	Total bytes	Failures	Message delivery mode	Elapsed dequeue time
DEMO	AQ\$_LOC	10.12.201	14:43:58	J001	146, 2717	1	0	0	0	0	PERSISTENT	

5.3.27 Queue Table

Queue table is a database table where queues are stored. Each queue table contains a default exception queue.

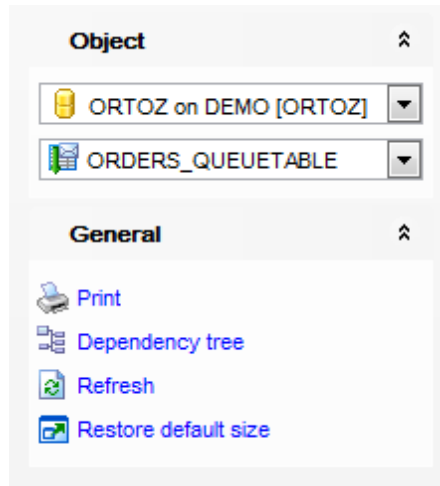
Queue Table Editor allows you to define queue properties. It opens automatically when you create a new queue and is available on editing an existing one.

To open a queue in **Queue Table Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing queue table](#)
- [Defining Physical Attributes](#)
- [Statistics](#)
- [Viewing DDL definition](#)

5.3.27.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Queue Table Editor** allows you to:

Object

-  select a database
-  select a queue table for editing

General

-  [compile](#) the queue table (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the queue table
-  view the [dependency tree](#) for the queue table
-  refresh the content of the active tab
-  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:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.3.27.2 Creating/editing queue table

Use the **Queue Table** tab of **Queue Table Editor** to create/edit a queue and specify its properties.

Name

Name of a queue table to be created

Schema

Use the drop-down list to specify the schema in which the queue table will be created.

Payload type

Use this section to specify type of the user data to be stored.

☒ Row

Indicates that RAW type will be used to store data in the queue table.

☐ Object type

Select this option to use an object type to store data in the queue table. Use the **Schema** and **Name** drop down lists to define the object type.

Compatible

Specify the lowest database version with which the queue is compatible.

Primary instance

The primary owner of the queue table. Queue monitor scheduling and propagation for the queues in the queue table are done in this instance. The default value for primary instance is 0, which means queue monitor scheduling and propagation will be done in any available instance.

Secondary instance

The queue table fails over to the secondary instance if the primary instance is not available. The default value is 0, which means that the queue table will fail over to any available instance.

Sort list

The columns to be used as the sort key in ascending order. This parameter has the following format: 'sort_column_1,sort_column_2'.

☒ **Multiple consumers**

If the option is enabled then queues created in the table can have multiple consumers for each message.

☒ **Message grouping**

Defines message grouping behavior for queues created in the table. If the option is disabled each message will be treated individually. If the option is enabled, messages enqueued as part of one transaction are considered part of the same group and can be dequeued as a group of related messages.

☒ **Secure**

Enable this option if you want to use the queue table for secure queues. This option is available only for server version 8.1 or higher.

5.3.27.3 Defining Physical Attributes

The **Physical attributes** tab is provided for setting up physical attributes for the new queue table.

The physical properties relate to the treatment of extents and segments and to the storage characteristics of the table.

The screenshot shows the 'New Queue Table' dialog box with the 'Physical Attributes' tab selected. The left sidebar shows the 'Database' dropdown set to 'ORTOZ on DEMO' and the 'General' section expanded with 'Compile' and 'Restore default size' buttons. The main area contains the following settings:

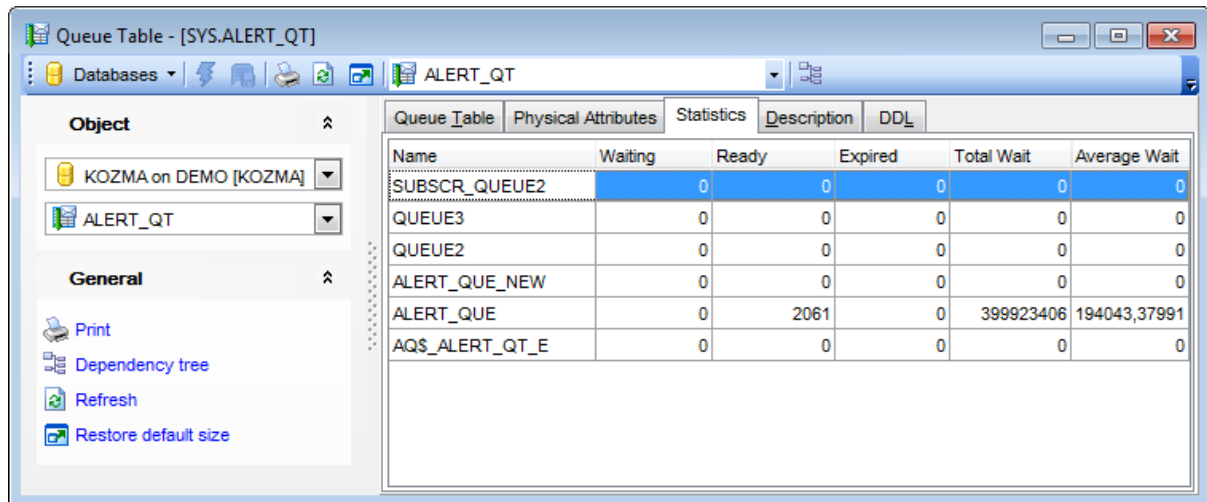
- Physical attributes**
 - Tablespace: < Default >
 - Buffer pool: RECYCLE
 - Initial number of transactions: DEFAULT
- Extents**
 - Initial extent: DEFAULT bytes
 - Next extent: DEFAULT bytes
 - Percent increase: DEFAULT %
 - Minimum extents: DEFAULT
 - Maximum extents: DEFAULT
- Space usage**
 - Percent free: DEFAULT
 - Percent used: DEFAULT
- Free lists**
 - Free lists: DEFAULT
 - Groups: DEFAULT
- Parallel**
 - ☒ Default
 - ☐ No parallel
 - ☐ Parallel
- Parallel options**
 - Degree: DEFAULT
 - Instances: 0
- Data storage options**
 - ☐ Compress data
 - ☐ Enable row movement
- Compress for**
 - ☒ All operation
 - ☐ Direct load operation

For more information refer to the [Storage attributes](#) page.

5.3.27.4 Statistics

At this tab you can view statistics of queues belonging to this queue table.

Table contains queue **Name**, number of messages waiting, ready, expired and total/average time messages in this queue were waiting.



Name	Waiting	Ready	Expired	Total Wait	Average Wait
SUBSCR_QUEUE2	0	0	0	0	0
QUEUE3	0	0	0	0	0
QUEUE2	0	0	0	0	0
ALERT_QUE_NEW	0	0	0	0	0
ALERT_QUE	0	2061	0	399923406	194043,37991
AQS_ALERT_QT_E	0	0	0	0	0

5.4 Non-schema objects

Other types of objects are also stored in the database and can be created and manipulated with SQL, but are not contained in a schema:

- [Contexts](#)
- [Profiles](#)
- [Consumer Groups](#)
- [Resource Plans](#)
- [Directories](#)
- [Tablespaces](#)
- [Rollback Segments](#)
- [Redo Log Groups](#)
- [Scheduler Schedules](#)
- [Scheduler Programs](#)
- [Scheduler Chains](#)
- [Scheduler Job Classes](#)
- [Scheduler Jobs](#)
- [Scheduler Window Groups](#)
- [Scheduler Windows](#)

Use the [DB Explorer](#) tree to [navigate](#) within the database(s) and the objects.

See also:

[Operations with database objects](#)

[New Object dialog](#)

[Duplicate Object Wizard](#)

[Schema Objects](#)

[Users and Roles](#)

5.4.1 Contexts

A **Context** is a set of application-defined attributes that validates and secures an application.

Using Context Editor you can create a namespace for a context and associate the namespace with the externally created [package](#) that sets the context.

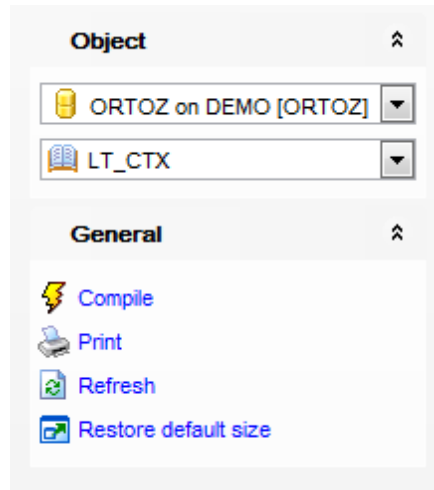
Context Editor allows you to define context properties. It opens automatically when you create a new context and is available on editing an existing one.

To open a context in **Context Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing context](#)
- [Viewing DDL definition](#)

5.4.1.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a context for editing

General

- [compile](#) the context (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the context
- view the [dependency tree](#) for the context
- refresh the content of the active tab
- 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 context:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

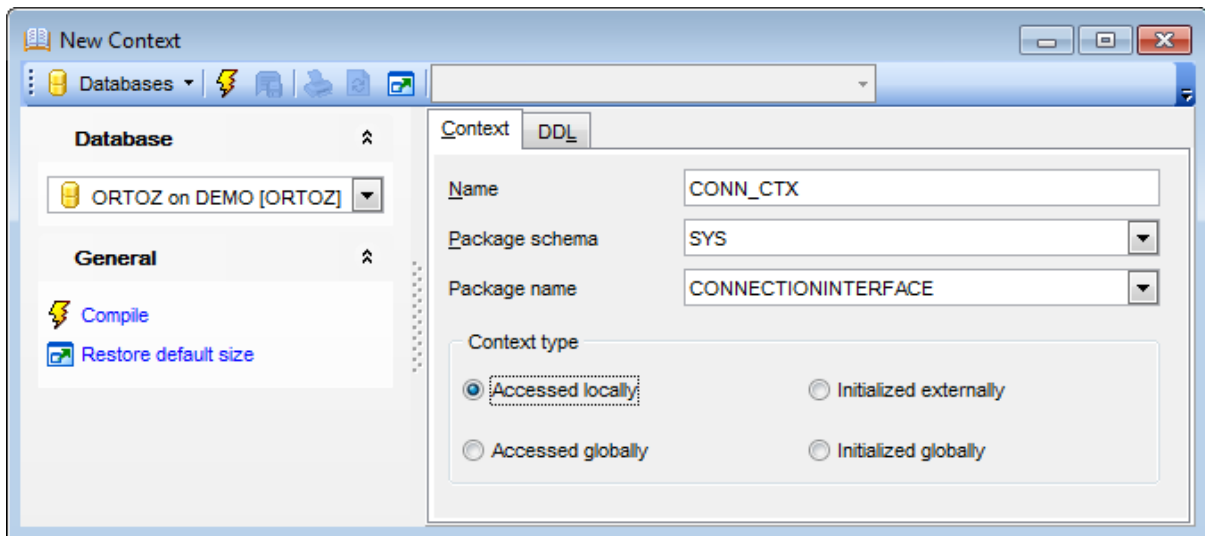
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.1.2 Creating/editing context

Use the **Context** tab of **Context Editor** to create/edit a context namespace and specify its properties.

Name

Specify the name of the context namespace to create or modify. Context namespaces are always stored in the *SYS* schema.



Package schema

Use the drop-down list to specify the schema owning package.

Package name

Use the drop-down list to specify the PL/SQL [package](#) that sets or resets the context attributes under the namespace for a user session.

Context type

Use this group to specify an entity other than Oracle Database that can initialize the context namespace.

☒ Accessed locally

Indicates that the namespace can be accessed locally.

☐ Accessed globally

Indicates that any application context set in the namespace is accessible throughout the entire instance. This setting lets multiple sessions share application attributes.

☐ Initialized externally

Indicates that the namespace can be initialized using an OCI interface when establishing a session.

☐ Initialized globally

Indicates that the namespace can be initialized by the LDAP directory when a global user connects to the database. After the session is established, only the designated PL/SQL

package can issue commands to write to any attributes inside the namespace.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.2 Profiles

A **Profile** is a set of limits on database resources. If a profile is assigned to a [user](#), then that user cannot exceed these limits.

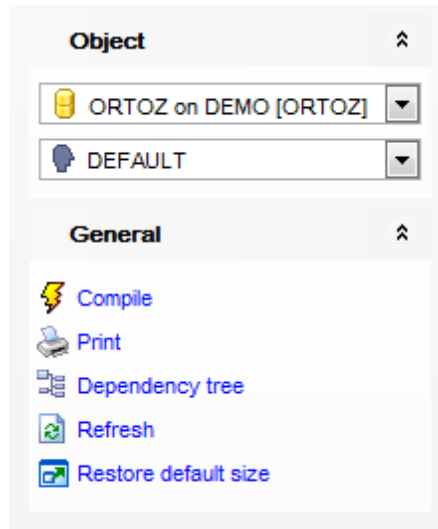
Profile Editor allows you to define profile properties. It opens automatically when you create a new profile and is available on editing an existing one.

To open a profile in **Profile Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing profile](#)
- [Viewing DDL definition](#)

5.4.2.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a profile for editing

General

-  [compile](#) the profile (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the profile
-  view the [dependency tree](#) for the profile
-  refresh the content of the active tab
-  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 profile:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.2.2 Creating/editing profile

Use the **Profile** tab of **Profile Editor** to create/edit a profile and specify its properties.

Name

Specify the name of the profile to be created, or view the name of the profile being edited.

New Profile

Database: ORTOZ on DEMO

General: Compile, Restore default size

Profile | DDL | Permissions

Name: PROFILE1

Resource parameters

Sessions per user	5	concurrent sessions
CPU per session	DEFAULT	milliseconds
CPU per call	DEFAULT	milliseconds
Connect time	DEFAULT	minutes
Idle time	UNLIMITED	minutes
Logical reads per session	UNLIMITED	data blocks
Logical reads per call	UNLIMITED	data blocks
Composite limit	10	service units
Private SGA	DEFAULT	bytes

Password parameters

Failed login attempts	5	times
Password lifetime	365	days
Password reuse time	30	days
Password reuse max	2	times
Password lock	DEFAULT	days
Password grace time	DEFAULT	days
Password verify function	NULL	(function name)

Specify *resource* and *password parameters* using the corresponding groups.

Select *DEFAULT* from the drop-down list if you want to omit a limit for this resource in this profile. A user assigned this profile is subject to the limit for this resource specified in the *DEFAULT* profile.

When specified with a **resource parameter**, *UNLIMITED* indicates that a user assigned this profile can use an unlimited amount of this resource. When specified with a **password parameter**, *UNLIMITED* indicates that no limit has been set for the parameter.

Resource parameters

Sessions per user

Specify the number of concurrent sessions to which you want to limit the [user](#), or select *DEFAULT* or *UNLIMITED* from the drop-down list.

CPU per session

Specify the CPU time limit (in milliseconds) for a session, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

CPU per call

Specify the CPU time limit (in milliseconds) for a call (a parse, execute, or fetch), or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Connect time

Specify the total elapsed time limit (in minutes) for a session, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Idle time

Specify the permitted periods of continuous inactive time (in minutes) during a session, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Logical reads per session

Specify the permitted number of data blocks read in a session, including blocks read from memory and disk, or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Logical reads per call

Specify the permitted number of data blocks read for a call to process a SQL statement (a parse, execute, or fetch), or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Composite limit

Specify the total resource cost for a session (expressed in service units), or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Private SGA

Specify the amount of private space a session can allocate in the shared pool of the system global area ([SGA](#)), or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

Password parameters

Failed login attempts

Specify the number of failed attempts to log in for the [user](#) account before the account is locked, or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Password lifetime

Specify the number of days the same password can be used for authentication, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Password reuse time

Specifies the number of days before which a password cannot be reused, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Password reuse max

Specifies the number of password changes required before the current password can be reused, or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Password lock

Specify the number of days an account will be locked after the specified number of consecutive failed login attempts, or select *DEFAULT* or *UNLIMITED* from the drop-down list. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Password grace time

Specify the number of days after the grace period begins during which a warning is issued and login is allowed, or select *DEFAULT* or *UNLIMITED* from the drop-down list. If the password is not changed during the grace period, the password expires. For your convenience the *Time calculator* is implemented: click the arrow-down button to call the *Time calculator* popup window.

Password verify function

Lets a PL/SQL password complexity verification script be passed as an argument to the CREATE PROFILE statement, or select *DEFAULT* or *NULL* from the drop-down list.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.3 Consumer Groups

Consumer groups let you group user sessions together by resource requirements. Resource consumer groups are different from user [roles](#); one database [user](#) can have different sessions assigned to different resource consumer groups.

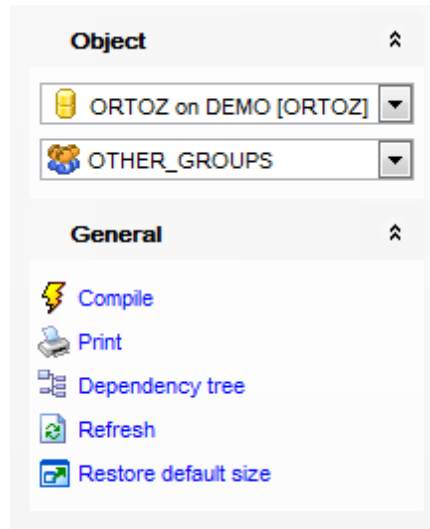
Consumer Group Editor allows you to define consumer group properties. It opens automatically when you create a new consumer group and is available on editing an existing one.

To open a consumer group in **Consumer Group Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing consumer group](#)
- [Editing object description](#)
- [Viewing DDL definition](#)

5.4.3.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Consumer Group Editor** allows you to:

Object

- select a database
- select a consumer group for editing

General

- [compile](#) the consumer group (if it is being created/modified)
- save the consumer group [description](#) (if it has been modified)
- set [printing options](#) to [print metadata](#) of the consumer group
- view the [dependency tree](#) for the consumer group
- refresh the content of the active tab
- 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 consumer group:

Description

- save object [description](#) to file
- copy [description](#) to clipboard

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

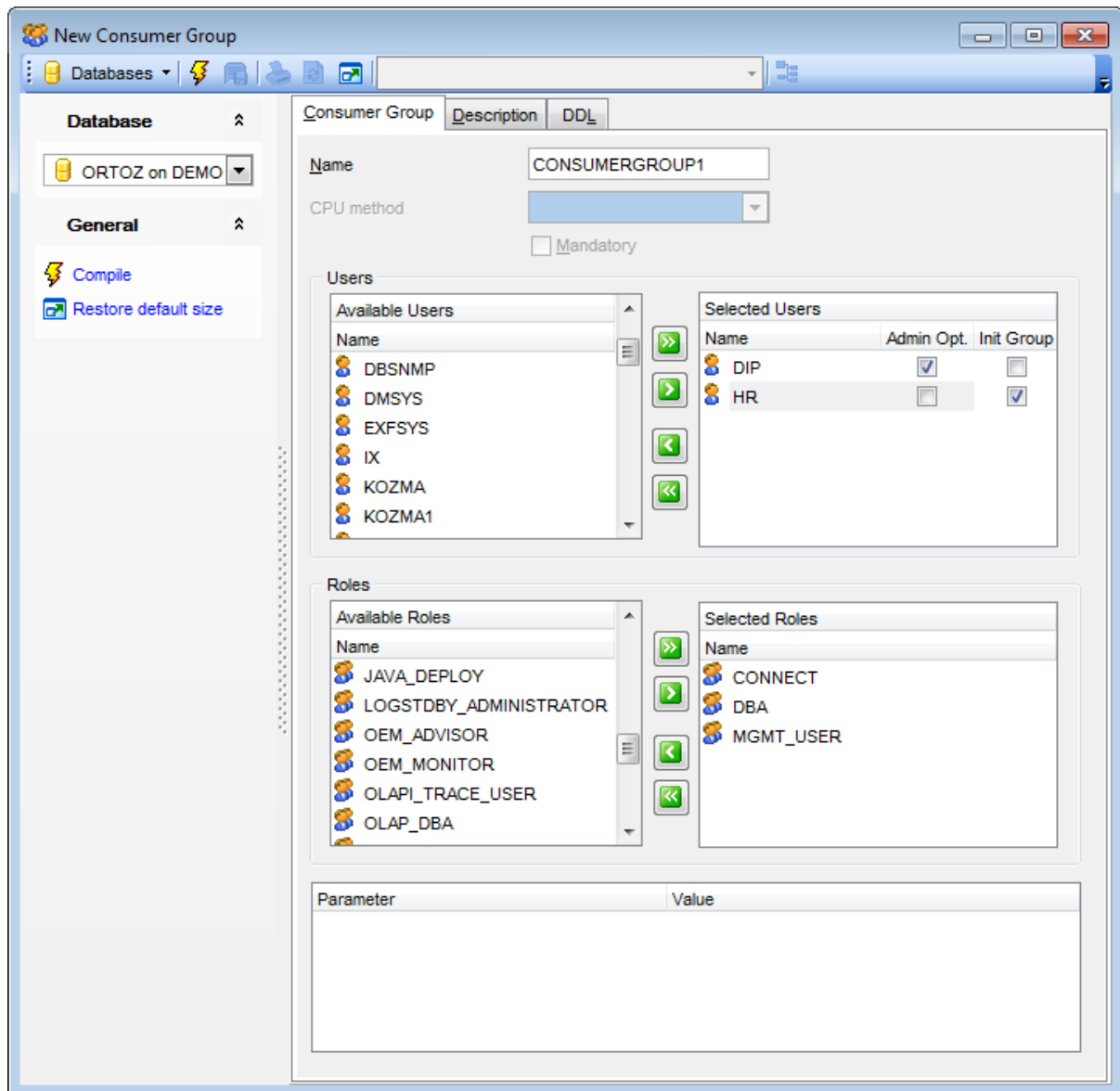
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.3.2 Creating/editing consumer group

Use the **Consumer Group** tab of **Consumer Group Editor** to create/edit a consumer group and specify its properties.

Name

Specify the name of the consumer group to be created, or view the name of the consumer group being edited.



CPU method

This control is not editable as it is not currently supported by the server.

This box indicates the resource allocation method for distributing CPU among sessions in the consumer group:

ROUND-ROBIN (uses a round-robin scheduler to ensure sessions are fairly executed) - applied by default;

RUN-TO-COMPLETION (specifies that sessions with the largest active time are scheduled ahead of other sessions) - not supported yet.

☒ **Mandatory** indicates whether the consumer group being edited is mandatory or not.

The **Users** and **Roles** groups allow you to form the consumer group by selecting its [users](#) and [roles](#).

To select a user/role, you need to move it from the **Available Users** / **Available Roles** list to the **Selected Users** / **Selected Roles** list. Use the     buttons or drag-and-drop operations to move the users and roles from one list to another.

☒ **Admin opt**

If this flag is set for a user, the user granted a switch privilege for the consumer group may also grant the switch privilege for that consumer group to others.

☒ **Init group**

The initial consumer group of a user is the consumer group to which any session created by that user initially belongs.

If this flag is set for a user, the consumer group is set as initial resource consumer group for the user.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.4 Resource Plans

Resource plans are used in Oracle to determine allocation of processing resources. One of the advantages of plans is that they can refer to each other. The entries in a plan can either be [consumer groups](#) or subplans.

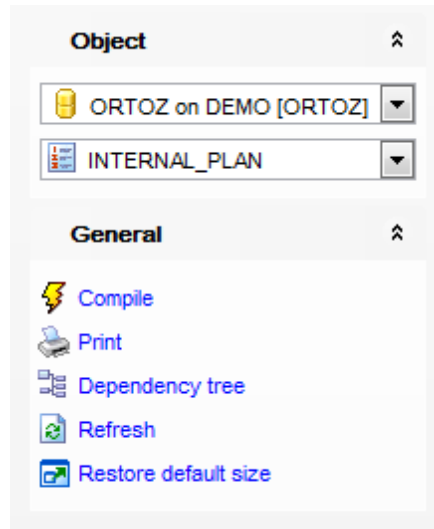
Resource Plan Editor allows you to define resource plan properties. It opens automatically when you create a new resource plan and is available on editing an existing one.

To open a resource plan in **Resource Plan Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing resource plan](#)
- [Directive Options](#)
- [Directive Comments](#)
- [Editing object description](#)
- [Viewing DDL definition](#)

5.4.4.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Resource Plan Editor** allows you to:

Object

-  select a database
-  select a resource plan for editing

General

-  [compile](#) the resource plan (if it is being created/modified)
-  save the resource plan [description](#) (if it has been modified)
-  set [printing options](#) to [print metadata](#) of the resource plan
-  view the [dependency tree](#) for the resource plan
-  refresh the content of the active tab
-  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 resource plan:

Description

-  save object [description](#) to file
-  copy [description](#) to clipboard

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

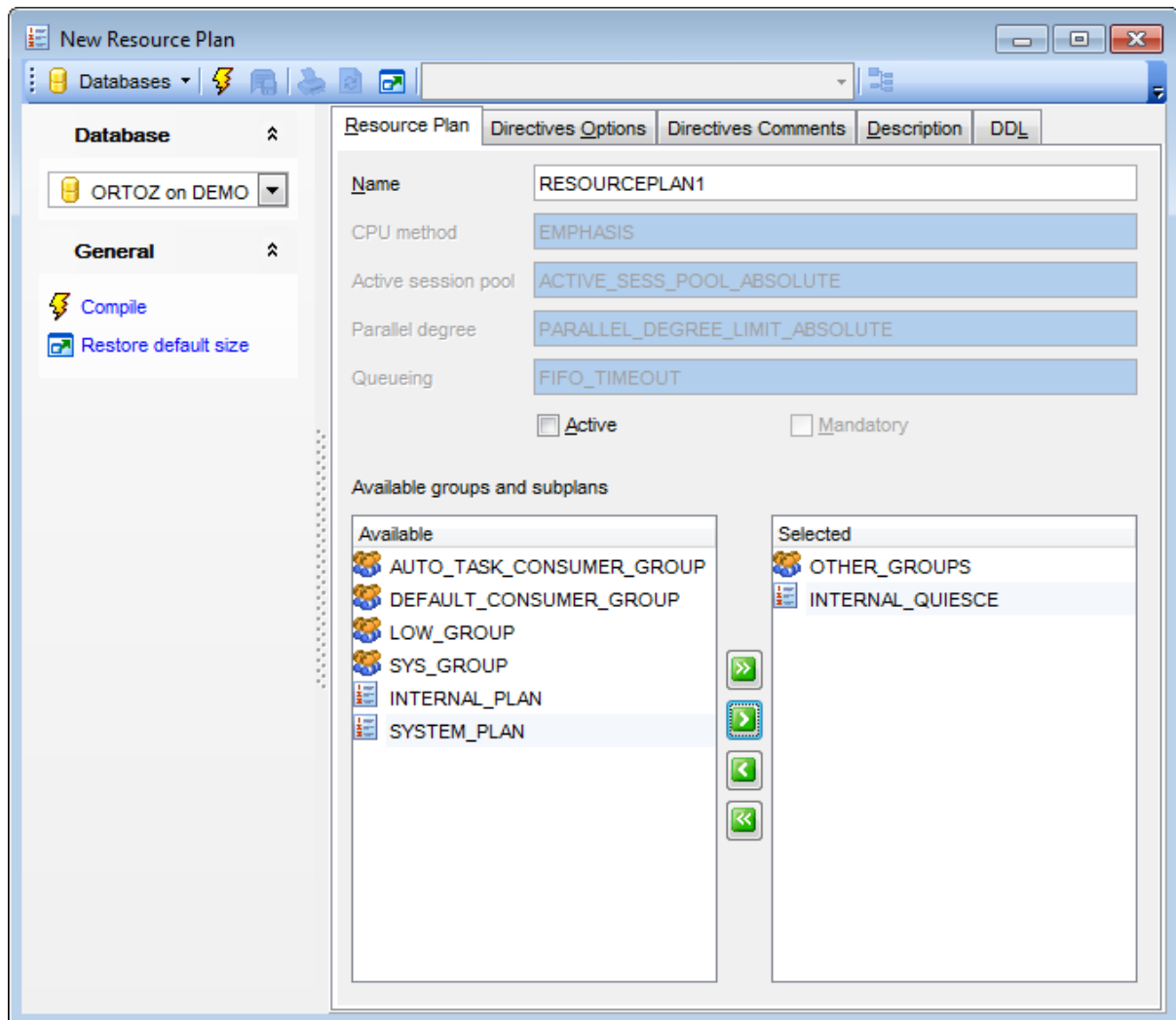
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.4.2 Creating/editing resource plan

Use the **Resource Plan** tab of **Resource Plan Editor** to create/edit a resource plan and specify its properties.

Name

Specify the name of the resource plan to be created, or view the name of the resource plan being edited.



CPU method

Use this box to view the resource allocation method for specifying how much CPU each consumer group or sub plan gets:

EMPHASIS (the default method, for multilevel plans that use percentages to specify how CPU is distributed among consumer groups);

RATIO (for single-level plans that use ratios to specify how CPU is distributed).

Active session pool

Use this box to view the active session pool resource allocation method which limits the number of active sessions. All other sessions are inactive and wait in a queue to be

activated. *ACTIVE_SESS_POOL_ABSOLUTE* used by default is the only available method.

Parallel degree

Use this box to view the resource allocation method for specifying a limit on the degree of parallelism of any operation. *PARALLEL_DEGREE_LIMIT_ABSOLUTE* used by default is the only available method.

Queueing

Use this box to view the queuing resource allocation method which controls the order in which queued inactive sessions will execute. *FIFO_TIMEOUT* used by default is the only available method.

☒ **Active**

Select this option to activate the resource plan immediately after compiling.

☒ **Mandatory**

Indicates whether the resource plan being edited is mandatory or not.

Available groups and subplans

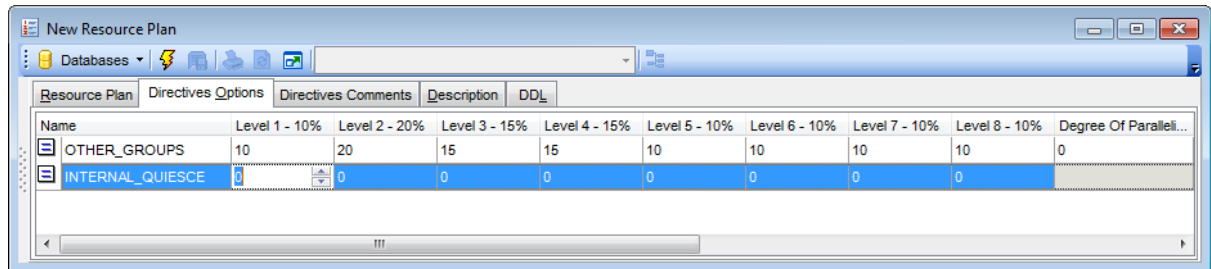
This area allows you to select existing [consumer groups](#) and resource plans as subplans for resource plan being created/edited.

To select a group/subplan, 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.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.4.3 Directives options

Use the **Directives Options** tab of **Resource Plan Editor** to set a number of parameters (directives options) for each of the previously added consumer groups / subplans.



Name

The name of the consumer group or subplan.

Level 1 - Level 8

Specify the CPU percentage at the corresponding level (for *EMPHASIS* CPU method).

Degree Of Parallelism

Specify a limit on the degree of parallelism for any operation.

Active Session Pool

Specify the maximum number of concurrently active sessions for the consumer group.

Timeout

Specify time (in seconds) after which a job in the inactive session queue (waiting for execution) will time out.

Max Undo Pool

Set a maximum in kilobytes (K) on the total amount of undo generated by the consumer group.

Max Execution Time

Specify the maximum execution time (in seconds) allowed for a session.

Switch Group

Specify the [consumer group](#) to which this session is switched if other switch criteria are met.

Switch Time

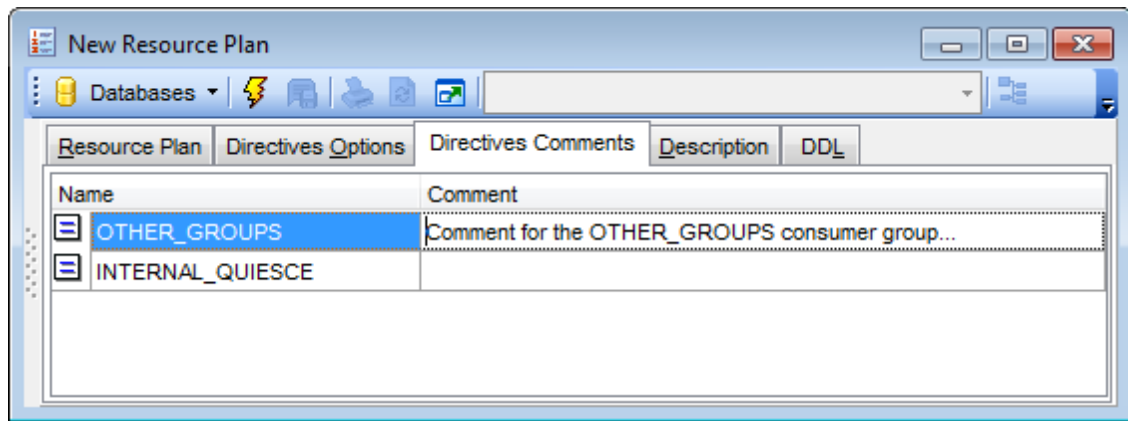
Specify time (in seconds) that a session can execute before an action is taken.

Switch Estimate

If checked, Oracle uses its execution time estimate to automatically switch the consumer group of an operation before beginning its execution.

5.4.4.4 Directive comments

Use the **Directives Comments** tab of **Resource Plan Editor** to set optional comments to consumer group / subplan directives of the resource plan.



5.4.5 Directories

A **Directory** database object specifies an alias for a directory on the server file system where external binary file LOBs (BFILEs) and external table data are located. You can use directory names when referring to BFILEs in your PL/SQL code and OCI calls, rather than hard coding the operating system path name, for management flexibility.

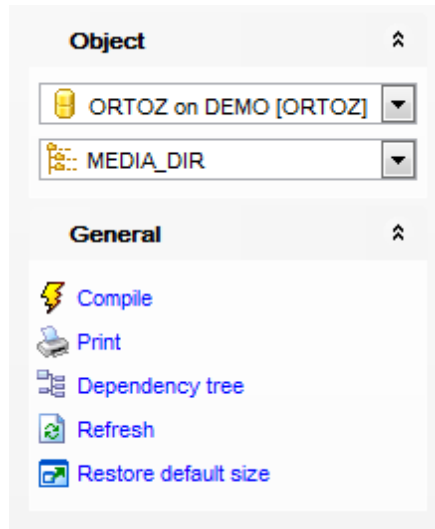
Directory Editor allows you to define directory properties. It opens automatically when you create a new directory and is available on editing an existing one.

To open a directory in **Directory Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing directory](#)
- [Viewing DDL definition](#)

5.4.5.1 Using Navigation bar and Toolbar

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



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

Object

-  select a database
-  select a directory for editing

General

-  [compile](#) the directory (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the directory
-  view the [dependency tree](#) for the directory
-  refresh the content of the active tab
-  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 directory:

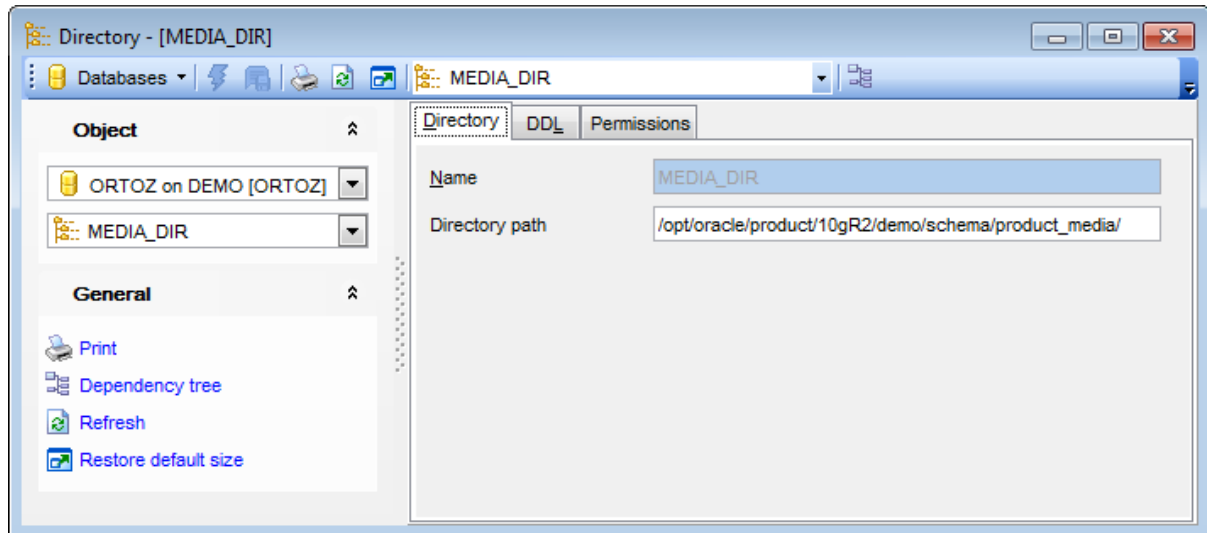
DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.5.2 Creating/editing directory

Use the **Object** tab of **Directory Editor** to create/edit a directory database object and specify its properties.



Name

Specify the name of the directory to be created, or view the name of the directory being edited. The maximum length of a directory is 30 bytes.

Directory path

Specify the full path name of the operating system directory of the server where the files are located. Note that the path name is case sensitive.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.6 Tablespaces

A **Tablespace** is an allocation of space in the database that can contain [schema objects](#).

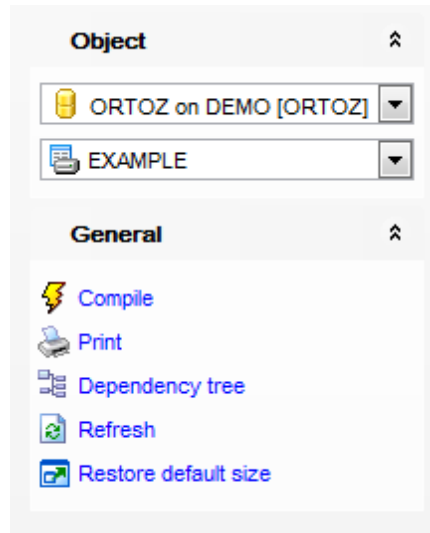
Tablespace Editor allows you to define tablespace properties. It opens automatically when you create a new tablespace and is available on editing an existing one.

To open a tablespace in **Tablespace Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing tablespace](#)
- [Managing files](#)
- [Managing objects](#)
- [Browsing object dependencies](#)
- [Viewing DDL definition](#)

5.4.6.1 Using Navigation bar 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

-  select a database
-  select a tablespace for editing

General

-  [compile](#) the tablespace (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the tablespace
-  view the [dependency tree](#) for the tablespace
-  refresh the content of the active tab
-  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 tablespace:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.6.2 Creating/editing tablespace

Use the **Tablespace** tab of **Tablespace Editor** to create/edit a tablespace and specify its properties.

Name

Specify the name of the tablespace to be created, or view the name of the tablespace being edited.

Tablespace type

☒ **Permanent**

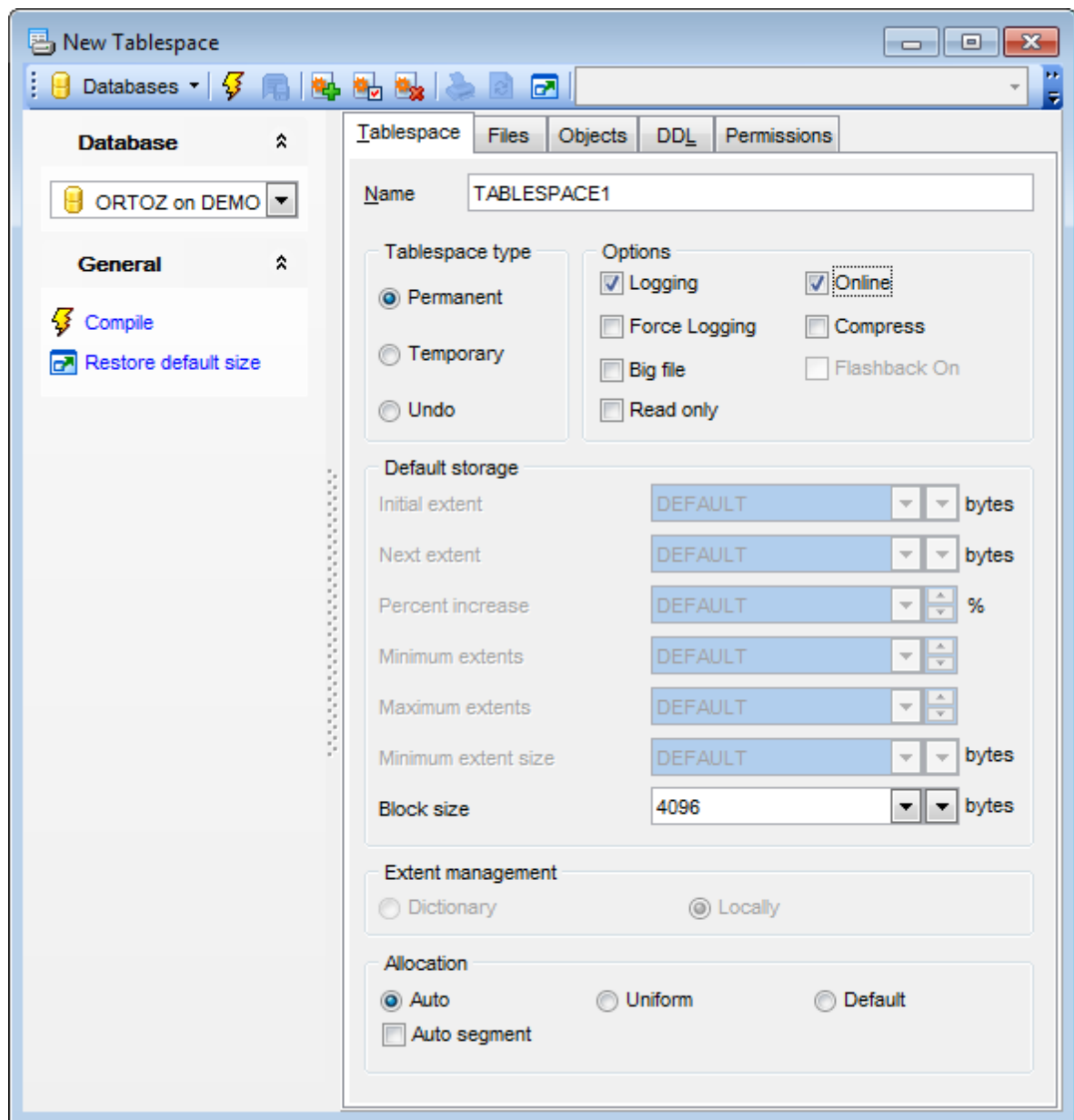
Contains persistent schema objects. Objects in permanent tablespaces are stored in datafiles.

☐ **Temporary**

Contains schema objects only for the duration of a session. Objects in temporary tablespaces are stored in tempfiles.

☐ **Undo**

A type of permanent tablespace used by Oracle Database to manage undo data if you are running your database in automatic undo management mode.



Options

☒ Logging

Check the option to set the default logging attributes of all [tables](#), [indexes](#), [materialized views](#), [materialized view logs](#), and partitions within the tablespace.

☒ Force logging

Use this option to put the tablespace into *FORCE LOGGING* mode. Oracle Database will log all changes to all objects in the tablespace except changes to temporary segments, overriding any *NOLOGGING* setting for individual objects.

☒ Big file

Use this option to specify that the tablespace is a bigfile tablespace. A bigfile tablespace

contains only one datafile or tempfile, which can contain up to approximately 4 billion (232) blocks with the maximum size of the single datafile or tempfile is 128 terabytes (TB) (for a tablespace with 32K blocks).

☒ **Online**

If this option is selected, the tablespace is available immediately after creation to [users](#) who have been [granted](#) access to the tablespace.

☒ **Compress**

This option allows you to specify the default compression of data for all [tables](#) created in the tablespace (not valid for a temporary tablespace).

☒ **Flashback on**

This option reflects the flashback mode value and can't be modified.

Default storage

Valid only for a dictionary-managed tablespace. This group lets you specify default storage parameters for all objects created in the tablespace: *Initial extent*, *Next extent*, *Percent increase*, *Minimum extents*, *Maximum extents*, *Minimum extent size*.

For more information see [Storage attributes](#).

Block size

This box allows you to specify a nonstandard block size (in bytes) for the tablespace. The following values are available in the drop-down list: *DEFAULT*, *2048*, *4096*, *8192*, *16384*, *32768*. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

Extent management

☒ **Dictionary**

Use this option if you want the tablespace to be managed using dictionary tables. In this case you should set the **Default storage** parameters.

☒ **Locally**

Select this option if you want the tablespace to be locally managed. Locally managed tablespaces have some part of the tablespace set aside for a bitmap.

Note: Oracle strongly recommends that you create only locally managed tablespaces which are more efficiently managed than dictionary-managed tablespaces.

Allocation

☒ **Auto**

Specifies that the tablespace is system managed. Users cannot specify an extent size.

☒ **Uniform**

Specifies that the tablespace is managed with uniform extents of amount of bytes set in the **Block size** field of the **Default storage** group.

☒ **Default**

Check the option to use default settings for tablespace management.

☒ **Auto segment**

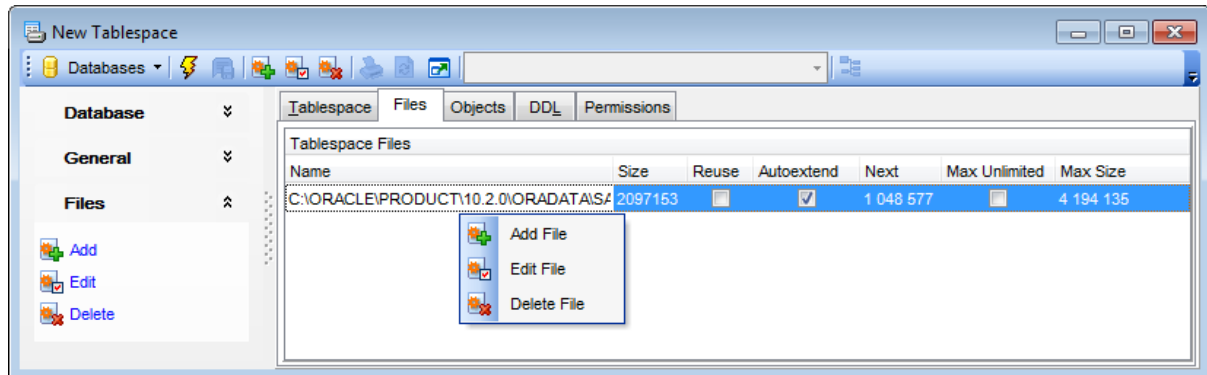
Use the option if you want the database to manage the free space of segments in the

tablespace using a bitmap. If you check this option, the database will ignore any specification for PCTUSED, FREELIST, and FREELIST GROUPS in subsequent storage specifications for objects in this tablespace.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.6.3 Managing files

Use the **Files** tab of **Tablespace Editor** to manage the list of *datafiles* (for the permanent tablespace) or *tempfiles* (for the temporary tablespace).



The list displays the files as a grid with the following columns: *Name*, *Size*, *Reuse*, *Autoextend*, *Next*, *Max unlimited*, *Max size*. 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.

Right-click an item within the list to call the **context menu** allowing you to *add* a new file and specify its properties using the **New File** dialog, *edit* the selected file using the **Edit File** dialog, or *delete* the selected file.

File management tools are also available through the [Navigation bar](#) of **Tablespace Editor**.

Adding / editing a file

The **New File** / **Edit File** dialog allows you to specify *datafile* and *tempfile* attributes.

The screenshot shows a 'New File' dialog box with the following fields and options:

- File Name:** datafile01
- Path:** C:\ORACLE\PRODUCT\10.2.0\ORADATA\SAMPLEDB
- File size:** 2 097 153 (with up/down arrows and a 'Reuse' checkbox)
- Auto extend property:**
 - ☒ Auto extend
 - Next size:** 1 048 577 (with up/down arrows and a 'byte' unit label)
 - ☐ Unlimited maximum size
 - Maximum size:** 4 194 135 (with up/down arrows and a 'byte' unit label)
- Buttons:** OK, Cancel

File Name

Specifies the name of either a datafile or tempfile.

Size

Specify the size of the file (in bytes). For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

☒ **Reuse**

Select this option to allow Oracle to reuse an existing file.

Auto extend property☒ **Auto extend**

Enables or disables the automatic extension of a new or existing datafile or tempfile.

Next size

Specify the size (in bytes) of the next increment of disk space to be allocated automatically when more extents are required. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

☒ **Unlimited maximum size**

Check the option if you do not want to limit the disk space that Oracle can allocate to the datafile or tempfile.

Maximum size

Specify the maximum disk space allowed for automatic extension of the datafile. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

5.4.6.4 Managing objects

Use the **Objects** tab of **Tablespace Editor** to manage the list of database objects allocated in the tablespace.

Tablespace Files Objects Dependencies DDL					
Objects					
Owner	Name	Object type	Created	Last DDL	
HR	REGIONS	Table	17.03.2010 23:11:55	17.03.2010 23:11:56	
HR	REG_ID_PK	Index	17.03.2010 23:11:55	17.03.2010 23:11:55	
HR	COUNTRY_C_ID_PK	Index	17.03.2010 23:11:56	17.03.2010 23:11:56	
HR	LOCATIONS	Table	17.03.2010 23:11:57	17.03.2010 23:12:50	
HR	LOC_ID_PK	Index	17.03.2010 23:11:57	17.03.2010 23:11:57	
HR	LOC_CITY_IX	Index	17.03.2010 23:11:58	17.03.2010 23:11:58	
HR	LOC_STATE_PROVINCE_IX	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	LOC_COUNTRY_IX	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	DEPARTMENTS	Table	17.03.2010 23:11:59	17.03.2010 23:12:51	
HR	DEPT_ID_PK	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	DEPT_LOCATION_IX	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	JOBS	Table	17.03.2010 23:11:59	17.03.2010 23:12:51	
HR	JOB_ID_PK	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	EMPLOYEES	Table	17.03.2010 23:11:59	17.03.2010 23:12:50	
HR	EMP_EMAIL_UK	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	EMP_EMP_ID_PK	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	
HR	EMP_DEPARTMENT_IX	Index	17.03.2010 23:11:59	17.03.2010 23:11:59	

The list displays the objects as a grid with the following columns: *Owner*, *Name*, *Object type*, *Size(Mb)*, *Created*, *Last DDL*. 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.

Right-click an item within the list to call the **context menu** allowing you to *edit* the selected object using its editor, or *drop* the selected object from the database.

5.4.7 Rollback Segments

A **Rollback Segment** is an object that Oracle Database uses to store data necessary to reverse, or undo, changes made by transactions.

Note: Oracle recommends that you run your database in automatic undo management mode instead of using rollback segments.

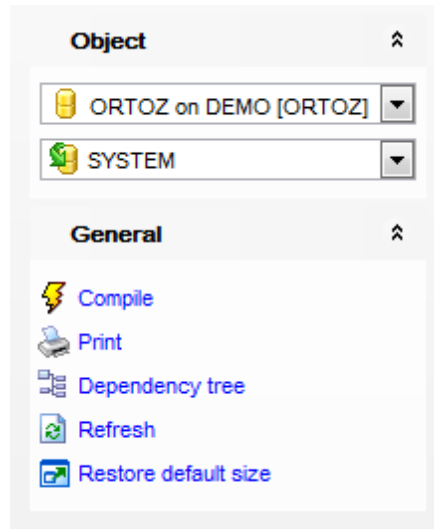
Rollback Segment Editor allows you to define rollback segment properties. It opens automatically when you create a new rollback segment and is available on editing an existing one.

To open a rollback segment in **Rollback Segment Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing rollback segment](#)
- [Viewing DDL definition](#)

5.4.7.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Rollback Segment Editor** allows you to:

Object

- select a database
- select a rollback segment for editing

General

- [compile](#) the rollback segment (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the rollback segment
- view the [dependency tree](#) for the rollback segment
- refresh the content of the active tab
- 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 rollback segment:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.7.2 Creating/editing rollback segment

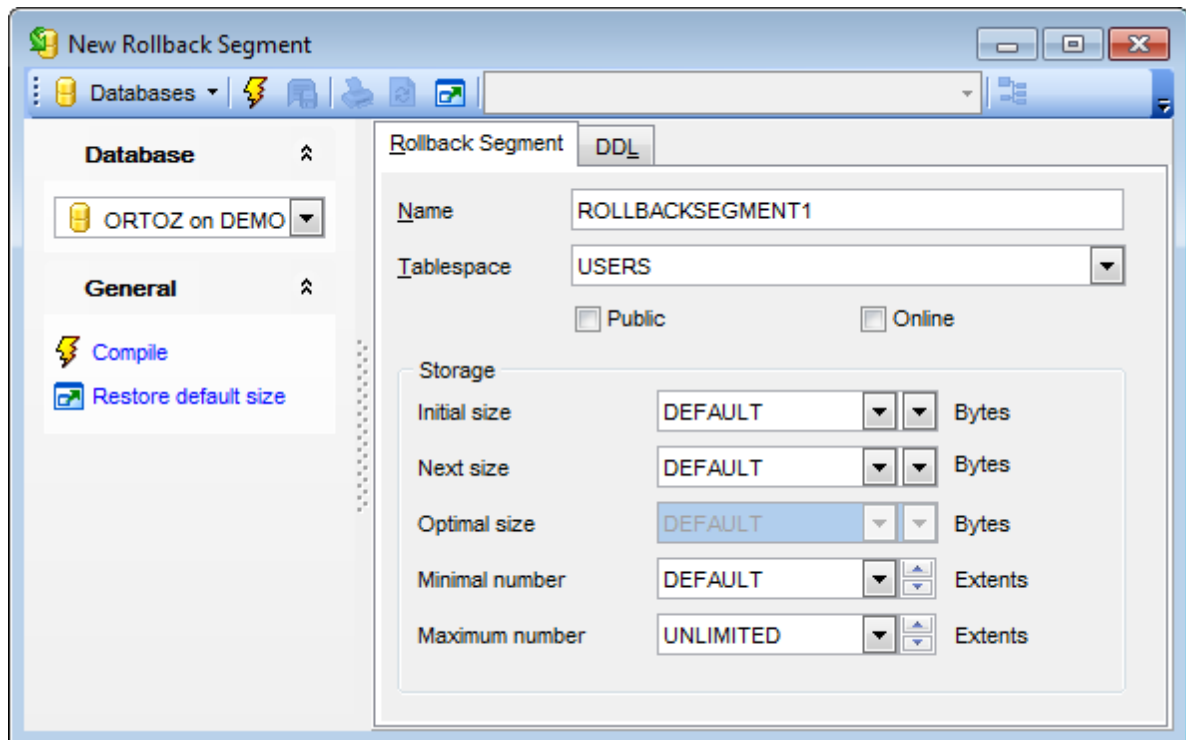
Use the **Rollback Segment** tab of **Rollback Segment Editor** to create/edit a rollback segment and specify its properties.

Name

Specify the name of the rollback segment to be created, or view the name of the rollback segment being edited.

Tablespace

Use the drop-down list to select the [tablespace](#) in which the rollback segment is created.



☒ Public

Enable the option to indicate that the rollback segment is public and is available to any instance.

☒ Online

Check the option to bring the rollback segment online, making it available for transactions by your instance.

Storage

The **Storage** group lets you specify storage characteristics for the rollback segment: *Initial size*, *Next size*, *Optimal size*, *Minimal number*, *Maximum number*. For more information see [Storage attributes](#).

To [compile](#) the object, use the corresponding **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.8 Redo Log Groups

One or more **Redo log file groups** can be added to the specified thread or instance, making them available to the instance to which the thread is assigned.

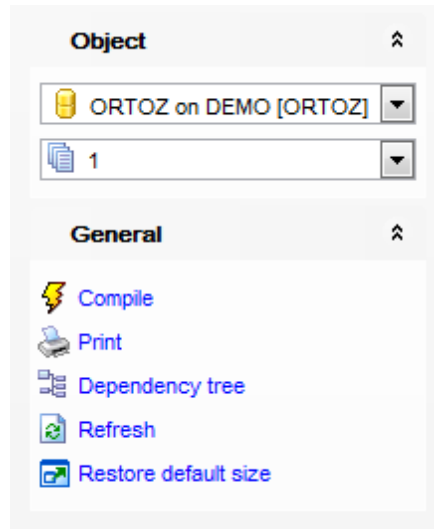
Redo Log Group Editor allows you to define redo log group properties. It opens automatically when you create a new redo log group and is available on editing an existing one.

To open a redo log group in **Redo Log Group Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing redo log group](#)
- [Viewing DDL definition](#)

5.4.8.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Redo Log Group Editor** allows you to:

Object

-  select a database
-  select a redo log group for editing

General

-  [compile](#) the redo log group (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the redo log group
-  view the [dependency tree](#) for the redo log group
-  refresh the content of the active tab
-  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 redo log group:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

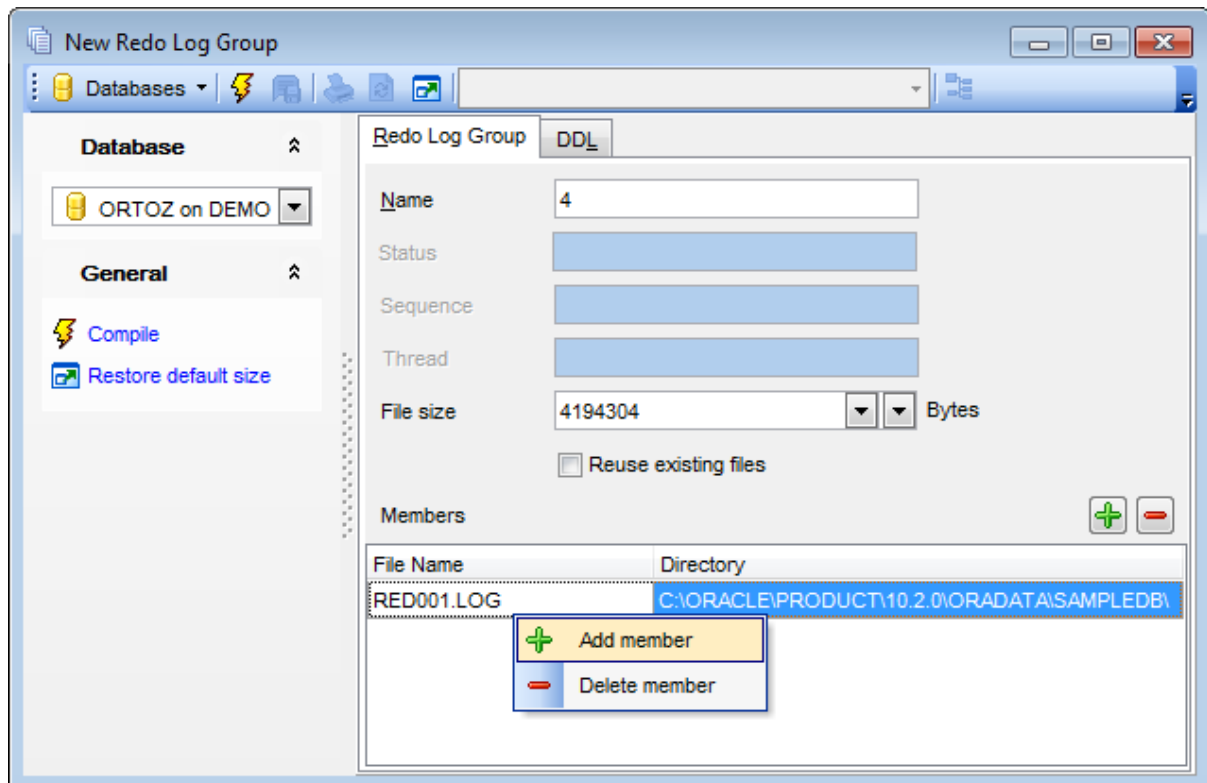
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.8.2 Creating/editing redo log group

Use the **Redo Log Group** tab of **Redo Log Group Editor** to create/edit a redo log group containing one or more members and specify its properties.

Name

Displays the name of the redo log group being created or edited. The group number uniquely identifies the redo log group. The default value is generated automatically.



Status

Displays the status of the redo log group: *Current*, *Active*, or *Inactive*.

Sequence

Displays the sequence number of the redo log group.

File size

Specify the size of the redo log group file(s), or select *DEFAULT* from the drop-down list. For your convenience the *Byte calculator* is implemented: click the arrow-down button to call the *Byte calculator* popup window.

☒ Reuse

Select this option to allow Oracle to reuse an existing file.

Members

The list displays the members included into the redo log group as a grid with the following columns: *File Name*, *Directory*.

Right-click an item within the list to call the **context menu** allowing you to *add* a new

member or *delete* the selected member from the list.

Member management tools are also available through the  **Add member** and  **Delete member** buttons.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.9 Scheduler Schedules

Use scheduler schedule to define period and frequency of task execution.

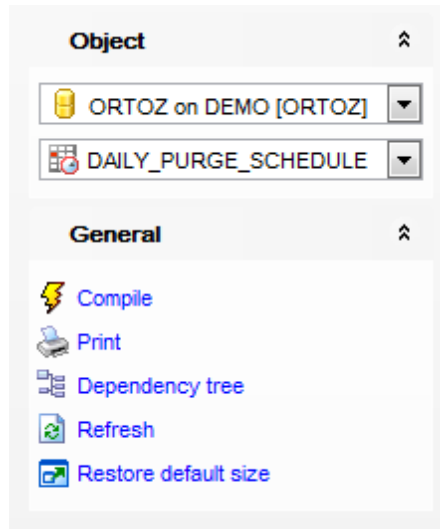
Scheduler Schedule Editor allows you to define scheduler schedule properties. It opens automatically when you create a new scheduler schedule and is available on editing an existing one.

To open the **Scheduler Schedule Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler schedule](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.9.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Scheduler Schedule Editor** allows you to:

Object

-  select a database
-  select a scheduler schedule for editing

General

-  [compile](#) the scheduler schedule (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the scheduler schedule
-  view the [dependency tree](#) for the scheduler schedule
-  refresh the content of the active tab
-  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 scheduler schedule:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

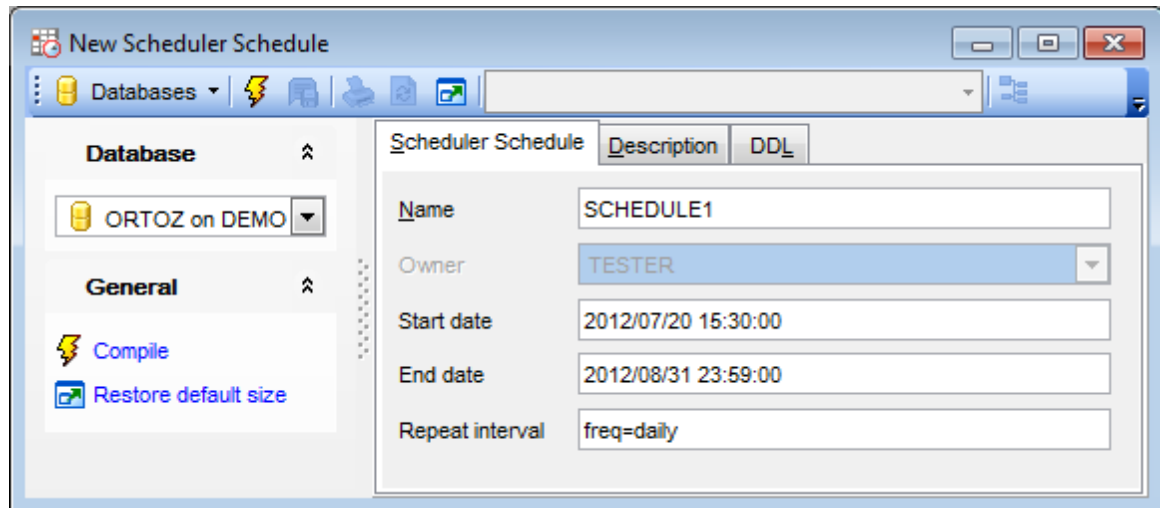
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.9.2 Creating/Editing scheduler schedule

Use the **Scheduler Schedule** tab of **Scheduler Schedule Editor** to create/edit a scheduler schedule and specify its properties.

Name

Displays the name of the scheduler schedule being created or edited.



Owner

This field displays the object owner.

Start date

Use this field to define the schedules start date.

End date

Schedules end date should be specified here.

Note: You should use the following data format for the preceding fields: 'yyyy/mm/dd hh24:mi:ss.ff tzz'.

Repeat interval

The statement in this field defines the regularity and periodicity of task execution and should correspond to Oracle Calendaring Syntax.

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.10 Scheduler Programs

Scheduler program is a database object that indicates the action to be performed by scheduler.

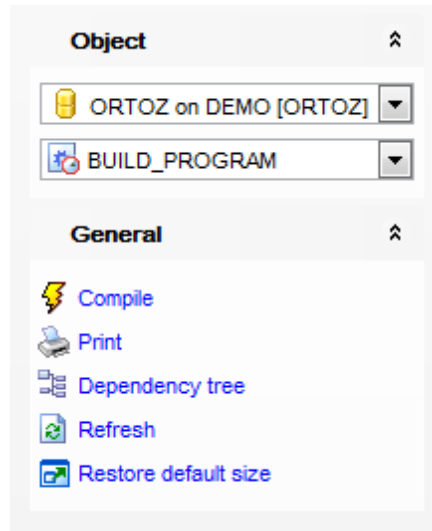
Scheduler Program Editor allows you to define scheduler program properties. It opens automatically when you create a new scheduler program and is available on editing an existing one.

To open the **Scheduler Program Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler program](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.10.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Scheduler Program Editor** allows you to:

Object group

- select a database
- select a scheduler program for editing

General group

- [compile](#) the scheduler program (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the scheduler program
- view the [dependency tree](#) for the scheduler program
- refresh the content of the active tab
- 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 scheduler program:

DDL group

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

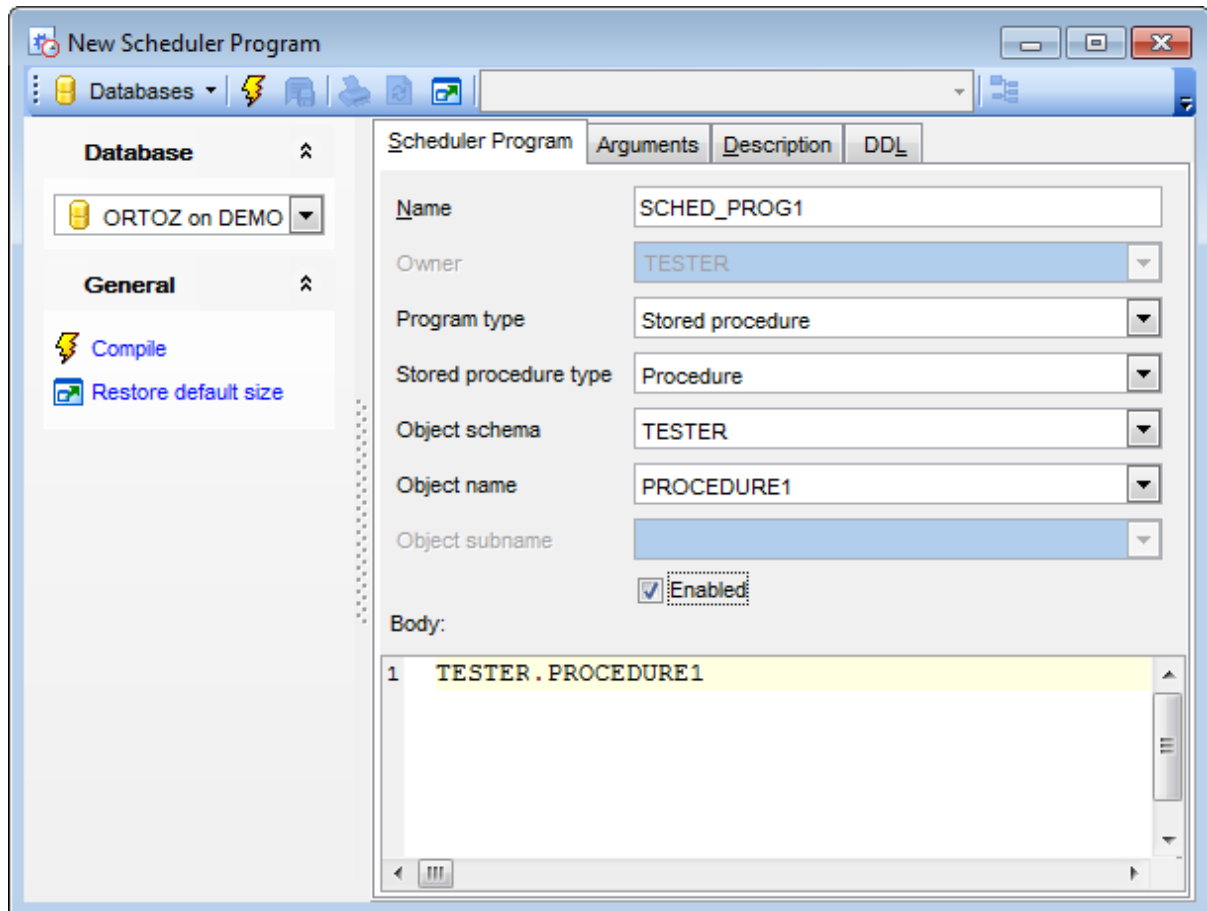
Items of the **Navigation bar** are also available on the **ToolBar** of **Scheduler Program Editor**. To enable the [toolbar](#), open the [Environment Options](#) dialog, proceed to the [Windows](#) section there and select ☒ *Toolbar* (if you need the toolbar only) or ☒ *Both* (if you need both the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

5.4.10.2 Creating/Editing scheduler program

Use the **Scheduler Program** tab of **Scheduler Program Editor** to create/edit a scheduler program and specify its properties.

Name

Displays the name of the scheduler program being created or edited.



Owner

This field displays the object owner.

Program type

Select the needed program type using the drop-down list:

PLSQL block - this specifies that the program is a PL/SQL block. Job or program arguments are not supported when the job or program type is PL/SQL Block.

Stored procedure - this specifies that the program is a PL/SQL or Java stored procedure, or an external C subprogram. Only procedures, not functions with return values, are supported. PL/SQL procedures with *INOUT* or *OUT* arguments are not supported.

Executable - this specifies that the program is external to the database. External programs implies anything that can be executed from the operating system's command line.

The fields below are available only if the *Stored Procedure* is set as **Program Type**.

Stored procedure type

Use this field to define the stored procedure type that should be used as program.

Object schema

Use this field to select the stored procedure or package schema.

Object name

Select the needed program or package from the drop-down list.

Object subname

This field is enabled, when *Package* was selected as *Stored Procedure Type*. You can select the needed procedure from the package within the drop-down list.

☒ **Enabled**

This flag specifies whether the program should be created *enabled* or not. If the flag is checked, then validity checks will be made and the program will be created *enabled* should all the checks be successful. By default, this flag is unchecked, which means that the program is not created enabled.

If the stored procedure with parameters was specified as the program type, you can define its arguments within the **Arguments** tab.

You can change argument's *data type* and *default value* at the corresponding columns.

Scheduler Program	Arguments	Description	DDL
Name	Data type	Default value	
MODEL_NAME	VARCHAR2	<NO VALUE>	
MINING_FUNCTION	VARCHAR2	<NO VALUE>	
DATA_TABLE_NAME	VARCHAR2	<NO VALUE>	
CASE_ID_COLUMN_NAME	VARCHAR2	<NO VALUE>	
PDS_NAME	VARCHAR2	<NO VALUE>	
BUILD_SETTINGS_NAME	VARCHAR2	<NO VALUE>	
MODEL_DESCRIPTION	VARCHAR2	<NO VALUE>	
TARGET_COLUMN_NAME	VARCHAR2		
SETTINGS_TABLE_NAME	VARCHAR2		
DATA_SCHEMA_NAME	VARCHAR2		
SETTINGS_SCHEMA_NAME	VARCHAR2		
REMOVE_SETTINGS_TABLE	CHAR	Y	

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.11 Scheduler Chains

Scheduler chain can be useful in combining tasks scheduled for execution.

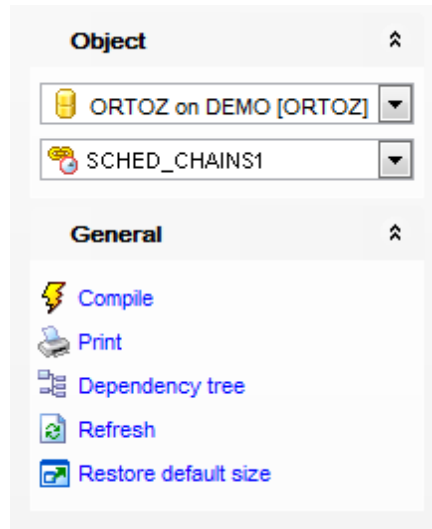
Scheduler Chain Editor allows you to define scheduler chain properties. It opens automatically when you create a new scheduler chain and is available on editing an existing one.

To open the **Scheduler Chain Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler chain](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.11.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Scheduler Chain Editor** allows you to:

Object

- select a database
- select a scheduler chain for editing

General

- [compile](#) the scheduler chain (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the scheduler chain
- view the [dependency tree](#) for the scheduler chain
- refresh the content of the active tab
- 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 scheduler chain:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.11.2 Creating/Editing scheduler chain

Use the **Scheduler Chain** tab of **Scheduler Chain Editor** to create/edit a scheduler chain and specify its properties.

Name

Displays the name of the scheduler chain being created or edited.

New Scheduler Chain

Database: ORTOZ on DEMO [ORTC]

General: Compile, Restore default size

Scheduler Chain

Name: SCHED_CHAIN1

Owner: TESTER

Ruleset owner: SYS

Ruleset: RULESET\$_8

Evaluation interval: freq=daily

☐ Enabled

Rules:

Rule name	Condition	Action	Comment

Steps:

Step name	Event scheduler owner	Event scheduler name	Skip	Pause	Restart on recovery
Step1	SYS	DAILY_PURGE_SCHEI	☐	☐	☐

Owner

This field displays the object owner.

Ruleset owner

Depending on the specified rule set owner, the appropriate rule set list will be available at the corresponding drop-down list.

Ruleset

Define the rule set within this drop-down list. Note that the scheduler creates the rule set automatically, and in the normal case no rule set should be passed in.

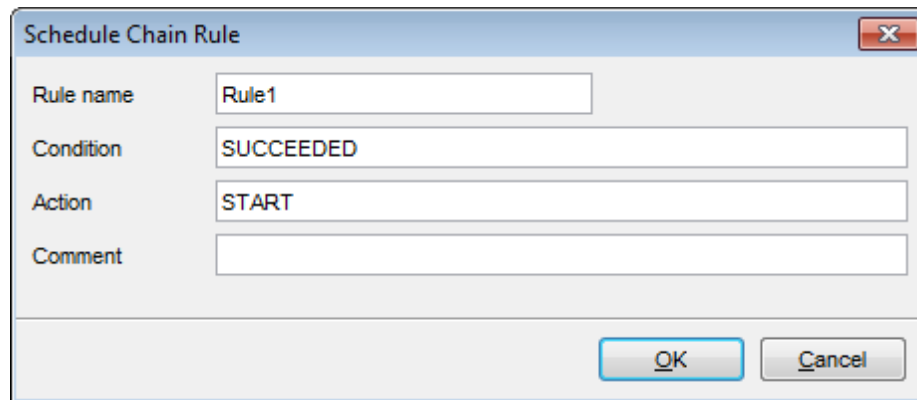
Evaluation interval

If this field is left empty, rule evaluation will be performed when the job starts and completes. If the value is specified, then rule evaluations will be performed periodically at the specified interval.

Enabled

This flag specifies whether the chain should be created *enabled* or not. If the flag is checked, then validity checks will be made and the chain will be created *enabled* should all the checks be successful. By default, this flag is unchecked, which means that the chain is not created enabled.

Use the   buttons to add or remove rule.

Rules

The image shows a dialog box titled "Schedule Chain Rule". It contains four text input fields: "Rule name" with the value "Rule1", "Condition" with the value "SUCCEEDED", "Action" with the value "START", and an empty "Comment" field. At the bottom right, there are "OK" and "Cancel" buttons.

Rule name

You should define the rule name at this field.

Condition

The condition is expressed using either SQL or the Scheduler chain condition syntax, and indicates the prerequisites for the action to occur.

Action

This field specifies what is to be done as a result of the condition being met.

Comment

You can describe the rule using this field if needed.

Steps

Schedule Chain Step

Step name: Step1

Schedule: (none)

Program owner: (none)

Program name:

Subchain: (none)

Event queue owner: (none)

Event queue name:

Event queue agent:

Event condition:

☐ Skip

☐ Pause

☐ Restart on recovery

OK Cancel

Step name

Specify step name at this field.

Schedule

This field indicates according to which schedule this step will be performed.

Note: If the schedule is defined for the step, then other fields are unavailable for editing.

Program owner

Specify the program owner within this drop-down list to get the list of the available programs at the **Program name** drop-down list.

Note: If the program owner is defined for the step, then other fields except **Program name** are unavailable for editing.

Program name

Define the name of a program to run during this step.

Subchain

Select the name of a chain to run during this step.

Note: If the subchain is defined for the step, then other fields are unavailable for editing.

Event queue owner

Define the queue owner within this drop-down list to get the list of the available queues at the **Program name** field.

Event queue name

This field indicates the queue into which events that start this particular step will be enqueued (the source queue).

Event queue agent

In the case of secure queues, the agent name should be provided (the agent should belong to a valid agent that is currently subscribed to the queue).

Event condition

This expression is used as the subscription rule for an event on the source queue. The expression must have the syntax of an Advanced Queuing rule.

**Skip**

Enable this option to skip the step when it's condition is met. In this case the step is treated as if it has immediately succeeded, instead of being run.

**Pause**

If this option is enabled, the step state will be changed to *PAUSED* after it has run.

**Restart on recovery**

With this option enabled the step stopped by a database shutdown is restarted when the database is recovered.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.12 Scheduler Job Classes

Before creating a job you need to create a scheduler job class. Job inherits basic properties defined for the class.

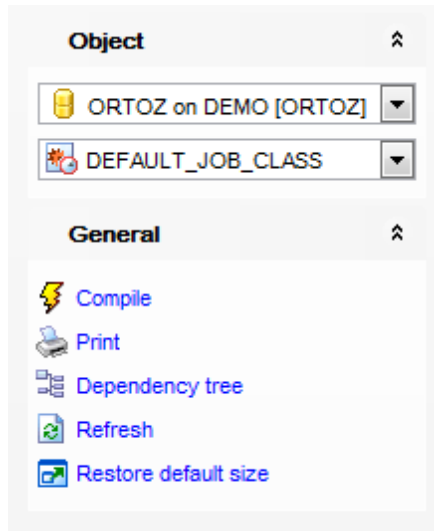
Scheduler Job Class Editor allows you to define scheduler job class properties. It opens automatically when you create a new scheduler job class and is available on editing an existing one.

To open the **Scheduler Job Class Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler job class](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.12.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Scheduler Job Class Editor**.



The **Navigation bar** of **Scheduler Job Class Editor** allows you to:

Object

- select a database
- select a scheduler job class for editing

General

- [compile](#) the scheduler job class (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the scheduler job class
- view the [dependency tree](#) for the scheduler job class
- refresh the content of the active tab
- 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 scheduler job class:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

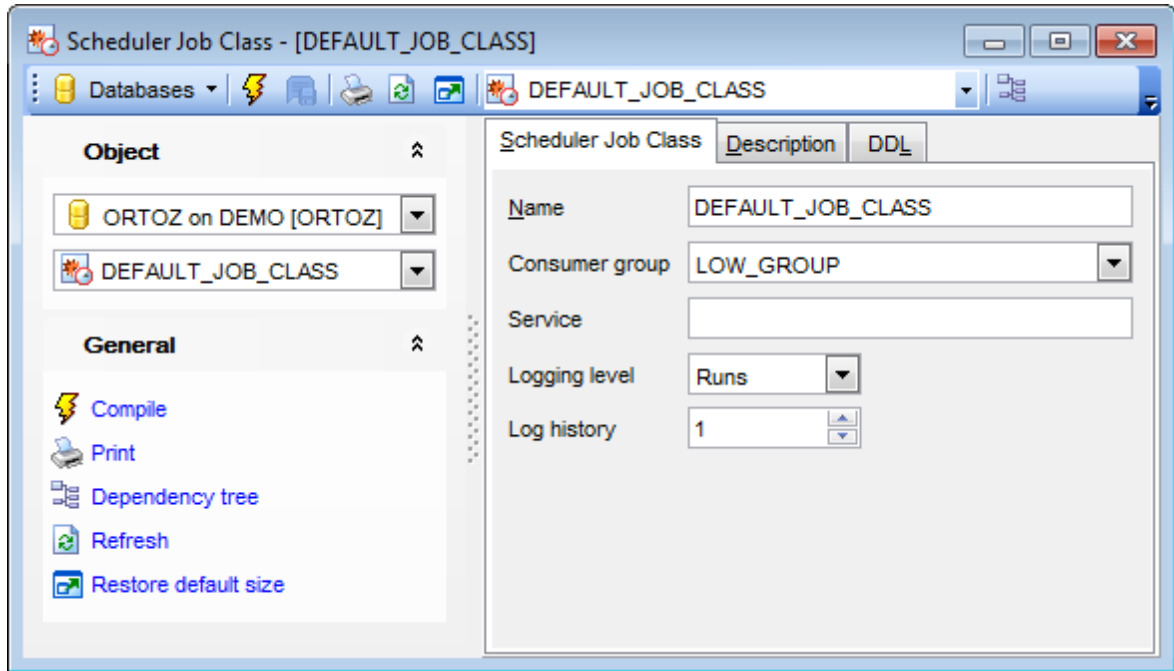
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.12.2 Creating/Editing scheduler job class

Use the **Scheduler Job Class** tab of **Scheduler Job Class Editor** to create/edit a scheduler job class and specify its properties.

Name

Displays the name of the scheduler job class being created or edited.



Consumer group

Specify the resource consumer group this class is associated with.

Service

Define the database service that the jobs in this class will have affinity to.

Logging level

This attribute specifies how much information is logged.

Off - No logging will be performed for any jobs in this class.

Runs - The Scheduler will write detailed information to the job log for all runs of each job in this class.

Full - In addition to recording every run of a job, the Scheduler will record all operations performed on all jobs in this class. In other words, every time a job is created, enabled, disabled, altered, and so on will be recorded in the log.

Log history

Use this field to specify how much history (in days) to keep.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.13 Scheduler Jobs

Scheduler job is a database object that assigns a specific task to a specific schedule.

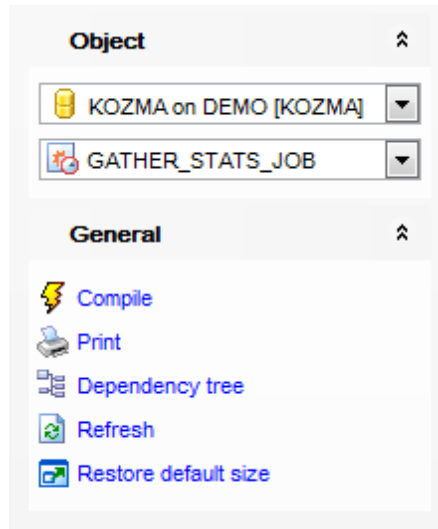
Scheduler Job Editor allows you to define scheduler job properties. It opens automatically when you create a new scheduler job and is available on editing an existing one.

To open the **Scheduler Job Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler job](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.13.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Scheduler Job Editor** allows you to:

Object

-  select a database
-  select a scheduler job for editing

General

-  [compile](#) the scheduler job (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the scheduler job
-  view the [dependency tree](#) for the scheduler job
-  refresh the content of the active tab
-  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 scheduler job:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.13.2 Creating/Editing scheduler job

Use the **Scheduler Job** tab of **Scheduler Job Editor** to create/edit a scheduler job and specify its properties.

Name

Displays the name of the scheduler job being created or edited.

The screenshot shows the 'New Scheduler Job' dialog box with the 'Scheduler Job' tab selected. The 'Name' field is 'SCHED_JOB4' and the 'Owner' is 'SYS'. The 'Logging level' is set to 'Runs' with a 'Max runs' of 0. 'Max failures' is 0 and 'Job priority' is 3. 'Raise events' is '(none)' and 'Schedule name' is '(none)'. The 'Queue' is 'HR.QUEUE1' and 'Queue agent' is '(none)'. The 'Job type' is 'Stored procedure' and 'Stored procedure type' is 'Procedure'. The 'Object schema' is 'IKOZMA_DATACMP1'. The 'Enabled' checkbox is checked. The 'Body' section is currently empty.

Owner

This field displays the object owner.

Schedule limit

If the job hasn't started at scheduled time it is naturally skipped. Using this field you can restrict the extra time for the job to start (from 1 minute to 99 days).

Logging level

This attribute specifies how much information is logged.

Off - No logging will be performed for any jobs in this class.

Runs - The Scheduler will write detailed information to the job log for all runs of each job in this class.

Full - In addition to recording every run of a job, the Scheduler will record all operations performed on all jobs in this class. In other words, every time a job is created, enabled, disabled, altered, and so on will be recorded in the log.

Max failures

Use this field to set the maximum number of times job can fail on consecutive scheduled runs before it is automatically disabled. If the value is '0' then the new job instances will be started regardless of how many previous instances have failed.

Max runs

This field allows you to define the maximum number of consecutive scheduled runs of the job. Once the value is reached, the job is disabled and its state is changed to *COMPLETE*.

Job priority

This field can be used to specify job priority. If multiple jobs within a class are scheduled to be executed at the same time, then job priority determines the order of execution. The default priority value is '3'.

Raise events

This field indicates at what stages of the job's execution events should be raised.

Schedule name

The name of a schedule or window group to use as the name schedule for this job.

Start date

Define the date on which this job started or will be scheduled to start.

End date

Specify the date after which the job will no longer run.

Repeat interval

At this field you should specify either a PL/SQL function returning the next date on which to run, or calendaring syntax expression.

Queue/Queue agent

This fields specify the queue into which events that start this particular job will be enqueued (the source queue). If the source queue is a secure queue both queue and queue agent should be specified. For non-secure queues, only the queue name need be provided.

Job type

Select the appropriate type of the job: *PLSQL block*, *Chain*, *Stored procedure*, *Executable* or *Schedule job program*.

Stored procedure type

Use this field to define the stored procedure type that should be used as job.

Object schema

Use this field to select the scheduler program, stored procedure or package schema.

Object name

Select the needed chain, scheduled program, stored procedure or package from the drop-down list.

Procedure subname

This field is enabled, when *Package* was selected as *Stored Procedure Type*. You can select the needed procedure from the package within the drop-down list.

☒ **Enabled**

This option indicates whether the job is created enabled or not.

☒ **Restartable**

This option specifies whether a job can be restarted in case of failure.

☒ **Autodrop**

Enabling this option causes a job to be automatically dropped after it has completed or has been disabled.

☒ **Stop on window close**

This option only applies if the schedule of a job is a window or a window group. Enabling this option implies that the job should be stopped once the associated window is closed.

Body

Use this tab to specify the scheduler job body which represents the task that will be executed when on the **Start date**.

Queue event condition

A conditional expression based on message properties that must evaluate to TRUE for the message to start the job. The expression must have the syntax of an Oracle Streams Advanced Queuing rule. Accordingly, you can include user data properties in the expression, provided that the message payload is an object type, and that you prefix object attributes in the expression with `tab.user_data`.

If the stored procedure with parameters was specified as the **Job Type**, you can define its arguments within the **Arguments** tab.

You can change argument's *data type* and *default value* at the corresponding columns.

Scheduler Job	Arguments	Description	DDL
Name	Data type	Value	
ENV	OBJECT		

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.14 Scheduler Window Groups

Scheduler window groups provide an easy way to schedule jobs that must run during multiple time periods throughout the day, week, and so on.

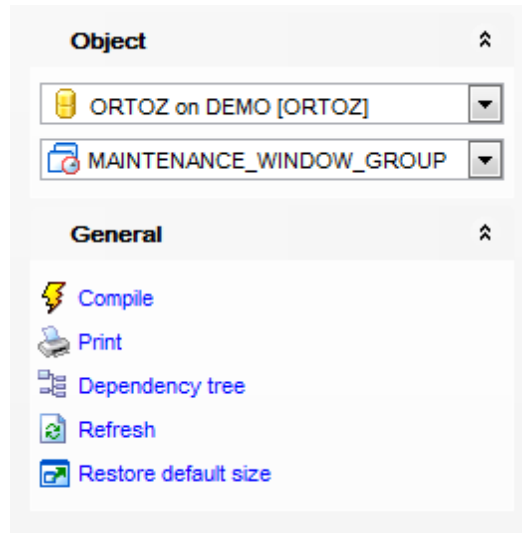
Scheduler Window Group Editor allows you to define scheduler window group properties. It opens automatically when you create a new scheduler window group and is available on editing an existing one.

To open the **Scheduler Window Group Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler window group](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.14.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **Scheduler Window Group Editor**.



The **Navigation bar** of **Scheduler Window Group Editor** allows you to:

Object

- select a database
- select a scheduler window group for editing

General

- [compile](#) the scheduler window group (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the scheduler window group
- view the [dependency tree](#) for the scheduler window group
- refresh the content of the active tab
- 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 scheduler window group:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

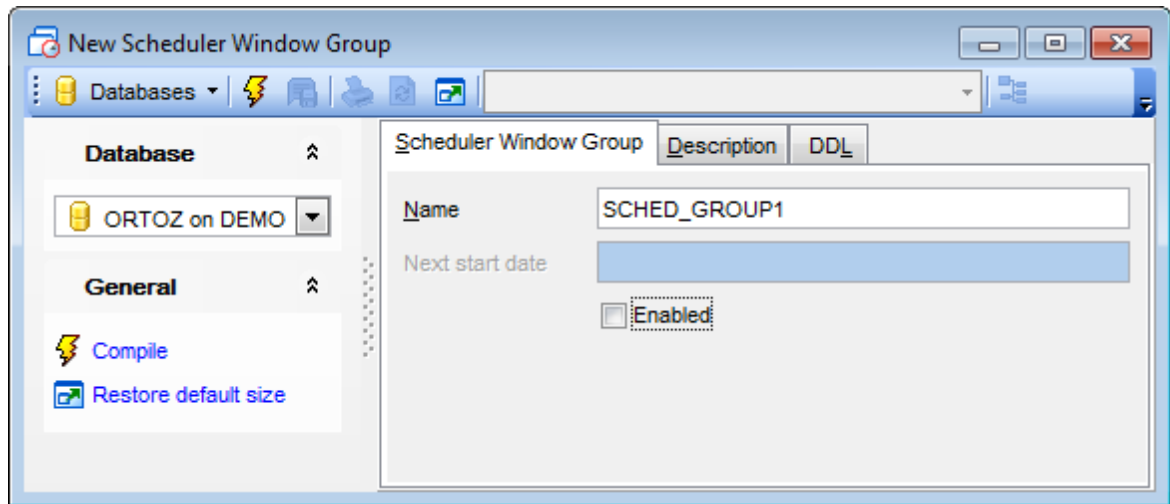
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.14.2 Creating/Editing scheduler window group

Use the **Scheduler Window Group** tab of **Scheduler Window Group Editor** to create/edit a scheduler window group and specify its properties.

Name

Displays the name of the scheduler window group being created or edited.



Next Start Date

This field indicates the date window start next time. The field value is assigned automatically and can't be changed.

☒ **Enabled**

This option indicates whether the window group is created enabled or not.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.4.15 Scheduler Windows

Scheduler window associates the resource plan with a manually defined time interval or an existing schedule.

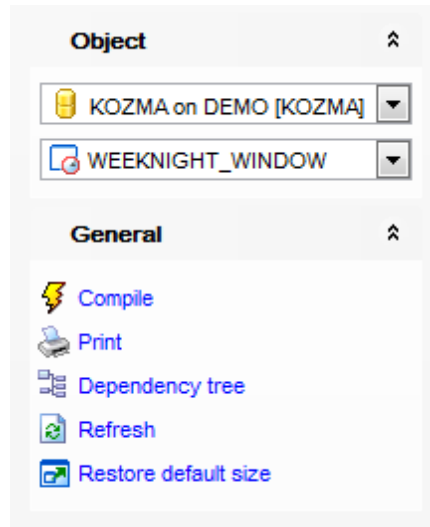
Scheduler Window Editor allows you to define scheduler window properties. It opens automatically when you create a new scheduler window and is available on editing an existing one.

To open the **Scheduler Window Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/Editing scheduler window](#)
- [Editing object description](#)
- [View DDL definition](#)

5.4.15.1 Using Navigation bar and Toolbar

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



The **Navigation bar** of **Scheduler Window Editor** allows you to:

Object

-  select a database
-  select a scheduler window for editing

General

-  [compile](#) the scheduler window (if it is being created/modified)
-  set [printing options](#) to [print metadata](#) of the scheduler window
-  view the [dependency tree](#) for the scheduler window
-  refresh the content of the active tab
-  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 scheduler window:

DDL

-  save [DDL](#) to file
-  open [DDL](#) in [Query Data](#)

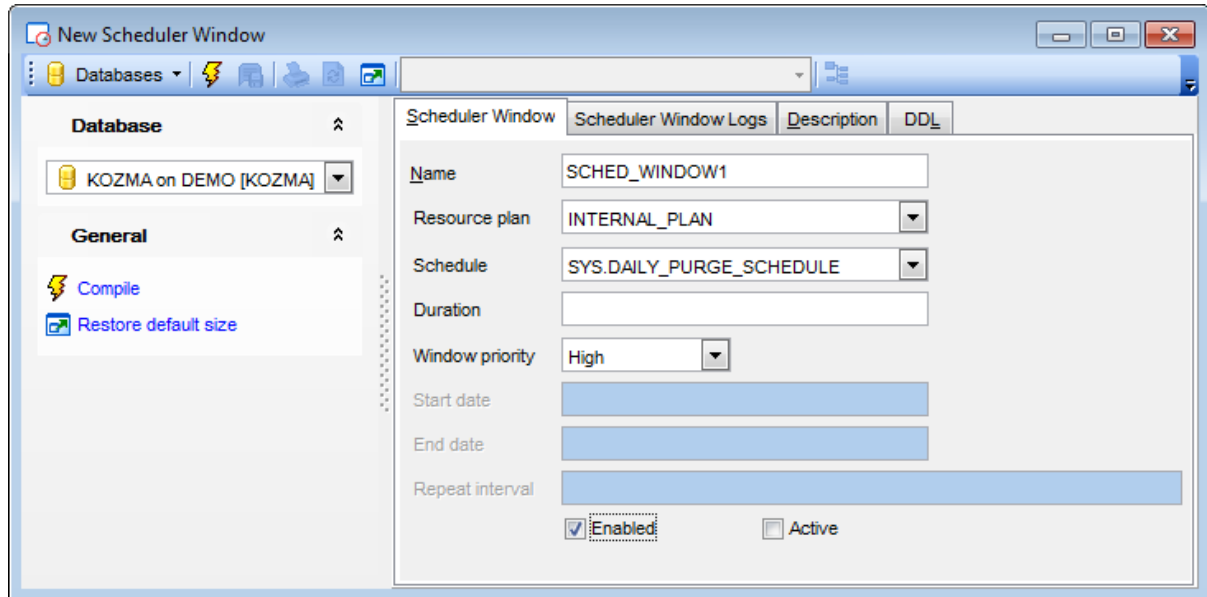
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.4.15.2 Creating/Editing window

Use the **Scheduler Window** tab of **Scheduler Window Editor** to create/edit a scheduler window and specify its properties.

Name

Displays the name of the scheduler window being created or edited.



Resource plan

Select the [resource plan](#) that is automatically activated when the window opens.

Schedule

Specified [schedule](#) will be associated with the window.

Duration

This field indicates how long the window will be open for.

Window priority

This attribute is only relevant when two windows overlap. Because only one window can be in effect at one time, the window priority will be used to determine which window will be opened.

Start date

Use this field to specify the first date on which this window is scheduled to open.

End date

At this field you should specify the date after which the window will no longer open.

Repeat interval

Define the frequency of window repetition. The value should be expressed using the Scheduler's calendaring syntax.

☒ **Enabled**

This option indicates whether the window group is created enabled or not.

☒ **Active**

Use this option to open a window immediately independent of its schedule. This window will open and the resource plan associated with it, will take effect immediately for the duration specified or for the normal duration of the window if no duration is given. Only an enabled window can be manually opened.

You can find the detailed window log at the **Schedule Window Logs** tab.

Scheduler Window		Scheduler Window Logs		Description	DDL		
Log ID	Log Date	Operation	Status	User Name	Client ID	Global UID	Additional Info
284495	09.10.2012 23:00:01	OPEN					
284691	10.10.2012 7:00:00	CLOSE					
279340	27.09.2012 23:00:00	OPEN					
279490	28.09.2012 7:00:00	CLOSE					
285072	22.10.2012 23:00:00	OPEN					
285290	23.10.2012 23:00:00	OPEN					
285363	24.10.2012 7:00:00	CLOSE					
285399	24.10.2012 23:00:00	OPEN					
285463	25.10.2012 7:00:00	CLOSE					
285505	25.10.2012 23:00:00	OPEN					

To [compile](#) the object, use the corresponding ⚡ **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.5 Users and Roles

SQL Manager for Oracle provides management tools for the following Oracle principals:

Users

Provides tools allowing you to manage Oracle users.

Roles

Provides tools allowing you to manage Oracle roles.

See also:

[New Object dialog](#)

[Duplicate Object Wizard](#)

[Schema objects](#)

[Non-schema objects](#)

5.5.1 Users

A **User** is an account through which one can login to the database.

Creating Users

To create a new user:

- select the **Database | New Object...** [main menu](#) item;
- select **User** in the [Create New Object](#) dialog;
- define user properties using the appropriate tabs of [User Editor](#).

Hint: To create a new user, you can also right-click the **Users** node or any object within this node in the [DB Explorer](#) tree and select the **New User** item from the [context menu](#).

To create a new user with the same properties as one of existing users has:

- select the **Database | Duplicate Object...** main menu item;
- follow the instructions of [Duplicate Object Wizard](#).

Alternatively, you can right-click a user in the [DB Explorer](#) tree and select the **Duplicate User <user_name>...** context menu item.

[Duplicate Object Wizard](#) allows you to select the database to create a new user in, and to edit the result SQL statement for creating the user.

Editing Users

- select the user for editing in the [DB Explorer](#) tree (type the first letters of the user name for quick [search](#));
- right-click the object and select the **Edit User <user_name>** context menu item, or simply double-click the user;
- edit user properties using the appropriate tabs of [User Editor](#).

Dropping Users

- select the user to drop in the [DB Explorer](#) tree;
- right-click the object and select the **Drop User <user_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 user;

Ctrl+O to edit the selected user;

Shift+Del to drop the object from the database.

See also:

[Roles](#)

5.5.1.1 User Editor

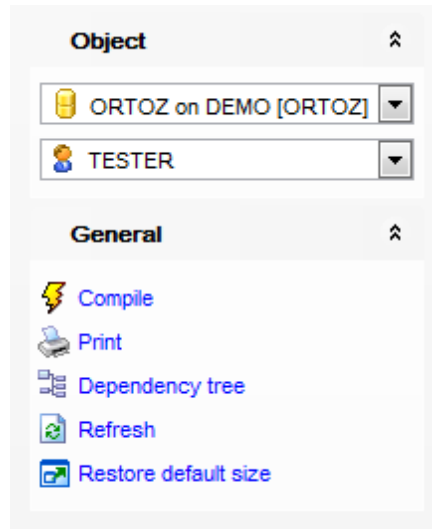
User Editor allows you to define user properties and membership. It opens automatically when you create a new user and is available on editing an existing one (see [Create user](#) and [Edit user](#) for details).

To open a user in **User Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing user](#)
- [Tablespace parameters](#)
- [Setting quotas](#)
- [Proxy Users](#)
- [Viewing DDL definition](#)

5.5.1.1.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a user for editing

General

- [compile](#) the user (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the user
- view the [dependency tree](#) for the user
- refresh the content of the active tab
- 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 user:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.5.1.1.2 Creating/editing user

Use the **User** tab of **User Editor** to create/edit a user and specify its properties.

Name

Specifies the name by which the user is identified inside this database. This name can contain only characters from the database character set and comply with the naming rules.

The screenshot shows the 'New User' dialog box with the 'User' tab active. The 'Name' field contains 'USER1'. Under 'Authentication method', 'Global authentication' is selected. The 'Password' and 'Verify password' fields are empty. The 'Expire password now' checkbox is unchecked. The 'Common name' is 'John Mills', 'Locality' is empty, 'Country' is 'US', 'State' is empty, 'Organization' is 'EMS', and 'Unit' is empty. The 'X.500 name' is 'CN=John Mills, O=EMS, C=US'. The 'Resource profile' is 'MONITORING_PROFILE'. The 'Lock account now' checkbox is unchecked.

Authentication method**• Password authentication**

Indicates that the user must specify a password to log on to the database.

• Expire password now

This setting forces the user or the DBA to change the password before the user can log in to the database.

• Operating system authentication

The user must be authenticated by an external service - operating system. In this case, Oracle relies on authentication by the operating system to ensure that a specific external user has access to a specific database user.

• Global authentication

The user must be authorized by the enterprise directory service (Oracle Internet Directory). In this case you are to fill all necessary fields below as follows: *common name*, *locality*, *country*, *state*, *organization*, *unit*, X.500 name.

Resource profile

Use the drop-down list to specify the [profile](#) you want to assign to the user. The profile limits the amount of database resources the user can use.

☒ **Lock account now**

Use this option to lock the user's account and disable access.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

5.5.1.1.3 Tablespace parameters

Use the **Tablespace** tab of **User Editor** to specify tablespace properties for the user.

The screenshot shows the 'User Editor' dialog box with the 'Tablespace' tab selected. The dialog has several tabs: 'User', 'Tablespace', 'Quotas', 'Proxy Users', 'DDL', and 'Permissions'. The 'Tablespace' tab is active, showing two main sections: 'Default tablespace' and 'Temporary tablespace'. In the 'Default tablespace' section, the 'Name' dropdown is set to 'USERS' and the 'Quota on default tablespace' is set to '2147483648' bytes. In the 'Temporary tablespace' section, the 'Name' dropdown is set to 'TEMP' and the 'Quota on temporary tablespace' is set to 'UNLIMITED' bytes.

Default tablespace

Use the **Name** drop-down list to specify the default [tablespace](#) for objects created by the user.

Temporary tablespace

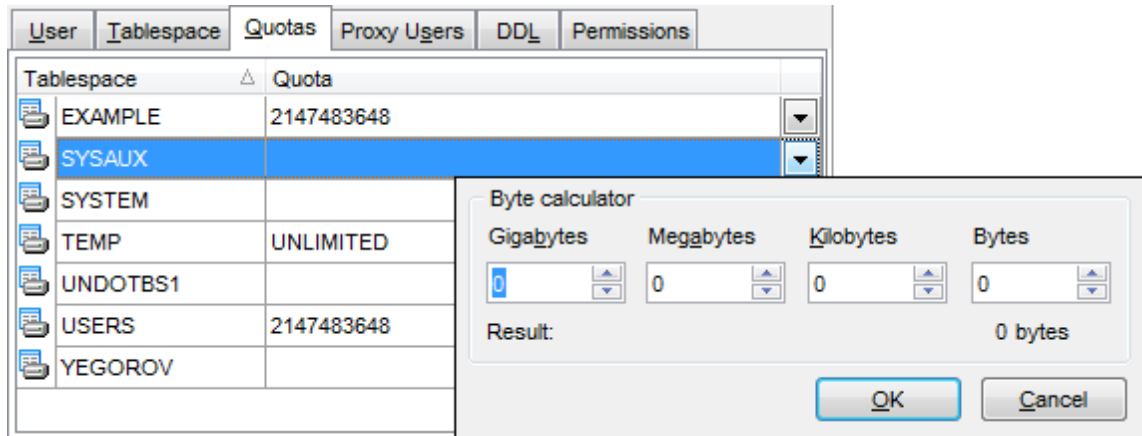
Use the **Name** drop-down list to specify the [tablespace](#) or tablespace group for the user's temporary segments.

Quota on default / temporary tablespace

Specify the maximum amount of space the user can allocate in the default/temporary [tablespace](#), or select *UNLIMITED* from the drop-down list. For your convenience the built-in *Byte calculator* is implemented: click on the right arrow-down button to call the *Byte calculator* popup window.

5.5.1.1.4 Setting quotas

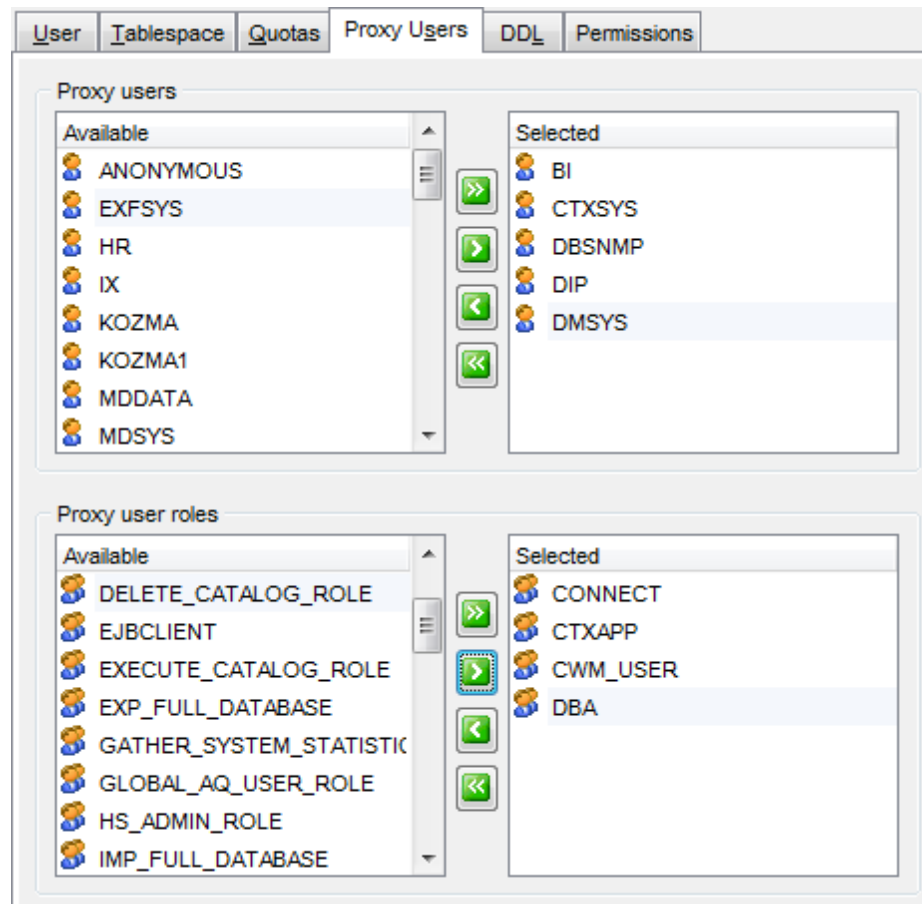
Use the **Quotas** tab of **User Editor** to view and set the quotas for existing tablespaces.



Select a [tablespace](#) in the list and specify the maximum amount of space that can be allocated in the tablespace, or select *UNLIMITED* from the drop-down list. For your convenience the built-in *Byte calculator* is implemented: click on the right arrow-down button to call the *Byte calculator* popup window.

5.5.1.1.5 Proxy users

The **Proxy Users** tab of **User Editor** allows you to expose user to proxy use by database user, activate all, some, or none of the roles of the user, and specify whether authentication is required.



Proxy users

To select a user, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the users from one list to another.

Proxy user roles

Use this group to correlate selected users with the roles listed in the **Available** list. To select a role, you need to move it from the **Available** list to the **Selected** list. Use the buttons or drag-and-drop operations to move the roles from one list to another.

5.5.2 Roles

A **Role** is a set of privileges that can be granted to [users](#) or to other roles. You can use roles to administer database privileges. You can add privileges to a role and then grant the role to a [user](#). The user can then enable the role and exercise the privileges granted by the role.

Creating Roles

- select the **Database | New Object...** [main menu](#) item;
- select **Role** in the [Create New Object](#) dialog;
- define role properties using the appropriate tabs of [Role Editor](#).

Hint: To create a new role, you can also right-click the **Roles** node or any object within this node in the [DB Explorer](#) tree and select the **New Role** item from the [context menu](#).

To create a new role with the same properties as one of existing roles has:

- select the **Database | Duplicate Object...** main menu item;
- follow the instructions of [Duplicate Object Wizard](#).

Alternatively, you can right-click a role in the [DB Explorer](#) tree and select the **Duplicate Role <role_name>...** context menu item.

[Duplicate Object Wizard](#) allows you to select the database to create a new role in, and to edit the result SQL statement for creating the role.

Editing Roles

- select the role for editing in the [DB Explorer](#) tree (type the first letters of the role name for quick [search](#));
- right-click the object and select the **Edit Role <role_name>** context menu item, or simply double-click the role;
- edit role properties using the appropriate tabs of [Role Editor](#).

Dropping Roles

- select the role to drop in the [DB Explorer](#) tree;
- right-click the object and select the **Drop Role <role_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 role;

Ctrl+O to edit the selected role;

Shift+Del to drop the object from the database.

See also:

[Users](#)

5.5.2.1 Role Editor

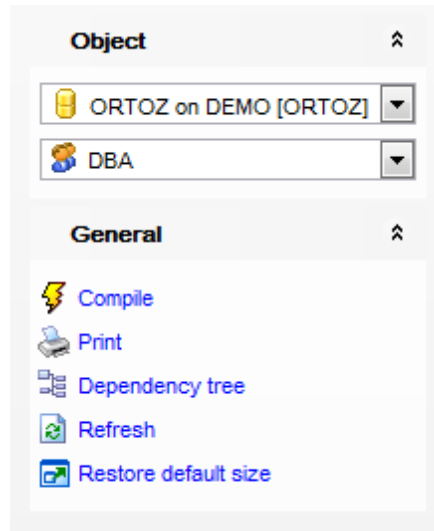
Role Editor allows you to define role properties and membership. It opens automatically when you create a new role and is available on editing an existing one (see [Create role](#) and [Edit role](#) for details).

To open a role in **Role Editor**, double-click it in the [DB Explorer](#) tree.

- [Using Navigation bar and Toolbar](#)
- [Creating/editing role](#)
- [Viewing DDL definition](#)

5.5.2.1.1 Using Navigation bar and Toolbar

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



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

Object

- select a database
- select a role for editing

General

- [compile](#) the role (if it is being created/modified)
- set [printing options](#) to [print metadata](#) of the role
- view the [dependency tree](#) for the role
- refresh the content of the active tab
- 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 role:

DDL

- save [DDL](#) to file
- open [DDL](#) in [Query Data](#)

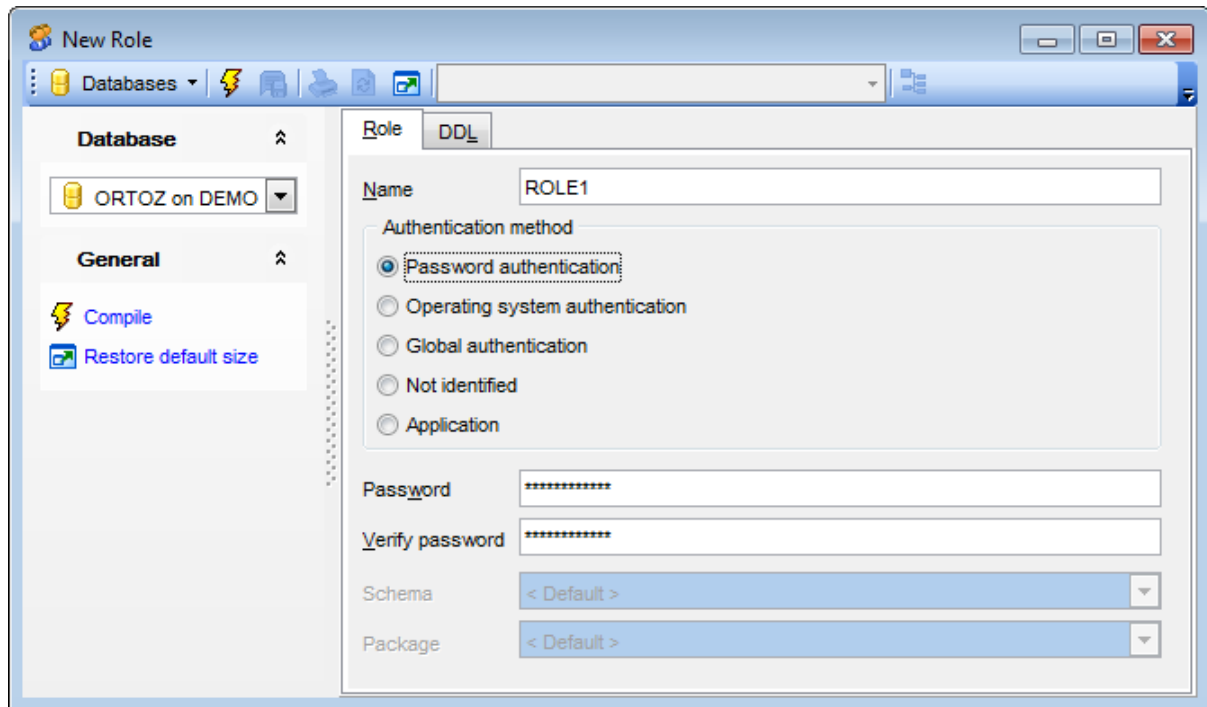
NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

5.5.2.1.2 Creating/editing role

Use the **Role** tab of **Role Editor** to create/edit a role and specify its properties.

Name

Specify the name of the new role, or view the name of the role being edited.

**Authentication method**

☒ **Password authentication**

Indicates that a password must be specified to log on to the database. Set the password and confirm it using the corresponding boxes.

☐ **Operating system authentication**

The role must be authenticated by an external service - operating system. In this case, Oracle relies on authentication by the operating system to ensure that a specific external user has access to a specific database role.

☐ **Global authentication**

The role must be authorized by the enterprise directory service (Oracle Internet Directory).

☐ **Not identified**

Indicates that this role is authorized by the database and that no password is required to identify the role.

☐ **Application**

Creates an application role, which is a role that can be enabled only by applications using an authorized package. In this case you need to specify the **Schema** and **Package** used for authentication.

To [compile](#) the object, use the corresponding  **Compile** item of the [Navigation bar](#) or [toolbar](#).

Part

VI

6 Query Management Tools

When using SQL Manager for Oracle, you are provided with two basic tools you may need to manage your SQL queries: Query data for editing SQL query text directly and Design query 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 Query data editor:

- select the **Tools | Query data** [main menu](#) item or use the corresponding  [toolbar](#) button (F12);
- click the **Add new query** item of the [Navigation bar](#);
- edit the query text within the Query tab.

In order to create a new query visually in Design Query editor:

- select the **Tools | Design query** [main menu](#) item or use the corresponding  [toolbar](#) button;
- build the query visually within the **Builder** tab.

Editing Queries

In order to open a query in Query data editor:

- select the **Tools | Query Data** [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 Query tab of [Query Data](#).

In order to open a query in Design query:

- select the **Tools | Design query** [main menu](#) item or use the corresponding  [toolbar](#) button;
- the last edited query is displayed automatically on opening Design Query editor;
- 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 **Query** tabs.

In order to load a query from an *.sql file:

- select the **Tools | Query data** [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 **Query** tab.

Executing Queries

- *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 [Query Data](#).

Saving Queries

- create a new query or open an existing one;
- click the **Save to file** [Navigation bar](#) item (in Query data) or the **Save SQL** [Navigation bar](#) item (in Design Query) or use the **Ctrl+S** [shortcut](#) to save the query using the

Save as... dialog;

- click the **Save diagram** [Navigation bar](#) item in [Design Query](#) to save the designed diagram;

or

- use the **Save all** [Navigation bar](#) item in [Query data](#) 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](#)

[Services](#)

[Options](#)

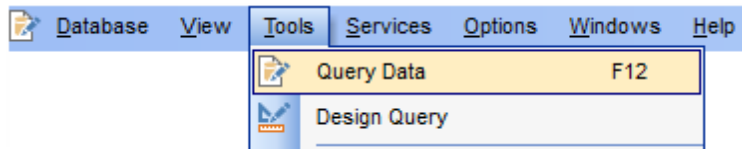
[How To...](#)

6.1 Query data

Query data is the basic tool of SQL Manager for Oracle 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 Query data tool select the **Tools | Query Data** main menu item or use the corresponding  [toolbar](#) button. You can also use *F12* [shortcut](#) for the same purpose.

- [Using Navigation bar and Toolbar](#)
- [Working with Query data](#)
- [Using the context menu](#)
- [Viewing query plan](#)
- [Using object links](#)
- [Executing queries and viewing results](#)
- [Viewing query logs](#)
- [Using PL/SQL Code Debugger](#)
- [Favorites editor](#)



See also:

[Design query](#)

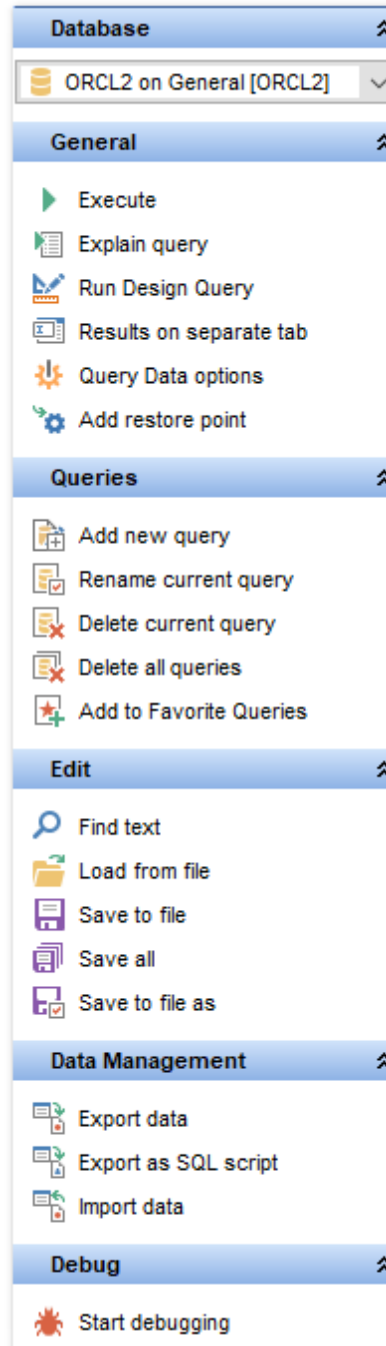
[Query parameters](#)

[Execute script](#)

[Editor options](#)

6.1.1 Using Navigation bar and Toolbar

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



Database

 select a database for the query

General

 execute the current query

-  view estimated [query execution plan](#)
-  run [Design Query](#) to design the query as a diagram
-  switch the results representation mode: *on Edit tab* or *on separate tab*
-  configure Query Data within the [Tools | Query Data](#) page of the [Environment Options](#) dialog
-  add [restore point](#)
-  restore the default size and position of the editor window

Queries

-  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

-  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 all queries to an **.sql* file

Logs group

-  activate the [Find Text](#) dialog
-  save the query log to a file
-  clear logs

Debug group

-  debug the PL/SQL code using [PL/SQL Debugger](#)

Data Management group

-  commit transaction
-  rollback transaction
-  export the returned dataset using [Export Data Wizard](#)
-  export the returned dataset as Execute Script using the [Export as SQL Script](#) wizard
-  [import data](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

See also:

- [Working with Query Data](#)
- [Viewing query plan](#)
- [Executing queries](#)
- [Viewing query logs](#)

[Favorites editor](#)

6.1.2 Working with Query Data

The Query tab is provided for working with SQL queries in text mode.

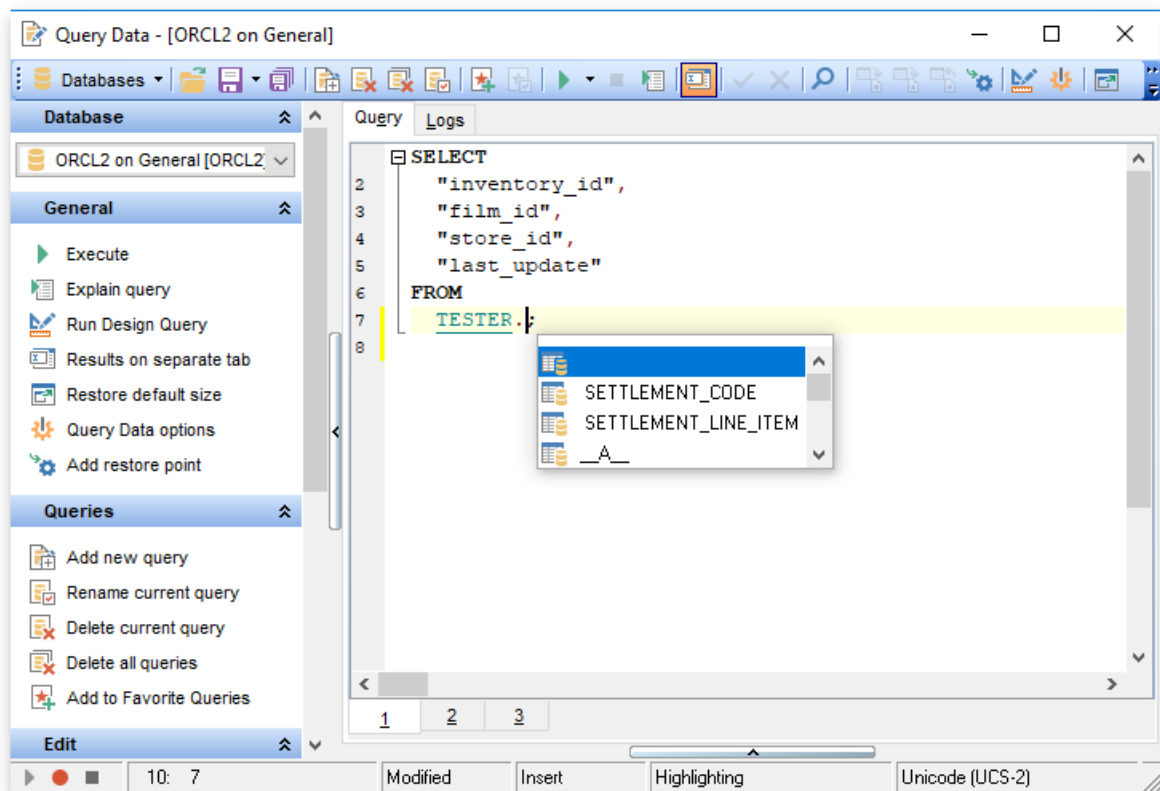
For your convenience the **syntax highlight**, **code completion** and a number of other features for efficient SQL editing are implemented:

- 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 Query Data features using the [Query Data 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 [Query Data Options](#) dialog or activate the completion list manually by pressing the *Ctrl+Space* [shortcut](#).



For your convenience the possibility to use macros is implemented.

To *start recording* a macro, click the **Record** button available in the status bar area, or use the *Shift+Ctrl+R* shortcut.

To *stop recording*, click the **Stop** button, or use the *Shift+Ctrl+R* shortcut.

To *call* the recorded macro, use the **Play** button, or use the *Shift+Ctrl+P* shortcut.

Hint: To paste input parameters of a procedure quickly, use the *Shift+Alt+P* [shortcut](#) after

the procedure name.

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.

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](#)

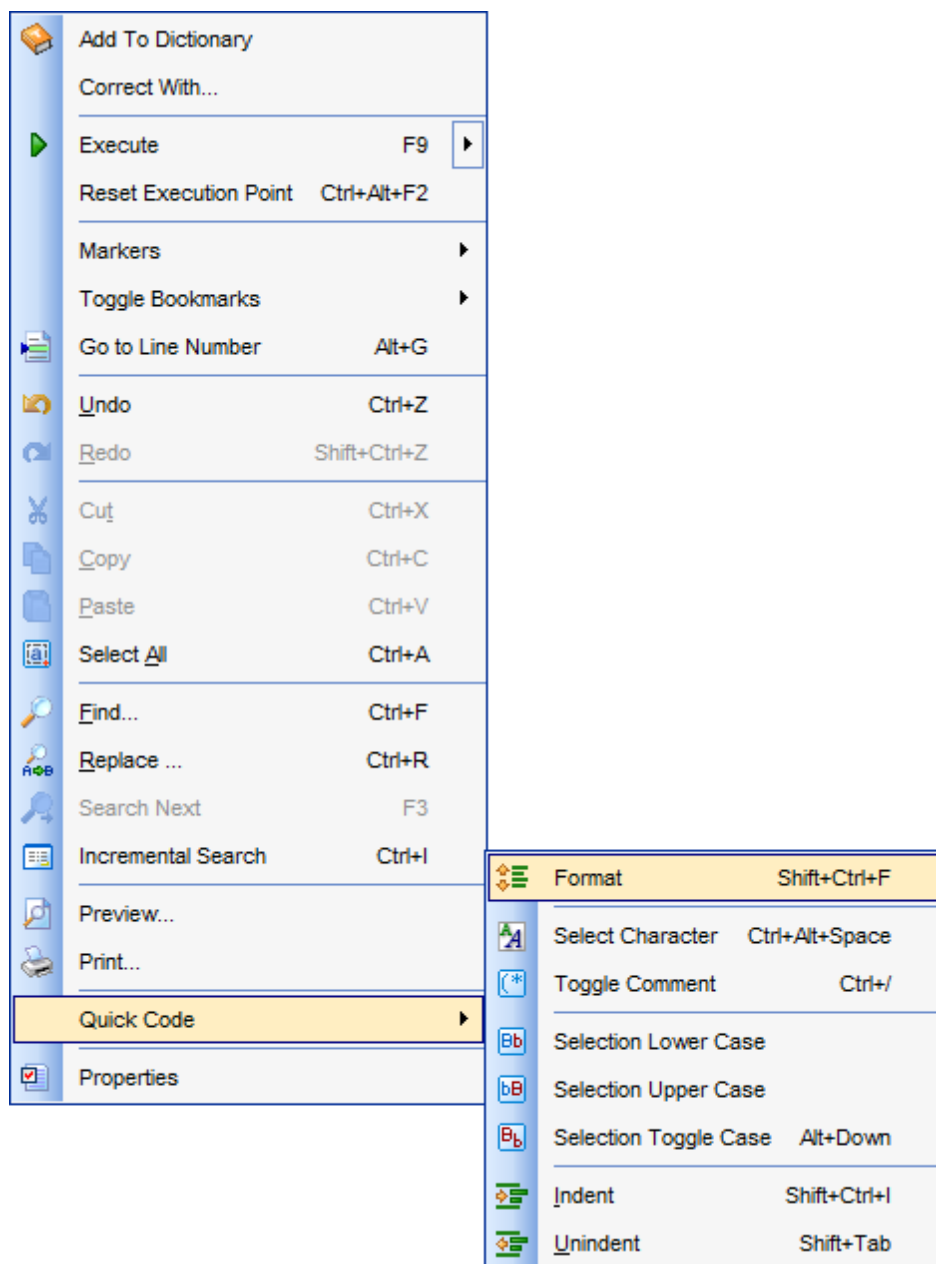
6.1.3 Using the context menu

The **context menu** of Query Data 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.

Implementation of the [Find Text](#) / [Replace Text](#) dialogs and [Incremental search](#) bar contributes to more efficient work with the SQL code.

Find the complete list of **Query Data** 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;
- toggle a comment for a code fragment;
- open the [Editor Options](#) dialog.

**See also:**

[Working with Query Data area](#)

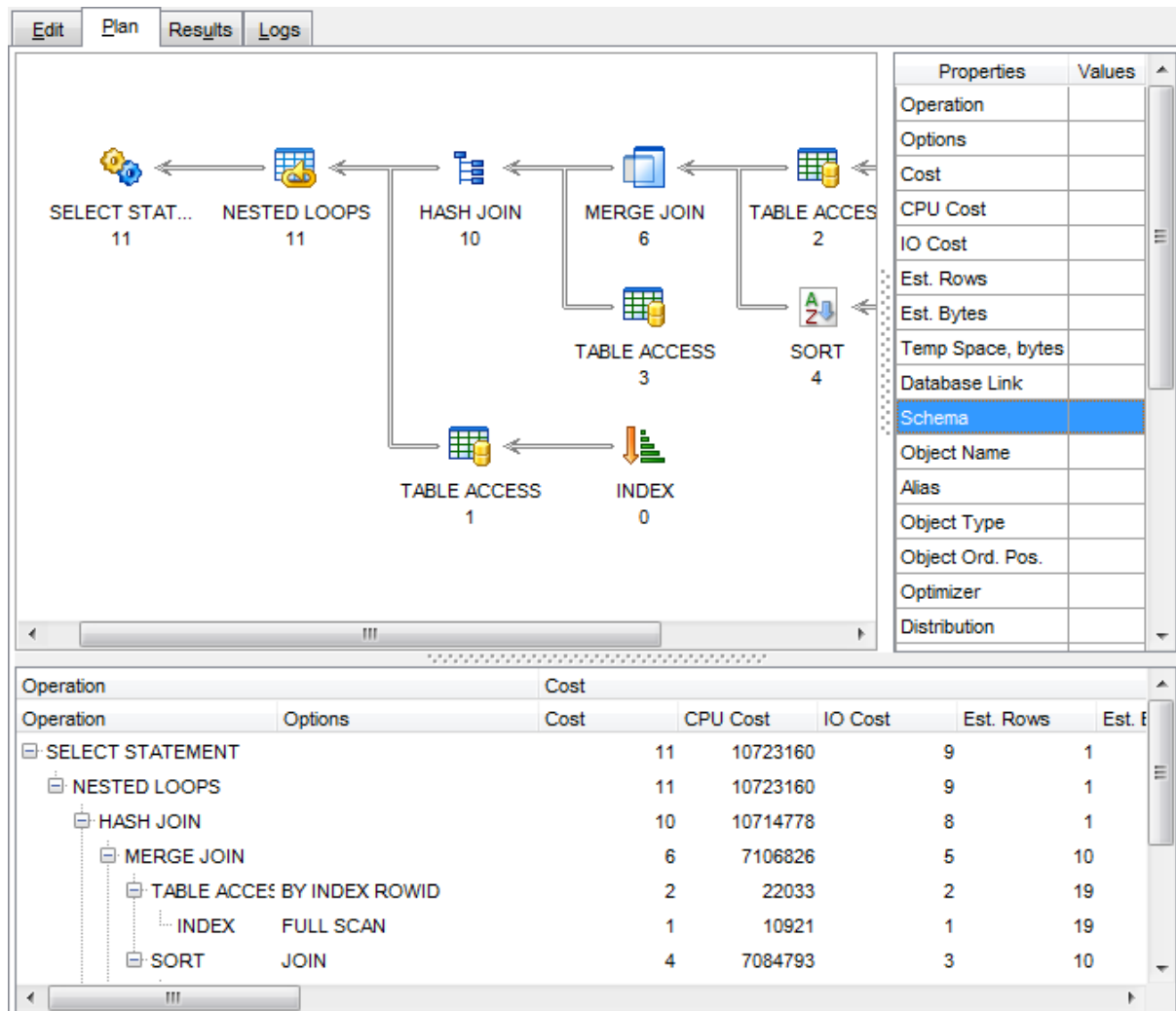
[Executing queries](#)

6.1.4 Viewing query plan

Using SQL Manager for Oracle, 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 **Query Data** 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.



Operation	Options	Cost	CPU Cost	IO Cost	Est. Rows	Est. Bytes
SELECT STATEMENT		11	10723160	9	1	
NESTED LOOPS		11	10723160	9	1	
HASH JOIN		10	10714778	8	1	
MERGE JOIN		6	7106826	5	10	
TABLE ACCESS BY INDEX ROWID		2	22033	2	19	
INDEX	FULL SCAN	1	10921	1	19	
SORT	JOIN	4	7084793	3	10	

The **Operation** panel below displays the operations as a tree list with the following columns: *Operation* (*Operation*, *Options*), *Cost* (*Cost*, *CPU Cost*, *IO Cost*, *Est. Rows*, *Est. Bytes*, *Temp Space, bytes*), *Object* (*Database Link*, *Schema*, *Object Name*, *Alias*, *Object Type*, *Object Ord. Pos.*), *Other* (*Optimizer*, *Distribution*, *Start Position*, *Stop Position*, *Position ID*, *Search Columns*, *Access Predicates*, *Filter Predicates*, *Projection*, *Time*, *QB Lock Name*, *Data Tag*, *Data*).

Right-click within the panel to display the **context menu** allowing you to configure the set of *visible bands/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 Query Data: select the ☒ **Explain query on execution** option available within the [Tools | Query Data](#) section of the [Environment Options](#) dialog.

See also:

[Query Data 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.

```
"HR"."JOB_HISTORY".EMPLOYEE_ID,  
"HR"."JOB_HISTORY".START_DATE,  
"HR"."JOB_HISTORY".END_DATE,  
"HR"."JOB_HISTORY".JOB_ID,  
"HR"."JOB_HISTORY".DEPARTMENT_ID
```

Please note that you can change the way highlighted objects look in the editor: use the [Display | Highlight](#) section of the [Editor Options](#) dialog.

See also:

[Working with Query Data area](#)

[Editor Options](#)

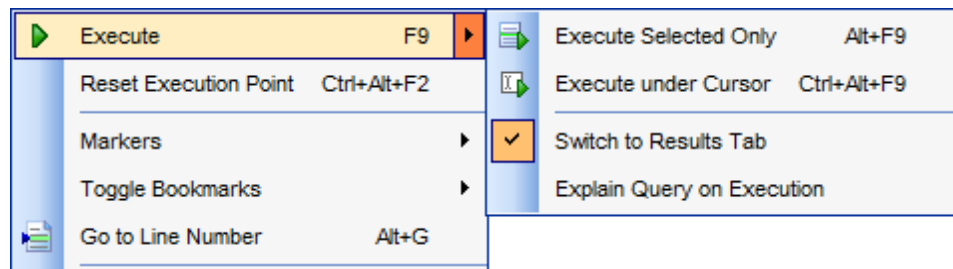
6.1.6 Executing queries

When all the query parameters are set, you can immediately **execute the query** in **Query Data**.

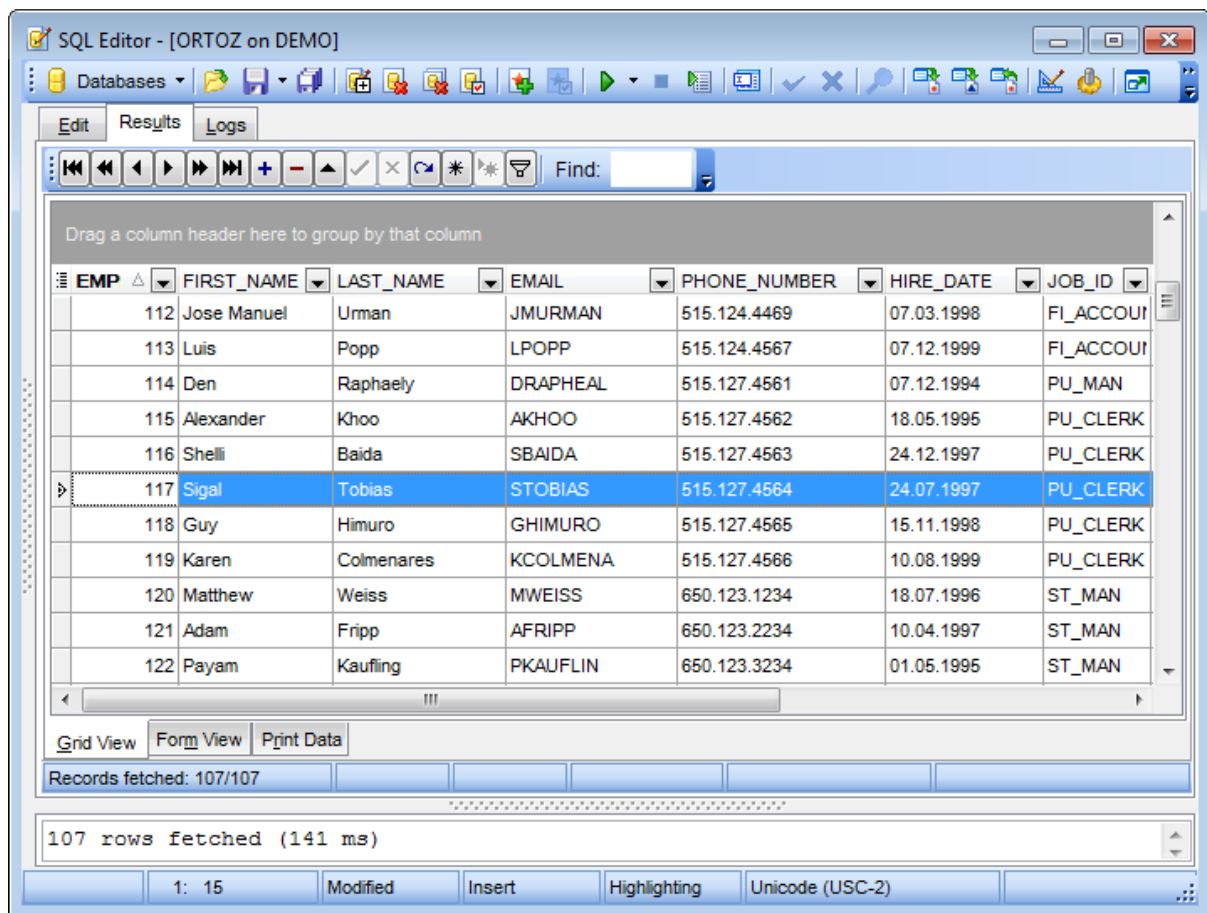
To execute a query, click the  **Execute** item of the [Navigation bar](#). You can also use the [context menu](#) or *F9* hot key for the same purpose.

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](#).



Note: You can add a restore point before changing data, to get an opportunity to [flash back](#) to the current data state.

Click  **Add restore point** on the [Navigation bar](#) or [toolbar](#) to open the **Add restore point** dialog. For details see [Adding restore point](#).

See also:

[Data View](#)

[Export Data](#)

[Export as SQL Script](#)

6.1.7 Viewing query logs

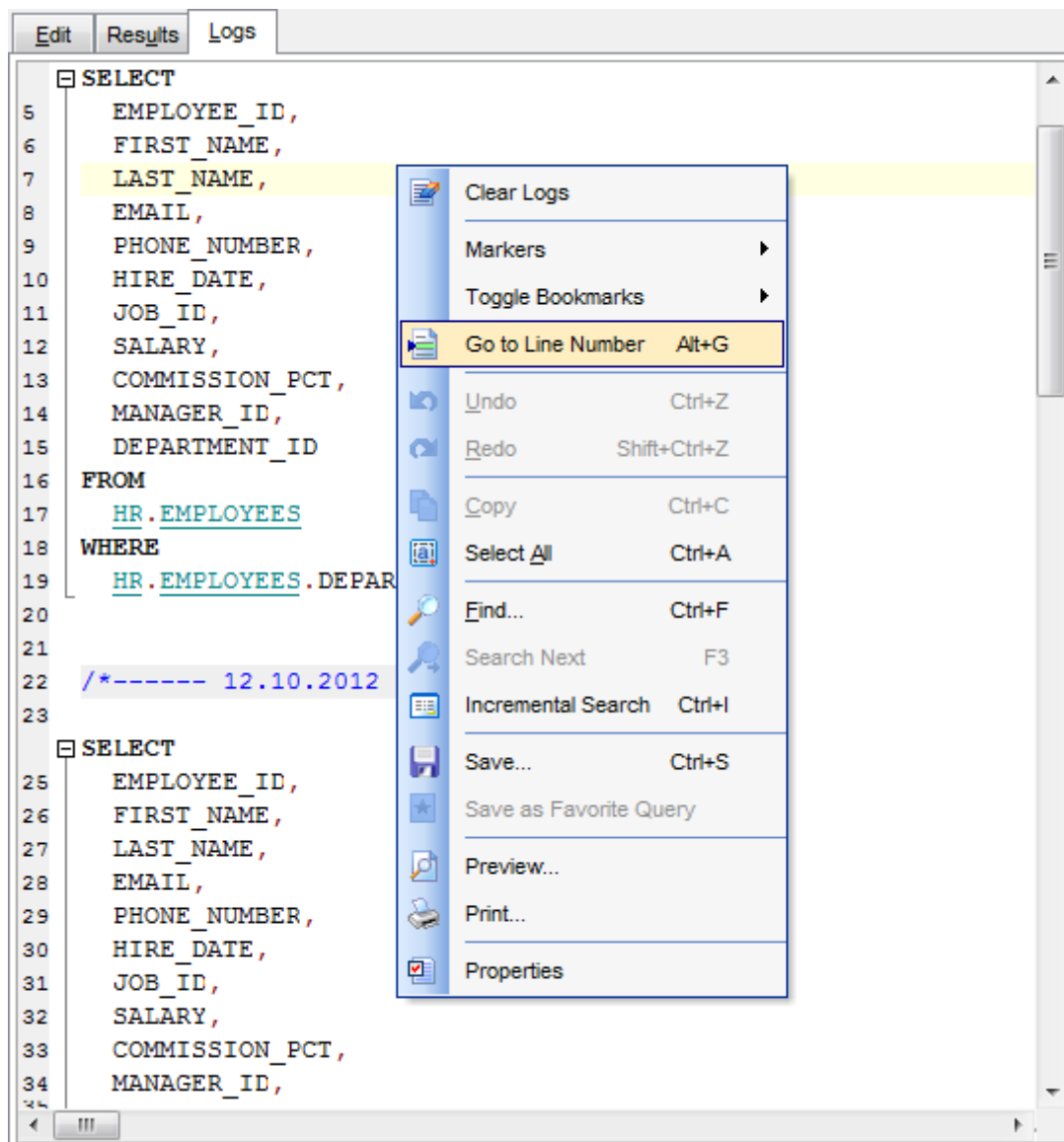
This tab allows you to view the query **log**. The log is available within the **Logs** tab of **Query Data**.

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 Query Data [context menu](#) generic functions.



See also:[Executing queries](#)[Using the context menu](#)

6.1.8 Using PL/SQL code debugger

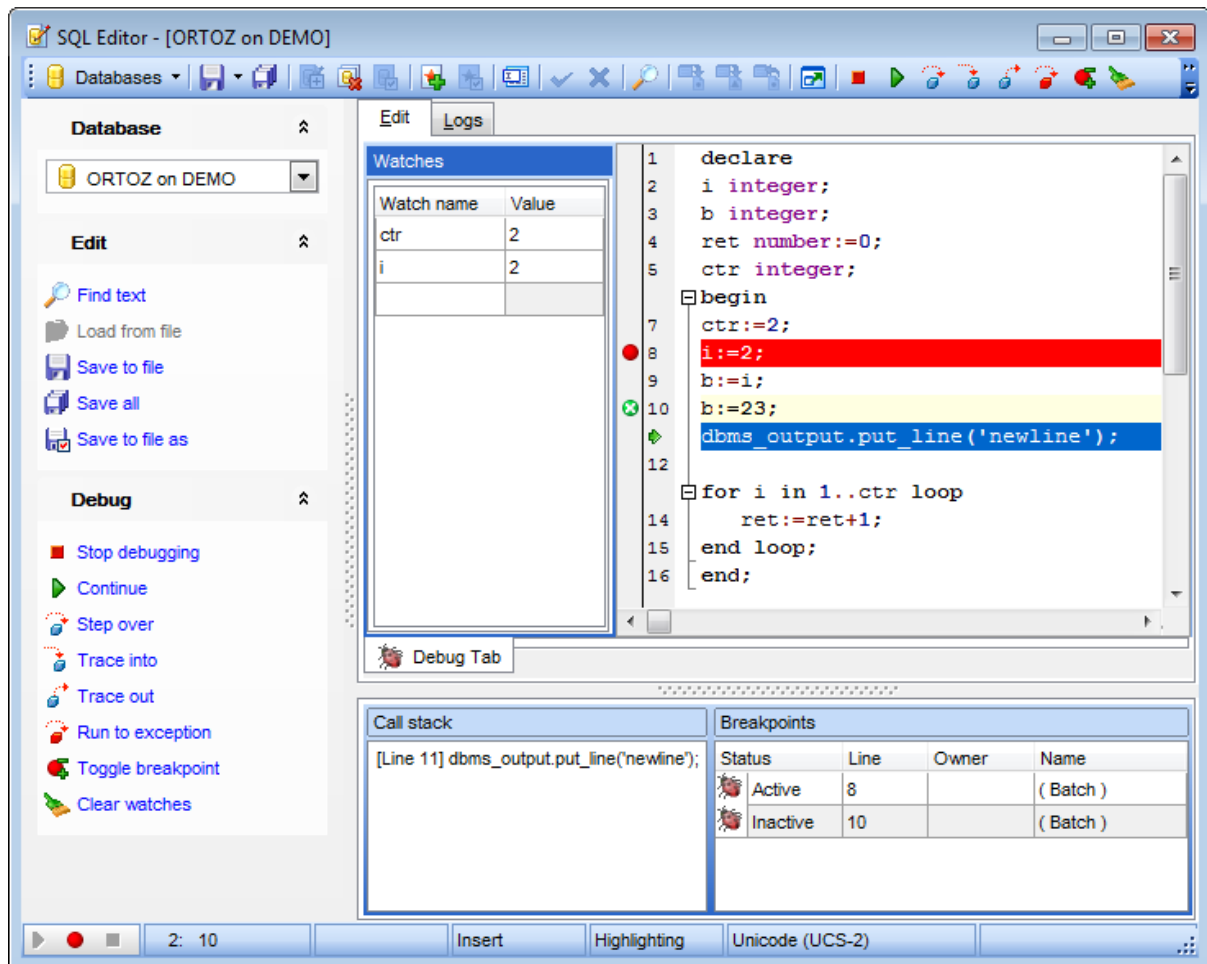
PL/SQL Code Debugger is the cutting edge feature of SQL Manager for Oracle. This tool is provided for step-by-step code debugging: anonymous blocks, [procedures](#), [functions](#), [packages](#), [triggers](#), [object types](#). Much of the power of the debugger comes from toggling breakpoints, getting variables' values, and fetching call stacks.

The **Edit** tab of the **PL/SQL Code Debugger** window contains the following areas:

- the *Debug* panel of the [Navigation bar](#);
- the *Watches* list;
- the *PL/SQL code* area;
- the *Call stack* box;
- the *Breakpoints* list.

Note: All areas within the **Edit** tab of the **PL/SQL Code Debugger** window are dockable, i.e. you can drag an area to any location within the parent form.

The **Logs** tab of the **PL/SQL Code Debugger** window displays the debug log.



The **Debug** panel of the **Navigation bar** provides several debug commands:

- **Start:** this command is used to start the debugging session;
- **Break:** this command stops the current debugging session;

-  *Continue*: use this command to continue execution up to the next breakpoint;
-  *Step over*: traces the code disregarding the object body ([procedure](#), [function](#));
-  *Trace into*: traces the code using the object body ([procedure](#), [function](#));
-  *Trace out*: traces the code up to the point of leaving the object body ([procedure](#), [function](#));
-  *Run to exception*: traces the code up to the nearest exception point;
-  *Toggle breakpoint*: use this command to add/remove breakpoints;
-  *Clear watches*: allows you to clear the variables added to the **Watches** list.

The **Watches** list allows you to watch the variables that have been declared in the code, and the value of each variable. The following attributes are listed for each watched variable:

Watch name

Value

You can delete the selected watch by pressing the Del button.

The **PL/SQL code** area presents the statement being debugged. All points that have been set within the code are marked with corresponding signs. Active breakpoints are highlighted red, and inactive breakpoints are highlighted green.

The **Call stack** box lists the call stacks, if applicable.

The **Breakpoints** list displays the currently toggled breakpoints. The following attributes are listed for each breakpoint:

Line

Status

Unit owner

Unit name

Compile with debug info

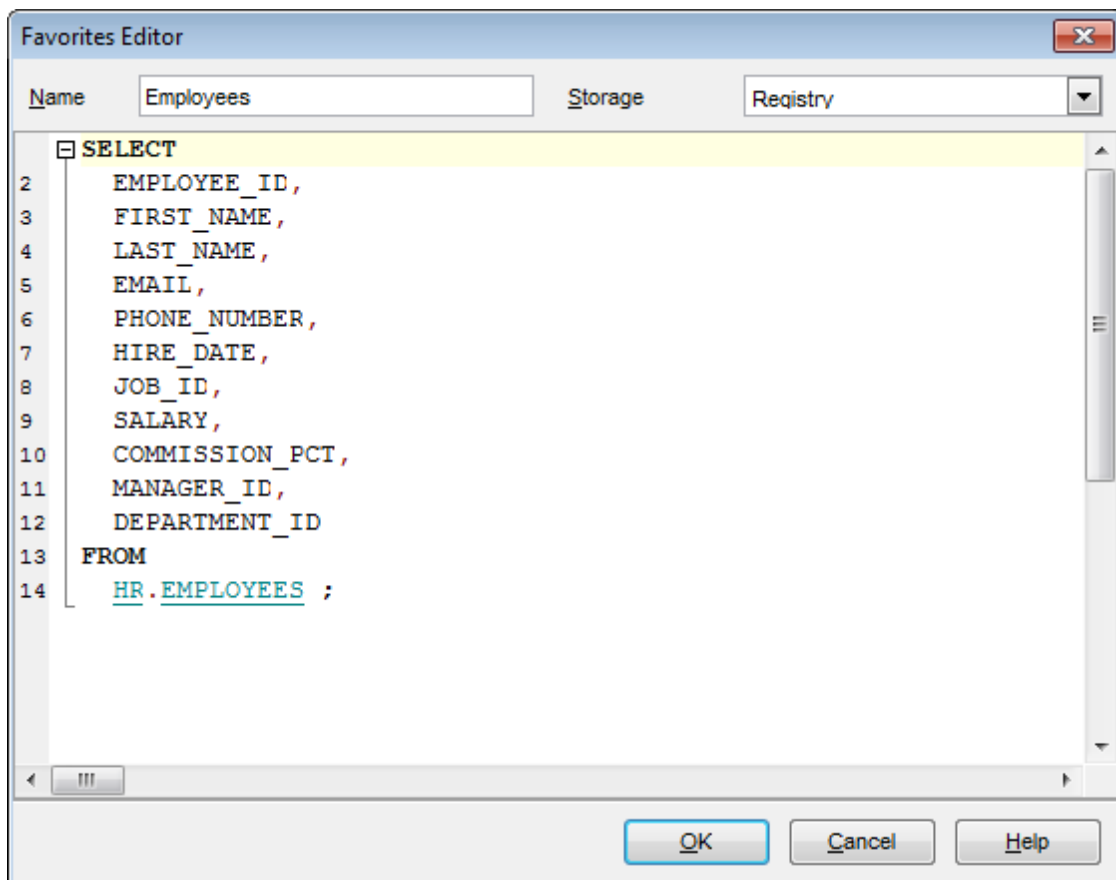
To debug a PL/SQL object you need it to compile it with debug info. PL/SQL objects are: [packages](#), [package bodies](#), [procedures](#), [functions](#), [triggers](#), [object types](#), [object type bodies](#).

6.1.9 Favorites editor

For your convenience the **Favorite Queries** list is implemented in SQL Manager for Oracle. 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 **Query Data**. The corresponding item is also available in the [context menu](#) of Query Data 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](#)

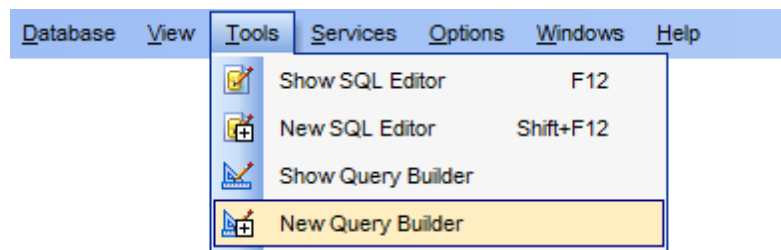
[Working with Query Data area](#)

6.2 Design query

Design Query is implemented in SQL Manager for Oracle 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 Design Query, select the **Tools | Design Query** main menu items or use the corresponding  [toolbar](#) buttons.

- [Using Navigation bar and Toolbar](#)
- [Working with diagram area](#)
- [Joining two database objects by fields](#)
- [Setting the selection criteria](#)
- [Setting output fields for selection](#)
- [Setting the grouping criteria](#)
- [Setting parameters of sorting](#)
- [Working with editor area](#)
- [Executing queries and viewing results](#)
- [Viewing query plan](#)



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.

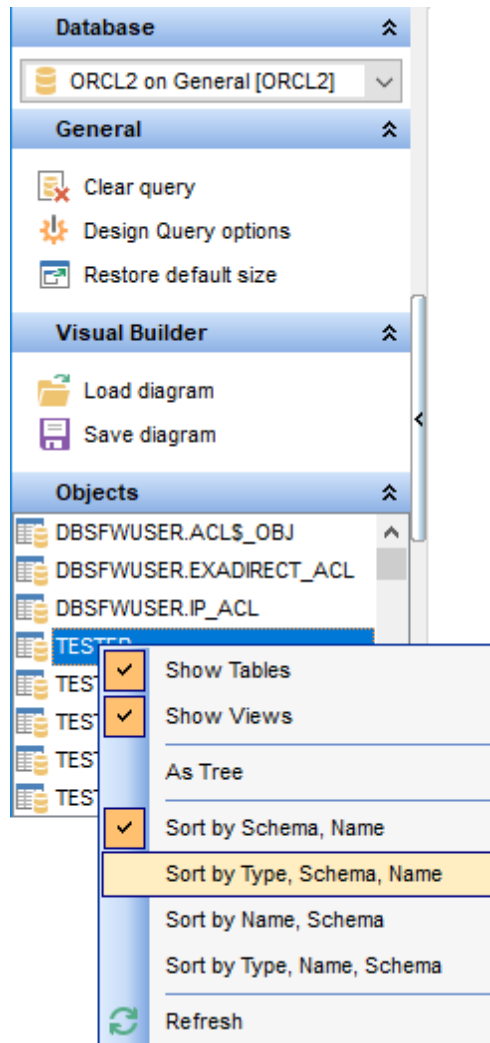
See also:

[Query Data](#)

[Query parameters](#)

6.2.1 Using Navigation bar and Toolbar

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



Database

select a database for executing the query

General

- execute the current query
- view estimated [query execution plan](#)
- clear the query
- create a [view](#) based on the query
- create a [procedure](#) based on the query
- show SQL help
- configure Design Query settings in the [Design Query](#) options tab of [Environment Options](#) dialog
- restore the default size and position of the builder window

Objects

 browse objects of the database; you can also add tables, views and procedures 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

 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

 load a query from an *.sql file using the **Open SQL File** dialog

 save the query to an *.sql file

Data Management

 commit transaction

 rollback transaction

 export the returned dataset using [Export Data Wizard](#)

 export the returned dataset as Execute Script using the [Export as SQL Script](#) wizard

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

See also:

[Working with diagram area](#)

[Query execution](#)

6.2.2 Working with diagram area

The main working area of **Design Query** 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 fields and setting links between objects.

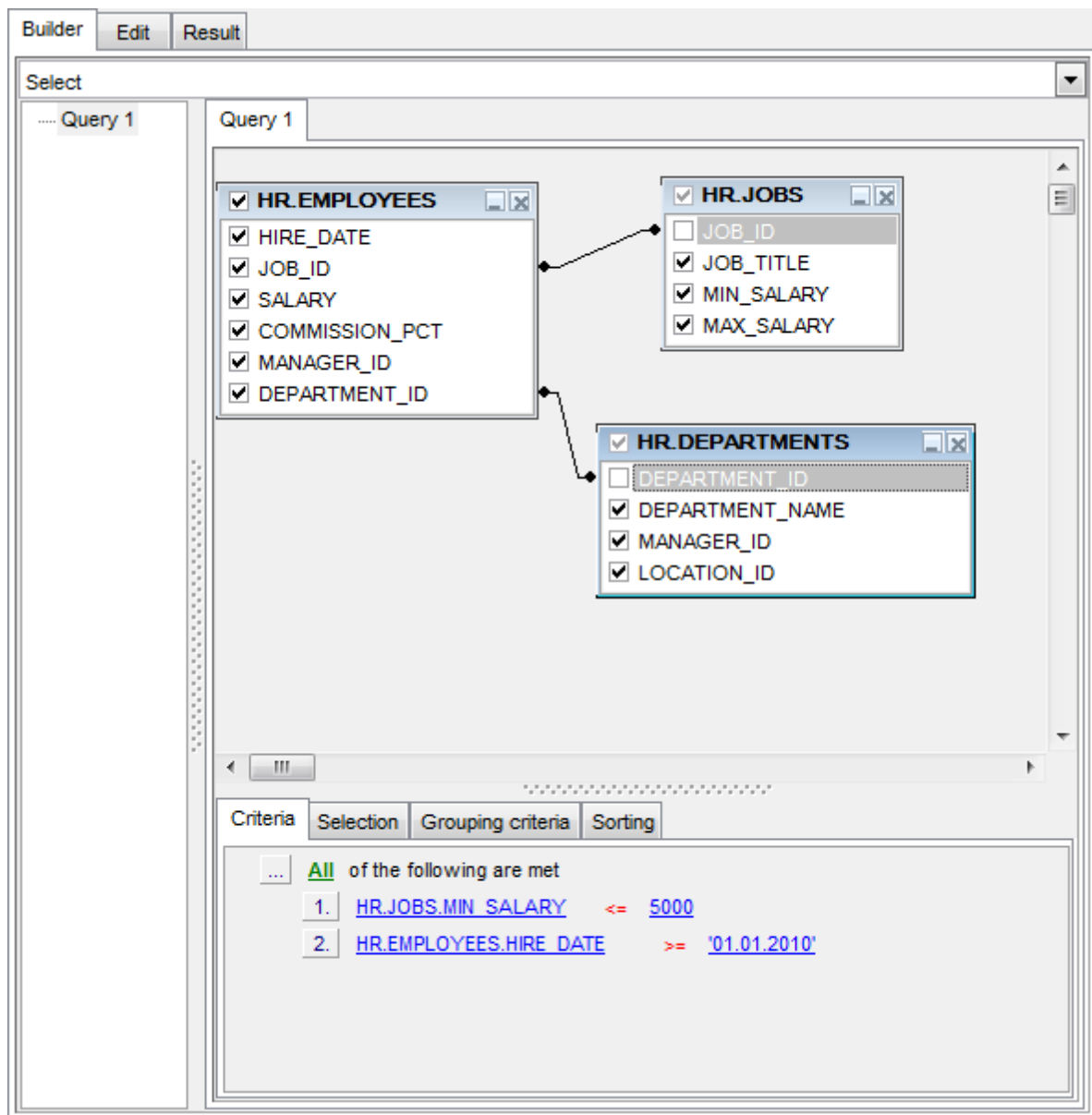
To add an object to the query, you can simply drag it from the [DB Explorer](#) tree to the diagram area.

To include a field in the query, check the corresponding box located to the left from the field name in the list, or just double-click it. To include all fields of the table/view, check the box located to the left of the table/view caption. If you do not check any fields, the SQL statement is generated as `SELECT * FROM <table/view_name>`, i.e. all the fields are included in the query.

To *collapse/expand* the list of table/view fields, click the minimize/maximize button at the object caption.

To exclude a field 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.

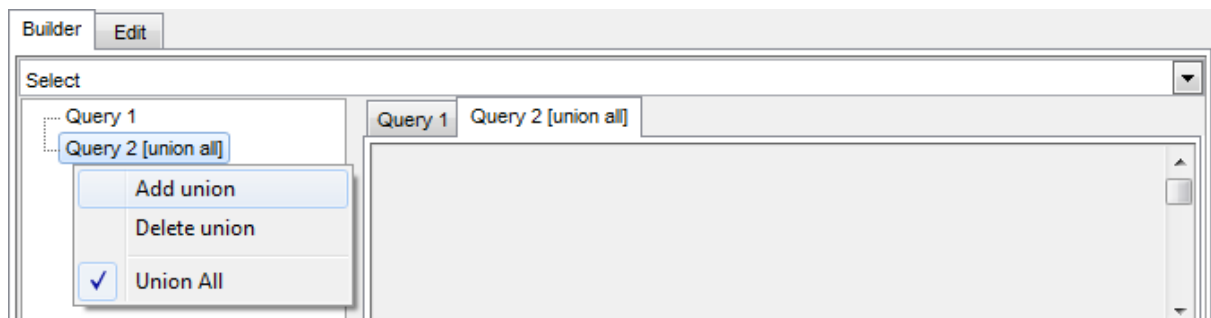


Design Query allows you to create complex queries consisting of two or more queries combined in one with the *UNION* operator, or add nested queries. The panel to the left of the diagram area displays the **tree of subqueries**.

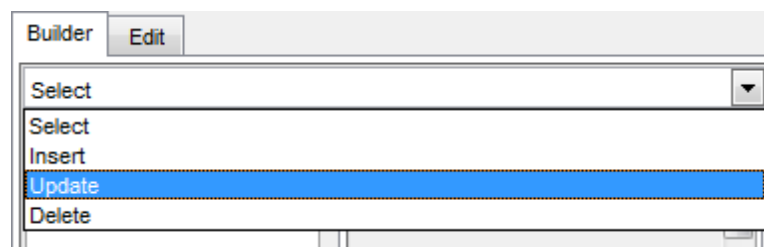
To add a query, right-click within the **tree of subqueries** area and select **Add union** from the context menu. A tab for the new query will appear in the diagram area.

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:

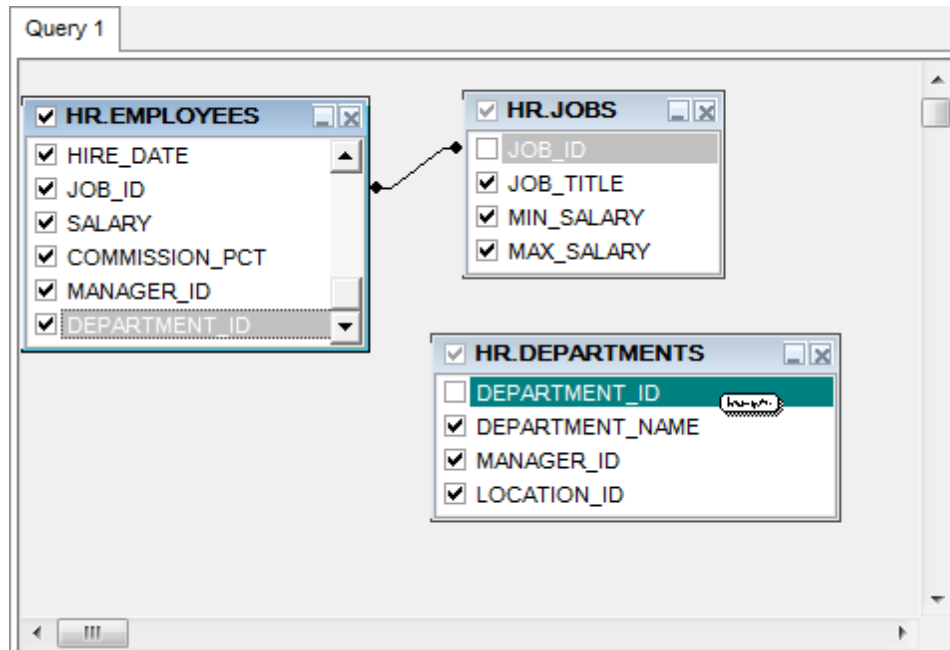
[Joining two objects](#)

[Working with the editor area](#)

[Query execution](#)

6.2.3 Joining two objects

The **diagram area** allows you to associate two objects by their fields: this operation is performed by dragging a field from one object list to another. This will set a link between these objects by the selected fields. It is indicated by a bidirectional arrow between the linked fields.



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 edit the 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 (=, >, <, >=, <=, <>).



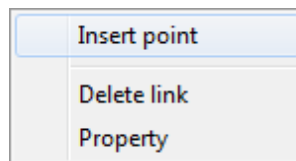
For your convenience the ☒ **Include all** option is available for each object of the association:
if the option is enabled for the left table, the *LEFT JOIN* operator will be used for the association;

if the option is enabled for the right table, the *RIGHT JOIN* operator is used for the association;
if the option is enabled for neither of the tables, the *INNER JOIN* operator is used for the association.

Click **OK** to apply the changes you have made.

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:

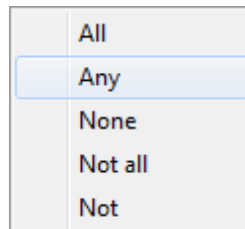
[Working with diagram area](#)

[Setting criteria](#)

6.2.4 Setting criteria

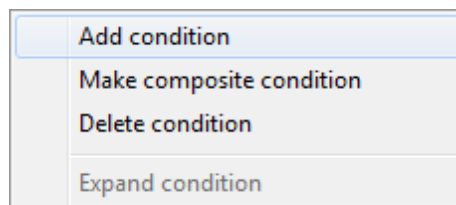
Use the **Criteria** tab to set the selection conditions.

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.



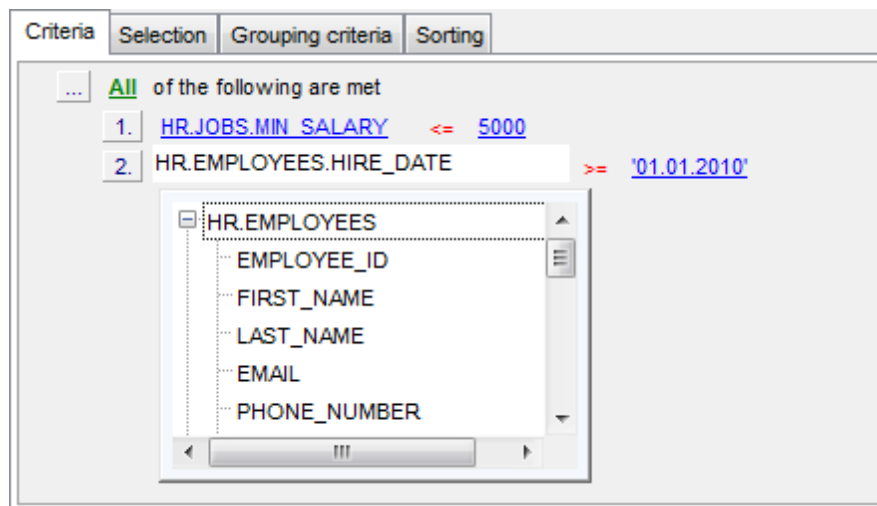
To add a condition, click the ellipsis  button on the left, and select the **Add condition** popup menu item.

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).

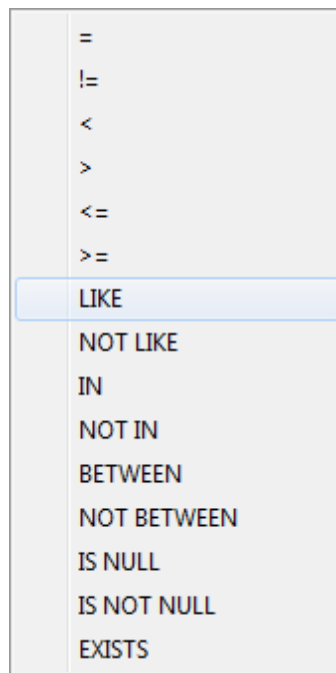


A simple condition pattern contains three elements: *an argument*, *a condition operator* and *a second argument* (if required for the condition).

Clicking each element field allows you to set its value. You can add a field by drag-and-dropping it from the working area to Criteria, Selection, Grouping criteria or Sorting tabs. When clicking an argument field, you can edit the argument as a text string: set an object name or a certain value in this field. Right-clicking the field in the edit mode activates the popup menu with the **Insert field** (also called by the *Shift+Enter* [shortcut](#); this item allows you to select a field from the list of all the table fields) and **Insert query** (this item adds a nested query) items.



Clicking the condition operator field activates the popup menu from which you can select the operator you need.



See also:

[Setting output fields](#)

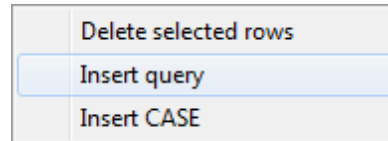
[Setting grouping criteria](#)

[Setting sorting parameters](#)

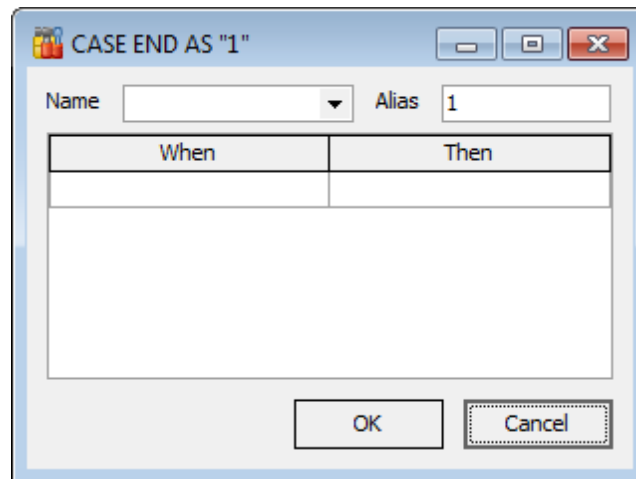
6.2.5 Setting output fields

The **Selection** tab displays the output fields of the query as a grid.

The grid allows you to edit the names of the query output fields, specify their display order and set the aggregate functions for each field. To remove a field from the list, right-click the field 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 field*, click it and then type the field 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.

Criteria	Selection	Grouping criteria	Sorting
☐ Select only unique records  up  down 			
Source field name	Name of output field	Aggregate	Grouping
HR.EMPLOYEES.EMAIL	EMAIL		Yes
HR.EMPLOYEES.PHONE_NUMBER	PHONE_NUMBER		Yes
HR.EMPLOYEES.HIRE_DATE	HIRE_DATE		Yes
HR.EMPLOYEES.JOB_ID	JOB_ID		Yes
▶ HR.EMPLOYEES.SALARY	FIELD_1	AVG	
HR.EMPLOYEES.COMMISSION_PCT	COMMISSION_PCT		Yes
HR.EMPLOYEES.MANAGER_ID	MANAGER_ID		Yes
HR.EMPLOYEES.DEPARTMENT_ID	DEPARTMENT_ID		Yes

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](#)

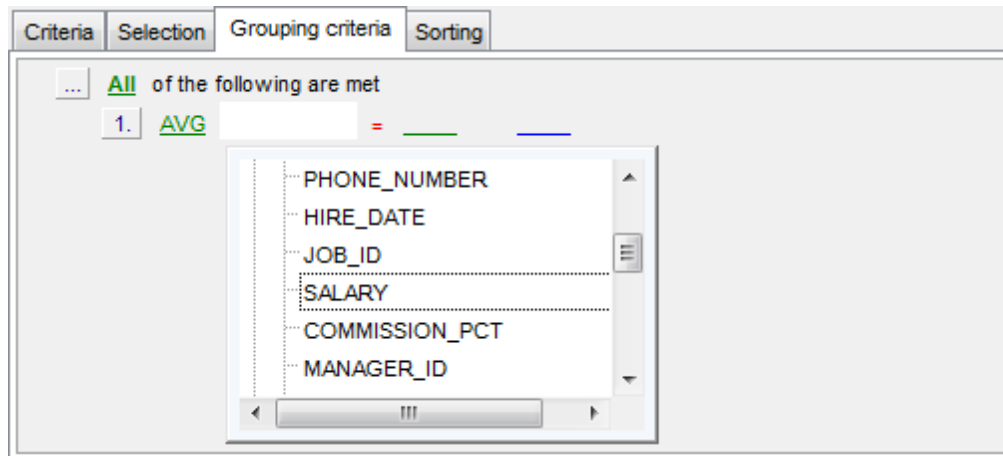
[Setting grouping criteria](#)

[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 fields 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 fields](#)

[Setting sorting parameters](#)

6.2.7 Setting sorting parameters

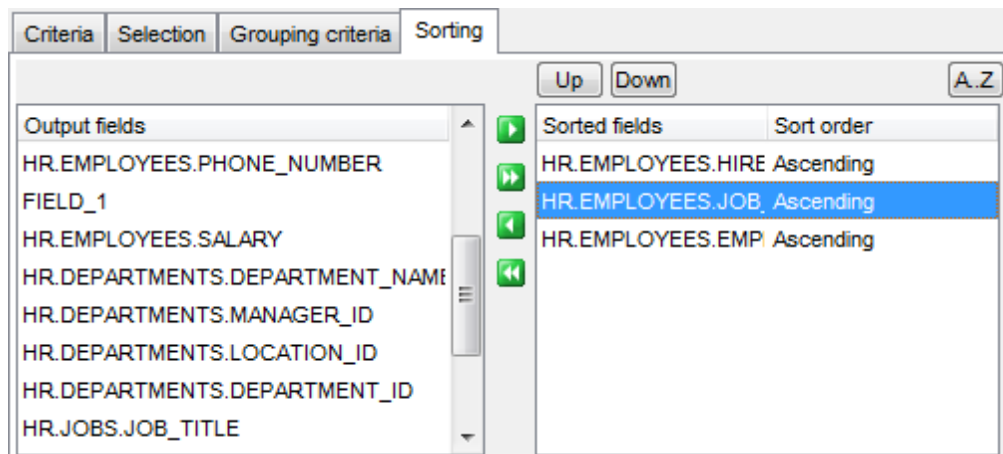
The **Sorting** tab allows you to set sorting parameters for the records returned by the query.

The working area contains the **Output fields** list (at the left) which represents all fields of the objects used in the query, and the **Sorted fields** list (at the right) which contains the fields to sort records by.

To move a field from one list to another, drag the selected field or use the **Add** and **Remove** buttons:    .

To change the sorting order for a sorted field, select the field in the **Sorted fields** list and move it using the **Up** and **Down** buttons.

To change the sorting direction, select the field in the **Sorted fields** list and switch the direction (*Ascending*, *Descending*) using the corresponding **A..Z/Z..A** button.



See also:

[Setting criteria](#)

[Setting output fields](#)

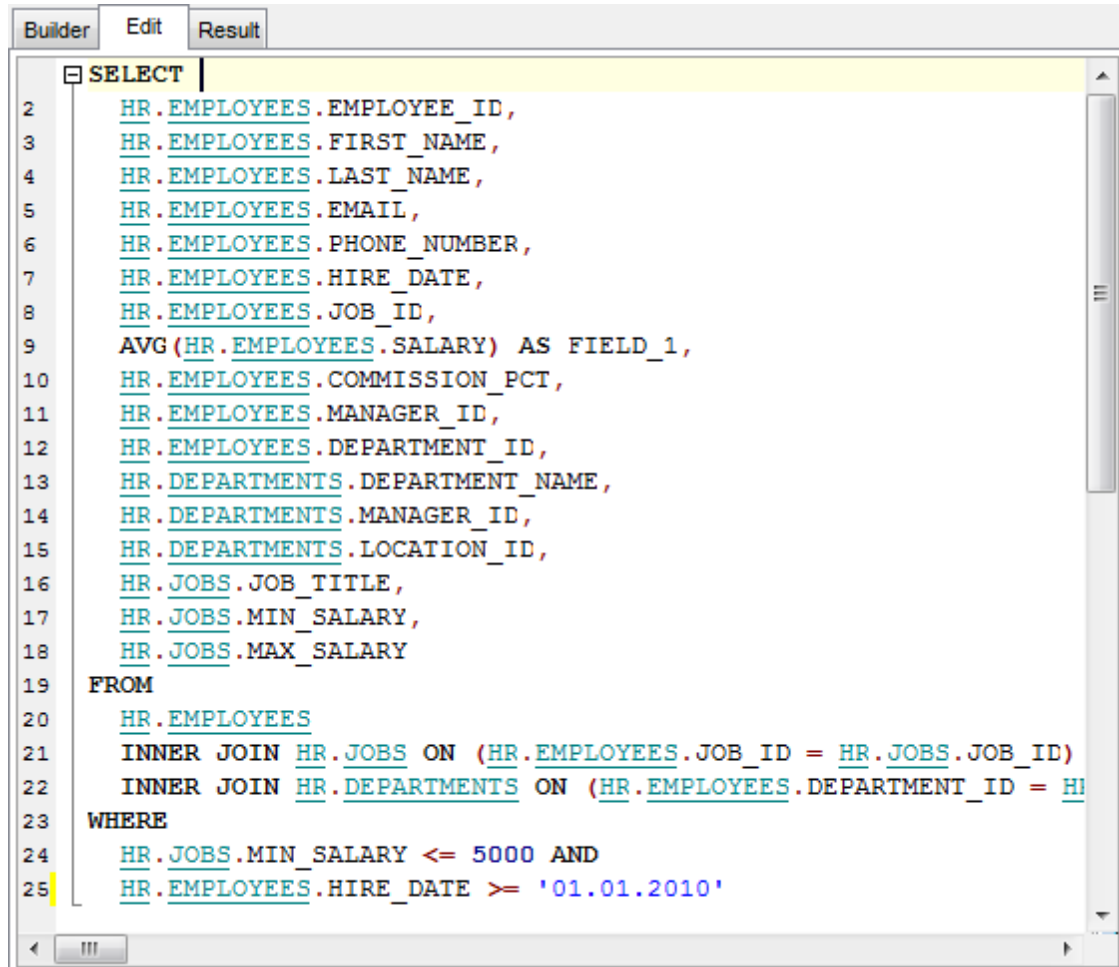
[Setting grouping criteria](#)

6.2.8 Working with the editor area

The Query tab 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 Query Data features available within the Query tab see [Working with Query Data area](#).

The screenshot shows the 'Builder' tab of the SQL Manager for Oracle. The query editor contains a SQL query with line numbers 2 through 25 on the left margin. The query text is as follows:

```
2  SELECT  
3  HR.EMPLOYEES.EMPLOYEE_ID,  
4  HR.EMPLOYEES.FIRST_NAME,  
5  HR.EMPLOYEES.LAST_NAME,  
6  HR.EMPLOYEES.EMAIL,  
7  HR.EMPLOYEES.PHONE_NUMBER,  
8  HR.EMPLOYEES.HIRE_DATE,  
9  HR.EMPLOYEES.JOB_ID,  
10 AVG(HR.EMPLOYEES.SALARY) AS FIELD_1,  
11 HR.EMPLOYEES.COMMISSION_PCT,  
12 HR.EMPLOYEES.MANAGER_ID,  
13 HR.EMPLOYEES.DEPARTMENT_ID,  
14 HR.DEPARTMENTS.DEPARTMENT_NAME,  
15 HR.DEPARTMENTS.MANAGER_ID,  
16 HR.DEPARTMENTS.LOCATION_ID,  
17 HR.JOBS.JOB_TITLE,  
18 HR.JOBS.MIN_SALARY,  
19 HR.JOBS.MAX_SALARY  
20 FROM  
21 HR.EMPLOYEES  
22 INNER JOIN HR.JOBS ON (HR.EMPLOYEES.JOB_ID = HR.JOBS.JOB_ID)  
23 INNER JOIN HR.DEPARTMENTS ON (HR.EMPLOYEES.DEPARTMENT_ID = HR.DEPARTMENTS.DEPARTMENT_ID)  
24 WHERE  
25 HR.JOBS.MIN_SALARY <= 5000 AND  
HR.EMPLOYEES.HIRE_DATE >= '01.01.2010'
```

See also:

[Working with diagram area](#)

[Query execution](#)

[Query Data](#)

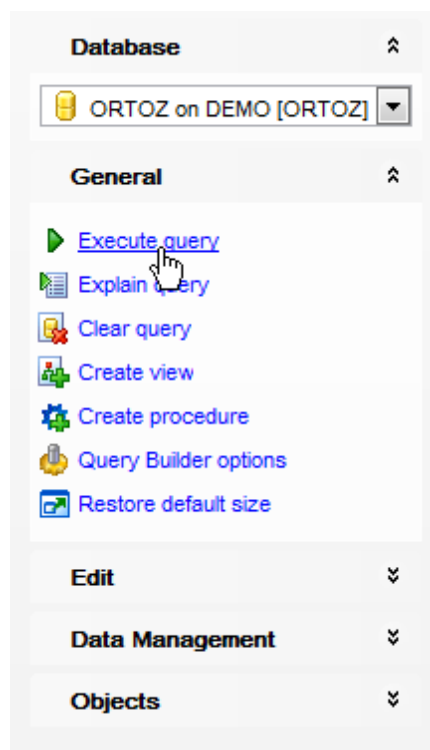
6.2.9 Query execution

When all the query parameters are set, you can immediately **execute the query** in **Design Query**.

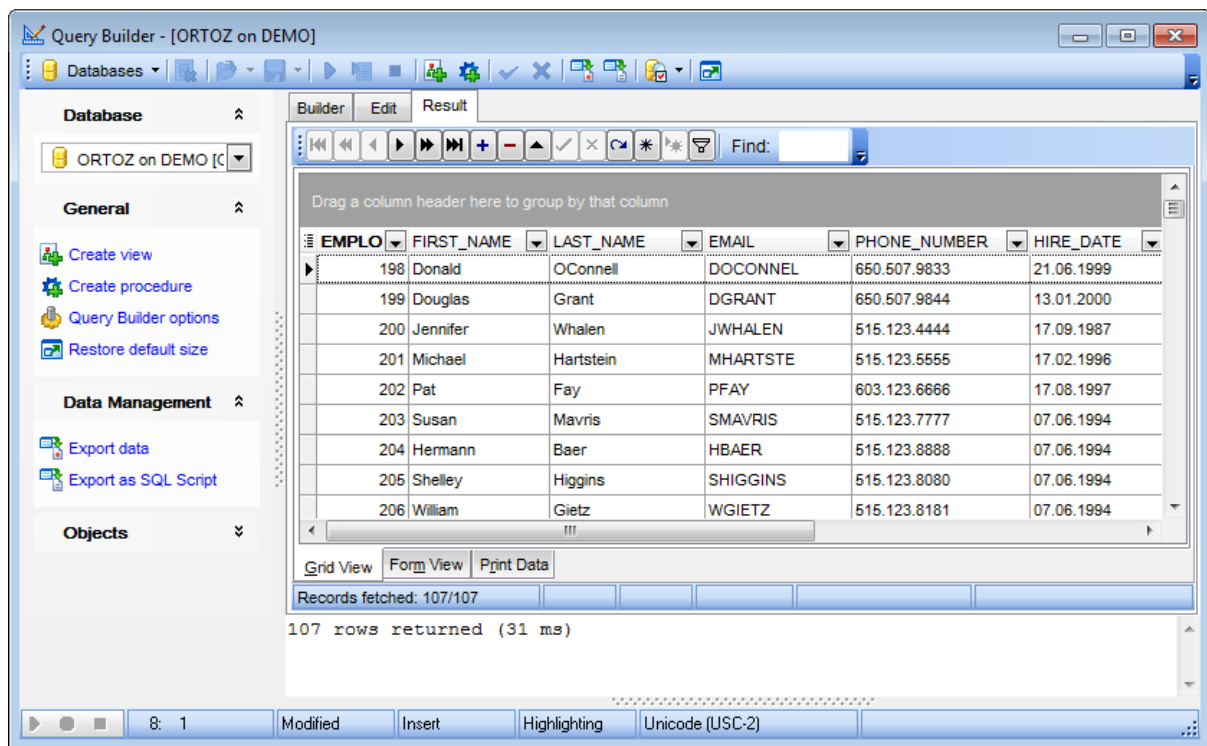
To execute a query, click the ► **Execute query** item of the [Navigation bar](#). You can also use the *F9* hot key for the same purpose.

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 Design Query 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](#).

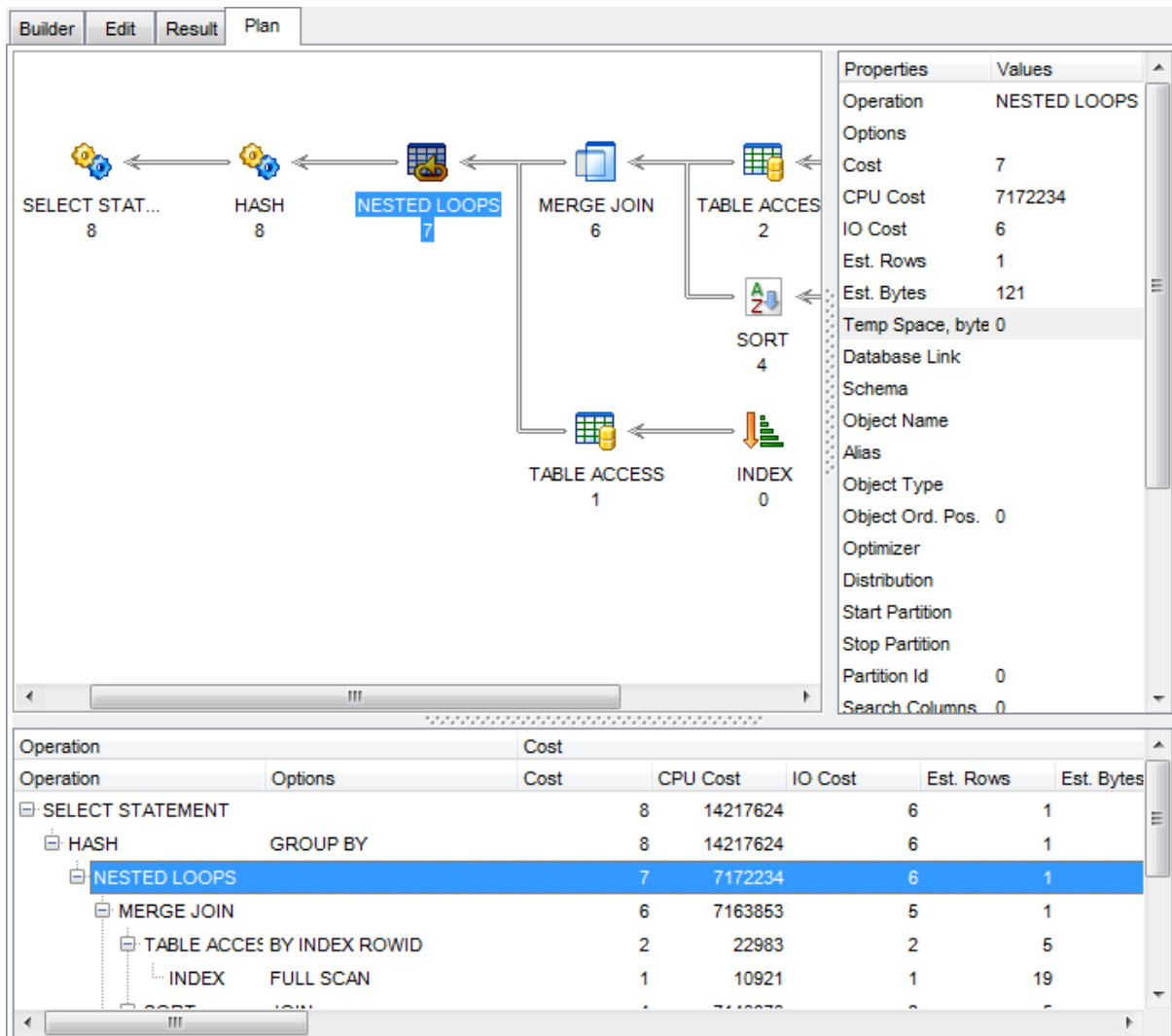
**See also:**[Working with diagram area](#)[Working with the editor area](#)[Data View](#)

6.2.10 Viewing query plan

Using SQL Manager for Oracle, 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 **Design Query** and use the  **Explain query** item of the [Navigation bar](#).

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 screenshot displays the 'Plan' tab in SQL Manager for Oracle. The top part shows a graphical query execution plan with the following operations and costs:

- SELECT STATEMENT (Cost: 8)
- HASH (Cost: 8)
- NESTED LOOPS (Cost: 7)
- MERGE JOIN (Cost: 6)
- TABLE ACCESS (Cost: 2)
- TABLE ACCESS (Cost: 1)
- INDEX (Cost: 0)
- SORT (Cost: 4)

The right pane shows the properties for the selected 'NESTED LOOPS' operation:

Properties	Values
Operation	NESTED LOOPS
Options	
Cost	7
CPU Cost	7172234
IO Cost	6
Est. Rows	1
Est. Bytes	121
Temp Space, byte	0
Database Link	
Schema	
Object Name	
Alias	
Object Type	
Object Ord. Pos.	0
Optimizer	
Distribution	
Start Partition	
Stop Partition	
Partition Id	0
Search Columns	0

The bottom pane shows a detailed table of operations:

Operation	Options	Cost	CPU Cost	IO Cost	Est. Rows	Est. Bytes
SELECT STATEMENT		8	14217624	6	1	
HASH	GROUP BY	8	14217624	6	1	
NESTED LOOPS		7	7172234	6	1	
MERGE JOIN		6	7163853	5	1	
TABLE ACCESS BY INDEX ROWID		2	22983	2	5	
INDEX	FULL SCAN	1	10921	1	19	

If necessary, you can specify that the **Plan** tab appears automatically upon query execution in Design Query: select the ☒ **Explain query on execution** option available within the [Tools | Design Query](#) section of the [Environment Options](#) dialog.

See also:

[Query execution](#)

6.3 Query parameters

Both [Query Data](#) and [Design Query](#) 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.

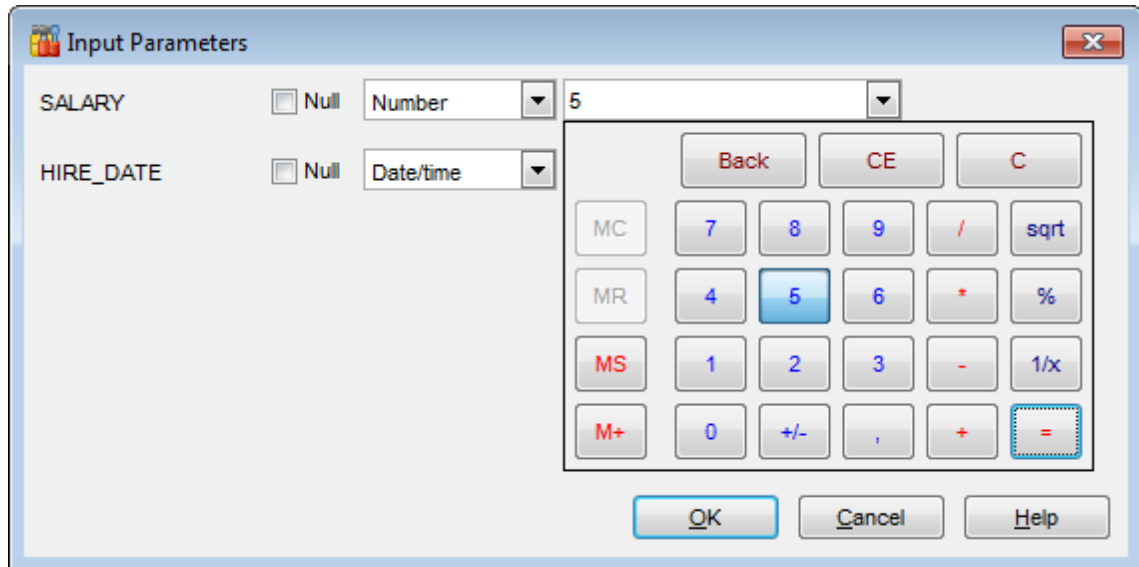
See also:

[Query Data](#)

[Design Query](#)

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.



The edit field for input parameters varies according to the field data type. For your convenience the *Calculator* and *Date editor* are implemented for *Numeric* and *Date and Time* types respectively: click the arrow-down button to call the *Calculator / Date editor* popup window.

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](#), [Query Data](#), [Design Query](#) 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](#)

[Services](#)

[Options](#)

[How To...](#)

7.1 Data View

SQL Manager for Oracle provides you with powerful tools for **viewing, editing and printing data** from tables and queries:

- table / materialized view / view data are available within the **Data** tab of [Table Editor](#) / [Materialized View Editor](#) / [View Editor](#) correspondingly;
- upon [a query execution](#) the returned dataset appears within the **Result(s)** tab of [Query Data](#) / [Design Query](#) (in Query Data 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](#)

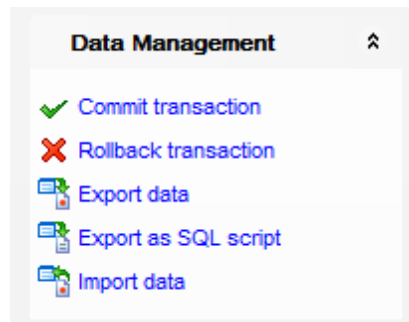
[Table Editor](#)

[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 [Query Data](#), [Design Query](#)) 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 Execute Script
- 📄 import data (in *Table Editor*, *View Editor* only)



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;
- enable [multi-level mode](#) to display data of the table(s) related by a [foreign key](#) (in *Table Editor* only)
- specify the maximum number of records (record limit) for displaying data (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 fields 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](#)

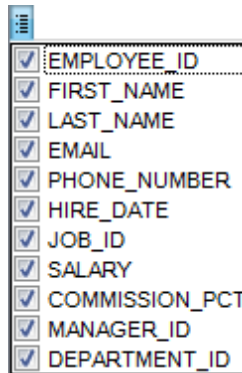
Hint: To increase the speed of opening tables and views with extremely large number of records, you can use options of the **Grid mode** group available in the [Grid | Data Options](#) section of the [Environment Options](#) dialog.

Applying changes

7.1.2.1 Customizing columns

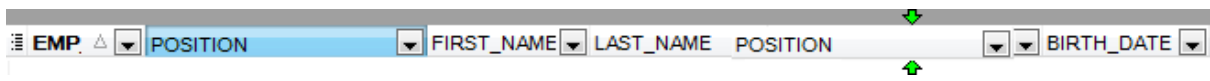
Selecting visible columns

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](#).

Fields	Keys	Foreign Keys	Checks	Indices	Triggers	Dependencies	Data	Description	DDL	Permissions
Find: 1000										
JOB_ID										
EMPLOYEE	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	SALARY				
JOB_ID : ADPres										
JOB_ID : ADVP										
JOB_ID : FIACCOUNT										
109	Daniel	Faviet	DFAVIET	515.124.4169	16.08.1994	9000				
113	Luis	Popp	LPOPP	515.124.4567	07.12.1999	6900				
112	Jose Manuel	Urman	JMURMAN	515.124.4469	07.03.1998	7800				
111	Ismael	Sciarra	ISCIARRA	515.124.4369	30.09.1997	7700				
110	John	Chen	JCHEN	515.124.4269	28.09.1997	8200				
JOB_ID : FI_MGR										
JOB_ID : HR_REP										
JOB_ID : IT_PROG										
103	Alexander	Hunold	AHUNOLD	590.423.4567	03.01.1990	9000				
107	Diana	Lorentz	DLORENTZ	590.423.5567	07.02.1999	4200				
106	Valli	Pataballa	VPATABAL	590.423.4560	05.02.1998	4800				
105	David	Austin	DAUSTIN	590.423.4569	25.06.1997	4800				
104	Bruce	Ernst	BERNST	590.423.4568	21.05.1991	6000				
JOB_ID : MK_MAN										
JOB_ID : MK_REP										
JOB_ID : PR_REP										
III										
Grid View Form View Print Data										
Records fetched: 107/107 00:00:00										

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.

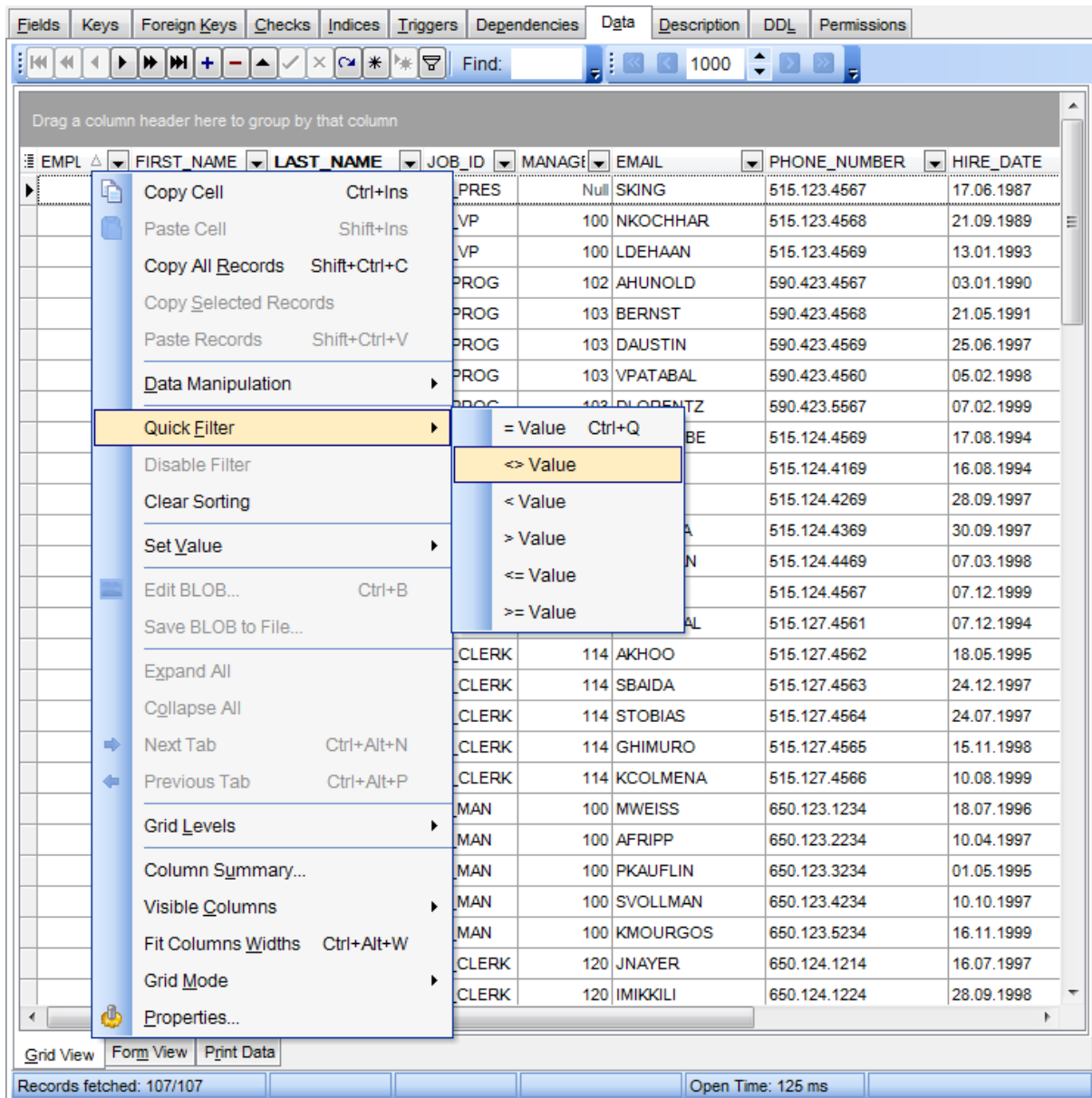
Fields	Keys	Foreign Keys	Checks	Indices	Triggers	Dependencies	Data	Description	DDL	Permissions
Find: 1000										
JOB_ID ▾ MANAGER_ID ▾										
EMPLOYEE_ID ▾ FIRST_NAME ▾ LAST_NAME ▾ EMAIL ▾ PHONE_NUMBER ▾ HIRE_DATE ▾ SALARY ▾										
JOB_ID : AD_ASST										
MANAGER_ID : 101										
200	Jennifer	Whalen	JWHALEN	515.123.4444	17.09.1987	44				
JOB_ID : AD_PRES										
MANAGER_ID :										
100	Steven	King	SKING	515.123.4567	17.06.1987	240				
JOB_ID : AD_VP										
MANAGER_ID : 100										
101	Neena	Kochhar	NKOCHHAR	515.123.4568	21.09.1989	170				
102	Lex	De Haan	LDEHAAN	515.123.4569	13.01.1993	170				
JOB_ID : FI_ACCOUNT										
MANAGER_ID : 108										
109	Daniel	Faviet	DFAVIET	515.124.4169	16.08.1994	90				
113	Luis	Popp	LPOPP	515.124.4567	07.12.1999	69				
112	Jose Manuel	Urman	JMURMAN	515.124.4469	07.03.1998	78				
111	Ismael	Sciarra	ISCIARRA	515.124.4369	30.09.1997	77				
110	John	Chen	JCHEN	515.124.4269	28.09.1997	82				
JOB_ID : FI_MGR										
JOB_ID : HR_REP										
Grid View Form View Print Data										
Records fetched: 107/107 Open Time: 110 ms										

See also:[Customizing columns](#)[Filtering records](#)[Working in multi-level mode](#)[Working in card view mode](#)[Column Summary](#)

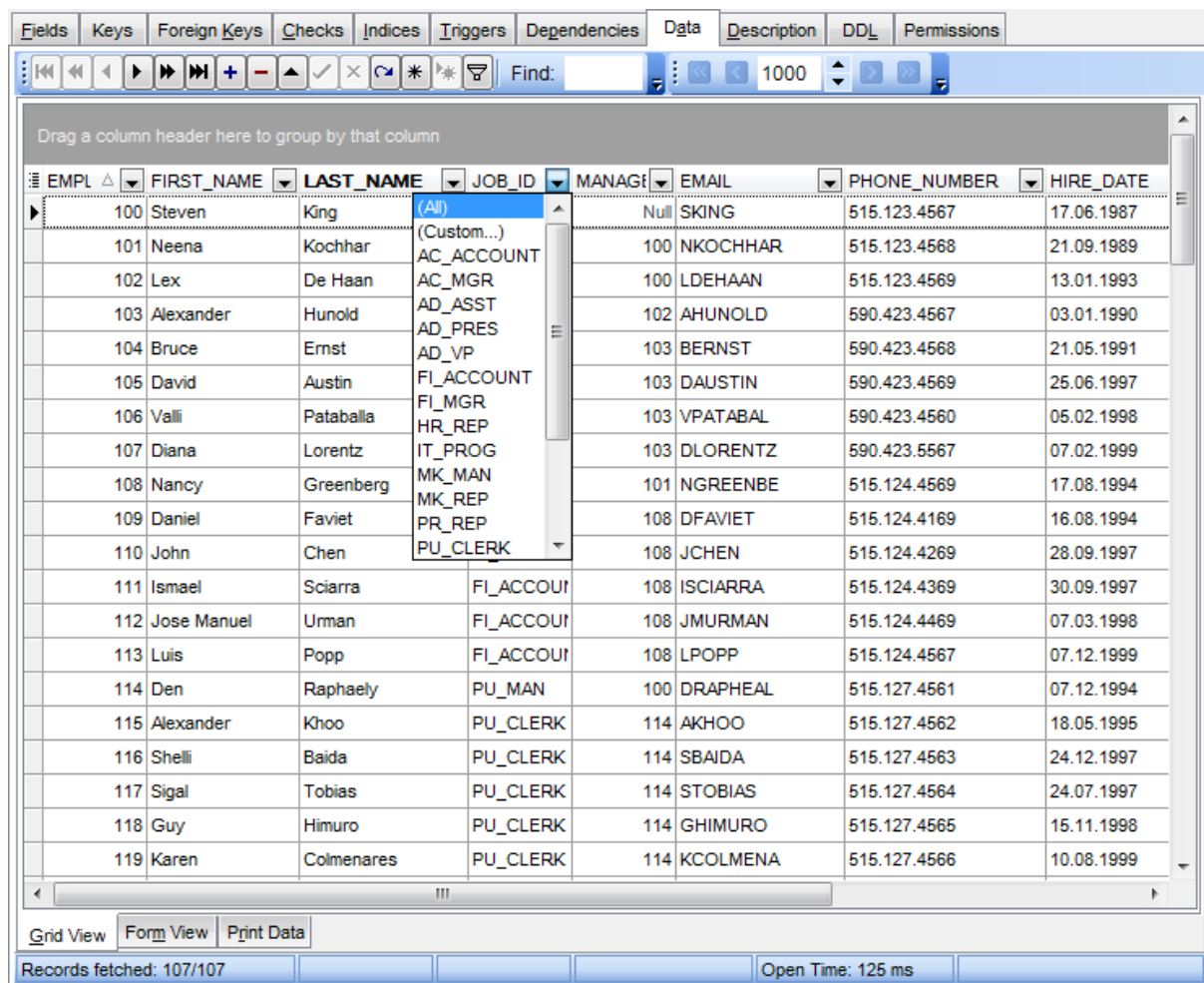
7.1.2.3 Filtering records

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;

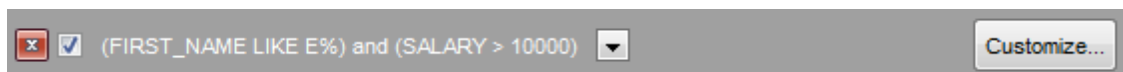


or

- 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](#)

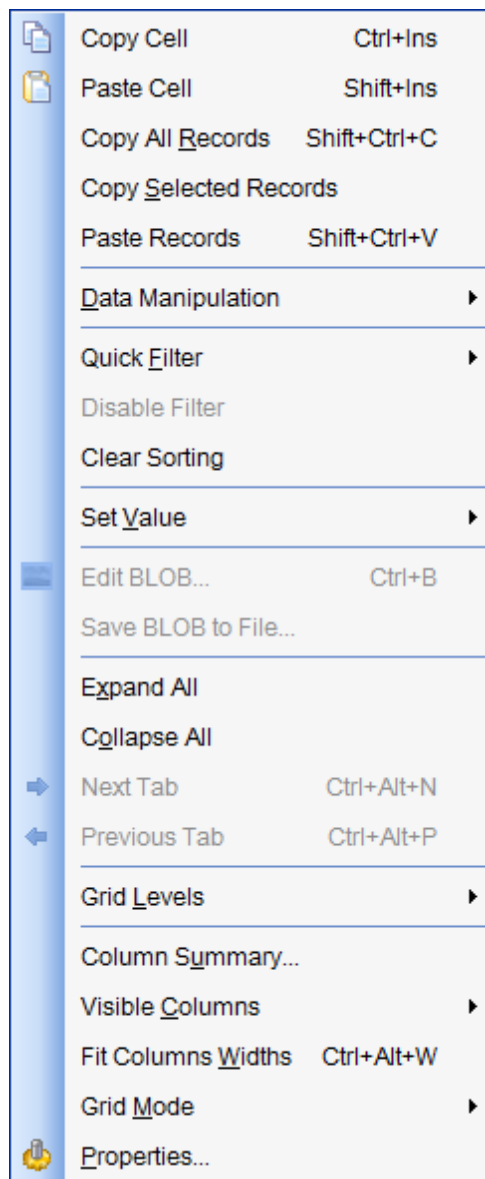
[Custom Filter](#)

[Filter Builder dialog](#)

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 Execute Script](#);
- set/disable [Quick Filter](#);
- clear sorting;
- set a value for the selected cell: *NULL*, *Empty string* (for string fields), *Now* (for DATE/TIME fields);
- 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](#).



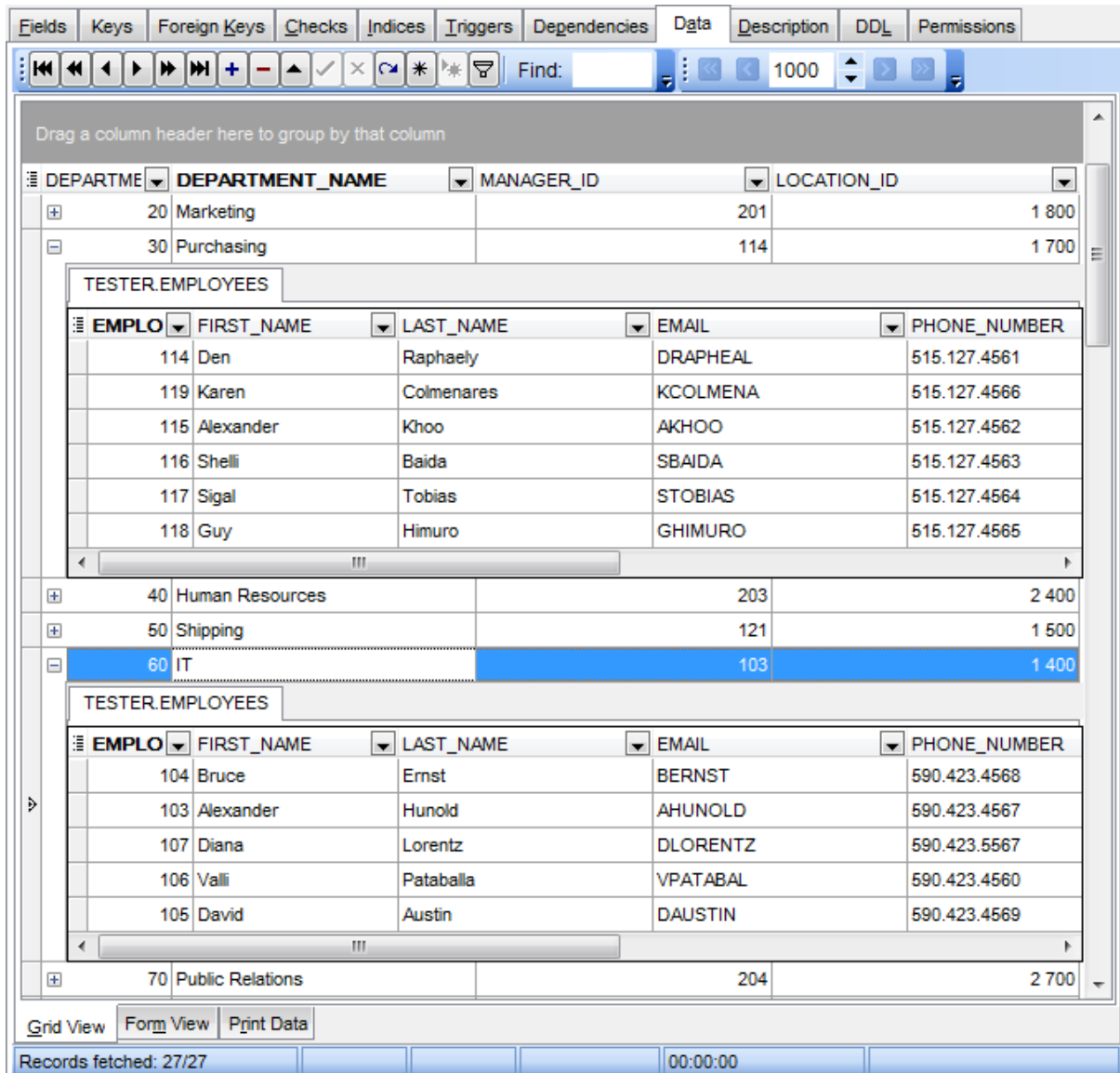
Note: If the ☒ **Show editor immediately** and ☒ **Always show editor** options on the [Environment options | Grid](#) tab are checked then the context menu of a grid can be evoked by selecting the necessary cell and right-clicking the table header. Otherwise, right-clicking the cell evokes the cell editing menu.

7.1.2.5 Working in multi-level mode

One of unique features of SQL Manager for Oracle 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](#)

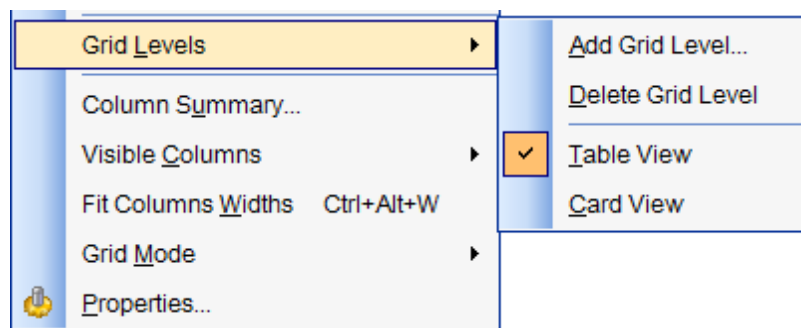
[Create Grid Level wizard](#)

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](#)

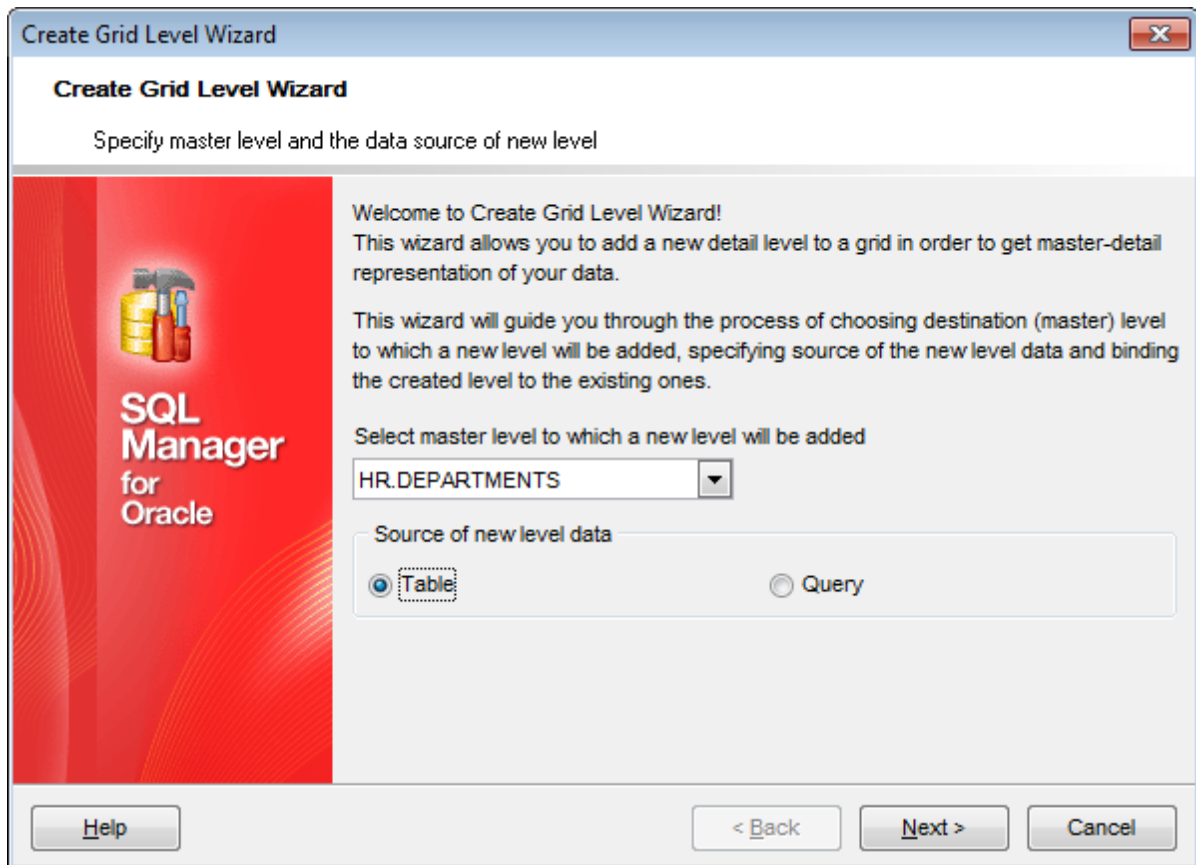


7.1.2.5.1.1 Specifying master level

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

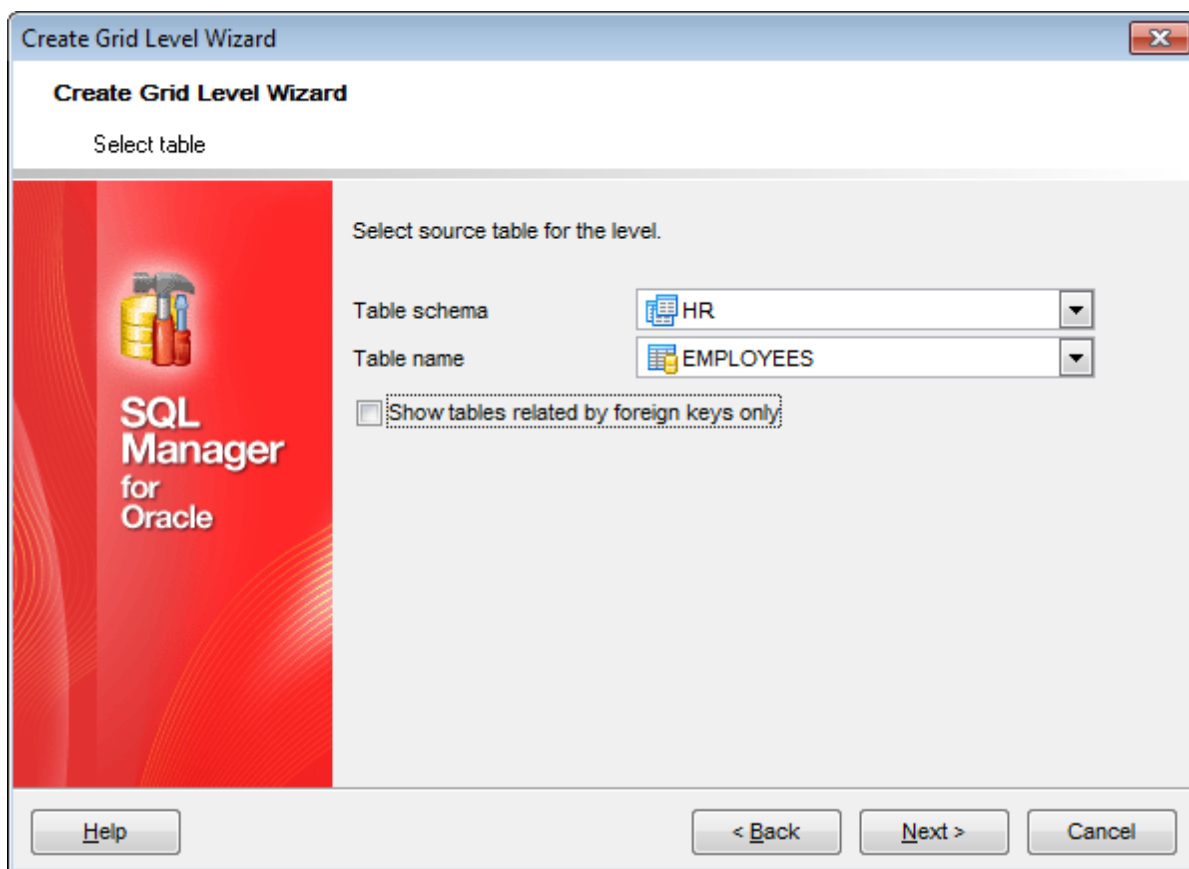
Select the source type of the new level data: ☒ *Table* or ☐ *Query*.



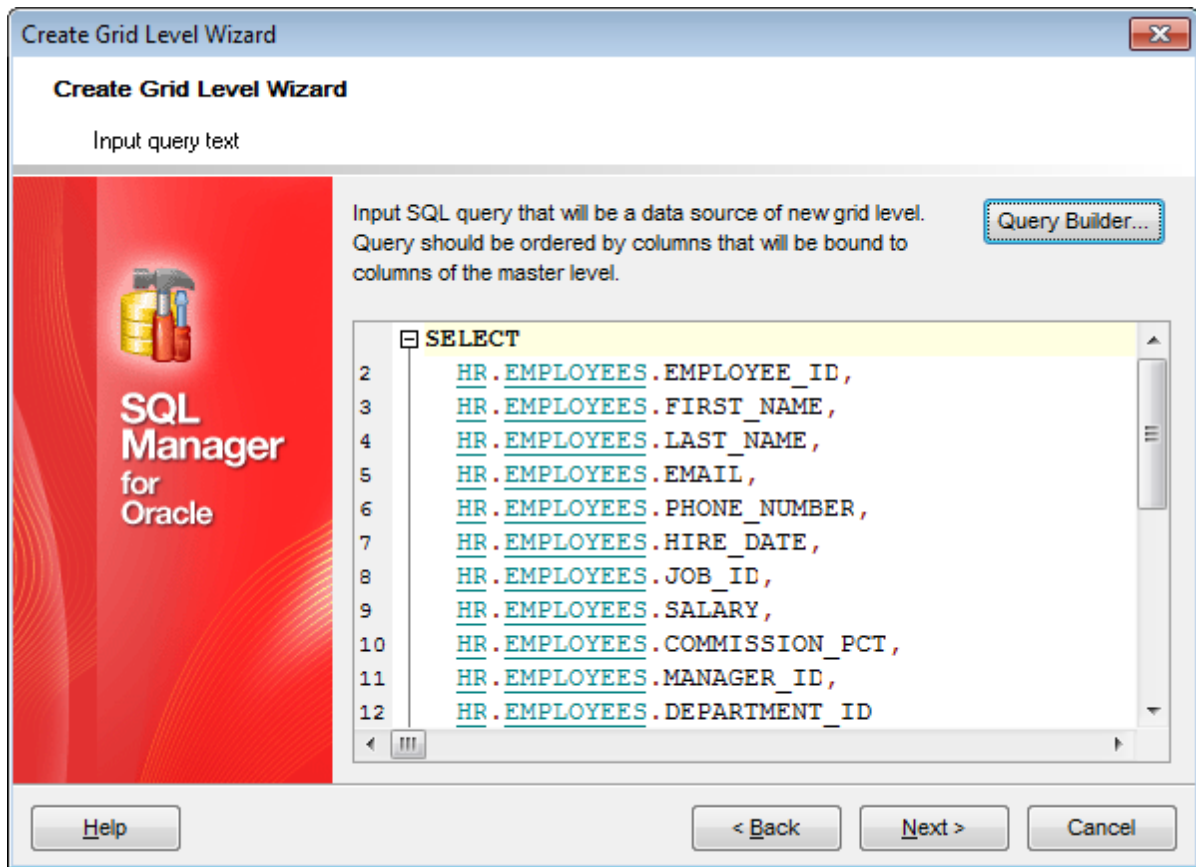
Click the **Next** button to proceed to the [Defining source for detail level](#) step to select a table for the detail level or input a query, depending on whether the ☒ **Table** or the ☐ **Query** option has been selected.

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 [Design Query](#) to build the SQL query visually.



Click the **Next** button to proceed to the [Binding master and detail levels](#) step of the wizard.

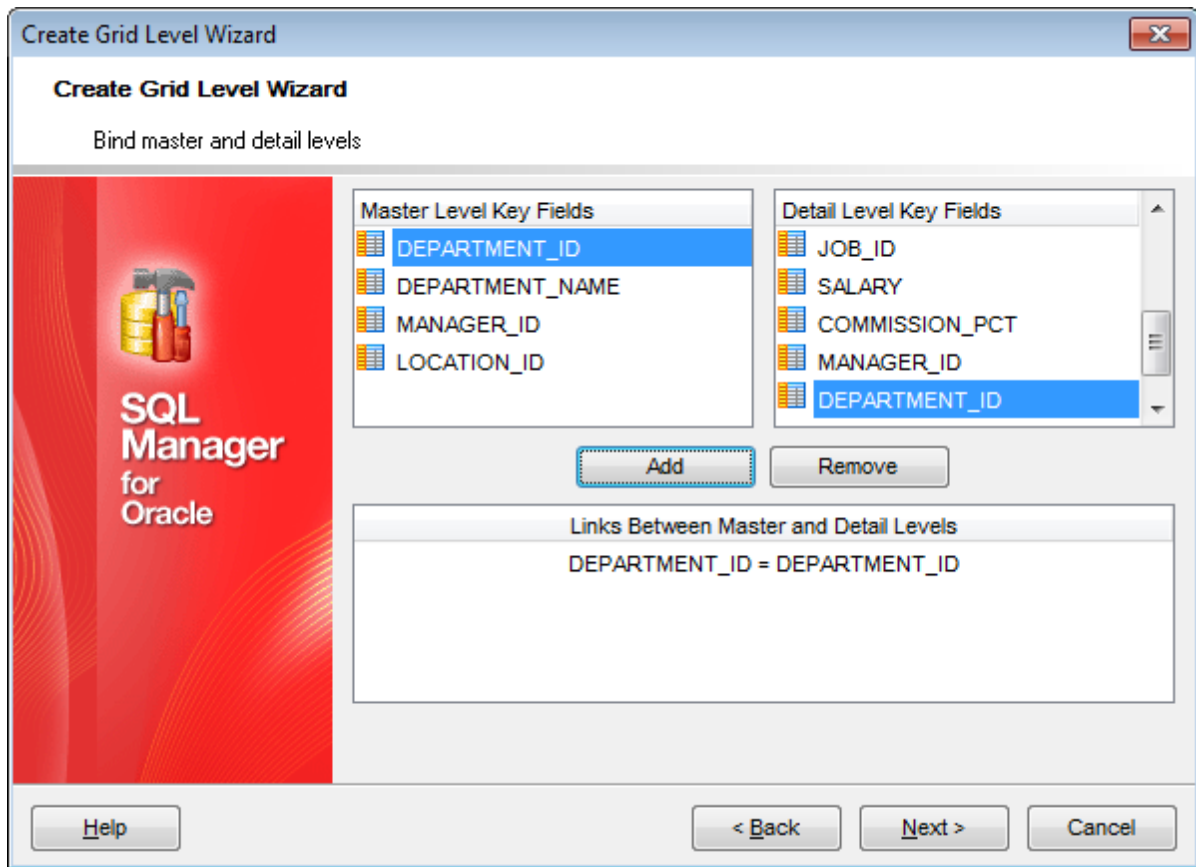
7.1.2.5.1.3 Binding master and detail levels

Define pairs of fields to link the Master Level and the Detail Level data sources:

- select a field 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.

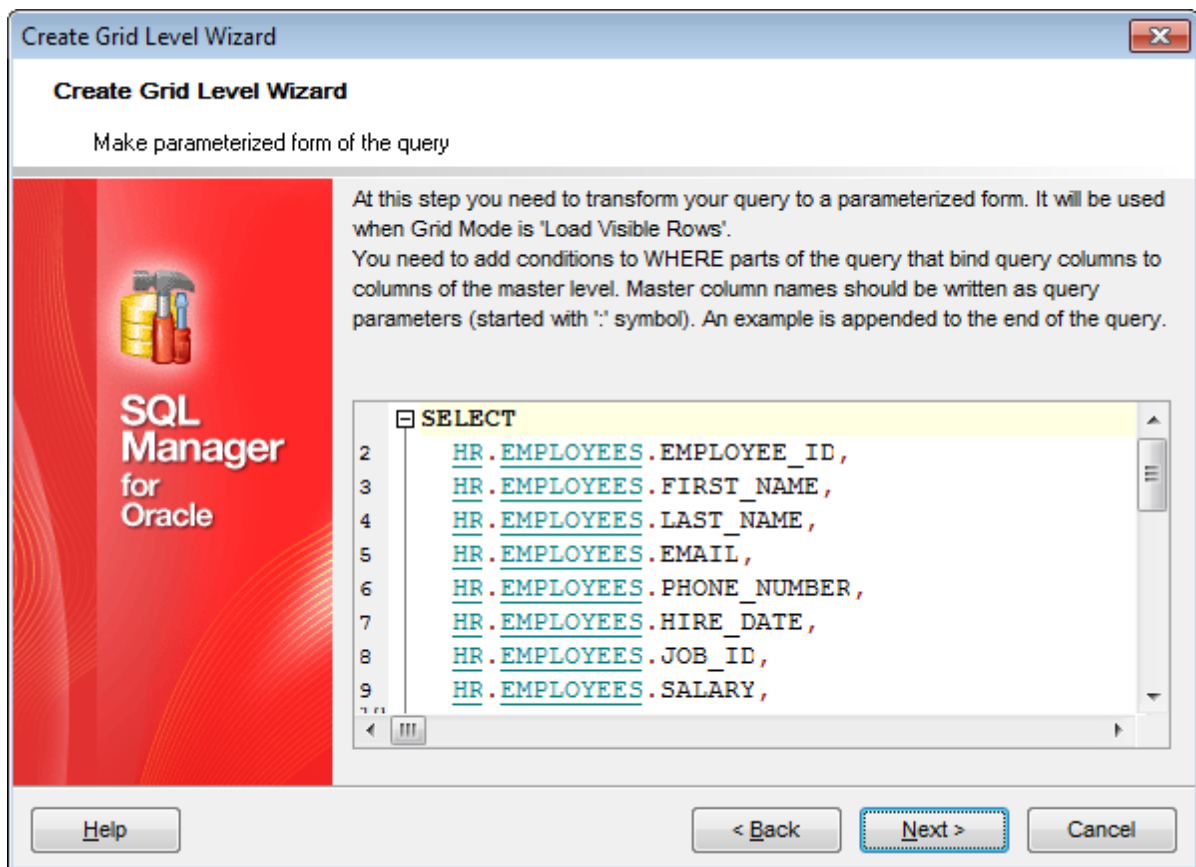
The **From Foreign Key...** menu is available if the ☒ **Show tables related by foreign keys only** option has been selected at the [previous step](#). This menu allows you to select the [foreign key](#) to be used for identifying master-detail levels (if the table has more than one foreign key relation).



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.

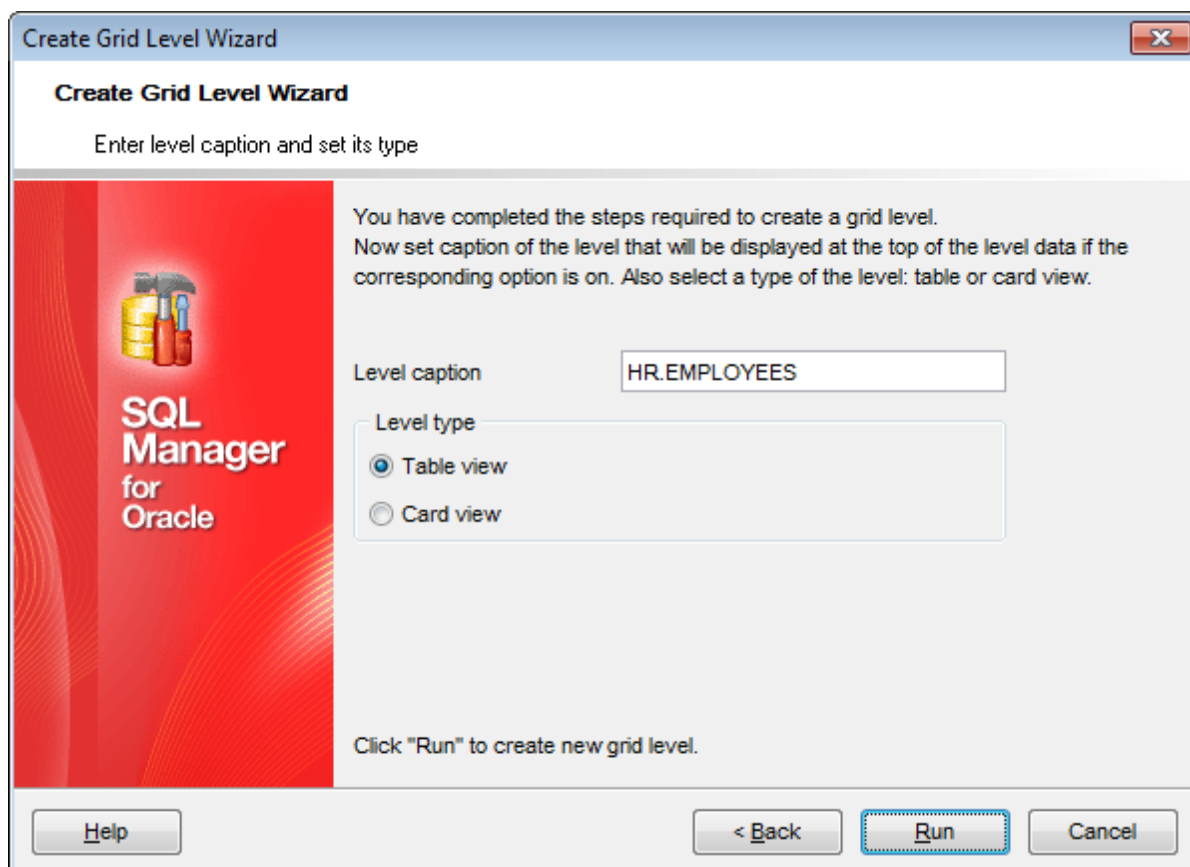
7.1.2.5.1.5 Setting additional parameters

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*.

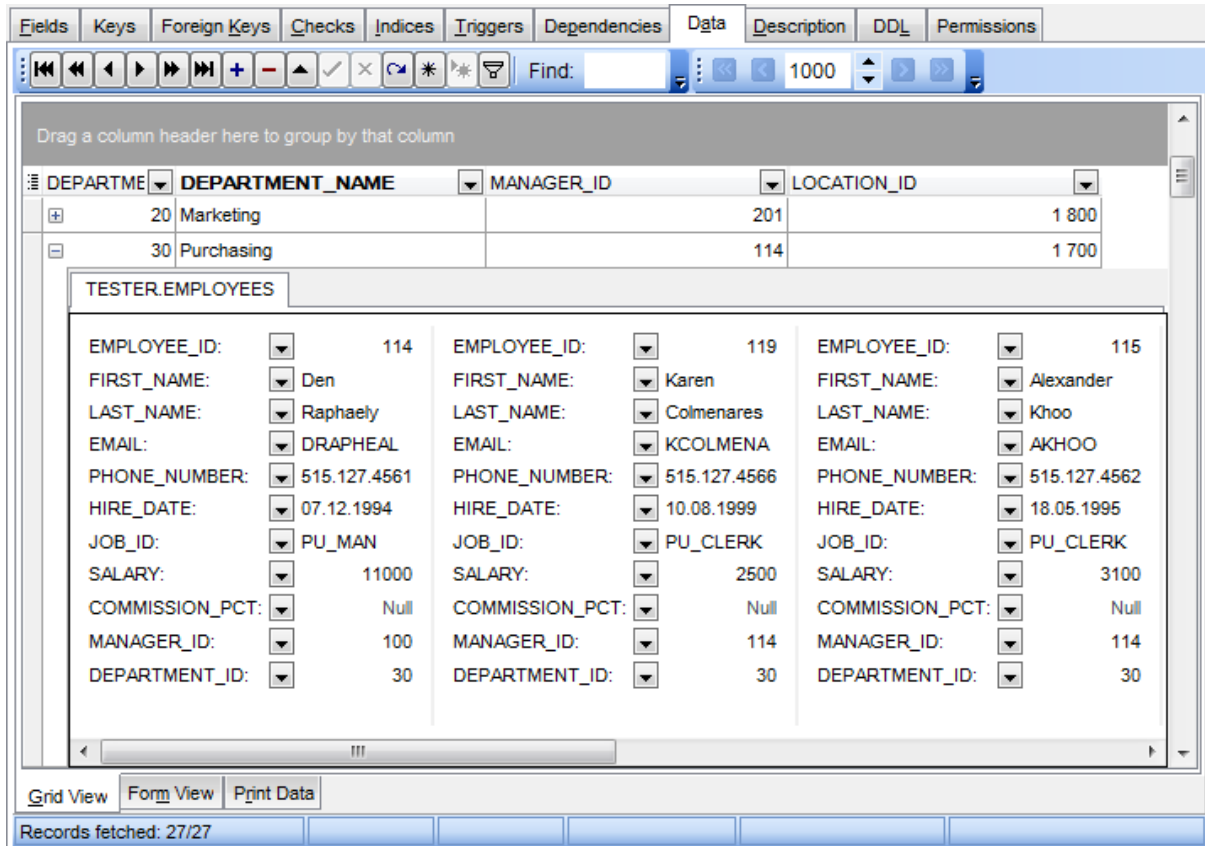


When you are done, click the **Run** button to complete the operation.

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.

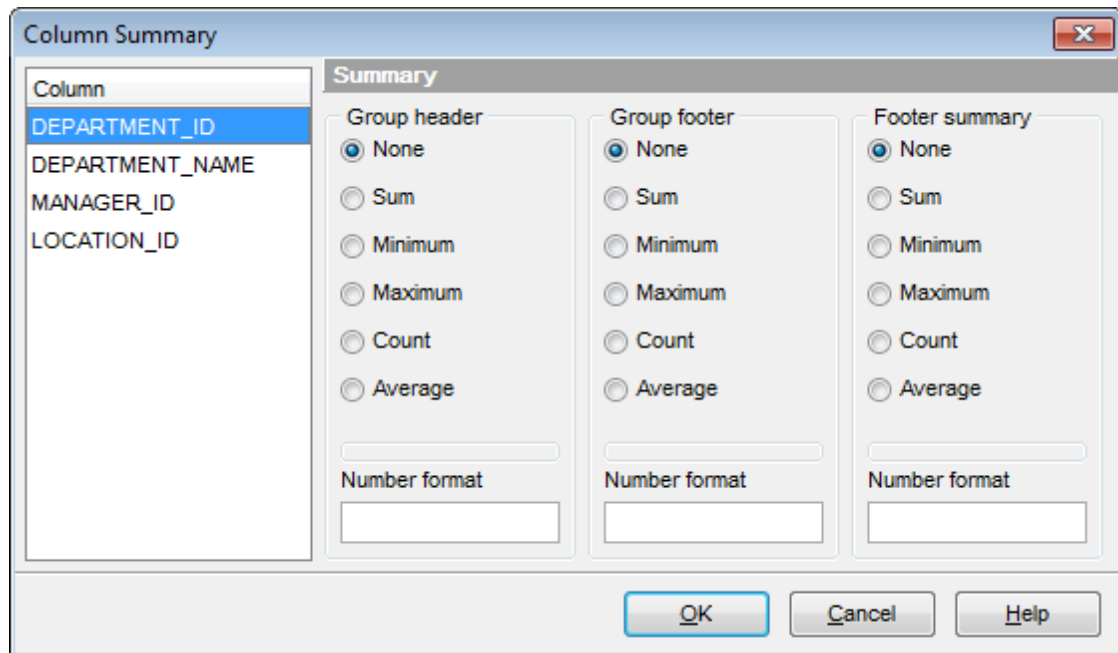


See also:

[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)

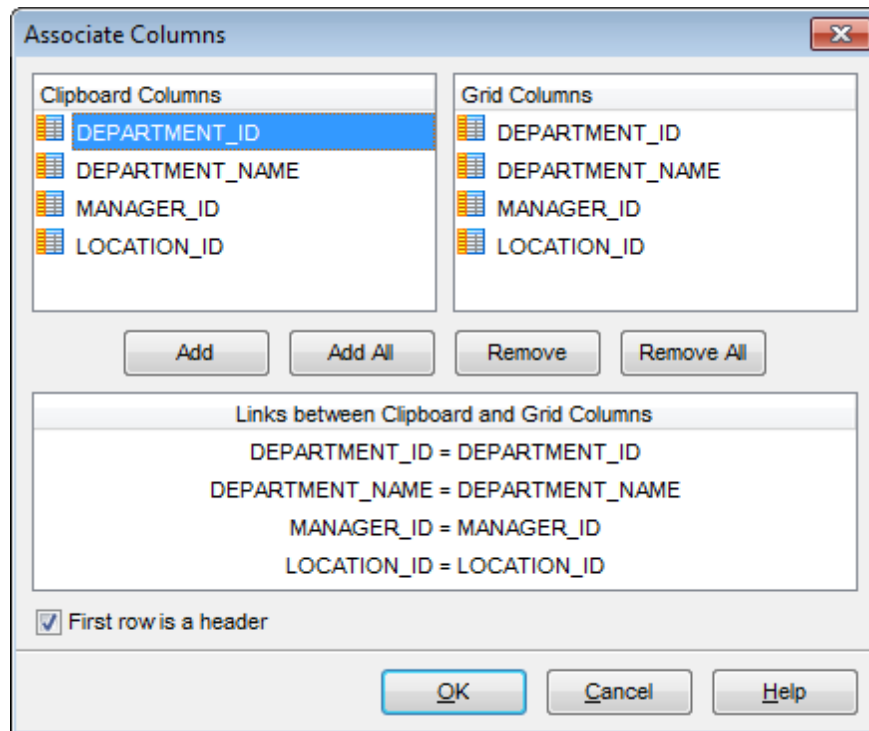
Use the **Number format** edit boxes in each group to specify the preferable [format](#) for summary info representation.

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 fields of the target Oracle 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 field 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: field names on the left and the corresponding values on the right. If the fields 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.

The screenshot shows the SQL Manager for Oracle interface in Form View mode. The top menu bar includes Fields, Keys, Foreign Keys, Checks, Indices, Triggers, Dependencies, Data, Description, DDL, and Permissions. Below the menu is a toolbar with navigation and editing icons, a Find field, and a record number display showing 1000. The main area displays the form for the EMPLOYEE table. Fields are listed on the left with their data types, and the corresponding values are entered on the right. Each field has a checkbox to toggle the NULL value. The current record is for John Chen, with a salary of 8200 and commission of 0. The bottom status bar shows 'Records fetched: 107/107' and a timer of 00:04:27.

Field Name	Data Type	Null	Value
EMPLOYEE_ID	NUMBER(6,0)	☐	110
FIRST_NAME	VARCHAR2(20)	☐	John
LAST_NAME	VARCHAR2(25)	☐	Chen
EMAIL	VARCHAR2(25)	☐	JCHEN
PHONE_NUMBER	VARCHAR2(20)	☐	515.124.4269
HIRE_DATE	DATE	☐	28.09.1997
JOB_ID	VARCHAR2(10)	☐	FI_ACCOUNT
SALARY	NUMBER(8,2)	☐	8200
COMMISSION_PCT	NUMBER(2,2)	☒	0
MANAGER_ID	NUMBER(6,0)	☐	108
DEPARTMENT_ID	NUMBER(4,0)	☐	100

Grid View Form View Print Data

Records fetched: 107/107 00:04:27

Each field has a ☒ **Null** checkbox which allows you to clear the field value and set it to NULL (if the field is nullable).

See also:

[Using Navigation bar and Toolbars](#)

[Grid View](#)

[Print Data](#)

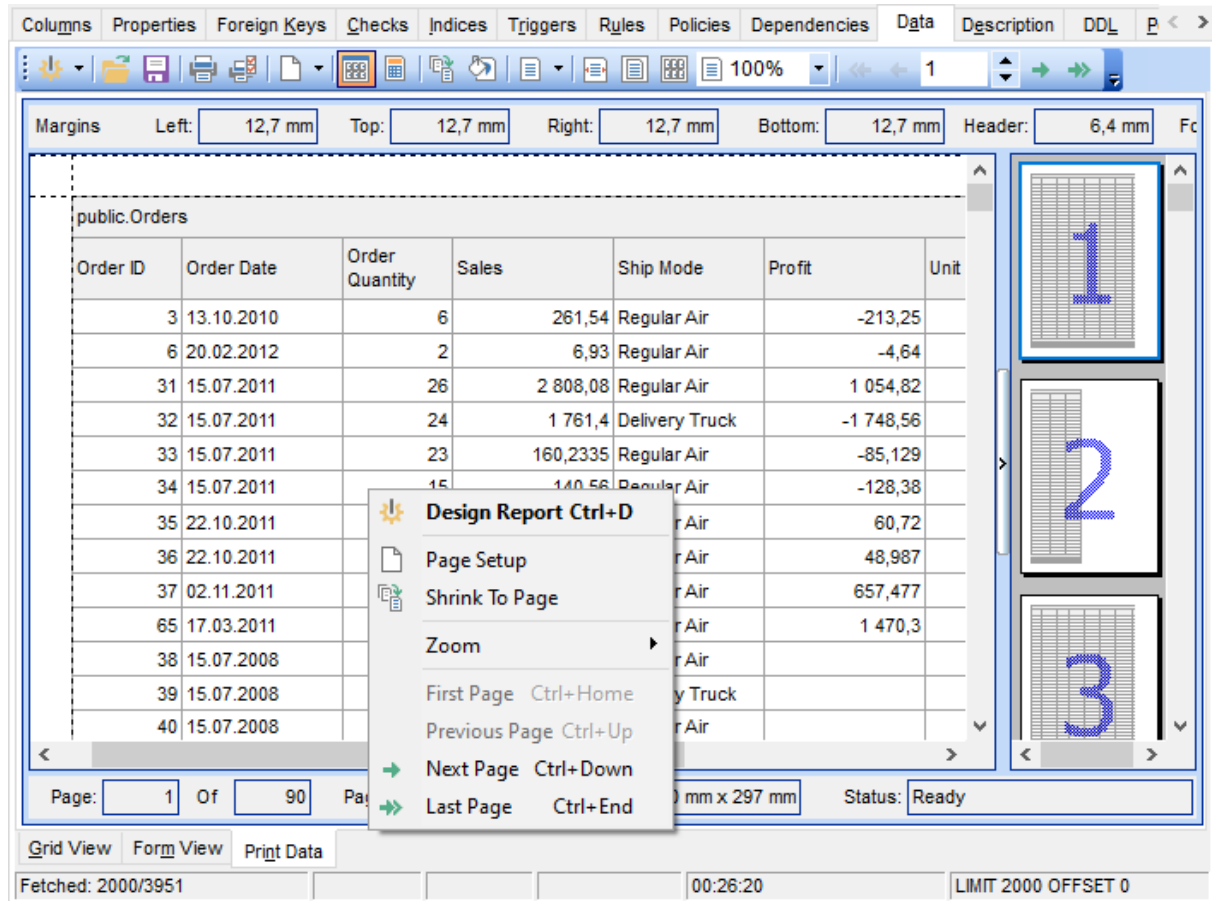
[BLOB View](#)

[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](#)

[Grid View](#)

[Form View](#)

[BLOB View](#)

[Applying changes](#)

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:

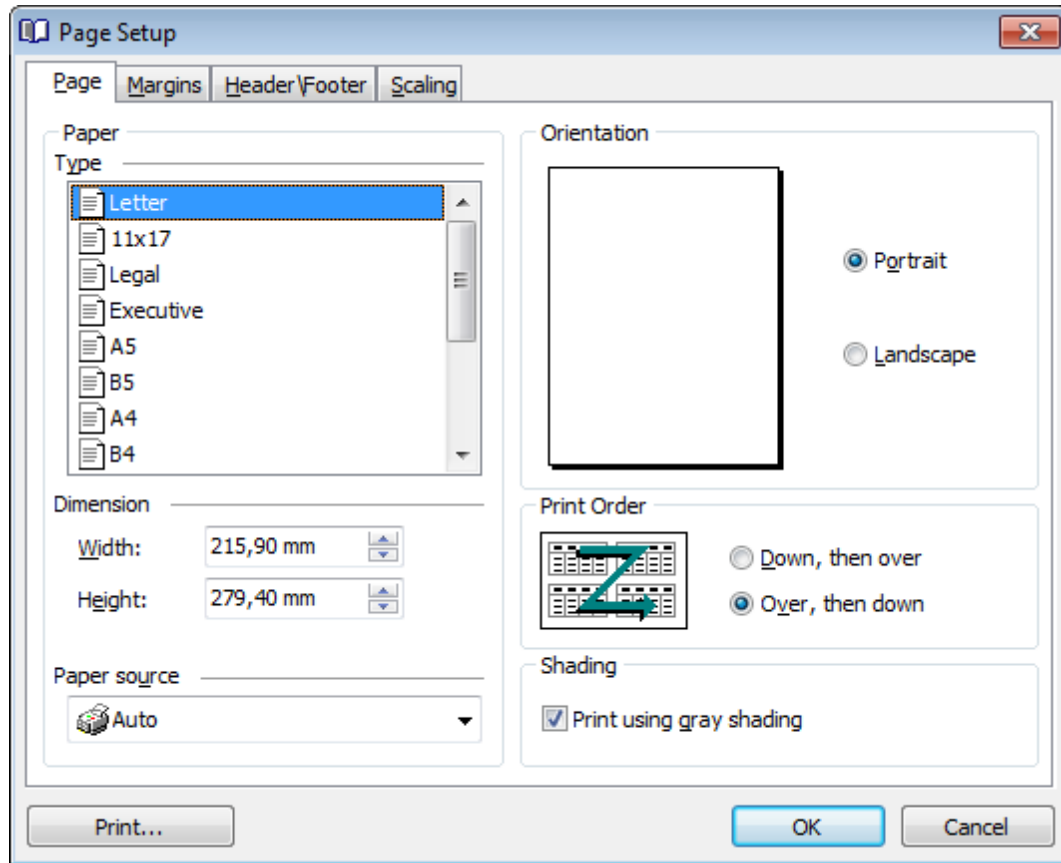
[Report Formatter](#)

[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*

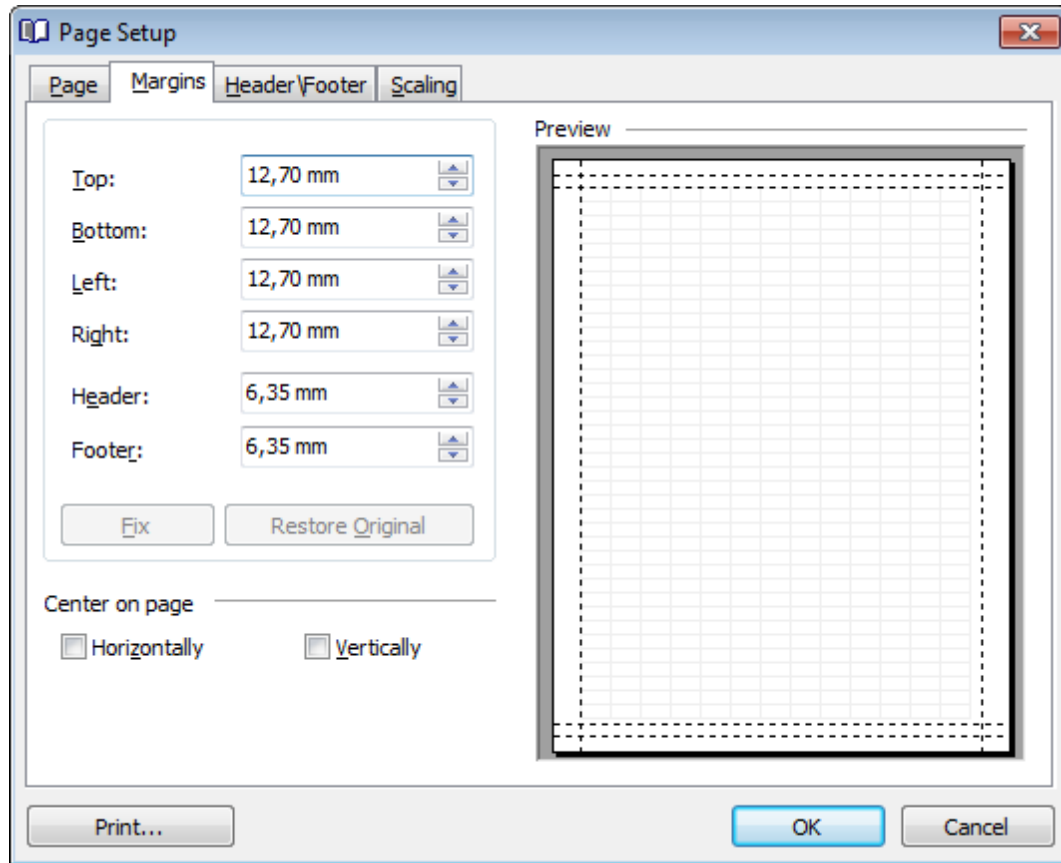
Shading

 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.

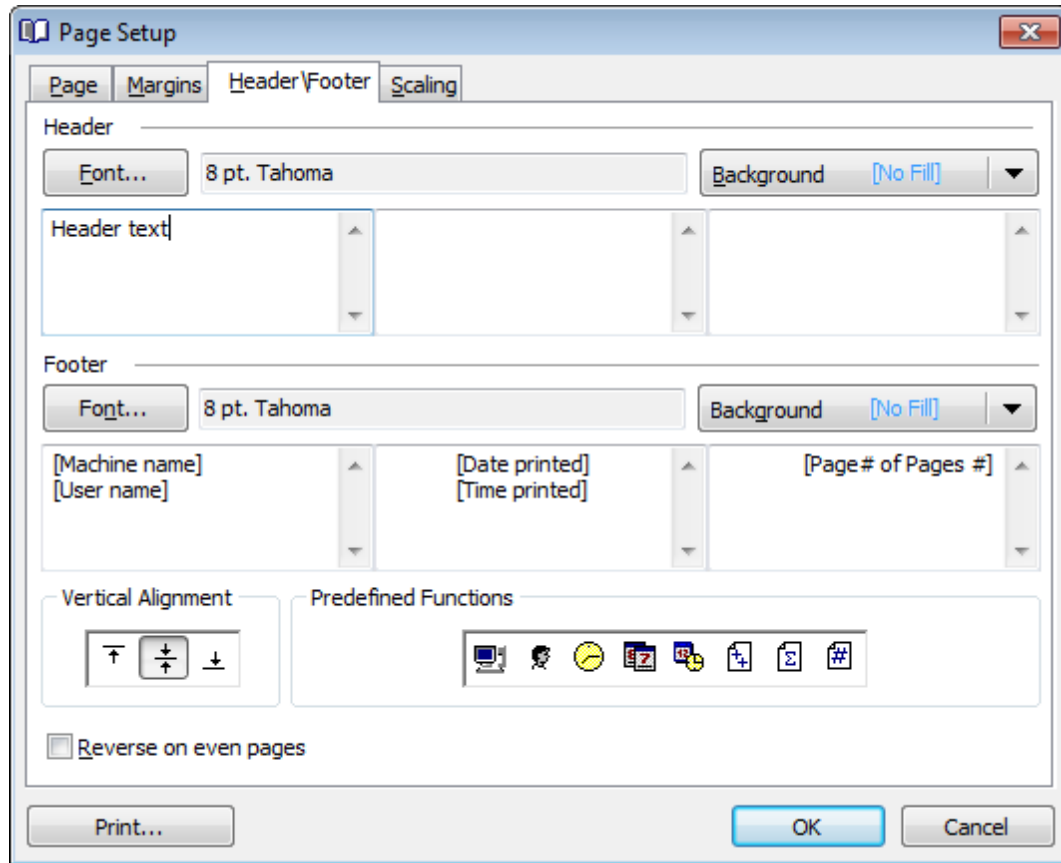
If you have specified an improper value, you can click the **Fix** button to correct it. To restore the default size values, click the **Restore Original** button.

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 fields. You can use any, all or none of the fields 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]

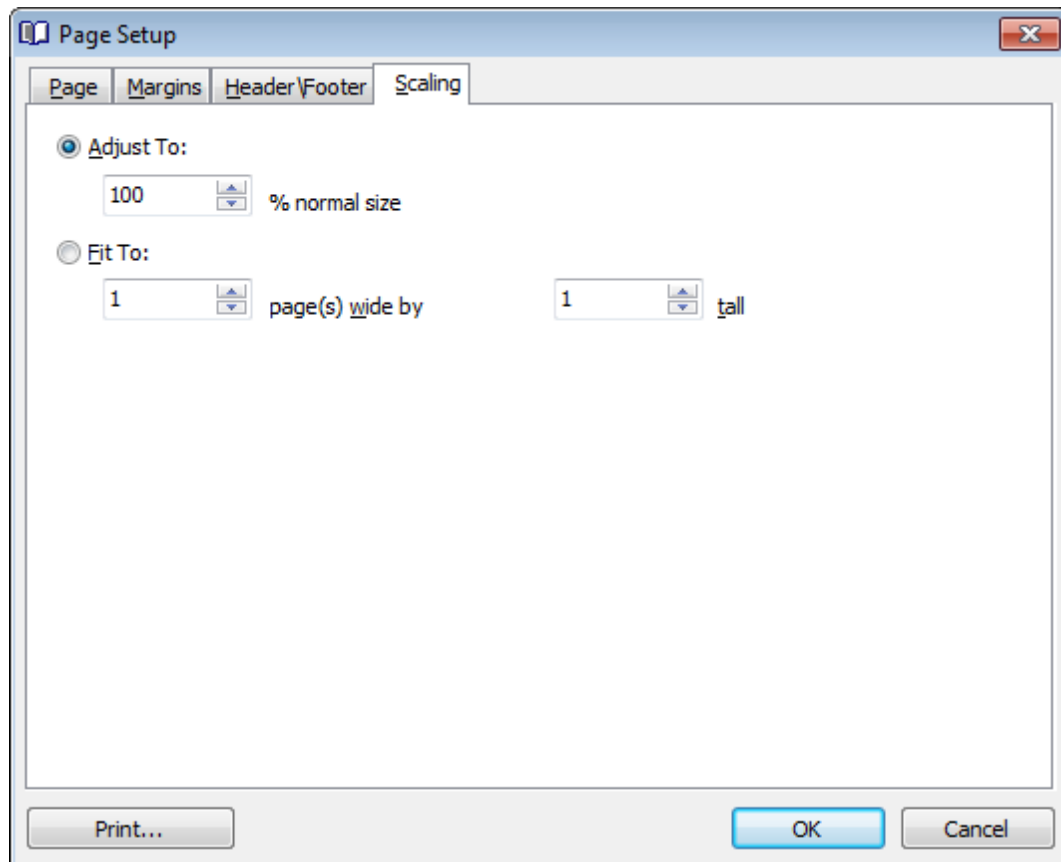
[Page #]

☒ **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:

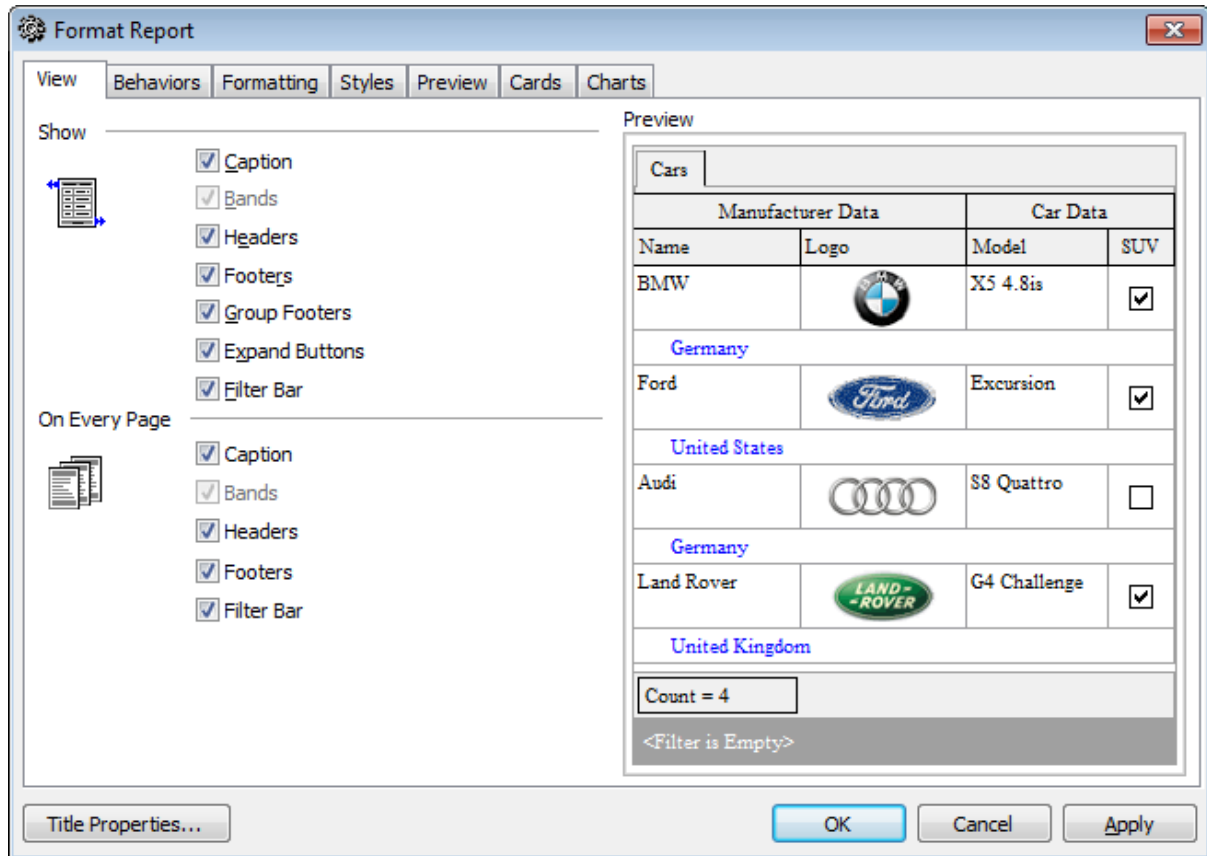
[Page Setup](#)

[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 show in the report.

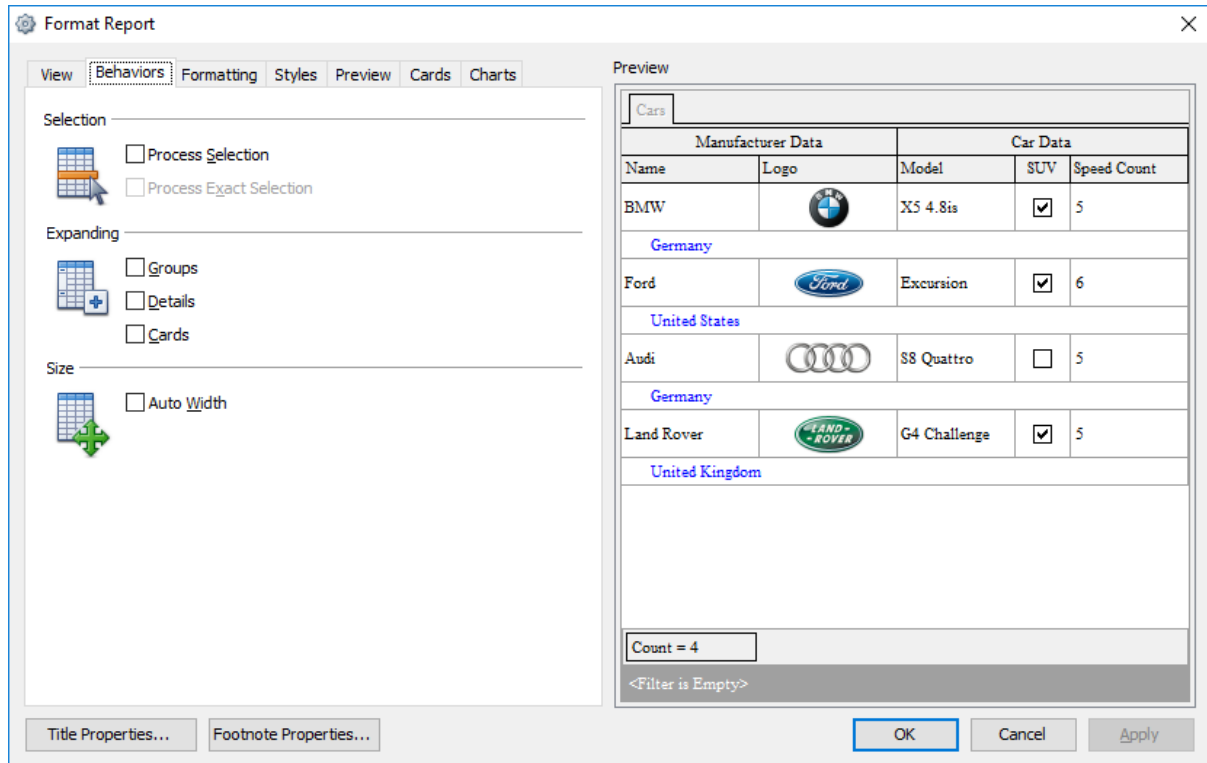


Tick off the elements to **show** in the report (*caption, bands, headers, footers, group footers, expand buttons, filter bar*) and **on every page** of the report (*caption, bands, headers, footers, filter bar*).

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

UltraFlat

Refinements

☐ Transparent Graphics

☐ Display Graphic As Text

☒ Flat CheckMarks

☐ Suppress Background Textures

☐ Consume Selection Style

Pagination

☐ By TopLevel Groups

☐ One Group Per Page

Preview

Manufacturer Data		Car Data	
Name	Logo	Model	SUV
BMW		X5 4.8is	☒
Germany			
Ford		Excursion	☒
United States			
Audi		S8 Quattro	☐
Germany			
Land Rover		G4 Challenge	☒
United Kingdom			
Count = 4			
<Filter is Empty>			

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.

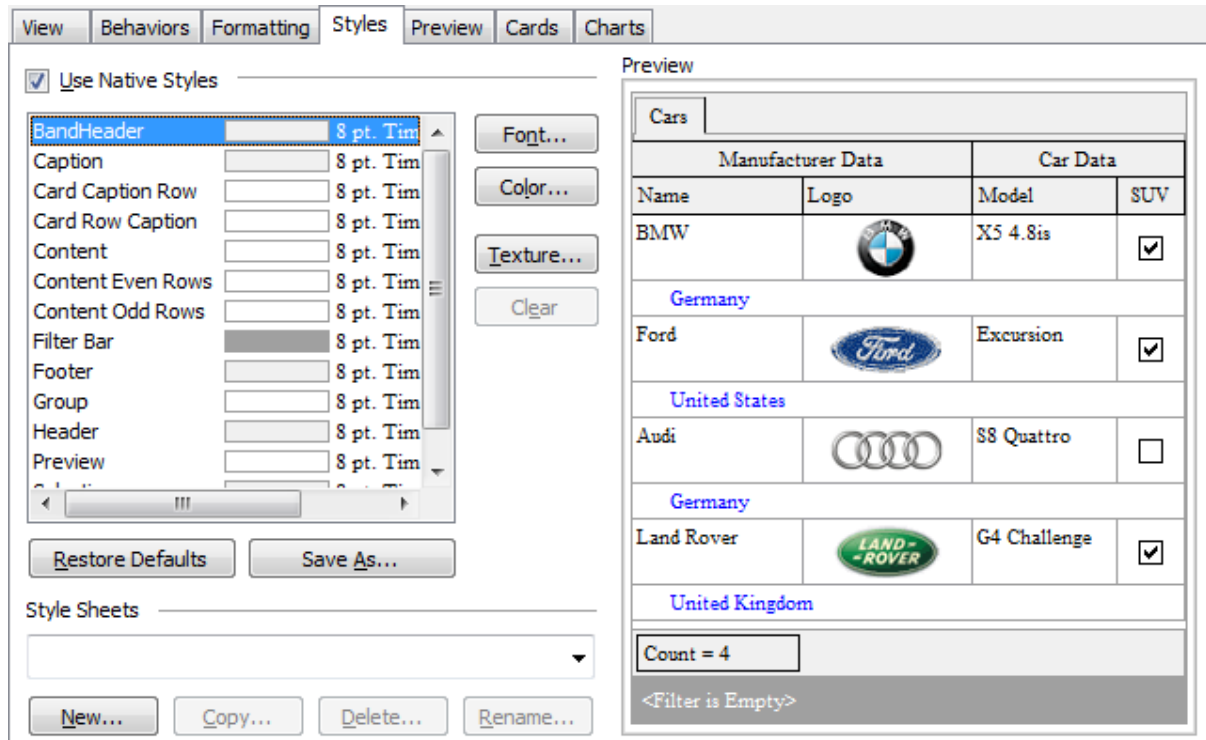
Pagination

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.

The screenshot shows the 'Format Report' dialog with the 'Preview' tab selected. The 'Options' section on the left includes a 'Visible' checkbox (checked), an 'Auto Height' checkbox (checked), and a 'Max Line Count' spinner set to 0. The 'Preview' section on the right displays a table titled 'Cars' with columns 'Manufacturer Data' and 'Car Data'. The table has rows for BMW, Ford, Audi, and Land Rover, grouped by country (Germany, United States, United Kingdom). The 'Count = 4' is shown at the bottom of the preview area.

Manufacturer Data		Car Data	
Name	Logo	Model	SUV
BMW		X5 4.8is	☒
Germany			
Ford		Excursion	☒
United States			
Audi		S8 Quattro	☐
Germany			
Land Rover		G4 Challenge	☒
United Kingdom			
Count = 4			
<Filter is Empty>			

☒ **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.

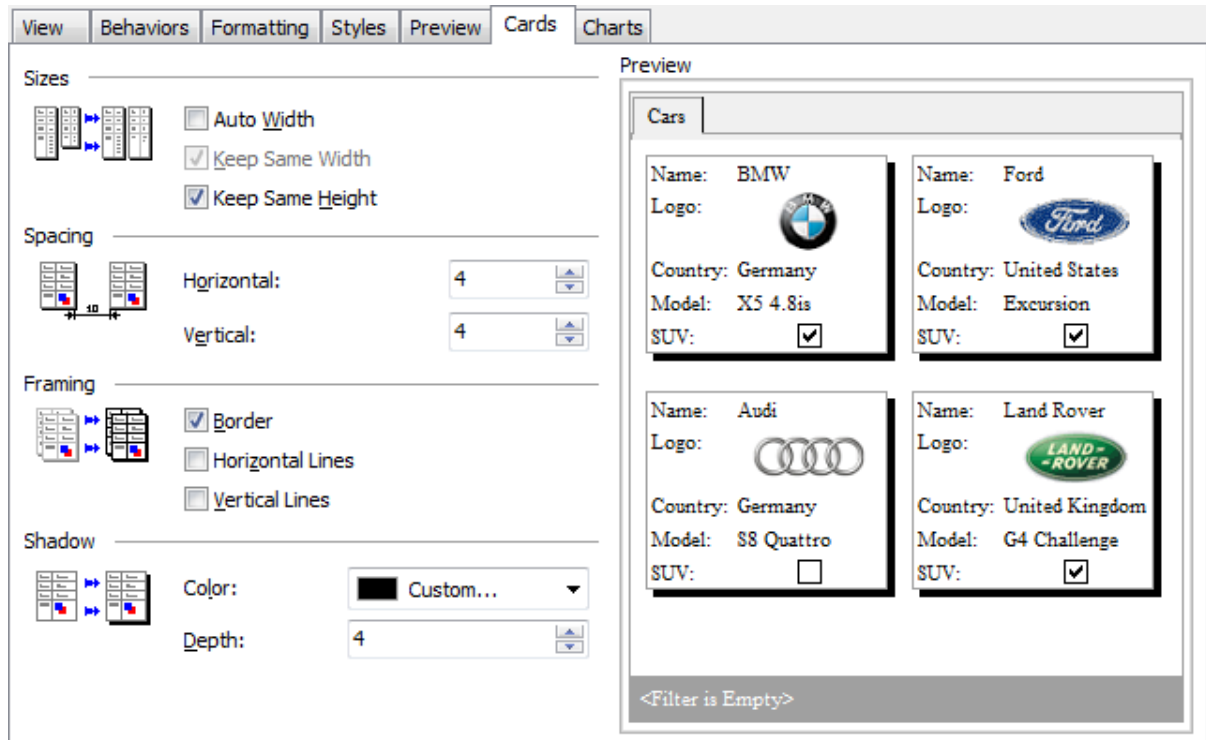
Max line count

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.

View Behaviors Formatting Styles Preview Cards **Charts**

Options

 ☐ Transparent

Preview

Cars

Manufacturer Data		Car Data	
Name	Logo	Model	SUV
BMW		X5 4.8is	☒
Germany			
Ford		Excursion	☒
United States			
Audi		S8 Quattro	☐
Germany			
Land Rover		G4 Challenge	☒
United Kingdom			
Count = 4			
<Filter is Empty>			

☒ **Transparent**

If this option is selected, the charts will be drawn transparent in the report.

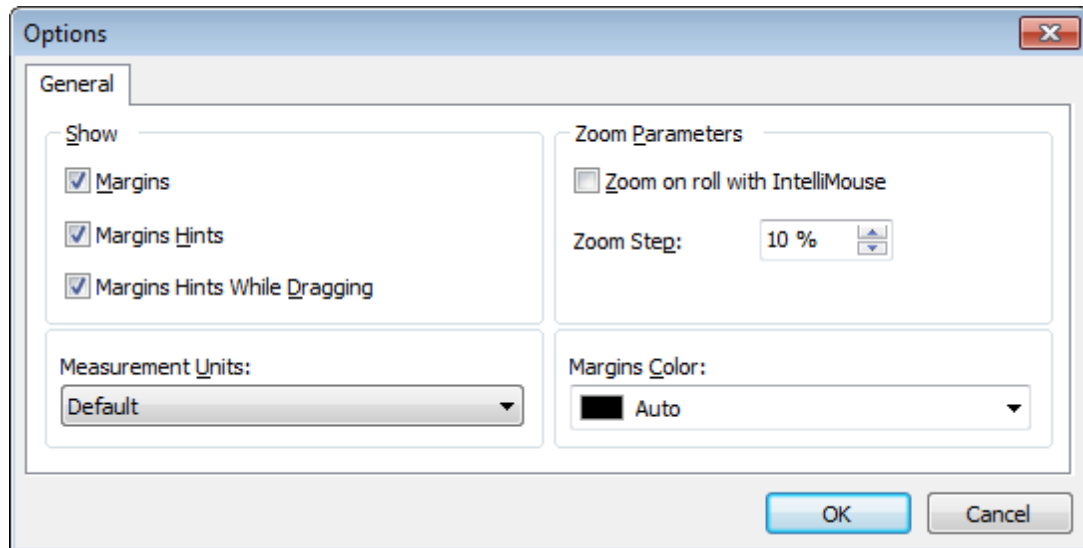
The **Preview** area on the right illustrates the changes you have made.

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

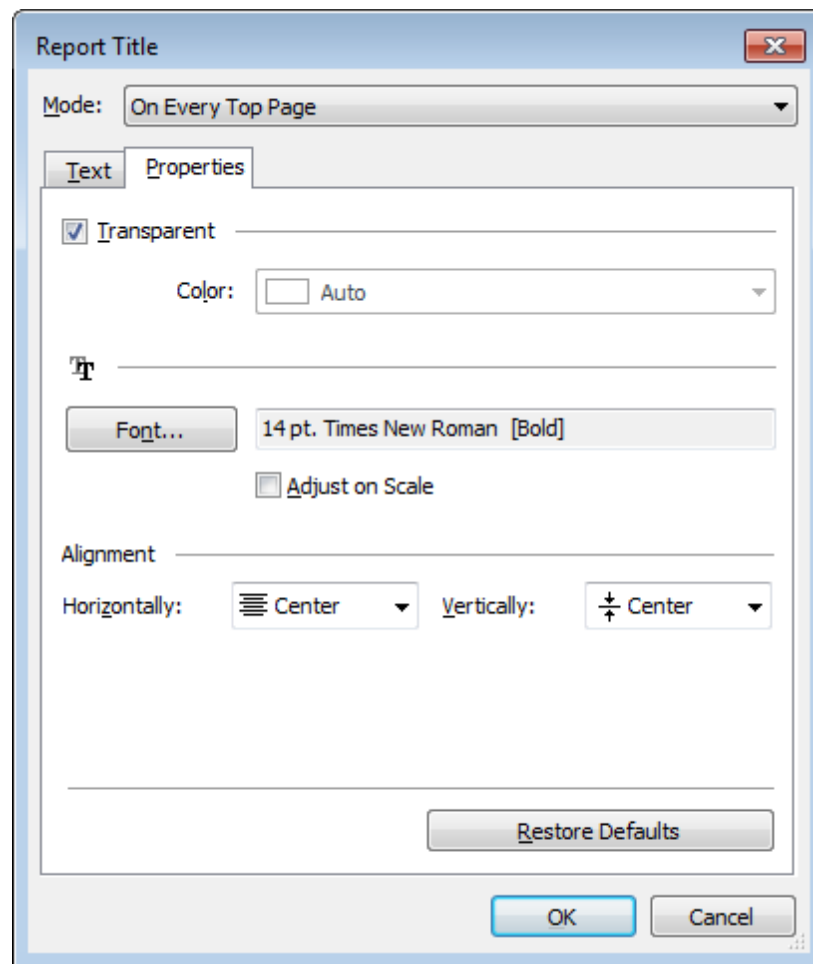
Use the spinner control to specify the percentage of the original page size to be considered as one zoom step.

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*.

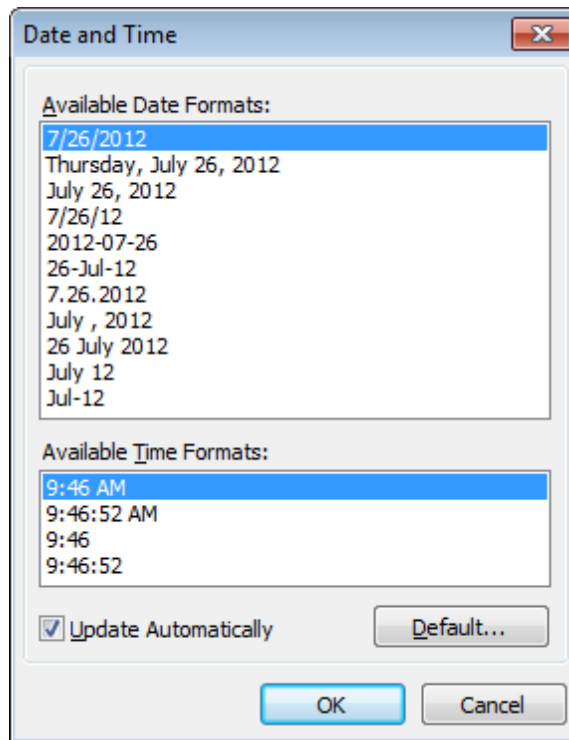
Use the **Vertically** drop-down list to select the type of vertical alignment to be applied to the report title: *Top*, *Center*, or *Bottom*.

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.



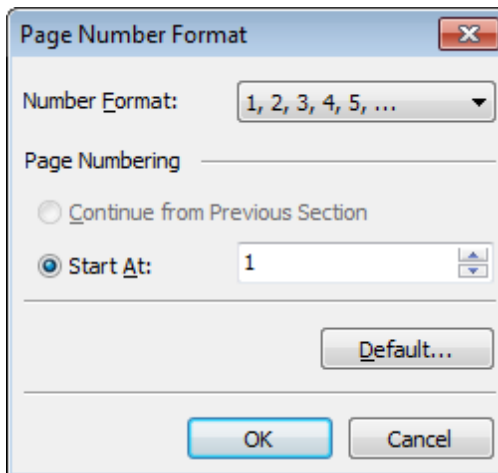
Select the preferable values from the **Available Date Formats** and the **Available Time Formats** lists. If necessary, you can specify that the date/time will be *updated automatically*.

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.

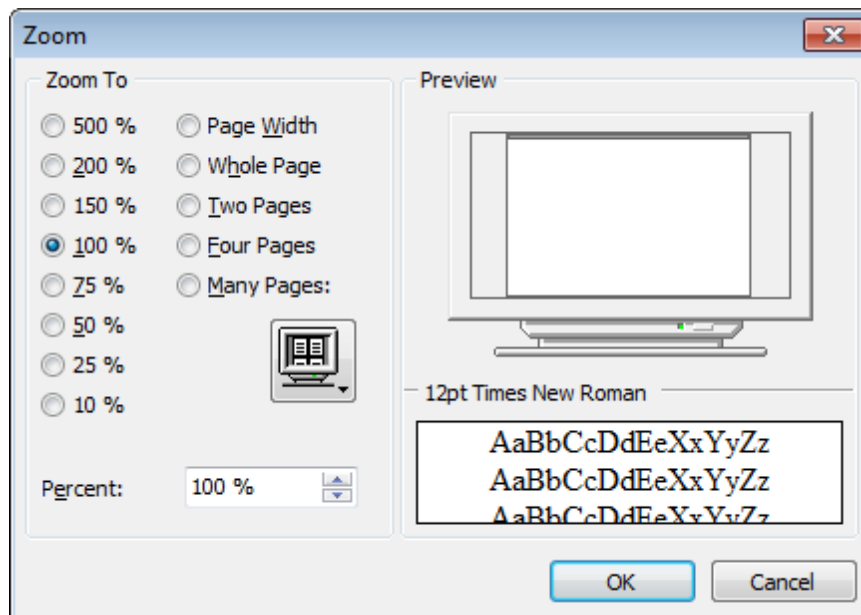
Use the **Page Numbering** section to specify whether page numbering should *continue from the previous section* (if any) or *start at the specified number*.

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](#)

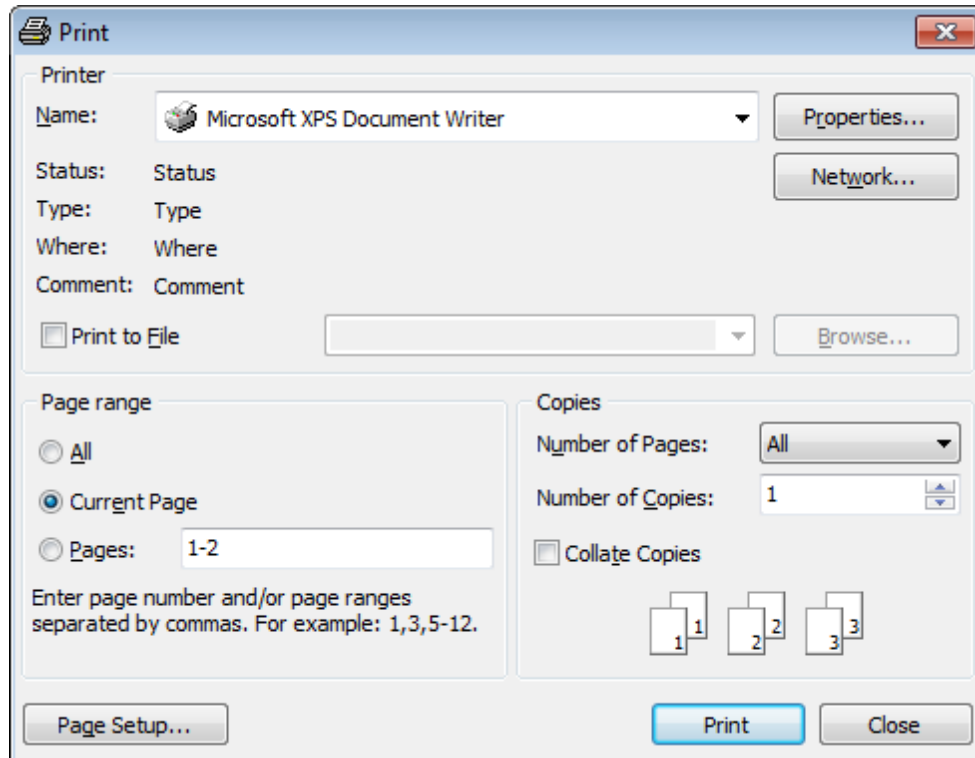
[Report Formatter](#)

[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](#)

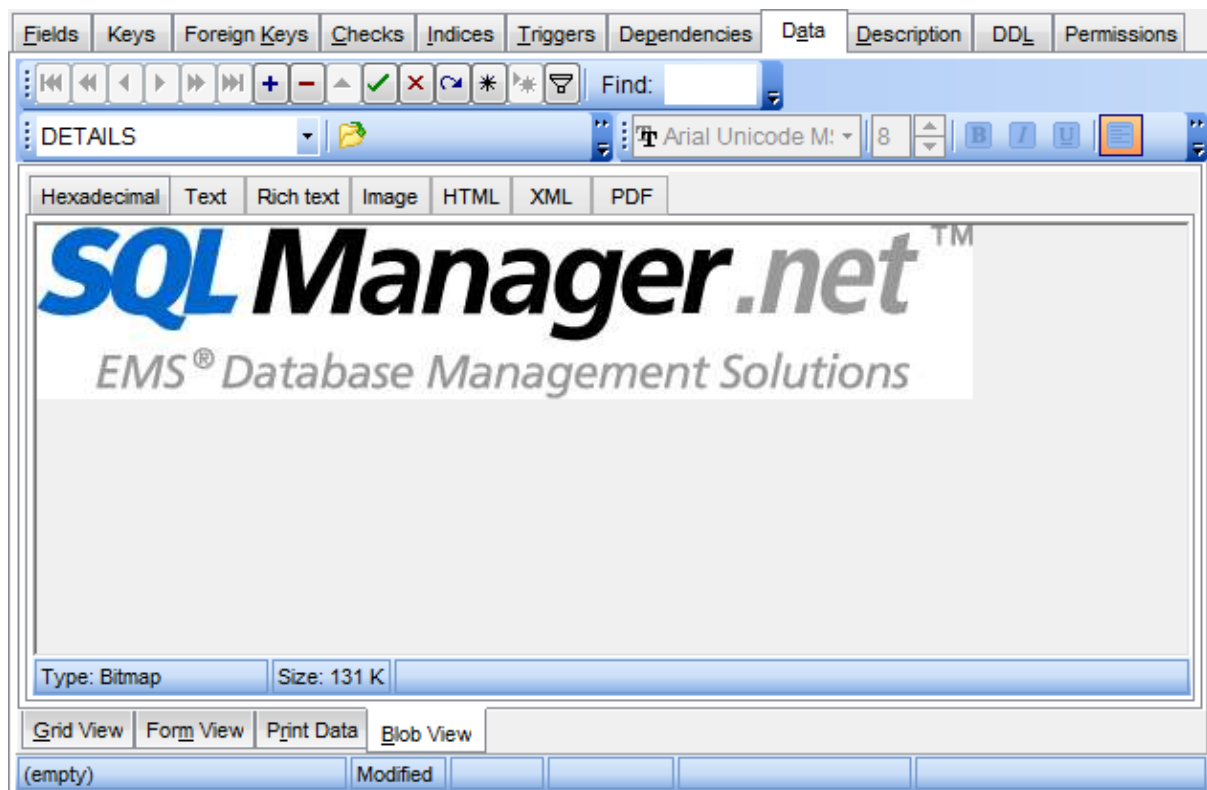
[Report Formatter](#)

[Setting report options](#)

7.1.5 BLOB View

SQL Manager for Oracle provides BLOB Viewer/Editor to view and edit BLOB (Binary Large Object) fields content. The BLOB Viewer/Editor can be invoked from the data grid within [Table Editor](#), [Query Data](#), [Design Query](#), etc.

- [Navigation within the BLOB Viewer/Editor](#)
- [Viewing/Editing BLOB field as Hexadecimal dump](#)
- [Viewing/Editing BLOB field as plain Text](#)
- [Viewing/Editing BLOB field as Rich Text \(RTF\)](#)
- [Viewing/Editing BLOB field as Image](#)
- [Viewing/Editing BLOB field as HTML](#)
- [Viewing/Editing BLOB field as XML](#)
- [Viewing/Editing BLOB field as PDF](#)



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](#)

[Grid View](#)

[Form View](#)

[Print Data](#)

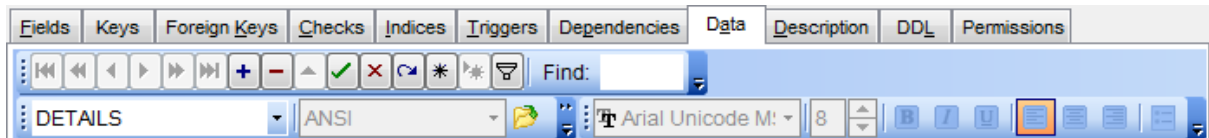
[Applying changes](#)

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 fields 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](#)

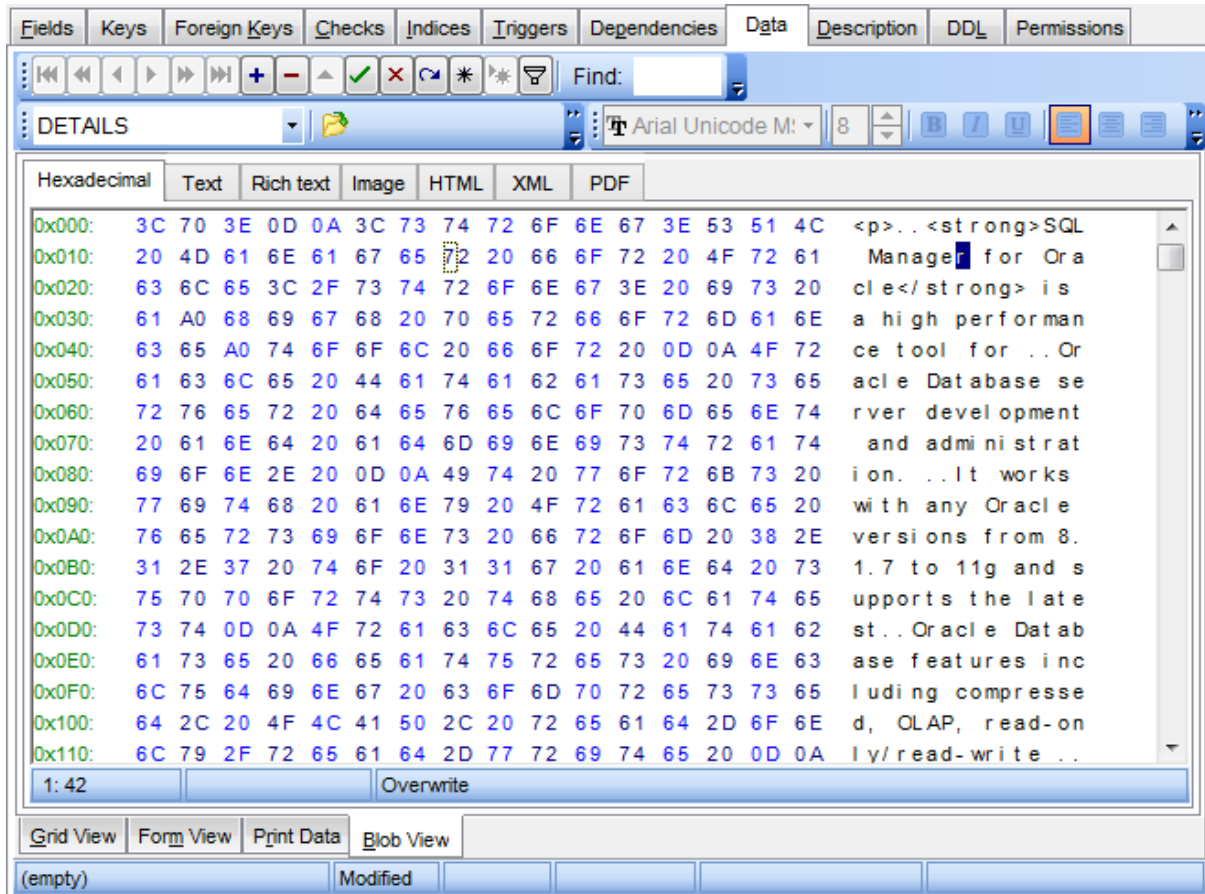
[Editing as PDF](#)

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](#)

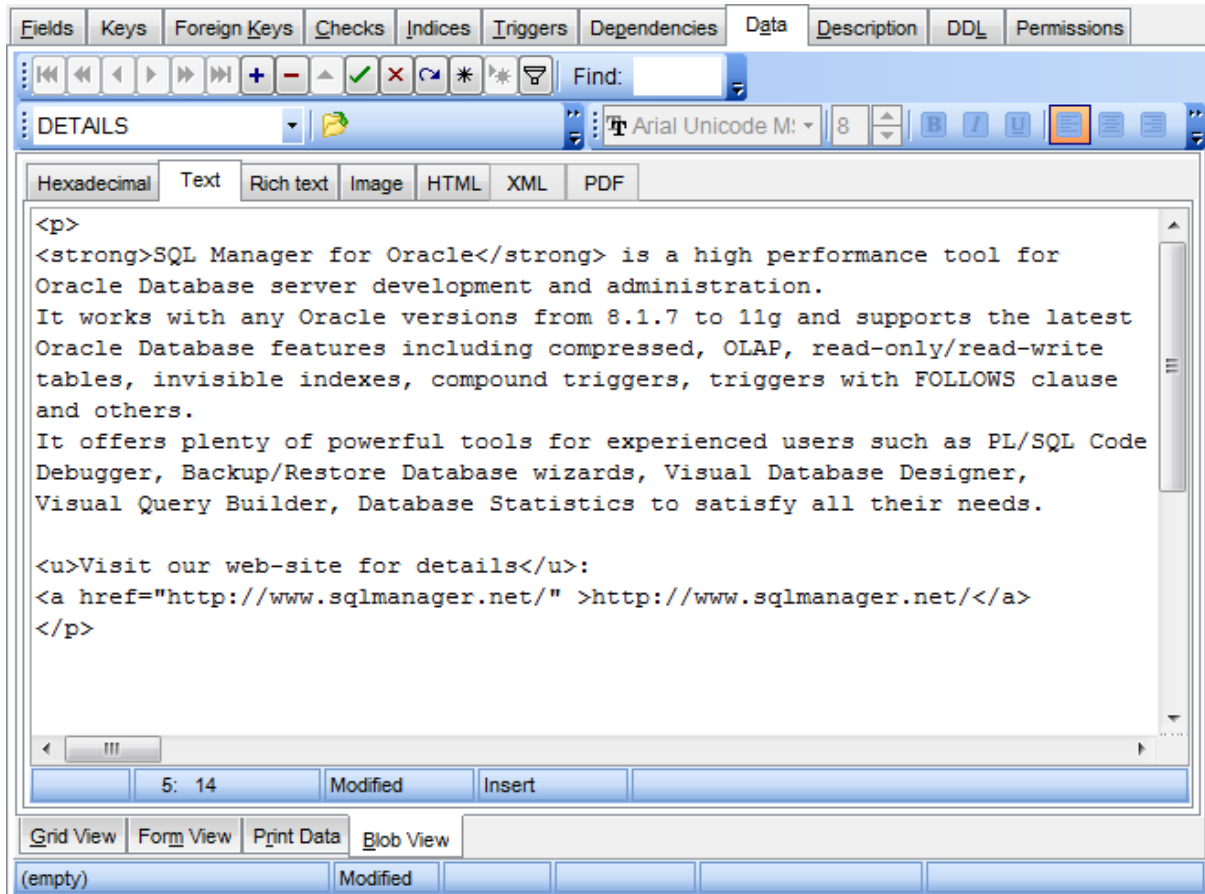
[Editing as HTML](#)

[Editing as XML](#)

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](#)

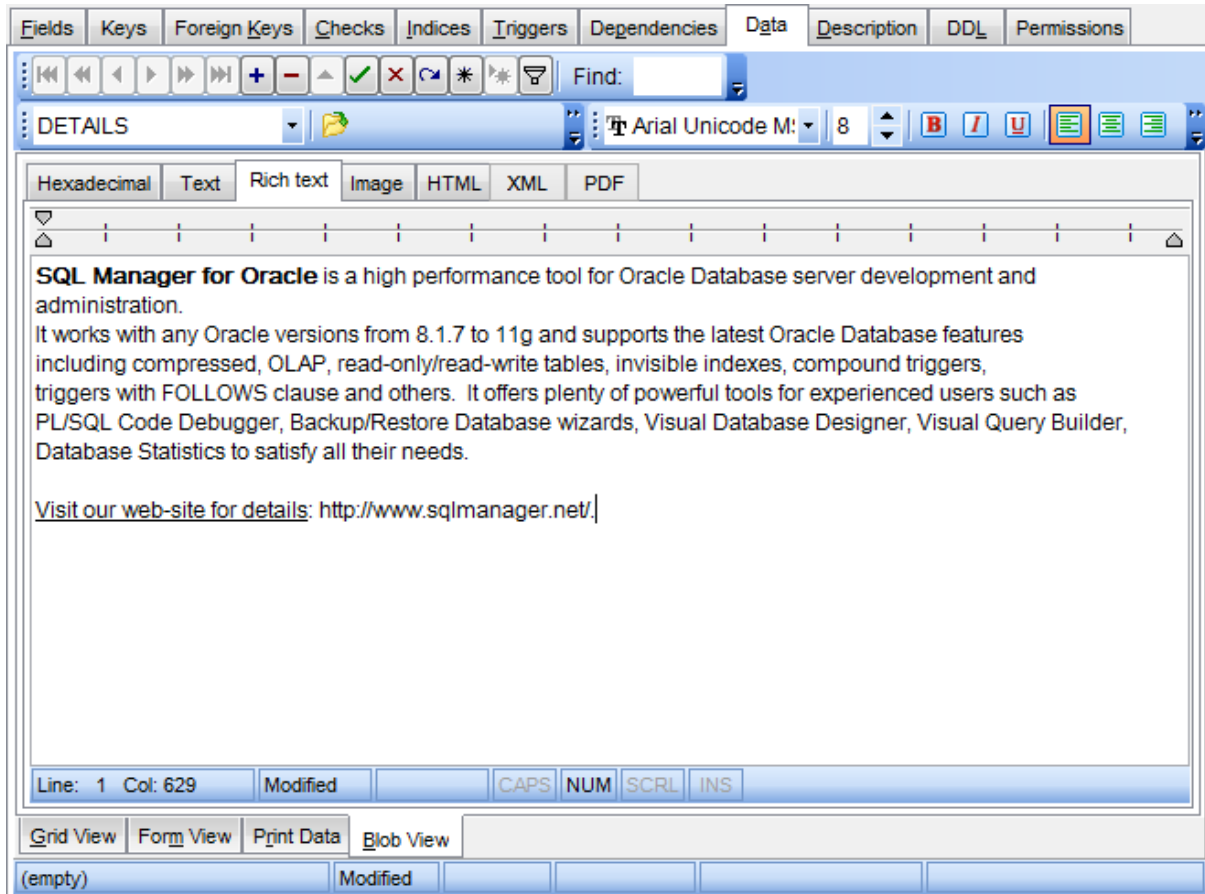
[Editing as HTML](#)

[Editing as XML](#)

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](#)

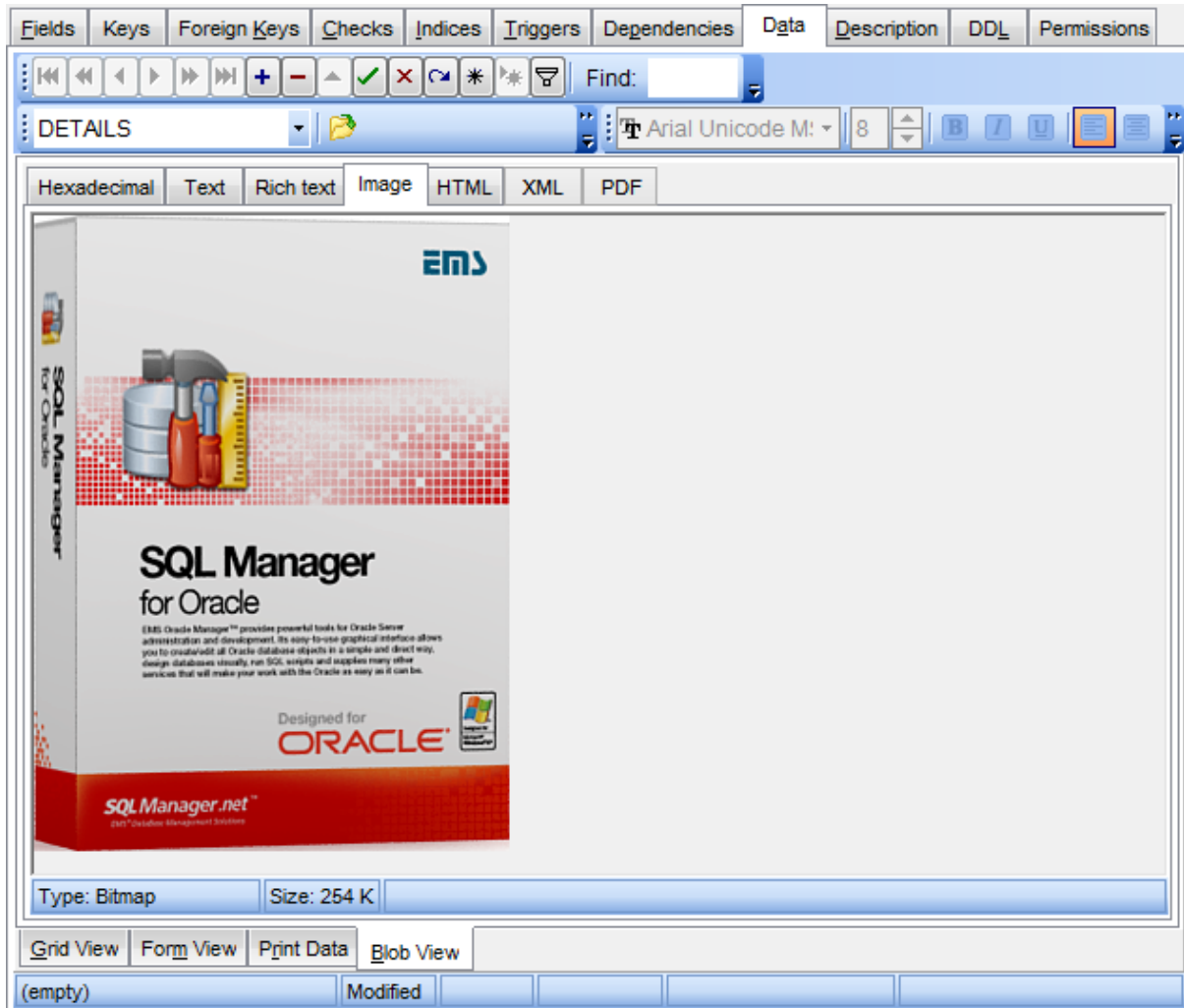
[Editing as HTML](#)

[Editing as XML](#)

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](#)

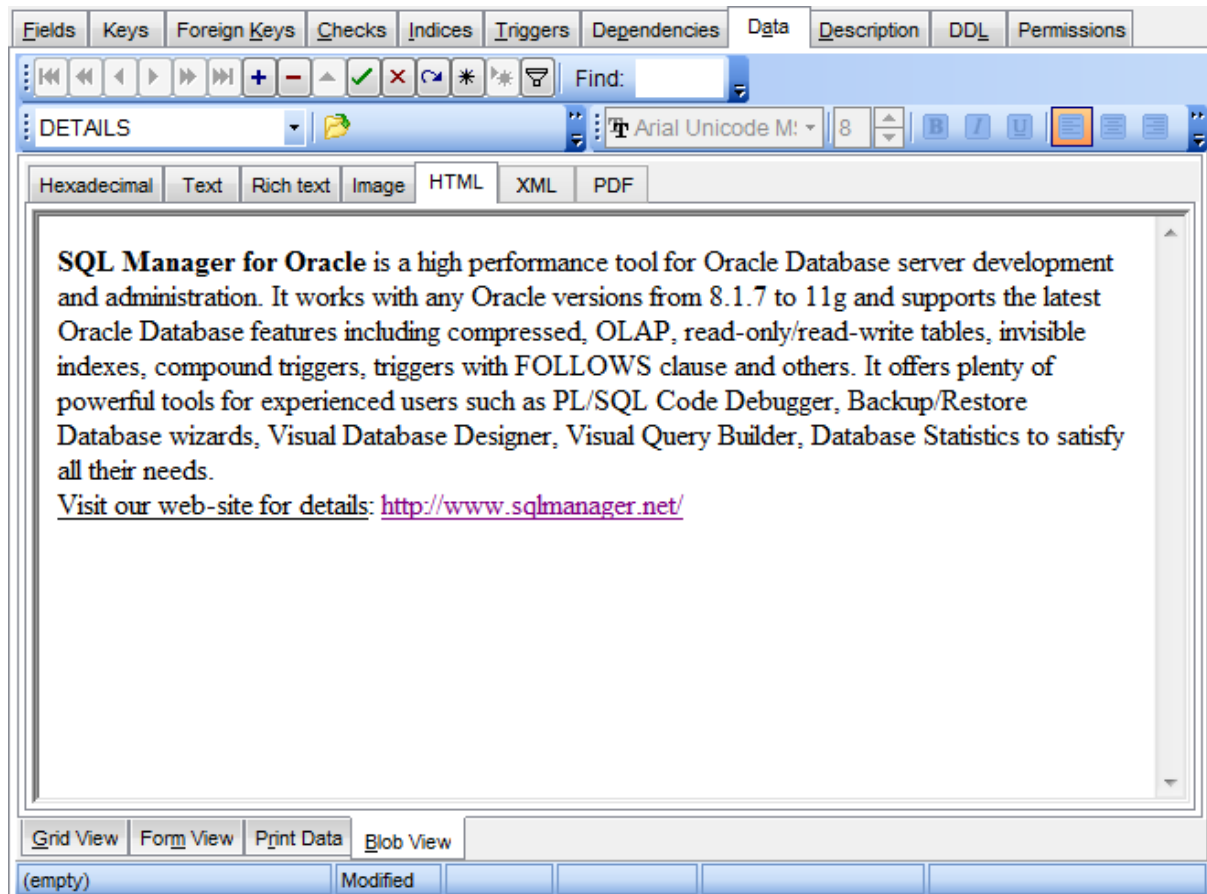
[Editing as HTML](#)

[Editing as XML](#)

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](#)

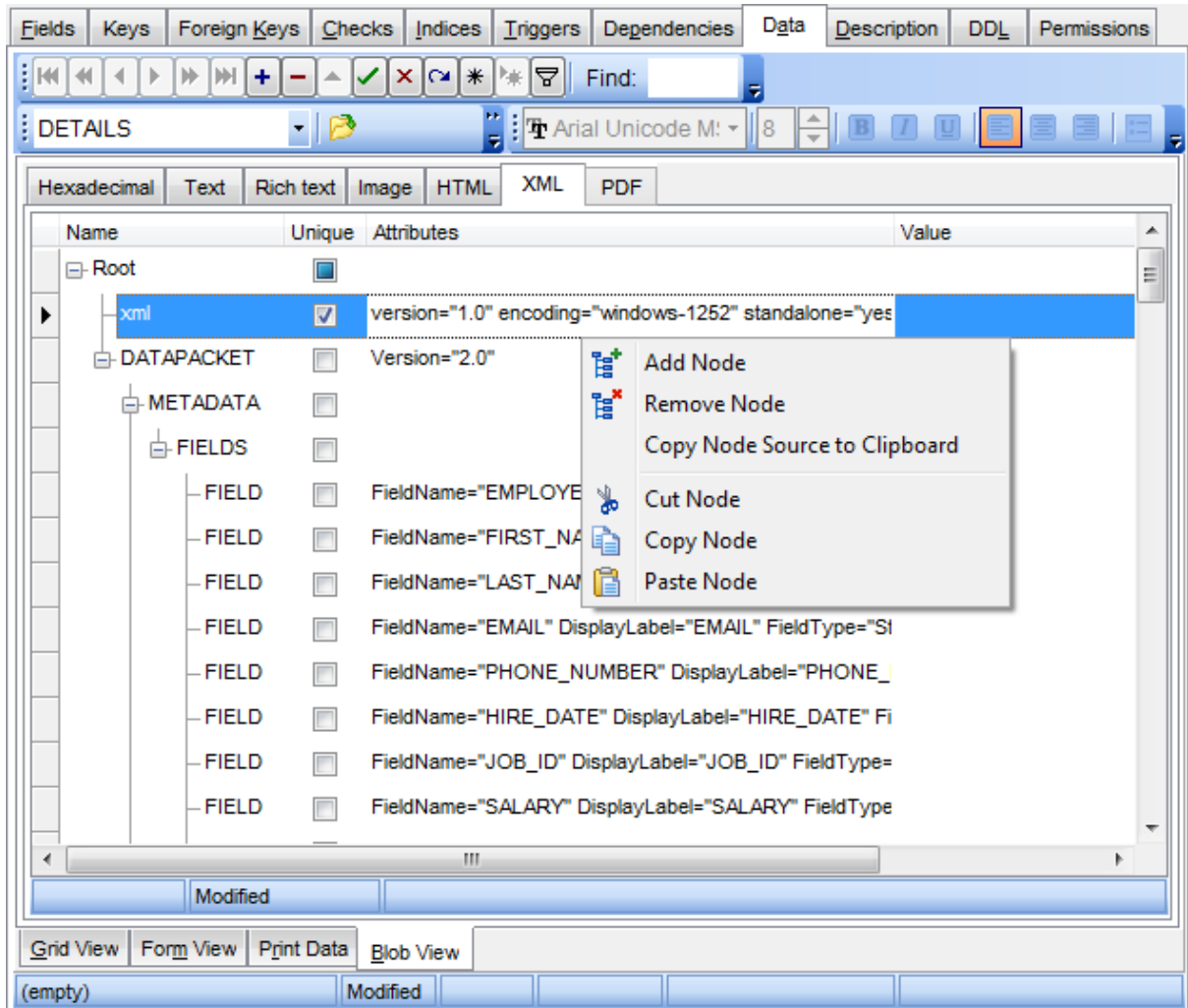
[Editing as Image](#)

[Editing as XML](#)

7.1.5.7 Editing as XML

The **XML** tab allows you to view/edit the XML (eXtensible Markup Language) data.

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 *.xml or load XML content from a file.



The XML content is represented as a tree-like structure consisting four editable fields: **Name**, **Unique**, **Attributes** and **Value**. You can edit data and modify the structure using drag-n-drop operations and items of the context menu.

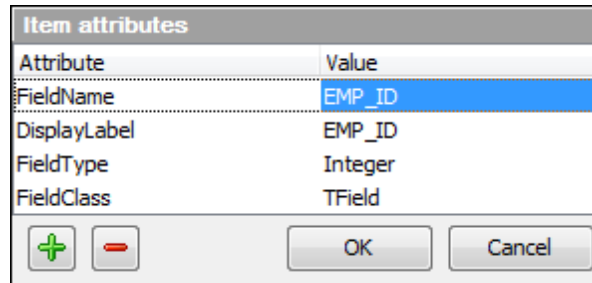
Hint: Hold the **Shift** key when you drag-and-drop a node to insert it as a child one.

The **context menu** allows you to:

- add a node (a child node relatively to the selected one);
- remove the selected node;
- copy the selected node source to clipboard;
- cut the selected node;
- copy the selected node;

- paste a node from clipboard.

Press the **Item attributes**  button in the editing mode of an **Attribute** item to add or edit attributes.



The 'Item attributes' dialog box contains a table with two columns: 'Attribute' and 'Value'. The table has four rows: 'FieldName' with value 'EMP_ID', 'DisplayLabel' with value 'EMP_ID', 'FieldType' with value 'Integer', and 'FieldClass' with value 'TField'. The 'FieldName' row is highlighted. At the bottom left are two buttons: a green plus sign and a red minus sign. At the bottom right are 'OK' and 'Cancel' buttons.

Attribute	Value
FieldName	EMP_ID
DisplayLabel	EMP_ID
FieldType	Integer
FieldClass	TField

Use the   buttons to add or remove an attribute. Click the required attribute name or value to edit.

See also:

[Navigation within BLOB Editor](#)

[Editing as Hexadecimal](#)

[Editing as Text](#)

[Editing as Rich Text](#)

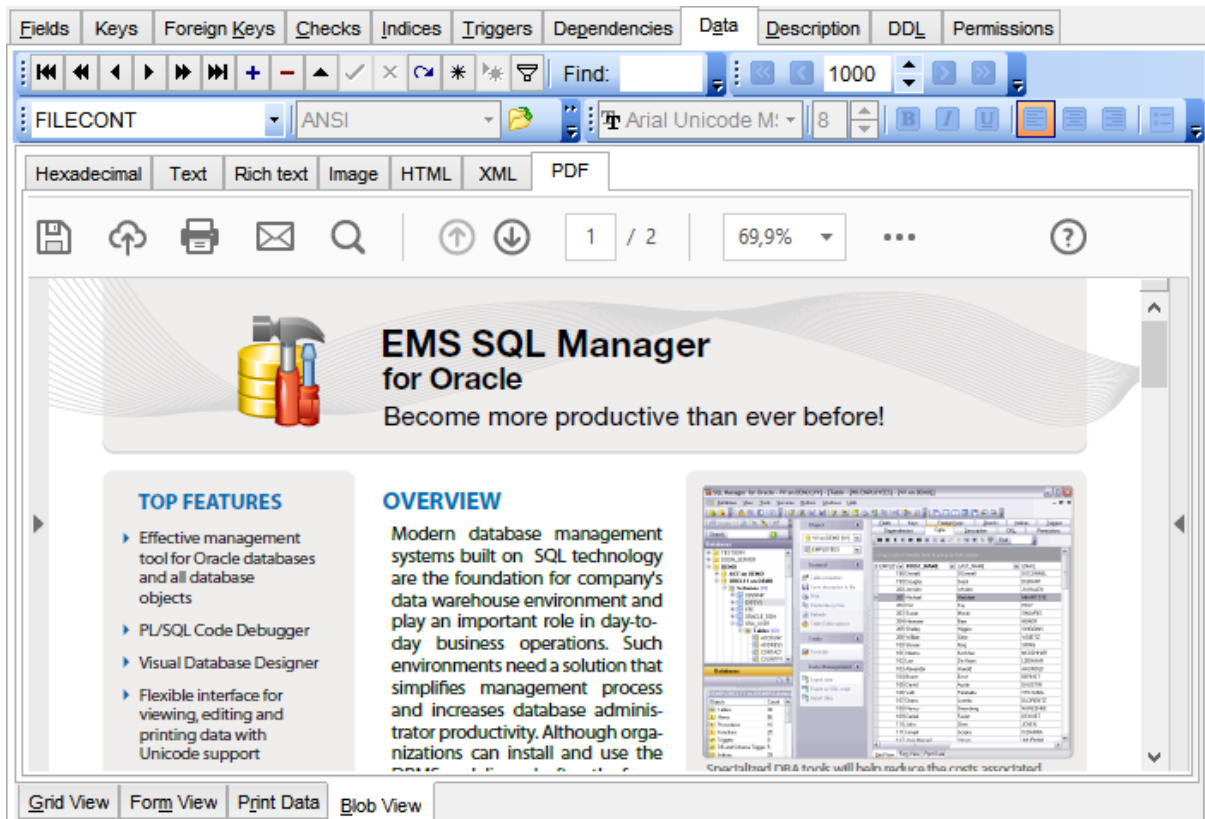
[Editing as Image](#)

[Editing as HTML](#)

7.1.5.8 Editing as PDF

The **PDF** tab allows you to view the BLOB data as PDF using Adobe Acrobat Reader. You need to have Adobe Acrobat Reader installed to view PDF data.

The [toolbar](#) provides additional functionality for PDF Viewer/Editor: use the  **Save to file** and the  **Load from file** toolbar buttons to save or load the document from the file.



See also:

[Navigation within BLOB Editor](#)

[Editing as Hexadecimal](#)

[Editing as Text](#)

[Editing as Rich Text](#)

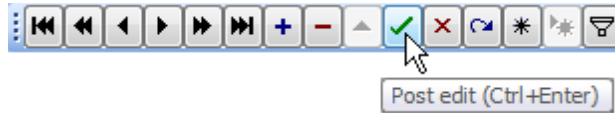
[Editing as Image](#)

[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](#)

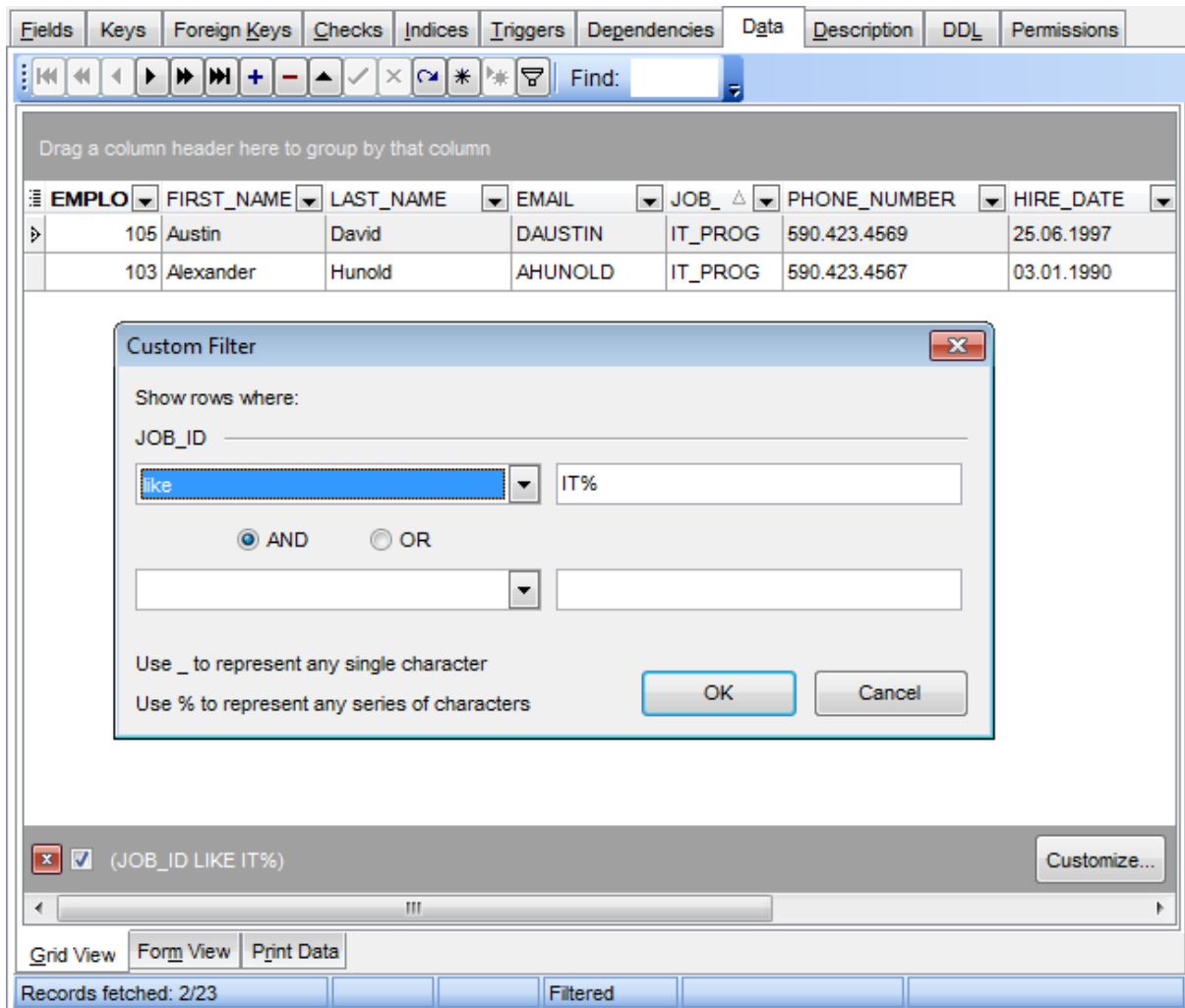
[BLOB View](#)

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 [Query Data](#) and [Design Query](#).

- [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:

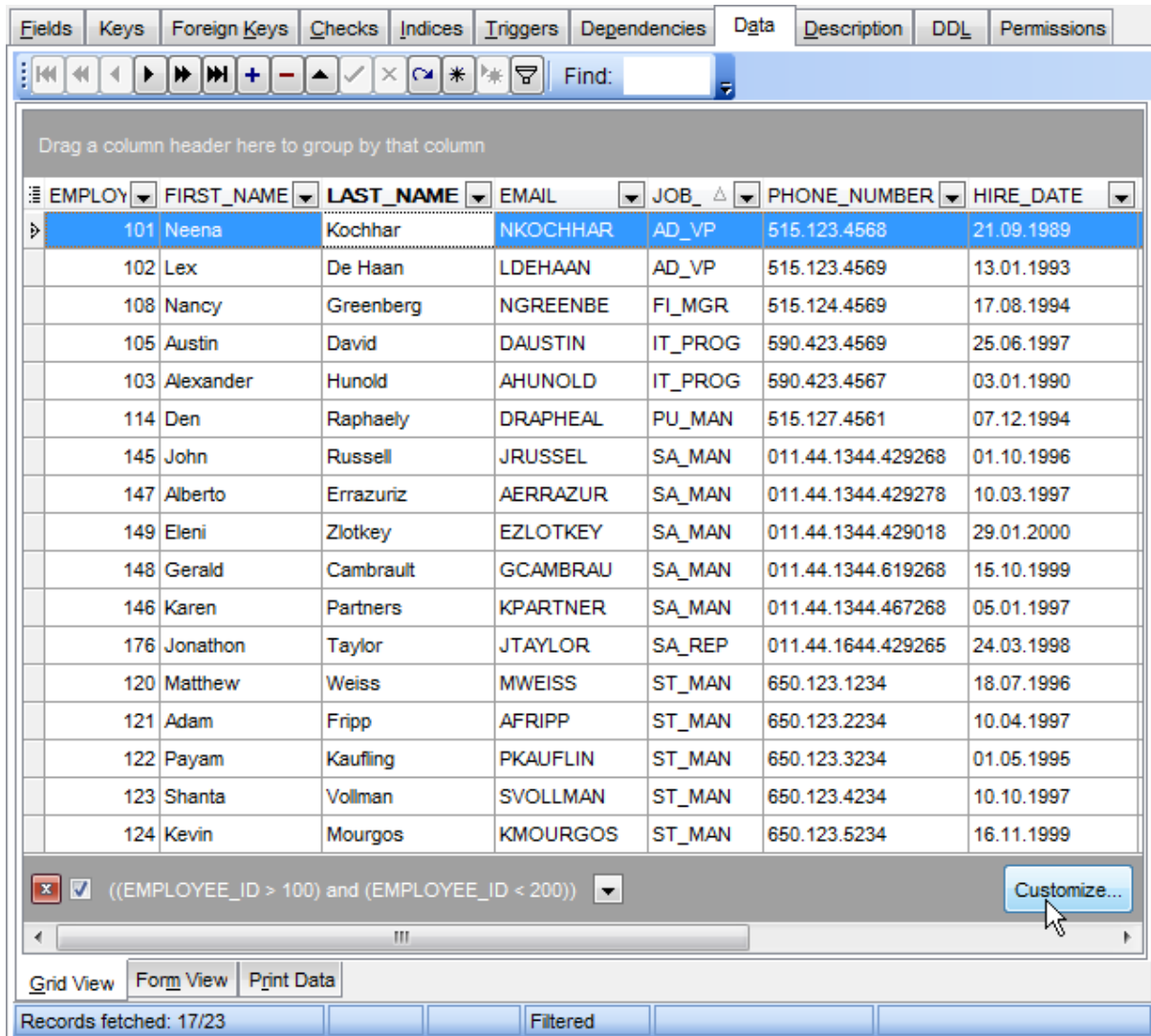
[Data View](#)

[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](#)

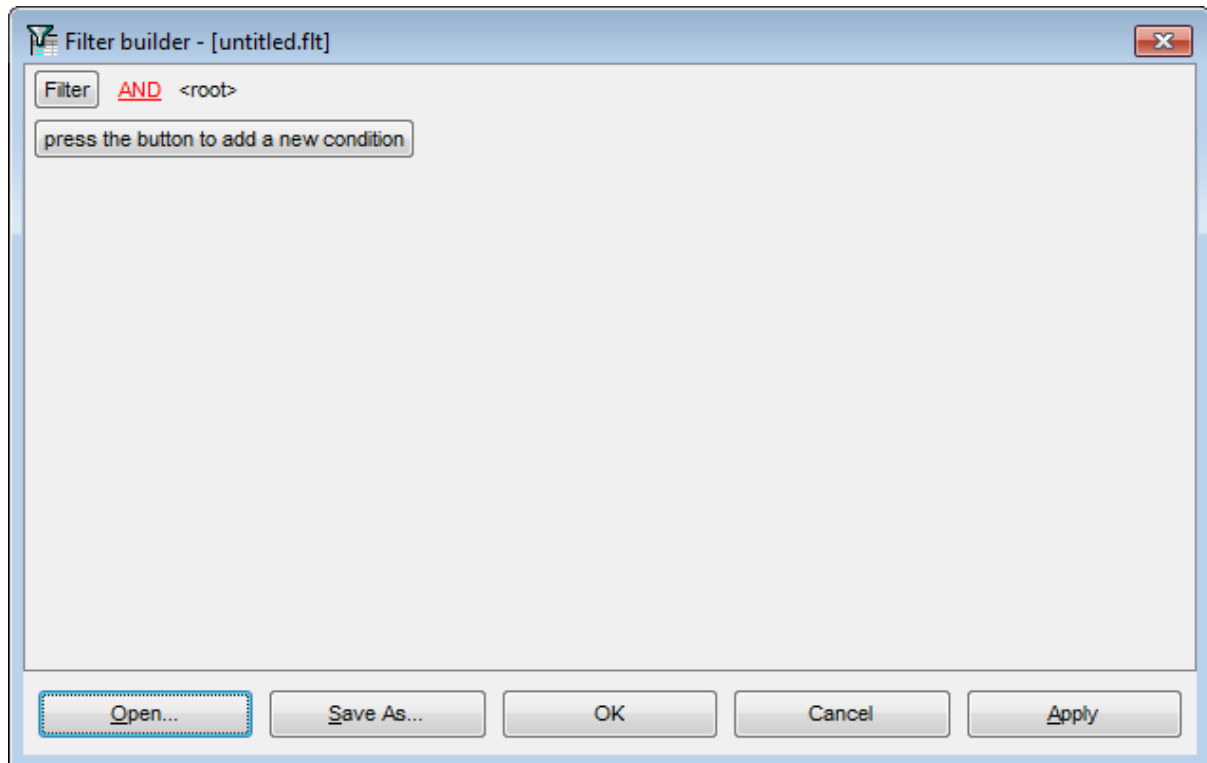
[Setting group operator](#)

[Applying filter conditions](#)

7.3.2 Adding a new condition

Suppose we need to select data from the sample table *EMPLOYEES* to view the list of IT specialists hired after 1/15/2007. These criteria are applied to the *HIRE_DATE*, the *DEPARTMENT_ID* and the *JOB_ID* fields.

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.



You can also add the filter condition from the grid with Shift button.

See also:

[Invoking the Filter Builder dialog](#)

[Setting filter criteria](#)

[Setting filter operator](#)

[Setting filter criteria values](#)

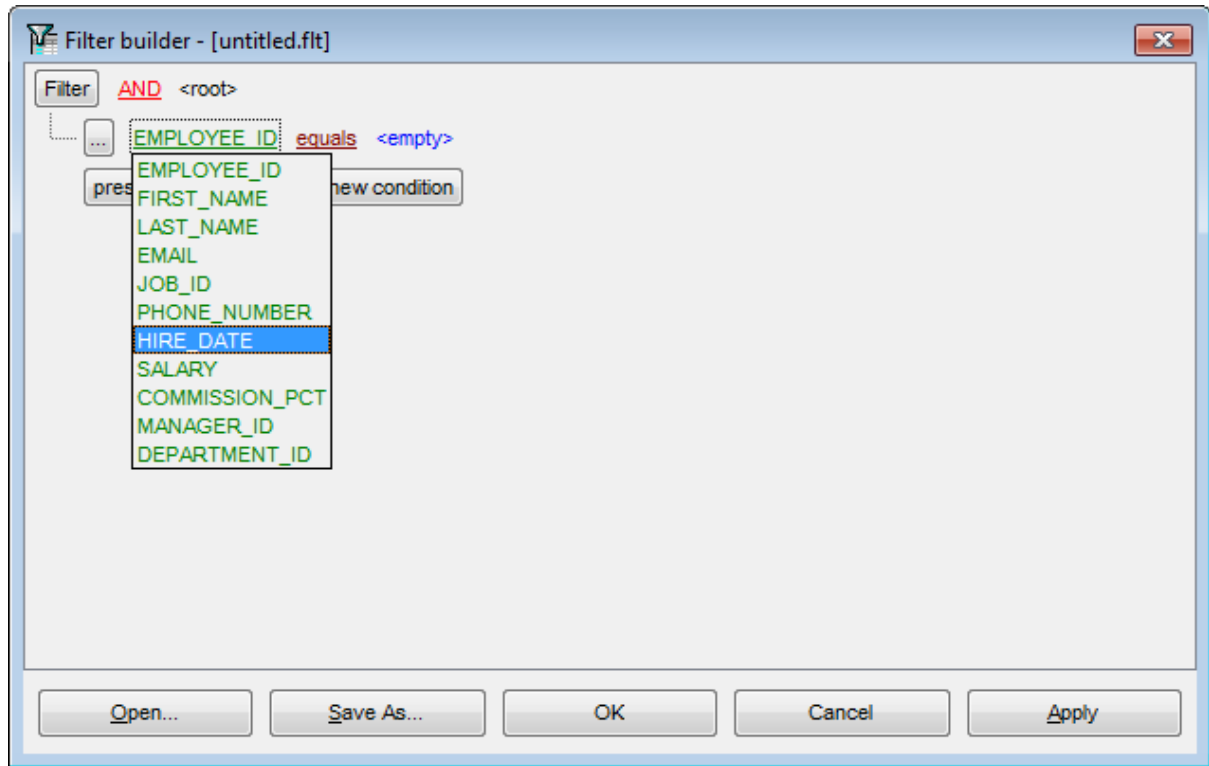
[Adding a new group](#)

[Setting group operator](#)

[Applying filter conditions](#)

7.3.3 Setting filter criteria

As we need to apply the filter criteria to the *HIRE_DATE* field, we click the column box (next to the ellipsis  button) to open the drop-down list displaying the available column names and select the *HIRE_DATE* item.

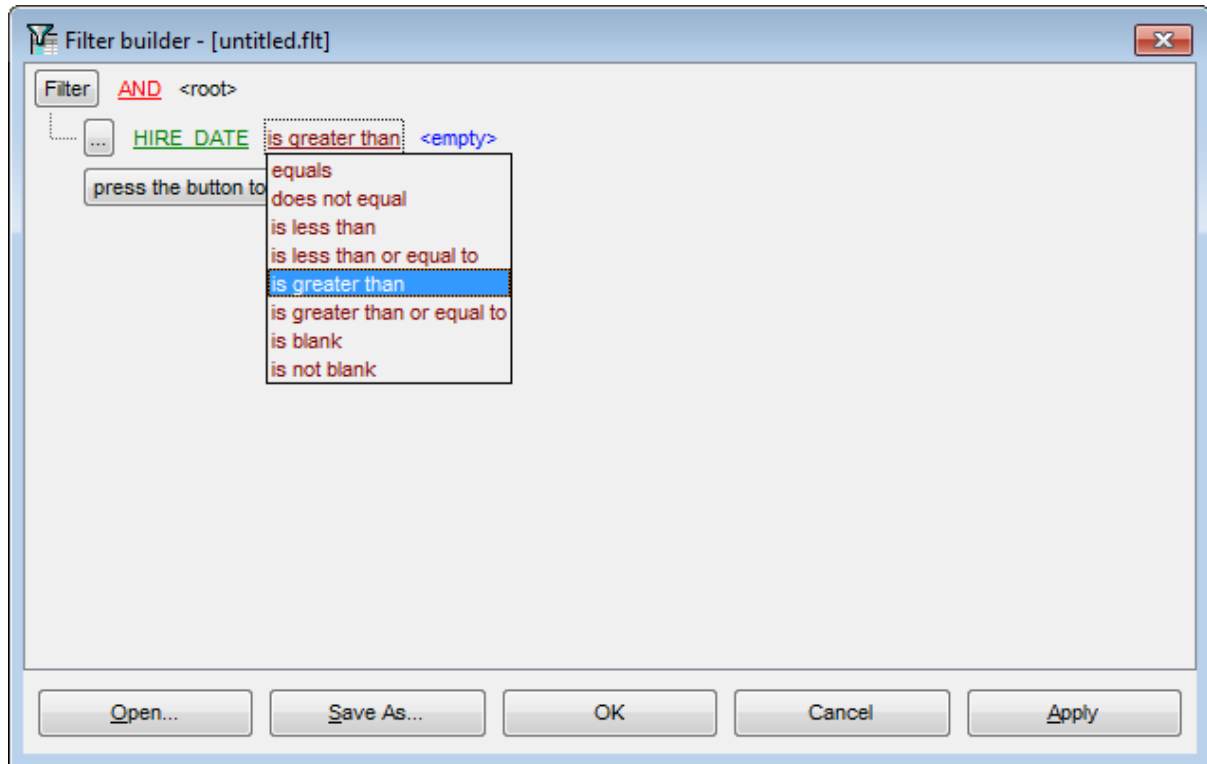


See also:

- [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 1/15/2007, 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](#)

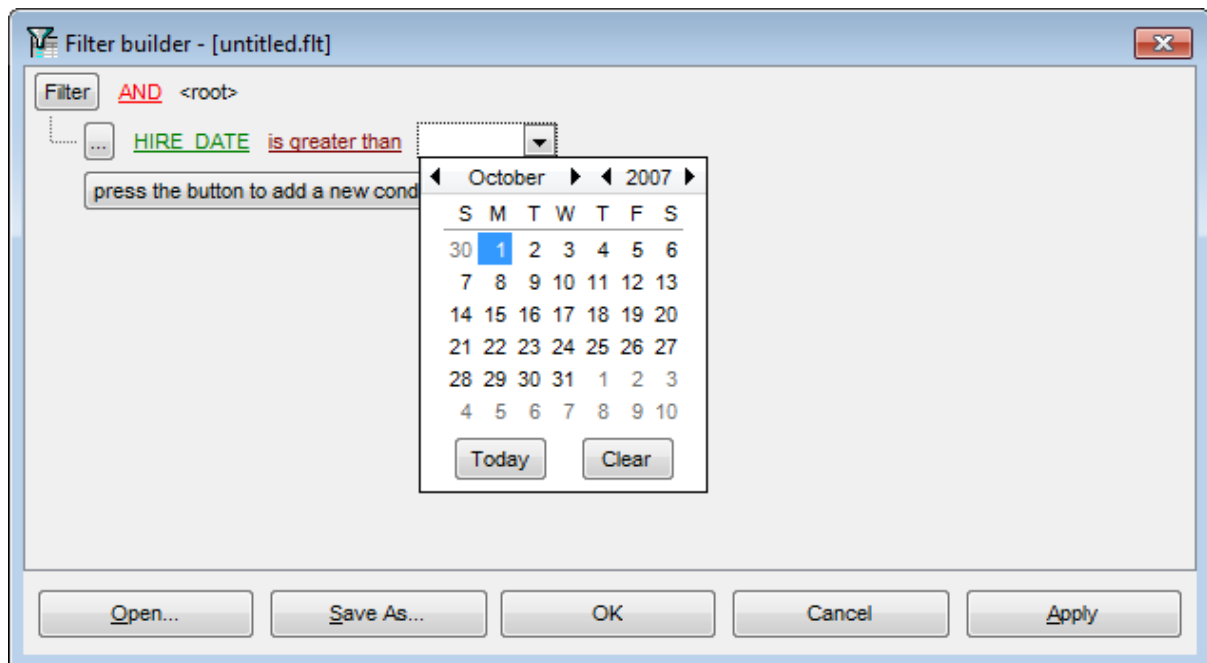
[Applying filter conditions](#)

7.3.5 Setting filter criteria values

Next, we need to specify value '1/15/2007' for the *IS GREATER THAN* operator.

Similarly, if, for example, we need to get the list of employees hired during the 1/15/2000 - 1/15/2007 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 '1/15/2000' and the '1/15/2007' values in the corresponding value boxes.

It is possible to set the date value **manually** by typing it in, or via 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.

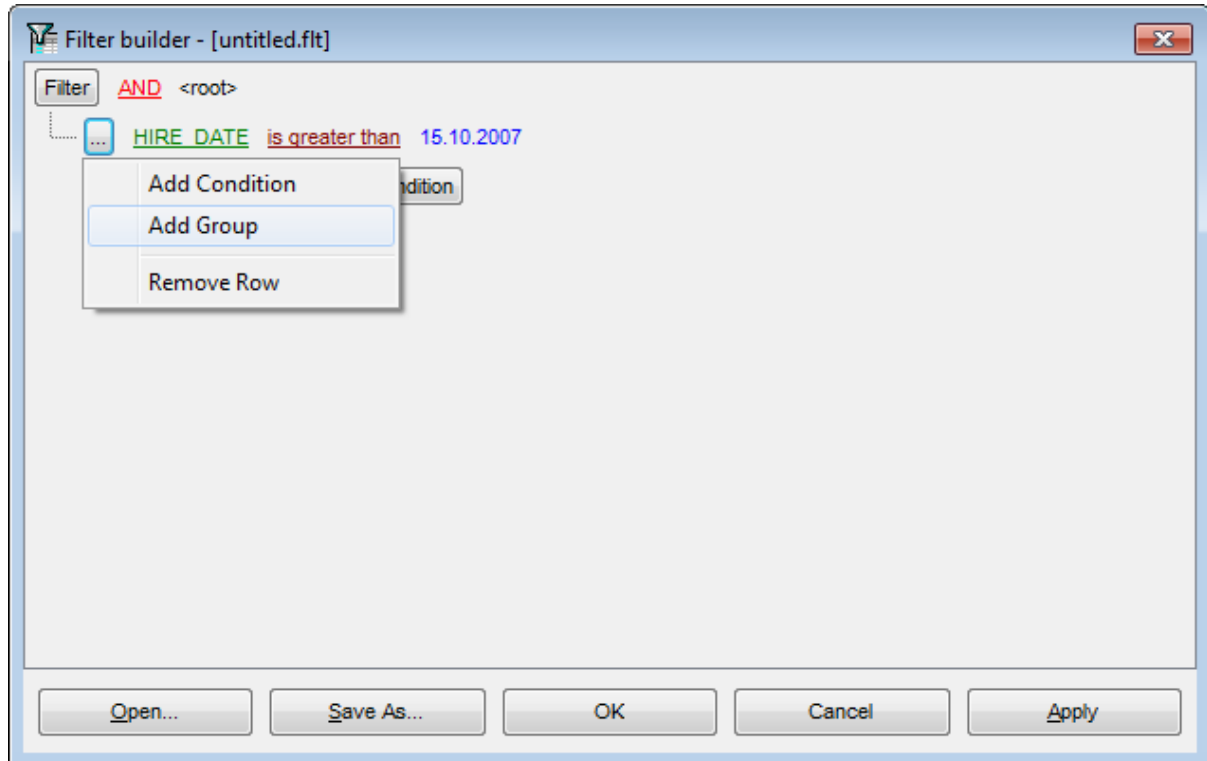
See also:

- [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 IT specialists (i.e. those registered in a department and having an IT-oriented job), we can add a complex filter condition combining simple conditions with the *AND* operator. (However, in this particular case we can just add them on 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](#)

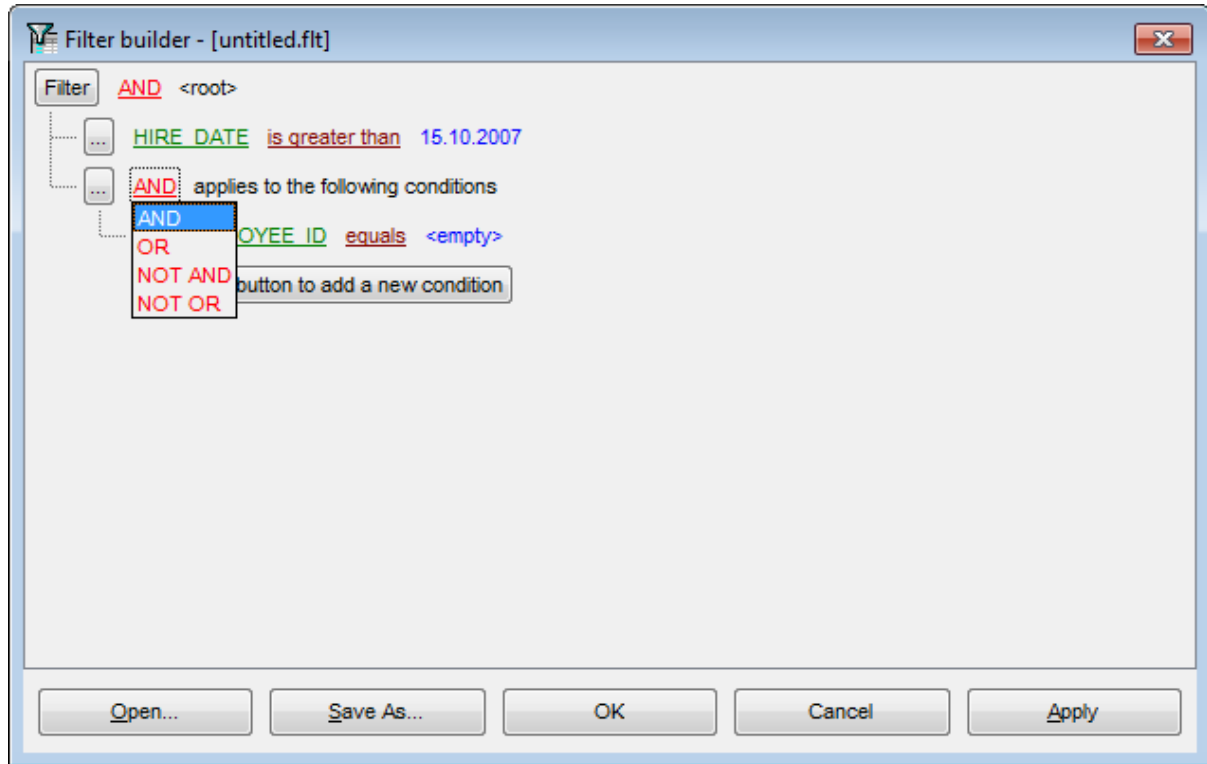
[Setting group operator](#)

[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](#)

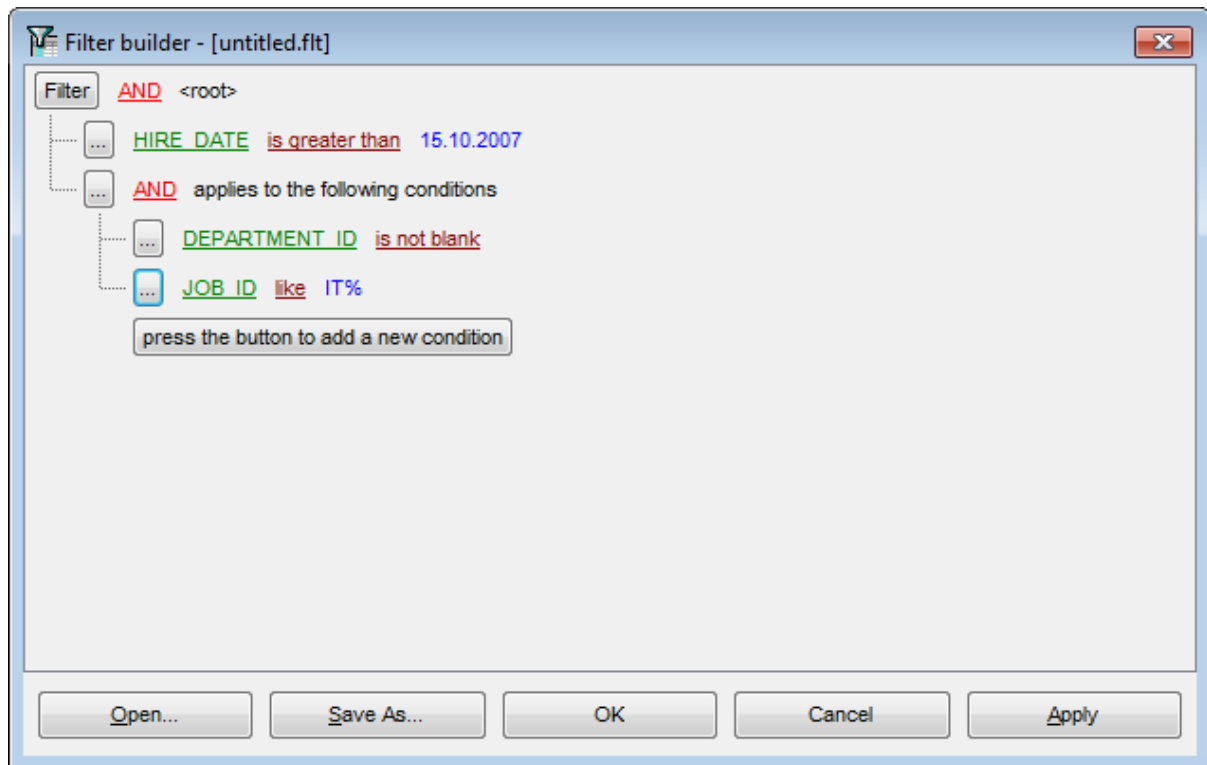
[Adding a new group](#)

[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

VIII

8 Import/Export Tools

Using SQL Manager for Oracle you are provided with powerful tools to import and export data to/from your Oracle database.

[Export Data Wizard](#)

Exports data to various supported formats including *MS Excel*, *MS Access*, *RTF*, *HTML*, *PDF*, *CSV*, *XML* and more.

[Import Data Wizard](#)

Imports data from any of supported formats: *MS Excel*, *MS Access*, *DBF*, *TXT*, *CSV*, *XML*, *MS Excel* and more.

[Export Data as SQL Script](#)

Exports data to an Execute Script as a number of INSERT statements.

See also:

[Getting Started](#)

[Database Explorer](#)

[Database Management](#)

[Database Objects Management](#)

[Query Management Tools](#)

[Data Management](#)

[Database Tools](#)

[Services](#)

[Options](#)

[How To...](#)

8.1 Export Data Wizard

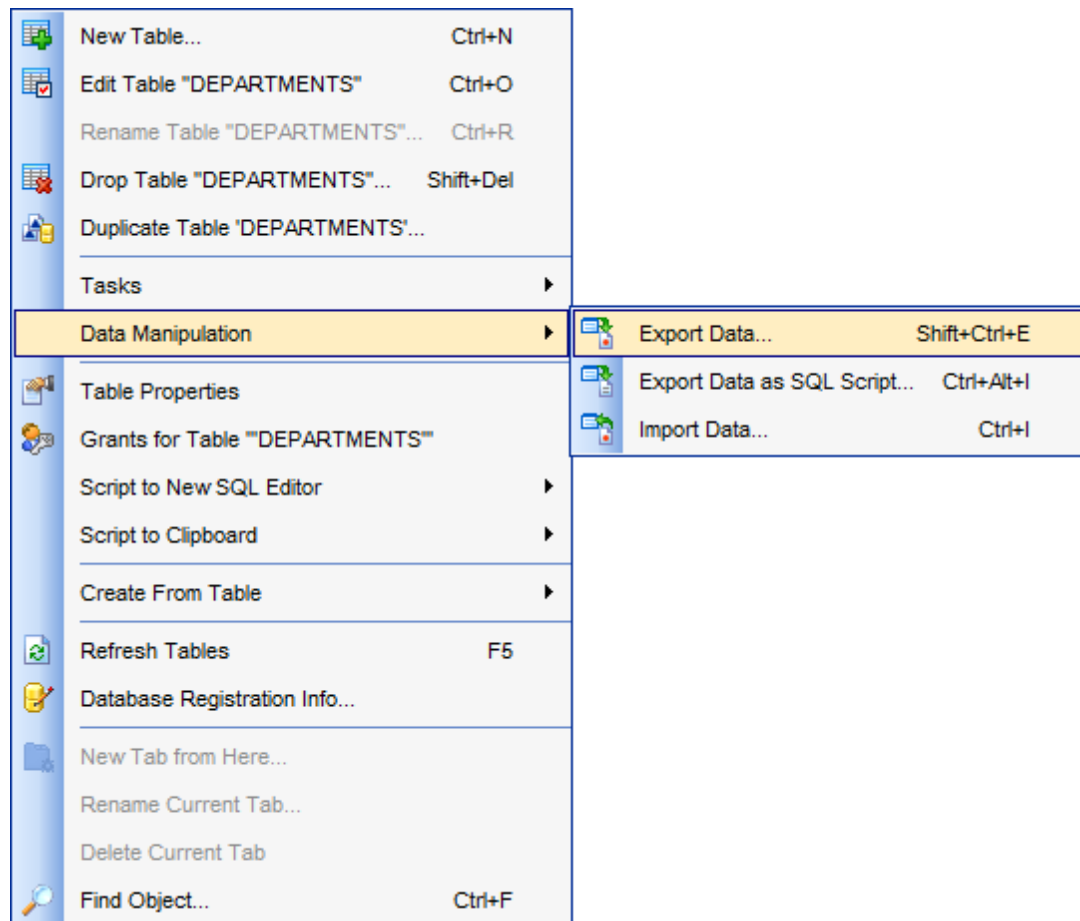
Export Data Wizard allows you to export data from a [table](#) / [view](#) or from a query result to any of supported formats (*MS Excel, MS Access, MS Word, RTF, HTML, PDF, TXT, CSV, XML, DBF, MS Excel 97-2007, MS Word 97-2003* etc). You can save your settings as a [template](#) any time for future 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 [Query Data](#) / [Design Query](#), 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 fields 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](#)

[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.

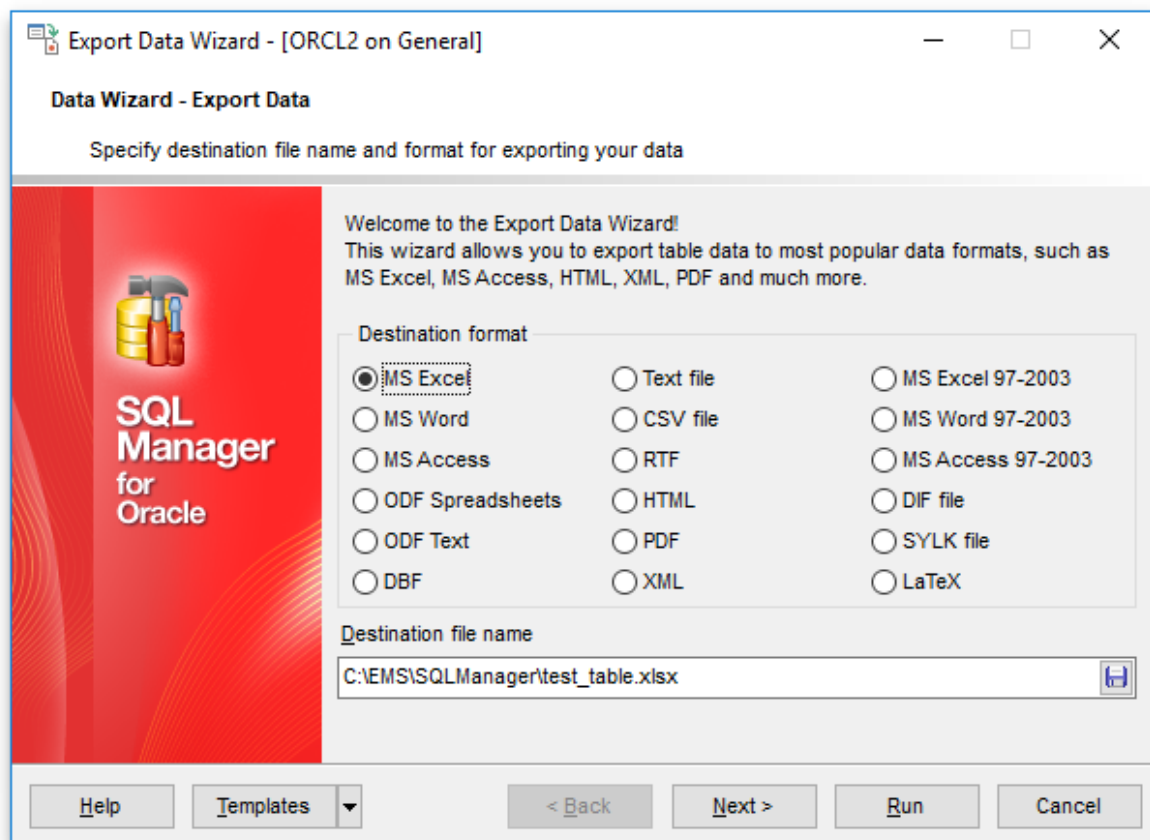
Destination format

Specify the format of the destination file. For details refer to [Supported file formats](#).

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**.

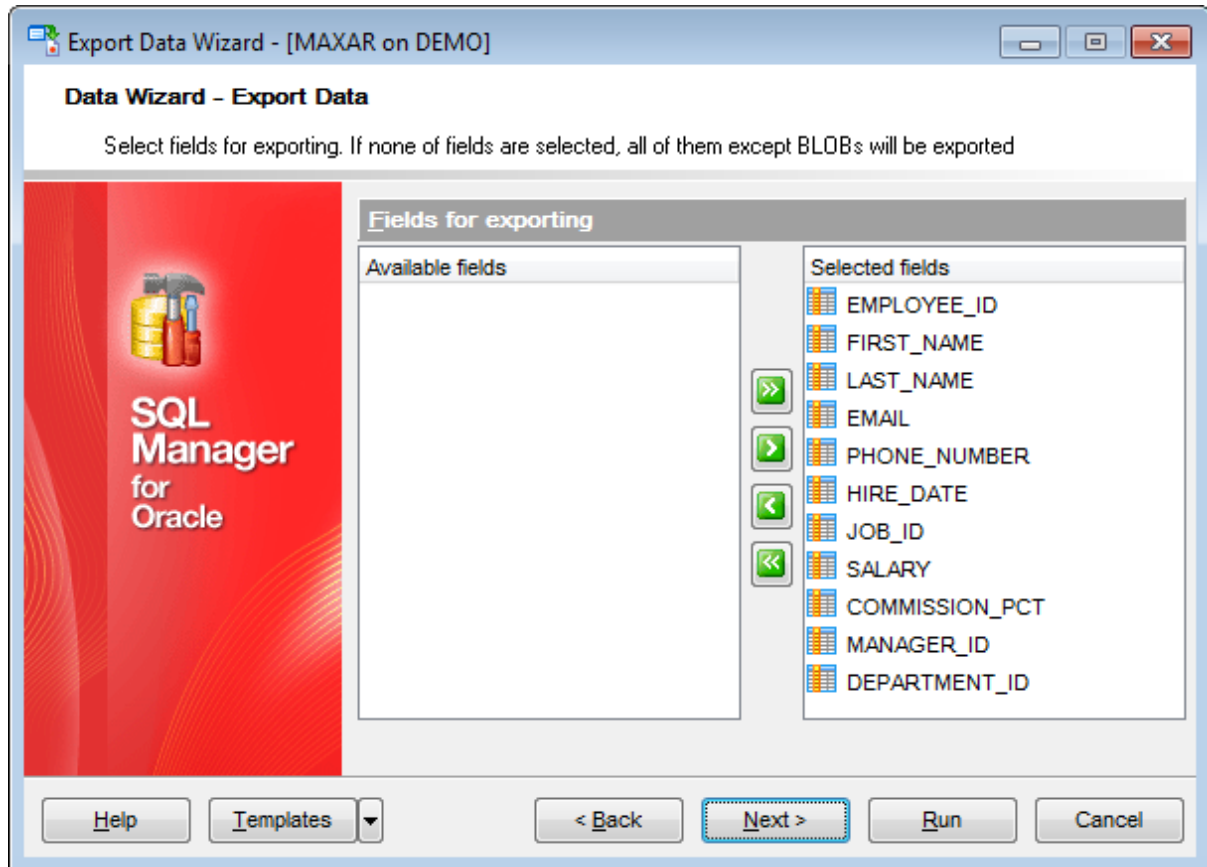
Note: If the target file already exists, the application will show a [warning](#) dialog where you can choose the action you need.



Click the **Next** button to proceed to the [Selecting fields for export](#) step of the wizard.

8.1.2 Selecting fields for export

This step of the wizard allows you to select the table field(s) to be exported. To select a field, you need to move it from the **Available fields** list to the **Selected fields** list. Use the     buttons or drag-and-drop operations to move the fields from one list to another.



If you leave all the fields in the **Available fields** list, all fields of the table (except BLOBs) will be exported.

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.*

Export Data Wizard - [MAXAR on DEMO]

Data Wizard - Export Data

Adjust formats for exported data if necessary

Data formats	
Integer format	### ##0
Float format	
Date format	dd.MM.yyyy
Time format	h:mm
DateTime format	dd.MM.yyyy h:mm
Currency format	
Boolean True	true
Boolean False	false
Null string	null
Decimal Separator	
Thousand Separator	
Date Separator	
Time Separator	

Buttons: Help, Templates, < Back, **Next >**, Run, Cancel

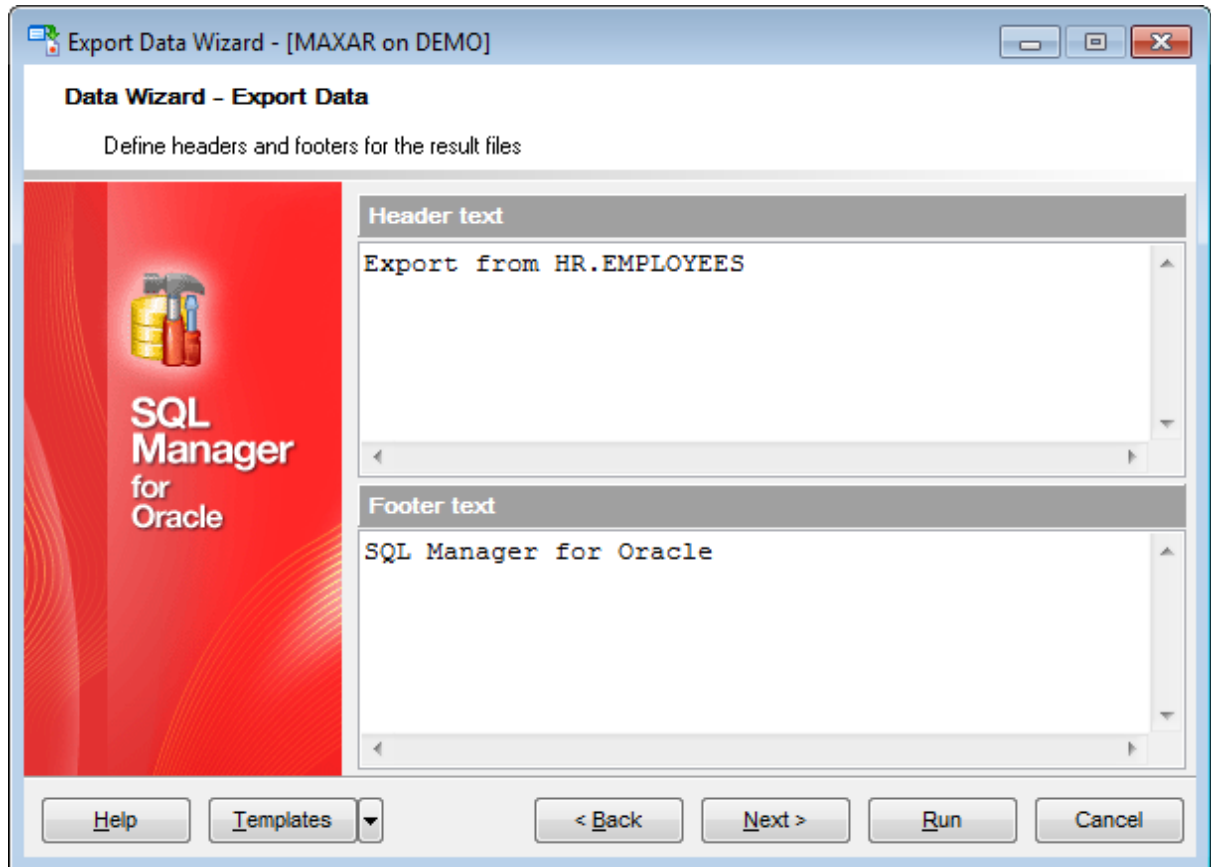
Hint: The formats used by default are specified in the [Data Export](#) section of the [Environment Options](#) dialog.

For more details refer to [Format specifiers](#).

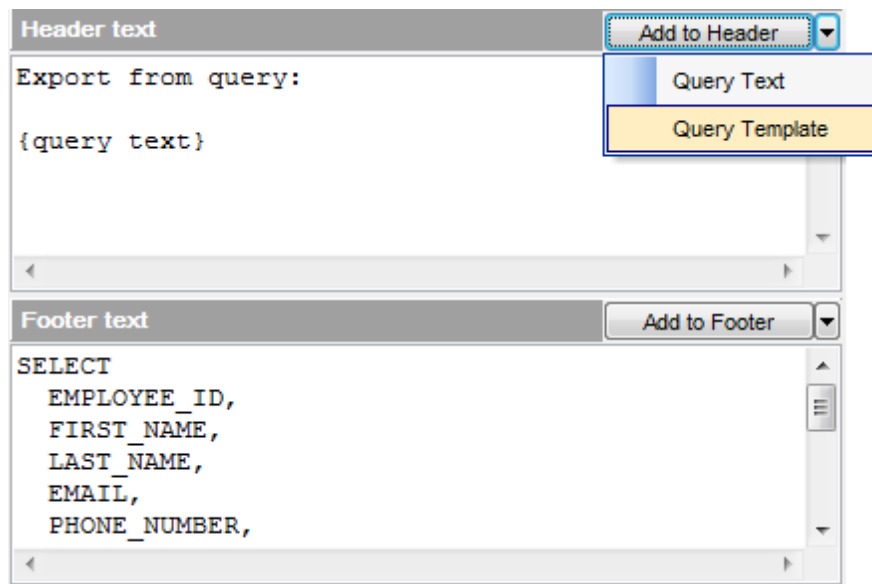
Click the **Next** button to proceed to the [Setting header and footer](#) step of the wizard.

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 / RTF options](#)
- [HTML options](#)
- [PDF options](#)
- [TXT options](#)
- [CSV options](#)
- [XML options](#)
- [MS Excel 97-2007 / ODS options](#)
- [MS Word 2007 / ODT options](#)

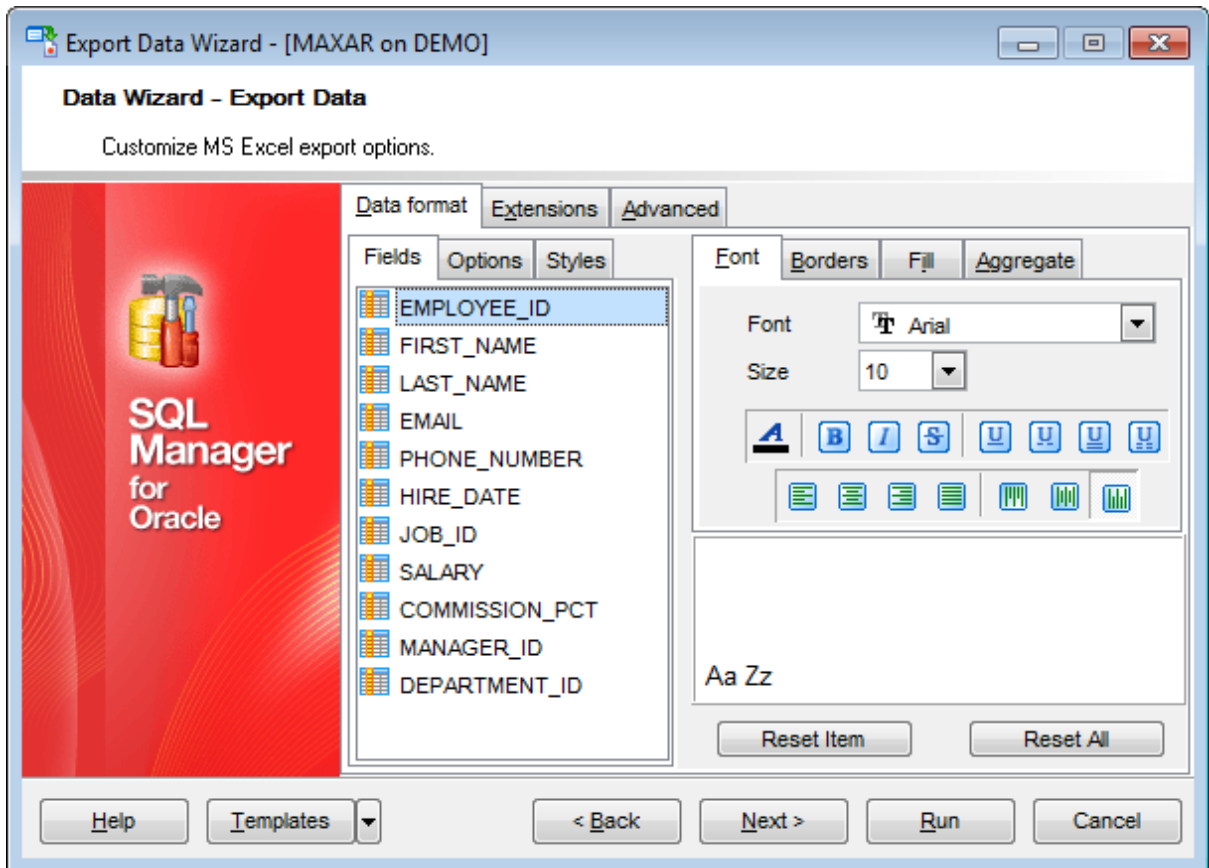
To get more information about the file formats, see the [Supported file formats](#) page.

8.1.5.1 Excel 97-2003 options

This step allows you to set options for the target **MS Excel 97-2003** (*.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.

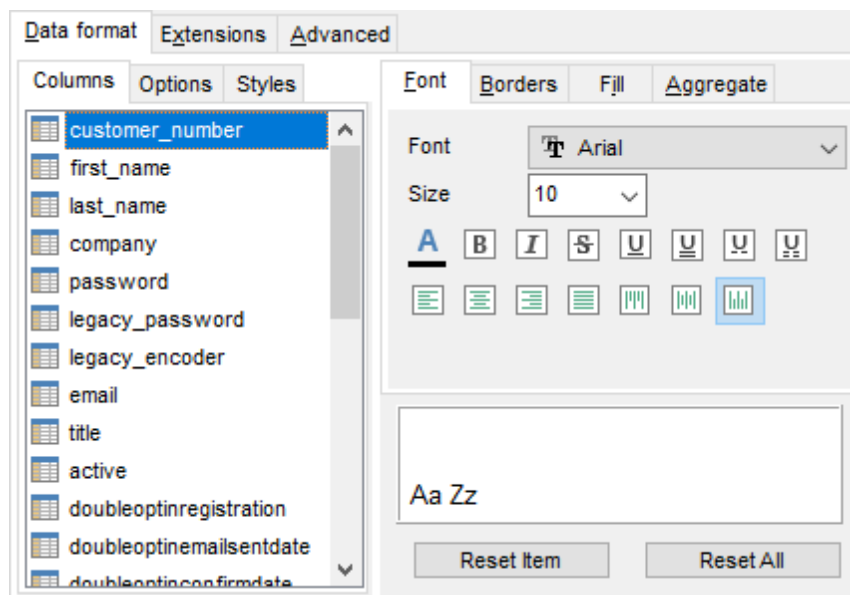
8.1.5.1.1.1 Fields

Using the **Fields** tab you can set *font* options, *border* and *fill* options and *aggregate functions* for all the **fields** 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.

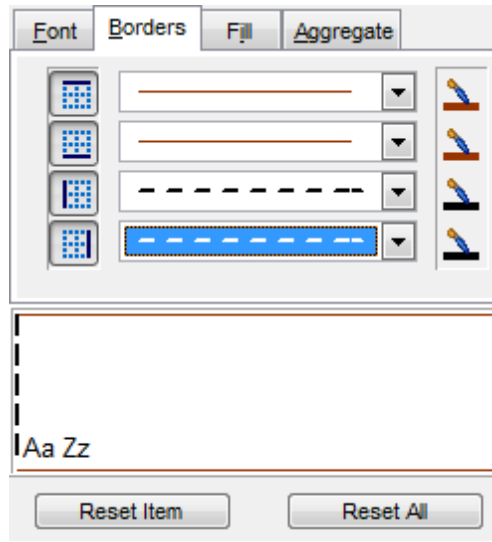
Use the buttons below to set *font color*, make text *bold*, *italicized*, *strikethrough* text, set *underline* effects, specify text *horizontal* and *vertical* align.



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.

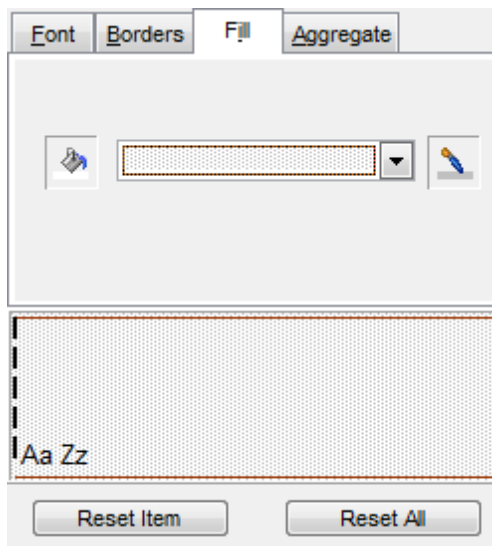


The **Fill** tab allows you to specify the fill pattern for the output Excel file cells.

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.

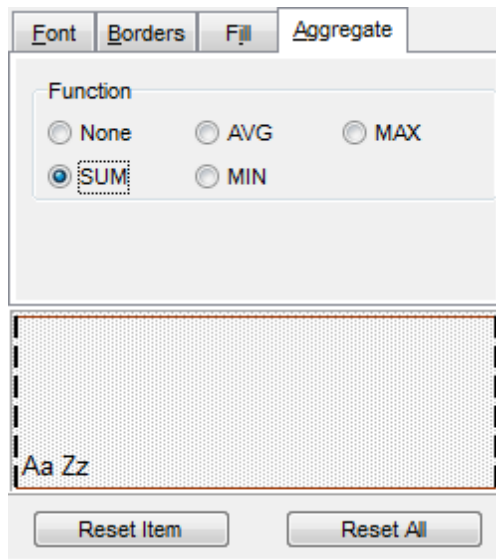


The **Aggregate** tab allows you to specify an aggregate function for the field in the output Excel file.

Select a **function** that will be applied to the field:

- ☒ None
- ☐ AVG

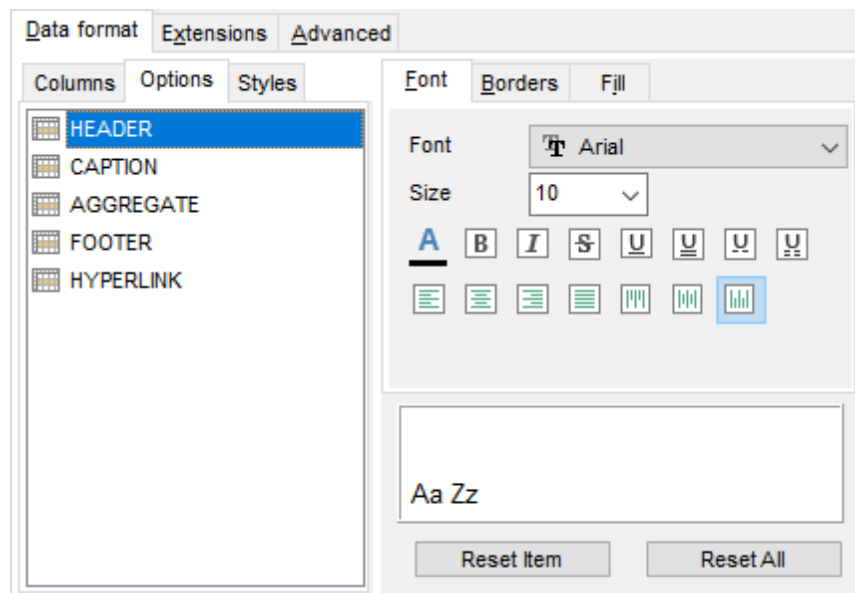
- ☒ MAX
- ☒ SUM
- ☒ MIN



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 **Fields**. For details refer to the [Fields](#) 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.

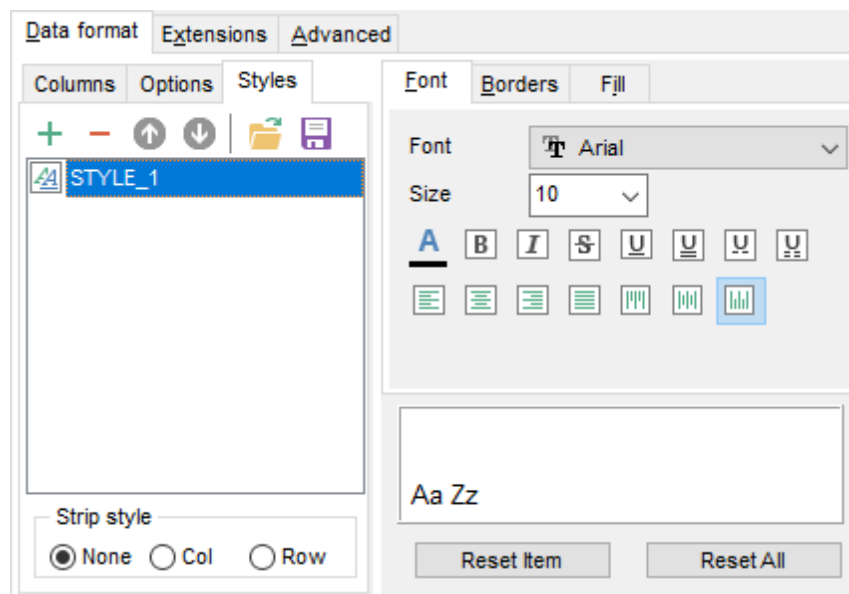
To delete a style template, select it and click the **-** **Minus** button.

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 **Fields**. For details refer to the [Fields](#) 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](#).

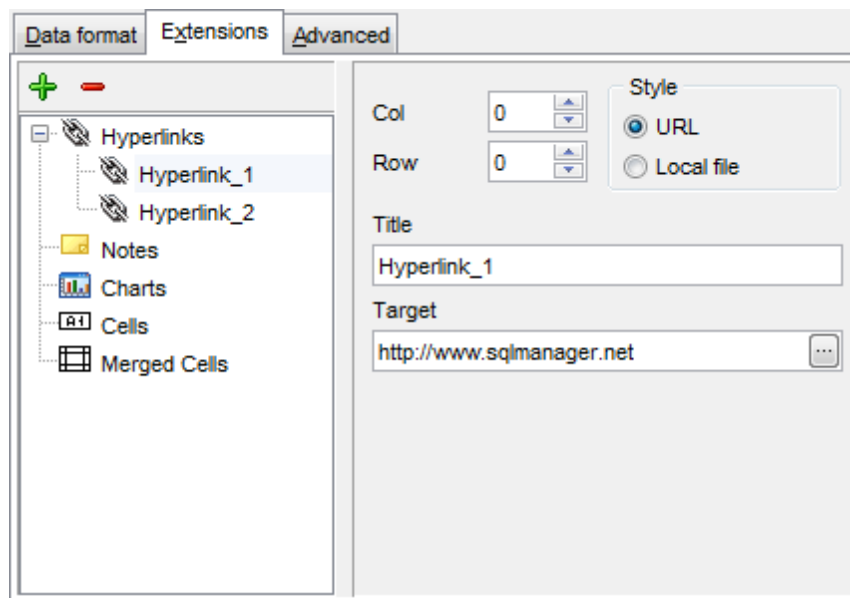
Click the **+** **Plus** button to add an element;
click the **-** **Minus** button to delete an element.

- [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

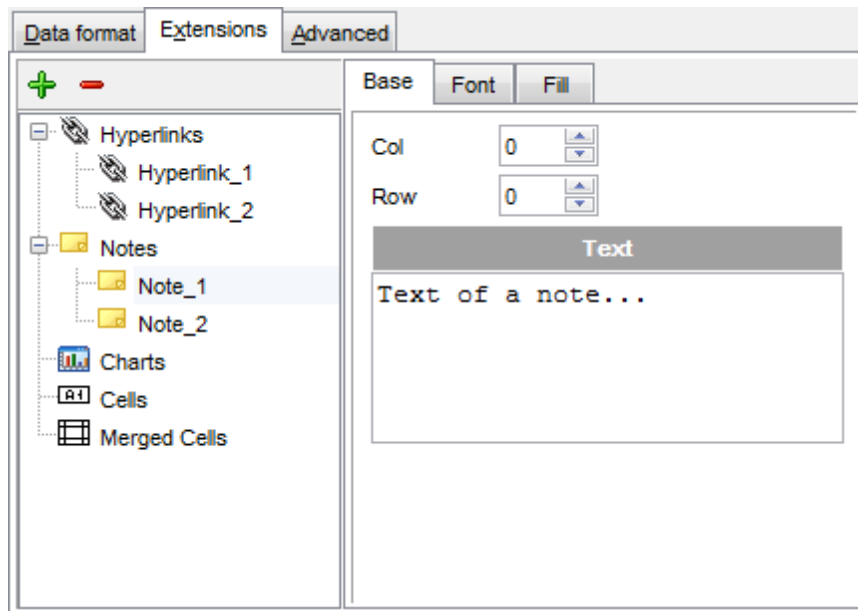
If you need to create a **note**:

- 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.



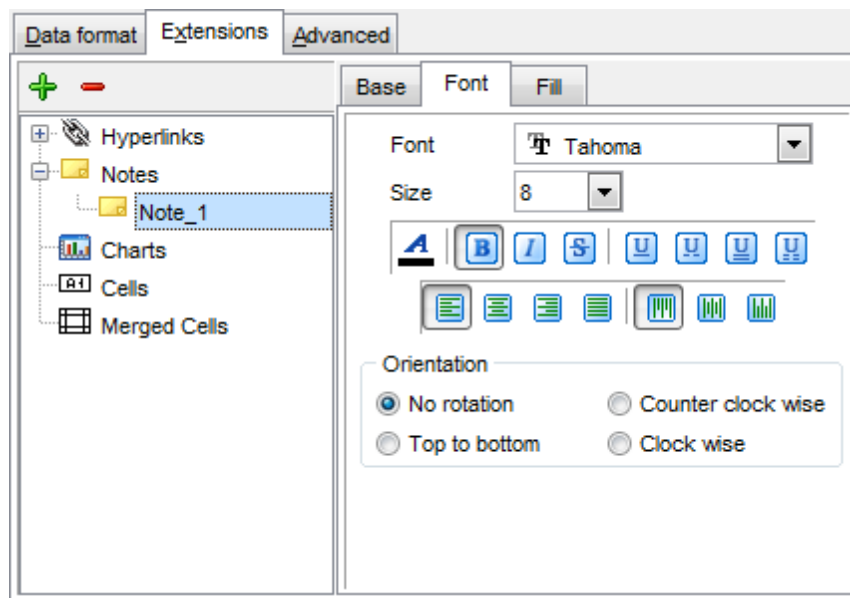
The **Font** tab allows you to specify properties of the font that will be used for the note.

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.

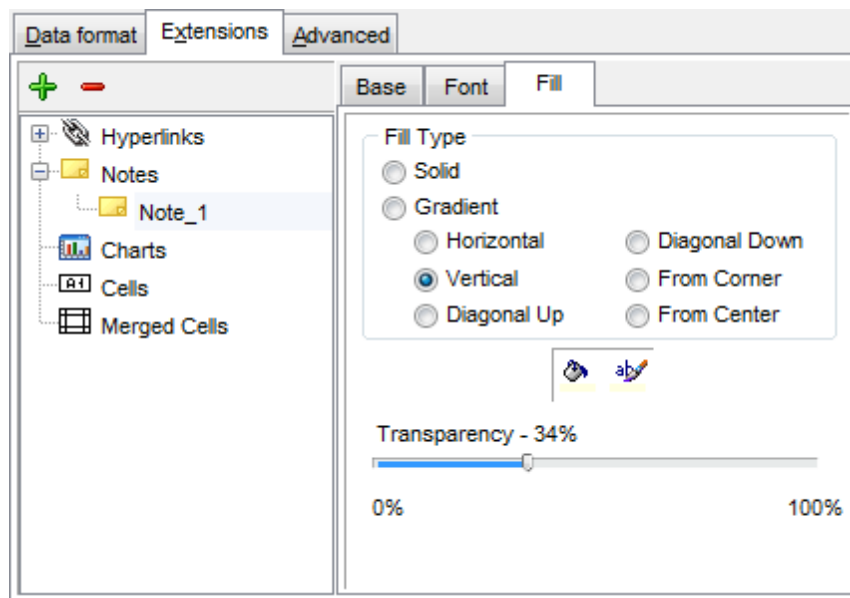
The **Fill Type** group allows you to select whether the fill color will be **solid** or **gradient**:

- ☒ *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:

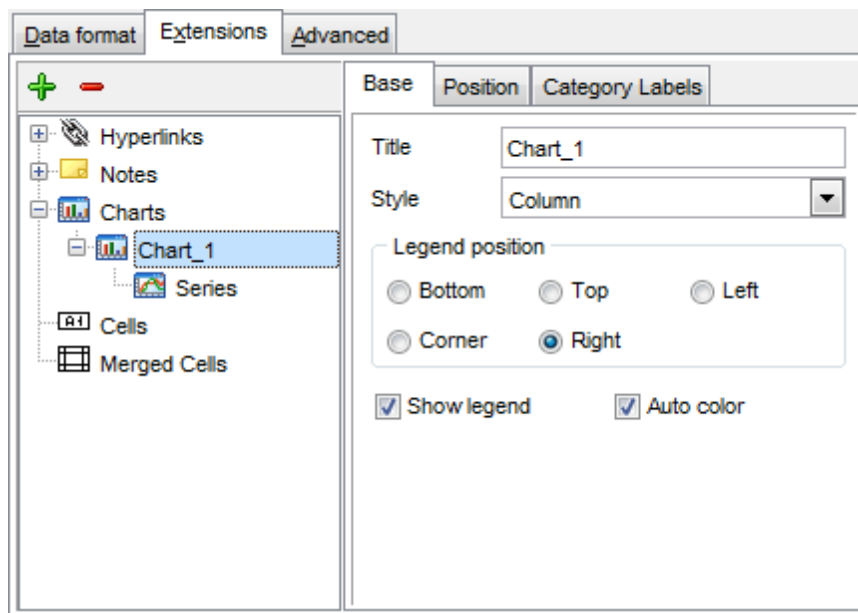
- ☒ *Bottom*
- ☐ *Top*
- ☐ *Left*
- ☐ *Corner*
- ☐ *Right*

☒ **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*

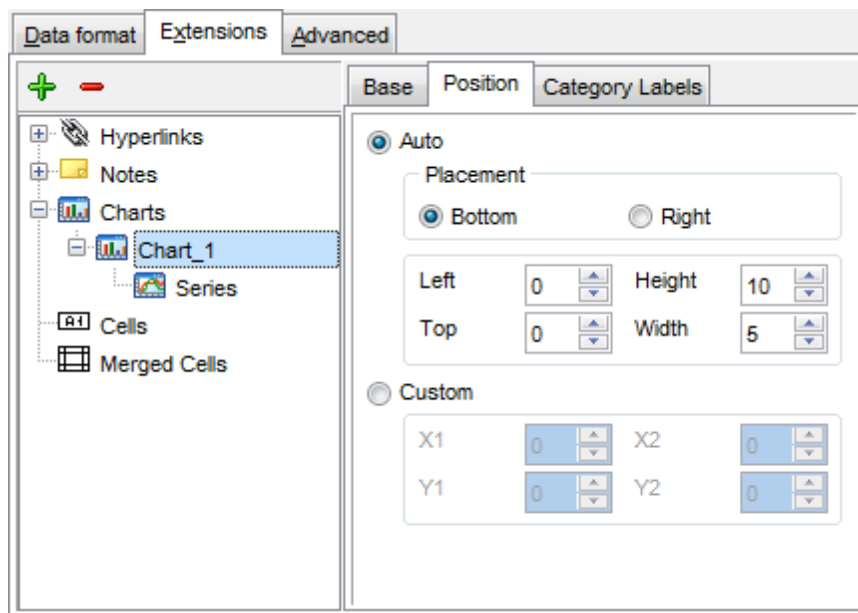
☒ *Right*

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.



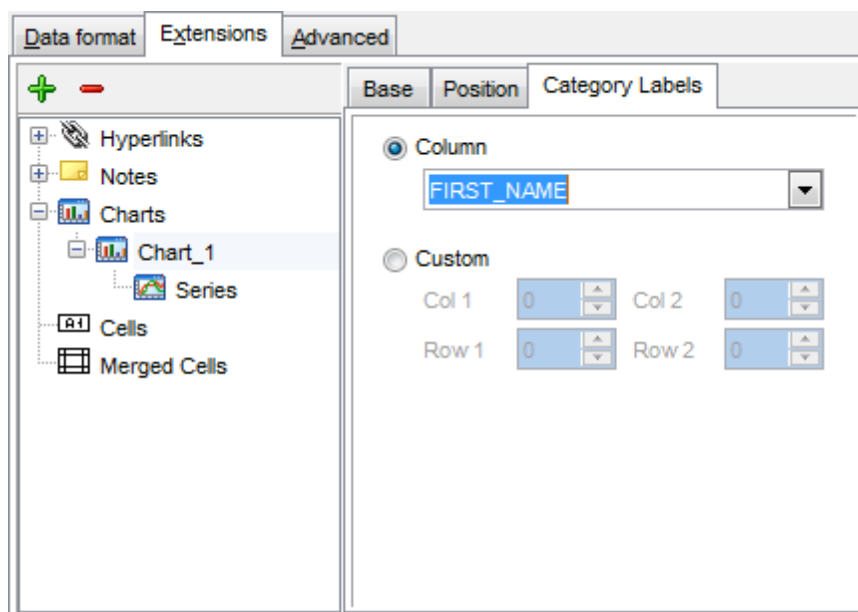
The **Category Labels** tab allows you to specify in which rows and columns the chart will be built.

☒ *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

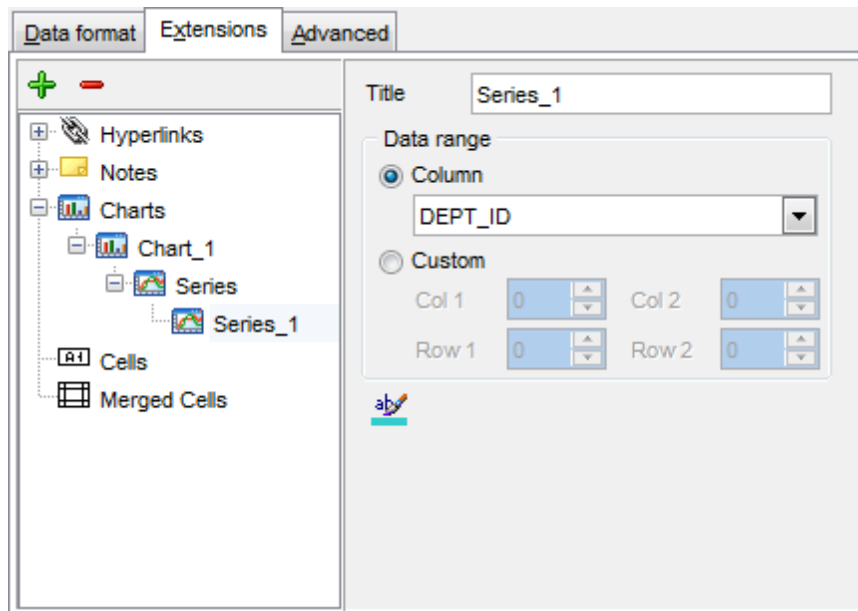
☒ Column

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.

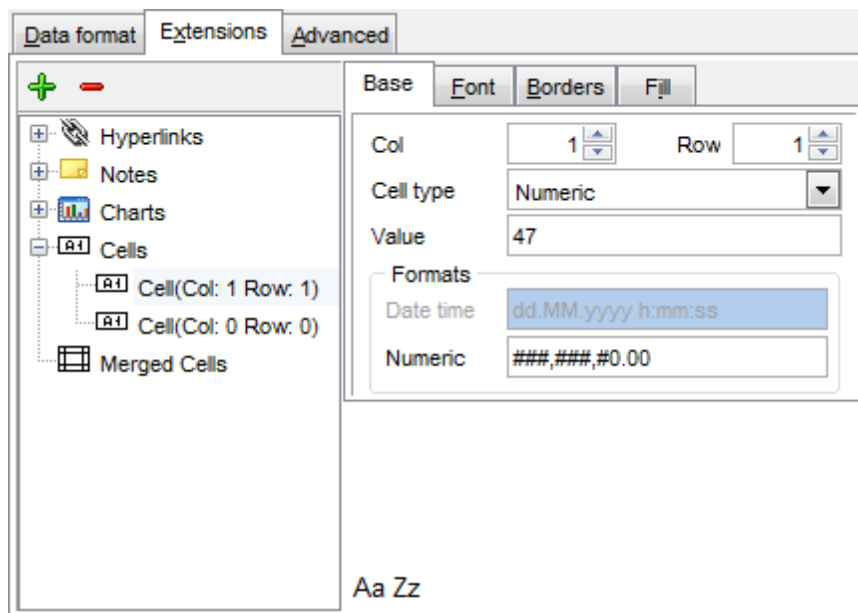
Press the  button to set the color for the series.



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*).

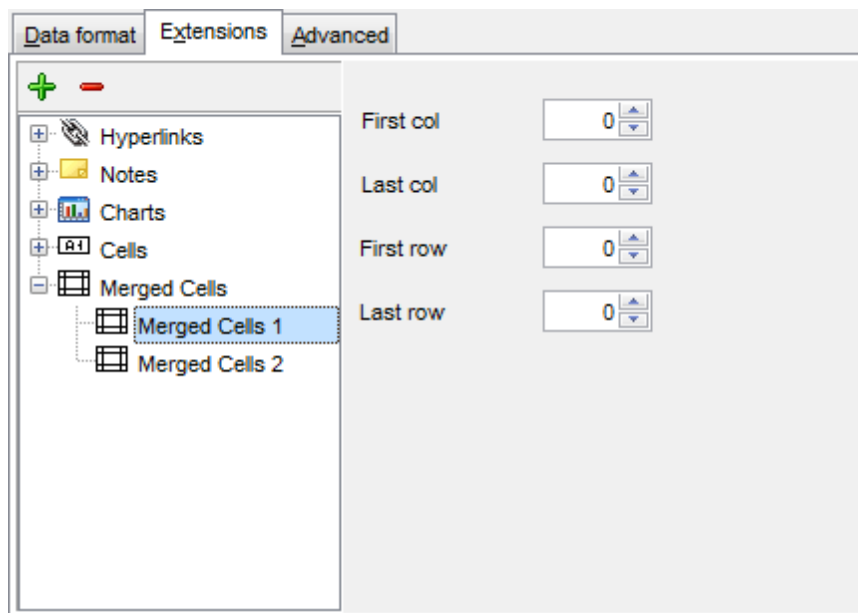
Set the required value in the **Value** edit box.

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 **Fields**. For details refer to the [Fields](#) 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.

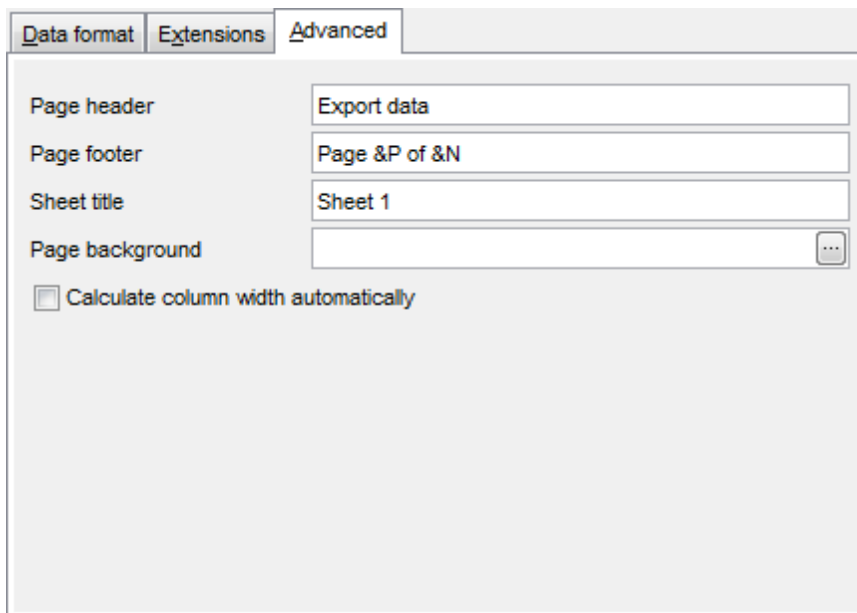
Hint: It is also possible to set macros in the **Page header** and **Page footer** fields:
&N stands for the quantity of pages;
&P - the number of the current page.

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.



	Data format	Extensions	Advanced
Page header			Export data
Page footer			Page &P of &N
Sheet title			Sheet 1
Page background			
☐ Calculate column width automatically			

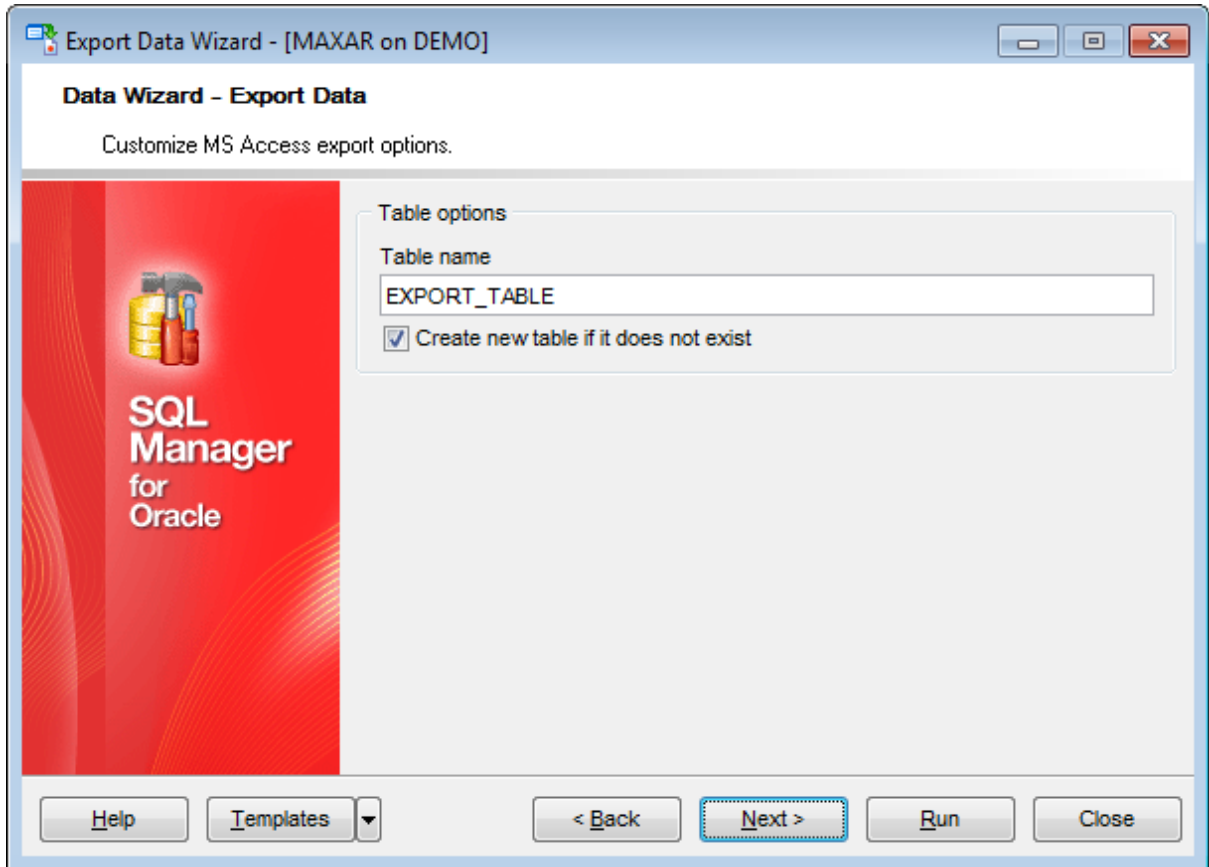
☒ **Calculate column width automatically**

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.



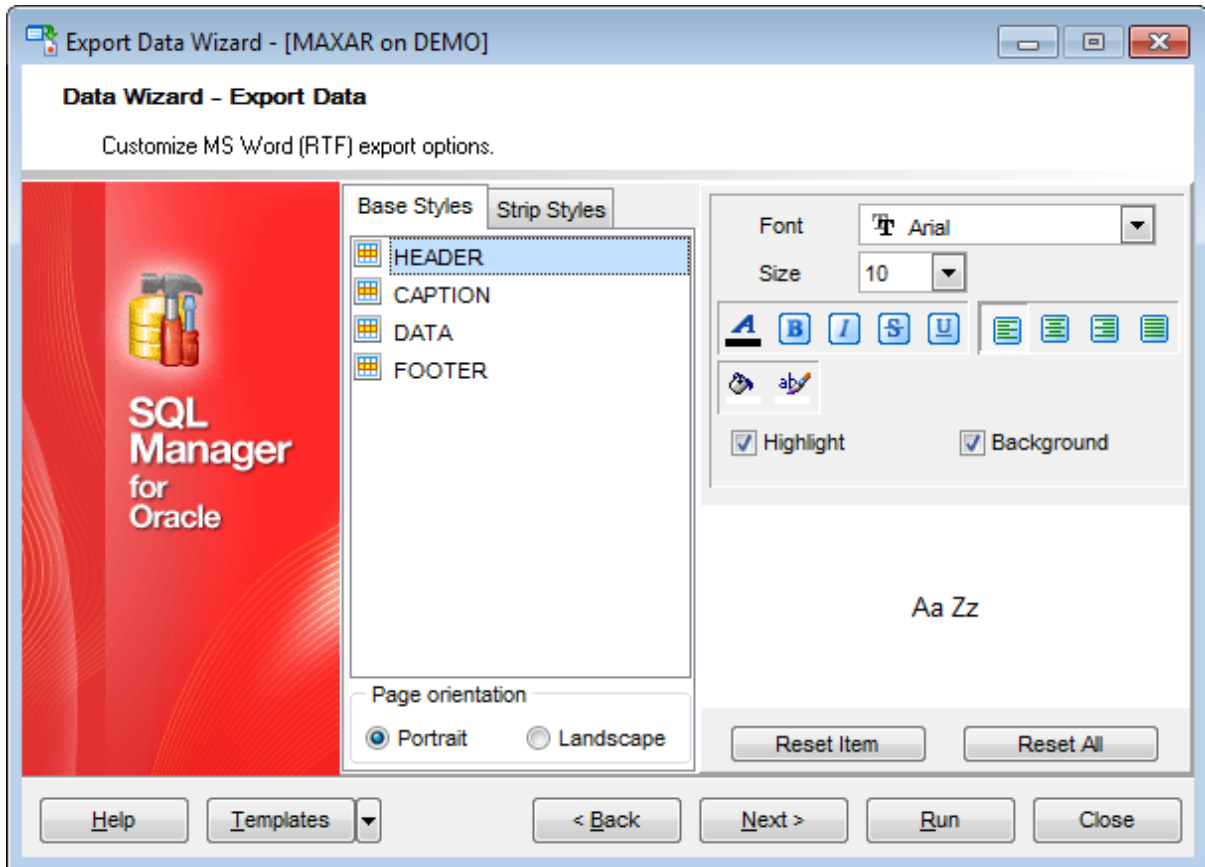
When you are done, click the **Next** button to proceed to [Setting common export options](#).

8.1.5.3 Word / 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](#)

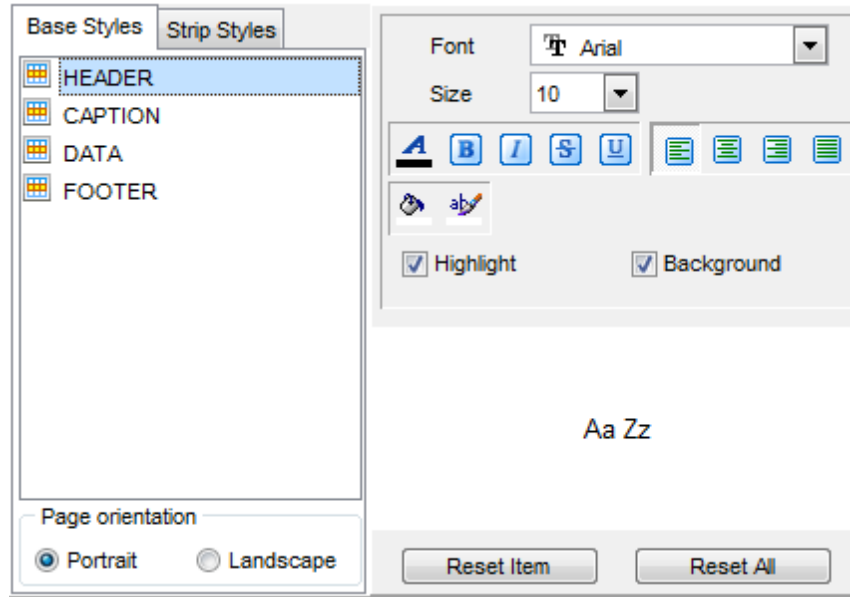
For your convenience the previews illustrating the changes are displayed in the **Sample Group** area within the *Base Styles* and the *Strip Styles* tabs.



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.

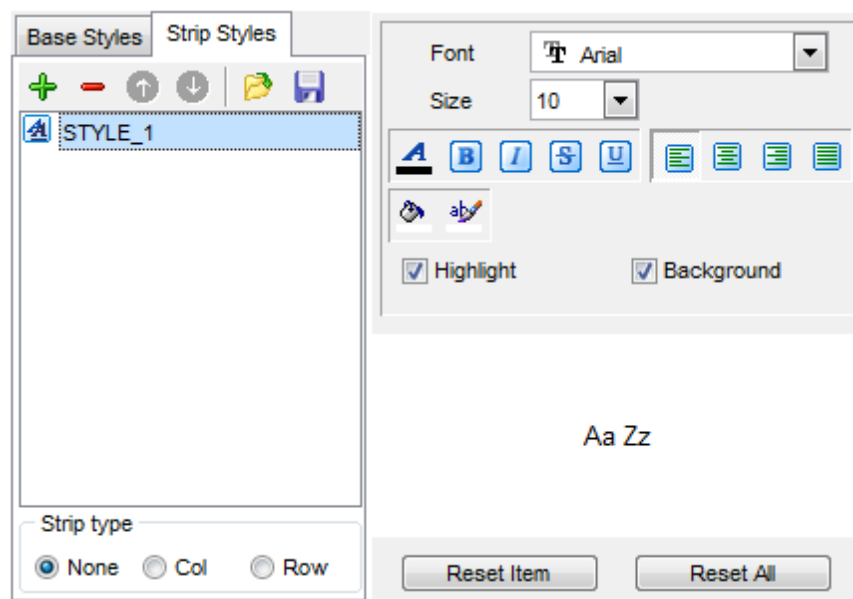
To delete a style template, select it and click the **-** **Minus** button.

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).

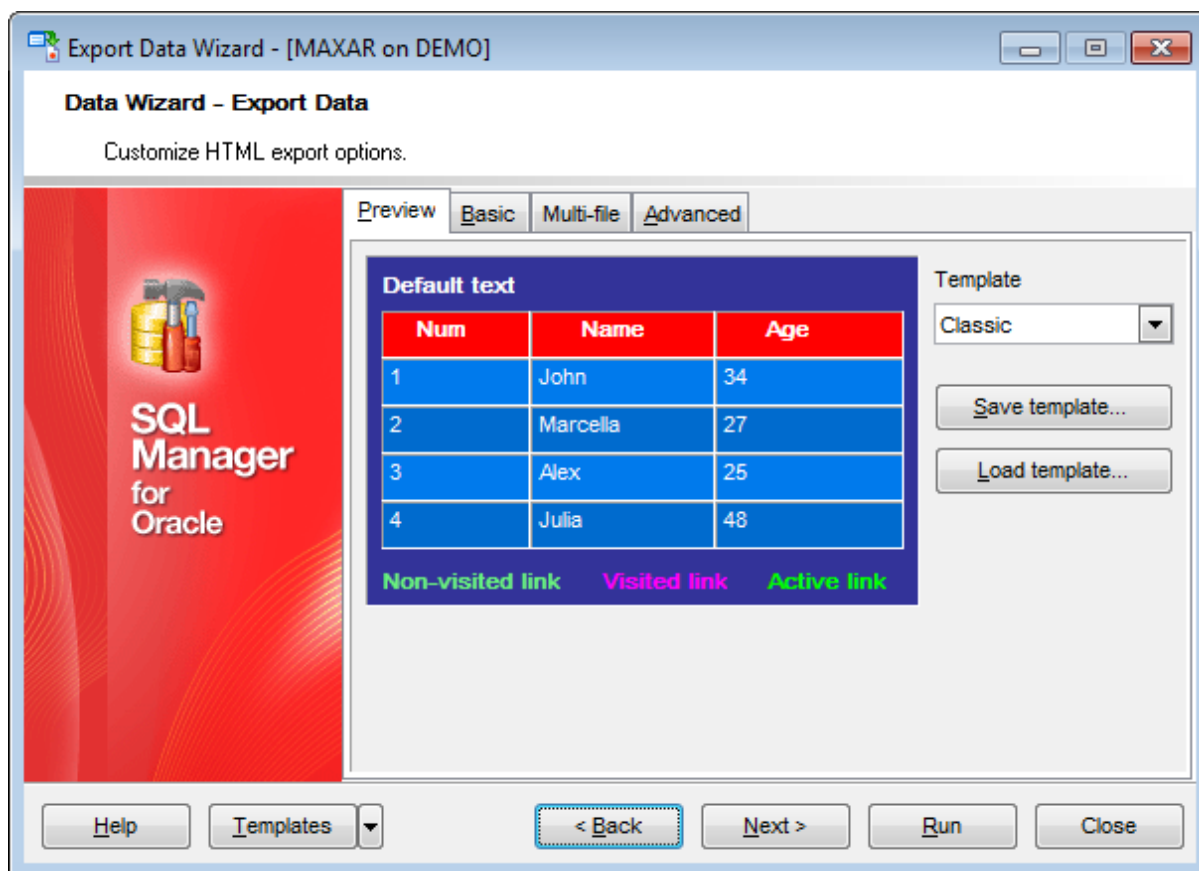


You can reset the changes any time using the **Reset Item** and the **Reset All** buttons.

8.1.5.4 HTML options

This step allows you to set options for the target **HTML** (*.htm) file.

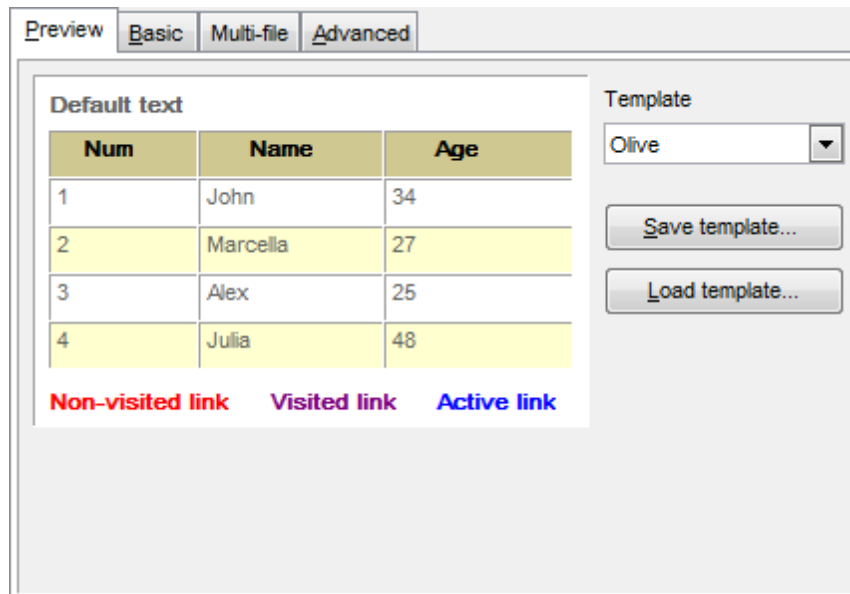
- [Preview](#)
- [Basic](#)
- [Multi-file](#)
- [Advanced](#)



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.



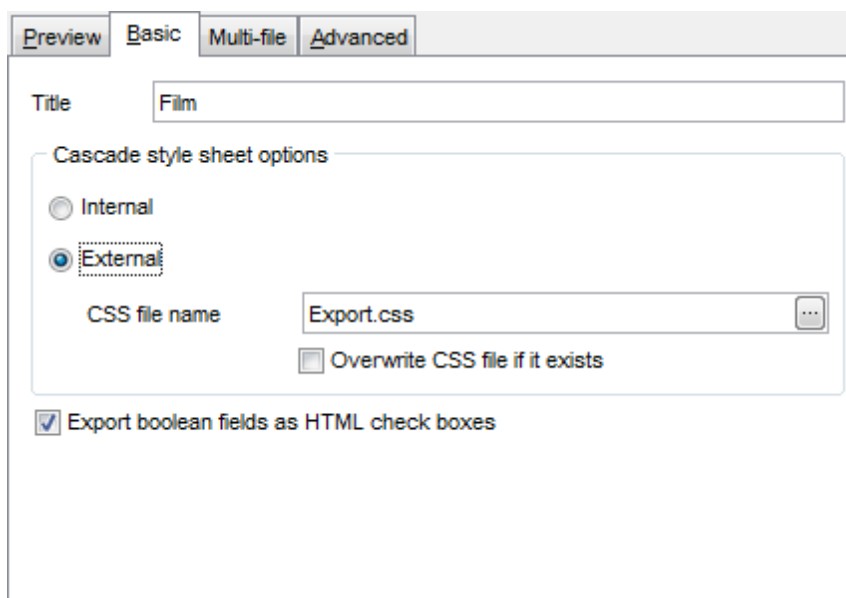
You can select any of the pre-defined templates and customize it by clicking objects in the preview panel, and save the settings as a custom template using the **Save template...** button. Use the **Load template...** button to load a previously saved custom template from your hard disk.

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 fields of the table should be exported as HTML check boxes.



The screenshot shows the 'Basic' tab of a dialog box with four tabs: 'Preview', 'Basic', 'Multi-file', and 'Advanced'. The 'Basic' tab is active. It contains a 'Title' field with the text 'Film'. Below it is a section titled 'Cascade style sheet options' containing two radio buttons: 'Internal' and 'External'. The 'External' radio button is selected. To the right of the 'External' radio button is a text field for 'CSS file name' containing 'Export.css' and an ellipsis button. Below this is a checkbox labeled 'Overwrite CSS file if it exists' which is unchecked. At the bottom of the dialog is a checked checkbox labeled 'Export boolean fields 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 control 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.

The screenshot shows the 'Advanced' tab of a configuration window. It is divided into two main sections: 'Body options' and 'Table Options'.
Body options:
- 'Default font': A drop-down menu showing 'Arial'.
- 'Background': A text field containing 'D:\EMS_logo.bmp' with a browse button (...).
- 'Advanced attributes': An empty text field.
Table Options:
- 'Cell padding': A spinner control set to 4.
- 'Cell spacing': A spinner control set to 1.
- 'Border': A spinner control set to 1.
- 'Background': A text field containing 'D:\Export_to_HTML_background.jpg' with a browse button (...).
- 'Advanced attributes': An empty text field.

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.

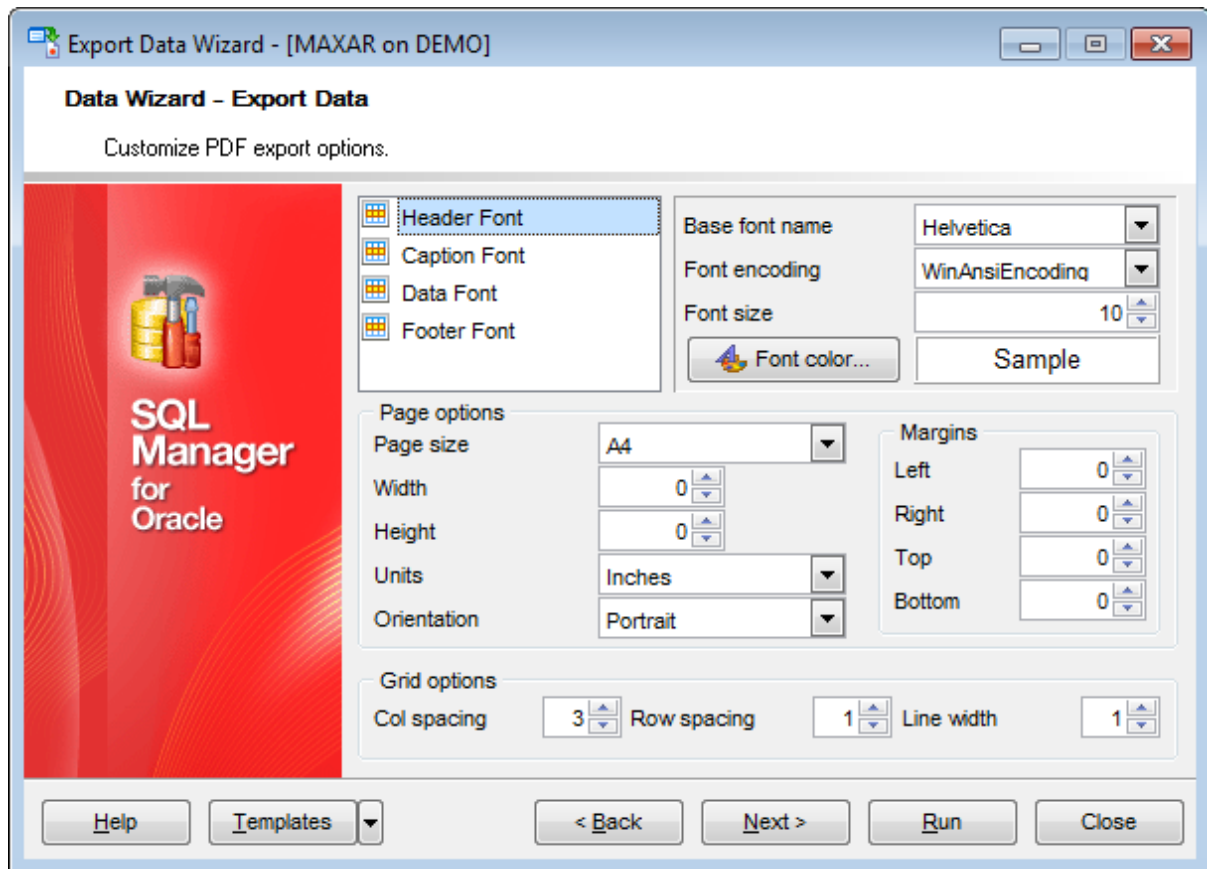
Fonts

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

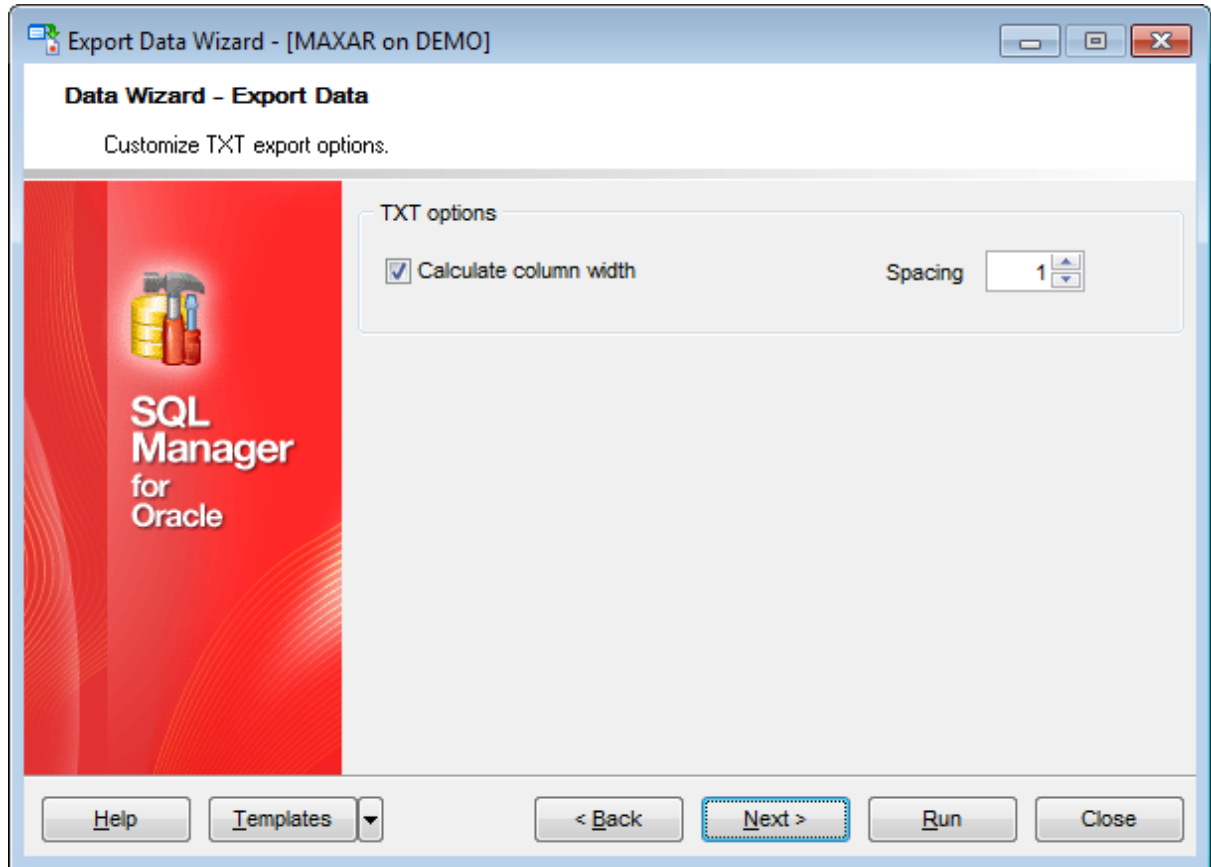
Use the **Col spacing**, **Row spacing**, **Line width** spinner controls to specify spacing for grid columns, rows, and grid line width respectively.

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.

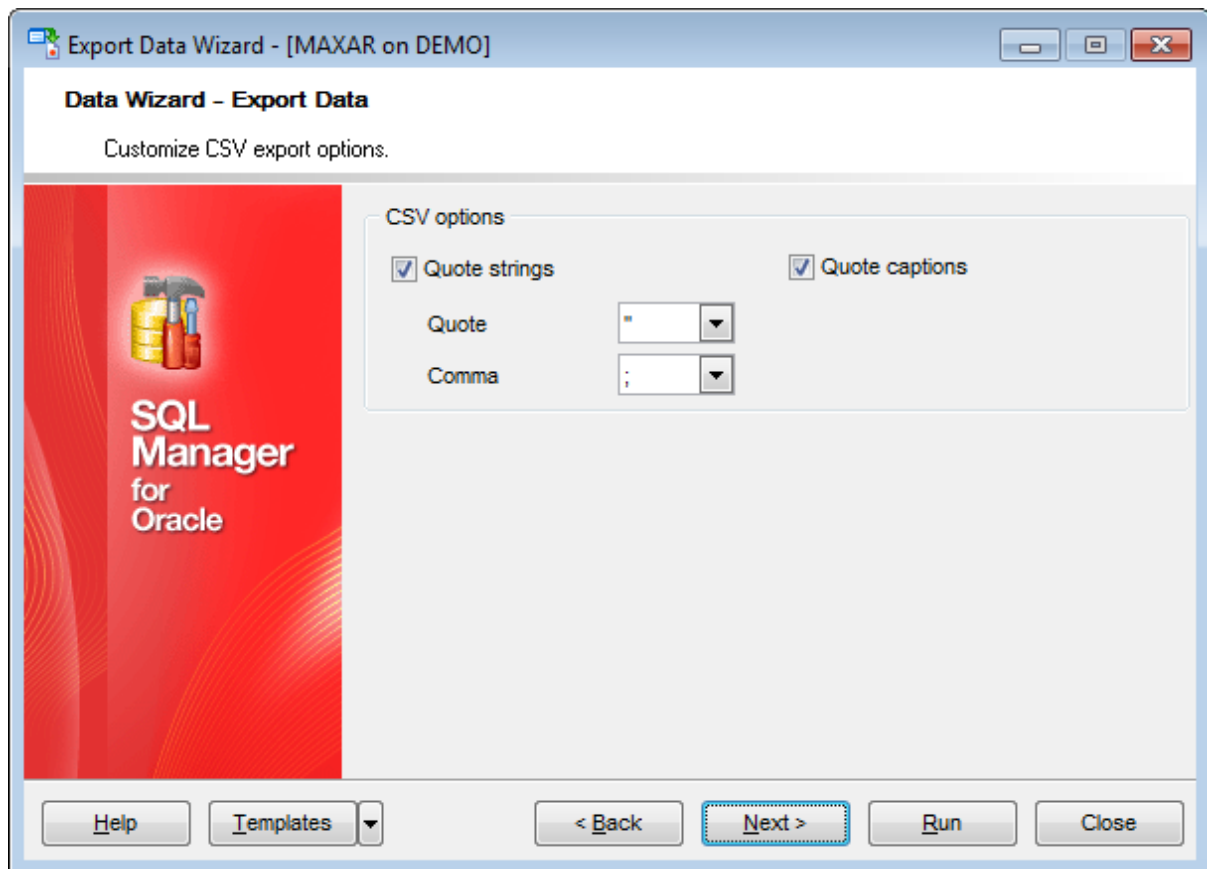
☒ **Quote strings**

Check this option to apply quoting for string values in the target file.

☒ **Quote captions**

Check this option to apply 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

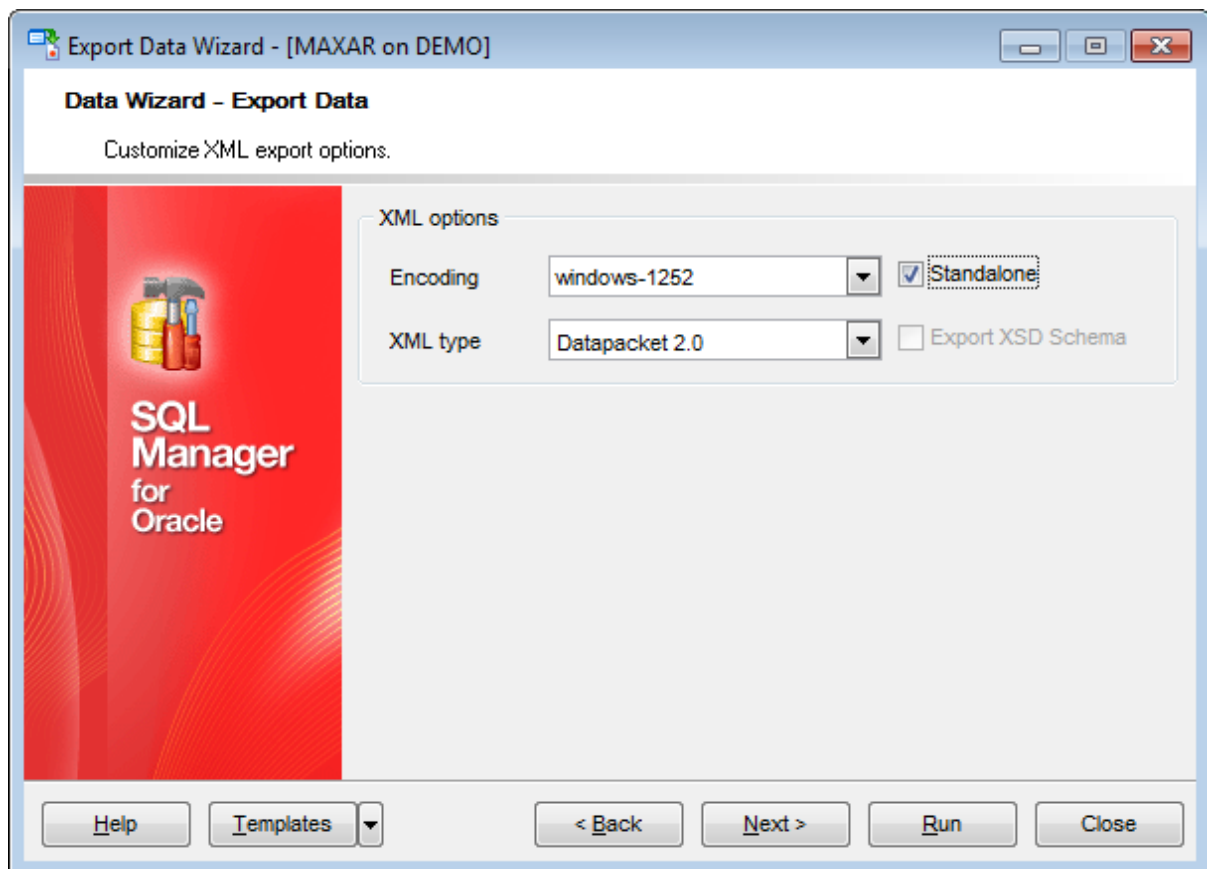
This step allows you to set options for the target **XML** (*.xml) file.

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** (*.xlsx) or **ODF Spreadsheets** (*.ods) file.

Using the **Base Styles** tab you can set *font* and *border* options for all **elements** of the Excel / 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 / 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*.

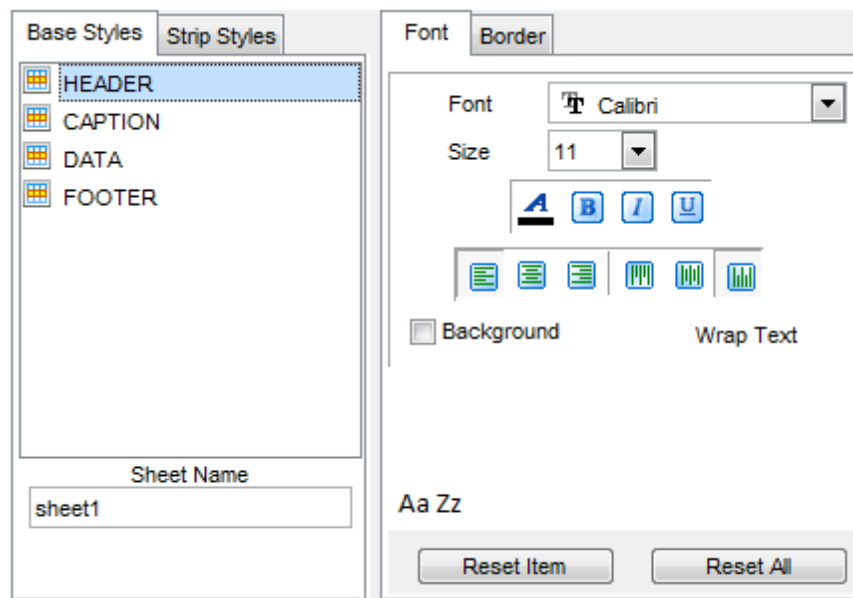
☒ **Background**

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.

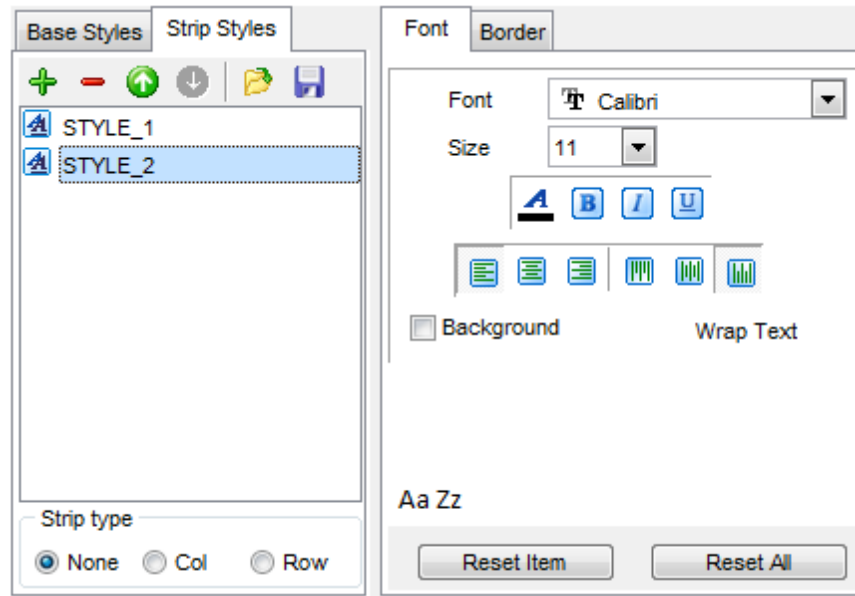
To delete a style template, select it and click the **Minus** button.

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.

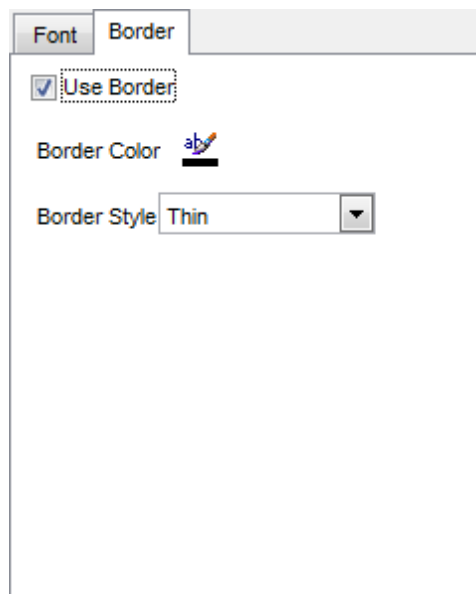
The **Border** tab allows you to specify properties of the borders of the output Excel / ODS file cells.

☒ **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** (*.docx) or **ODF text** (*.odt) file.

Using the **Base Styles** tab you can set *font* options for all **elements** of the Word / 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.

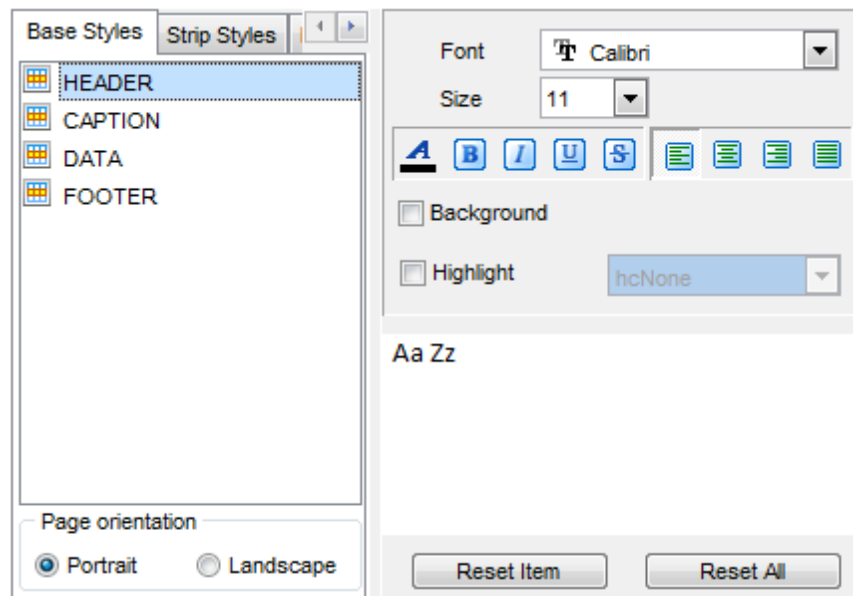
Press the  button to set the background color for the text.

☒ **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.

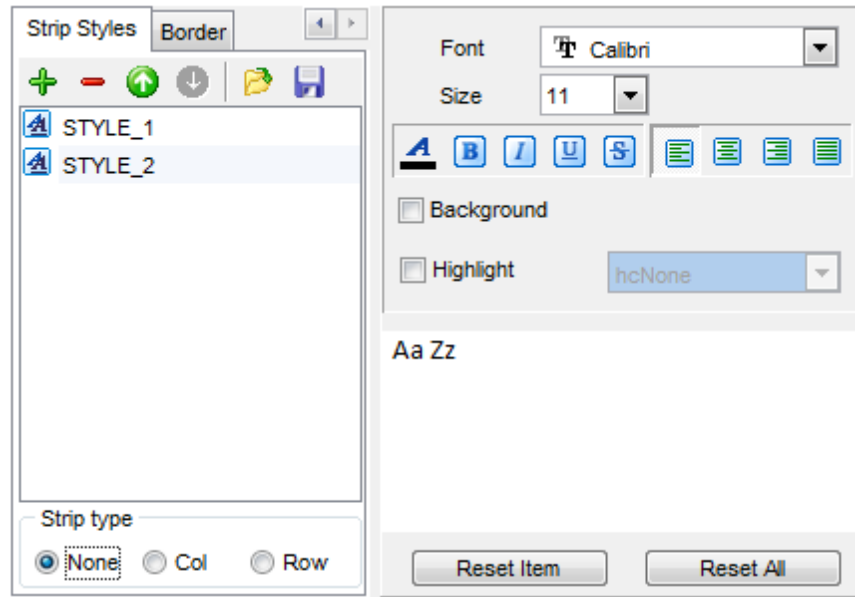
To delete a style template, select it and click the **Minus**  button.

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.

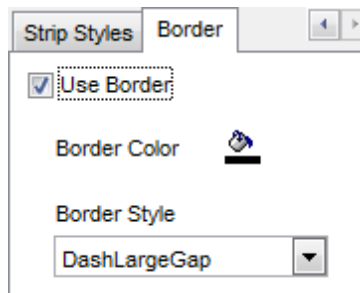
Using the **Border** tab you can enable borders in the result Word 2007 / ODT document and customize them.

☒ **Use border**

Enables/disables borders in the output file.

Press the  button to set the color to be applied to the borders.

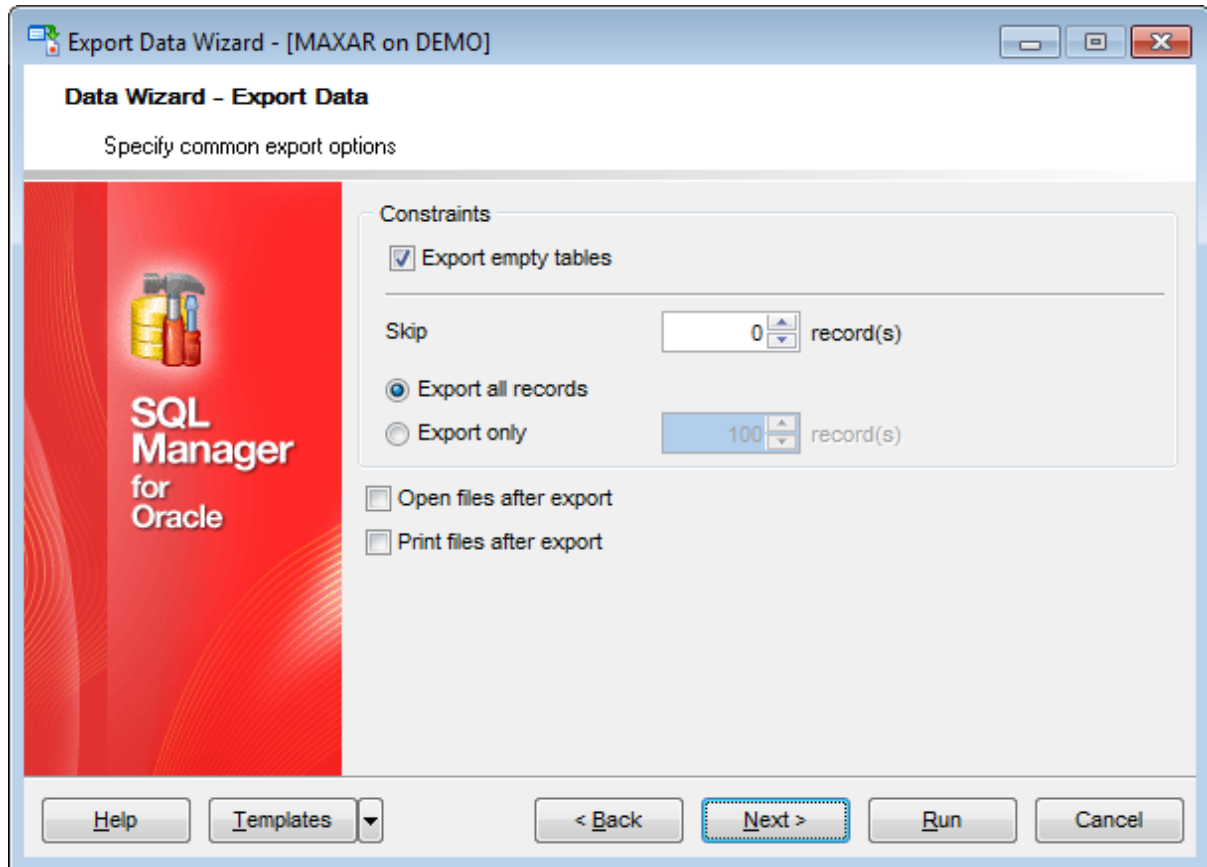
Use the **Border Style** drop-down list to select the preferable style that will be used for borders (*single*, *thick*, *double*, *hairline*, etc.).



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**

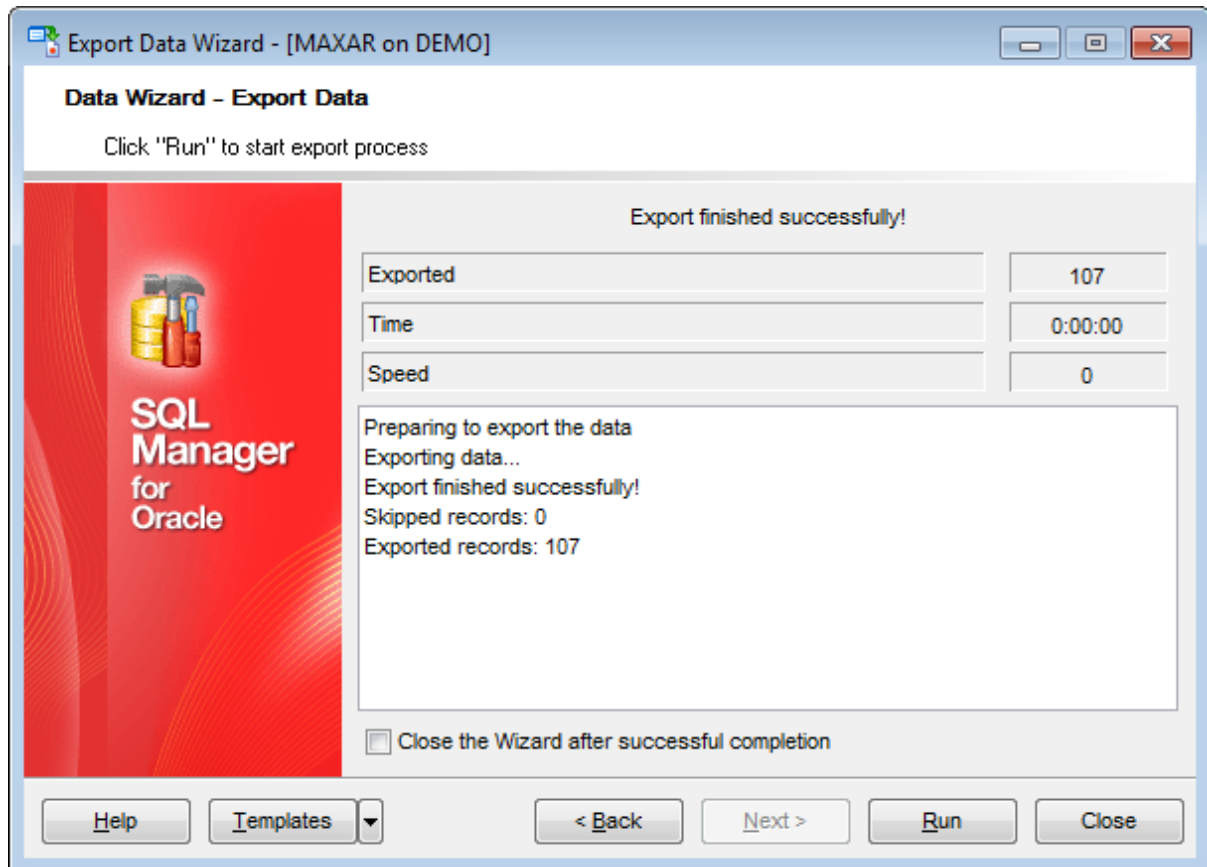
If this option is checked, the result file will be sent to the default printer after the export operation is completed.

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).

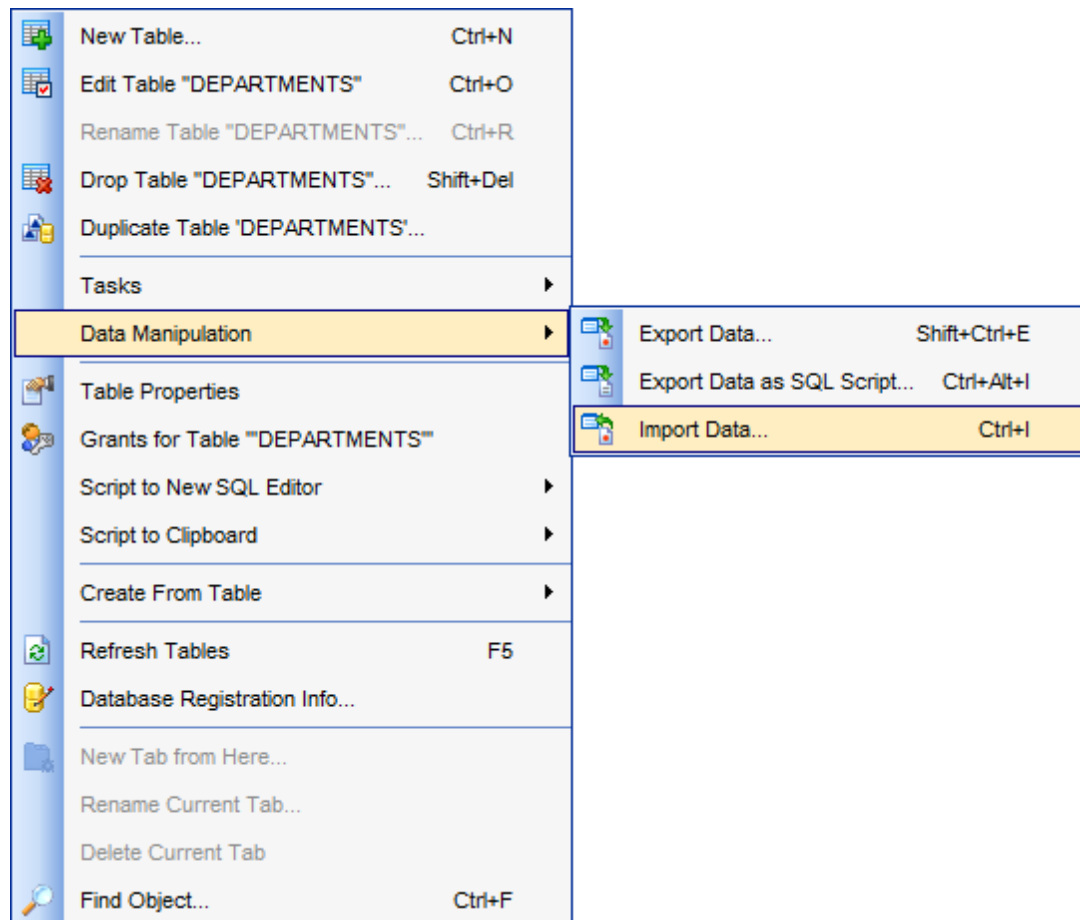
8.2 Import Data Wizard

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*, *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 fields](#)
- [Adjusting common data formats](#)
- [Setting advanced field 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](#)

[Using templates](#)

8.2.1 Selecting source file name and format

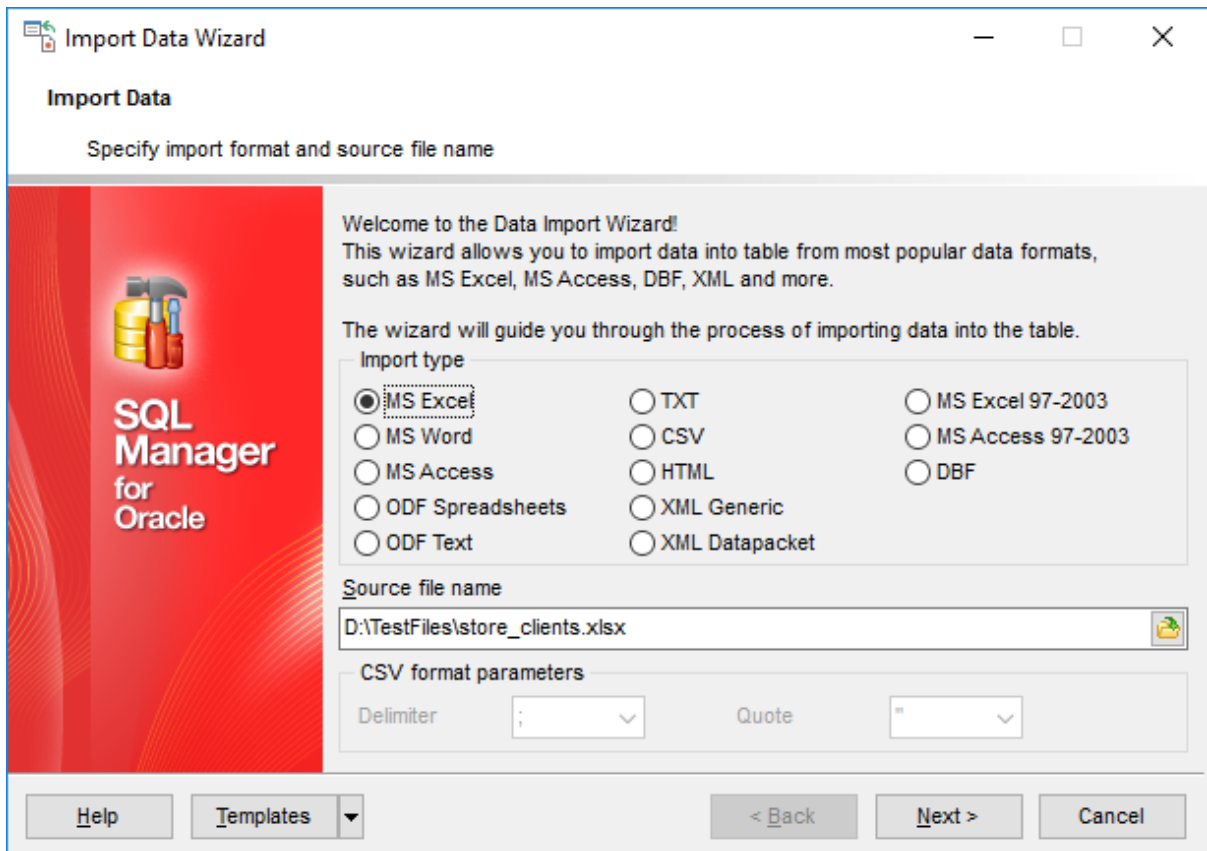
This step of the wizard allows you to select the source file format you need to import data from.

Import type

Specify the format of the source file. For details refer to [Supported file formats](#).

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 Data Wizard

Import Data
Specify import format and source file name

Welcome to the Data Import Wizard!
This wizard allows you to import data into table from most popular data formats, such as MS Excel, MS Access, DBF, XML and more.

The wizard will guide you through the process of importing data into the table.

Import type

- ☒ MS Excel
- ☐ MS Word
- ☐ MS Access
- ☐ ODF Spreadsheets
- ☐ ODF Text
- ☐ TXT
- ☐ CSV
- ☐ HTML
- ☐ XML Generic
- ☐ XML Datapacket
- ☐ MS Excel 97-2003
- ☐ MS Access 97-2003
- ☐ DBF

Source file name
D:\TestFiles\store_clients.xlsx 

CSV format parameters

Delimiter: ; Quote: "

Buttons: Help, Templates, < Back, Next >, Cancel

CSV format parameters

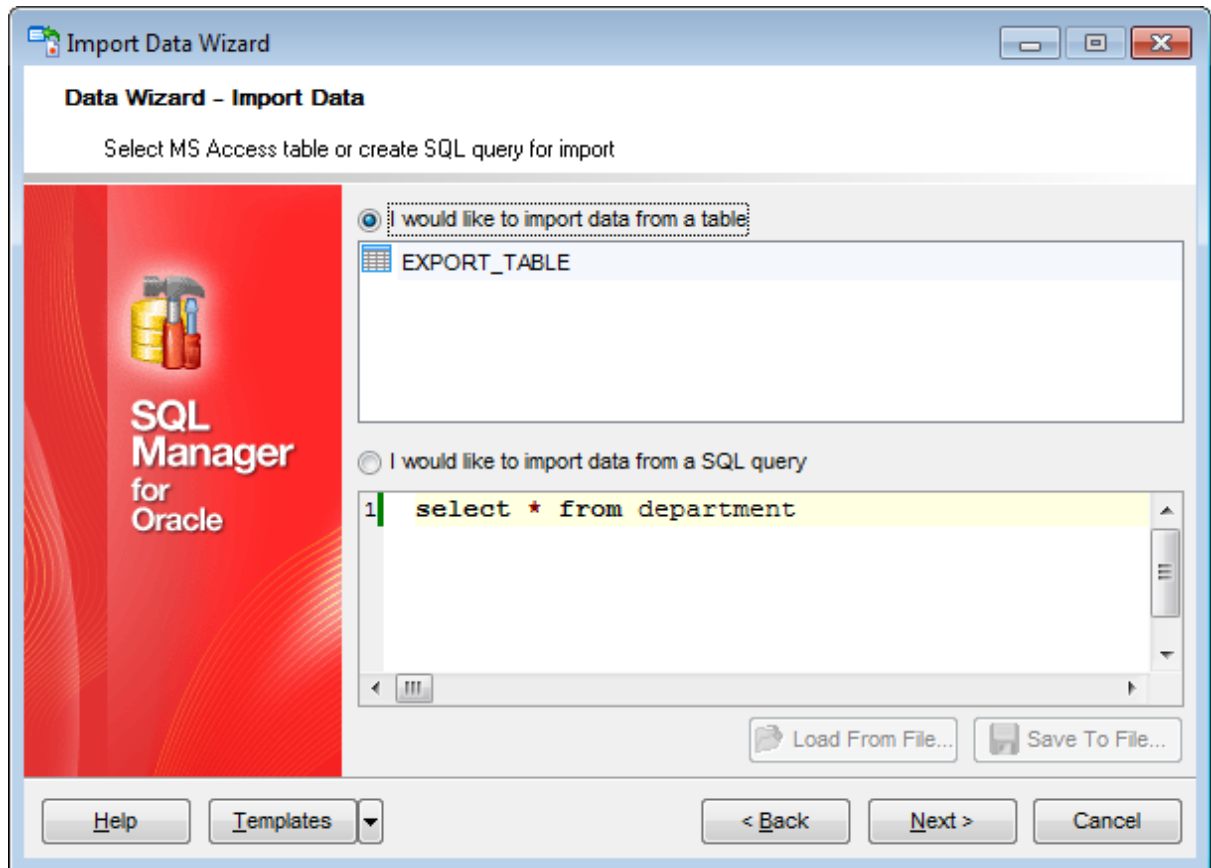
For [CSV](#) import you should define **Delimiter** and **Quote** settings using the corresponding drop-down lists.

Click the **Next** button to proceed to the [Setting fields 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 fields of the target Oracle table.

- [MS Excel](#)
- [MS Access](#)
- [DBF](#)
- [XML Datapacket](#)
- [TXT](#)
- [CSV](#)
- [HTML](#)
- [XML Generic](#)
- [MS Excel/Word 97-2003, ODF](#)

To get more information about the file formats, see the [Supported file formats](#) page.

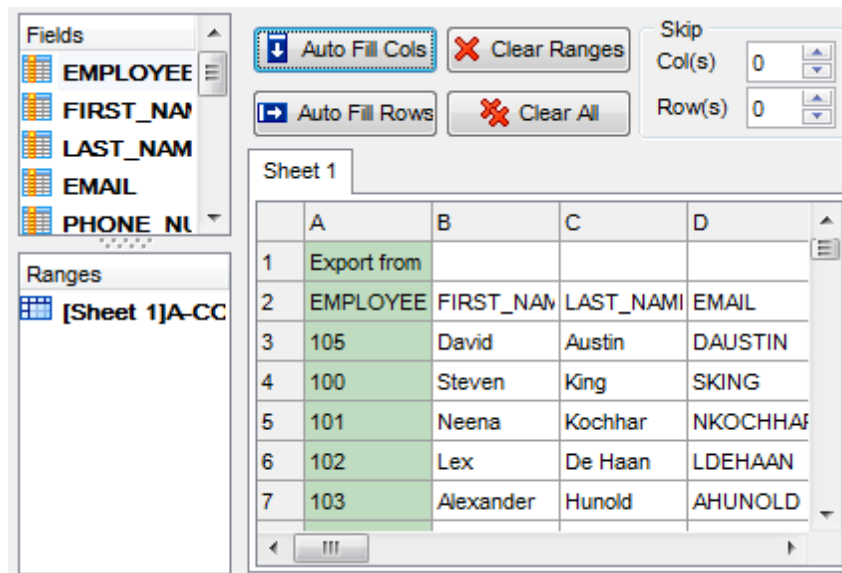
8.2.3.1 Excel 97-2003

Specify ranges in the grid for the target and source fields:

- select a field of the target Oracle table in the **Fields** 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 fields correspondence appears in the **Ranges** list;
- repeat the operation for all the fields you need to be included in the import process.

If the source Excel file and the destination Oracle 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.

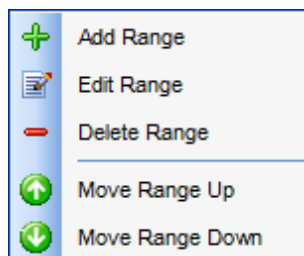
If necessary, you can choose to **skip** a defined number of the source file columns and/or rows using the **Col(s)** and **Row(s)** spinner controls of the **Skip** group (e.g. if you need to exclude column headers from the imported data range).



To clear ranges for a field, select the field in the **Fields** list and press the  **Clear Ranges** button.

To clear all ranges specified for the target table fields, 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 field.

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).

The screenshot shows the 'Range' dialog box with the following settings:

- Range Type:** Col (dropdown), Col A (dropdown)
- Start:** ☒ Where data started, ☐ Start Row (0)
- Finish:** ☐ Where data finished, ☒ Finish Row (10)
- Direction:** ☒ Down, ☐ Up
- Sheet:** ☐ Default Sheet, ☒ Custom Sheet
 - ☐ Sheet Number (spinner)
 - ☒ Sheet Name (Sheet 1)

Click the **Next** button to proceed to the [Adjusting data formats](#) step of the wizard.

8.2.3.2 Access

Set correspondence between the source MS Access fields and the target Oracle table fields:

- select a field of the target Oracle table in the **Destination Fields** list;
- select the corresponding field of the source MS Access table in the **Source Fields** list;
- click the **+ Add** button to set correspondence between the selected fields;
- the pair of fields appears in the list below;
- repeat the operation for all the fields you need to be included in the import process.

Use the **Auto Fill** button to set correspondence between the source and target fields automatically on the basis of their order.

Destination Fields		Source Fields
DEPARTMENT_ID	=	DEPARTMENT_ID=Number
MANAGER_ID	=	MANAGER_ID=Number
COMMISSION_PCT	=	COMMISSION_PCT=Number
SALARY	=	SALARY=Number
JOB_ID	=	JOB_ID=Text(10)
HIRE_DATE	=	HIRE_DATE=Date/Time

To remove a correspondence, select the pair of fields 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 DBF

Set correspondence between the source DBF columns and the target Oracle table fields:

- select a field of the target Oracle table in the **Destination Fields** list;
- select the corresponding column of the source DBF table in the **Source Fields** list;
- click the **+ Add** button to set correspondence between the selected fields;
- the pair of fields appears in the list below;
- repeat the operation for all the fields you need to be included in the import process.

Use the **Auto Fill** button to set correspondence between the source and target fields automatically on the basis of their order.

☒ **Skip deleted records**

Use the option to exclude records marked as deleted.

The screenshot shows a window for setting field correspondences. On the left is an empty 'Destination Fields' list. On the right is a 'Source Fields' list containing: EMPLOYEE_ID, FIRST_NAME, LAST_NAME, EMAIL, PHONE_NUMB, and HIRE_DATE. Between these lists are four buttons: '+ Add', 'Auto Fill' (with a downward arrow icon), 'Remove' (with a minus icon), and 'Clear' (with a red X icon). Below the buttons is a 'Char set' dropdown menu set to 'None'. At the bottom is a table with two columns: 'Destination Fields' and 'Source Fields'. The table contains five rows of mappings: DEPARTMENT_ID = DEPARTMENT, MANAGER_ID = MANAGER_ID, COMMISSION_PCT = COMMISSION, SALARY = SALARY, and JOB_ID = JOB_ID. Below the table is a checkbox labeled 'Skip deleted records' which is checked.

Destination Fields		Source Fields
DEPARTMENT_ID	=	DEPARTMENT
MANAGER_ID	=	MANAGER_ID
COMMISSION_PCT	=	COMMISSION
SALARY	=	SALARY
JOB_ID	=	JOB_ID

☒ Skip deleted records

To remove a correspondence, select the pair of fields 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.

8.2.3.4 XML Datapacket

Set correspondence between the source XML columns and the target Oracle table fields:

- select a field of the target Oracle table in the **Destination Fields** list;
- select the corresponding column of the source XML table in the **Source Fields** list;
- click the **+ Add** button to set correspondence between the selected fields;
- the pair of fields appears in the list below;
- repeat the operation for all the fields you need to be included in the import process.

Use the **Auto Fill** button to set correspondence between the source and target fields automatically on the basis of their order.

Source Fields	Destination Fields	
DEPARTMENT_ID	DEPARTMENT_ID	=
MANAGER_ID	MANAGER_ID	=
COMMISSION_PCT	COMMISSION_PCT	=
SALARY	SALARY	=
JOB_ID	JOB_ID	=
HIRE_DATE	HIRE_DATE	=

To remove a correspondence, select the pair of fields in the list below and press the **- Remove** button.

To remove all correspondences, press the **X Clear** button.

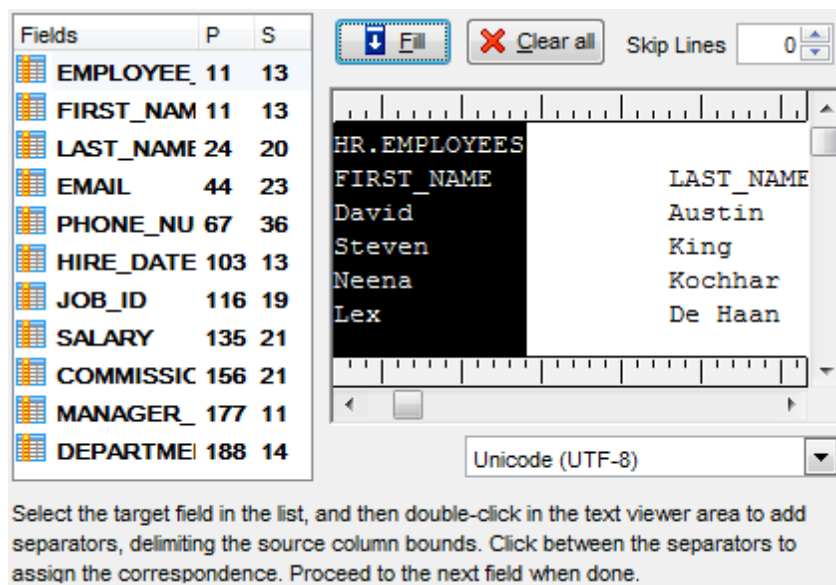
Click the **Next** button to proceed to the [Adjusting data formats](#) step of the wizard.

8.2.3.5 TXT

Set correspondence between the source text file columns and the target Oracle table fields:

- select a field of the target Oracle table in the **Fields** 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 field - the selected source column gets black highlight;
- repeat the operation for all the fields 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.

8.2.3.6 CSV

Set correspondence between the target table fields and the source CSV file columns:

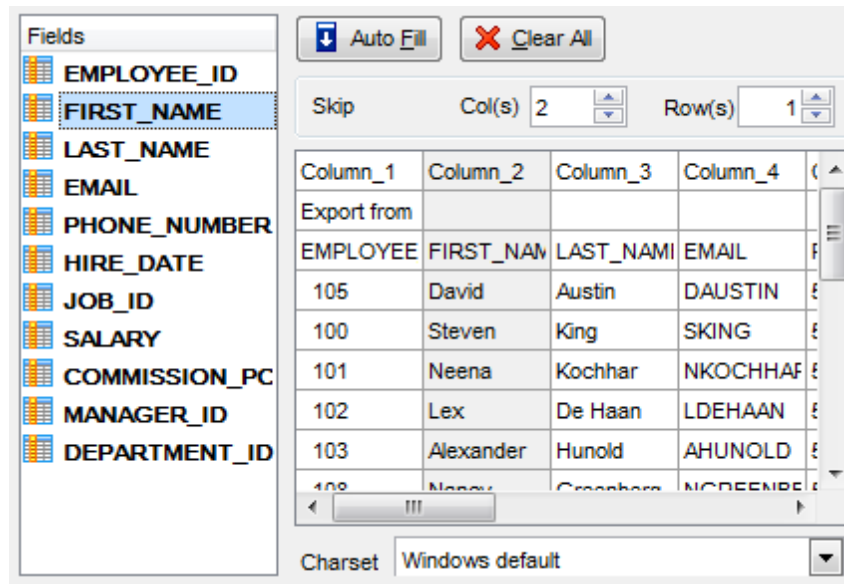
- select a field of the target Oracle table in the **Fields** list;
- proceed to the source grid viewer area: click a caption to assign the column to the selected target table field;
- the selected column of the source file gets gray highlight;
- repeat the operation for all the fields you need to be included in the import process.

If the source CSV file and the destination Oracle 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).



Column_1	Column_2	Column_3	Column_4
Export from			
EMPLOYEE	FIRST_NAME	LAST_NAME	EMAIL
105	David	Austin	DAUSTIN
100	Steven	King	SKING
101	Neena	Kochhar	NKOCHHAR
102	Lex	De Haan	LDEHAAN
103	Alexander	Hunold	AHUNOLD
108	Neena	Kochhar	NKOCHHAR

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.

8.2.3.7 HTML

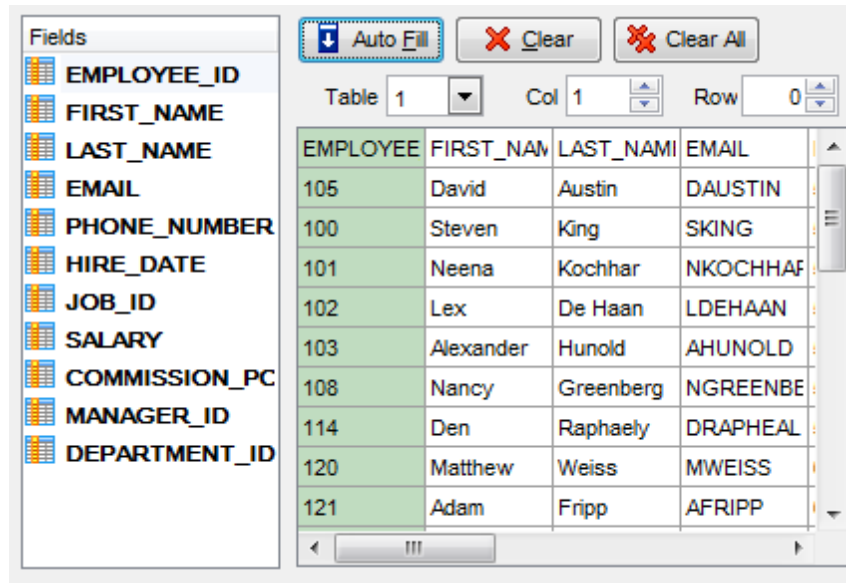
Set correspondence between the target table fields and the source HTML file columns:

- select a field of the target Oracle table in the **Fields** 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 field;
- 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 Oracle 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).



EMPLOYEE	FIRST_NAME	LAST_NAME	EMAIL
105	David	Austin	DAUSTIN
100	Steven	King	SKING
101	Neena	Kochhar	NKOCHHAF
102	Lex	De Haan	LDEHAAN
103	Alexander	Hunold	AHUNOLD
108	Nancy	Greenberg	NGREENBE
114	Den	Raphaely	DRAPHEAL
120	Matthew	Weiss	MWEISS
121	Adam	Fripp	AFRIPP

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.

8.2.3.8 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.

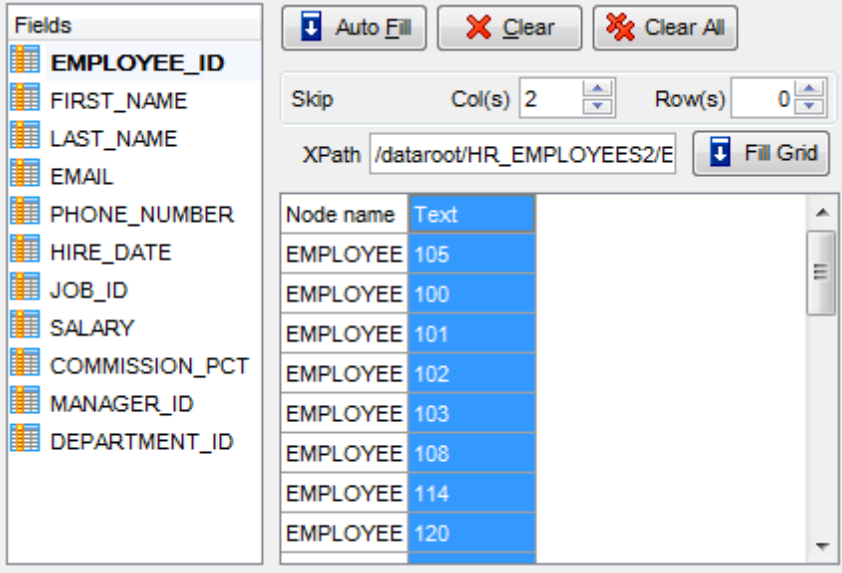
Set correspondence between the source XML file columns and the target Oracle table fields:

- select a field of the target Oracle table in the **Fields** list;
- proceed to the source grid viewer area: click a column to assign the column to the selected target table field;
- the selected column of the source file gets gray highlight;
- repeat the operation for all the fields you need to be included in the import process.

You can use the  **Auto Fill** button to set correspondence between the source and target fields 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).



Node name	Text
EMPLOYEE	105
EMPLOYEE	100
EMPLOYEE	101
EMPLOYEE	102
EMPLOYEE	103
EMPLOYEE	108
EMPLOYEE	114
EMPLOYEE	120

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.

8.2.3.9 MS Excel/Word, ODF

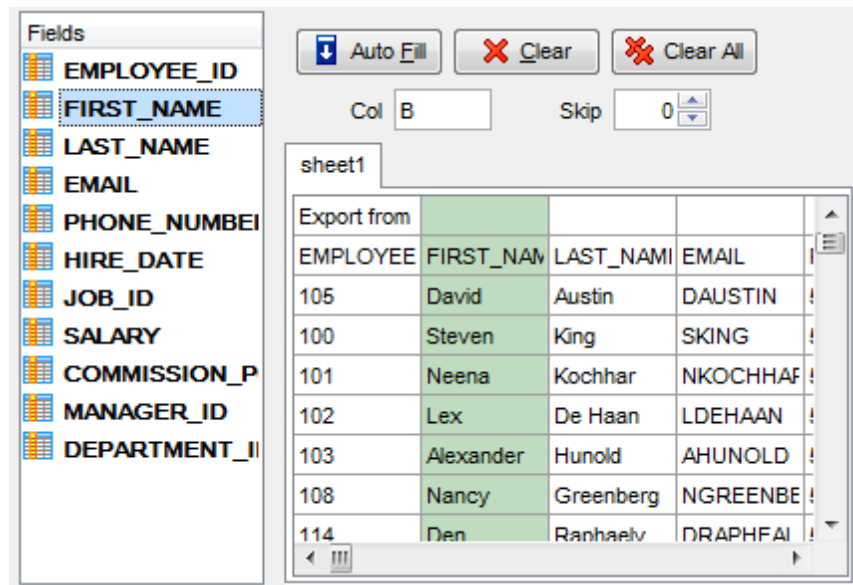
Specify ranges in the grid for the target and source fields:

- select a field of the target Oracle table in the **Fields** list;
- proceed to the **Sheet** grid: click a column to assign the column to the selected target table field;
- 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 file and the destination Oracle 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 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.

8.2.4 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.

Import Data Wizard

Data Wizard - Import Data

Adjust common data formats for import

Date & Time formats

Short date	dd.MM.yyyy
Long date	d MMMM yyyy 'r.'
Short time	h:mm
Long time	h:mm:ss

Separators

Decimal	,
Thousand	#160
Date	.
Time	:

Boolean True	Boolean False	Null Values
True	False	Null

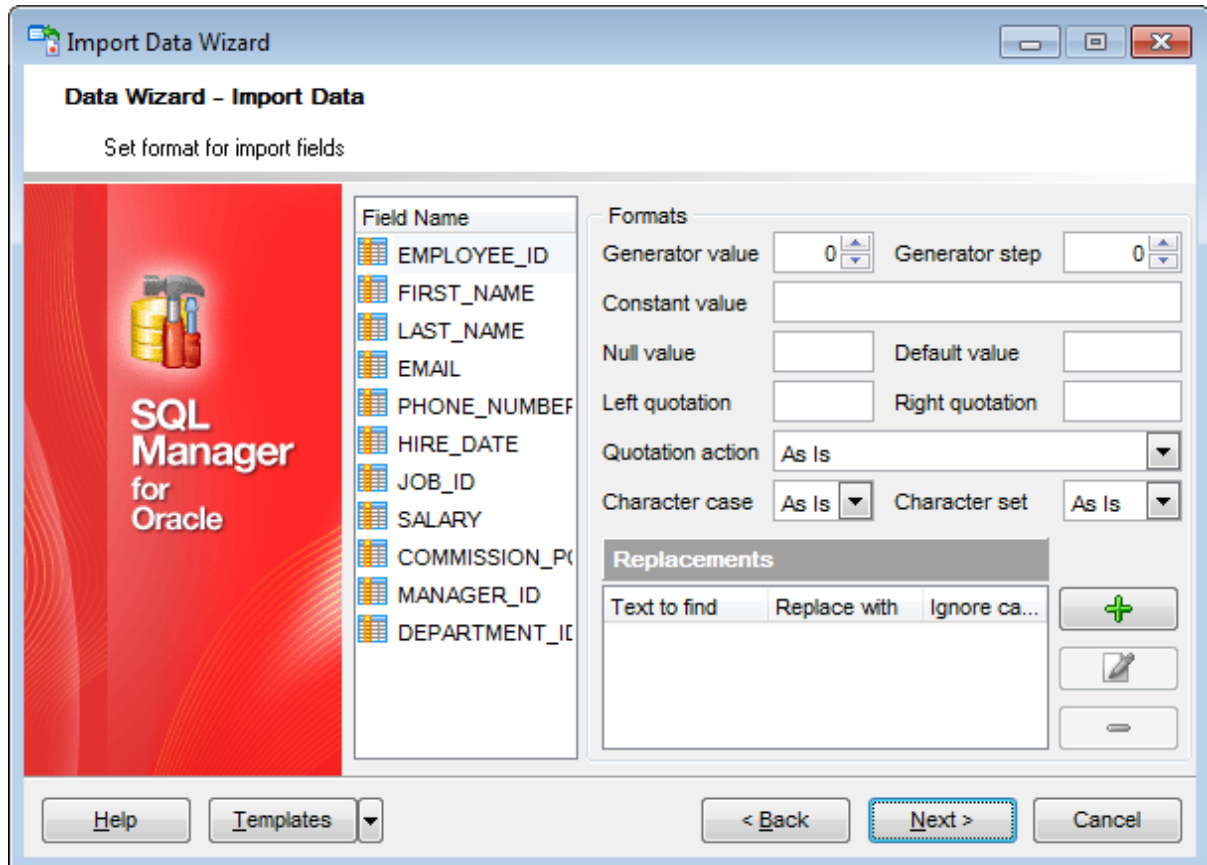
Buttons: Help, Templates, < Back, **Next >**, Cancel

Click the **Next** button to proceed to the [Setting advanced field formats](#) step of the wizard.

8.2.5 Setting advanced field formats

This step of the wizard allows you to set **formats** each field separately.

Select a field in the list and adjust **format options** that will be applied to this field only.



Specify **Generator value** and **Generator step** for incremental data generation into the specified field, or enter a **Constant value** which will be set for all records in the field.

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'.

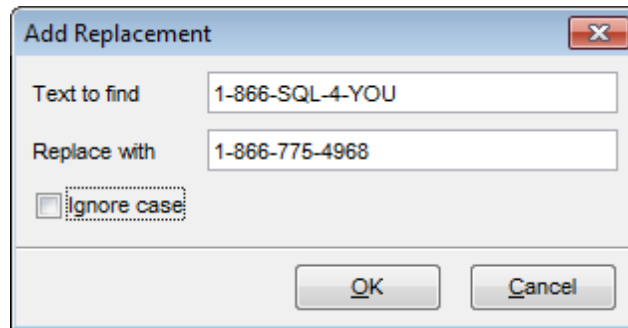
Use the **Character case** drop-down list to select the case that will be used for string values of the field: *Upper*, *Lower*, *UpperFirst*, *UpperFirstWord*, or 'As is'.

Use the **Character set** drop-down list to select which charset will be used for string data in the field: *ANSI*, *OEM*, or *As is*.

Replacements

This area allows you to set the text you need to be replaced during data import into the

selected field. 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.

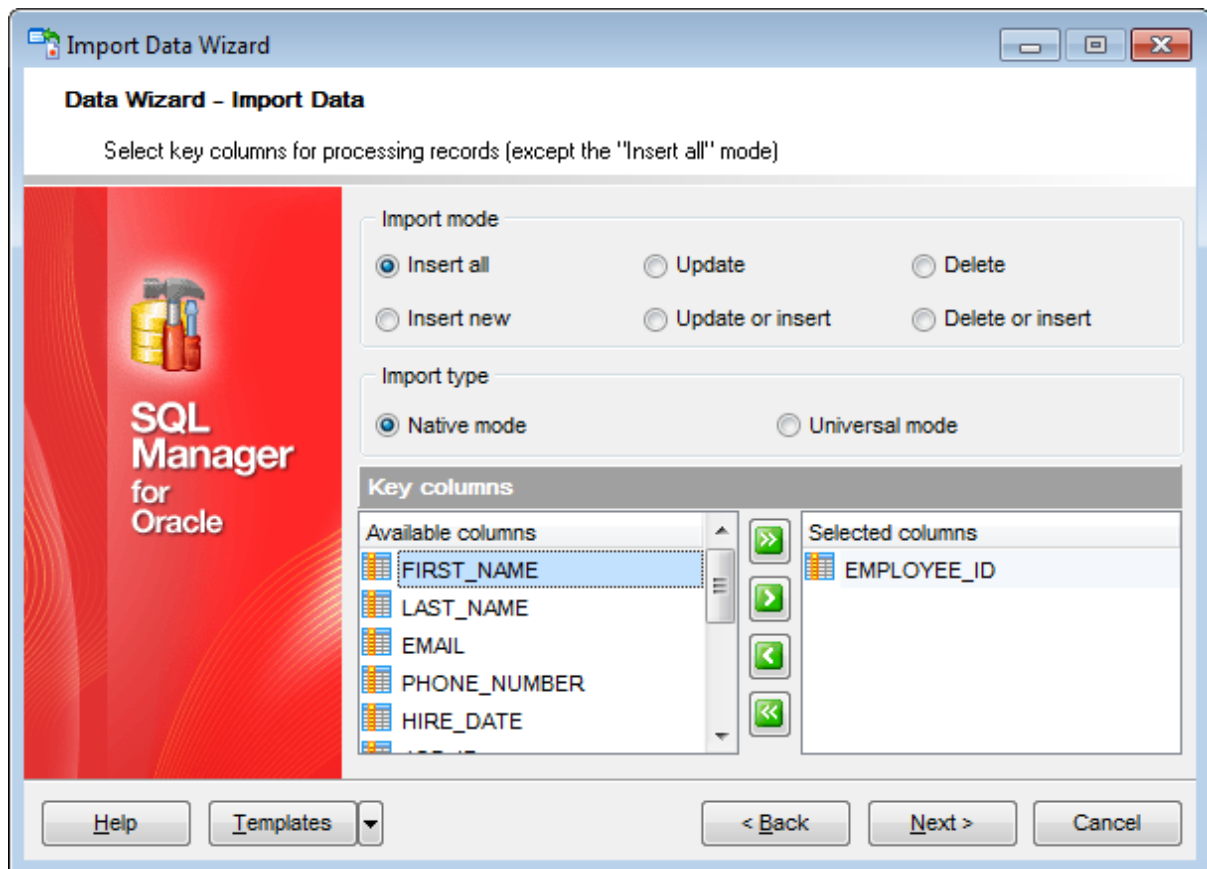
When you are done, click the **Next** button to proceed to the [Setting import mode](#) step of the wizard.

8.2.6 Setting import mode

This step of the wizard allows you to define the records processing mode.

Import 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 field(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

Source file data

ID	DATA
1	a
2	b
4	f

A	B
1	c
2	d
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 fields. This field (or fields) is used as key field 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.

Import type

☒ Native mode

The Native mode uses single commands method that serves to generate and execute single SQL commands on the server. With the help of the Native mode your data can be imported dozen (!) times faster as compared to the Universal mode which is used for backward compatibility.

☐ Universal mode

With this mode selected import is performed with single commands method. Use it if Native mode import is executed with errors.

Key columns

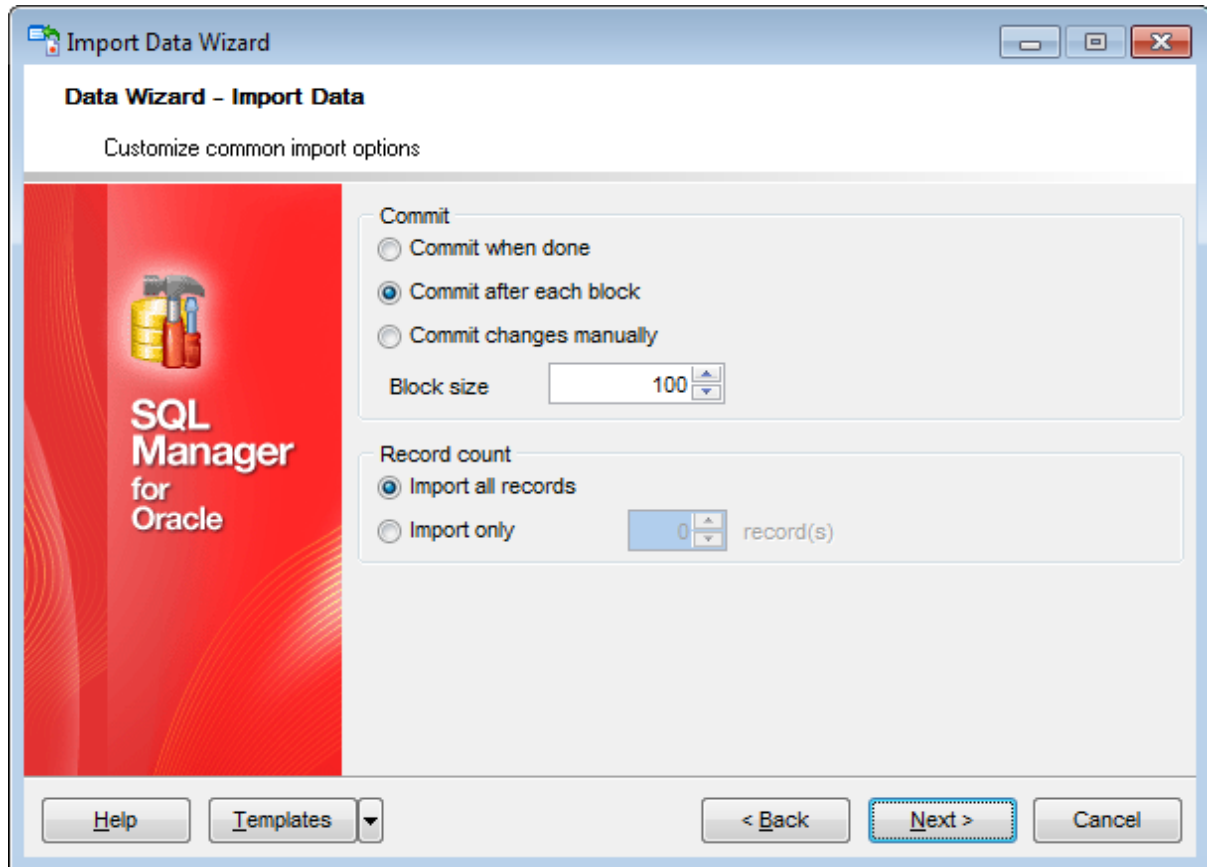
This area allows you to select the fields of the table to be used as the key fields for the import process.

To select a field, 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 fields 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)

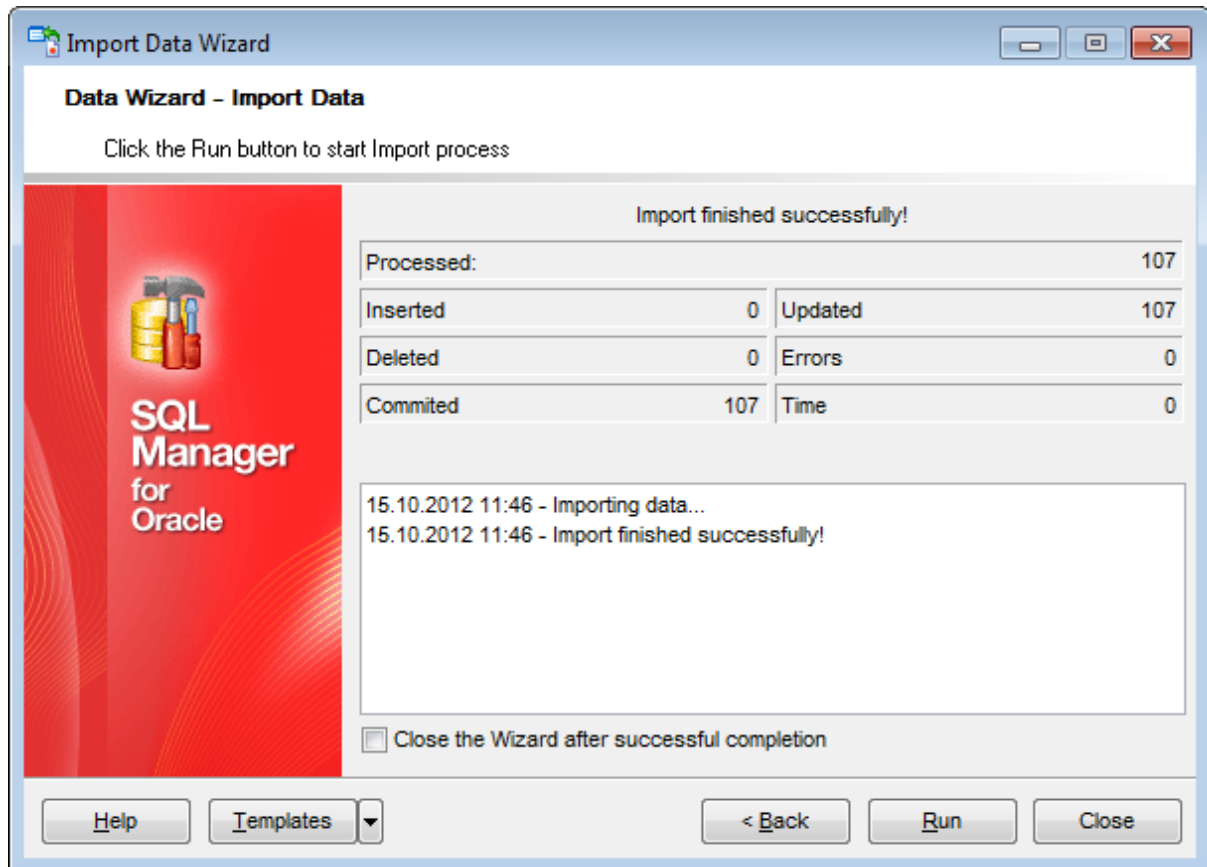
Specifies the number of records to be imported.

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.

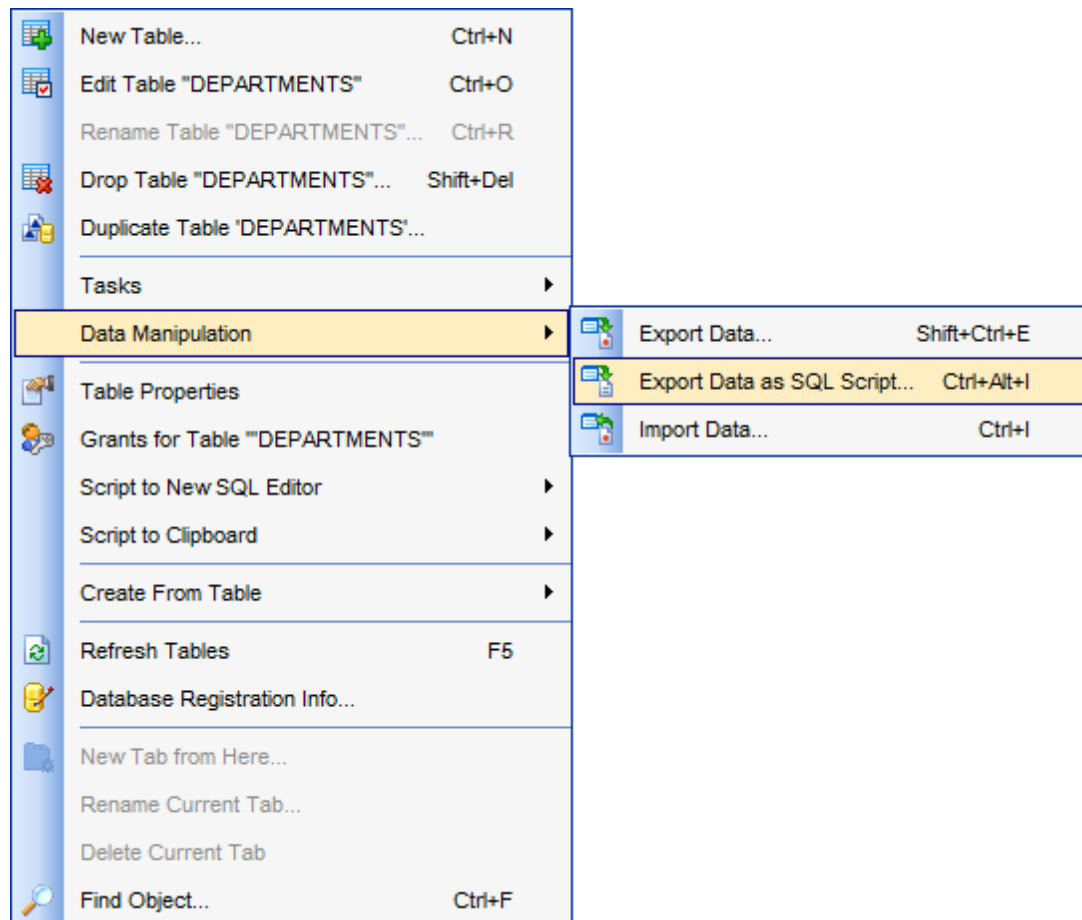
After the operation is completed, you can view the total number of *processed* records, the number of *inserted/updated/deleted* records, the number of *committed* records, the number of *errors*, elapsed *time*, and the *log* of operations and errors (if any).

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 Execute 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 [Query Data](#) / [Design Query](#), 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 field to export](#)
- [Editing the result table definition](#)
- [Setting export options](#)
- [Exporting as Execute 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](#)

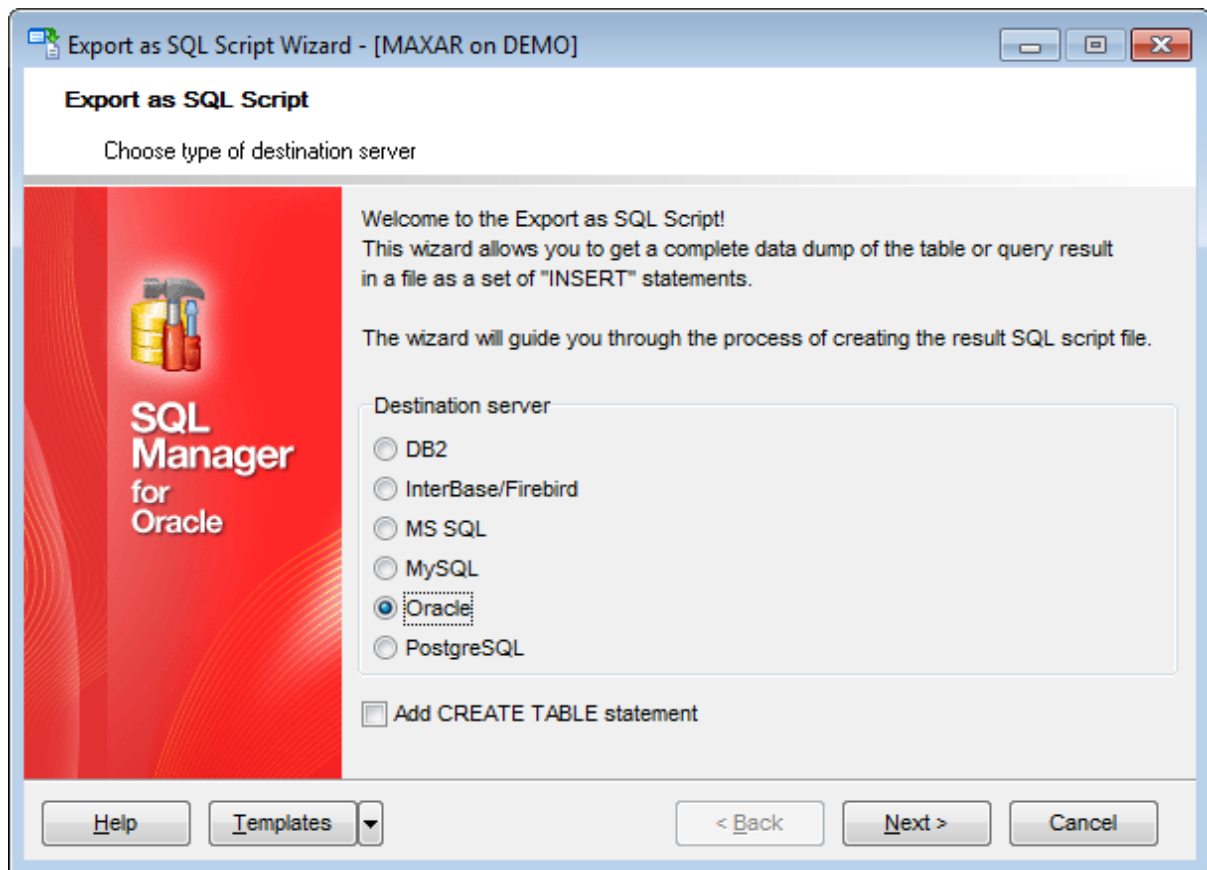
[Using templates](#)

8.3.1 Selecting destination DBMS

TM

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

Script destination

Specify whether the result script will be loaded to [Execute Script Editor](#) or saved to a file.

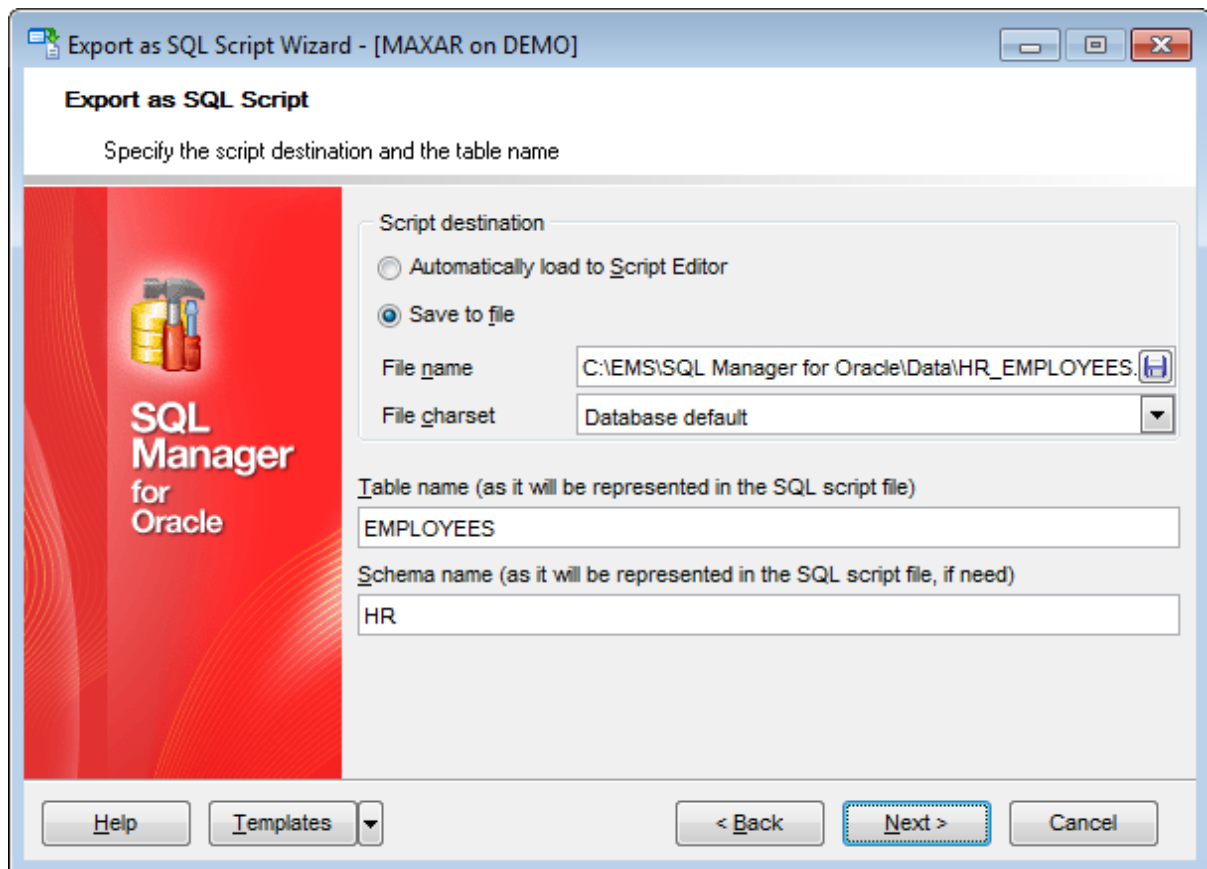
File name

Type in or use the  button to specify the path to the file and the file name.

File charset

If necessary, select the charset for the result script file 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 and arrays options

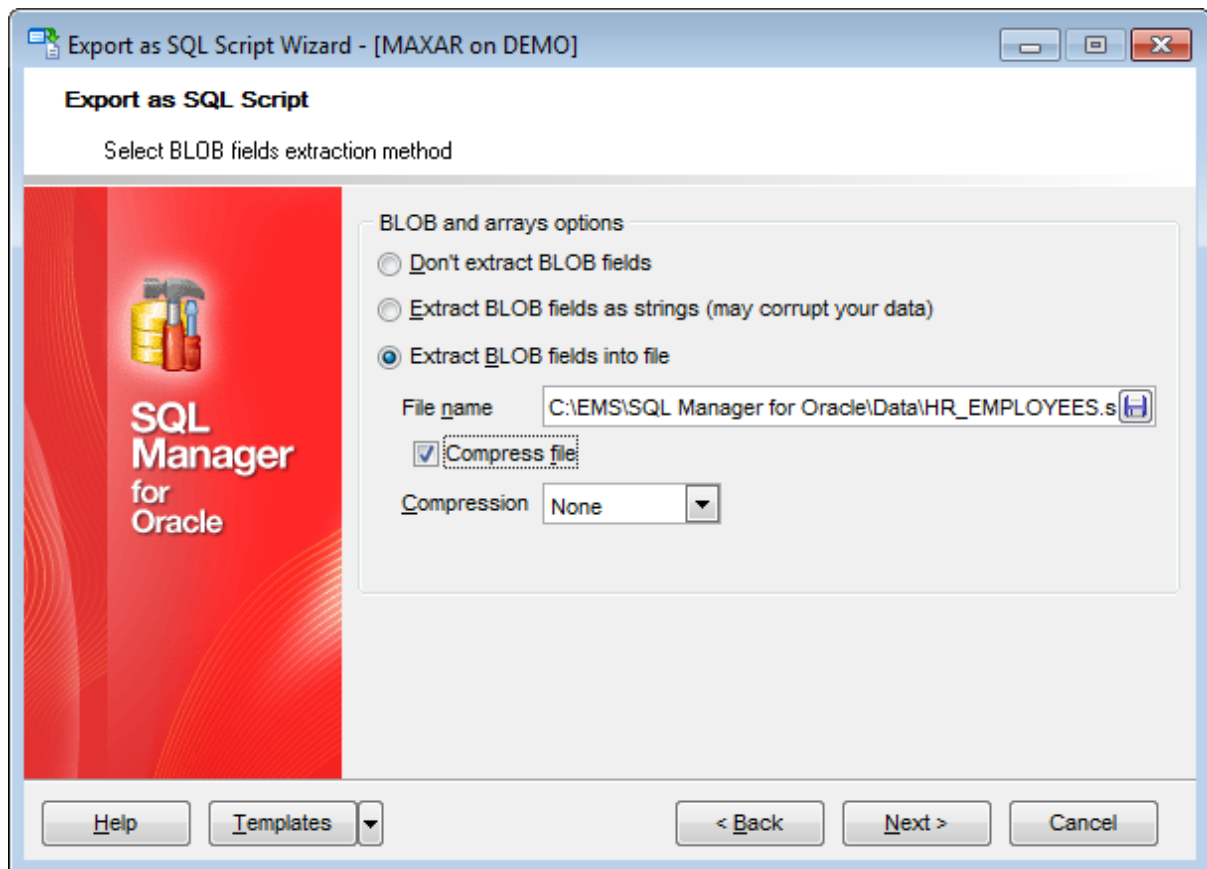
In this group of options you can determine whether BLOB fields are *not to be extracted*, *extracted as strings*, or *extracted into a separate file* (available for DB2, InterBase/Firebird, MS SQL, Oracle [destination servers](#)). If the latter is selected, you also need to specify the **File name** (the *.blo file where the BLOB data will be stored) and the location of the file on your local machine using the  button.

☒ 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*.



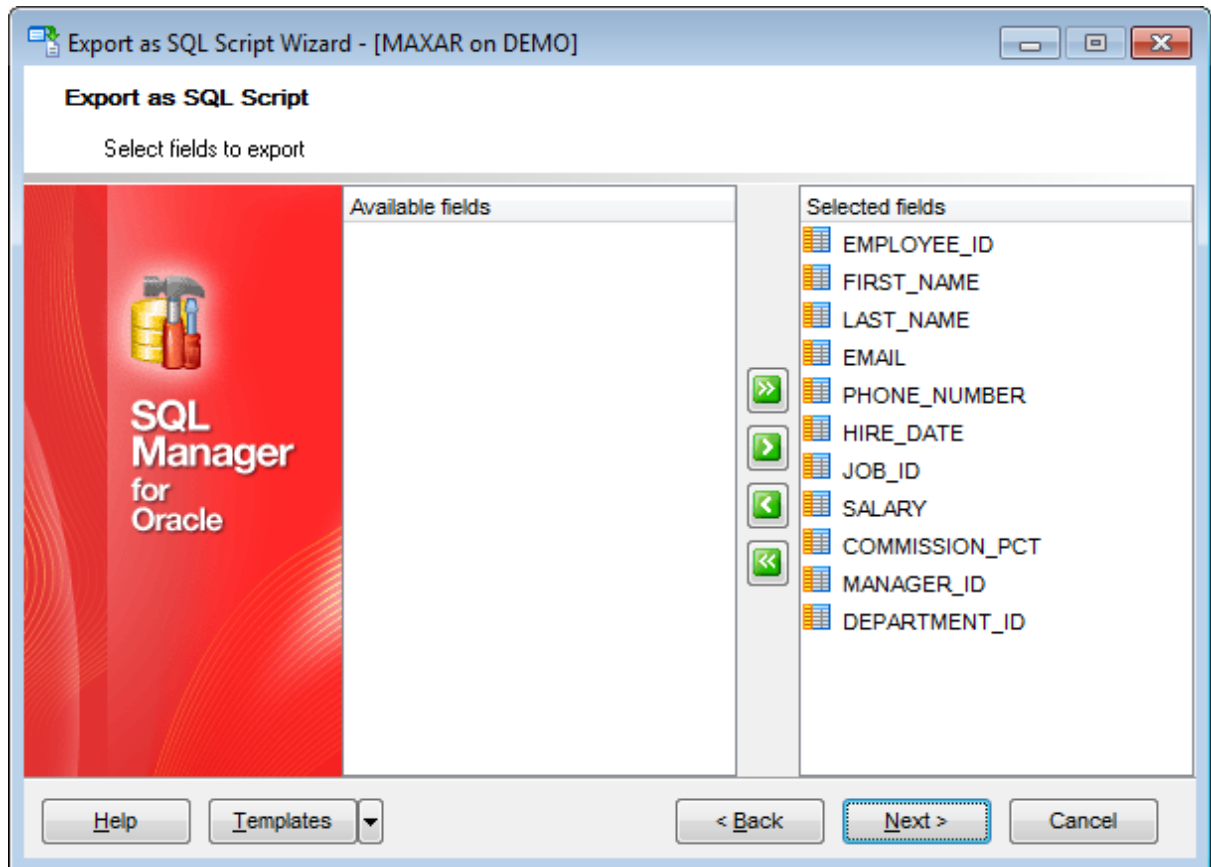
Note: If you choose to save BLOB fields in a file then afterwards this data can be restored only by using the SQL Manager for Oracle [Execute Script](#) tool.

Click the **Next** button to proceed to the [Selecting fields to export](#) step of the wizard.

8.3.4 Selecting fields to export

This step of the wizard allows you to select the table field(s) to be exported to SQL Script.

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

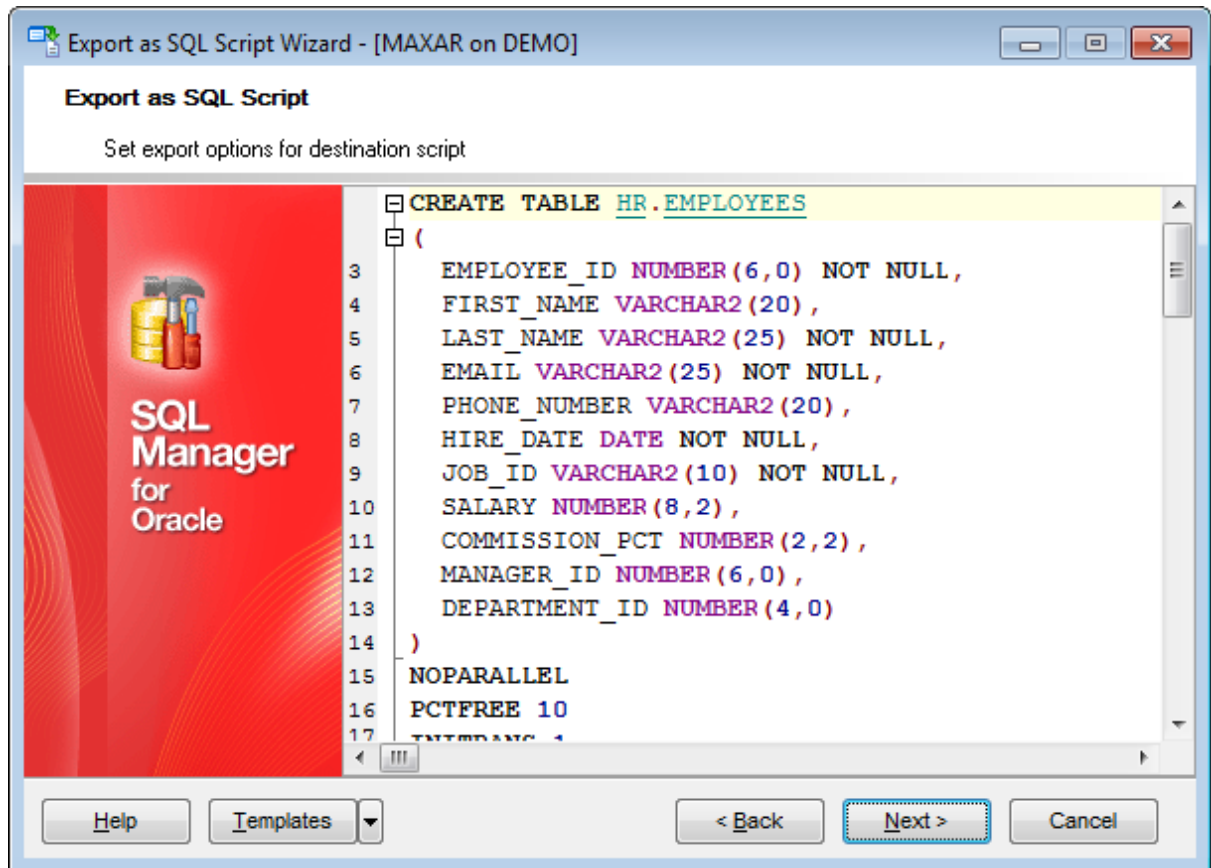


Click the **Next** button to proceed to the [Editing table definition](#) step of the wizard.

8.3.5 Editing table definition

This step is available only if the **Add CREATE TABLE statement** option was checked on the [Selecting destination DBMS](#) step of the wizard. It allows you to view/edit the Execute Script for creating the table.

For your convenience the **syntax highlight**, **code folding** and a number of other features for efficient SQL editing are implemented. For details see [Working with Query Data area](#) and [Using the context menu](#).



Click the **Next** button to proceed to the [Setting export options](#) step of the wizard.

8.3.6 Setting export options

Specify common export options according to your needs.

☒ **Replace non-print characters in strings with spaces**

Select this option to insert spaces instead of non-print characters.

☒ **Quote identifiers**

With this option ON all reserved words are enclosed in quotation marks.

☒ **Use multi insert statements**

Use the option to allow multi insert statements in the result script.

Note: The option is active available when destination server selected at the first step is different from *Oracle*. Before using the result script make sure that destination server supports such statements.

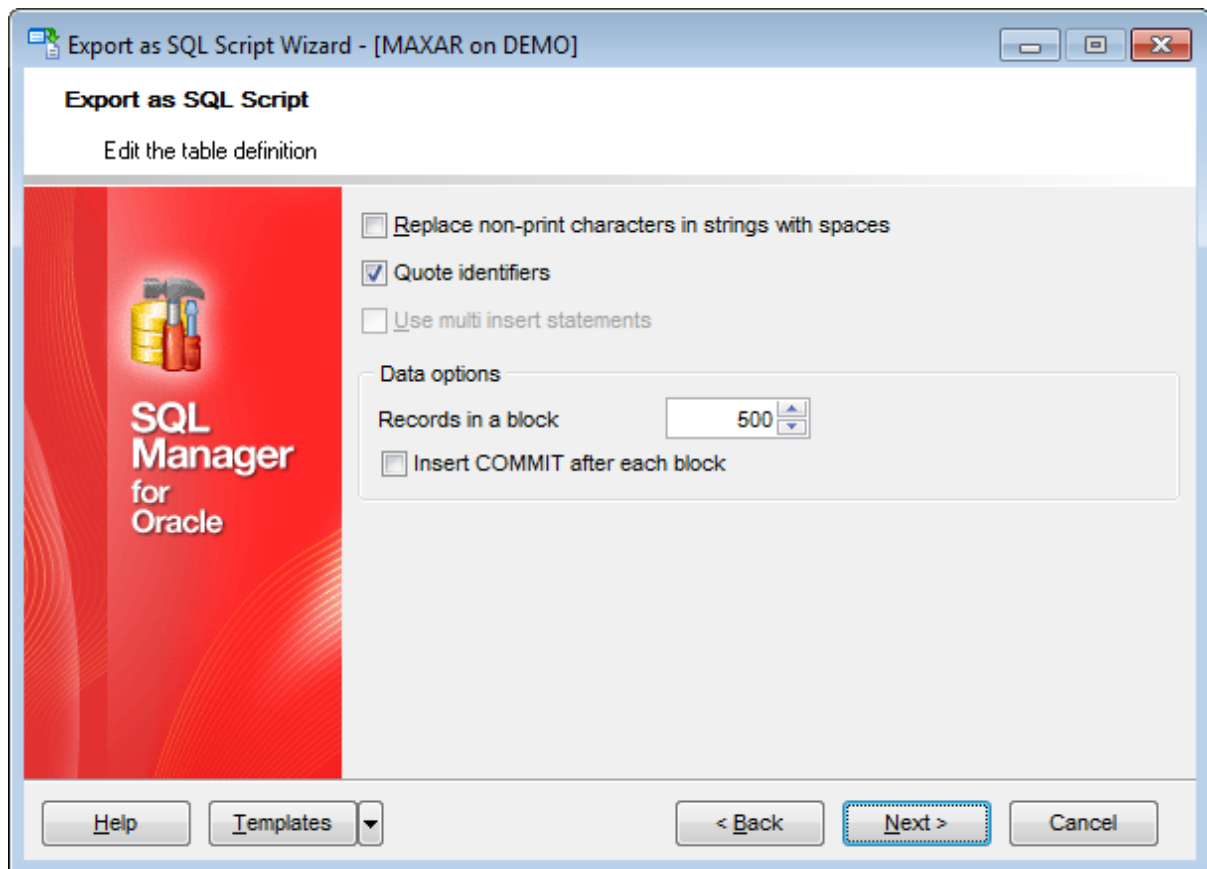
Data options

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.

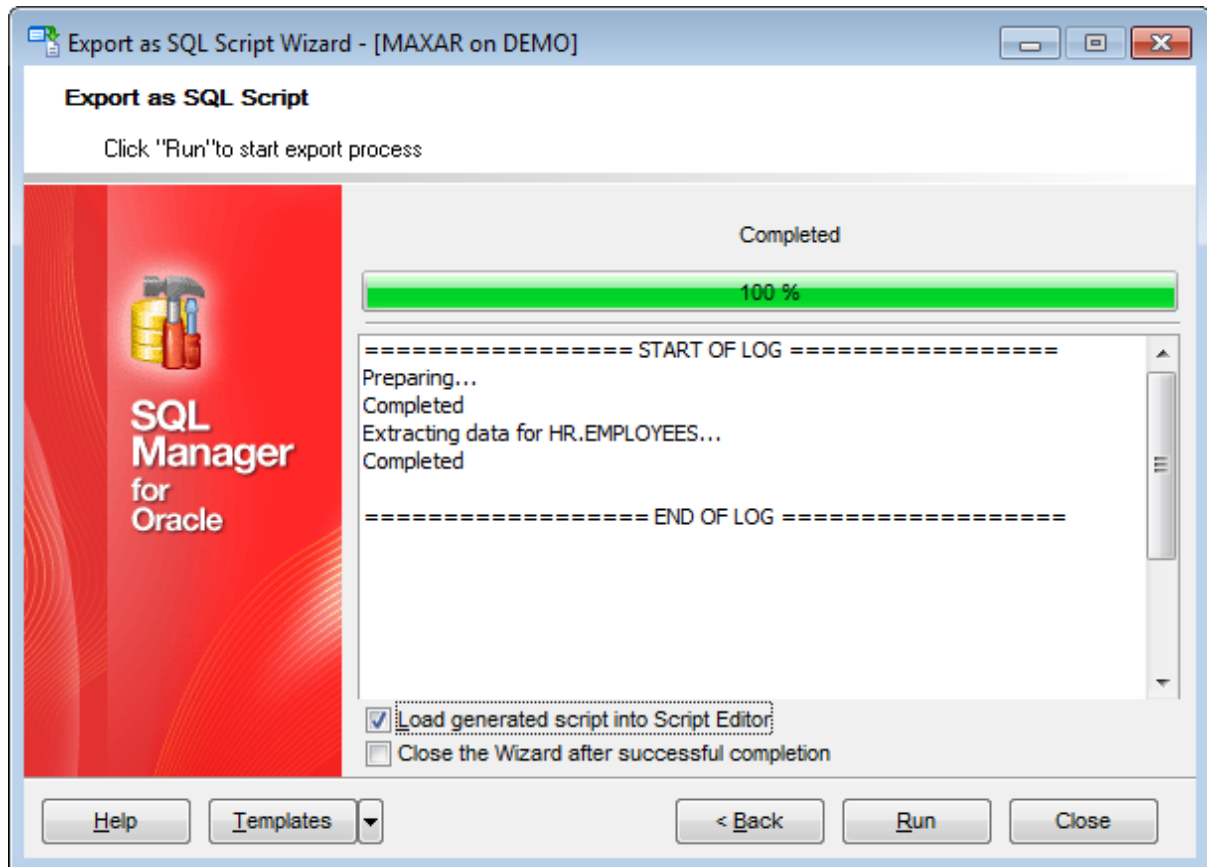


Click the **Next** button to proceed to [Exporting as Execute Script](#).

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 log area 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 [Execute 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.

Part

IX

9 Database Tools

The following *database tools* are available in SQL Manager for Oracle:

[SQL Monitor](#)

Displays all the SQL statements executed while working in SQL Manager for Oracle.

[Execute Script](#)

Executes SQL Scripts in the database.

[Search in Metadata](#)

Provides quick search for a string within the scope of database metadata.

[Extract Database](#)

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.

[Compare Databases](#)

Creates an SQL Script that provides database structure synchronization.

[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.

[Dependency Tree](#)

Allows you to view all the object dependencies in one diagram.

[Instance Manager](#)

Checks Oracle service status to stop or start it.

[Grant Manager](#)

Allows you to grant/revoke privileges on database objects.

[Visual Database Designer](#)

Allows you to lay out your database schema visually.

See also:

[Getting Started](#)

[Database Explorer](#)

[Database Management](#)

[Database Objects Management](#)

[Query Management Tools](#)

[Data Management](#)

[Import/Export Tools](#)

[Services](#)

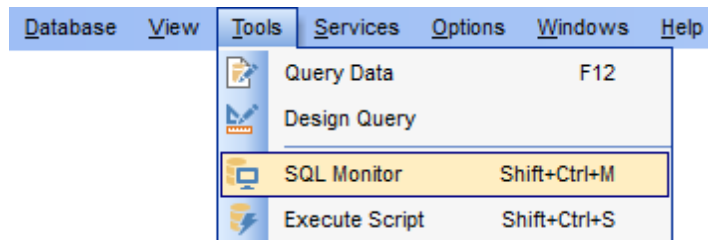
[Options](#)

[How To...](#)

9.1 SQL Monitor

SQL Monitor allows you to view the log of all operations performed over databases and database objects in SQL Manager for Oracle. 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](#).



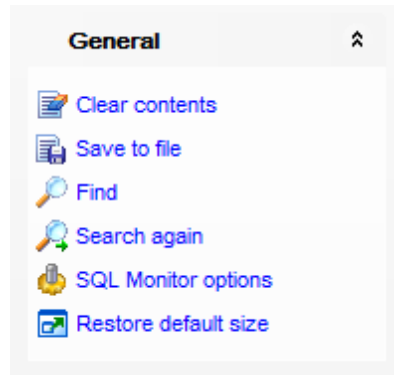
- [Using Navigation bar and Toolbar](#)
- [Working with SQL Monitor](#)

See also:

[SQL Monitor options](#)

9.1.1 Using Navigation bar and Toolbar

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



General

- 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
- find next
- 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

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

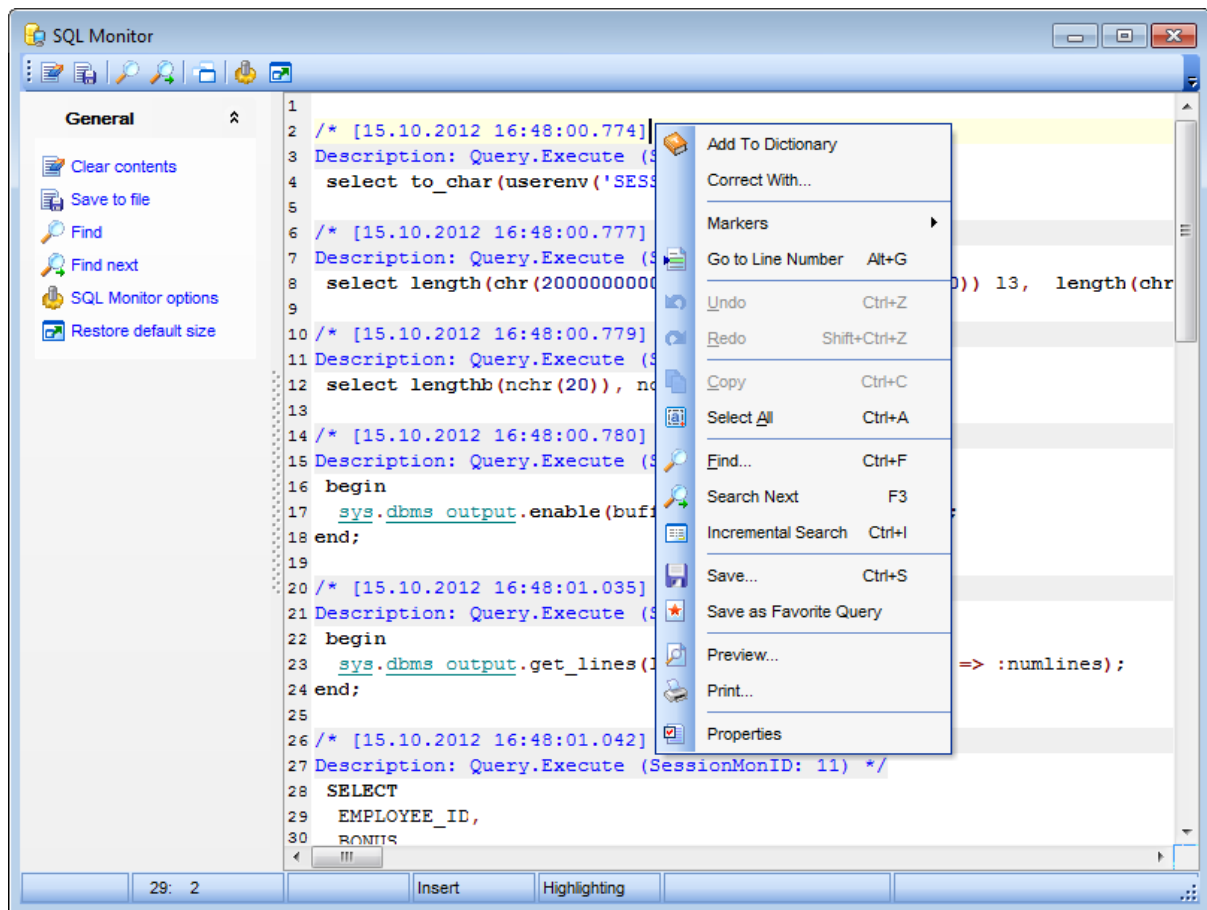
9.1.2 Working with SQL Monitor

With SQL Monitor window you can see all commands sent to the server from SQL Manager.

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*), [spelling 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.

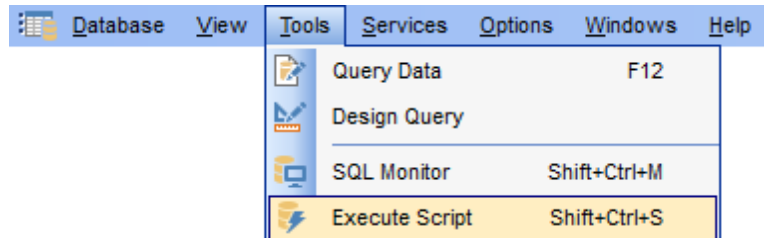
Implementation of the [Find Text](#) dialog and [Incremental search](#) bar contributes to more efficient work with the content of SQL Monitor.



9.2 Execute script editor

Using **Execute Script** you can view, edit and execute SQL scripts.

To open Execute Script editor select the **Tools | ⚡ Execute Script** main menu items or  [toolbar](#) button. 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 Execute Script editor](#)
- [Using Script Explorer](#)
- [Script execution](#)

Note: **Execute Script Editor** does not show results returned upon SELECT queries execution. Please use [Query Data](#) for that purpose instead.

See also:

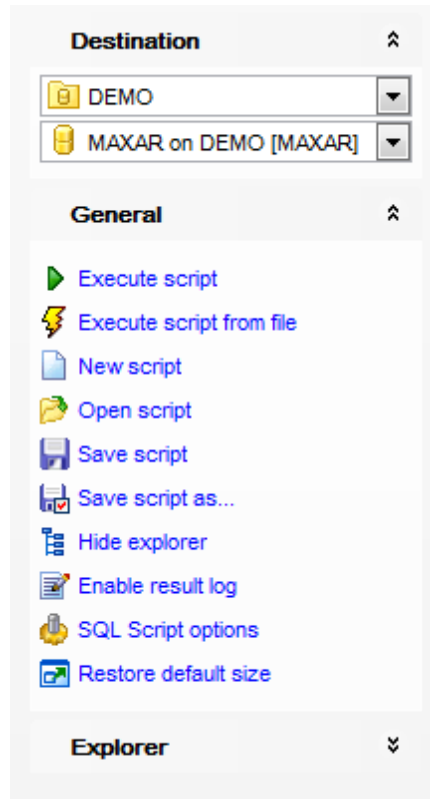
[Query Data](#)

[Execute Script options](#)

[Editor Options](#)

9.2.1 Using Navigation bar and Toolbar

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



Destination

- select a database group
- select a database for the script

General

- [execute](#) the current script
- execute a script from file
- create a new script
- load a script from an *.sql file using the **Open Execute Script** dialog
- save the current script
- save the script to an *.sql file using the **Save as...** dialog
- hide/show explorer
- enable/disable result log
- configure Execute Script in the [Environment Options](#) dialog
- restore the default size and position of the editor window

Explorer group

- browse the tree objects used in the script using the [Script Explorer](#) pane

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

See also:[Working with Execute Script editor area](#)[Using Script Explorer](#)[Script execution](#)

9.2.2 Working with SQL Script editor area

The **Editor area** of Execute Script is provided for efficient working with SQL scripts in text mode.

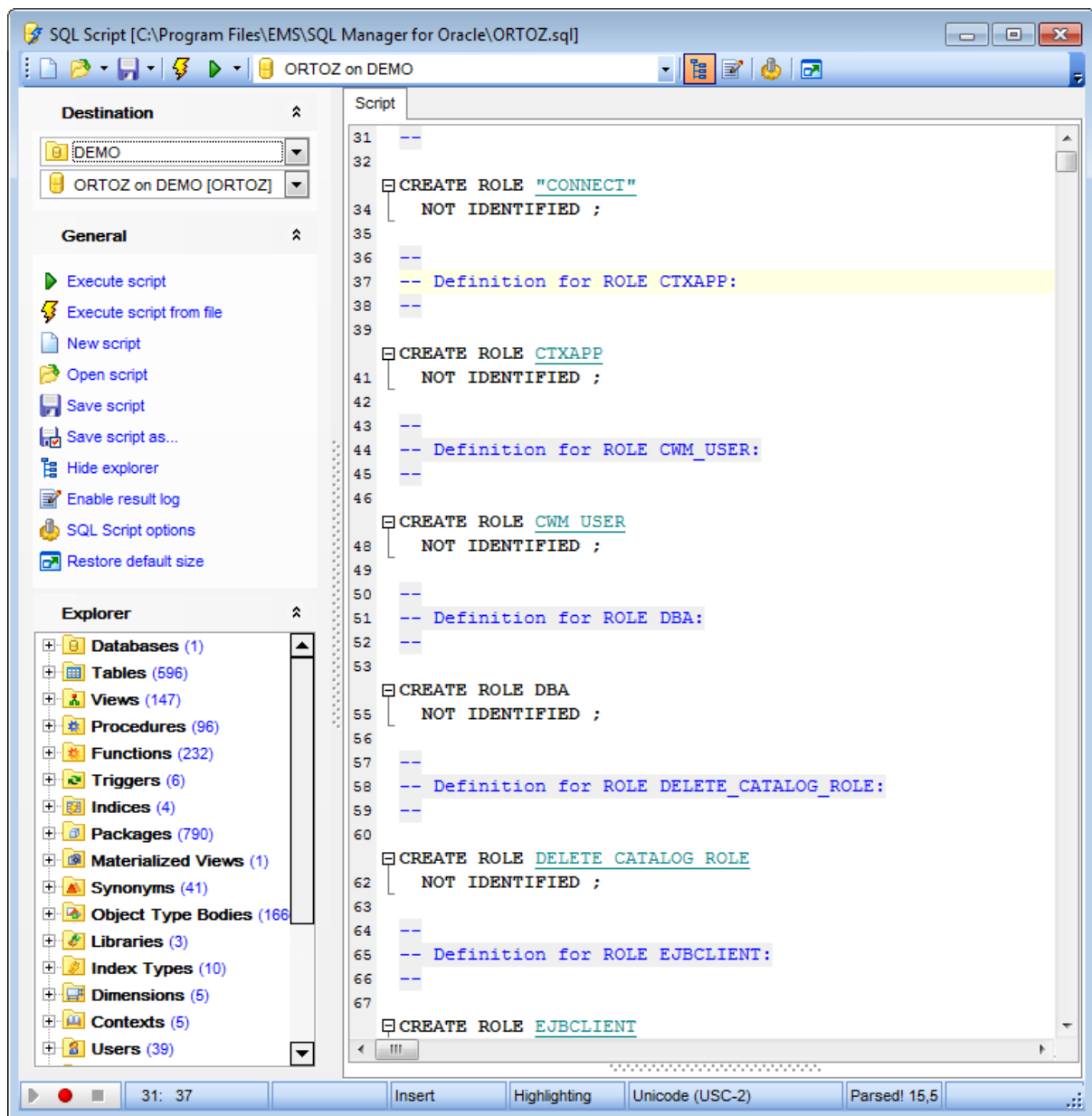
For your convenience the **syntax highlight, code completion** and a number of other features for efficient SQL editing are implemented:

- 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 Execute 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.



For your convenience the possibility to use **macros** is implemented.

To *start recording* a macro, click the **Record** button available in the status bar area, or use the *Shift+Ctrl+R* shortcut.

To *stop recording*, click the **Stop** button, or use the *Shift+Ctrl+R* shortcut.

To *call* the recorded macro, use the **Play** button, or use the *Shift+Ctrl+P* shortcut.

See also:

[Using Navigation bar and Toolbar](#)

[Using Script Explorer](#)

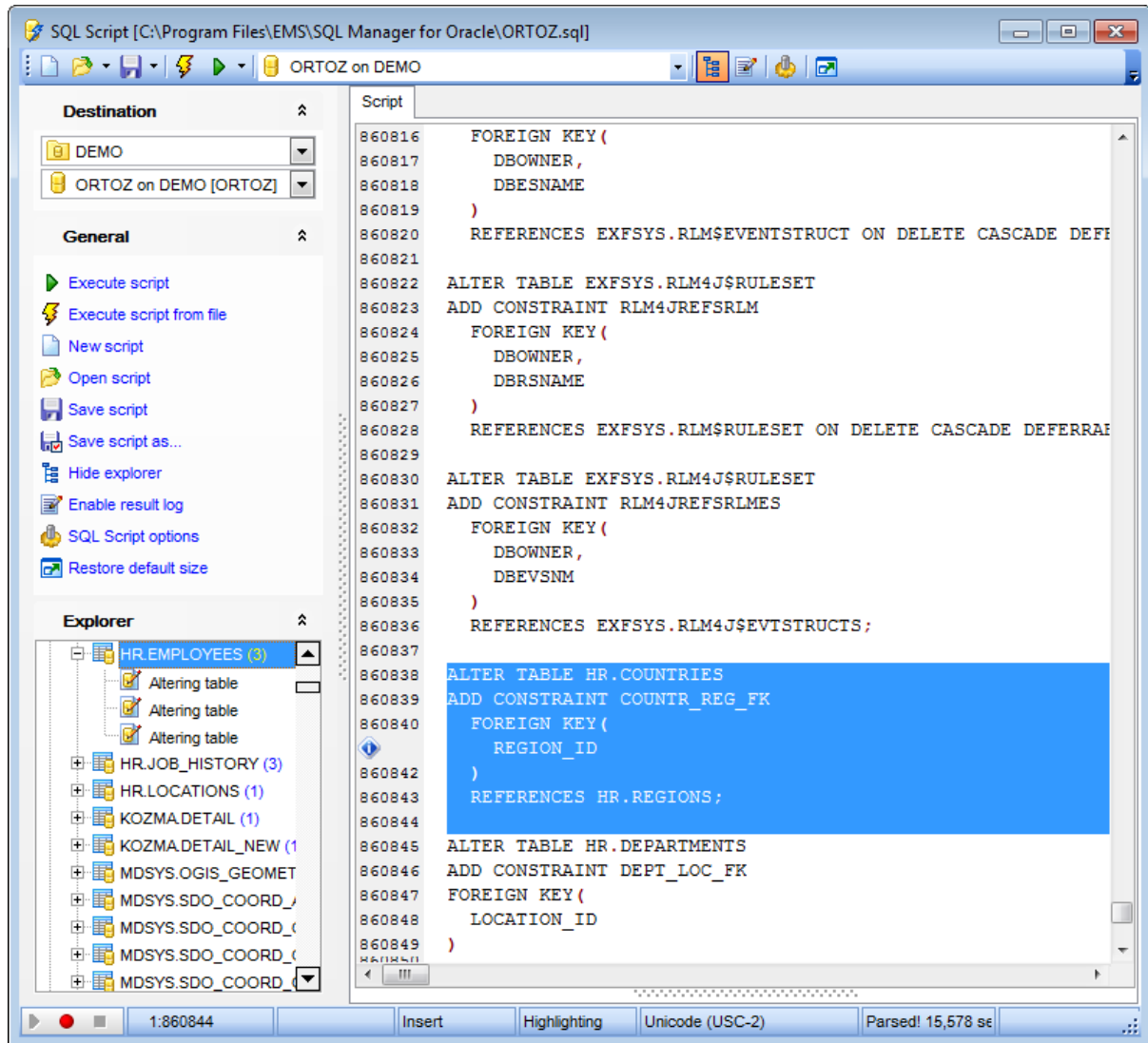
[Script execution](#)

[Managing Favorite queries](#)

[Execute Script options](#)

9.2.3 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).

You can disable the Object Explorer to speed up the processing of big files with **Hide explorer** item or at Environment options|[Object editors](#).

See also:

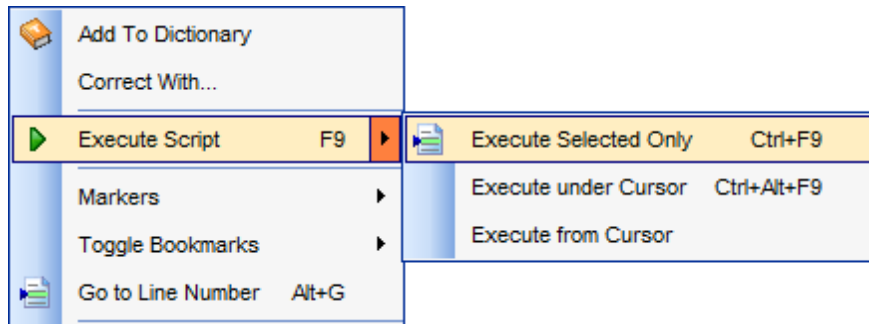
[Using Navigation bar and Toolbar](#)

[Working with Execute Script editor area](#)
[Database Objects Management](#)

9.2.4 Script execution

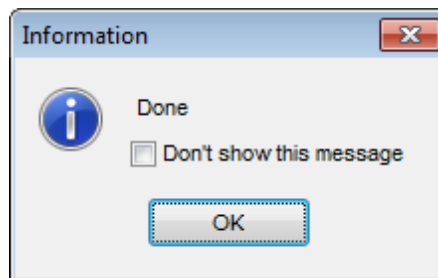
When all the script parameters are set, you can immediately **execute the script** in **Execute Script** editor.

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 | Execute 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 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: **Execute Script** does not show results returned upon SELECT queries execution. Please [execute](#) such queries in [Query Data](#) to see the result dataset.

See also:

[Using Navigation bar and Toolbar](#)

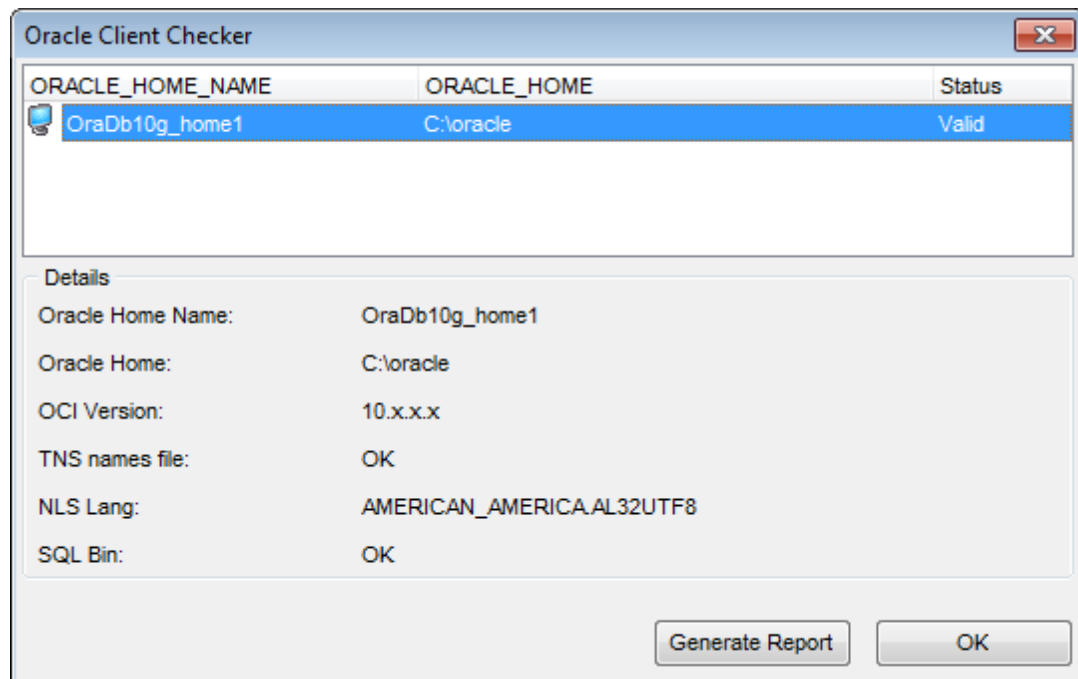
[Working with Execute Script editor area](#)

[Using Script Explorer](#)

9.3 Oracle Client Checker

The **Oracle Client Checker** dialog allows you to check the validity of Oracle client(s) identified by SQL Manager.

To call the dialog, use the **Client Checker...** button which is available at the [Setting connection parameters](#) step of [Register Database Wizard](#) and in the [Connection](#) section of the [Database Registration Info](#) dialog.



The upper area of the dialog lists Oracle clients as a grid with the following columns:

Oracle Home

Status (Valid/Invalid)

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.

The **Detail** group provides common information on the selected client:

Oracle Home name

Oracle Home

OCI version

TNS names file

NLS Lang

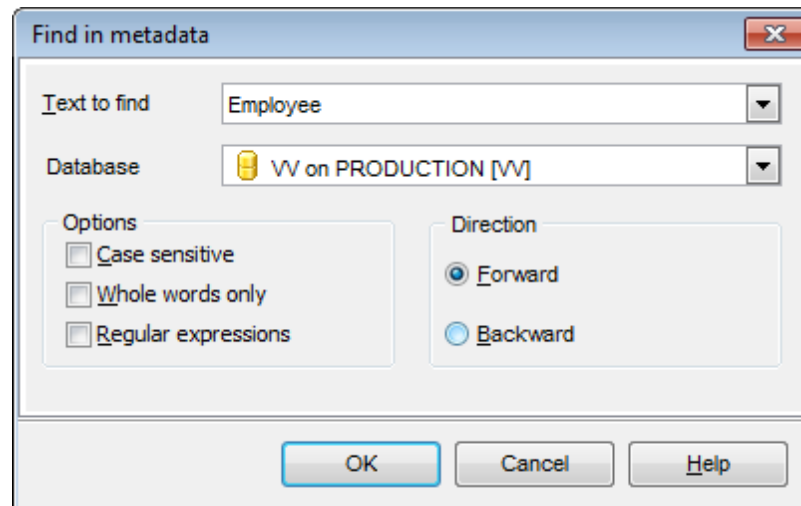
SQL Bin

Generate report

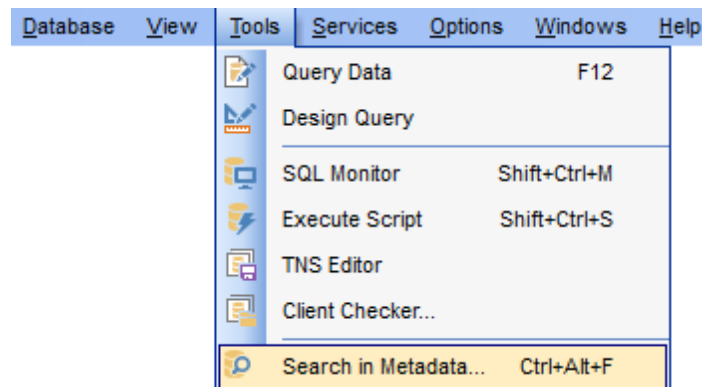
All information about oracle client and environment variable can be saved in the external file that can be created by clicking the **Generate report** button.

9.4 Search in Metadata

The **Search in Metadata** tool is implemented for quick search within the scope of database metadata. The tool allows 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](#).



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

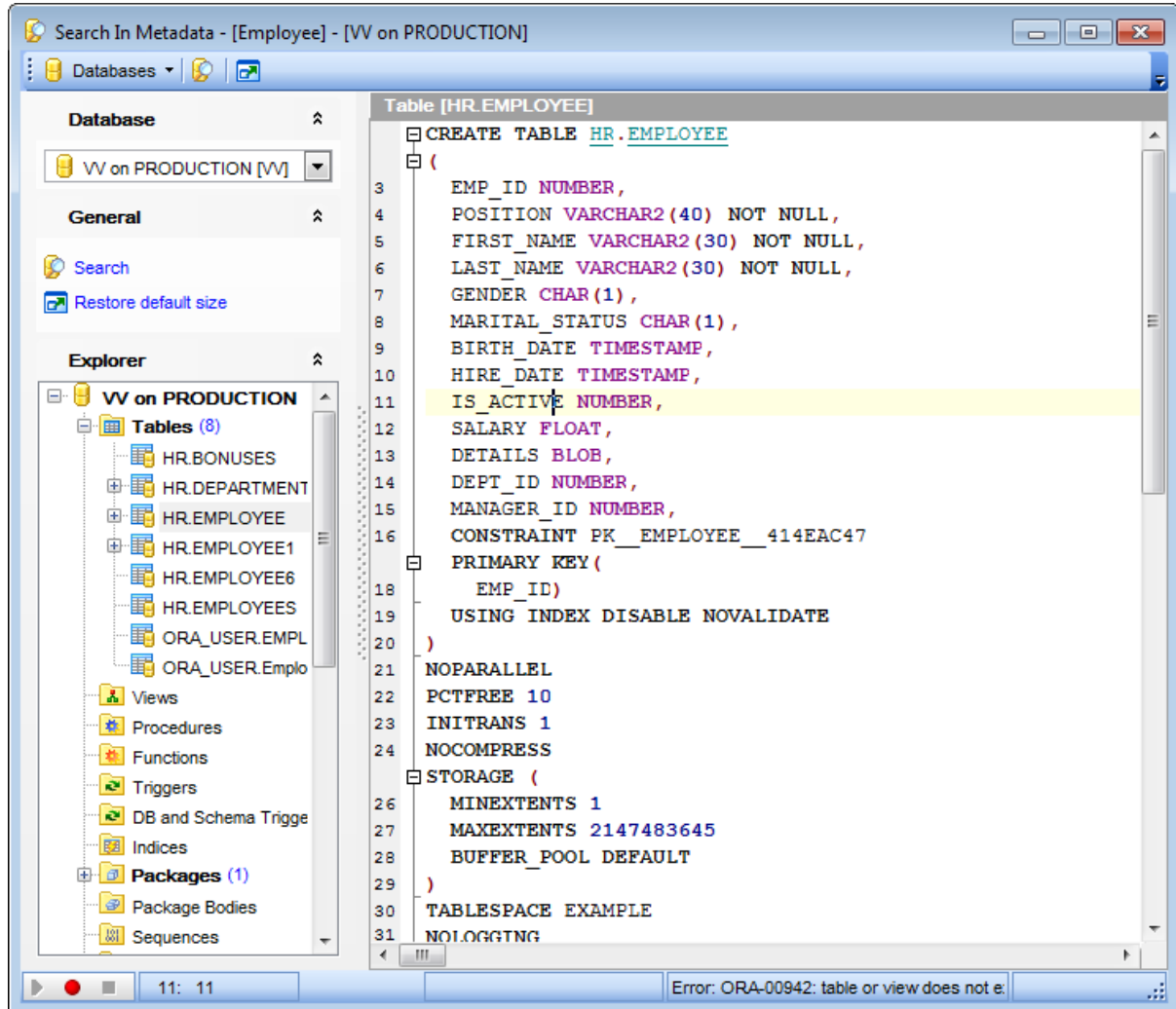
Use the drop-down list to select a database for the search operation.

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.

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 Query Data area](#) and [Using the context menu](#).

Availability:

Full version (for **Yes**

Windows)

Lite version (for **No**
Windows)

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

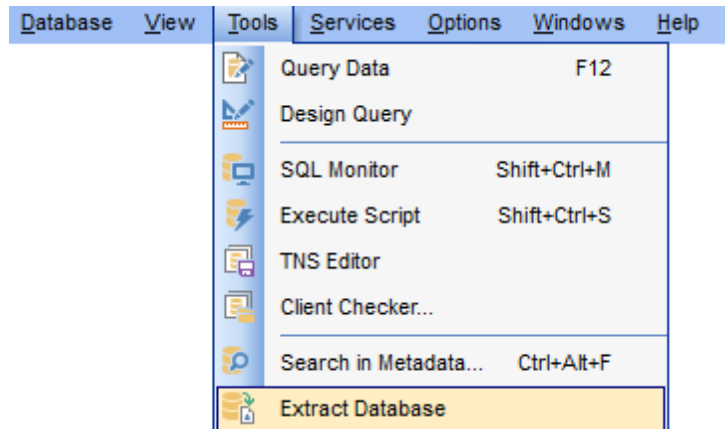
See also:

[Find Text dialog](#)

9.5 Extract Database Wizard

Extract Database Wizard allows you to extract database objects and/or data to an Execute Script, e.g. for backup purposes.

To start the wizard, select the **Tools** |  **Extract Database...** [main menu](#) item, or right-click the database alias in the [DB Explorer](#) tree and select the **Tasks** |  **Extract Database...** item from the [context menu](#).



- [Selecting a database for extraction](#)
- [Specifying destination file name](#)
- [Setting extraction mode](#)
- [Setting BLOB options](#)
- [Selecting objects for metadata extraction](#)
- [Selecting objects for data extraction](#)
- [Customizing script options](#)
- [Start of extraction process](#)
- [Using templates](#)

See also:

[Execute Script Editor](#)

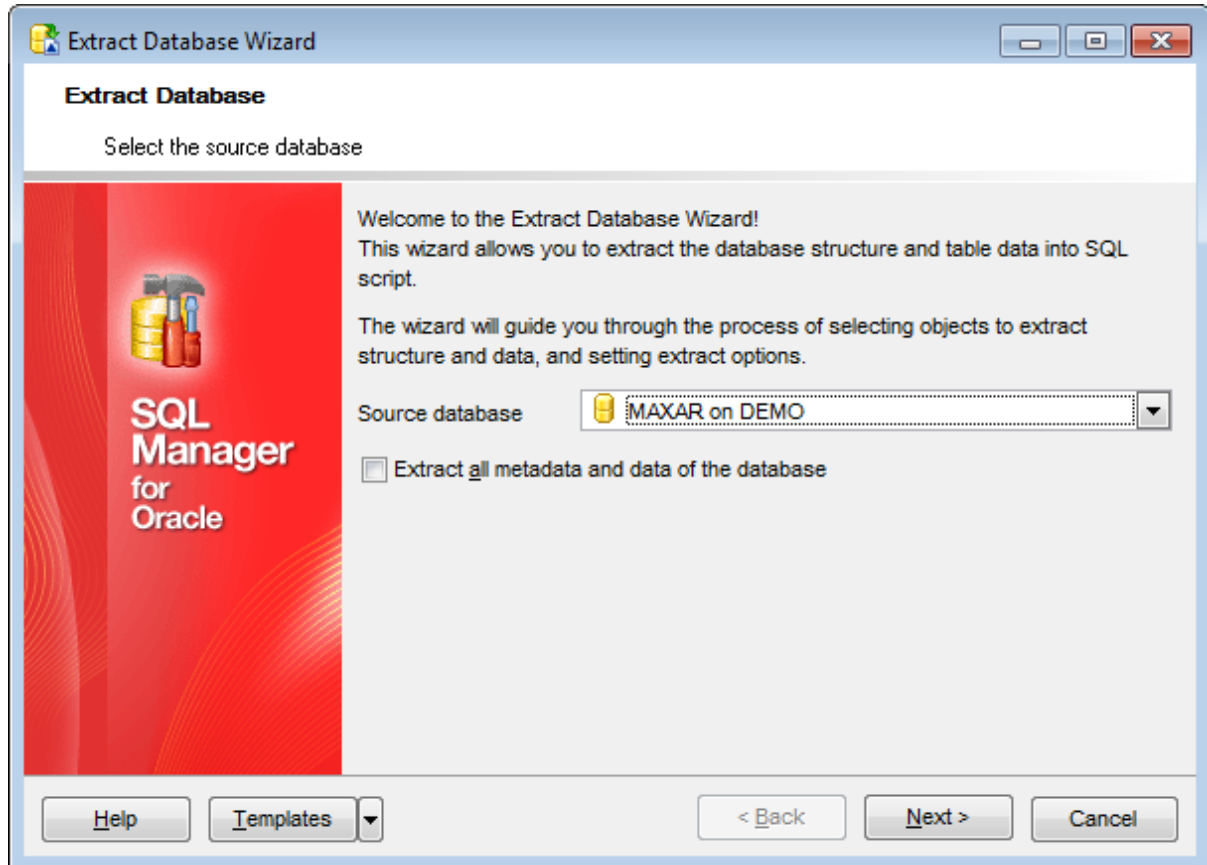
[Database Objects Management](#)

[Using templates](#)

9.5.1 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.

9.5.2 Specifying destination file name

Script destination

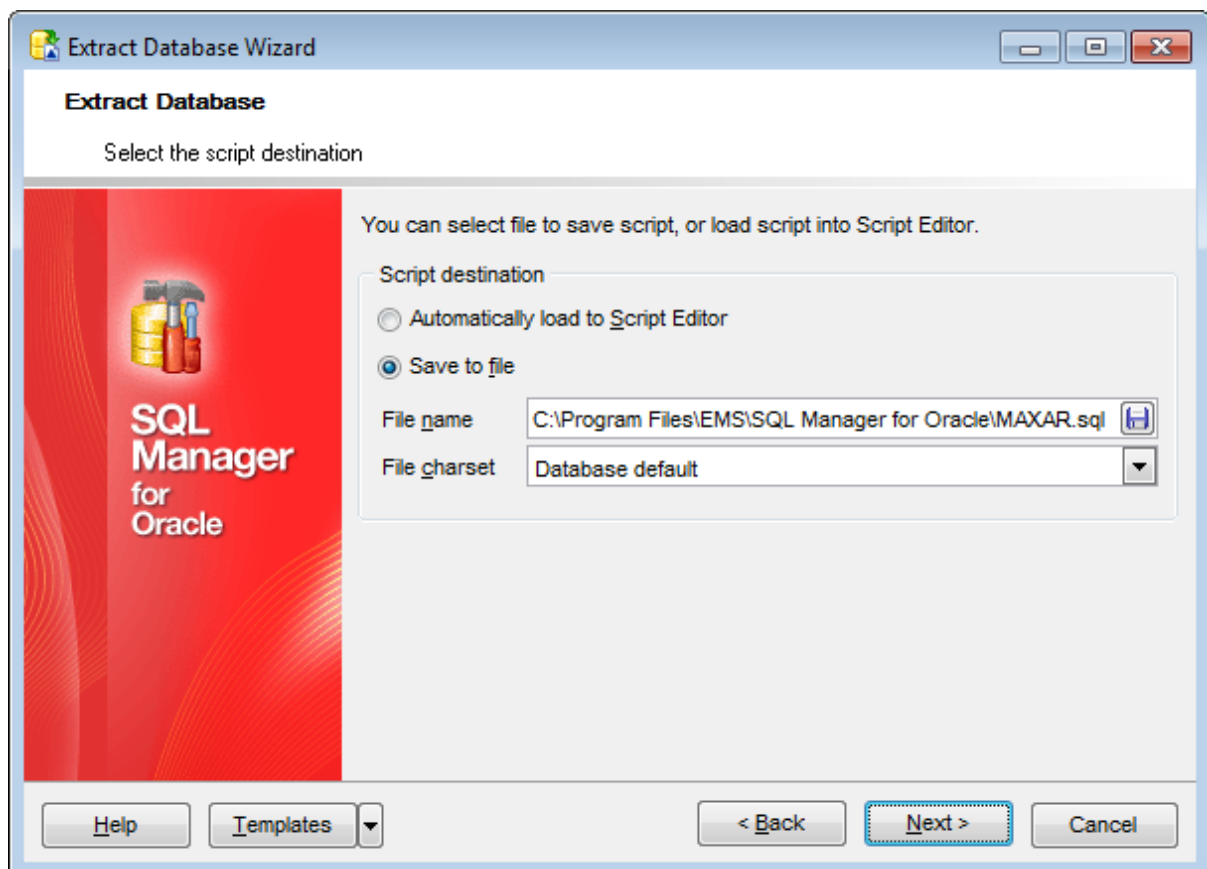
This group of options allows you to specify whether the result Execute Script will be automatically loaded to [Execute Script Editor](#) or saved into a file.

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.

File charset

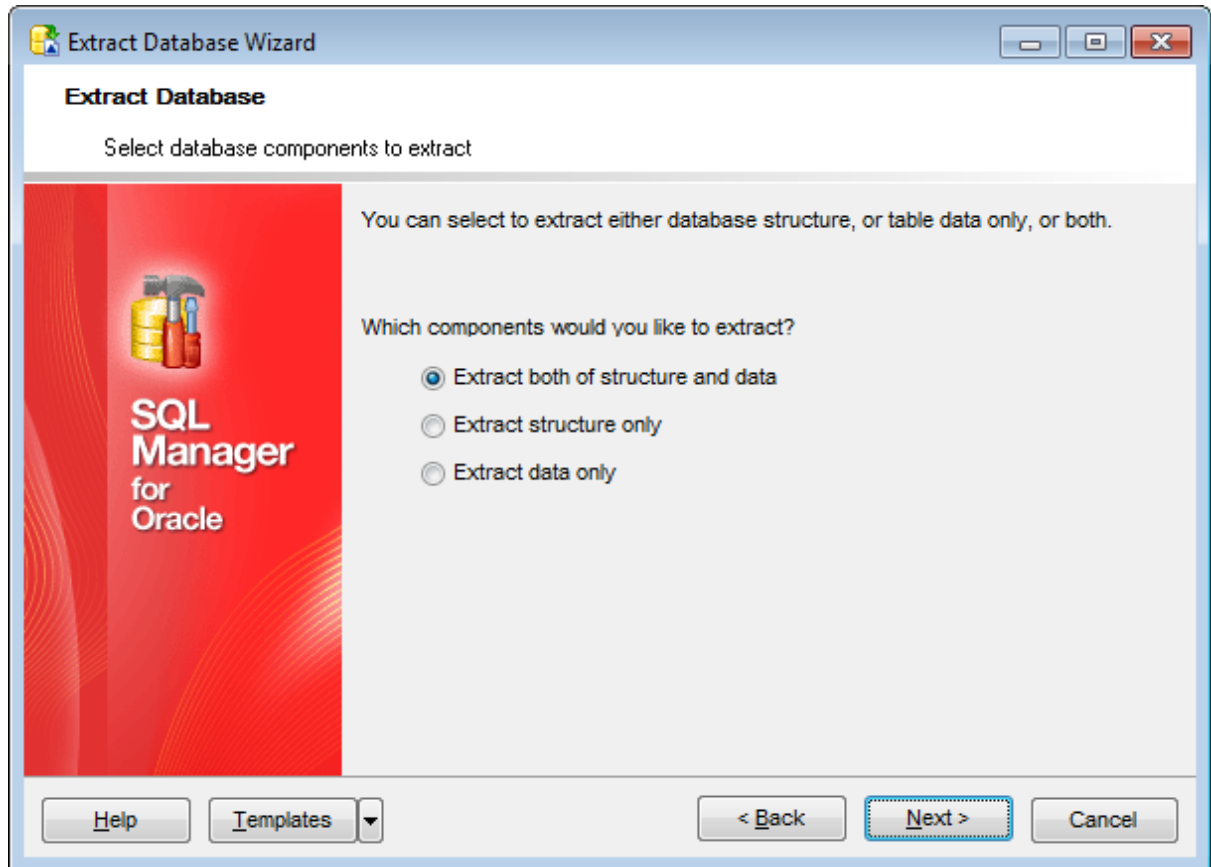
If necessary, use the drop-down list to select the character set to be applied to the output file.



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 [next step of the wizard](#), or you will be immediately forwarded to the [Setting BLOB options](#) step, and then to the [Customizing script options](#) step of the wizard.

9.5.3 Setting extraction mode

This step allows you to specify the **extraction mode**: choose whether *structure only*, *data only* or *both* are to be extracted.



Click the **Next** button to proceed to the [Setting BLOB options](#) step of the wizard.

9.5.4 Setting BLOB options

BLOB options

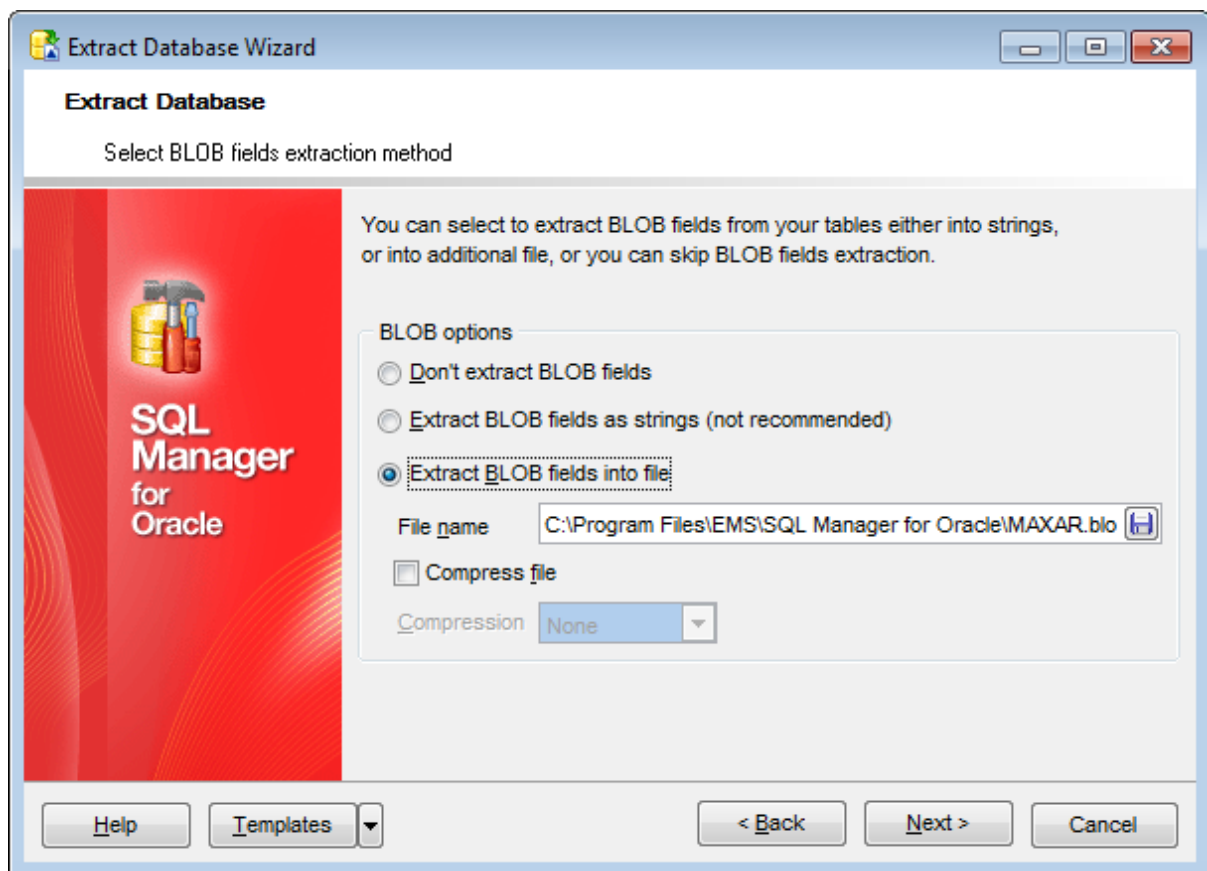
In this group of options you can determine whether BLOB fields are *not to be extracted*, *extracted as strings*, or *extracted into a separate file*. If the latter is selected, you also need to specify the **File name** (the *.blo file where the BLOB data are to be stored) and the location of the file on your local machine using the **Save as...**  button.

☒ 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*.



Note: If you choose to ☒ **Extract BLOB fields into file** then afterwards the result SQL file can be restored only by using the SQL Manager for Oracle [Execute Script](#) tool.

Click the **Next** button to proceed to [Selecting objects for structure extraction](#).

9.5.5 Selecting objects for structure extraction

This step of the wizard allows you to **select 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 objects**

Adds all objects of the database to structure extraction process.

☒ **Extract all objects of schema...**

Adds all objects of a schema to structure extraction process.

Schema name

Use the drop-down list to select the schema to extract all objects from.

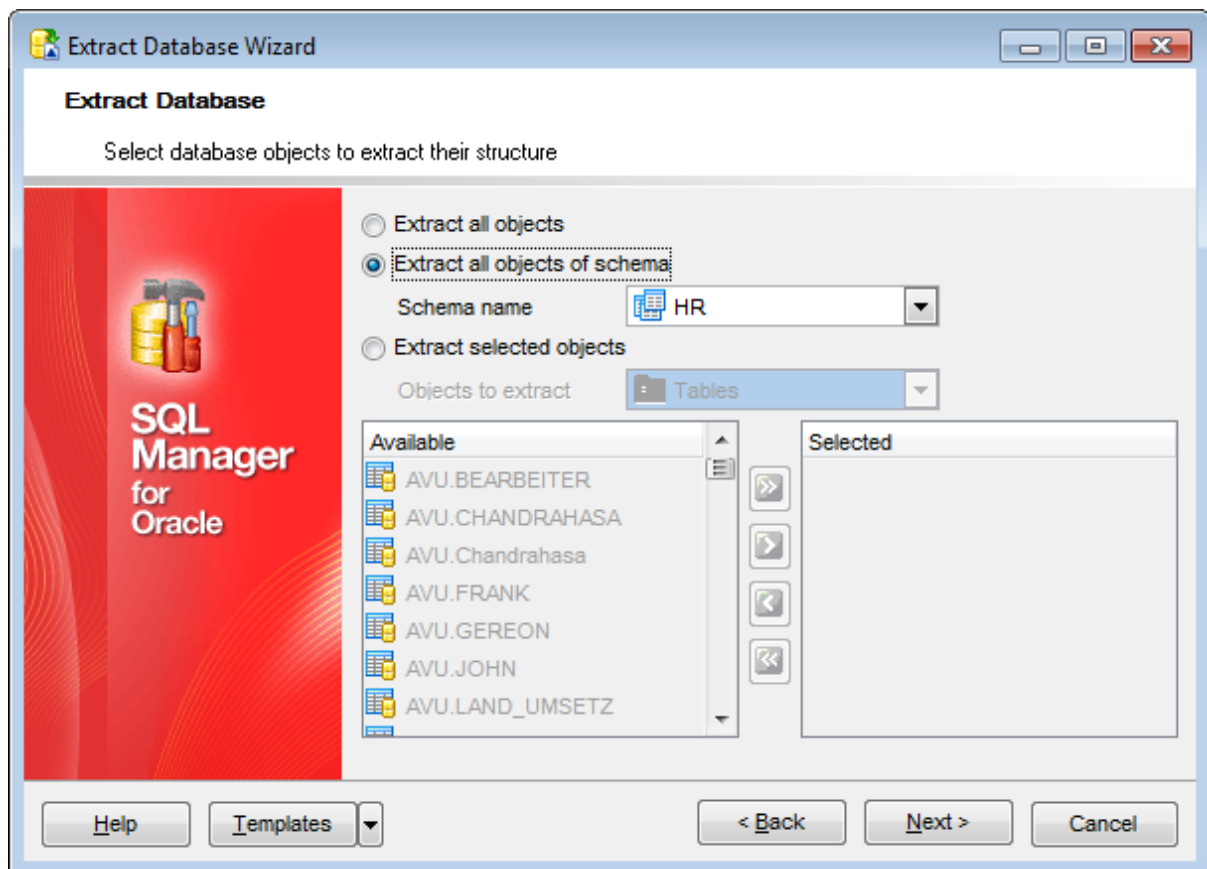
☒ **Extract selected objects**

Adds only selected objects to structure extraction process.

Objects to extract

Use the drop-down list to select the type of objects to be extracted.

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 [Selecting objects for data extraction](#).

9.5.6 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 all tables**

Adds all tables of the database to data extraction process.

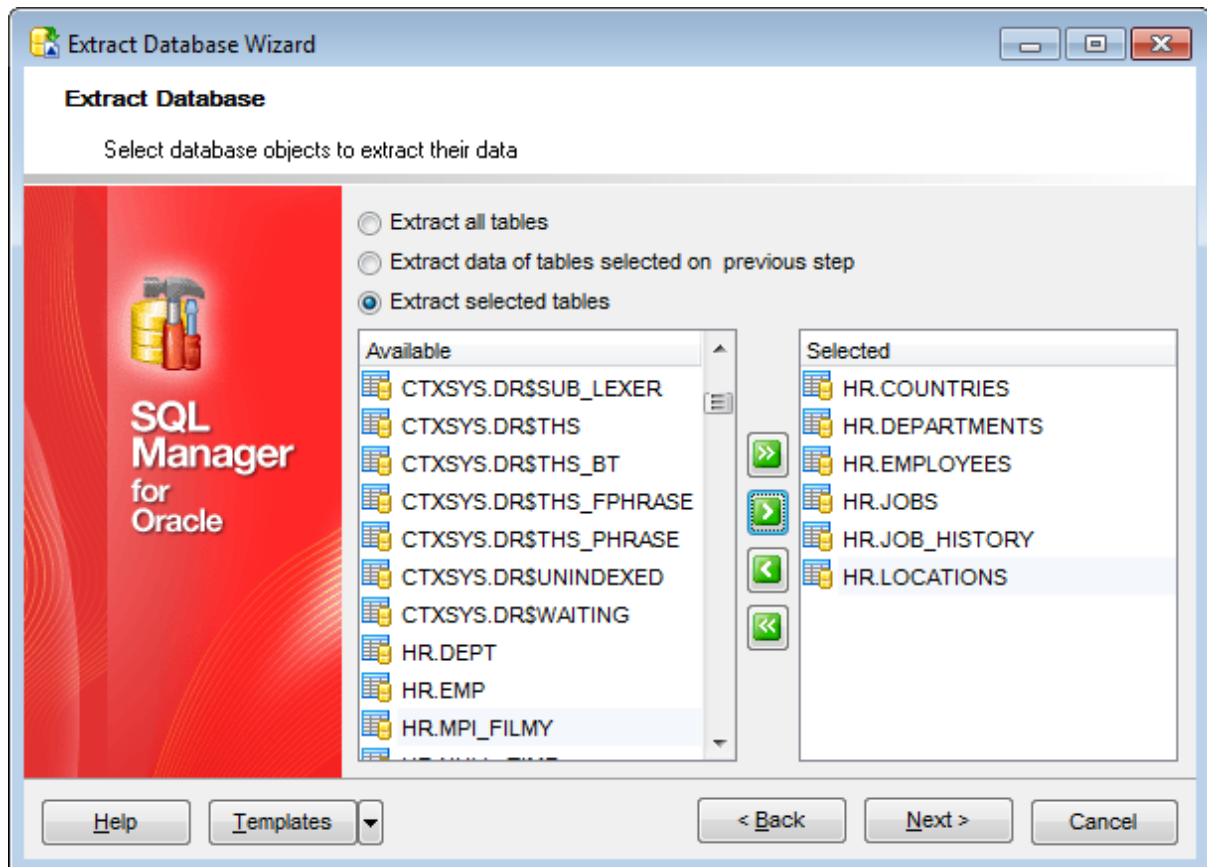
☐ **Extract data of tables selected on the previous step**

Adds only the tables [selected for metadata extraction](#).

☒ **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.



Click the **Next** button to proceed to the [Customizing script options](#) step of the wizard.

9.5.7 Customizing script options

This step allows you to customize common **script options** and **data options** for the extraction process.

Script options

☒ Calculate dependencies

This option determines objects' [dependencies](#) usage in the extraction process. If you check this option then dependencies of every object will be analyzed before the extraction process. At first objects that have no dependent objects are extracted and then objects that depend on already extracted objects are extracted.

☒ Generate DROP statements

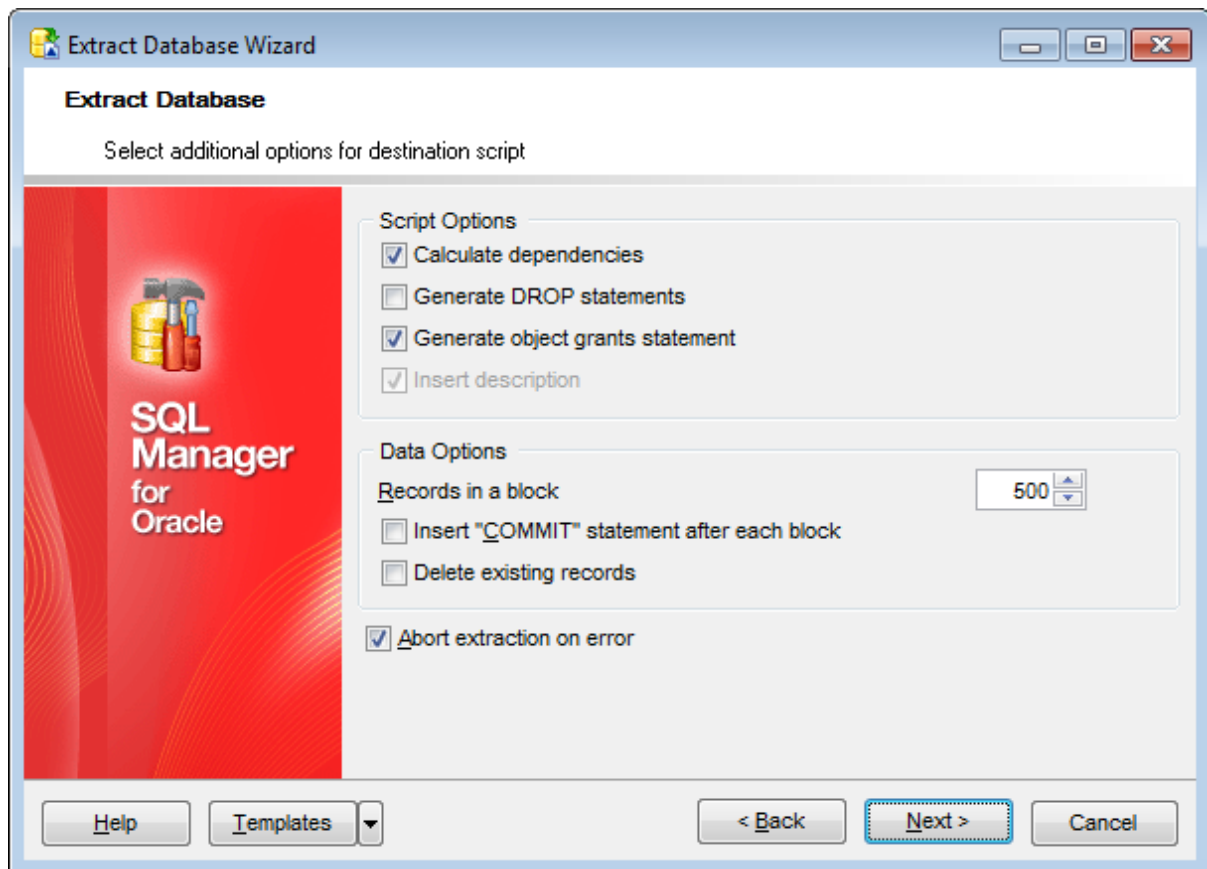
Check the option to add the *DROP* statements for the extracted objects in the result script.

☒ Generate object grants statement

Check this option to add the *GRANT* statements to object definitions.

☒ Insert description

This option determines whether object [description](#) should be added to the generated script.



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.

☒ **Delete existing records**

Check this option if you want to delete data from the table after it is extracted.

☒ **Abort extraction on error**

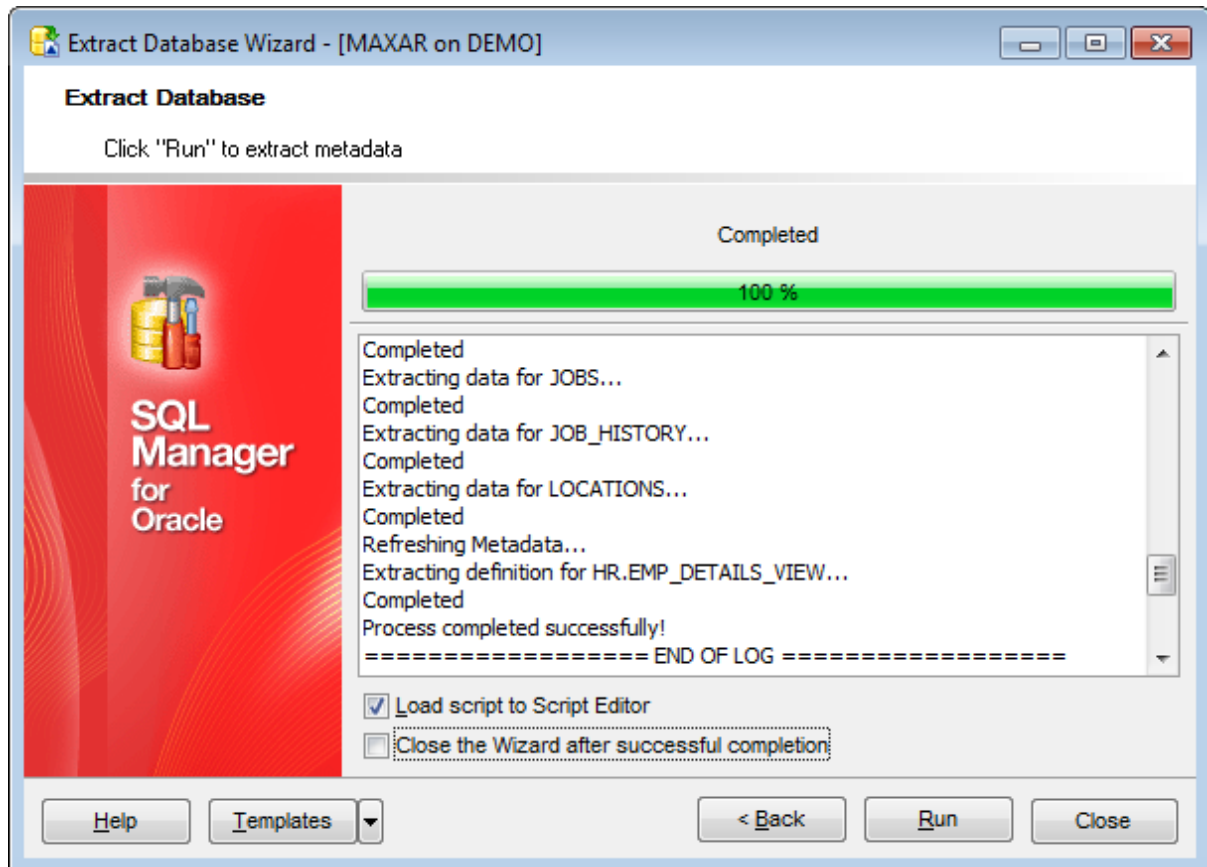
This option determines whether the extraction process should be stopped or forced to continue if an error occurs.

Click the **Next** button to proceed to the [last](#) step of the wizard.

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



☒ Load script to Execute Script

Check this option to load the result script to [Execute Script Editor](#).

☒ Close the wizard after successful completion

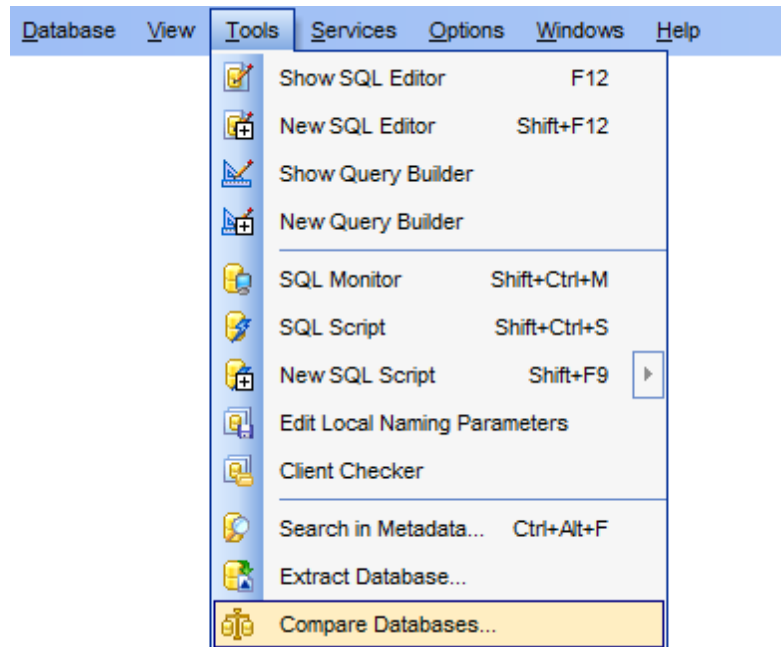
If this option is selected, the wizard is closed automatically when the extraction process is completed.

If necessary, you can save a [template](#) for future use.

Click the **Run** button to run the extraction process.

9.6 Compare Databases Wizard

Compare Databases Wizard creates an Execute Script that provides database structure synchronization. To launch the wizard use the **Tools |  Compare Databases...** item of the main menu.



- [Selecting source database](#)
- [Selecting schemas of the source database](#)
- [Selecting target database](#)
- [Selecting schemas of the target database](#)
- [Selecting type of the synchronization script](#)
- [Defining options for destination script](#)
- [Performing operation](#)

Availability:

Full version (for Windows)

Yes

Lite version (for Windows)

No

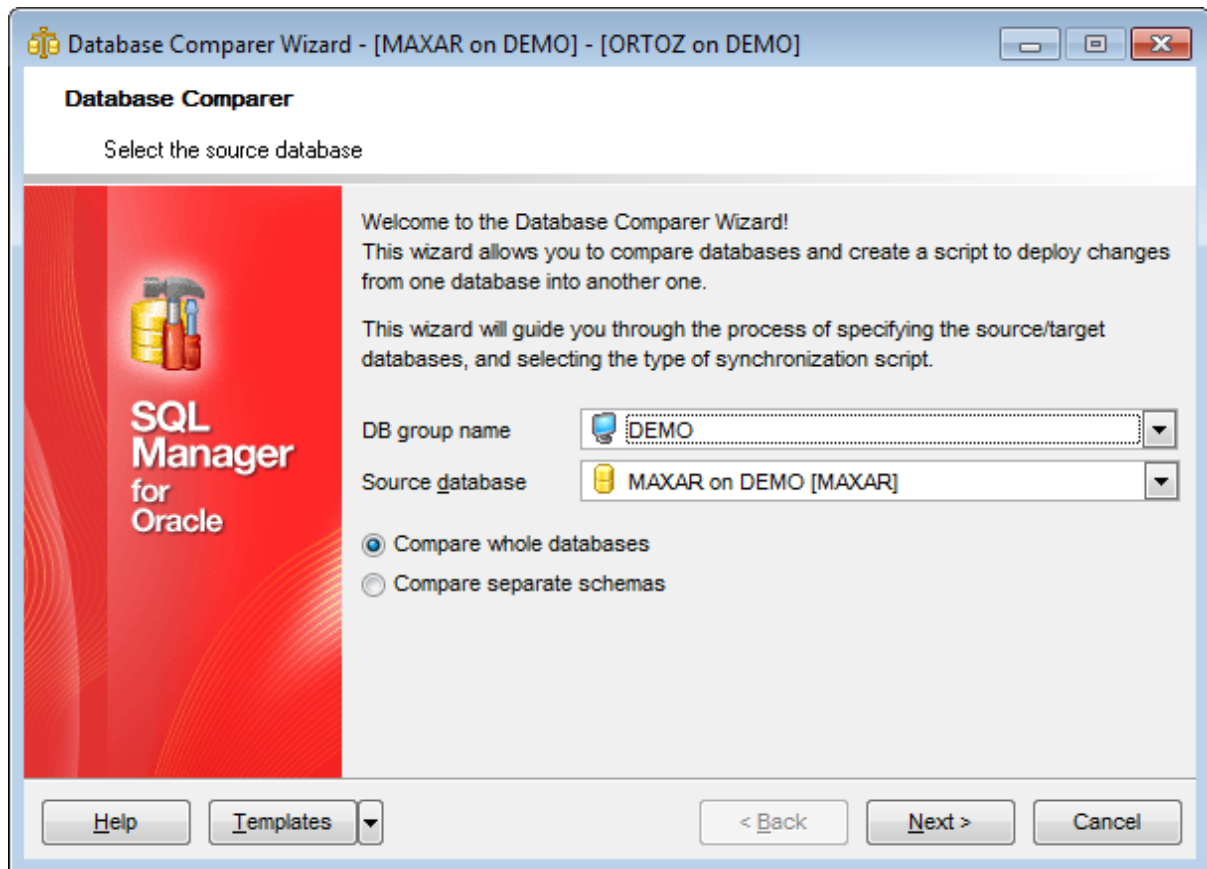
Note: To compare all features of the **Full** and the **Lite** versions of SQL Manager, refer to the [Feature Matrix](#) page.

See also:

[Using templates](#)

9.6.1 Selecting source database

Use this step to define source database for comparing.



Source host

Defines host where source database is located.

Source database

Select source database from the drop-down list.

- ☒ *Compare whole database*
- ☒ *Compare separate schemas*

If ☒ *Compare separate schemas* was checked then you need to select the schemas at the [Selecting schemas of the source database](#) step.

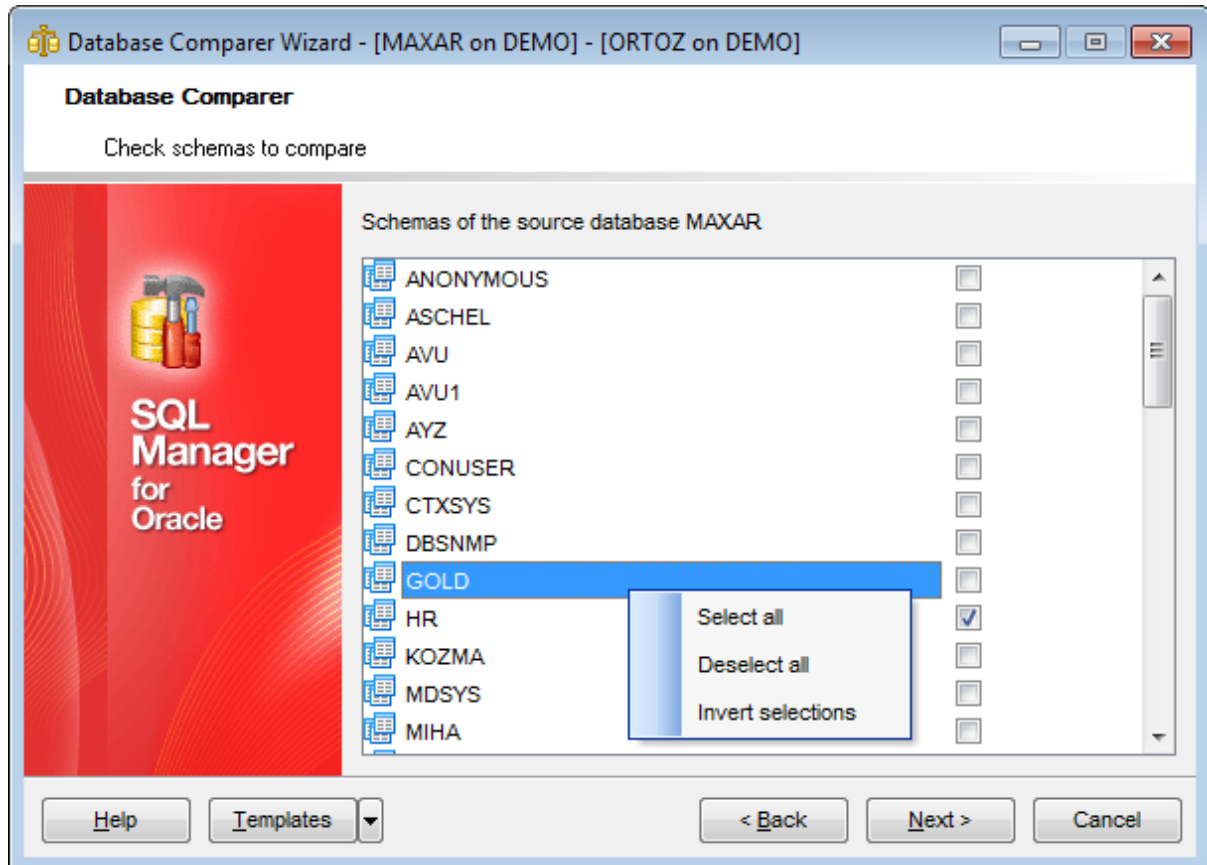
Otherwise you will proceed to the [Selecting target database](#) step.

Use the [templates](#) button to save current settings to template or to restore settings from an existing template.

9.6.2 Selecting schemas of the source database

This step appears only if the  *Compare separate schemas* option was checked at the [first step](#).

Use this step of the wizard to select the schemas of the source database to compare.

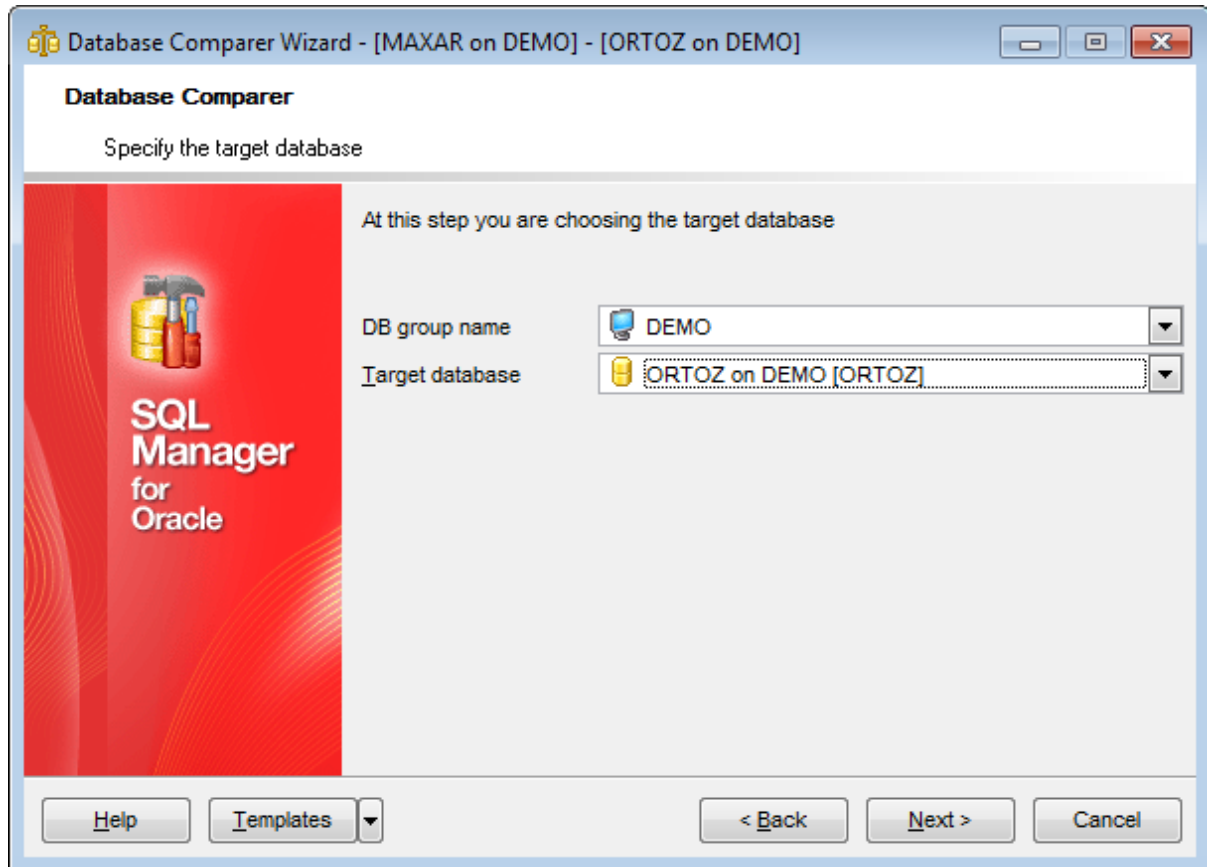


For your convenience the *Select All*, *Deselect All* and *Invert selections* functions are implemented in the context menu of the schemas list area.

Click the **Next** button to proceed to the [Selecting target database](#) step of the wizard.

9.6.3 Selecting target database

Use this step to define target database for comparing.

**DB group name**

Defines group where target database is located.

Target database

Select target database from the drop-down list.

If ☒ *Compare separate schemas* at the [first step](#) was checked then you need to select the schemas of the target database at the [Selecting schemas of the target database](#) step.

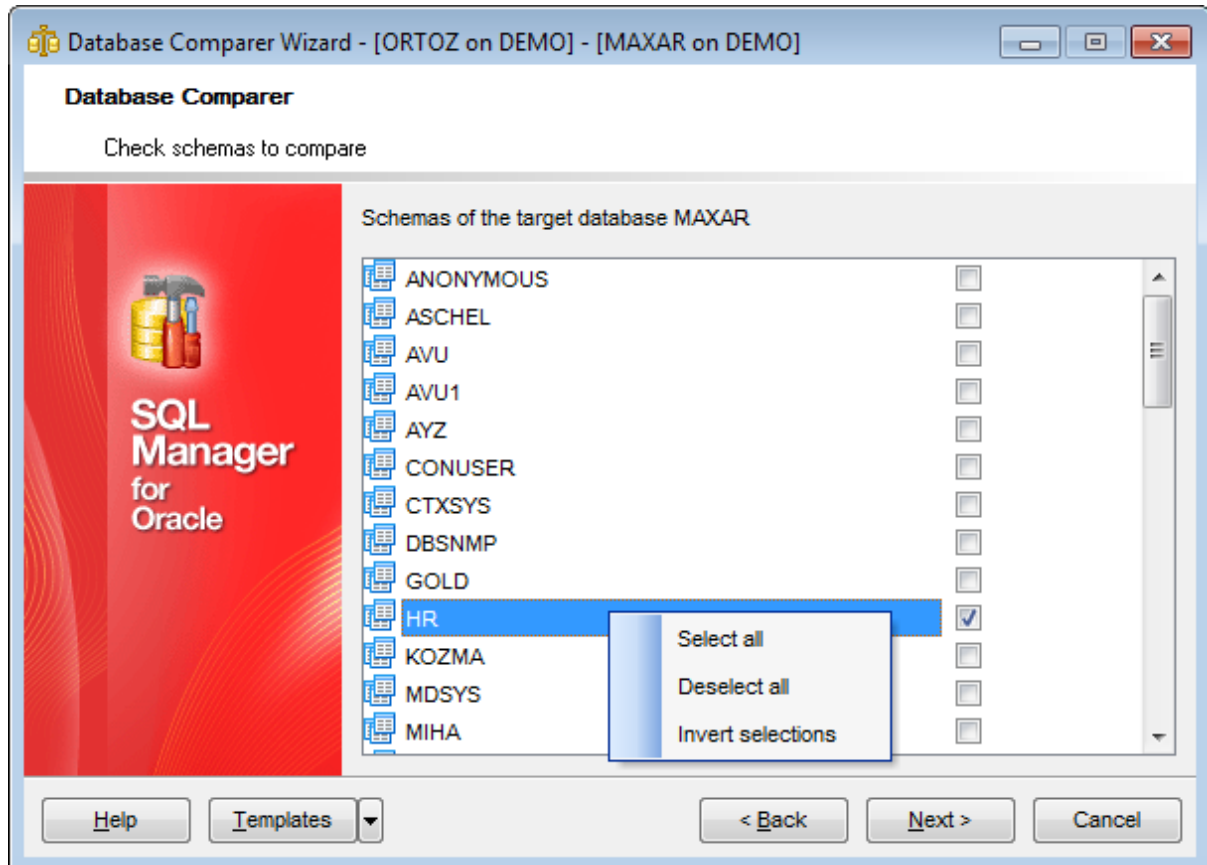
Otherwise you will proceed to the [Selecting type of the synchronization script](#) step.

Use the [templates](#) button to save current settings to template or to restore settings from an existing template.

9.6.4 Selecting schemas of the target database

This step appears only if the  *Compare separate schemas* option was checked at the [first step](#).

Use this step of the wizard to select the schemas of the target database to compare.

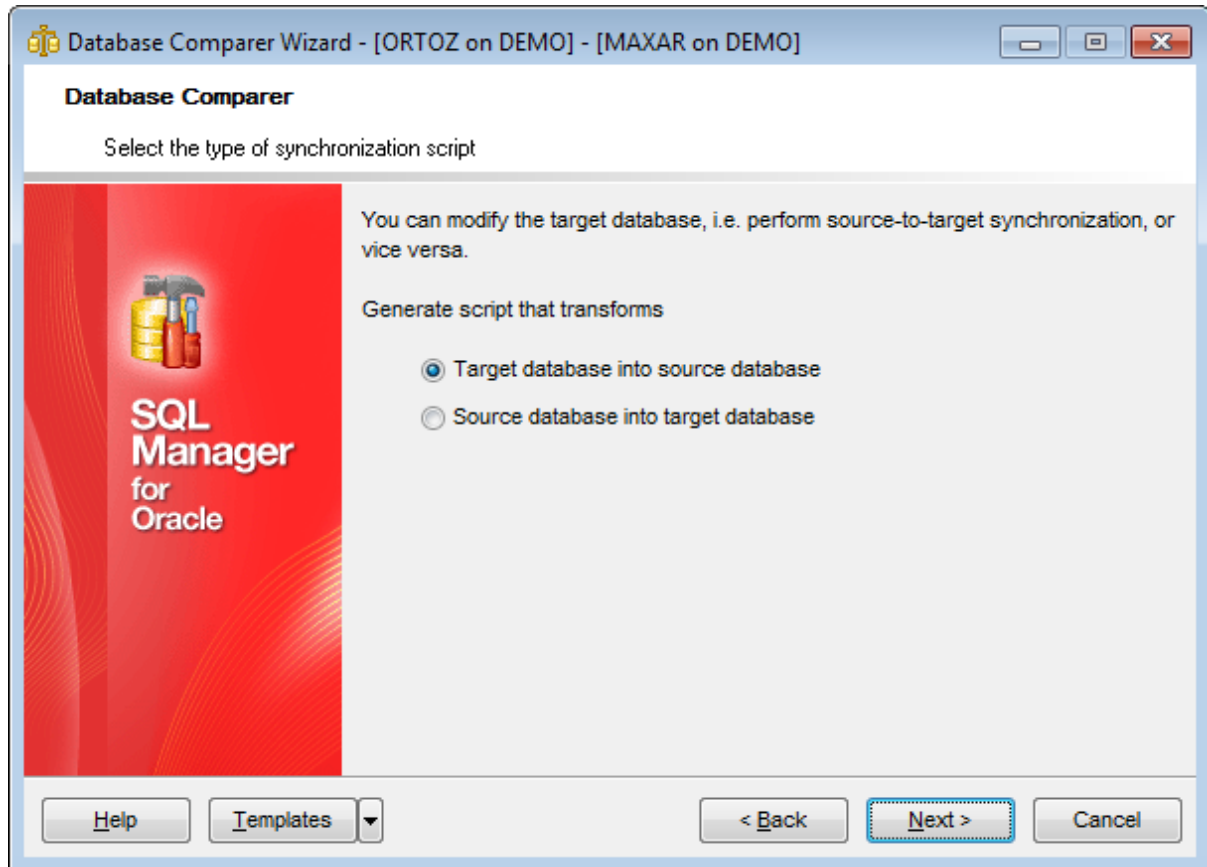


For your convenience the *Select All*, *Deselect All* and *Invert selections* functions are implemented in the context menu of the schemas list area.

Click the **Next** button to proceed to the [Selecting type of the synchronization script](#) step of the wizard.

9.6.5 Selecting type of the synchronization script

Specify the direction of comparing selected database.



☒ **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.**

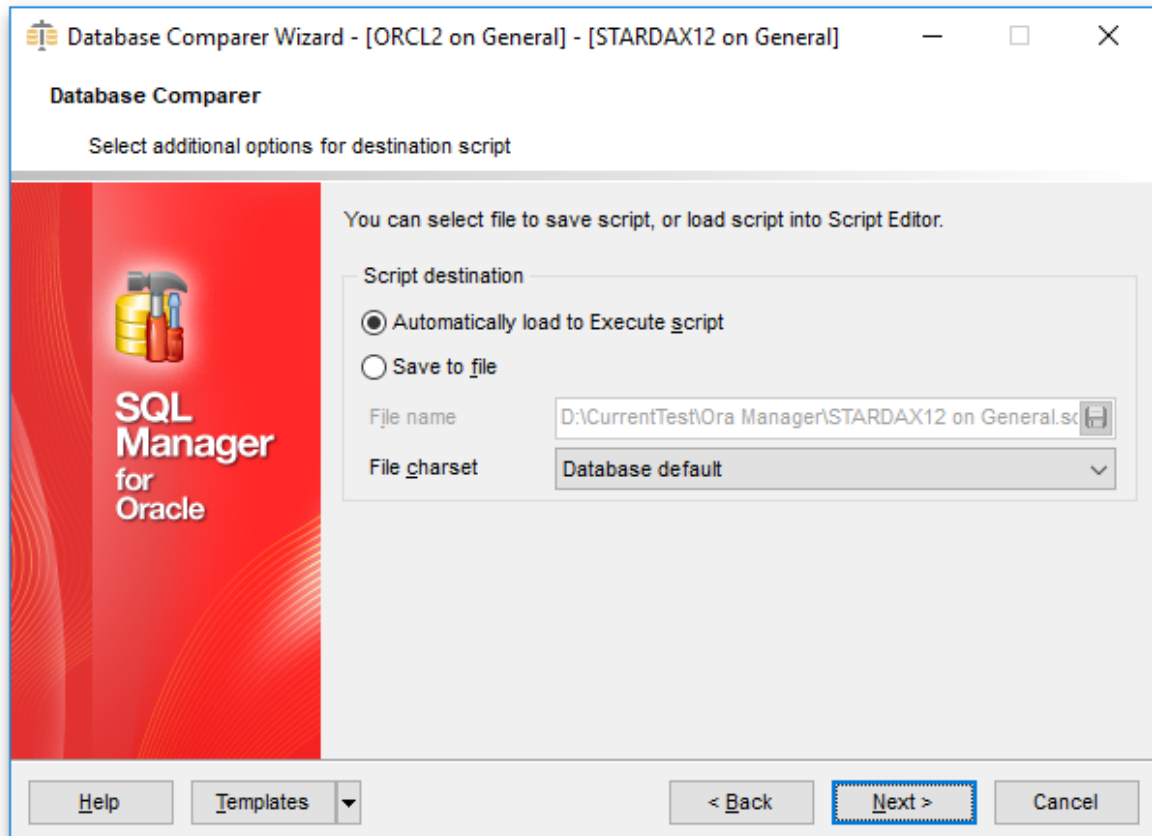
Enables direct comparing: the synchronization script will contain statements which make the [source](#) database identical to the [target](#) one.

Click the **Next** button to proceed to the [Defining options concerned destination script](#) step.

Use the [templates](#) button to save current settings to template or to restore settings from an existing template.

9.6.6 Defining options for destination script

Use this step to define additional option for destination script.



☒ **Automatically load to Execute script**

With this option enabled, the synchronization script will not be saved. It will be loaded to [Execute Script](#).

☒ **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.

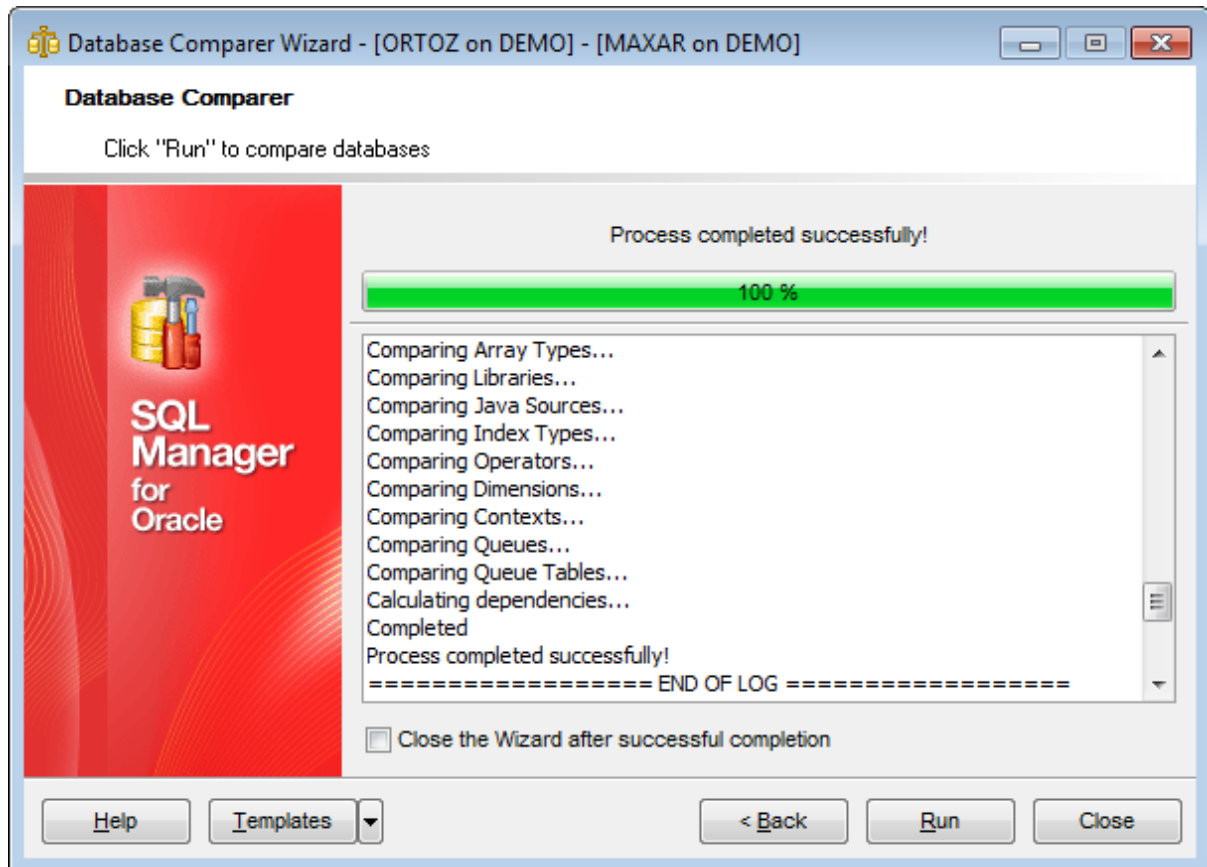
Click the **Next** button to proceed to the [Performing operation](#) step.

Use the [templates](#) button to save current settings to template or to restore settings from an existing template.

9.6.7 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.

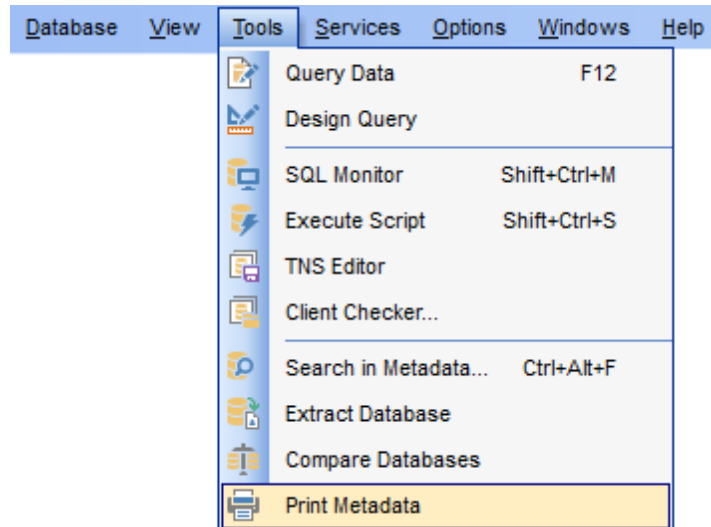
Click the **Run** button to run the backup database operation.

Use the [templates](#) button to save current settings to template or to restore settings from an existing template.

9.7 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](#). Alternatively, you can right-click the database alias in the [DB Explorer](#) tree and select the **Tasks | Print Metadata** item from the [context menu](#).



- [Using Navigation bar and Toolbar](#)
- [Selecting objects](#)
- [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.

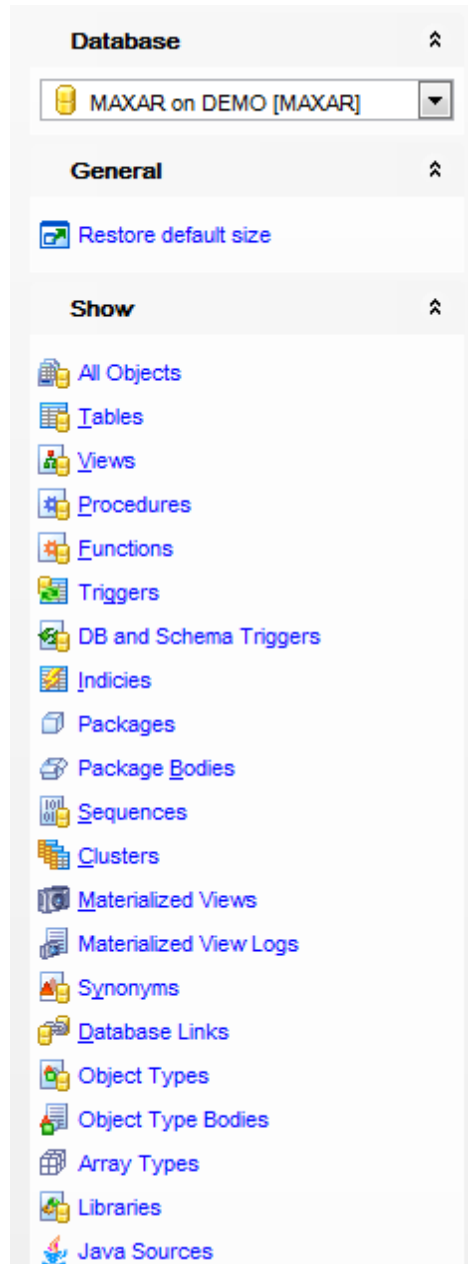
See also:

[Database Objects Management](#)

[Print Metadata options](#)

9.7.1 Using Navigation bar and Toolbar

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



Database

 select a database for the printing report

General

 print metadata of the selected object(s)

 [preview](#) the printing report

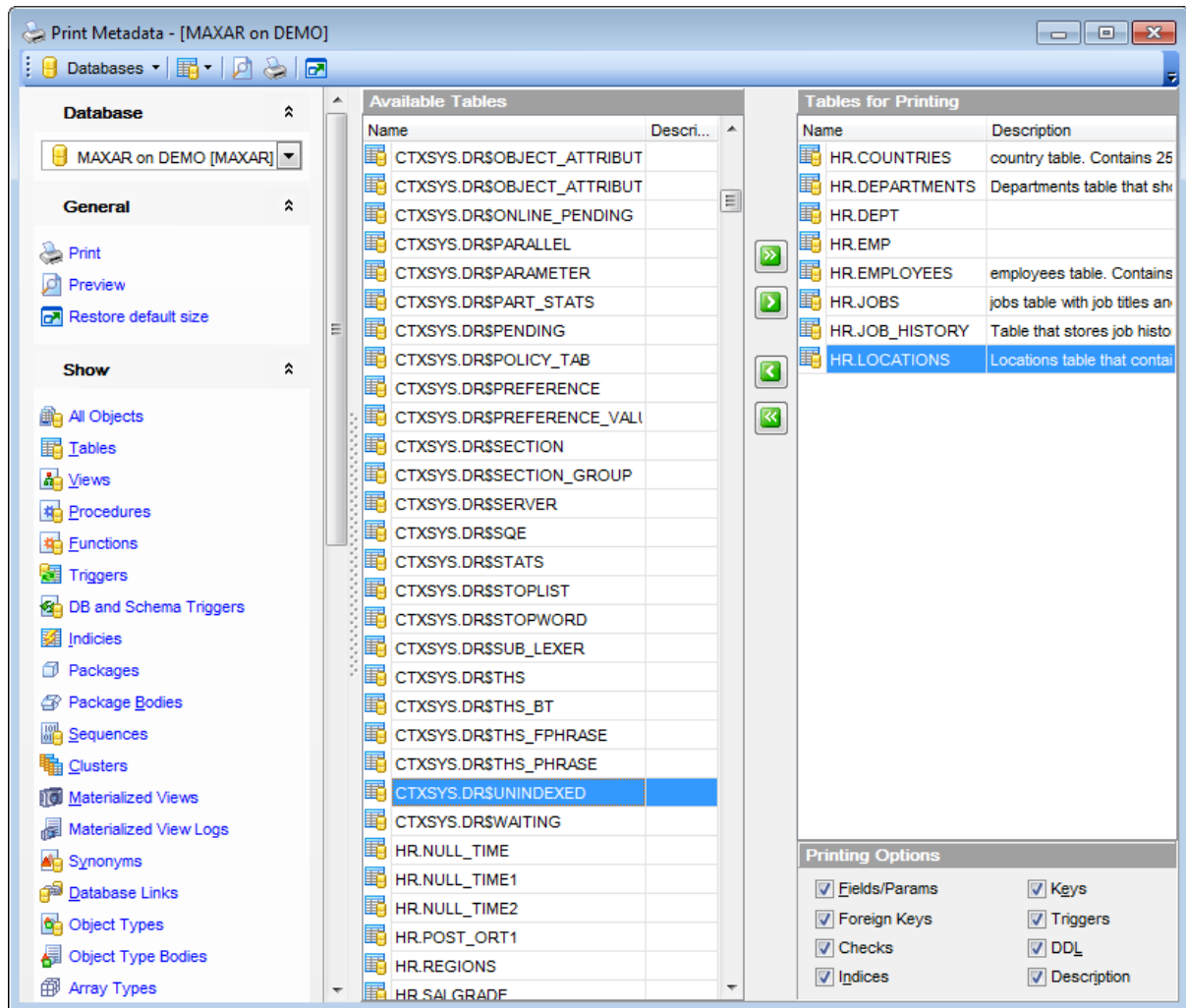
 restore the default size and position of the window

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

9.7.2 Selecting objects

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.

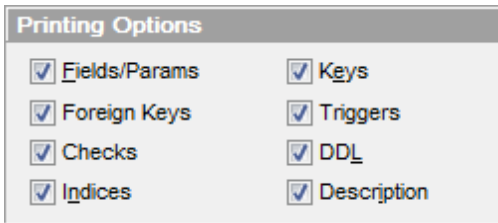


After you select one or several objects, the **Printing Options** pane appears at the bottom. Select an object in the **Objects for Printing** list and specify items to be included into the printing report. For details see [Printing options](#).

Note: You can  **Preview** the printing report and  **Print** metadata for objects of the selected type using the corresponding items of the [Navigation bar](#) (or [toolbar](#)). For details see [Report Viewer](#).

9.7.3 Printing options

The **Printing Options** area is available in the bottom right corner of the **Print Metadata** window.



Categories for printing

Use this group to specify items to be included into the printing report: *Fields, Indexes, Description, DDL, Keys, Foreign keys, Checks, Triggers* (availability of the items depends on the object).

Click the **Print** button to call the standard **Print** dialog to set printer configuration and start printing the report.

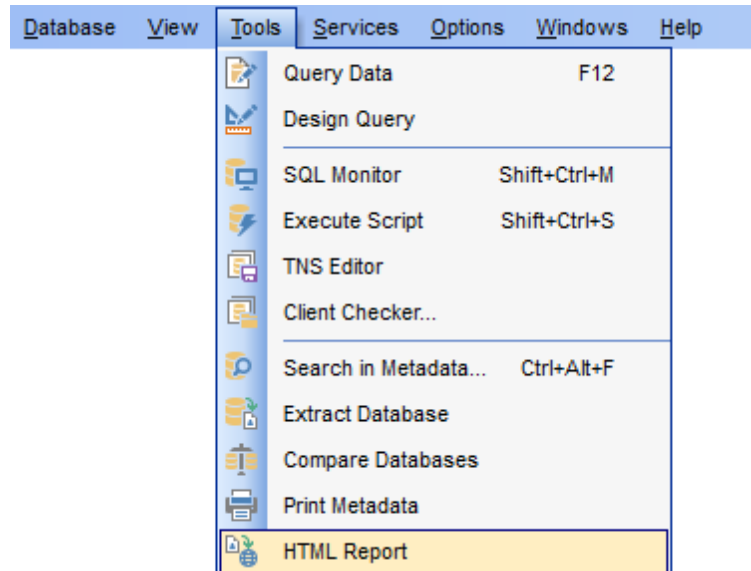
Click the **Preview** button to call the [Report Viewer](#) dialog to preview the report.

Click the **Design** button to call [Report Designer](#) to edit the report.

9.8 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](#). Alternatively, you can right-click the database alias in the [DB Explorer](#) tree and select the **Tasks | HTML Report...** item from the [context menu](#).



- [Selecting database and directory](#)
- [Selecting object types](#)
- [Selecting schemas](#)
- [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](#)

9.8.1 Selecting database and directory

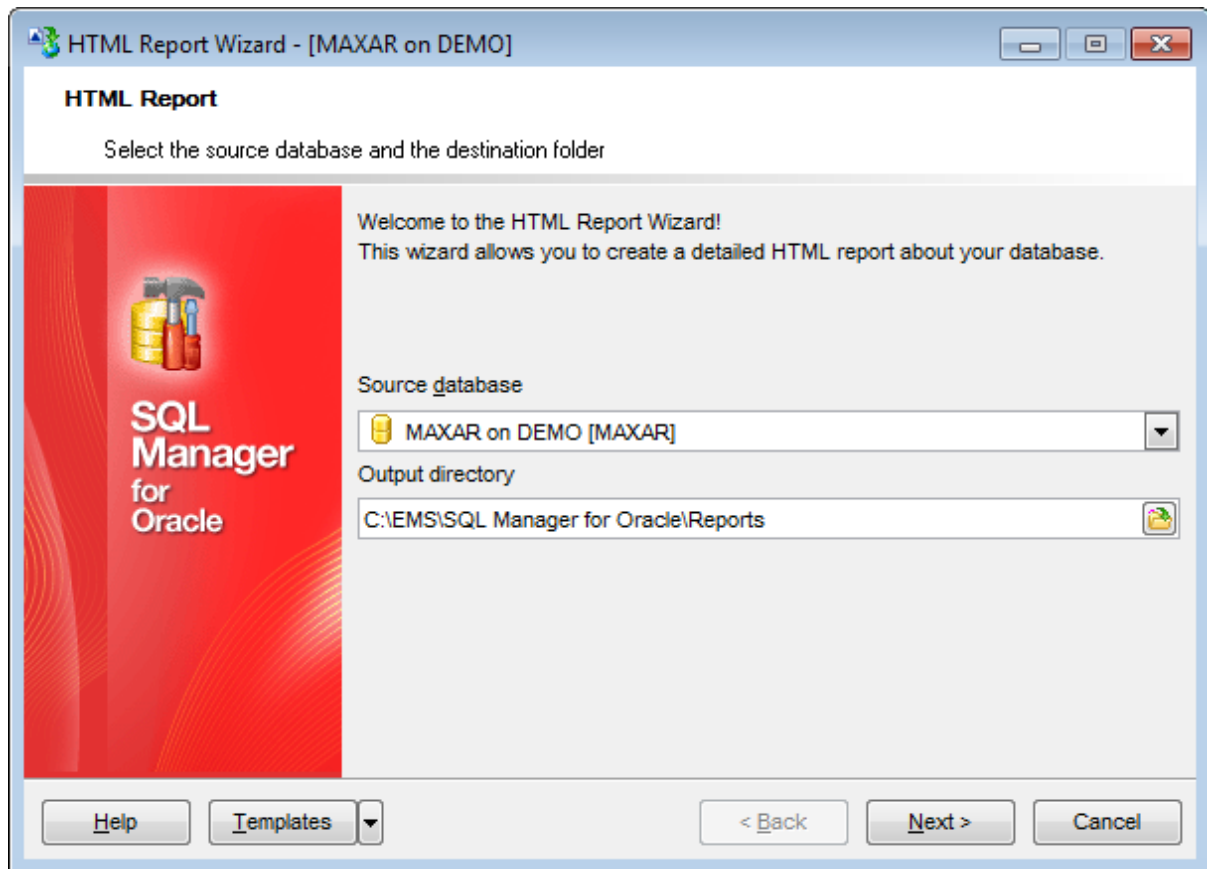
At this step of the wizard you should select the **source database** and **output directory** for the HTML report.

Source 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.

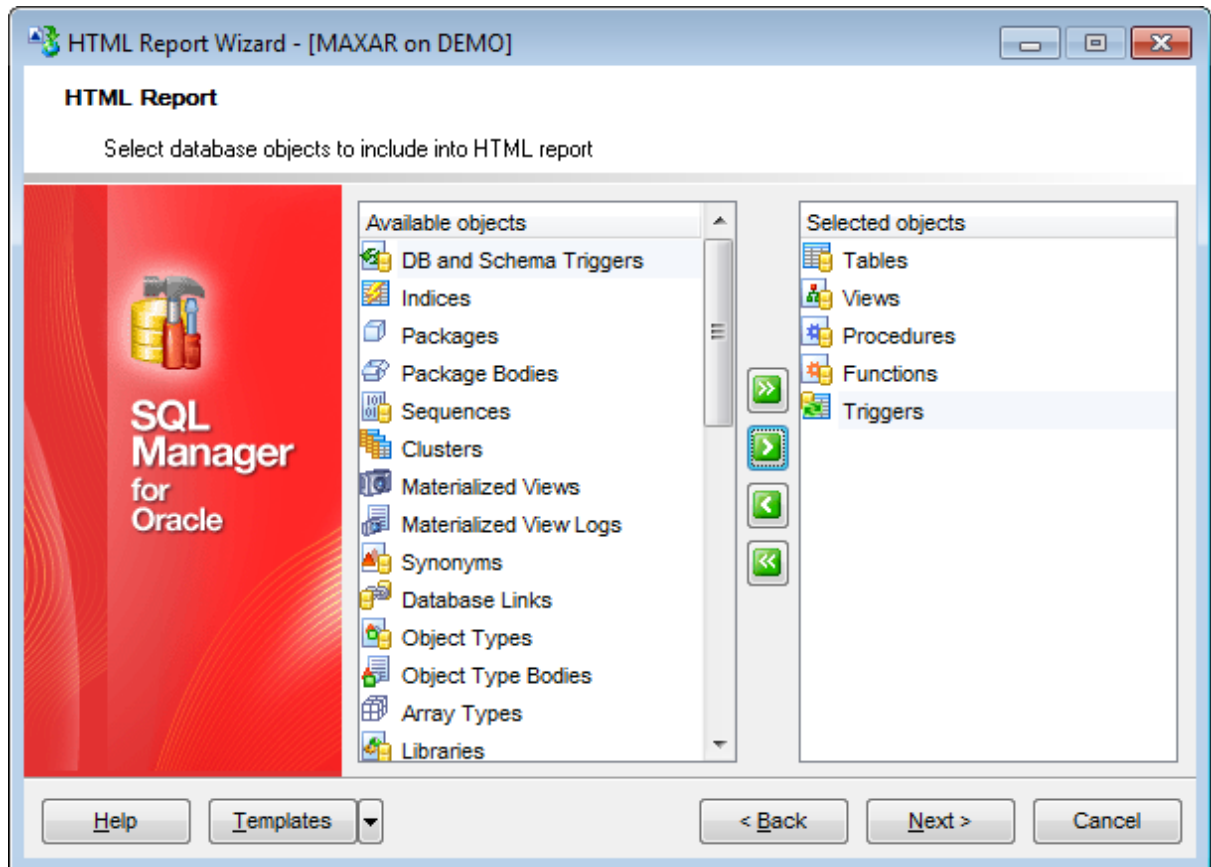


Click the **Next** button to proceed to the [Selecting object types](#) step of the wizard.

9.8.2 Selecting object types

Use this step of the wizard to select *the types of objects* to be included in the result HTML report.

To select an object, you need to move it from the **Available objects** list to the **Selected objects** list. Use the     buttons or drag-and-drop operations to move the objects from one list to another.

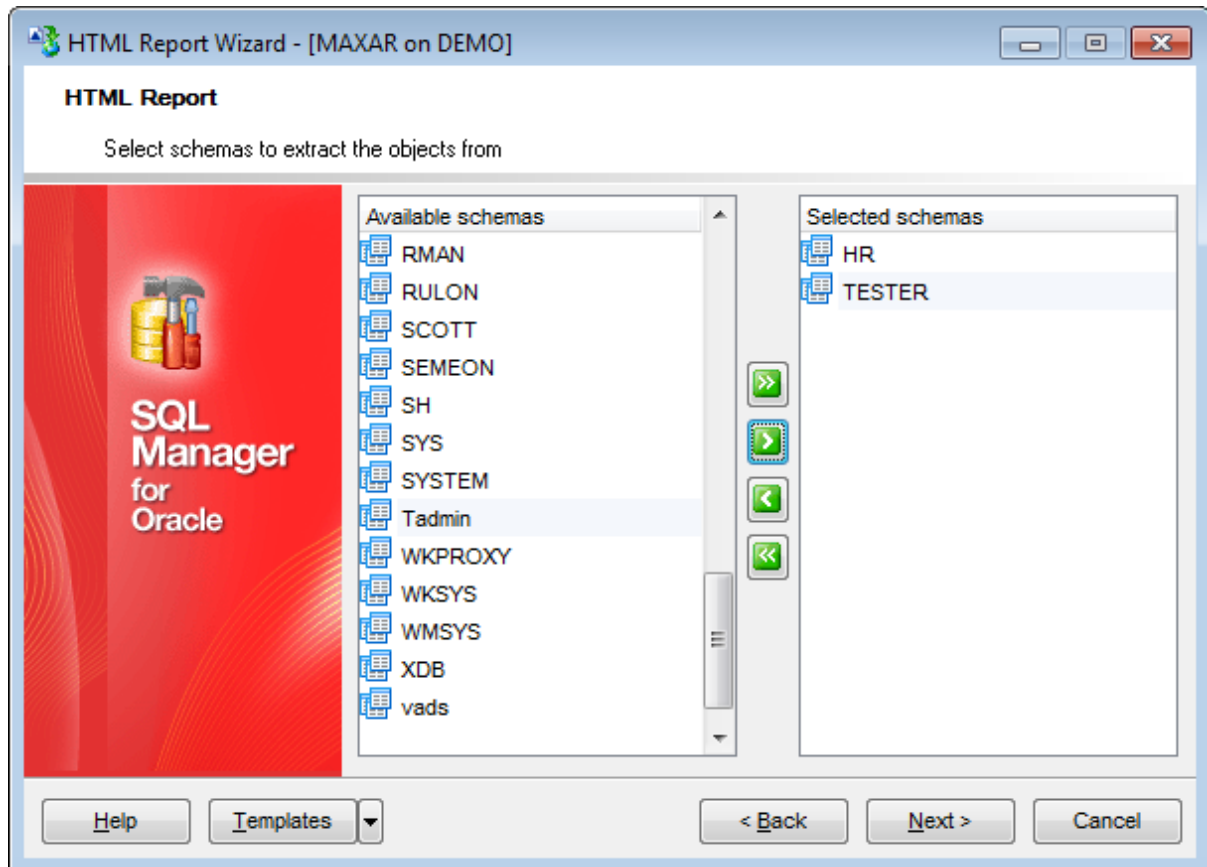


Click the **Next** button to proceed to the [Selecting schemas](#) step of the wizard.

9.8.3 Selecting schemas

Use this step of the wizard to select *the schemas* containing objects of the types selected at the [previous step](#).

To select a schema, you need to move it from the **Available schemas** list to the **Selected schemas** list. Use the     buttons or drag-and-drop operations to move the schemas from one list to another.



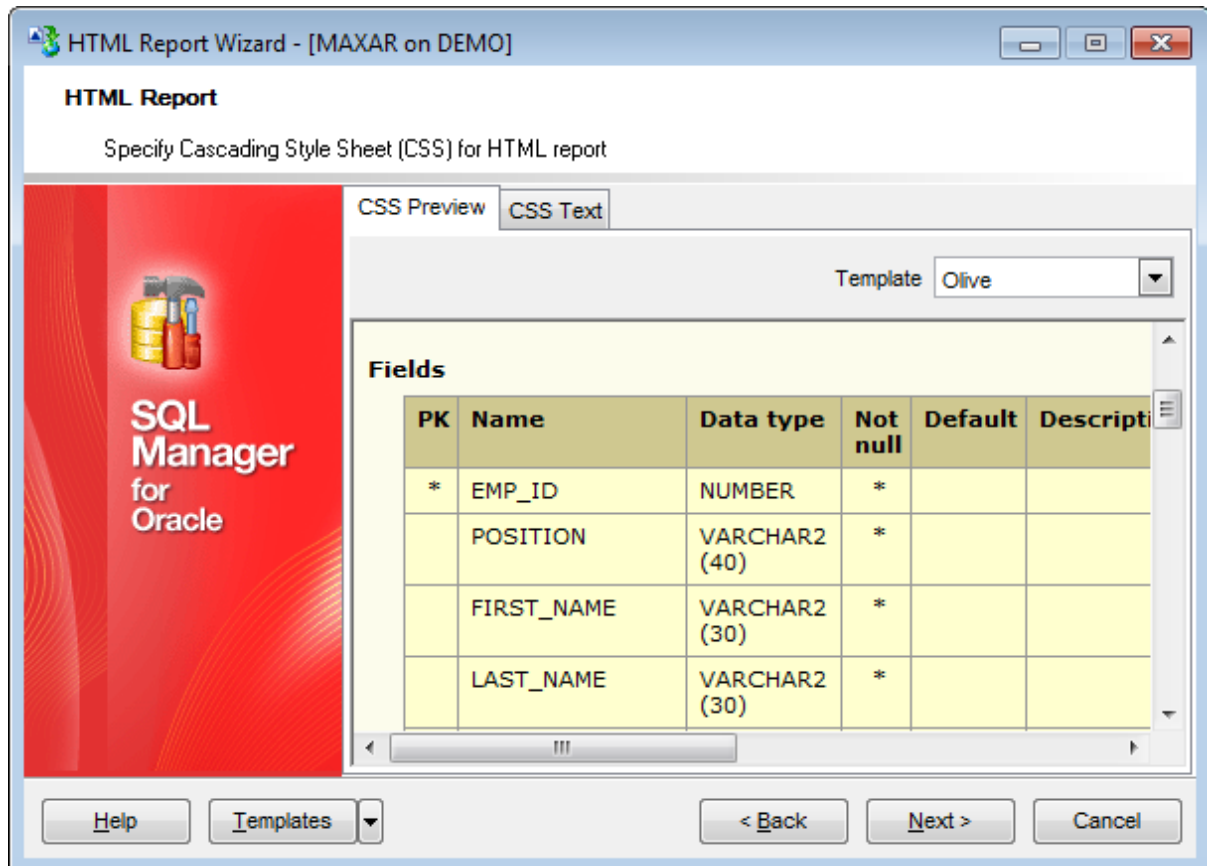
Click the **Next** button to proceed to the [Specifying CSS](#) step of the wizard.

9.8.4 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.

At the *CSS Preview* tab choose the style that will be applied to the target HTML file. You can select any of the pre-defined templates from the *Template* drop down list.

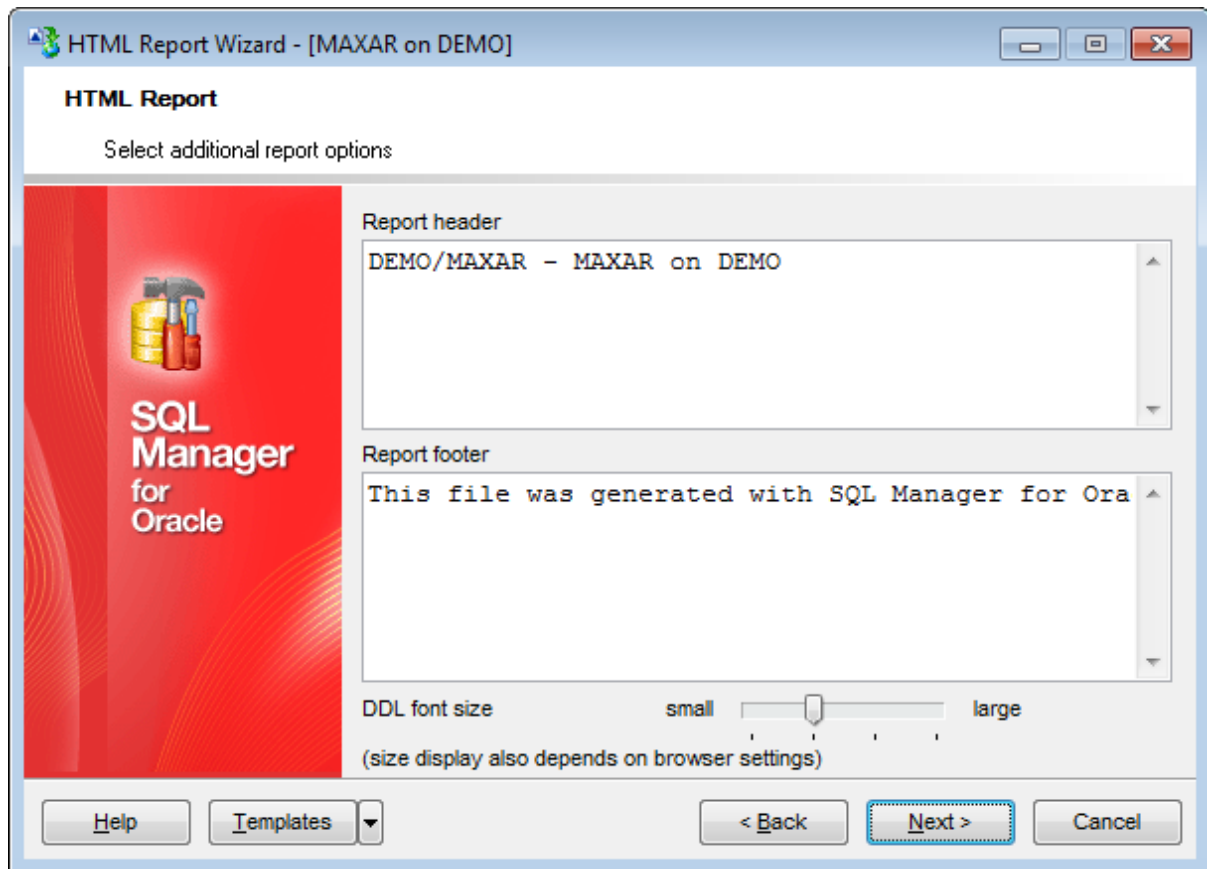
Also you can edit the CSS (Cascading Style Sheet) file manually at the *CSS Text* tab.



Click the **Next** button to proceed to the [Setting additional report options](#) step of the wizard.

9.8.5 Setting additional report options

Use this step of the wizard to set additional HTML report options.



If necessary, you can set optional text to **Report header** and **Report footer** of the result HTML report. For your convenience the default header and footer text is already available. If necessary, you can edit this text according to your needs.

DDL font size

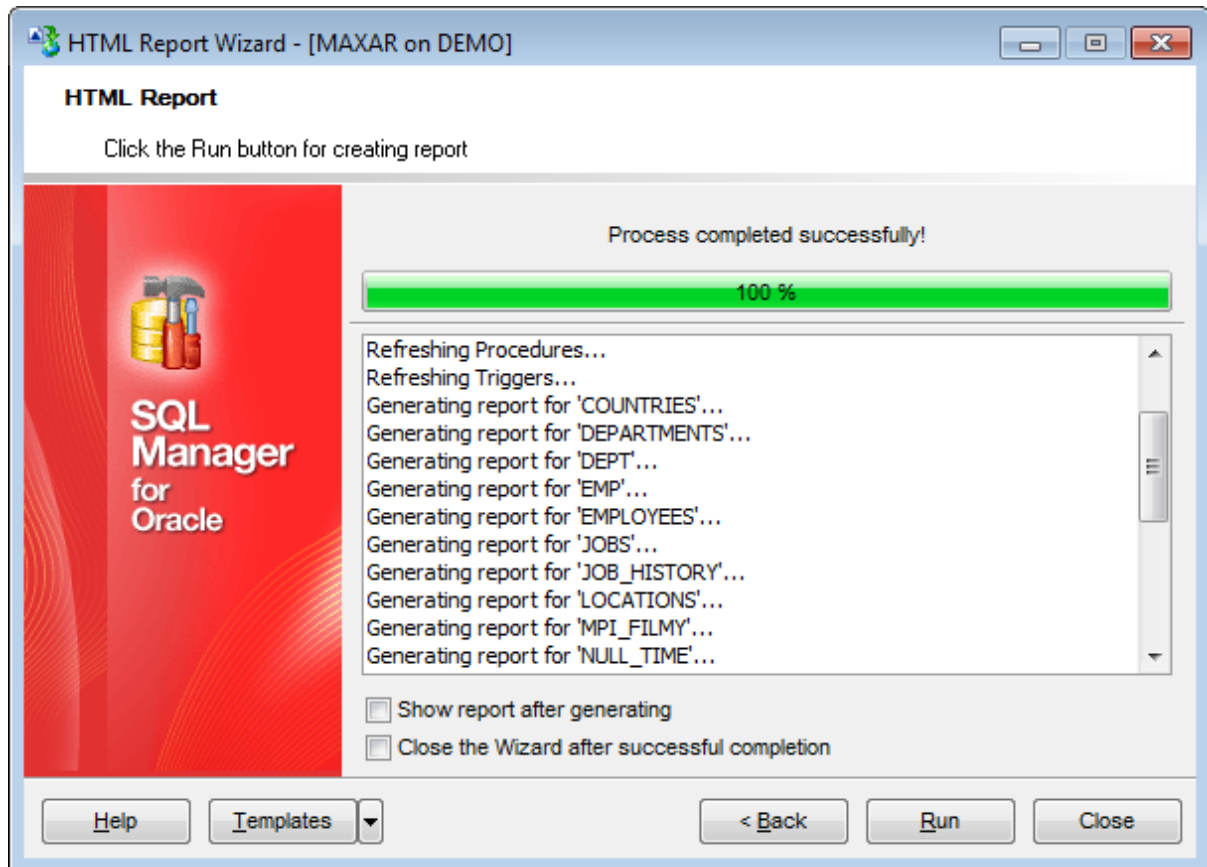
This control allows you to set the font size for the DDL section. Move the slider between the **small** and **large** threshold values to select the required font size value within this scope. Note that the text size also depends on your browser settings.

Click the **Next** button to proceed to [Creating HTML report](#).

9.8.6 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 log area 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.

9.9 Reports management

SQL Manager for Oracle 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 Editor](#)

Allows you to manage created reports.

[Report Viewer](#)

Allows you to preview reports before printing and export them to other formats.

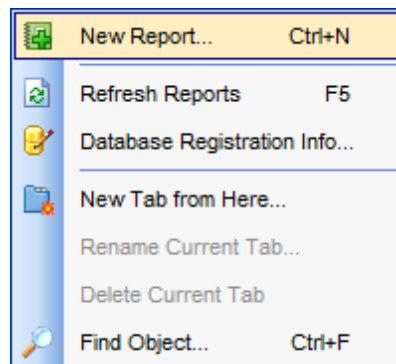
Reports can be stored either in the database (table *ORAMREPORTS* will be created to store them) or in a directory on your hard drive specified on the [Directories](#) page of the [Database Registration Info](#) dialog.

9.9.1 Create Report Wizard

Using **Create Report Wizard** you can create a report containing required datasets, bands and fields 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](#)

9.9.1.1 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*.

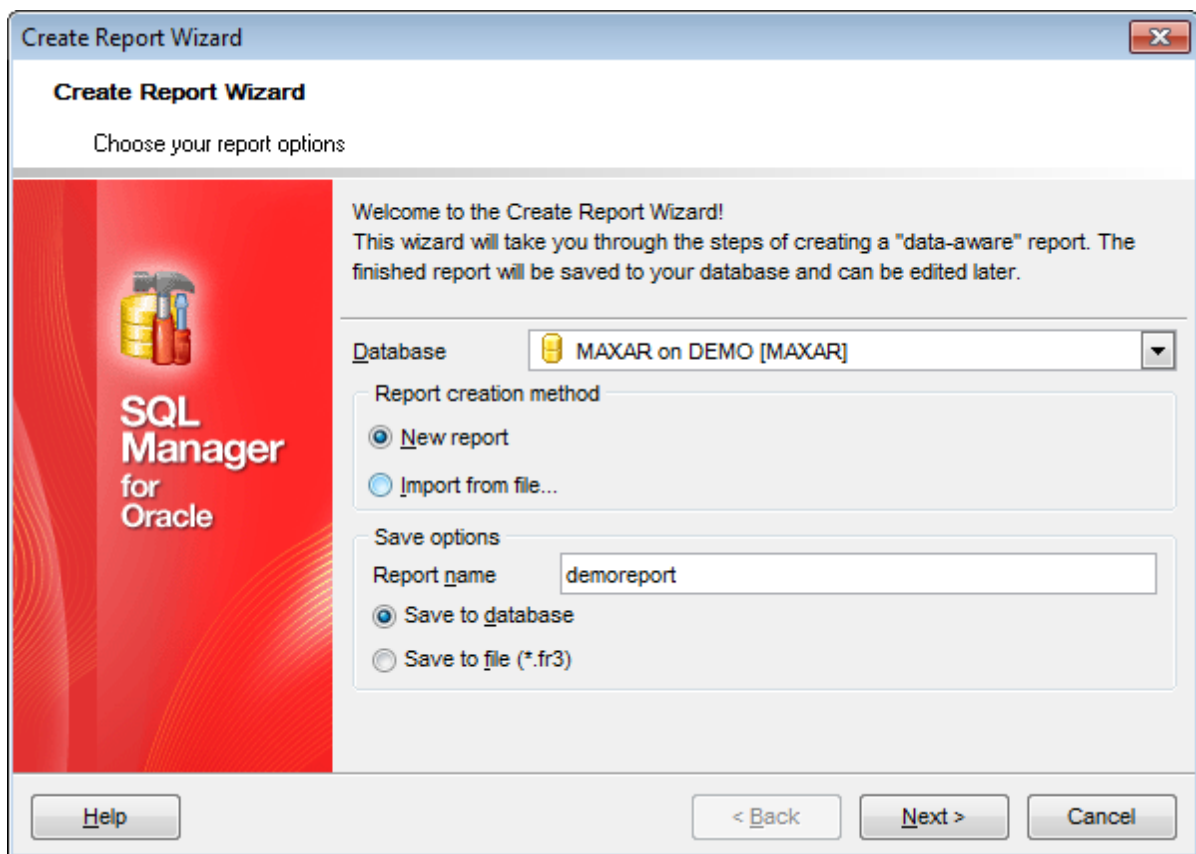
Set the **name** for the new report and specify the save options for it:

☒ **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.

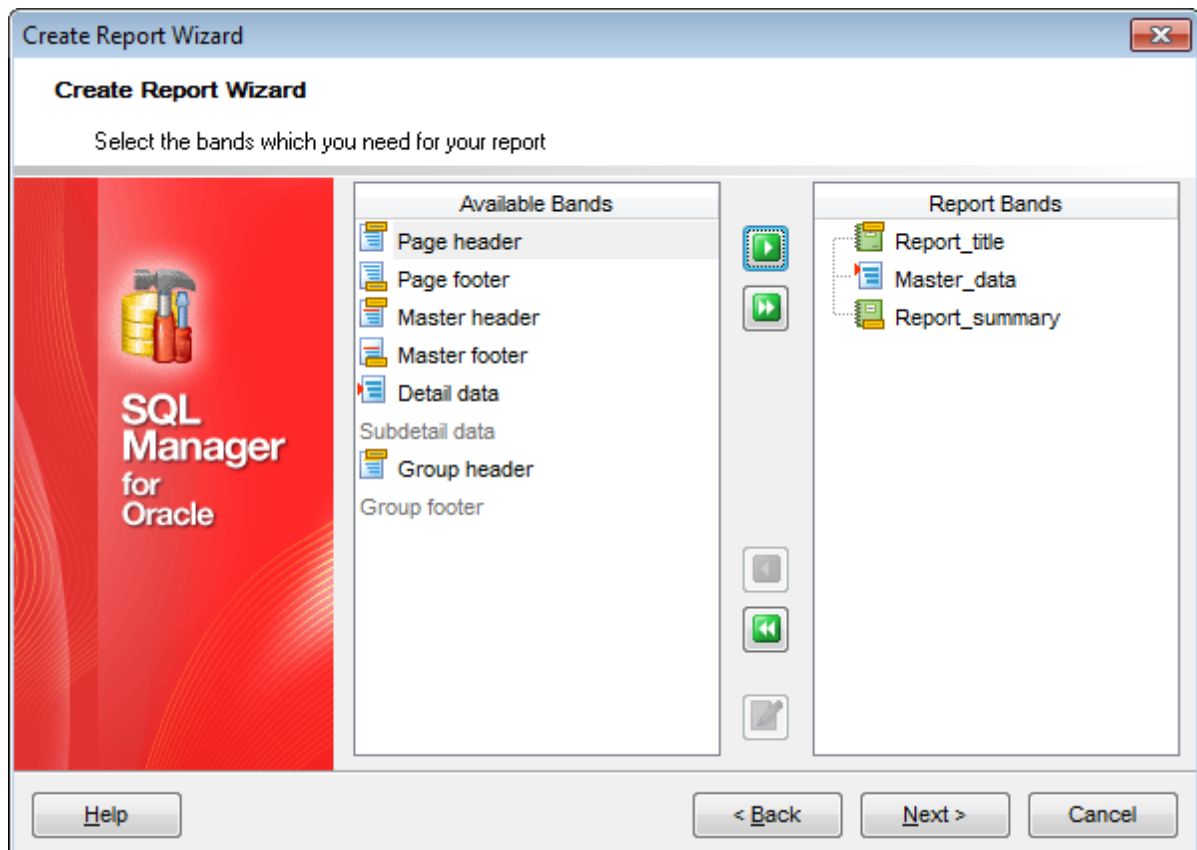


Click the **Next** button to proceed to the [Selecting report bands](#) step of the wizard.

9.9.1.2 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 fields from one list to another.

Use the **Edit**  button to create datasets for 'data' bands using [Design Query](#).



Brief information about bands functionality is listed below. See **FastReport Help** for more information.

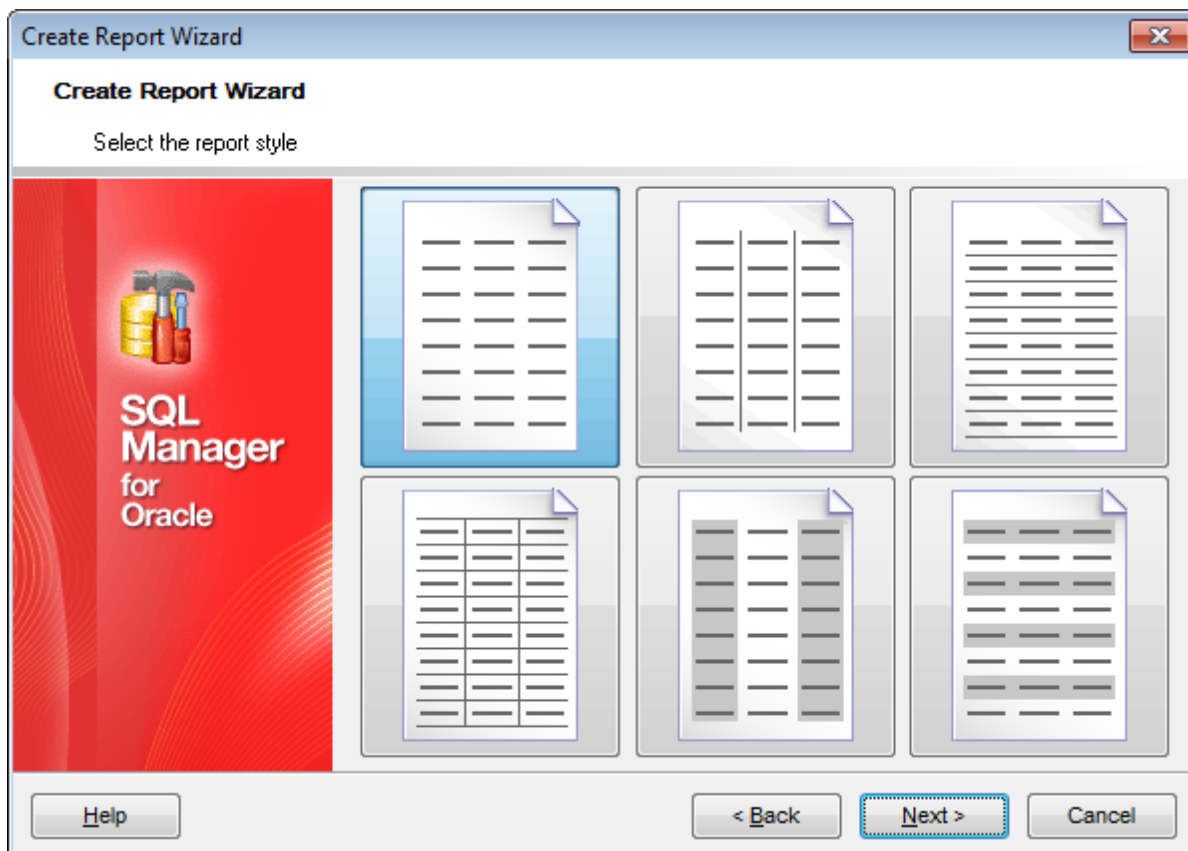
Name	Functionality
Report title	<i>Prints once at the beginning of report</i>
Report summary	<i>Prints once at the end of report</i>
Page header	<i>Prints at the top of each page</i>
Page footer	<i>Prints at the bottom of each page</i>
Master header	<i>Prints at the beginning of master list</i>
Master data	<i>Data rows of master list</i>
Master footer	<i>Prints at the end of master list</i>
Detail header	<i>Prints at the beginning of detail list</i>
Detail data	<i>Data rows of detail list</i>
Detail footer	<i>Prints at the end of detail list</i>

Subdetail header	<i>Prints at the beginning of subdetail list</i>
Subdetail data	<i>Data rows of subdetail list</i>
Subdetail footer	<i>Prints at the end of subdetail list</i>
Group header	<i>Prints at the beginning of each group</i>
Group footer	<i>Prints at the end of each group</i>

Click the **Next** button to proceed to the [Selecting report style](#) step of the wizard.

9.9.1.3 Selecting report style

Select the report style by clicking one of the images illustrating the styles available for the report.

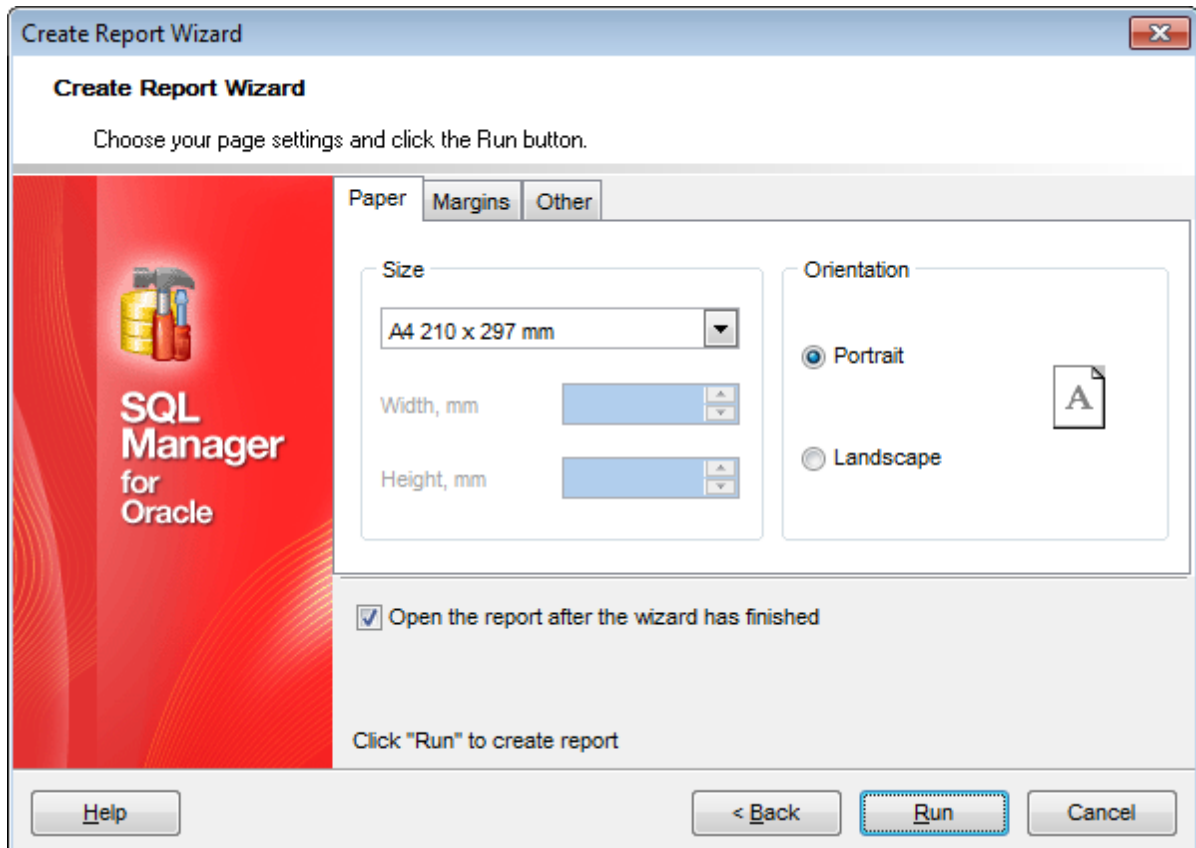


Click the **Next** button to proceed to the [Specifying paper settings](#) step of the wizard.

9.9.1.4 Specifying page settings

9.9.1.4.1 Specifying paper settings

Specify report options: paper size and *orientation*, [page margins](#), [other settings](#). For details see [Page settings](#).



Use the **Margins** tab to [specify margins](#) for the result report.

☒ **Open the report after the wizard has finished**

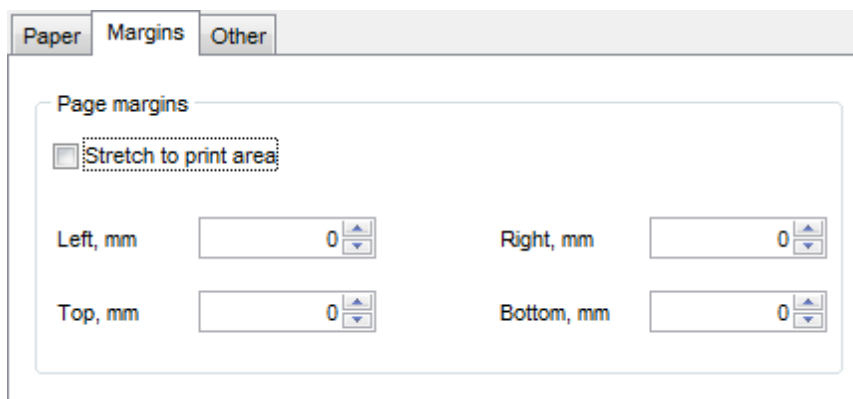
If this option is checked, the report will be opened in [Report Designer](#) after generating.

When you are done, click the **Run** button to start the report generation process.

9.9.1.4.2 Specifying margins

Page 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).



The screenshot shows a dialog box with three tabs: 'Paper', 'Margins', and 'Other'. The 'Margins' tab is selected. Inside the 'Margins' tab, there is a section titled 'Page margins'. At the top of this section is a checkbox labeled 'Stretch to print area', which is checked. Below this checkbox are four input fields for specifying margins in millimeters: 'Left, mm' (0), 'Right, mm' (0), 'Top, mm' (0), and 'Bottom, mm' (0). Each input field has a small up/down arrow button next to it.

Use the **Other** tab to [specify other page settings](#) for the result report.

When you are done, click the **Run** button to start the report generation process.

9.9.1.4.3 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.

The screenshot shows a dialog box with three tabs: 'Paper', 'Margins', and 'Other'. The 'Other' tab is selected. Inside the 'Other' tab, there are two main sections: 'Options' and 'Columns'. The 'Options' section contains three checkboxes: 'Print to previous page' (which is checked), 'Two-pass report' (unchecked), and 'Page numbering' (unchecked). The 'Columns' section contains two numeric spinners: 'Number' (set to 0) and 'Gap, mm' (set to 0).

When you are done, click the **Run** button to start the report generation process.

9.9.2 Report Designer

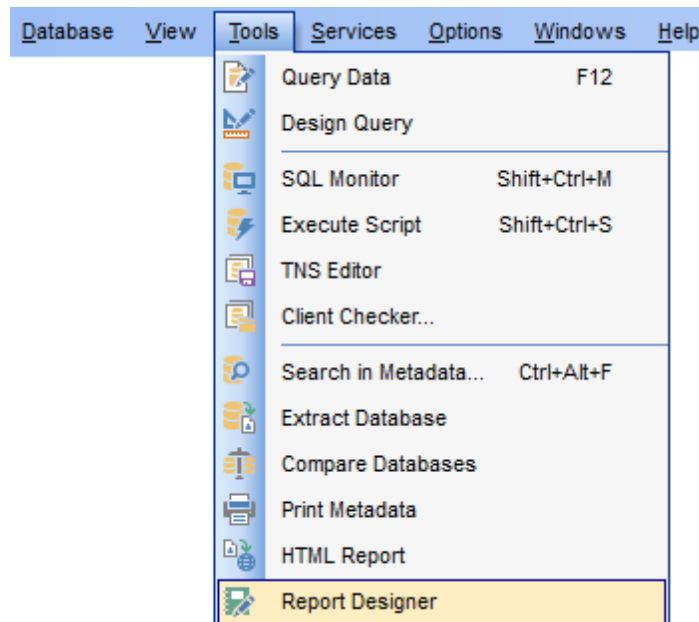
Report Designer allows you to create and edit reports. This tool can be opened after completion of [Create Report Wizard](#) to design a new report.

To edit an already existing project, use the appropriate [Navigation bar](#) item of [Report Editor](#).

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](#)
- [Report Preview](#)
- [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](#)

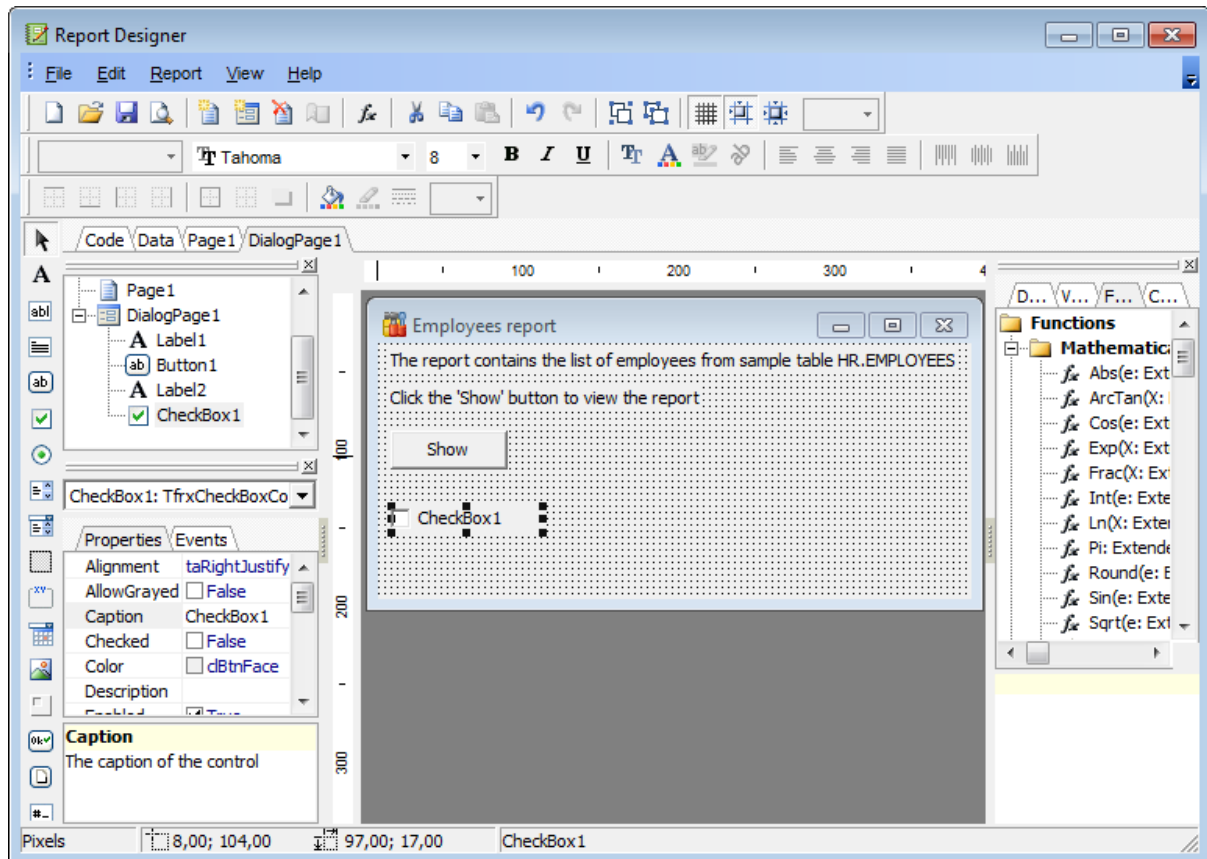
[Report Editor](#)

[Report Viewer](#)

9.9.2.1 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 [OraQuery](#):

```
{
OraQuery1.Active = true;
}
```

See also:

[Adding database and query components](#)

[Adding report data](#)

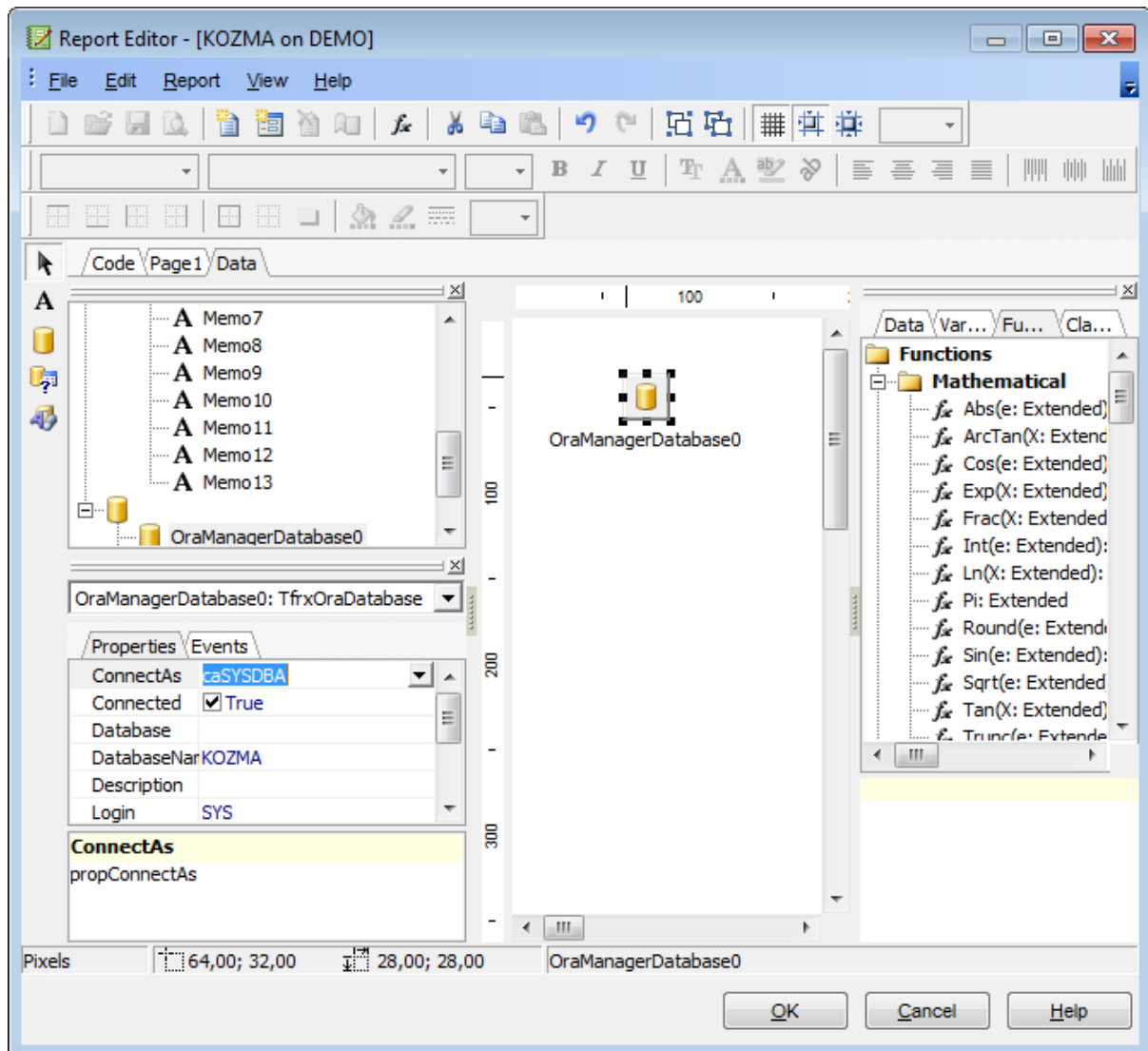
[Saving the report](#)

9.9.2.2 Adding database and query components

Adding database component

In order to add the *Database* component:

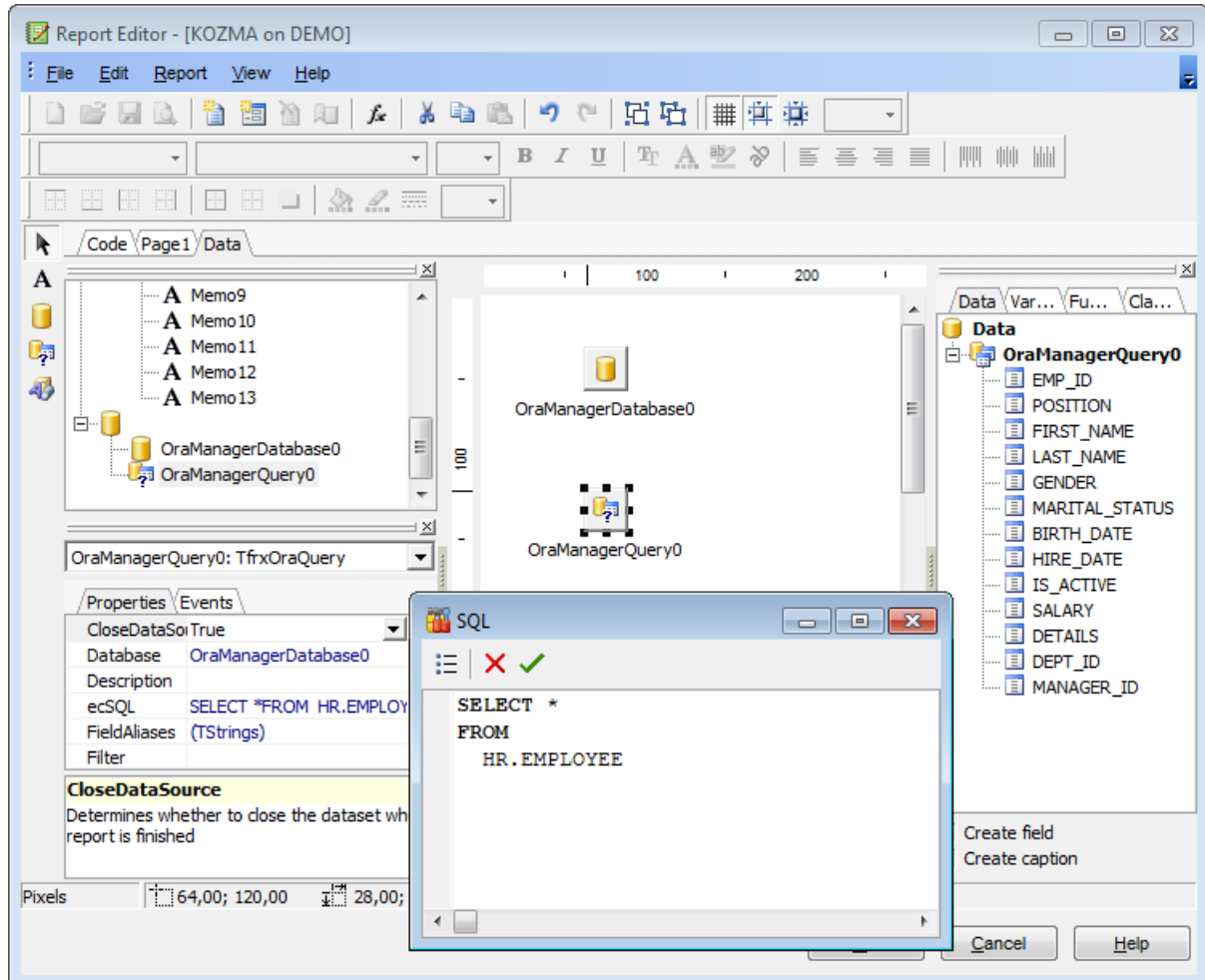
- proceed to the **Data** tab of **Report Designer**;
- pick the  **Oracle Database** component on the toolbar (on the left);
- click within the working area - the corresponding *OraDatabase1* icon appears in the area;
- set the database connection and authorization parameters using the **Properties Inspector**.



Adding query component

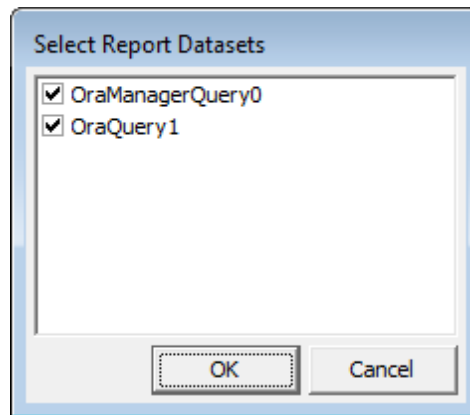
- proceed to the **Data** tab of **Report Designer**;
- pick the  **Oracle Query** component on the toolbar (on the left);
- click within the working area - the corresponding *OraQuery1* icon appears in the area;
- set the database name and authorization parameters within the **Properties Inspector**

- double-click the *OraQuery1* 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**.

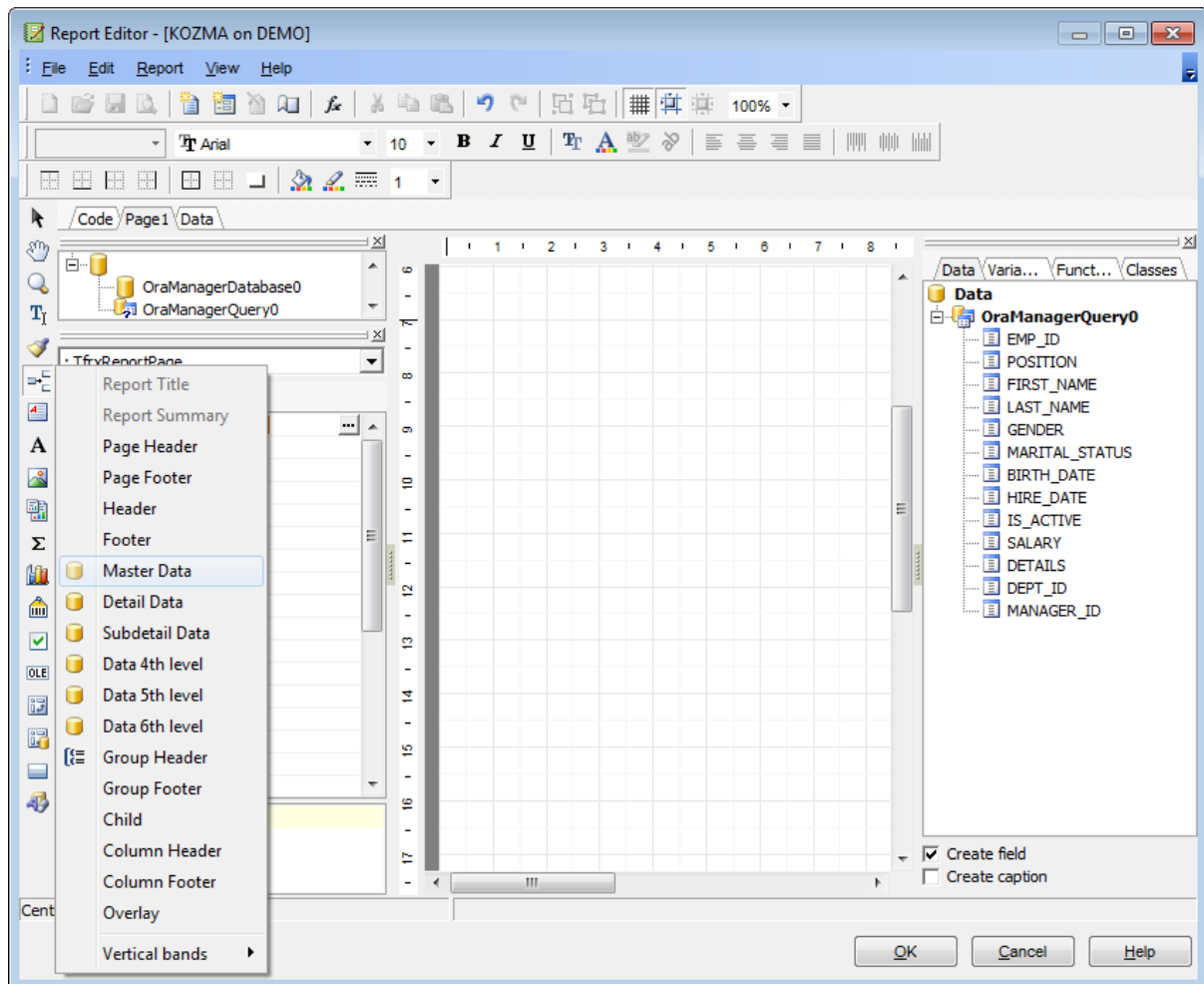


See also:[Adding dialog form](#)[Adding report data](#)[Saving the report](#)

9.9.2.3 Adding report data

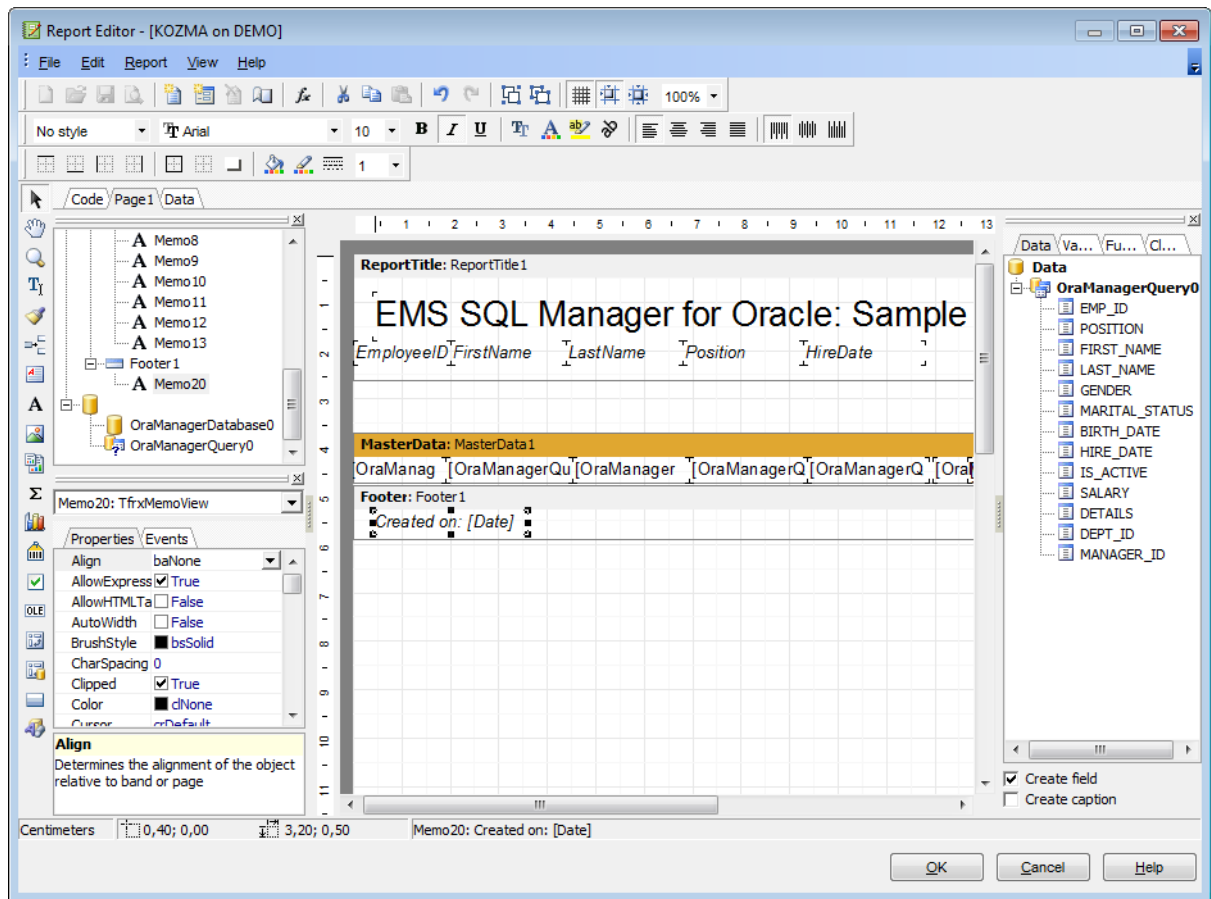
Adding bands

- 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

- proceed to the **Data** tab within the panel on the right side of the window;
- pick a field 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](#)

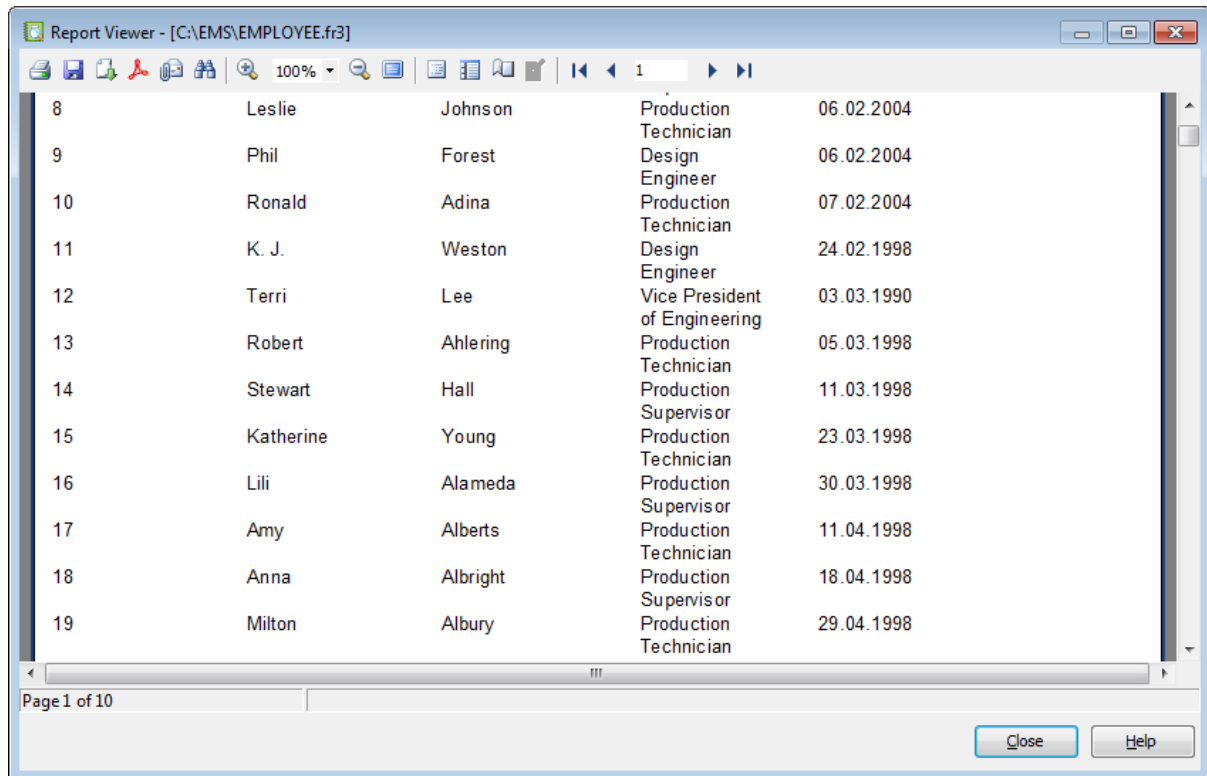
[Saving the report](#)

9.9.2.4 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](#)

9.9.2.5 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 Editor](#).

See also:

[Adding dialog form](#)

[Adding database and query components](#)

[Adding report data](#)

9.9.3 Report Editor

Report Editor allows you to view, edit, save and print reports.

To open a report in **Report Editor**, double-click it in the [DB Explorer](#) tree, or right-click it and select the **Edit Report <report_name>...** item from the [context menu](#).

- [Using Navigation bar and Toolbar](#)
- [Viewing Report](#)

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:

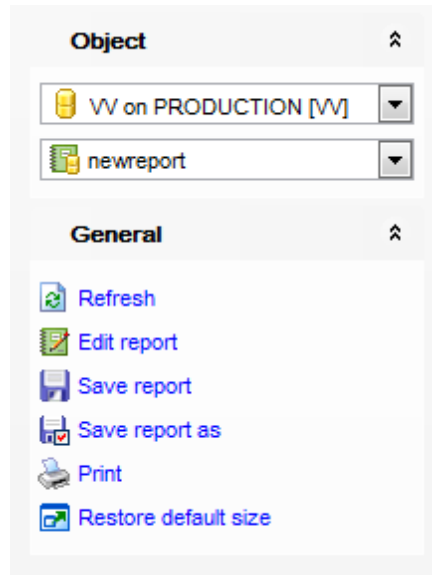
[Create Report Wizard](#)

[Report Designer](#)

[Report Viewer](#)

9.9.3.1 Using Navigation bar and Toolbar

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



Object

-  select a database
-  select a report

General

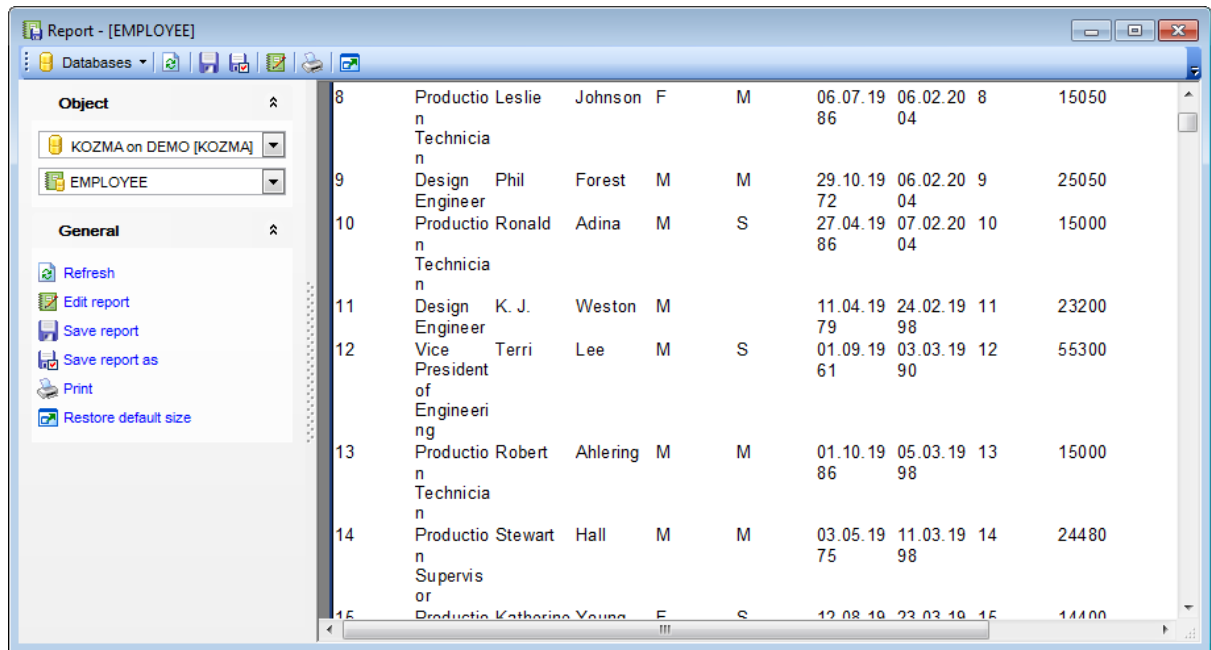
-  refresh the content of the window
-  edit report using [Report Designer](#)
-  save the current report
-  save the report to a *.fr3 file using the **Save as...** dialog
-  print the report
-  restore the default size and position of the viewer window

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

9.9.3.2 Viewing Report

The main window of **Report Editor** allows you to view the specified report.

Possible report operations are available through the [Navigation bar](#) and [toolbar](#) of the editor window.



9.9.4 Report Viewer

Report Viewer allows you to preview reports generated in SQL Manager before printing and export them to other formats.

This module is provided by Fast Reports, Inc. (<http://www.fast-report.com>) and has its own help system. For more information refer to the *Fast Report User Manual* (*FRUserManual.chm*) distributed with the program.

The tool opens automatically when a  **Preview** item is used in [Print Metadata](#) or [Report Designer](#).

- [Using Toolbar and context menu](#)
- [Working with Report Viewer](#)
- [Page settings](#)
- [Sending Report by E-mail](#)

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](#)

[Report Editor](#)

9.9.4.1 Using Toolbar and context menu

The **Toolbar** and **context menu** provide quick access to tools implemented in **Report Viewer**.



The **Toolbar** of **Report Viewer** allows you to:

- print the report
- save the current report to an external *.fp3 file
- call a menu allowing you to [export](#) the preview content to any of the available formats: *PDF file, HTML file, RTF file, Excel table (OLE), Excel table (XML), BMP image, JPEG image, TIFF image, GIF image, E-mail, CSV file, Text file, Open Document Spreadsheet, Open Document Text, Text (matrix printer)*
- specify Export to PDF options
- specify [Send by E-mail](#) options
- search for text within the report content
- zoom in
- zoom out
- enable/disable full screen view
- enable/disable report outline
- enable/disable report thumbnails
- specify [page settings](#)
- navigate to the first page of the report
- navigate to the previous page of the report
- navigate to the next page of the report
- navigate to the last page of the report

Items of the **Toolbar** are also available in the **context menu** of the **Report Viewer** window. To open the menu, right-click in the working area of the viewer.

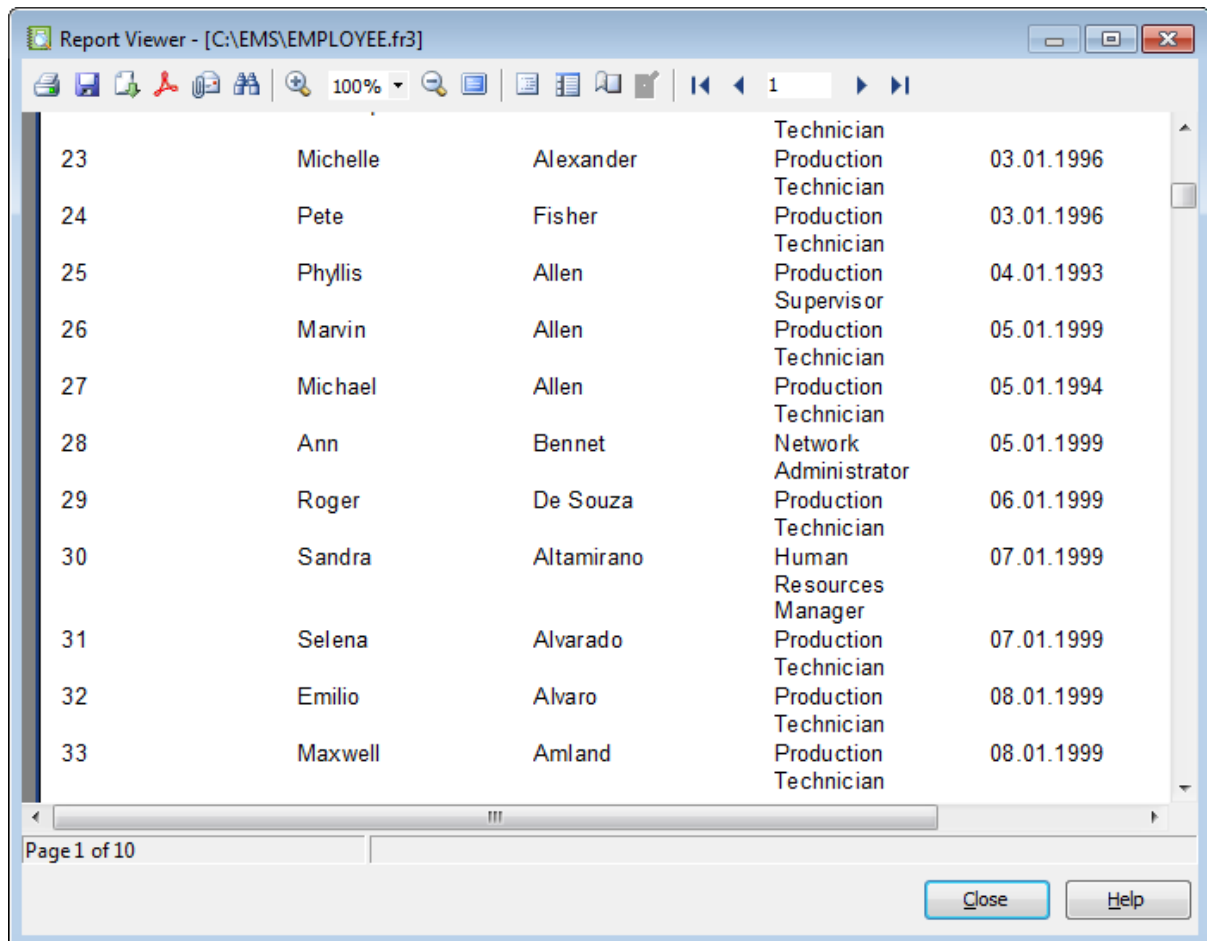
9.9.4.2 Working with Report Viewer

Report Viewer provides a quick preview of data and metadata reports generated in SQL Manager:

- [Viewing data report](#)
- [Viewing metadata report](#)

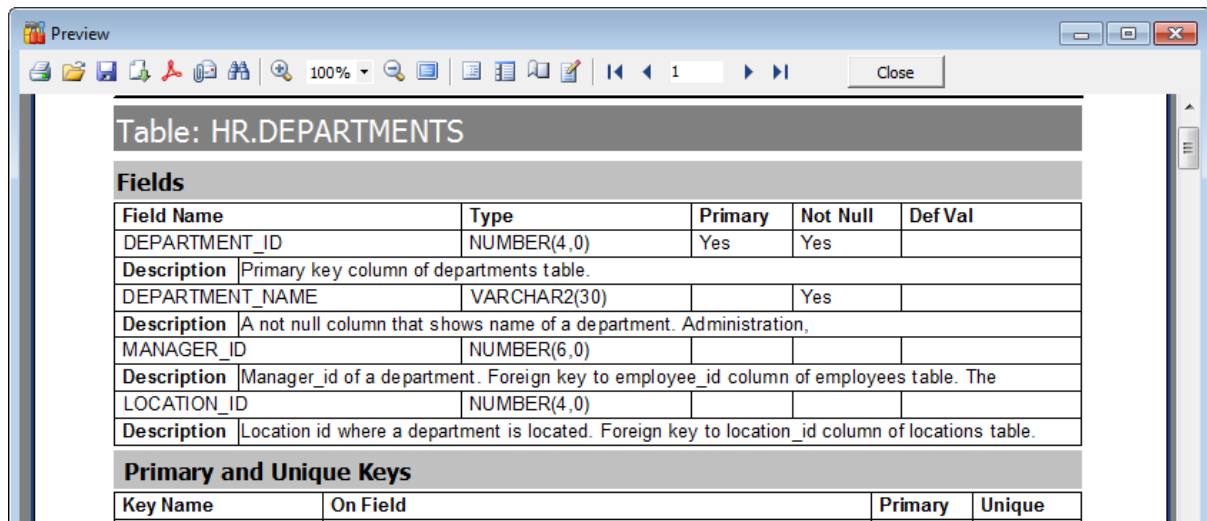
Data Report

The screenshot below illustrates viewing data reports generated with the [Report Designer](#) tool.



Metadata Report

The screenshot below illustrates viewing metadata reports generated with the [Print Metadata](#) tool.



The screenshot shows a 'Preview' window with a toolbar at the top. The main content area displays the table structure for 'Table: HR.DEPARTMENTS'. It includes a 'Fields' section with a table of columns and their properties, and a 'Primary and Unique Keys' section with an empty table.

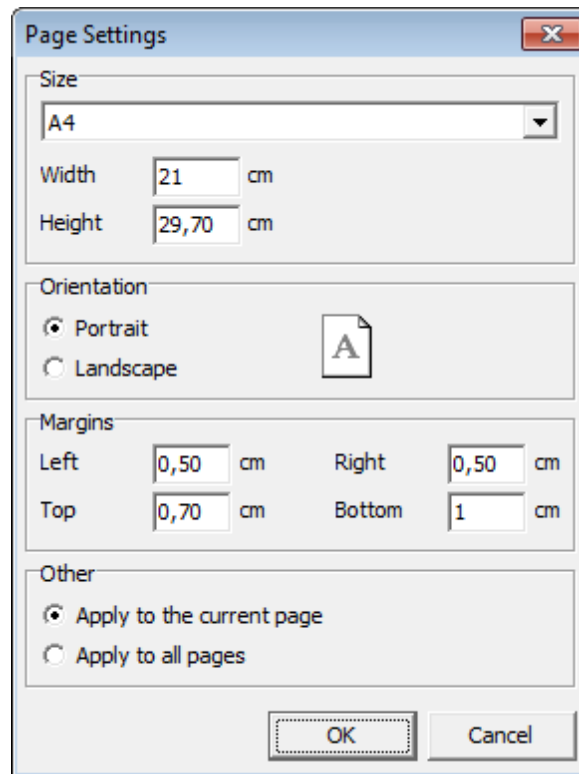
Field Name	Type	Primary	Not Null	Def Val
DEPARTMENT_ID	NUMBER(4,0)	Yes	Yes	
Description Primary key column of departments table.				
DEPARTMENT_NAME	VARCHAR2(30)		Yes	
Description A not null column that shows name of a department. Administration.				
MANAGER_ID	NUMBER(6,0)			
Description Manager_id of a department. Foreign key to employee_id column of employees table. The				
LOCATION_ID	NUMBER(4,0)			
Description Location id where a department is located. Foreign key to location_id column of locations table.				

Primary and Unique Keys			
Key Name	On Field	Primary	Unique

Note: Report Viewer tools are available through the [toolbar](#) and [context menu](#) of the preview area.

9.9.4.3 Page settings

The **Page Settings** dialog allows you to configure page *size*, *orientation*, *margins*, and *other* settings.



Size

Select one of the standard paper types from the drop-down list, or specify custom *width* and *height* using the corresponding controls below (in centimeters).

Orientation

Select the preferable page orientation (your selection is illustrated in the chart on the right):

- ☒ *Portrait*
- ☐ *Landscape*

Margins

Use this group to specify the *left*, *right*, *top* and *bottom* margins (in centimeters).

Other

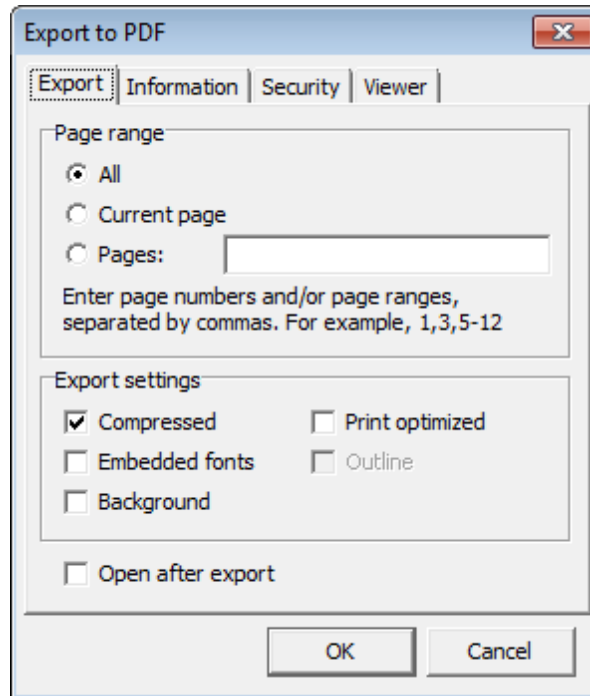
Select the scope the settings are to be applied to:

- ☒ *Apply to the current page*
- ☐ *Apply to all pages*

For more information refer to the **Fast Report User Manual** distributed with the program.

9.9.4.4 Exporting report content

The **Export** dialog allows you to configure *page range* and a number of *output format settings*.



Page range

This group allows you to specify which report pages are to be exported:

- ☒ *All*
- ☐ *Current page*
- ☐ *Specified pages* (you should input page number(s) and/or page range(s) in the edit box)

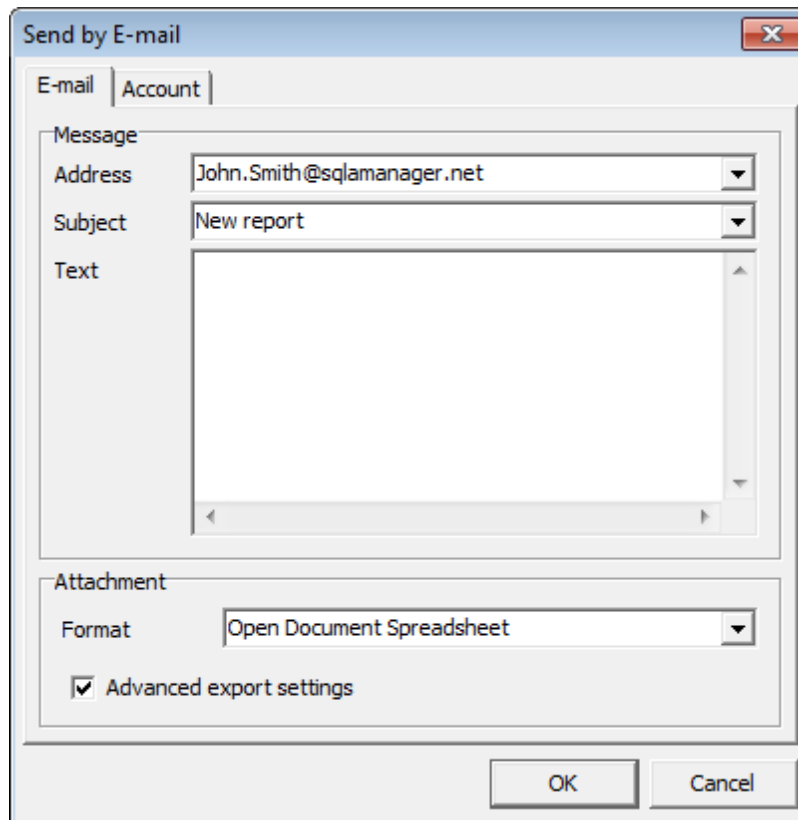
Format-specific settings

These settings vary according to the specified output format: *PDF file, HTML file, RTF file, Excel table (OLE), Excel table (XML), BMP image, JPEG image, TIFF image, GIF image, E-mail, CSV file, Text file, Open Document Spreadsheet, Open Document Text, Text (matrix printer)*.

For more information refer to the *Fast Report User Manual* distributed with the program.

9.9.4.5 Sending by E-mail

The **Send by E-mail** dialog allows you to send a report by e-mail in any supported format.

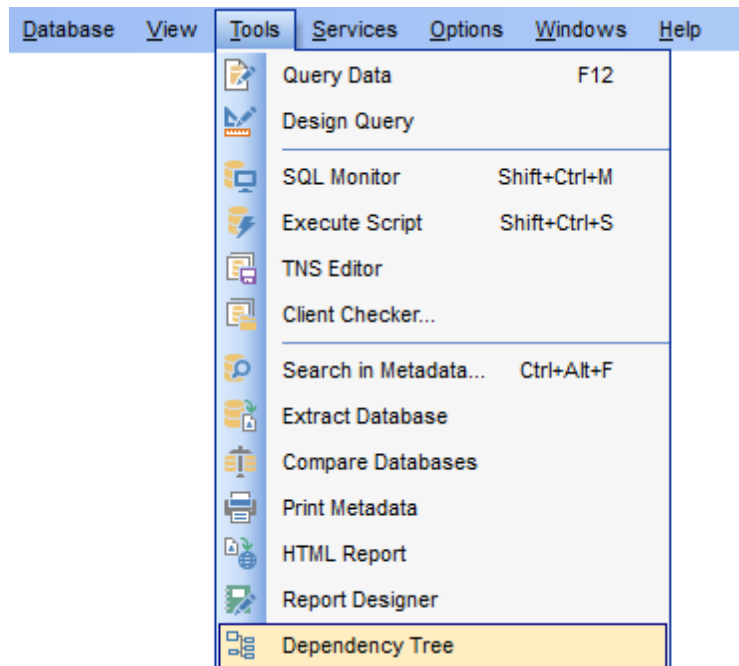


For more information refer to the **Fast Report User Manual** distributed with the program.

9.10 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**

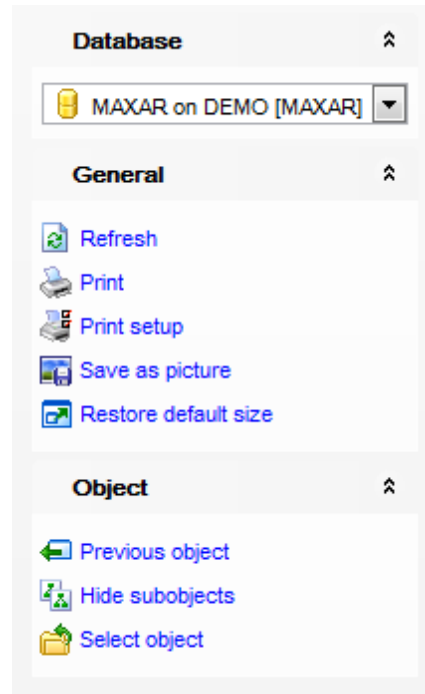
Note: To compare all features of the **Full** and the **Lite** versions of SQL Manager, refer to the [Feature Matrix](#) page.

See also:

[Database Objects Management](#)

9.10.1 Using Navigation bar and Toolbar

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



Database

 select a database for browsing object dependencies

General

-  refresh the currently displayed dependency tree
-  print the diagram
-  set printing options using the **Print Setup** dialog
-  save the current diagram as a picture
-  restore the default size and position of the window

Object

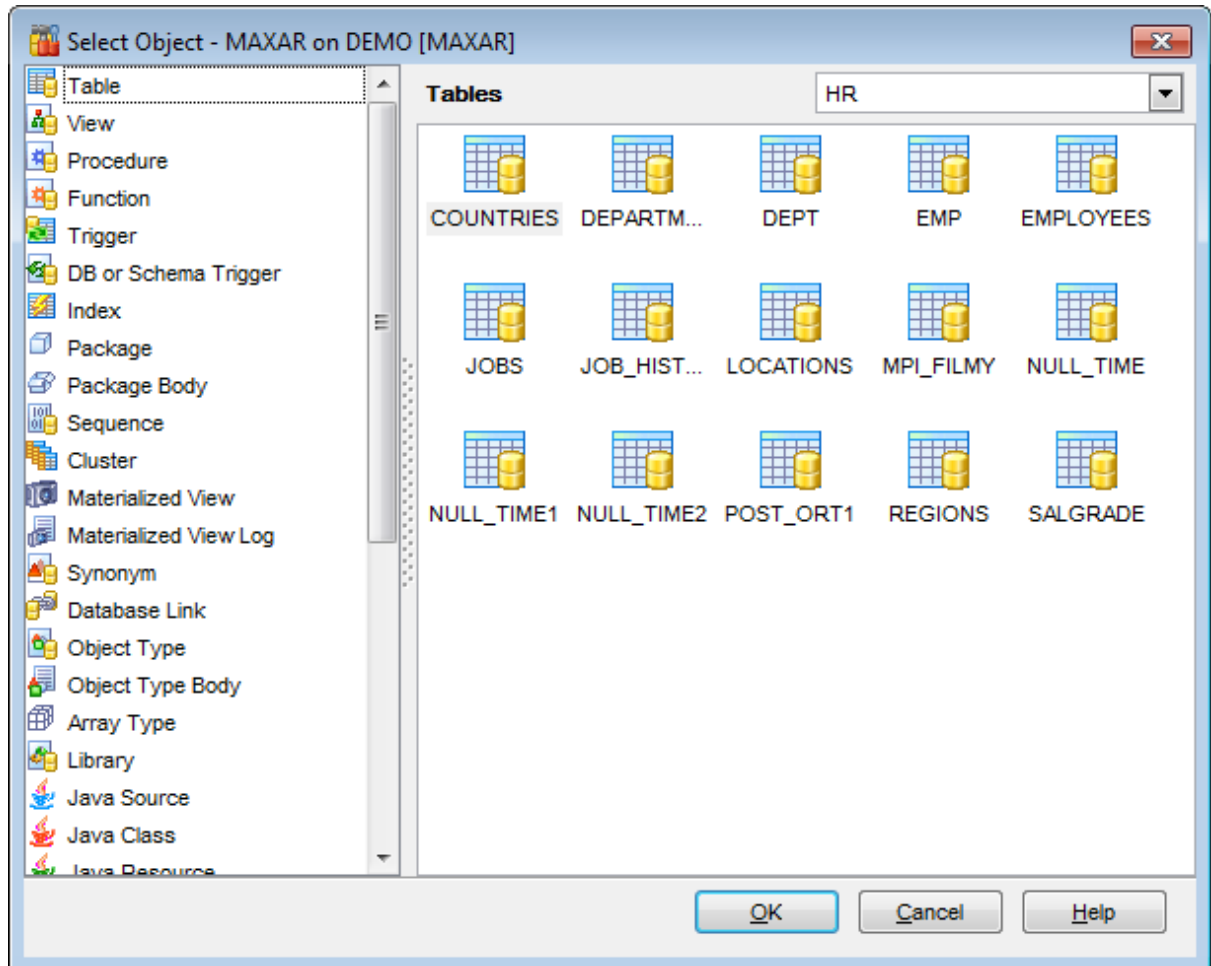
-  navigate by switching to the previous object
-  navigate by switching to the next object
-  show/hide subobjects
-  [select](#) a root object

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

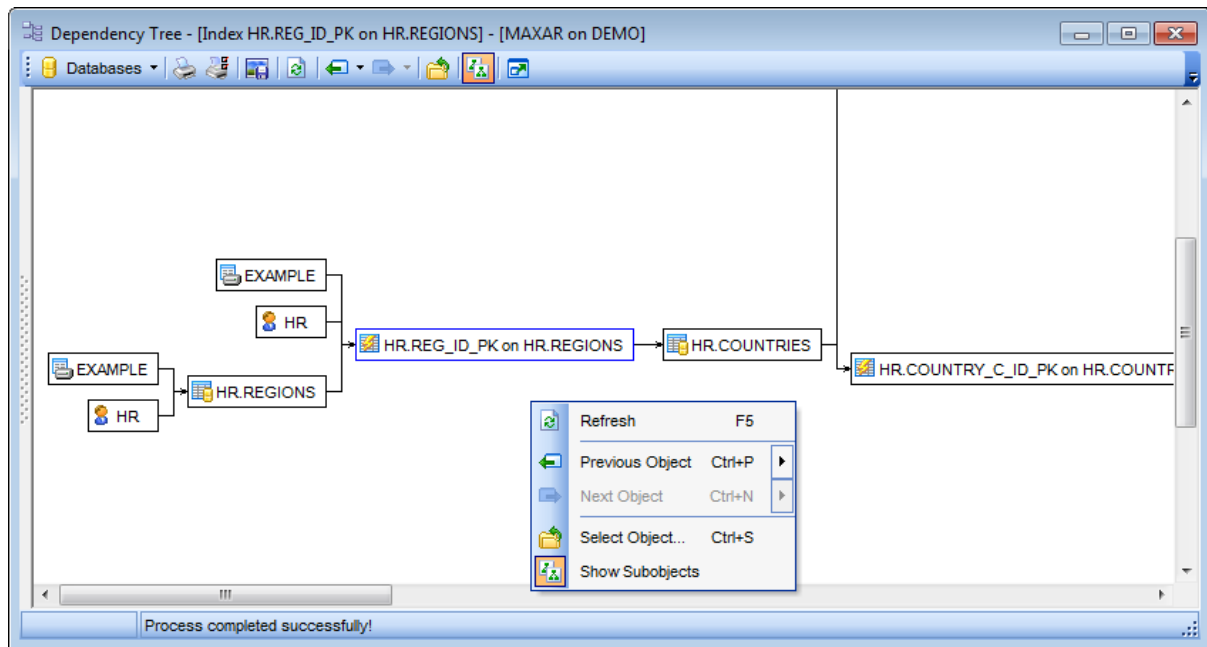
Hint: Items of the **Object** pane of the **Navigation bar** are also available in the *context menu* of the **Dependency Tree** area.

9.10.2 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).

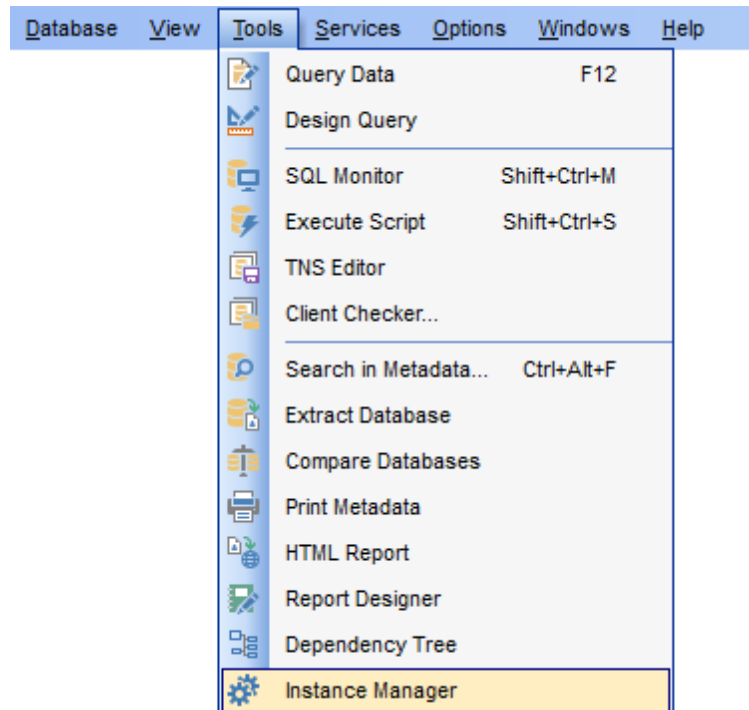
You can switch between objects by selecting them in the diagram. The selected object becomes the root object. To make an object root, you can also right-click it in the diagram area and select **Set as Root** from the **context menu**. The context menu of an object also allows you to *edit* it using 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](#).

9.11 Instance Manager

This tool allows you to check PostgreSQL service status, to stop or start it and set settings. To launch this tool use the **Services |  Instance Manager** item of main menu.



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.

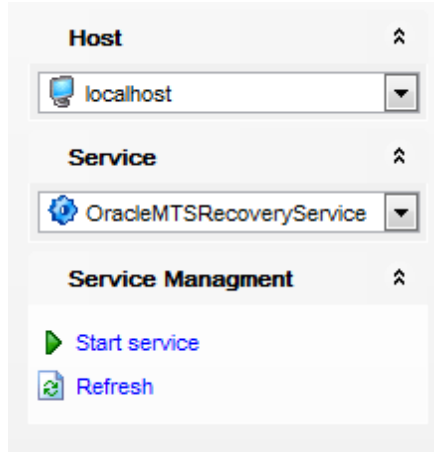
See also:

[Database Information](#)

[TNS Editor](#)

9.11.1 Using Navigation and Toolbar Bar

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



Service Management

▶ **Start service**

■ **Stop service**

🔄 **Refresh** - get actual statistics

🖥️ restore the default size and position of the window

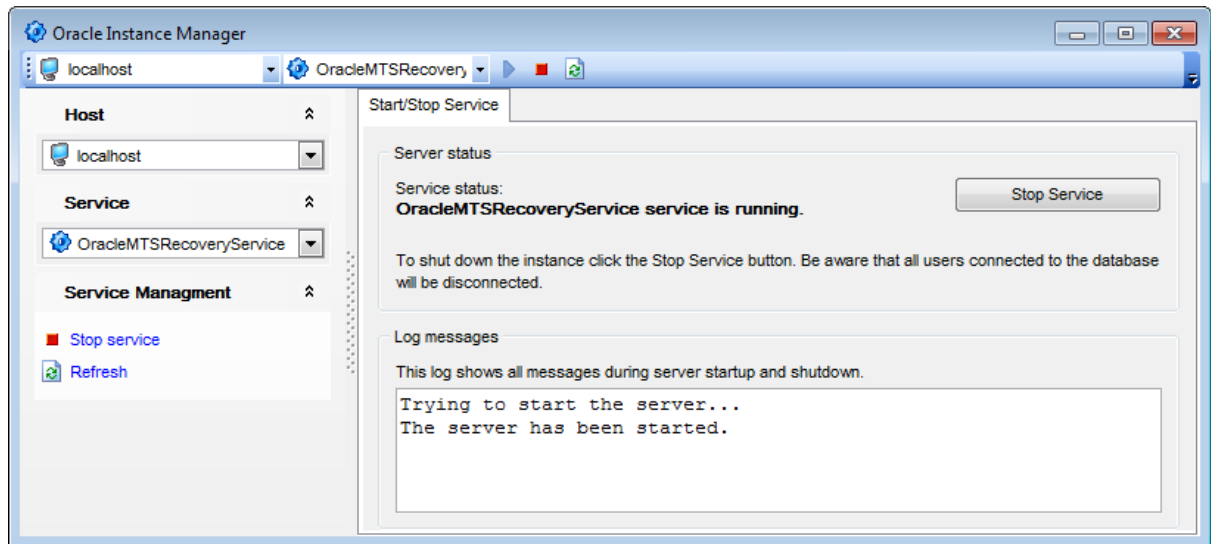
✓ **Apply changes** to the service settings

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

9.11.2 Service Status

You can manage server instance by [using navigation bar](#).

To shut down/startup the instance click the **Stop/Start Service** button. Be aware that all users connected to the databases will be disconnected.



Log messages

This log shows all messages during server startup and shutdown.

9.11.3 Configuring Service

Here you can change selected service settings.

☒ **Launch service on system start**

Check this option to enable auto-start of the Oracle service.

Start/Stop Service | Configure Service

Service settings

☒ Launch service on system start

Display name: OracleOraDB18Home1MTSRecoveryService Name displayed in the Computer Manager Console

Service description: office Description of the service

Service parameters: D:\Shared\Oracle18\bin\omtsreco.exe OracleOraDB18Home1MTSRecoveryService

Display name

Set the name to display in the Computer Manager console.

Service description

Input custom description for the service.

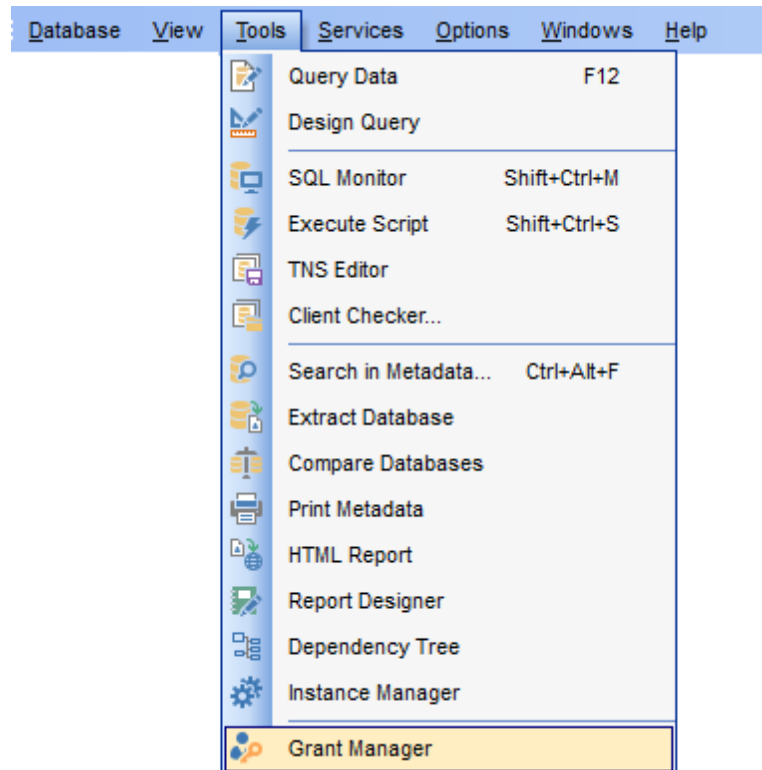
Service parameters

Set service parameters for the selected service.

9.12 Grant Manager

Grant Manager allows you to set the certain user access grants for database objects.

To open **Grant Manager**, select the **Tools |  Grant Manager** main menu item, or use the ** Grant Manager** button on the main [toolbar](#).



- [Using Navigation bar, Toolbar and context menu](#)
- [Managing database-specific privileges](#)
- [Managing column permissions](#)
- [Filtering objects in list](#)
- [Managing system privileges](#)
- [Managing roles](#)

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.

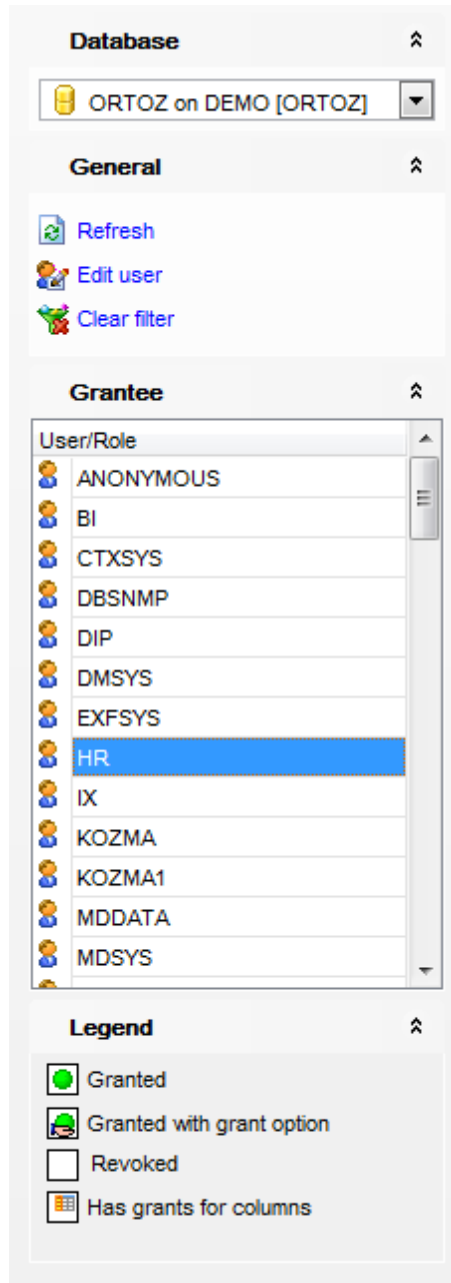
See also:

[Users](#)

[Roles](#)

9.12.1 Using Navigation bar, Toolbar and context menu

The **Navigation bar**, **Toolbar** and **context menu** provide quick access to tools implemented in **Grant Manager**.



Database

select a database for grants management

General

refresh the content of the window

-  call [User Editor](#) to [edit](#) a database user
-  [compile](#) changes (if any)
-  clear the currently applied filter
-  restore the default size and position of the window

Grantee

-  select an existing database [user/role](#) to grant privileges to

Legend

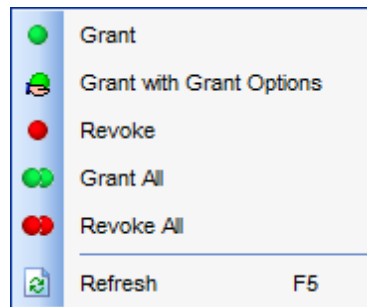
- ✓ view the legend

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

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/role](#);
- grant a permission (with Grant Option) on an object to the selected [user/role](#);
- revoke a previously granted permission;
- grant all permissions on an object to the selected [user/role](#);
- revoke all previously granted permissions on an object;
- refresh the permissions.



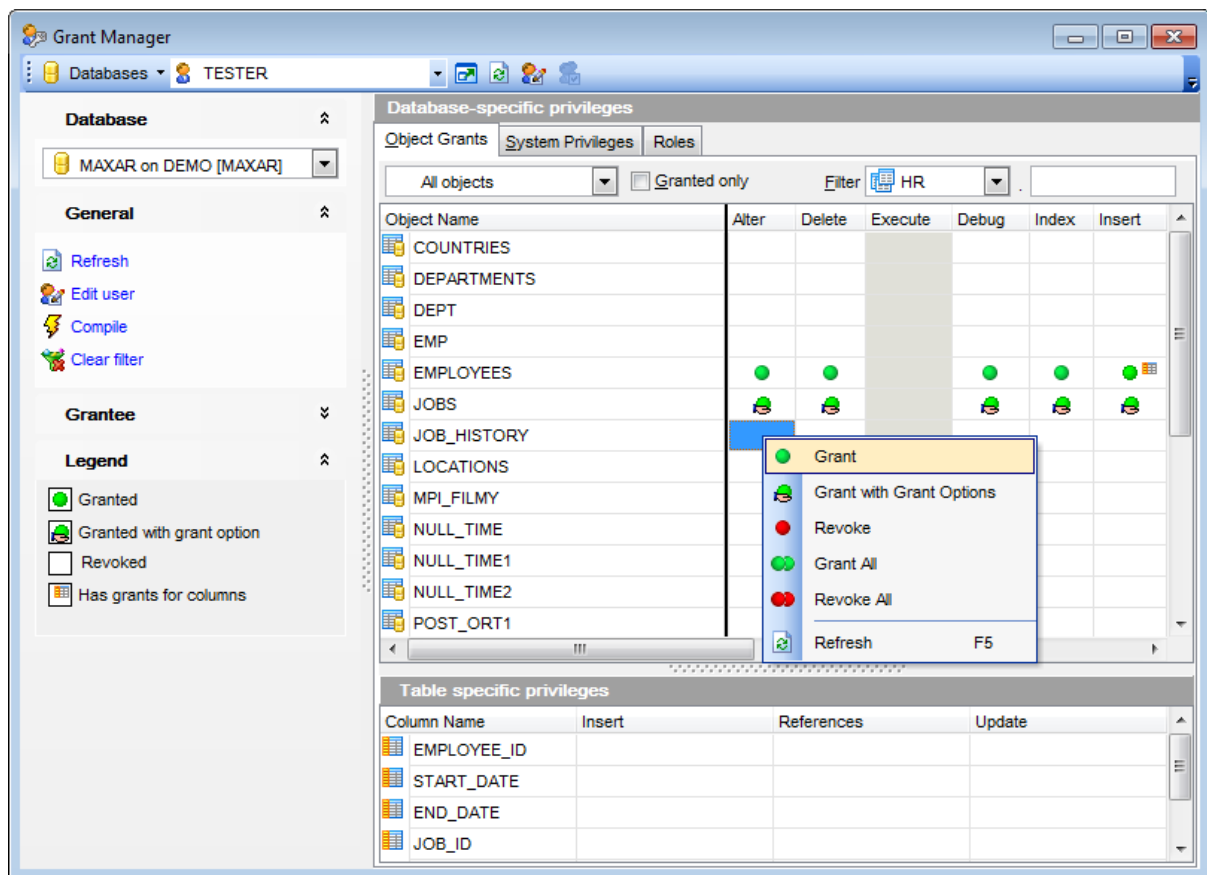
9.12.2 Setting object grants

9.12.2.1 Managing database-specific privileges

The **Database-specific privileges** area of the **Objects Grants** tab allows you to define privileges on database objects and grant privileges to a [user](#) or [role](#).

To edit the privileges of a [user/role](#) on an object of a database, select the database using the **Database** pane of the [Navigation bar](#), then select a *user* or *role* from the **Grantee** 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: *Alter, Delete, Execute, Debug, Flashback, Index, Insert, On Commit Refresh, Query Rewrite, Read, References, Select, Under, Update, Write*.



The list of the objects can be configured in several ways: you can specify that [only granted objects](#) are displayed in the grid, or define a schema and 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. 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*
 -  *Revoke All*
-

See also:

[Using Navigation bar and context menu](#)

[Managing column permissions](#)

[Filtering objects in list](#)

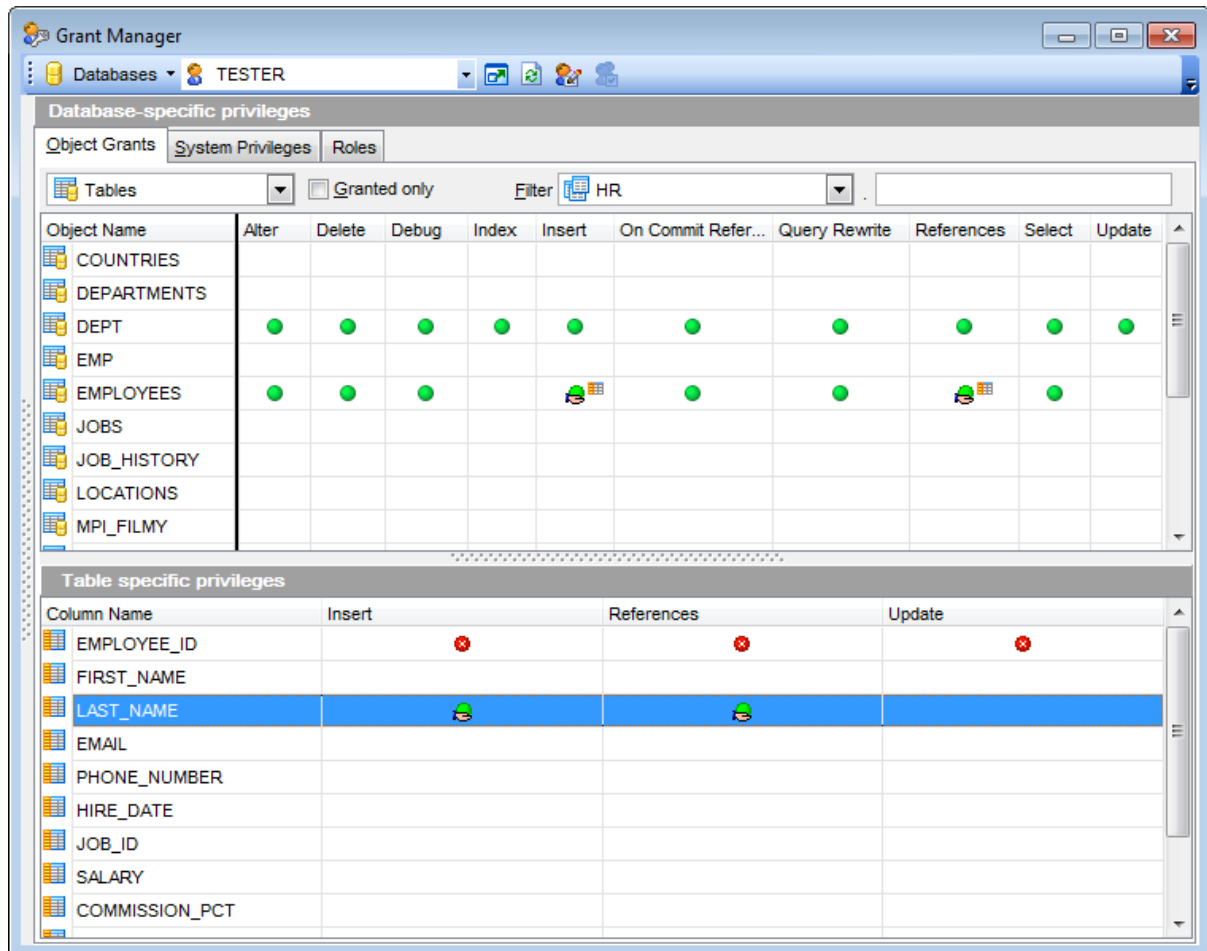
[Managing system privileges](#)

[Managing roles](#)

9.12.2.2 Managing column permissions

The **Table-specific privileges** area of the **Objects Grants** tab displays the grid with table columns and the privileges that can be granted to the selected [user](#) or [role](#).

Use items of the [context menu](#) to grant/deny/revoke permissions on columns.



If permissions on a column have been defined (for a *table*), the corresponding permission cell of the table contains a specific icon .

See also:

[Using Navigation bar and context menu](#)

[Managing database-specific privileges](#)

[Filtering objects in list](#)

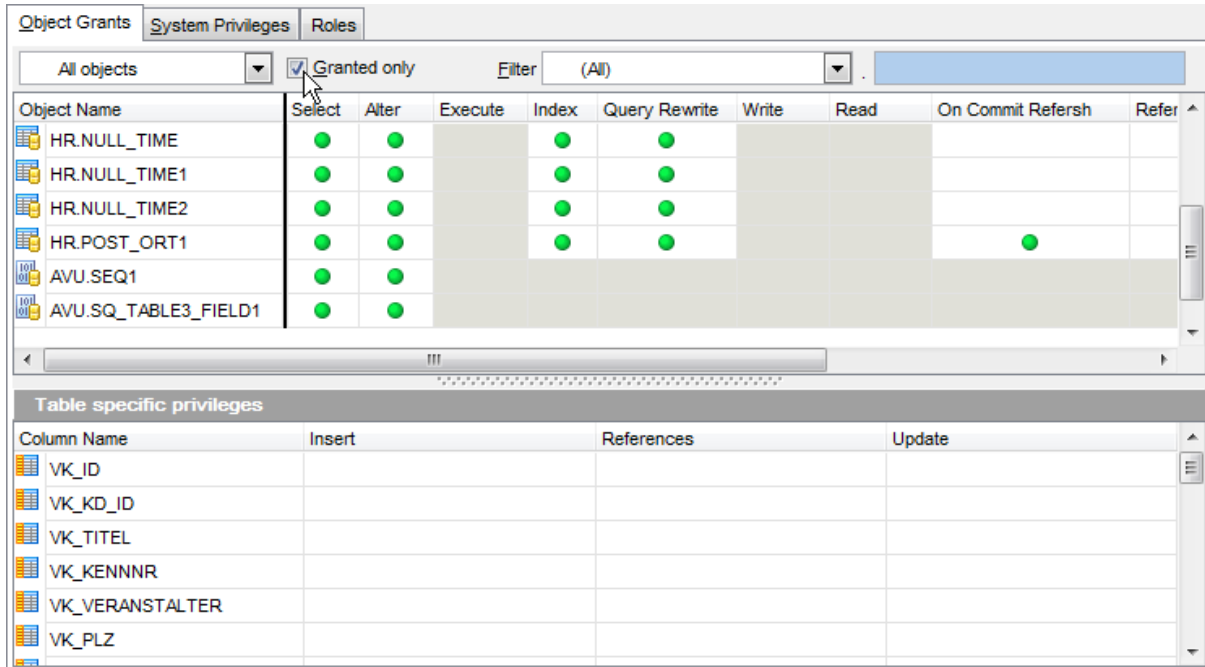
[Managing system privileges](#)

[Managing roles](#)

9.12.2.3 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;
- the ☒ **Granted only** option: check this option to display objects with at least one granted operation.



See also:

[Using Navigation bar and context menu](#)

[Managing database-specific privileges](#)

[Managing column permissions](#)

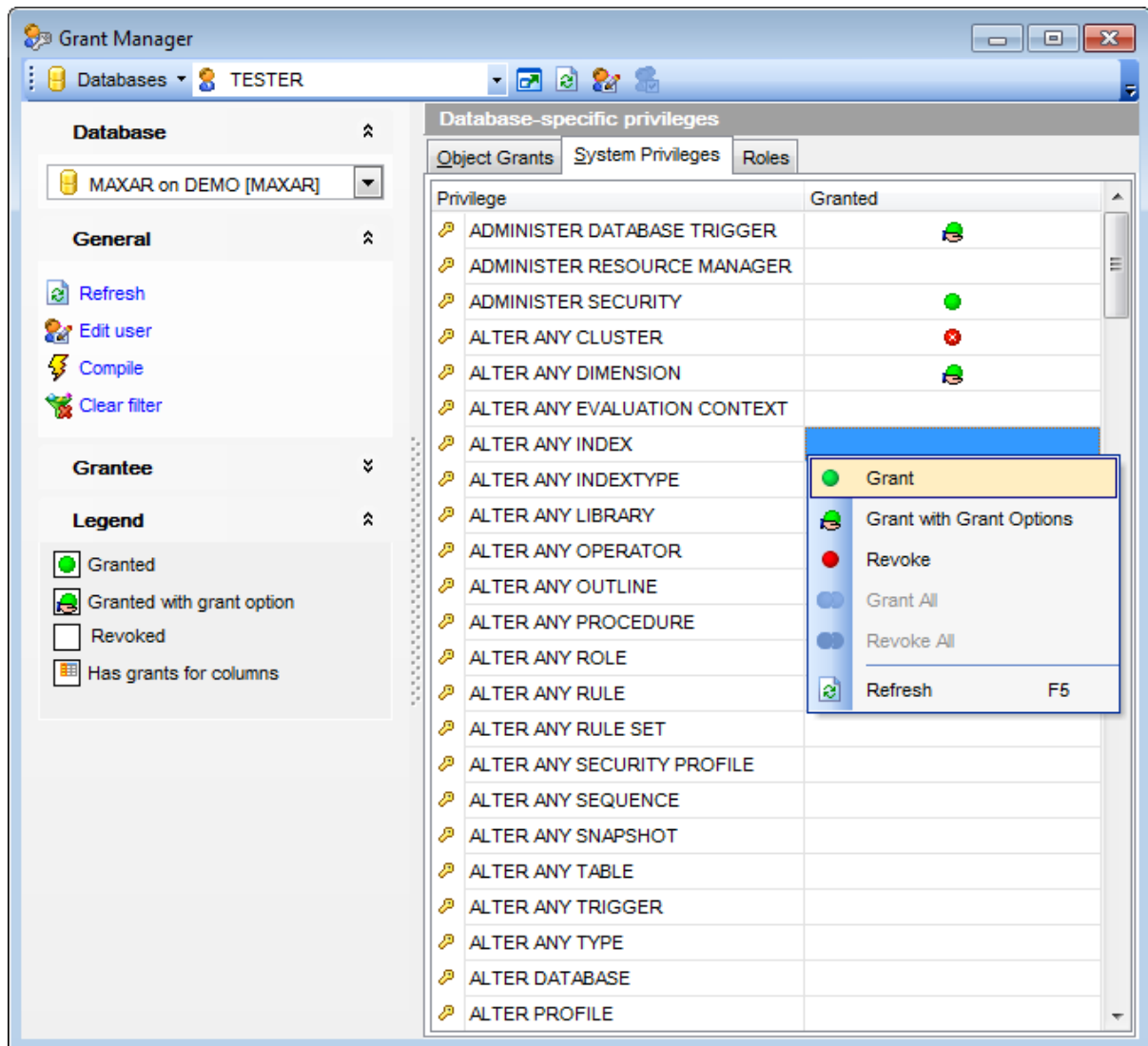
[Managing system privileges](#)

[Managing roles](#)

9.12.3 Managing system privileges

The **System Privileges** tab allows you to allocate system privileges to the selected [user/role](#).

To edit the system privileges of a [user/role](#), select the database using the **Database** pane of the [Navigation bar](#), then select a *user* or *role* from the **Grantee** list available within the [Navigation bar](#).



Right-click a cell next to the system privilege to grant this privilege to the selected user or role. 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*
- *Revoke All*

See also:[Using Navigation bar and context menu](#)[Managing database-specific privileges](#)[Managing column permissions](#)[Filtering objects in list](#)[Managing roles](#)

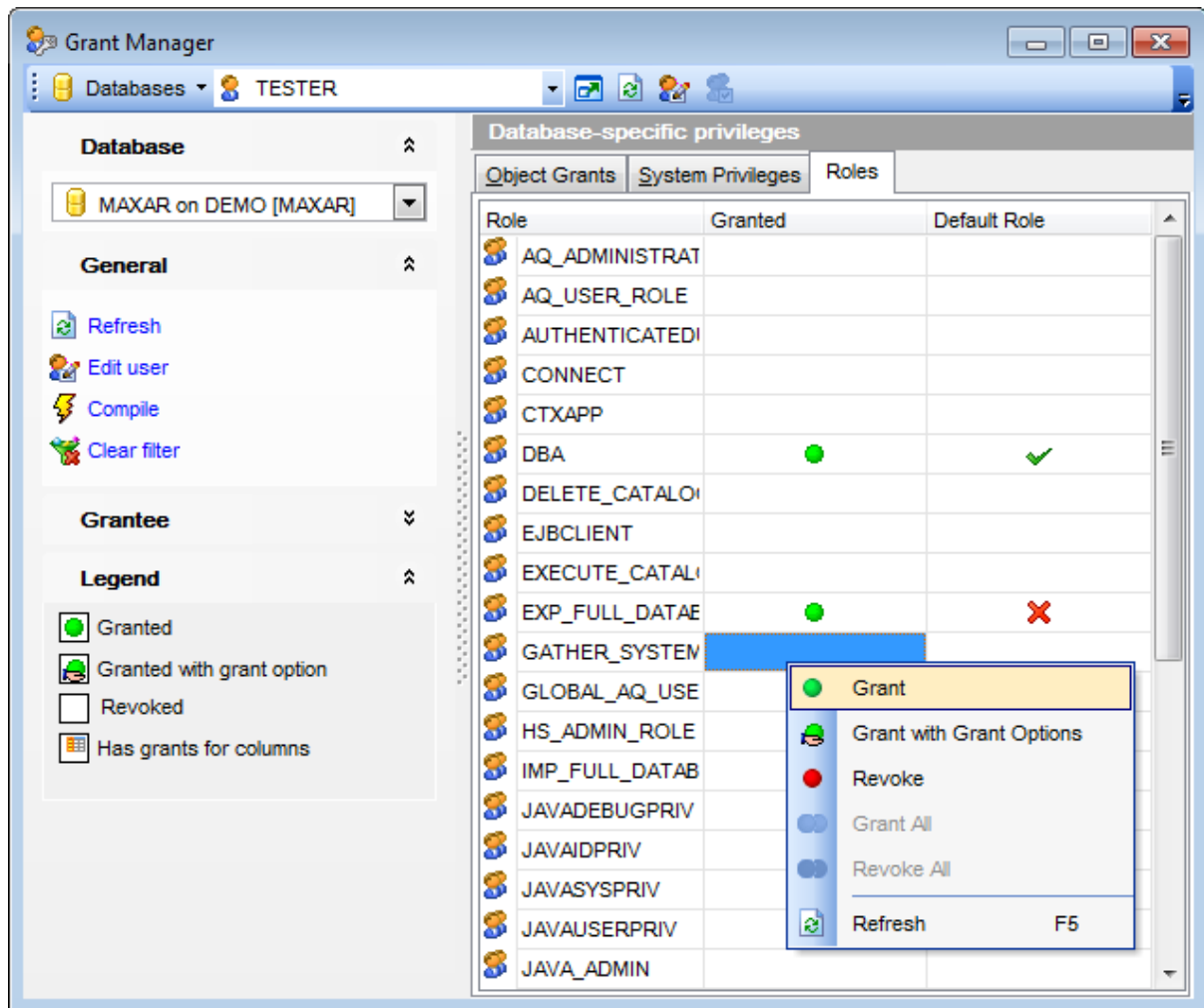
9.12.4 Managing roles

The **Roles** tab allows you to define which [users/roles](#) may obtain [roles](#) and define whether a [role](#) should be assigned to the selected [user/role](#) by default.

Select a *user* or *role* from the **Grantee** list available within the [Navigation bar](#), then select a role to be allocated to the current user/role and right-click the corresponding cell of the **Granted** column. The [context menu](#) of a cell contains possible permissions that can be granted:

- *Grant*
- *Grant with Grant Option*
- *Revoke* (removes a previously allocated role)
- *Grant All*
- *Revoke All*

To set the role as default for the selected user/role, double-click the corresponding cell of the **Default Role** column.



See also:

[Using Navigation bar and context menu](#)

[Managing database-specific privileges](#)

[Managing column permissions](#)

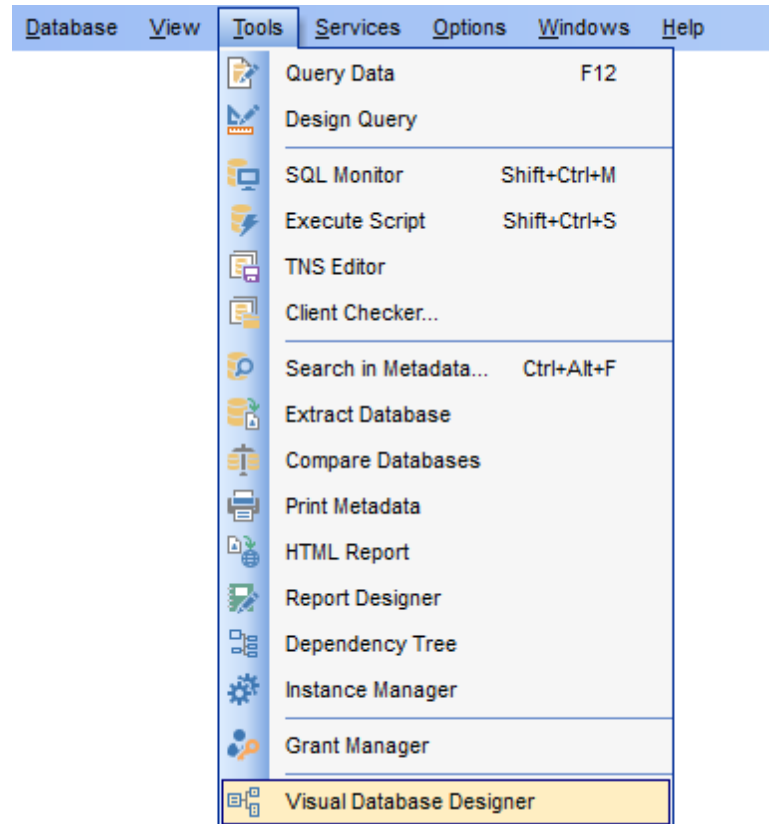
[Filtering objects in list](#)

[Managing system privileges](#)

9.13 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 fields, 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 **Yes**

Windows)

Lite version (for **No**
Windows)

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

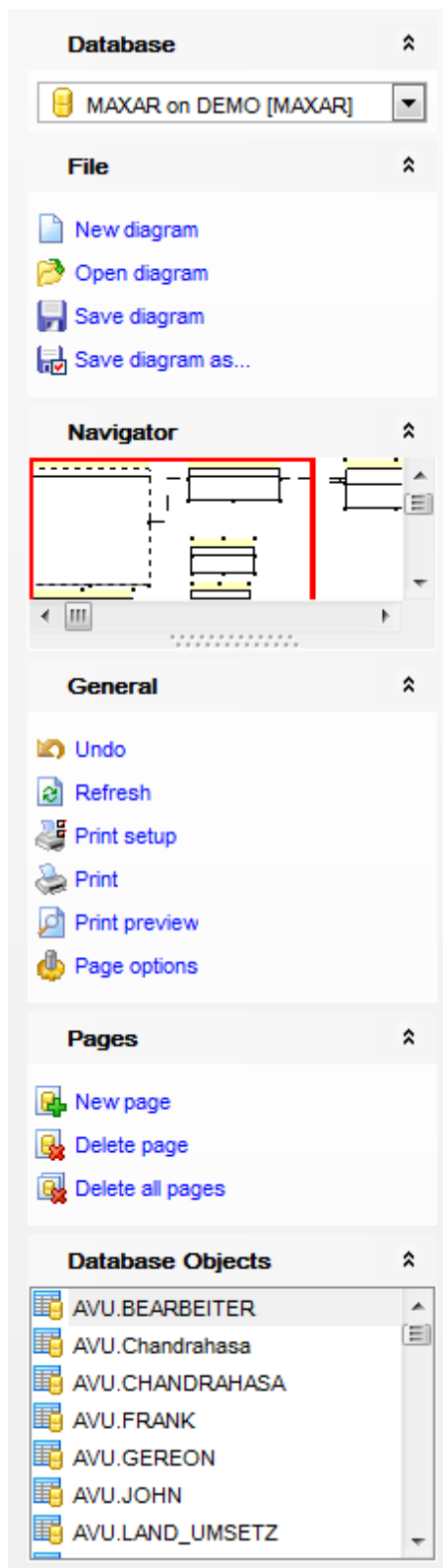
See also:

[Database Objects Management](#)

[Visual Database Designer options](#)

9.13.1 Using Navigation bar and Toolbars

The **Navigation bar** and **Toolbars** provide quick access to tools implemented in **Visual Database Designer**.



Database

 select a database for building the diagram

File

-  create a new diagram;
-  [open](#) an existing diagram;
-  [save](#) the current diagram to a *.pgd file;
-  save the current diagram as a custom file

Navigator

- ✓ use [Diagram Navigator](#)

General

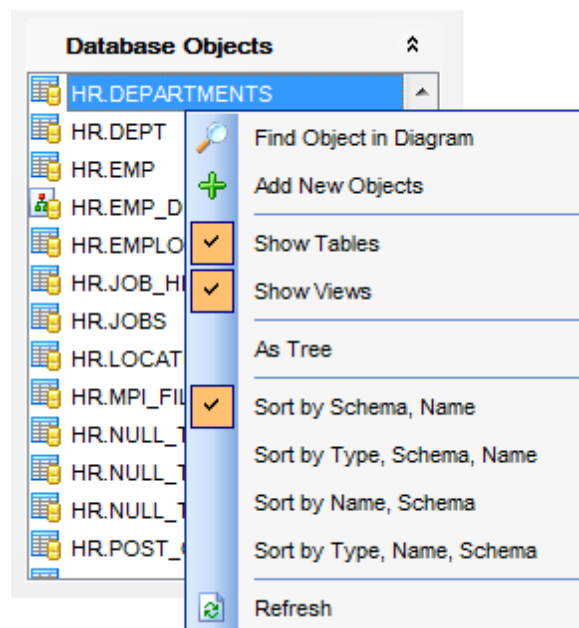
-  cancel latest modification;
-  repeat canceled modification;
-  refresh objects in the diagram;
-  **Print setup** - define printing settings;
-  [print](#) the diagram;
-  show [Print Preview](#);
-  edit [diagram options](#)
-  restore the default size and position of the [window](#)

Pages

-  [add](#) a new page;
-  [delete](#) the current page;
-  [delete all](#) pages.

Database Objects

Contains the list of objects that can be placed to diagram.



Context menu of Database Objects group allows you to:

-  [search](#) for objects in the diagram using the [Database Objects](#) pane;

- + [add](#) objects to the diagram using the [Database Objects](#) pane;
- ✓ **Show Tables** - отображать на диаграмме таблицы.
- ✓ **Show Views** - отображать на диаграмме представления.
- ✓ **As tree/ ✓ As list** - switch objects view;
- ✓ **Sort by...** - enable/disable sorting;
-  refresh list of objects.

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;
-  create a new diagram;
-  [open](#) an existing diagram;
-  [save](#) the current diagram to a *.pgd 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 [Execute 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](#);
-  cancel latest modification;
-  repeat canceled modification.

Object Customization panel allows you to define *font color*, *pen color* and *brush color*.



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.

Diagram toolbar located on the left allows you to:

-  align left edges;
-  align right edges;
-  align tops;

-  align bottom;
-  align horizontal centers;
-  align vertical centers;
-  space equally, horizontal;
-  space equally, vertical.

-  set the cursor mode to *Select*;
-  enables creating [tables](#) on clicking;
-  enables creating [views](#) on clicking;
-  create a new [relation](#); switch to create relation mode;
-  enables creating comment on clicking.

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

See also:

[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](#)

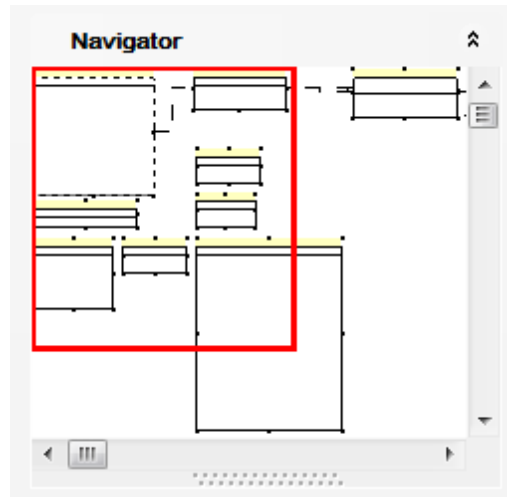
[Printing diagram](#)

[Saving/loading diagram](#)

[Setting diagram options](#)

9.13.2 Using Diagram Navigator and DB Objects pane

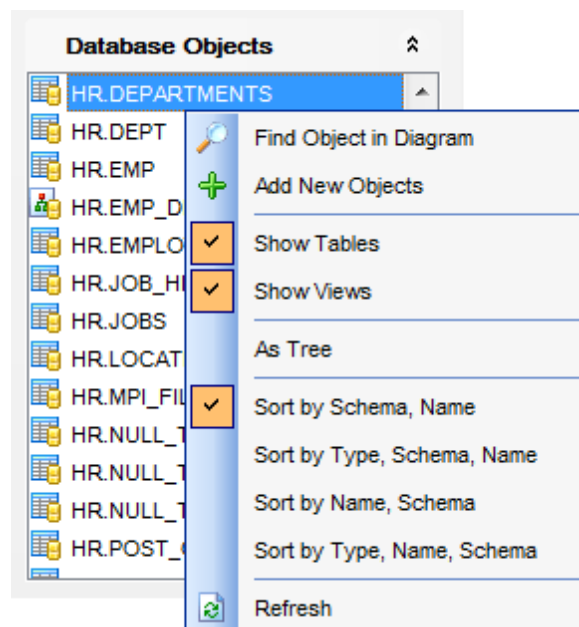
To navigate within the large diagram, use the **Navigator** tool available on the [Navigation bar](#). It allows you to see the whole diagram in a reduced scale and to perform a number of operations over the diagram objects.



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](#);
- ✓ toggle objects representation mode: *as a tree* / *as a list*;
- ✓ select the sorting mode applied to the objects in the list: *by schema, name* / *by type, schema, name* / *by name, schema* / *by type, name, schema*;
-  refresh the list.

See also:

[Using Navigation bar and Toolbars](#)

[Adding/removing objects to/from diagram](#)

[Creating new objects](#)

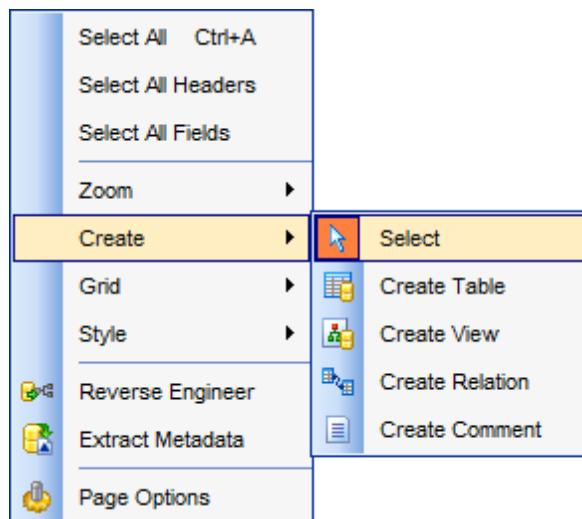
[Creating relations](#)

[Working with diagram pages](#)

9.13.3 Using context menus

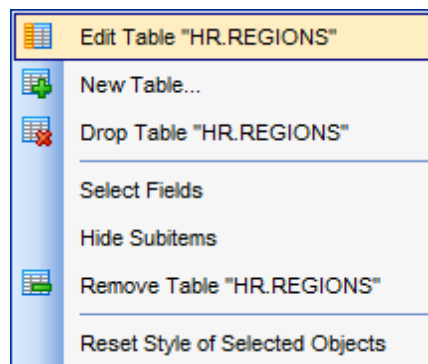
The **context menu** of the diagram area contains a number of items available in the [Navigation bar](#) and [toolbars](#) and allows you to:

- 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](#), [relation](#), or [comment](#);
- configure the [grid](#): *draw grid, snap to grid*;
- adjust the diagram [style](#): *draw primary key fields 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 [Execute Script Editor](#);
- view/edit [diagram options](#).



The **context menu** of an entity contains items for working with the object and allows you to:

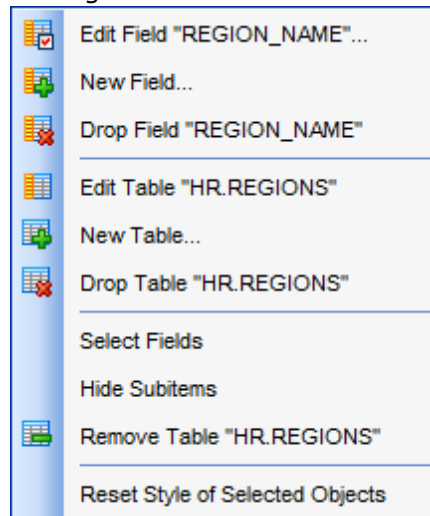
- [edit](#) the object using its editor ([Table Editor](#), [View Editor](#));
- [create](#) a new object using its editor ([New table](#), [View Editor](#));
- [drop](#) the object from the database;
- show/hide object subitems;
- [remove](#) the object from the diagram.



The **context menu** of a field contains items for working with the object and its fields and

allows you to:

- [edit](#) the selected field using its editor ([Field Editor](#));
- [create](#) a new field;
- [drop](#) the selected field;
- [edit](#) the object using its editor ([Table Editor](#), [View Editor](#));
- [create](#) a new object using its editor ([New table](#), [View Editor](#));
- [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](#)

9.13.4 Working with diagram objects

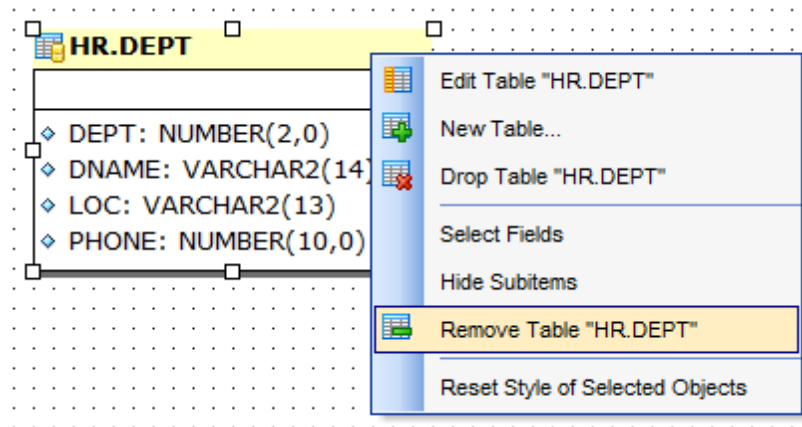
9.13.4.1 Adding/removing objects to/from diagram

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](#)

9.13.4.2 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+F* [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](#)

9.13.4.3 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](#)).



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](#)

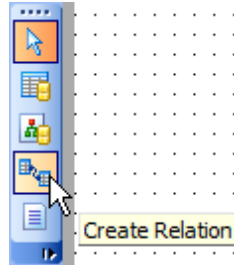
[Incremental search](#)

[Creating relations](#)

9.13.4.4 Creating relations

To establish a new relation (which is the [foreign key](#) in terms of database management):

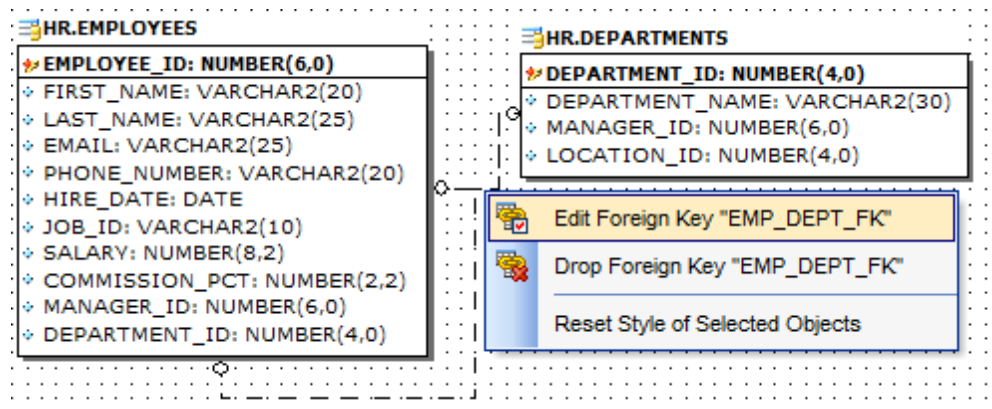
- press the **Create relation** button on the [New object toolbar](#);
- click the entity where the referential constraint should be created;
- click the referred entity;
- specify new foreign key properties using [Foreign key Editor](#).



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](#) or [drop](#) the foreign key from the database.



See also:

[Using Diagram Navigator and DB Objects pane](#)

[Adding/removing objects to/from diagram](#)

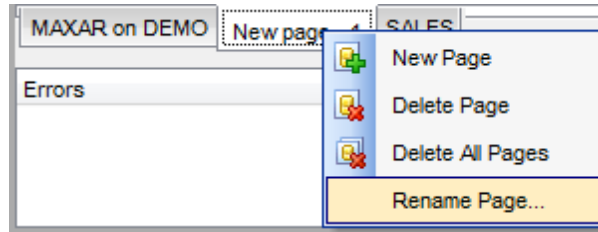
[Incremental search](#)

[Creating new objects](#)

9.13.5 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:

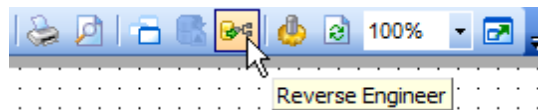
[Using Diagram Navigator and DB Objects pane](#)

[Adding/removing objects to/from diagram](#)

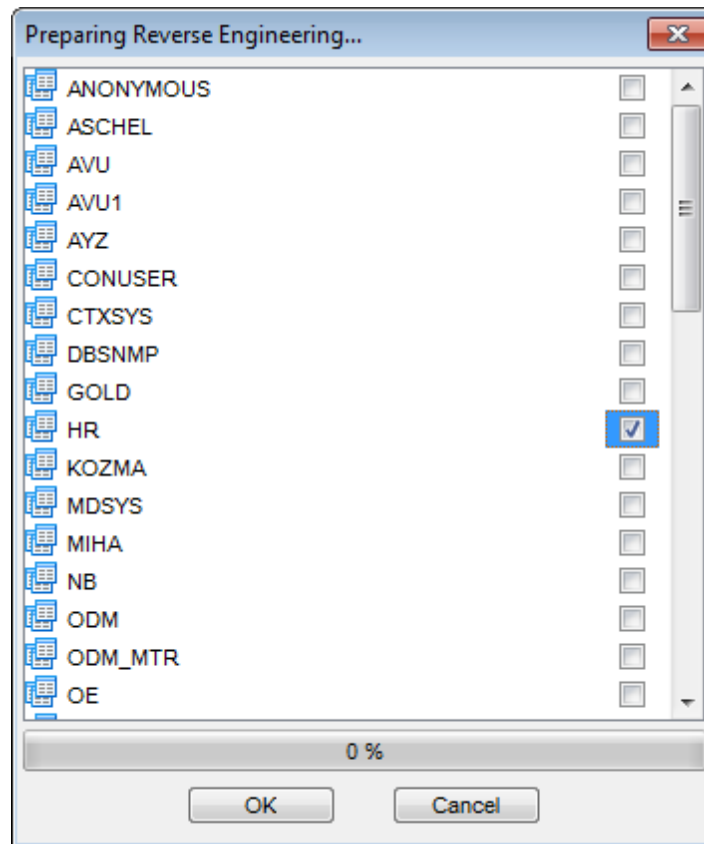
9.13.6 Reverse engineering

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 **Preparing Reverse Engineering** dialog allows you to select [schemas](#) containing objects to reverse engineer.



For your convenience the *Select All* and *Deselect All* items are available in the context menu of the schemas list.

See also:

[Using Navigation bar and Toolbars](#)

[Using Diagram Navigator and DB Objects pane](#)

[Adding/removing objects to/from diagram](#)

9.13.7 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.

9.13.7.1 Print Preview

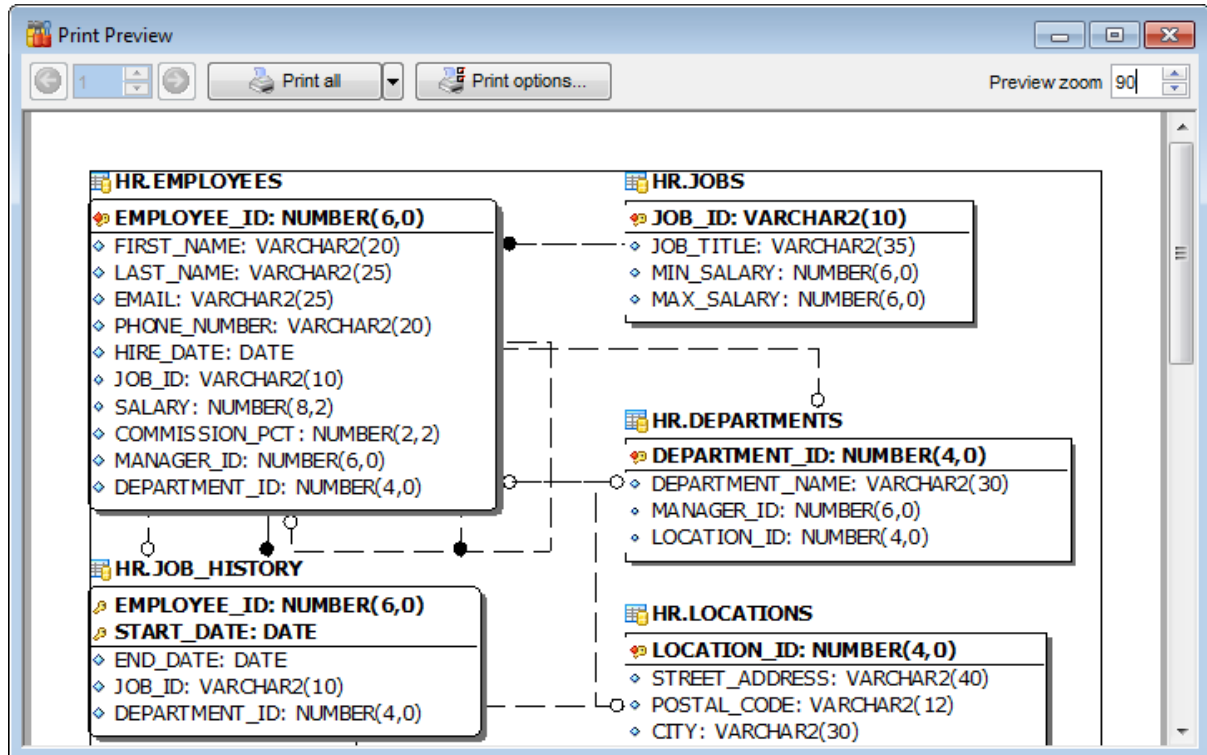
The **Print Preview** dialog allows you to see the diagram layout in WYCIWYG mode before it will be printed.

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:

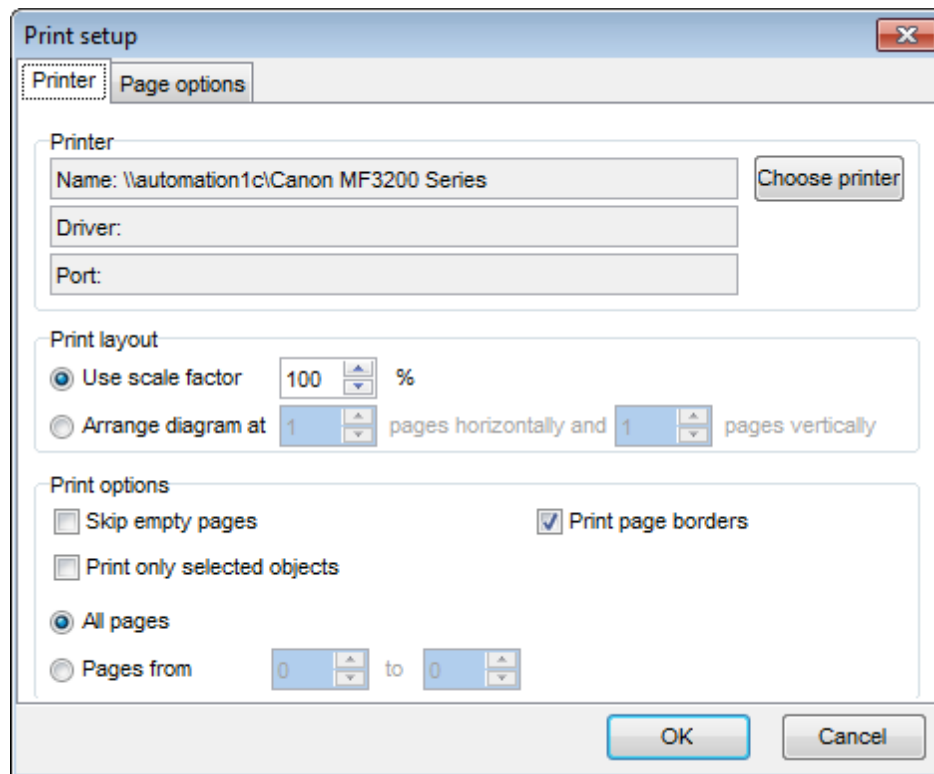
[Print Setup dialog](#)

9.13.7.2 Print Setup dialog

The **Print Setup** dialog of **Visual Database Designer** provides two tabs for setting printing options: **Printer** and **Page options**.

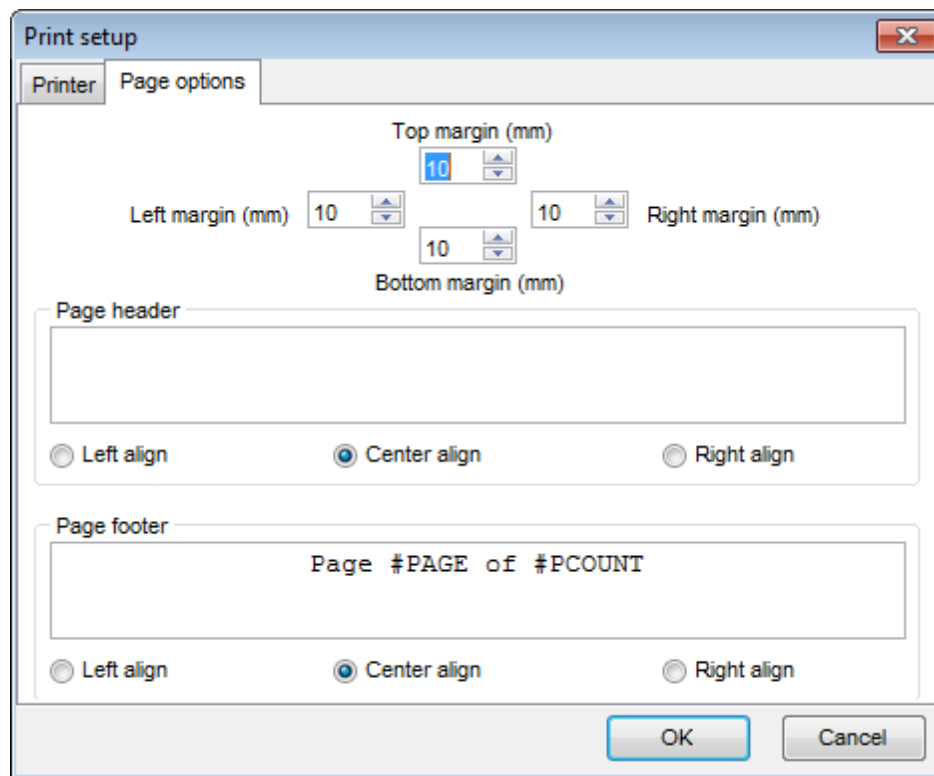
The **Printer** tab of the **Print Setup** dialog allows you to:

- 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*.



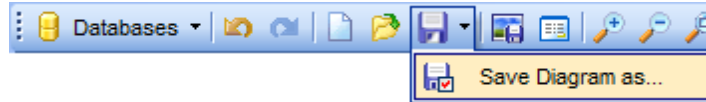
Hint: It is also possible to set macros in the **Page header** and **Page footer** fields:
#PCOUNT stands for the quantity of pages;
#PAGE - the number of the current page;
#DATE denotes the current date;
#TIME denotes the current time.

See also:

[Print Preview](#)

9.13.8 Saving/loading diagram

Use the  **Save Diagram** and the  **Open Diagram** buttons on the [main toolbar](#) to save the diagram as a *.ord 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 [main toolbar](#).

See also:

[Using Navigation bar and Toolbars](#)

[Using Diagram Navigator and DB Objects pane](#)

[Using context menus](#)

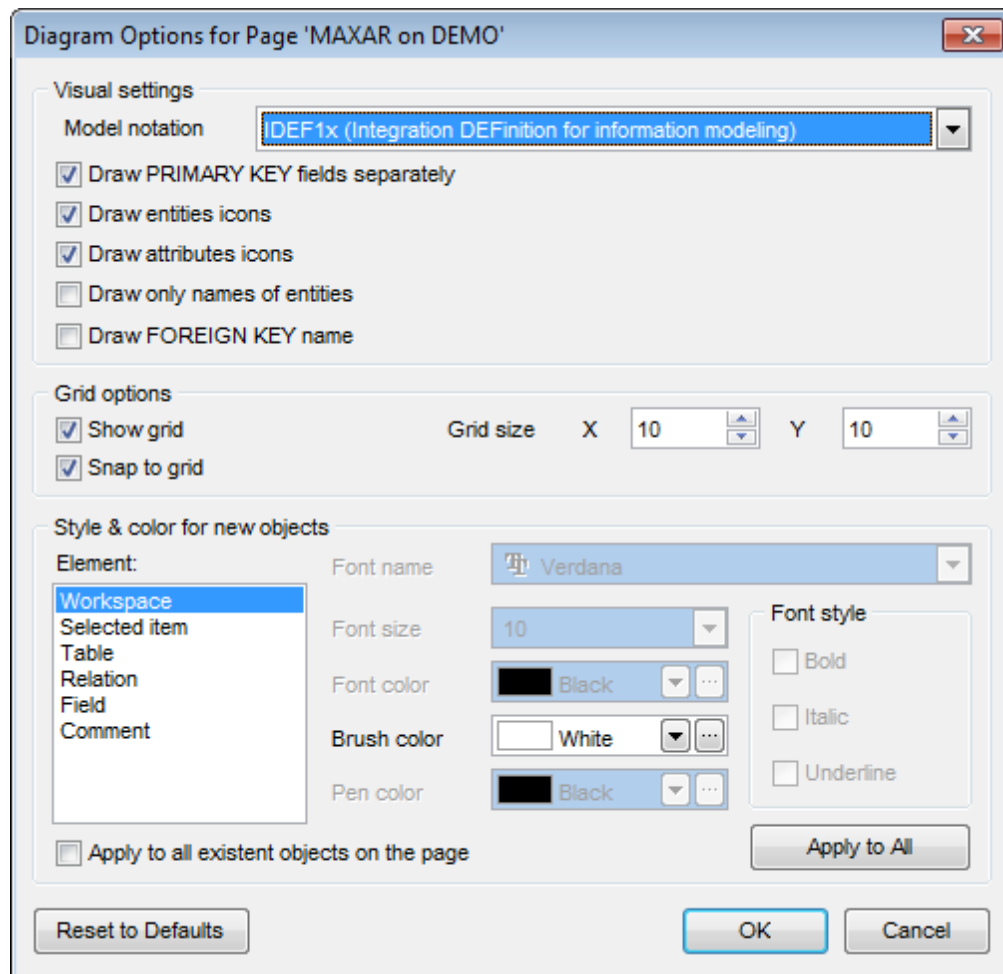
[Adding/removing objects to/from diagram](#)

9.13.9 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.



☒ **Apply changes to all new pages**

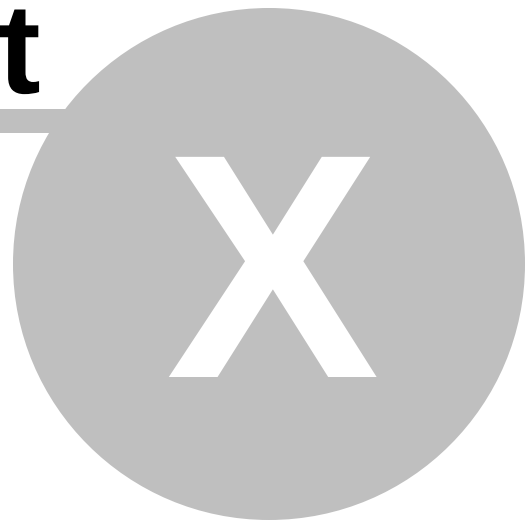
If this option is selected, the current settings will be applied to all newly created pages of Visual Database Designer.

See also:

[Using Diagram Navigator and DB Objects pane](#)

[Visual Database Designer options](#)

Part



10 Services

SQL Manager for Oracle provides graphical interface for a number of database maintenance operations. The following *services* are available in SQL Manager:

[Database Information](#)

Allows you to get and modify all information on configuration parameters for the current Oracle instance and current session.

[Database Statistics](#)

Allows you to view all the essential statistics on the specified database — system statistics, statistics on sessions (including hit ratio, information on locks and processes), statistics on storage, wait events, latches etc.

[PL/SQL Profiler](#)

Allows you to profile existing PL/SQL applications and identify performance bottlenecks.

[Advanced Statistics Wizard](#)

Allows you to collect, delete and import/export the statistics on specified objects for optimizer, as an aid to improve the performance.

[TKProf Wizard](#)

Makes possible to process trace files and create transient kernel reports.

[Backup Database Wizard](#)

Creates backup copies of your databases.

[Restore Database Wizard](#)

Restores your databases from previously created backups.

[Flashback](#)

Restores data to a certain state.

[Job Manager](#)

Allows you to create, schedule and run single or recurring execution of tasks in the database.

[Truncate Wizard](#)

A useful tool for truncating table and cluster data in the specified database.

[Recompile Invalid Objects](#)

Allows you to look up invalid objects in the specified schema and recompile them using their definition.

[Enable/Disable constraints](#)

A wizard used to disable and enable the constraints of different types.

To obtain detailed information concerning specific Oracle database maintenance services, refer to the official server documentation.

See also:

[Getting Started](#)

[Database Explorer](#)

[Database Management](#)

[Database Objects Management](#)

[Query Management Tools](#)

[Data Management](#)

[Import/Export Tools](#)

[Database Tools](#)

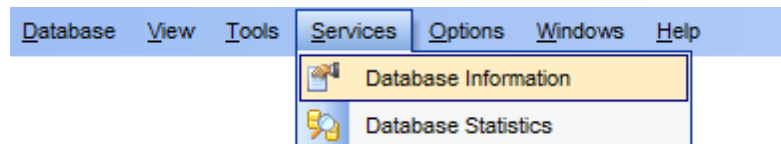
[Options](#)

[How To...](#)

10.1 Database Information

The **Database Information** tool allows you to get all information on NLS parameters for the database and configuration parameters for the current Oracle instance and current session which can be changed to optimize the server performance.

To open the tool, select the **Services** |  **Database Information** [main menu](#) item, or right-click the database in [DB Explorer](#) and select the **Tasks** |  **Database Information** item from the [context menu](#). Alternatively, you can use the  **Properties** button on the main toolbar.

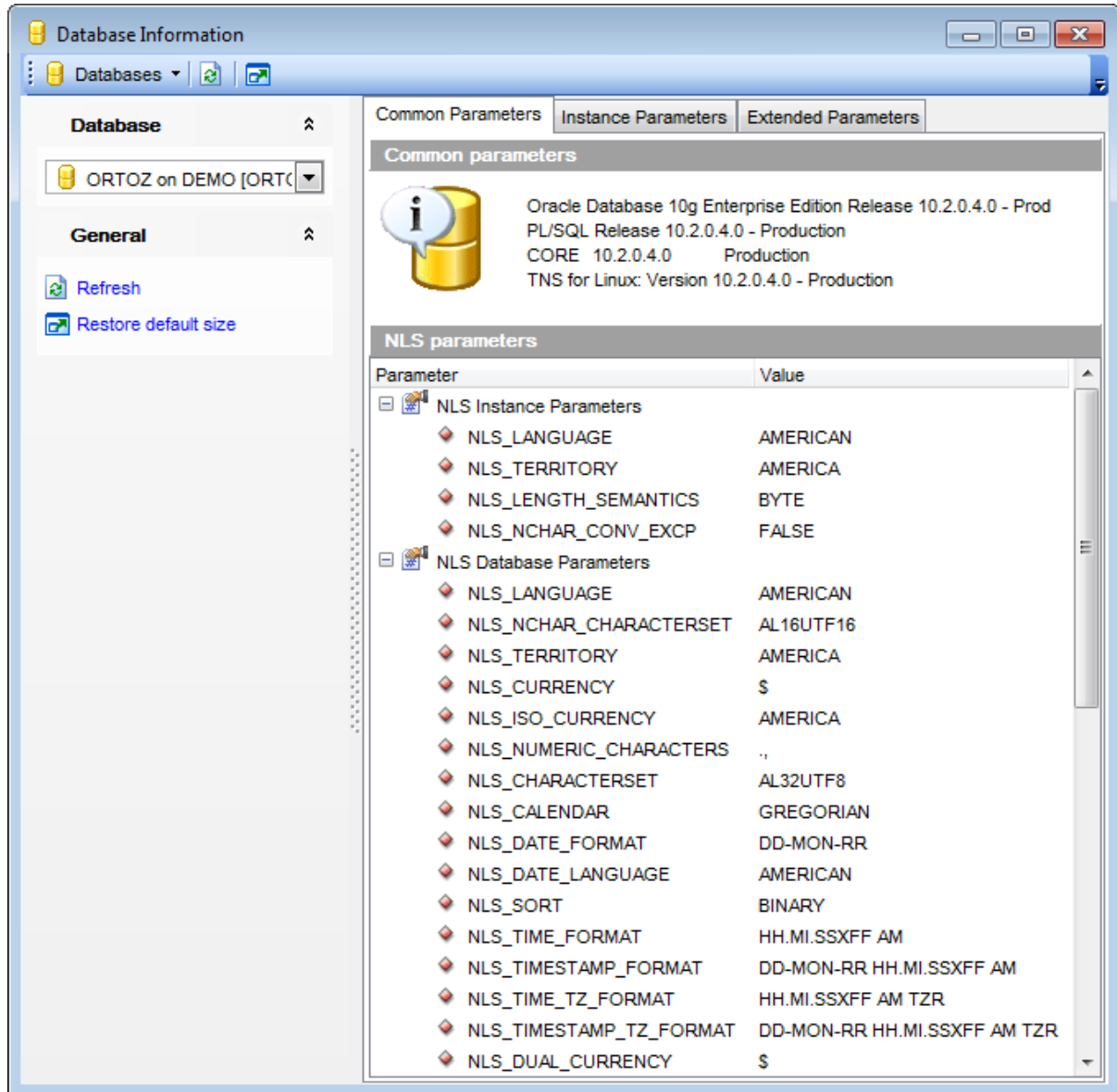


- [Common Parameters](#)
- [Instance Parameters](#)
- [Extended Parameters](#)

10.1.1 Common Parameters

The **Common Parameters** tab provides two groups of parameters: *Common parameters* and *NLS parameters*.

Note: The parameters listed within this tab are read-only and their values cannot be changed.



Common parameters

This area displays common information about the Oracle server, its basic components (*PL/SQL*, *CORE*, *TNS*, *NLSRTL*), and their versions.

NLS parameters

The NLS database environment is established on creating a database and partially via initialization parameter file at the instance startup.

The **NLS parameters** area lists NLS parameters and their values in groups:

NLS Instance Parameters

NLS Database Parameters

NLS Session Parameters

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.

See also:

[Instance Parameters](#)

[Extended Parameters](#)

10.1.2 Instance Parameters

The **Instance Parameters** tab allows you to view and edit instance configuration parameters to optimize performance.

Name	Value	Default	Session Modifia...	System Modifiable
◊ O7_DICTIONARY_ACCESSIBILITY	FALSE	Yes	No	Not modifiable
◊ active_instance_count		Yes	No	Not modifiable
◊ aq_tm_processes	0	No	No	Immediate
◊ archive_lag_target	0	Yes	No	Immediate
◊ asm_diskgroups		Yes	No	Immediate
◊ asm_diskstring		Yes	No	Immediate
◊ asm_power_limit	1	Yes	Yes	Immediate
◊ audit_file_dest	/opt/oracle/admin/ORTOZ/adump	No	No	Deferred
◊ audit_sys_operations	FALSE	Yes	No	Not modifiable
◊ audit_syslog_level		Yes	No	Not modifiable
◊ audit_trail	NONF	Yes	No	Not modifiable

asm_power_limit

Type name: Integer

Default value: Yes

Current value: 1

New value: 0

Description: number of processes for disk rebalancing

Scope: System

Apply: Memory

The **Instance configuration parameters for <instance_name>** area displays the parameters as a grid with the following columns: *Name*, *Value*, *Default*, *Session Modifiable*, *System Modifiable*. 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.

The area at the bottom provides the *parameter editor* which displays detailed information on the currently selected parameter. Some parameter values can be changed in the corresponding editor fields.

See also:

[Common Parameters](#)

[Extended Parameters](#)

10.1.3 Extended Parameters

The **Extended Parameters** tab allows you to view extended database/instance configuration parameters, such as *instance name/version*, *database startup time*, *creation date*, *database role*, information on current *sessions*, *locks*, *database cache*, *pool size*, etc.

Note: The parameters listed within this tab are read-only and their values cannot be changed.

Extended configuration parameters for ORTOZ	
Parameter	Value
Instance Name	ORTOZ
Version	10.2.0.4.0
Startup Time	06.10.2012 14:20:27
Host Name	userver
Archiver	STOPPED
Parallel	NO
Database Role	PRIMARY
Open Resetlogs	NOT ALLOWED
Controlfile Type	CURRENT
Current Sessions	15
Current Locks	9
Blocked Sessions	0
Log Mode	NOARCHIVELOG
Optimizer Mode	ALL_ROWS
Created	17.03.2010 23:11:07
SGA Size in Mb	104
DB Caches	0
Fixed SGA Size in Mb	1,21
Log Buffer Size in Mb	2,79
Shared Pool in Mb	0
Large Pool in Mb	0
Java Pool in Mb	0
Cache Advice	ON

The **Extended configuration parameters for <instance_name>** area displays the parameters as a grid with the following columns: *Parameter*, *Value*. 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.

See also:

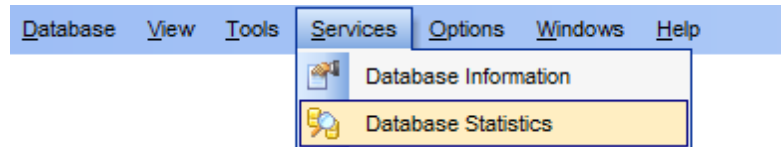
[Common Parameters](#)

[Instance Parameters](#)

10.2 Database Statistics

The **Database Statistics** tool allows you to view all the essential statistics on the specified database - system statistics, statistics on sessions (including hit ratio, information on locks and processes), statistics on storage, wait events, latches, etc.

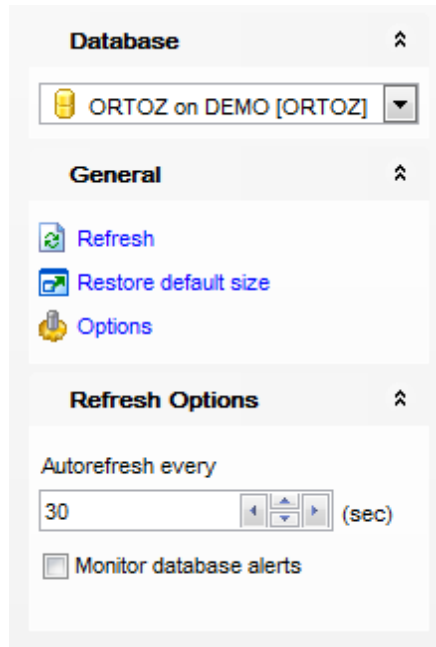
To open the tool, select the **Services** |  **Database Statistics** [main menu](#) item, or right-click the database in [DB Explorer](#) and select the **Tasks** |  **Database Statistics** item from the [context menu](#).



- [Using Navigation bar and Toolbar](#)
- [System Statistics](#)
- [Last Analyze Stats](#)
- [Sessions](#)
- [Storage](#)
- [SGA](#)
- [Wait Events](#)
- [Latches](#)
- [Database Alerts](#)

10.2.1 Using Navigation bar and Toolbar

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



Database

 select a database for collecting statistics

General

-  refresh the content of the active tab
-  restore the default size and position of the window

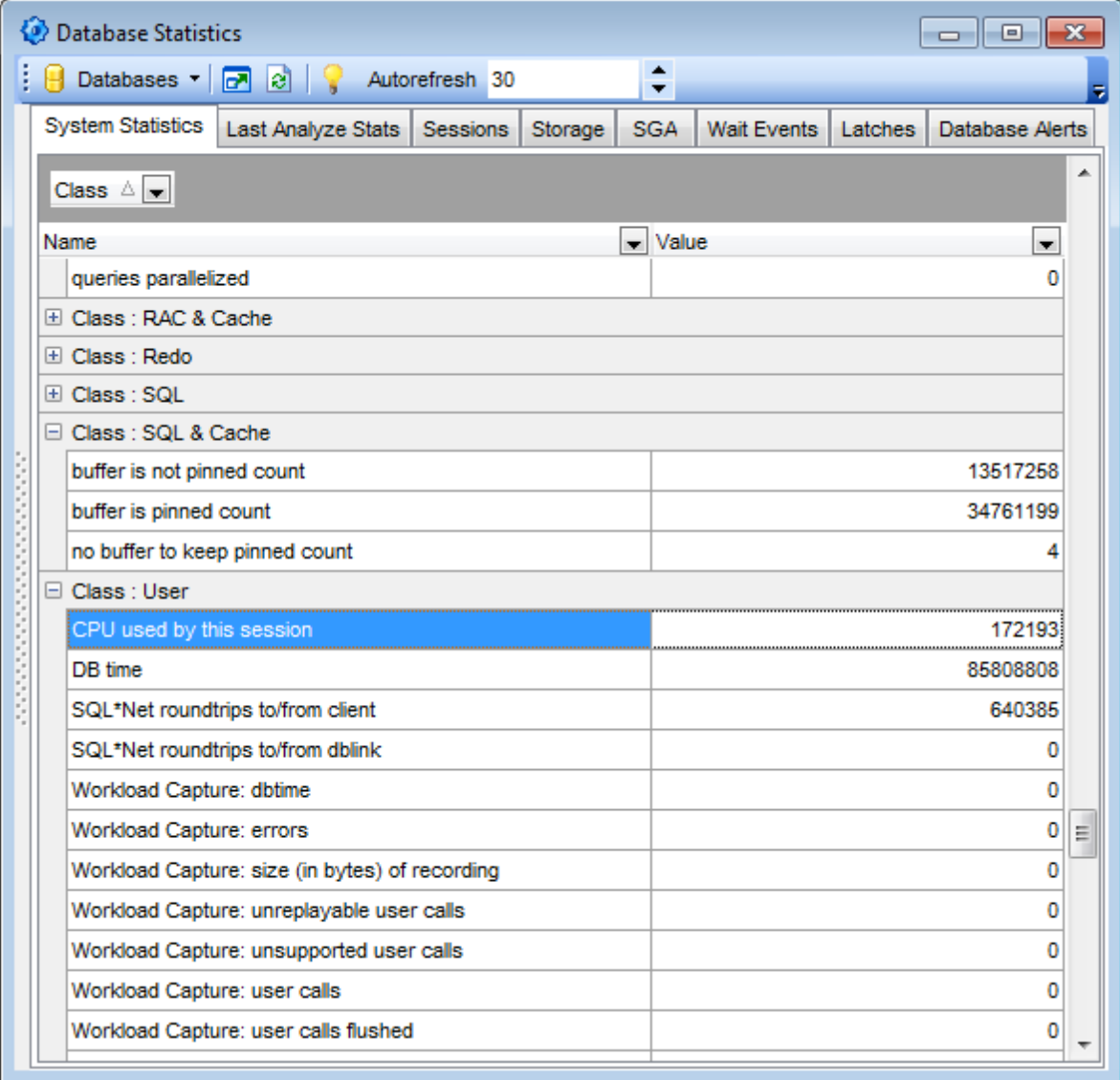
Refresh Options

- ☒ set the time interval for refreshing statistics automatically
- ☒ specify to monitor [database alerts](#)

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

10.2.2 System Statistics

The **System Statistics** tab displays the system statistics; all stats are grouped into classes - *Cache*, *Debug*, *Enqueue*, *RAC* (Real Application Clusters), *RAC & Cache*, *Redo*, *SQL*, *SQL & Cache*, *User*.



Name	Value
queries parallelized	0
+ Class : RAC & Cache	
+ Class : Redo	
+ Class : SQL	
- Class : SQL & Cache	
buffer is not pinned count	13517258
buffer is pinned count	34761199
no buffer to keep pinned count	4
- Class : User	
CPU used by this session	172193
DB time	85808808
SQL*Net roundtrips to/from client	640385
SQL*Net roundtrips to/from dblink	0
Workload Capture: dbtime	0
Workload Capture: errors	0
Workload Capture: size (in bytes) of recording	0
Workload Capture: unplayable user calls	0
Workload Capture: unsupported user calls	0
Workload Capture: user calls	0
Workload Capture: user calls flushed	0

The list displays items of system statistics as a grid with the following columns: *Name*, *Value*. If more convenient, you can [change the order](#) of the columns by dragging their headers horizontally.

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.

Click a column caption to **sort** items by values of this column in the ascending or the

descending mode.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:

[Last Analyze Stats](#)

[Sessions](#)

[Storage](#)

[SGA](#)

[Wait Events](#)

[Latches](#)

[Database Alerts](#)

10.2.3 Last Analyze Stats

The **Last Analyze Stats** tab displays the objects ([tables](#) and [indexes](#)) and the date when these objects were last analyzed (i.e. when statistics was last gathered).

Hint: Statistics for tables/indexes can be gathered with the help of [Advanced Statistics Wizard](#).

System Statistics Last Analyze Stats Sessions Storage SGA Wait Events Latches Database Alerts		
Object Type △ ▼		
Owner ▼	Name ▼	Last Analyzed ▼
Object Type : Index		
CTXSYS	DRC\$DEL_KEY	23.04.2010 12:10:06
CTXSYS	DRC\$IDX_COLSPEC	23.04.2010 12:10:06
CTXSYS	DRC\$IDX_COLUMN	23.04.2010 12:10:06
CTXSYS	DRC\$IDX_KEY	23.04.2010 12:10:06
CTXSYS	DRC\$IXO_KEY	23.04.2010 12:10:06
CTXSYS	DRC\$IXP_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$IXS_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$IXS_NAME	23.04.2010 12:10:07
CTXSYS	DRC\$IXX_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$OAT_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$OAT_NAME	23.04.2010 12:10:07
CTXSYS	DRC\$OBJ_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$OBJ_NAME	23.04.2010 12:10:07
CTXSYS	DRC\$PRE_KEY	23.04.2010 12:10:07
CTXSYS	DRC\$PRE_NAME	23.04.2010 12:10:08
CTXSYS	DRC\$PRV_KEY	23.04.2010 12:10:08
CTXSYS	DRC\$SEC_KEY	23.04.2010 12:10:08
CTXSYS	DRC\$SGP_KEY	23.04.2010 12:10:08
CTXSYS	DRC\$SGP_UNIQUE	23.04.2010 12:10:08

The list displays the objects as a grid with the following columns: *Owner*, *Name*, *Last Analyzed*. If more convenient, you can [change the order](#) of the columns by dragging their headers horizontally.

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.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For

more information refer to the [Filtering records](#) page.

See also:

[System Statistics](#)

[Sessions](#)

[Storage](#)

[SGA](#)

[Wait Events](#)

[Latches](#)

[Database Alerts](#)

10.2.4 Sessions

The **Sessions** tab displays the list of sessions opened for the database (the most I/O active sessions are colored red) and additional information for each session: [hit ratios](#), [processes](#), [locks](#).

System Statistics Last Analyze Stats Sessions Storage SGA Wait Events Latches Database Alerts									
Session									
USERNAME	SID	SERIAL#	STATUS	Lock wait	MACHINE	TYPE	COMMAND	CPU_TIME	UGA memory
TESTER	14	2002	ACTIVE	NO	EMSDOMAINKA	USER		158	273352
TESTER	16	90	INACTIVE	NO	EMSDOMAINKA	USER		0	76960
	1	1	ACTIVE	NO	VADS	BACKGROUND		0	76960
	10	1	ACTIVE	NO	VADS	BACKGROUND		0	76960
	9	1	ACTIVE	NO	VADS			0	76960
	8	1	ACTIVE	NO	VADS			0	207888
	7	1	ACTIVE	NO	VADS			0	76960
	6	1	ACTIVE	NO	VADS			0	76960
	5	1	ACTIVE	NO	VADS			0	76960
	4	1	ACTIVE	NO	VADS	BACKGROUND		0	76960
	3	1	ACTIVE	NO	VADS	BACKGROUND		0	76960
	2	1	ACTIVE	NO	VADS	BACKGROUND		0	76960

The list displays the sessions as a grid with the following columns: *USERNAME*, *SID*, *SERIAL#*, *STATUS*, *Lock wait*, *MACHINE*, *TYPE*, *COMMAND*, *CPU_TIME*, *UGA memory*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

Right-click an item within the list to call the **context menu** allowing you to *refresh* the list, *kill a session*, *disconnect a session* and *set SQL trace* to the trace log on the server.

Session management tools are also available through the [Navigation bar](#) of the **Database Statistics** window.

The lower area displays the following statistics for each session:

- [Hit Ratios](#)
- [Process](#)
- [Locks](#)

See also:

[System Statistics](#)

[Last Analyze Stats](#)

[Storage](#)

[SGA](#)

[Wait Events](#)

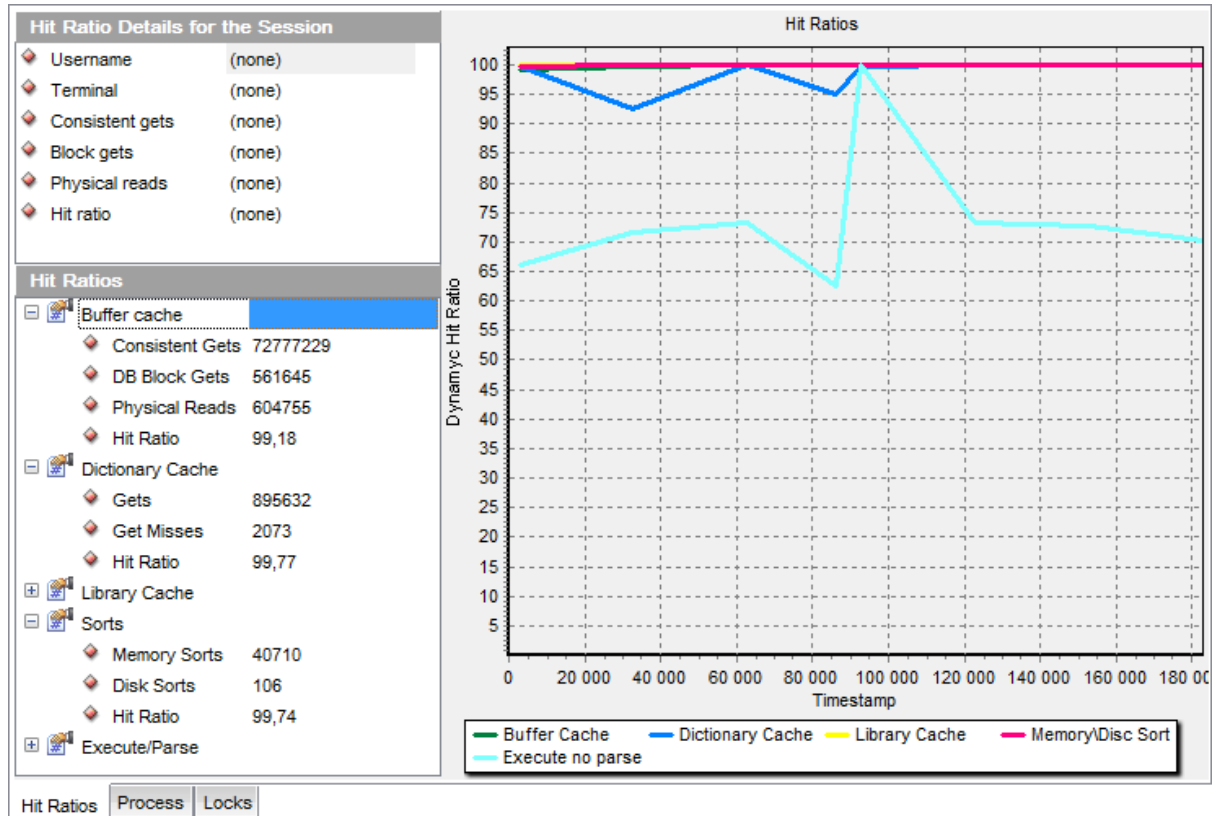
[Latches](#)

[Database Alerts](#)

10.2.4.1 Hit Ratios

The **Hit Ratio** tab provides session hit ratio details and displays the hit ratio dynamics graphically.

The hit ratio of a user session is the ratio of the number of correct predictions and the total number of links the user traversed in the session.



Hit Ratio Details for the Session

Displays details for the selected [session](#): Username, Terminal, Consistent gets, Block gets, Physical reads, Hit ratio.

Hit Ratios

The list area displays the hit ratios in groups: Buffer cache, Dictionary cache, Library cache, Sorts, Execute/Parse.

The diagram area provides visual representation of the hit ratios.

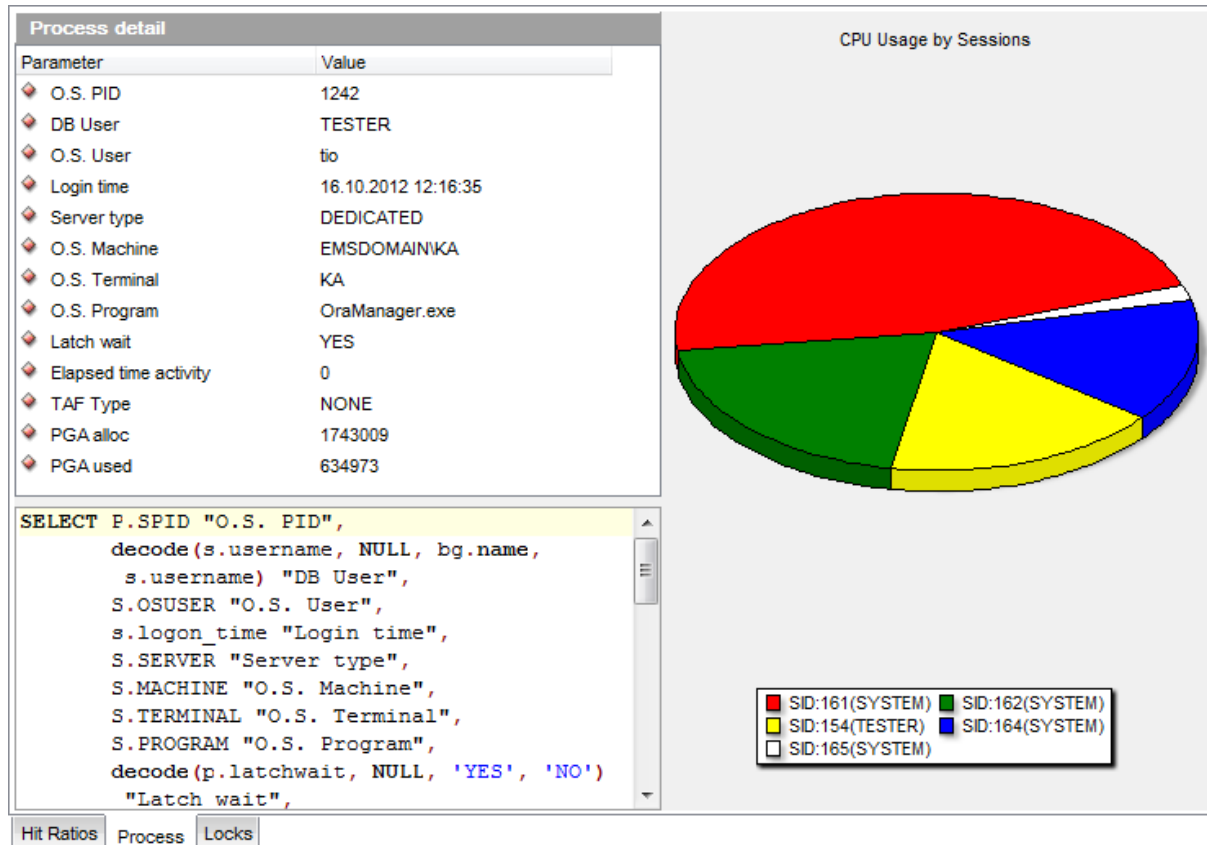
See also:

[Process](#)

[Locks](#)

10.2.4.2 Process

The **Process** tab provides details on processes and displays CPU usage by sessions graphically.



Process detail

The list displays process details as a grid with the following columns: *Parameter*, *Value*. 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.

The list displays process details for the selected [session](#): *O.S. PID*, *DB User*, *O.S. User*, *Login time*, *Server type*, *O.S. Machine*, *O.S. Terminal*, *O.S. Program*, *Latch wait*, *Elapsed time activity*, *TAF Type*, *PGA allocated*, *PGA used*.

The editor area below displays the last cached query to the system view for the specified session.

CPU Usage by Sessions

The diagram area provides visual representation of CPU usage by sessions.

See also:

[Hit Ratios](#)

[Locks](#)

10.2.4.3 Locks

The **Locks** tab displays all session locks. Select the required session from the **Session** list to see its locks, locked objects and detailed information on them.

The screenshot shows the SQL Manager for Oracle interface with the **Locks** tab selected. The top pane displays a list of sessions with the following columns: USERNAME, SID, SERIAL#, STATUS, Lock wait, MACHINE, TYPE, and COMM. The bottom pane is divided into two sections: **All Lock per Session** and **Locked Objects of the Library Cache**. The **All Lock per Session** section shows a table with the following columns: Object Name, Object Type, Type, Lock, and a scroll bar. The **Locked Objects** section shows a table with the following columns: Object Name, Object Type, and Lock Mode. The **Hit Ratios**, **Process**, and **Locks** tabs are visible at the bottom.

All Lock per Session

The list displays all locks for the selected [session](#) as a grid with the following columns: *Object name, Object type, Type, Lock mode, Request, CTime, Lock ID1, Lock ID2, Block*. 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.

Locked Objects

The list displays locked objects for the selected [session](#) as a grid with the following columns: *Object name*, *Object type*, *Lock mode*, *Undo segment number*, *Slot number*, *Sequence number*, *Program*. 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.

Locked Objects of the Library Cache

The list area displays the locked objects of the library cache grouped by object type.

See also:

[Hit Ratios](#)

[Process](#)

10.2.5 Storage

The **Storage** tab displays the storage statistics in groups:

- [Tablespace](#)
- [Control Files](#)
- [Data Files](#)
- [RBS Activity](#)

See also:

[System Statistics](#)

[Last Analyze Stats](#)

[Sessions](#)

[SGA](#)

[Wait Events](#)

[Latches](#)

[Database Alerts](#)

10.2.5.1 Tablespace

The **Tablespace** tab consists of two basic areas: **Tablespaces** and **Segments for <tablespace_name>**.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts

Tablespaces						
Tablespace	Alloc Size(Mb)	Free Size(Mb)	Used Size(Mb)	Pct Used	Max (Mb)	Free Space Frag Index
EXAMPLE	100	31,75	68,25	68 %	32767,98	44,45
SYSAUX	560	14,94	545,06	97 %	32767,98	50,06
SYSTEM	540	8,38	531,63	98 %	32767,98	76,96
TEMP	322	322	0	0 %	32767,98	101
UNDOTBS1	360	338,69	21,31	6 %	32767,98	53,66
USERS	2446,25	1451,56	994,69	41 %	32767,98	13,12
YEGOROV	2048,01	2042,56	5,45	0 %	2048,01	22,93

Segments for EXAMPLE									
Min extents	0	Segment type	(All)						
Owner	Segment Name	Segment Type	Size (b)	Initial Extent	Next Extent	Pct Increase	Extents	Max Extents	Extent Efficacy
HR	COUNTRY_C_ID_PK	Index	65536	65536		0	1	2147483645	
HR	DEPT_ID_PK	Index	65536	65536		0	1	2147483645	
HR	DEPT_LOCATION_ID	Index	65536	65536		0	1	2147483645	
HR	EMP_DEPARTMENT	Index	65536	65536		0	1	2147483645	
HR	EMP_EMAIL_UK	Index	65536	65536		0	1	2147483645	
HR	EMP_EMP_ID_PK	Index	65536	65536		0	1	2147483645	
HR	EMP_JOB_IX	Index	65536	65536		0	1	2147483645	
HR	EMP_MANAGER_IX	Index	65536	65536		0	1	2147483645	
HR	EMP_NAME_IX	Index	65536	65536		0	1	2147483645	
HR	JHIST_DEPARTMEN	Index	65536	65536		0	1	2147483645	

Tablespace	Control Files	Data Files	RBS Activity

Tablespaces

The list displays Oracle [tablespaces](#) as a grid with the following columns: *Tablespace*, *Alloc Size (Mb)*, *Free Size (Mb)*, *Used Size (Mb)*, *Pct Used*, *Max(Mb)*, *Free Space Fragmentation Index*. 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.

Right-click an item within the list to call the **context menu** allowing you to *refresh* the list, *coalesce* the tablespace and *set SQL trace* to the trace log on the server.

Tablespace management tools are also available through the [Navigation bar](#) of the **Database Statistics** window.

Segments for <tablespace_name>

The list displays the selected tablespace segments as a grid with the following columns: *Owner*, *Segment name*, *Segment type*, *Size (b)*, *Initial Extent*, *Next Extent*, *Pct Increase*, *Extents*, *Max Extents*, *Extent Efficacy*, *Frag Count*. 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 also filter the rows in the **Segments for <tablespace_name>** list by **minimum extents** and **segment type**. Use the corresponding controls in the upper area.

See also:

[Control Files](#)

[Data Files](#)

[RBS Activity](#)

10.2.5.2 Control Files

The **Control Files** tab provides information on control files of the Oracle database.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts
Control Files							
Controlfile Name							
/opt/oracle/oradata/ORTOZ/control01.ctl							
/opt/oracle/oradata/ORTOZ/control02.ctl							
/opt/oracle/oradata/ORTOZ/control03.ctl							

The upper area lists the full paths to control files on the server.

The lower area displays control file details as a grid with the following columns: *Type*, *Record Size*, *Records Total*, *Records Used*, *Pct Used*, *Free Size*. 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.

See also:

[Tablespace](#)

[Data Files](#)

[RBS Activity](#)

10.2.5.3 Data Files

The **Data Files** tab provides information on data files of the Oracle database.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts
Data Files							
File Name	File Type	Status	Used Size(Mb)	Free Size(Mb)	Pct Used	Tablespace	
/opt/oracle/oradata/ORTOZ/users01.dbf	Datafile	ONLINE	994,69	1451,56	85 %	USERS	
/opt/oracle/oradata/ORTOZ/sysaux01.dbf	Datafile	ONLINE	545,06	14,94	85 %	SYSAUX	
/opt/oracle/oradata/ORTOZ/system01.dbf	Datafile	ONLINE	531,63	8,38	85 %	SYSTEM	
/opt/oracle/oradata/ORTOZ/example01.dbf	Datafile	ONLINE	68,25	31,75	85 %	EXAMPLE	
/opt/oracle/oradata/ORTOZ/undotbs01.dbf	Datafile	ONLINE	21,31	338,69	85 %	UNDOTBS1	
/opt/oracle/oradata/ORTOZ/yegorov01.dbf	Datafile	ONLINE	5,45	2042,56	85 %	YEGOROV	
/opt/oracle/oradata/ORTOZ/temp01.dbf	Tempfile	AVAILABLE	322	322	100 %	TEMP	

The **Data Files** area displays data files as a grid with the following columns: *File Name*, *File Type*, *Status*, *Used Size (Mb)*, *Free Size (Mb)*, *Pct Used*, *Tablespace*, *Next Extent*, *Initial Extent*, *Min Extent*, *Max Extent*, *Pct Increase*. 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.

See also:

[Tablespace](#)

[Control Files](#)

[RBS Activity](#)

10.2.5.4 RBS Activity

The **RBS Activity** tab provides information on Rollback Segment Activity.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts			
RBS Activity										
Segment Name	Tablespace	Status	Xacts	Size	Waits	Gets	Writes	Extents	Shrinks	Optimal Size
SYSTEM	SYSTEM	ONLINE		0,37	6	75	7740	0	0	
_SYSSMU1\$	UNDOTBS1	ONLINE		2,12	4	139	41702	0	0	
_SYSSMU2\$	UNDOTBS1	ONLINE		1,12	3	130	47440	0	0	
_SYSSMU3\$	UNDOTBS1	ONLINE		1,12	3	173	127578	0	0	
_SYSSMU4\$	UNDOTBS1	ONLINE		2,12	4	130	28372	0	0	
_SYSSMU10\$	UNDOTBS1	ONLINE		1,12	3	136	97706	0	0	
_SYSSMU6\$	UNDOTBS1	ONLINE		2,12	4	156	132952	0	0	
_SYSSMU7\$	UNDOTBS1	ONLINE		1,12	3	125	33202	0	0	
_SYSSMU8\$	UNDOTBS1	ONLINE		1,12	3	131	29952	0	0	
_SYSSMU9\$	UNDOTBS1	ONLINE		1,12	3	128	19348	0	0	
_SYSSMU5\$	UNDOTBS1	ONLINE		8,12	10	128	25286	0	0	
Tablespace	Control Files	Data Files	RBS Activity							

The **RBS Activity** area displays [rollback segments](#) as a grid with the following columns: *Segment Name*, *Tablespace*, *Status*, *Xacts*, *Size*, *Waits*, *Gets*, *Writes*, *Extents*, *Shrinks*, *Optimal Size*. 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.

See also:

[Tablespace](#)

[Control Files](#)

[Data Files](#)

10.2.5.5 Redo Switch Frequency

The **Redo Switch Frequency** tab provides information how many times the database stopped writing to one redo log file and switched to another one.

You can set the **Warning level** to highlight the cell with **yellow**, if number of redo log switches exceeds the specified number.

Set the **Critical level** value to highlight the cell with **red**, if the number of switches exceeds this value.

System Statistics Last Analyze Stats Sessions Storage SGA Wait Events Latches Database Alerts																		
Warning Level		3	Critical Level		5													
Day	Total	Avg per Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
2018-11-18	2	0,08	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
2018-11-17	2	0,08	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2018-11-16	1	0,04	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2018-11-15	5	0,21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1
< >																		
Tablespace Control Files Data Files RBS Activity Redo Switch Frequency																		

10.2.6 SGA

The **SGA** (System Global Area) is a chunk of memory that is allocated by an Oracle instance and is shared among Oracle processes. It contains all sorts of information about the instance and the database to be operated.

The **SGA** tab allows you to view the following statistics on Oracle SGA:

- [Summary SGA](#)
- [Library Cache](#)
- [Data Dictionary Cache](#)

See also:

[System Statistics](#)

[Last Analyze Stats](#)

[Sessions](#)

[Storage](#)

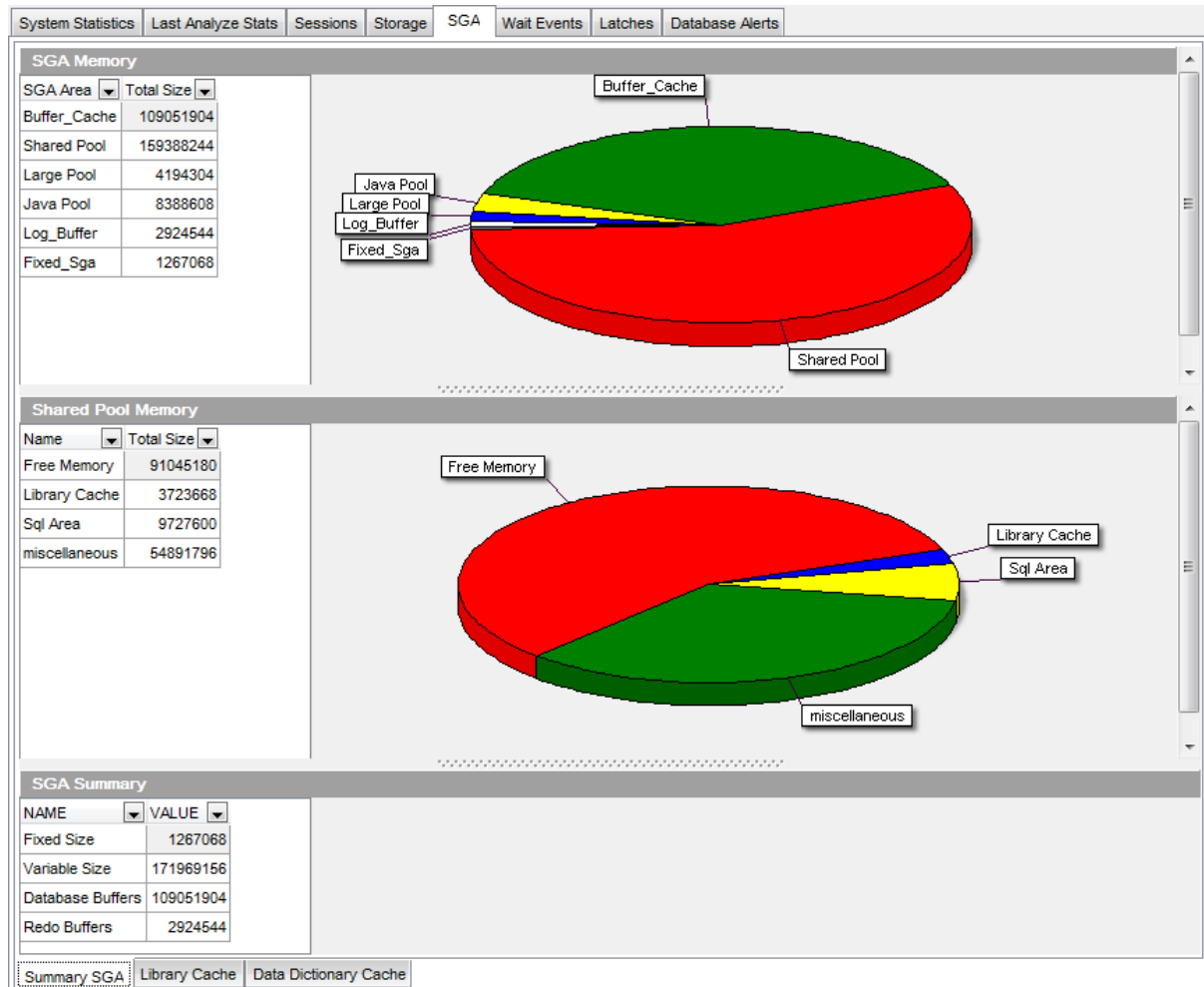
[Wait Events](#)

[Latches](#)

[Database Alerts](#)

10.2.6.1 Summary SGA

The **Summary SGA** tab provides information on SGA (System Global Area) memory, shared pool memory and SGA summary.



SGA Memory

The list area displays SGA memory usage information as a grid with the following columns: *SGA Area*, *Total Size*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

The diagram area provides visual representation of SGA memory usage.

Hint: You can click the diagram and rotate it to get the best view.

Shared Pool Memory

The list area displays shared pool memory usage information as a grid with the following

columns: *Name*, *Total Size*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

The diagram area provides visual representation of shared pool memory usage.

Hint: You can click the diagram and rotate it to get the best view.

SGA Summary

The list area displays SGA summary as a grid with the following columns: *NAME*, *VALUE*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:

[Library Cache](#)

[Data Dictionary Cache](#)

10.2.6.2 Library Cache

The **Library Cache** tab provides information on Oracle library cache.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts	
Library Cache								
Namesoace	Gets	Get Hits	Get Hit Ratio	Pins	Pin Hits	Pin Hit Ratio	Reloads	Invalidations
BODY	443	413	93	578	547	95	0	0
CLUSTER	108	100	93	271	263	97	0	0
INDEX	57	0	0	57	0	0	0	0
JAVA DATA	0	0	100	0	0	100	0	0
JAVA RESOURCE	0	0	100	0	0	100	0	0
JAVA SOURCE	0	0	100	0	0	100	0	0
OBJECT	0	0	100	0	0	100	0	0
PIPE	0	0	100	0	0	100	0	0
SQL AREA	5103	2462	48	61127	58768	96	22	0
TABLE/PROCEDURE	4036	1688	42	7742	4947	64	4	0
TRIGGER	10	6	60	137	133	97	0	0
Summary SGA	Library Cache	Data Dictionary Cache						

The **Library Cache** area displays items as a grid with the following columns: *Namespace*, *Gets*, *Get Hits*, *Get Hit Ratio*, *Pins*, *Pin Hits*, *Pin Hit Ratio*, *Reloads*, *Invalidations*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:

[Summary SGA](#)

[Data Dictionary Cache](#)

10.2.6.3 Data Dictionary Cache

The **Data Dictionary Cache** tab provides information on Oracle data dictionary cache.

System Statistics Last Analyze Stats Sessions Storage SGA Wait Events Latches Database Alerts								
Data Dictionary Cache								
Type	Parameter	Count	Usage	Fixed	Gets	Get Misses	Scans	Scan Misses
PARENT	dc_free_extents	0	0	0	0	0	0	0
PARENT	dc_used_extents	0	0	0	0	0	0	0
PARENT	dc_hintsets	0	0	0	0	0	0	0
PARENT	dc_awr_control	1	1	0	49	1	0	0
PARENT	outstanding_alerts	16	16	0	80	24	0	0
PARENT	qmtmrctq_cache_entries	0	0	0	0	0	0	0
PARENT	qmtmrctq_cache_entries	0	0	0	0	0	0	0
PARENT	qmtmrctp_cache_entries	0	0	0	0	0	0	0
PARENT	qmtmrctp_cache_entries	0	0	0	0	0	0	0
PARENT	qmtmrctn_cache_entries	0	0	0	0	0	0	0
PARENT	qmtmrctn_cache_entries	0	0	0	0	0	0	0
PARENT	dc_segments	668	668	0	1070	668	0	0
PARENT	dc_tablespace	7	7	0	33276	7	0	0
PARENT	dc_tablespace_quotas	0	0	0	0	0	0	0
PARENT	dc_files	6	6	0	138	6	0	0
PARENT	dc_users	42	42	0	19358	42	0	0
PARENT	dc_rollback_segments	22	22	1	386	21	0	0

The **Data Dictionary Cache** area displays items as a grid with the following columns: *Type, Parameter, Count, Usage, Fixed, Gets, Get Misses, Scans, Scan Misses, Scan Completes, Modifications, Flushes*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:

[Summary SGA](#)

[Library Cache](#)

10.2.7 Wait Events

The **Wait Events** tab provides information on Oracle wait events.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts
Drag a column header here to group by that column							
Events	Total Waits	Time Wait(s)	Total Timeouts	Average Wait(s)			
Log Archive I/O	1	0	0	0			
Class Slave Wait	2	0	0	0			
Os Thread Startup	22	0,63	0	0,03			
Control File Sequential Read	2216	0,34	0	0			
Control File Parallel Write	878	27,67	0	0,03			
Latch: Cache Buffers Chains	1	0	0	0			
Checkpoint Completed	2	0,64	0	0,32			
Read By Other Session	5	0,29	0	0,06			
Recovery Read	3	0	0	0			
Log File Sequential Read	12	0,1	0	0,01			
Log File Single Write	7	0,36	0	0,05			
Log File Parallel Write	474	8,25	0	0,02			
Log File Sync	49	1,83	0	0,04			
Db File Sequential Read	24036	54,92	0	0			
Db File Scattered Read	474	5,5	0	0,01			
Db File Single Write	6	0	0	0			
Direct Path Read	24	0	0	0			
Direct Path Read Temp	4	0	0	0			

The list displays wait events as a grid with the following columns: *Events*, *Total Waits*, *Time Wait(s)*, *Total Timeouts*, *Average Wait(s)*. If more convenient, you can [change the order](#) of the columns by dragging their headers horizontally.

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.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:

[System Statistics](#)

[Last Analyze Stats](#)

[Sessions](#)

[Storage](#)

[SGA](#)

[Latches](#)

[Database Alerts](#)

10.2.8 Latches

Latches are low level serialization mechanisms used to protect shared data structures in the [SGA](#). The implementation of latches is operating system dependent, particularly in regard to whether a process will wait for a latch and for how long.

The **Latches** tab displays aggregate latch statistics for both parent and child latches, grouped by latch name.

System Statistics	Last Analyze Stats	Sessions	Storage	SGA	Wait Events	Latches	Database Alerts
Drag a column header here to group by that column							
Name	PID	Immer	Immediat	Gets	Misses	Sleeps	
Redo Copy		4840	9	14	0	0	
In Memory Undo Latch		873	0	2974	0	0	
Active Service List		867	0	5349	0	0	
Memory Management Latch		849	0	15	0	0	
Sql Memory Manager Latch		833	0	1	0	0	
Klf Sga Latch		814	0	5	0	0	
Checkpoint Queue Latch		710	0	17087	0	0	
Object Queue Header Heap		444	0	5657	0	0	
Cache Table Scan Latch		333	0	80	0	0	
Job Workq Parent Latch		90	0	0	0	0	
Mql Tracking Latch		51	0	0	0	0	
Post/Wait Queue		51	0	125	0	0	
Process Allocation		35	0	54	0	0	
Enqueue Hash Chains		8	0	83053	0	0	
Library Cache Load Lock		3	0	3375	0	0	
Rsm Sql Latch		1	0	0	0	0	
Sga Io Buffer Pool Latch		1	0	1	0	0	
Active Checkpoint Queue Latch		0	0	1450	0	0	

The list displays latches as a grid with the following columns: *Name*, *PID*, *Immediate Gets*, *Immediate Misses*, *Gets*, *Misses*, *Sleeps*. If more convenient, you can [change the order](#) of the columns by dragging their headers horizontally.

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.

Click a column caption to **sort** items by values of this column in the ascending or the descending mode.

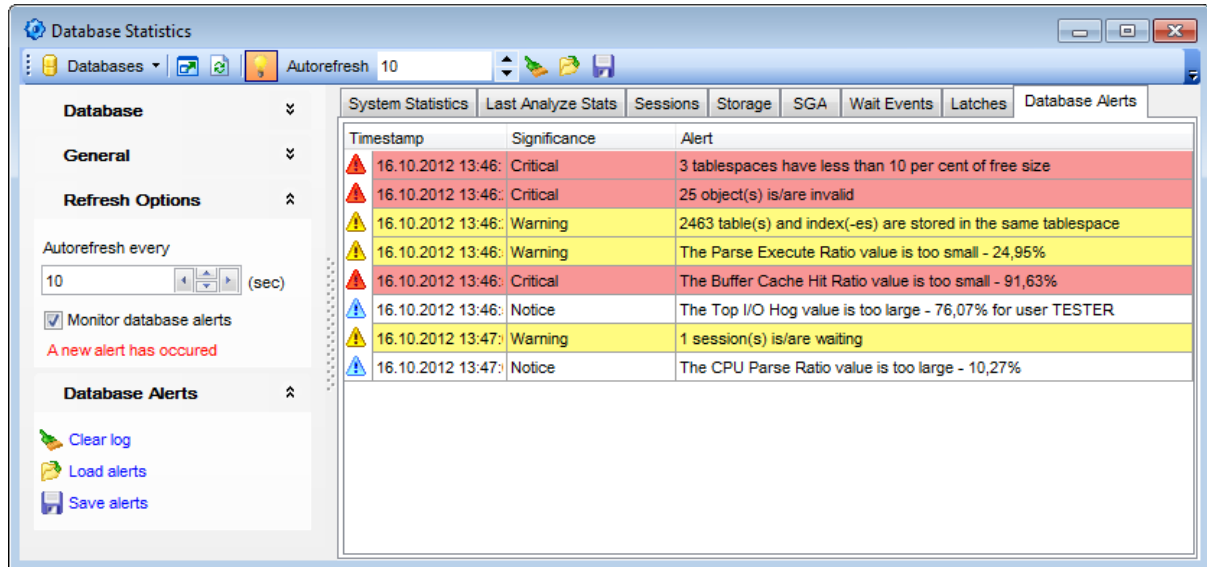
In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

See also:[System Statistics](#)[Last Analyze Stats](#)[Sessions](#)[Storage](#)[SGA](#)[Wait Events](#)[Database Alerts](#)

10.2.9 Database Alerts

The **Database Alerts** tab provides information on Oracle database alerts.

Note: To start monitoring of database alerts, you should select the corresponding option available on the [Navigation bar](#). Using the **Navigation bar** you can also manage the list of database alerts: *clear log*, *load* the list from an external file, *save* the list to a file.



The list displays database alerts as a grid with the following columns: *Timestamp*, *Significance*, *Alert*. 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.

Hint: Alerts of different significance are marked in the list by their icons and are highlighted with different colors.

Alert settings can be defined at the [Database Alerts Settings](#) section of the [Environment Options](#) dialog.

See also:

[System Statistics](#)

[Last Analyze Stats](#)

[Sessions](#)

[Storage](#)

[SGA](#)

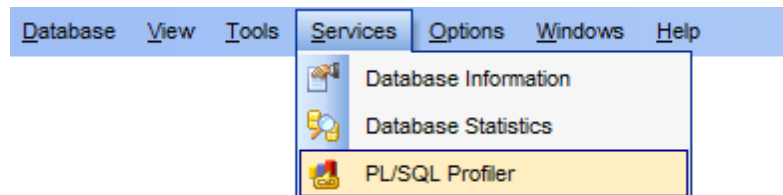
[Wait Events](#)

[Latches](#)

10.3 PL/SQL Profiler

PL/SQL Profiler allows you to profile existing PL/SQL applications and identify performance bottlenecks.

To call the **PL/SQL Profiler** window, select the **Services |  PL/SQL Profiler** [main menu](#) item.



- [Using Navigation bar and Toolbar](#)
- [Using PL/SQL Profiler](#)

Availability:

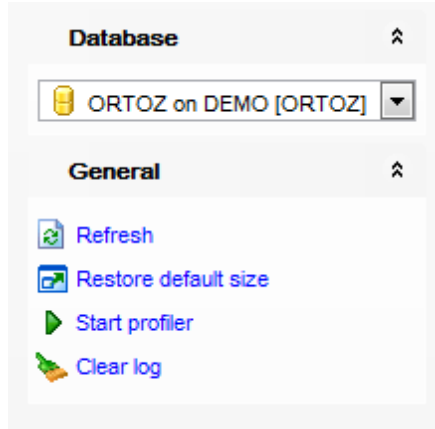
Full version (for Windows) **Yes**

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.

10.3.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in **PL/SQL Profiler**.



Database

 select a database for profiling

General

-  refresh the currently displayed profiler information
-  start profiler
-  pause profiler
-  stop profiler
-  clear profiler log
-  restore the default size and position of the window

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

10.3.2 Using PL/SQL Profiler

PL/SQL Profiler provides three basic areas: *Run-specific information*, *Information about each library unit in a run*, *Data from all profiler runs*.

Run-specific information

The list displays profiler sessions as a grid with the following columns: *Run date*, *Run owner*, *Elapsed time (msec)*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

Right-click an item within the list to call the **context menu** allowing you to *delete* the selected session.

The screenshot shows the PL/SQL Profiler 2.0 application window. On the left is a sidebar with a 'Database' section showing 'KOZMA on DEMO [KOZMA]' and a 'General' section with buttons for 'Refresh', 'Restore default size', 'Stop profiler', 'Pause profiler', and 'Clear log'. The main area is divided into three sections:

Run-specific information

Run date	Run owner	Elapsed time
30.07.2010 12:26:32	SYS	
26.10.2012 15:51:15	SYS	129650,4

Information about each library unit in a run

Unit type	Unit owner	Unit name	Total	Total %
ANONYMOUS BLOCK	<anonymous>	<anonymous>	0	0 %
ANONYMOUS BLOCK	<anonymous>	<anonymous>	1,13	88 %
ANONYMOUS BLOCK	<anonymous>	<anonymous>	0,01	1 %
ANONYMOUS BLOCK	<anonymous>	<anonymous>	0,01	1 %

Data from all profiler runs

Line	Occurrence	Total time	Min time	Max time	Total time (n)	TOTALTIME
1	0	0	0	0	0	0 %
2	0	2475174	2475174	2475174	0,2475174	25 %
3	1	1747708	1747708	1747708	0,1747708	17 %

At the bottom of the main area are 'Data' and 'Source' tabs.

Information about each library unit in a run

The list displays extended information about each library unit as a grid with the following columns: *Unit type*, *Unit owner*, *Unit name*, *Total time (msec)*, *Total time*. 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.

In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

Data from all profiler runs

This area allows you to view data from all profiler runs as a grid with the following columns: *Line*, *Occurrences*, *Total time*, *Min time*, *Max time*, *Total time (msec)*, *TOTALTIME*. 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.

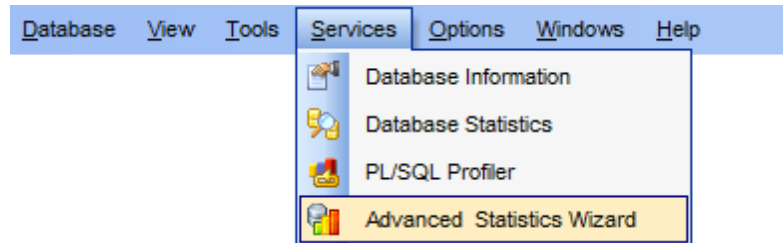
In order to **filter** items in grid, you can use [Custom Filter](#) and [Filter Builder dialog](#). For more information refer to the [Filtering records](#) page.

If necessary, you can switch to the **Source** tab to view the source for all profiler runs.

10.4 Advanced Statistics Wizard

Advanced Statistics Wizard allows you to collect various statistics as an aid to improve the performance. You can choose to collect and manage statistics for the whole system or database, schemas, tables and domain indexes.

To start the wizard, select the **Services |  Advanced Statistics Wizard** [main menu](#) item, or right-click the database or any database object in [DB Explorer](#) and select the **Tasks | Gather Statistics / Tasks | Delete Statistics** item from the context menu.



- [Selecting database and stats mode](#)
- [Selecting objects](#)
- [Specifying additional settings](#)
- [Managing statistics](#)

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 templates](#)

10.4.1 Selecting database and stats mode

This step of the wizard allows you to select the source database and stats mode: stats operation and object type.

Database

Use the drop-down list to select the **source database** that contains objects for gathering statistics.

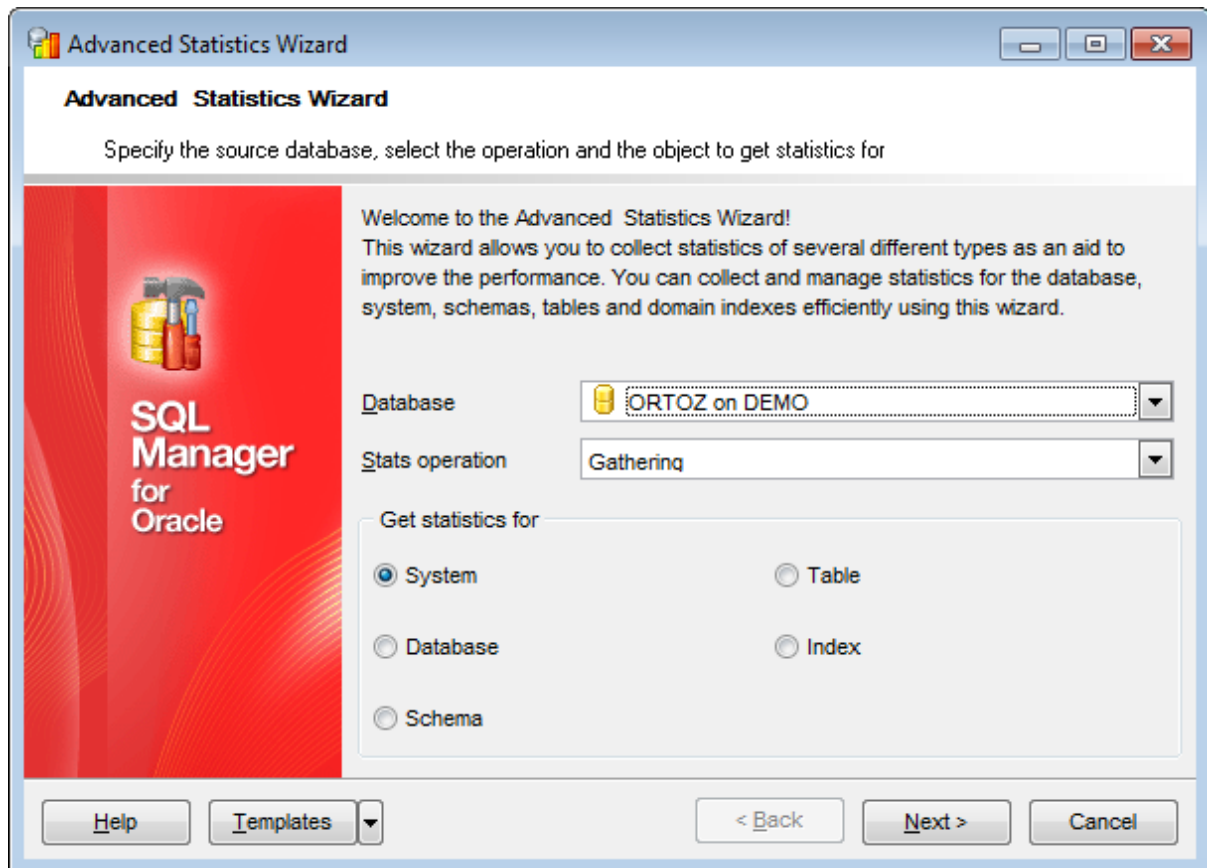
Stats operation

Use the drop-down list to select the statistics operation: *gathering*, *delete*, *export*, *import*.

Get statistics for

This group allows you to define the object type for retrieving statistics:

- ☒ System
- ☐ Database
- ☐ Schema
- ☐ Table
- ☐ Index



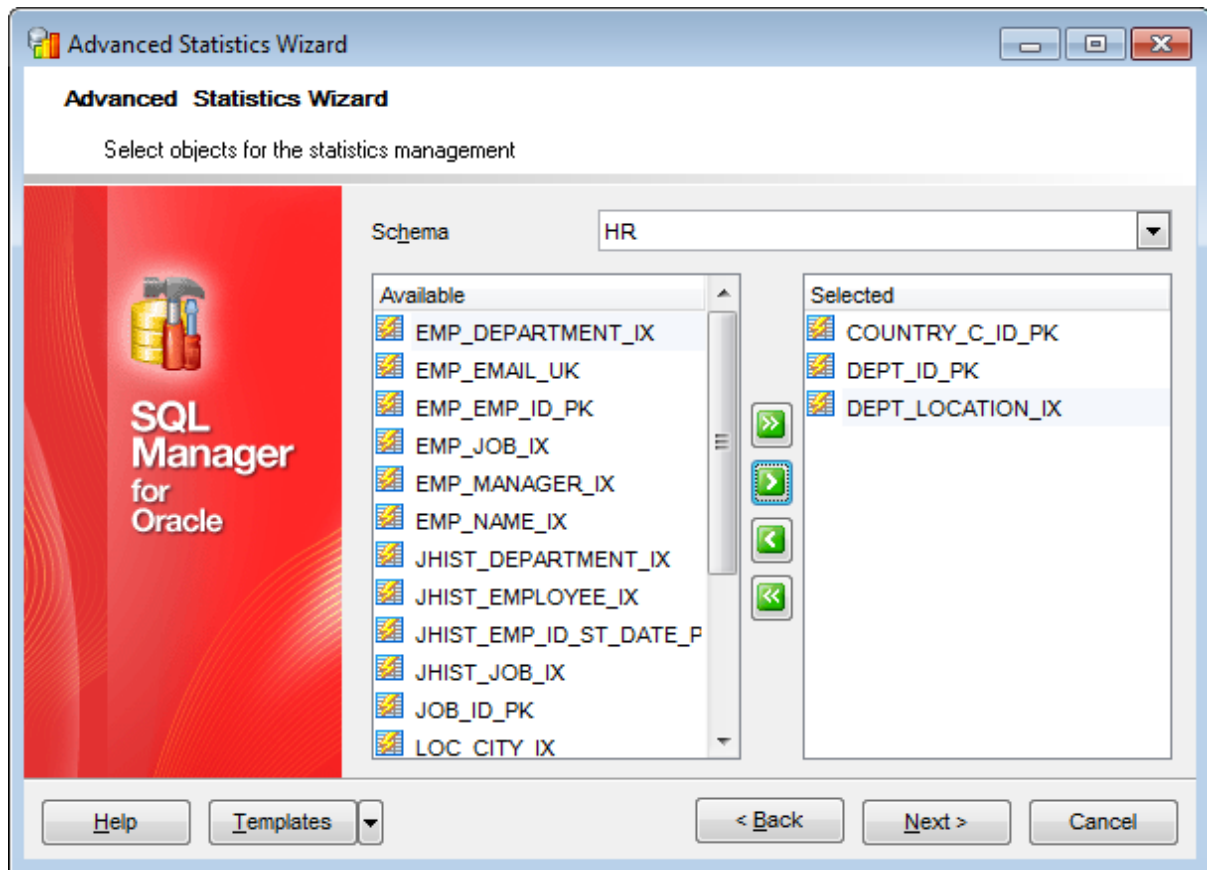
Click the **Next** button to proceed to the [Selecting objects](#) step (if you intend to get statistics for *schemas*, *tables* or *indexes*) or to the [Specifying additional settings](#) step of the wizard (if you intend to get statistics for the entire *system* or *database*).

10.4.2 Selecting objects

This step of the wizard allows you to **select objects** of the specified type for the statistics operation.

Note that this step is only available if you have specified the following object types to get statistics for at the [previous step](#):

- ☒ *Schema*
- ☐ *Table*
- ☐ *Index*



If you have specified ☒ *Schema* as the object type to get statistics for, you should select schema(s) for the statistics operation.

To select a schema, 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.

If you have specified ☐ *Table* as the object type to get statistics for, you should select table(s) for the statistics operation.

Schema

Use the drop-down list to select the schema to get [tables](#) from.

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 objects from one list to

another.

If you have specified  *Index* as the object type to get statistics for, you should select index(-es) for the statistics operation.

Schema

Use the drop-down list to select the schema to get [indexes](#) from.

To select an 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 objects from one list to another.

Click the **Next** button to proceed to the [Specifying additional settings](#) step of the wizard.

10.4.3 Specifying additional settings

Use this step of the wizard to **specify additional settings** for the specified statistics operation. The set of options depend on the objects for statistics, selected at the [first step](#).

The screenshot shows the 'Advanced Statistics Wizard' dialog box, specifically the 'Specify additional settings' step. The dialog has a title bar with standard window controls. On the left, there is a red vertical banner with the 'SQL Manager for Oracle' logo. The main area contains several settings:

- Target schema:** A drop-down menu currently showing '(none)'.
- Target name:** A drop-down menu currently showing '(none)'.
- Stat ID:** An empty text input field.
- Granularity:** A drop-down menu showing 'ALL'.
- Options:** A drop-down menu showing 'GATHER'.
- Method opt:** A drop-down menu showing 'FOR ALL INDEXED COLUMNS'.
- Degree:** A numeric spinner set to '0'.
- Estimate percent:** A numeric spinner set to '50'.
- Checkboxes:** Three unchecked checkboxes labeled 'No invalidate', 'Force', and 'Block sample'.

At the bottom, there are buttons for 'Help', 'Templates' (with a dropdown arrow), '< Back', 'Next >' (highlighted with a dashed border), and 'Cancel'.

Target schema

Use the drop-down list to select the schema containing the stat table.

Target name

Use the drop-down list to select the stat table (*stattab*) identifier describing where the current statistics will be saved, or enter a name (the stat table that will be created in this case).

Stat ID

Specify identifier (optional) to associate with these statistics within stat table (*stattab*).

Mode

Use the drop-down list to specify further specification of which objects to gather statistics for:

NOWORKLOAD (in this mode characteristics of the I/O system are captured; gathering may take a few minutes and depends on the size of the database; during this period Oracle will estimate the average read seek time and transfer speed for the I/O system)

INTERVAL (in this mode system activity is captured during a specified interval)

START | STOP (system activity is captured during specified start and stop times, and the

dictionary or stat table is refreshed with statistics for the elapsed period)

Interval

Specify time, in minutes, to gather statistics. This value is applied only when *INTERVAL* mode is selected.

Partition name

Specify the name of the partition on which you want statistics to be gathered.

Granularity

Use the drop-down list to specify granularity of statistics to collect:

ALL (gathers all, i.e. subpartition, partition, and global, statistics)

AUTO (determines the granularity based on the partitioning type)

DEFAULT (gathers global- and partition-level statistics)

GLOBAL (gathers global statistics)

GLOBAL AND PARTITION (gathers the global and partition level statistics; no subpartition level statistics are gathered even if it is a composite partitioned object)

PARTITION (gathers partition-level statistics)

SUBPARTITION (gathers subpartition-level statistics)

Options

Use the drop-down list to specify further specification of which objects to gather statistics for:

GATHER (gathers statistics on all objects in the schema)

GATHER AUTO (gathers all necessary statistics automatically; Oracle implicitly determines which objects need new statistics, and determines how to gather those statistics)

GATHER STALE (gathers statistics on stale objects as determined by looking at the *_tab_modifications views; also returns a list of stale objects)

GATHER EMPTY (gathers statistics on objects which currently have no statistics; also returns a list of objects which currently have no statistics)

LIST AUTO (returns a list of objects to be processed with *GATHER AUTO*)

LIST STALE (returns list of stale objects as determined by looking at the *_tab_modifications views)

LIST EMPTY (returns list of objects which currently have no statistics)

Method opt

Use the drop-down list to specify the method of gathering stats: *FOR ALL INDEXES COLUMNS*, *FOR ALL HIDDEN COLUMNS*.

Degree

Specify degree of parallelism (1 - serial execution).

Estimate percent

Specify the percentage of rows to estimate.

☒ **No invalidate**

If this option is selected, the dependent cursors are not invalidated.

☒ **Block sample**

This option specifies whether or not to use random block sampling instead of random row sampling. Random block sampling is more efficient, but if the data is not randomly distributed on disk, then the sample values may be somewhat correlated.

☒ **Force**

If this option is selected, statistics of the schema are gathered even if the object is locked.

☒ **Gather sys**

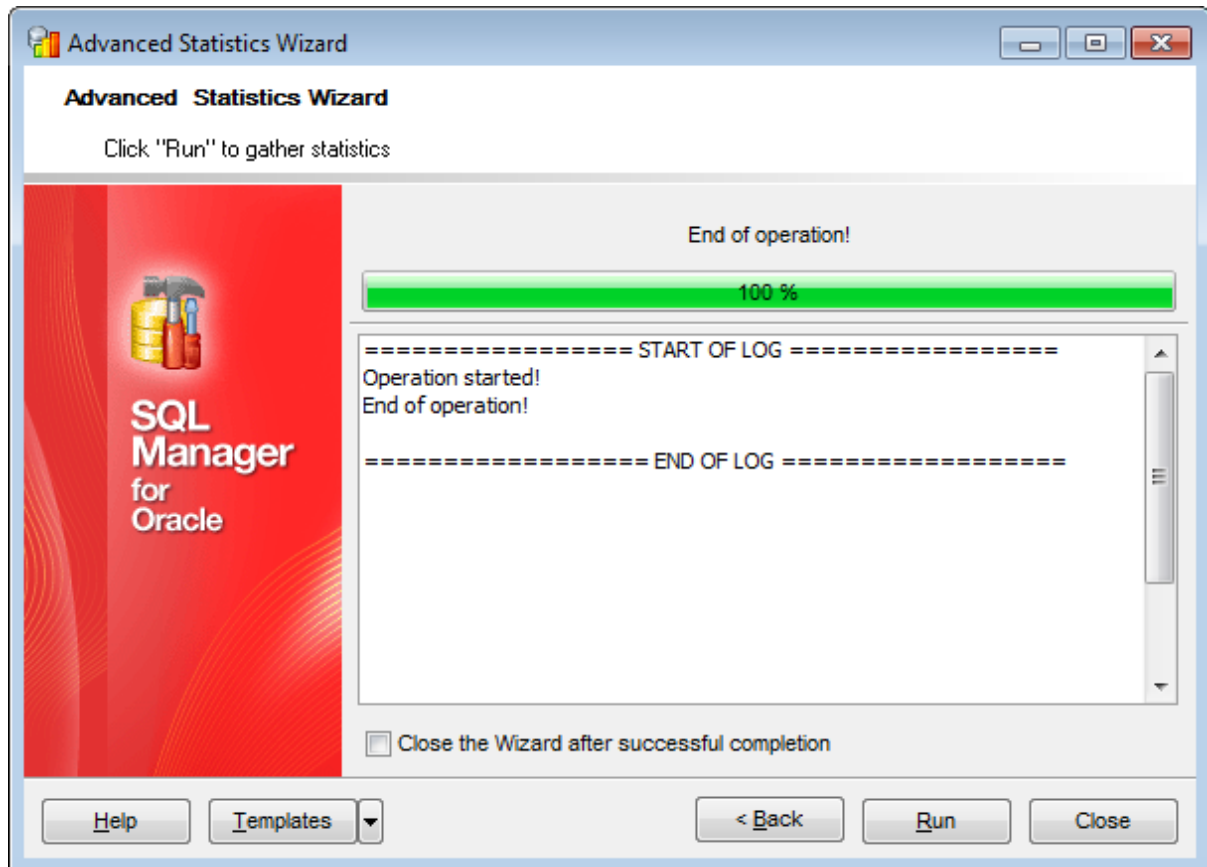
Select this option to gather statistics on the objects owned by the SYS user.

Click the **Next** button to proceed to the [Managing statistics](#) step of the wizard.

10.4.4 Managing statistics

This step of the wizard is intended for informing you that all extraction options have been set, and you can start the extraction 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 process is completed.

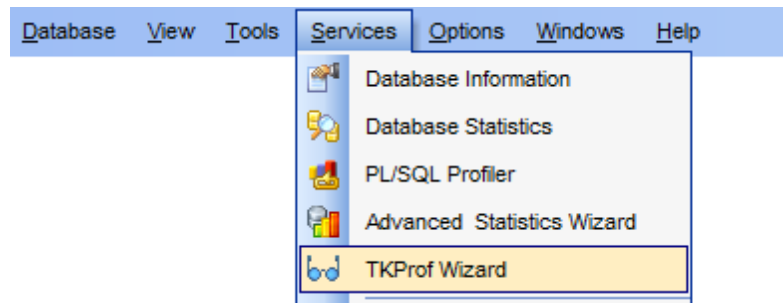
If necessary, you can save a [template](#) for future use.

Click the **Run** button to run the statistics operation.

10.5 TKProf Wizard

TKProf Wizard makes it possible to process trace files and create transient kernel reports.

To start the wizard, select the **Services | TKProf Wizard** [main menu](#) item.



- [Specifying common settings](#)
- [Selecting input files](#)
- [Setting sorting options](#)
- [Defining execution plan](#)
- [Specifying additional options](#)

Availability:

Full version (for Windows) **Yes**

Lite version (for Windows) **No**

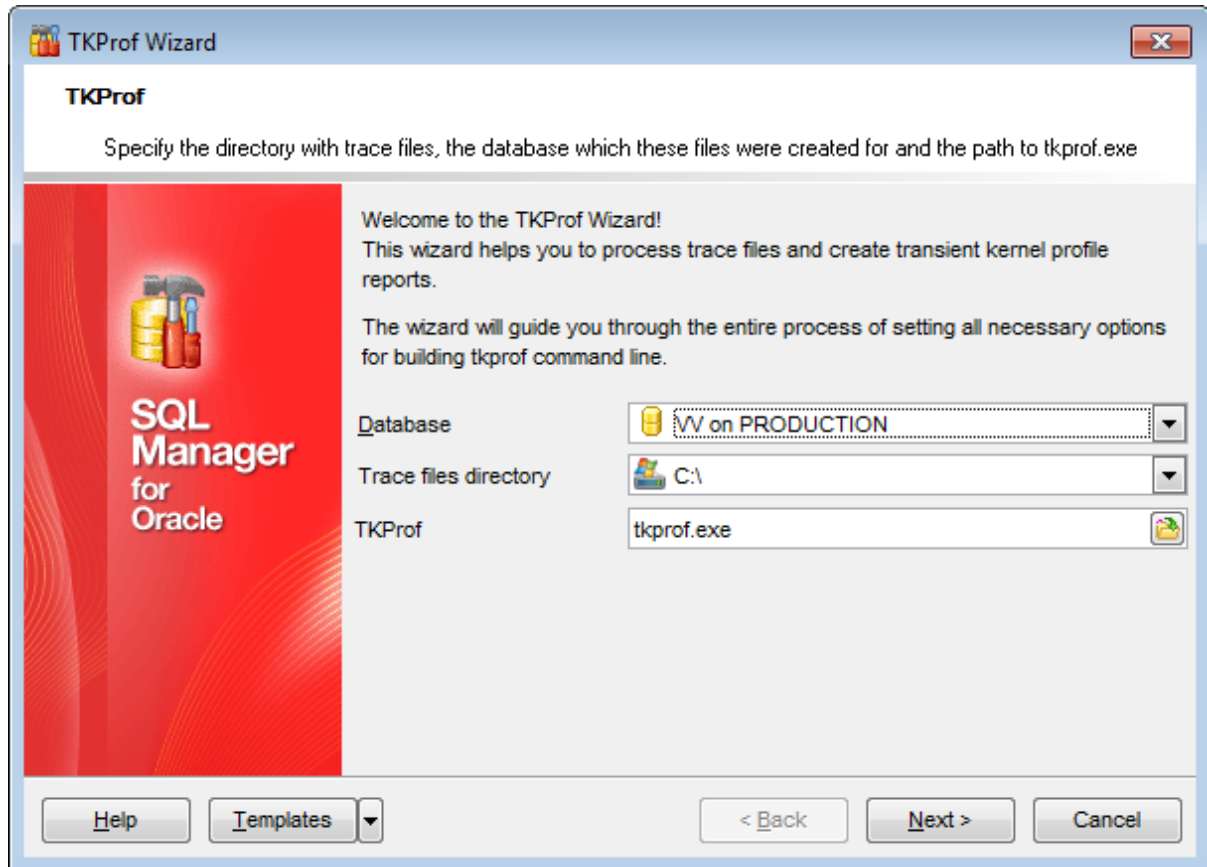
Note: To compare all features of the **Full** and the **Lite** versions of SQL Manager, refer to the [Feature Matrix](#) page.

See also:

[Templates](#)

10.5.1 Defining common settings

Use this step to define trace file and TKProf utility locations and specify database.

**Database**

Select the database for which trace files were created.

Trace files directory

Specifies the location of trace files to be processed.

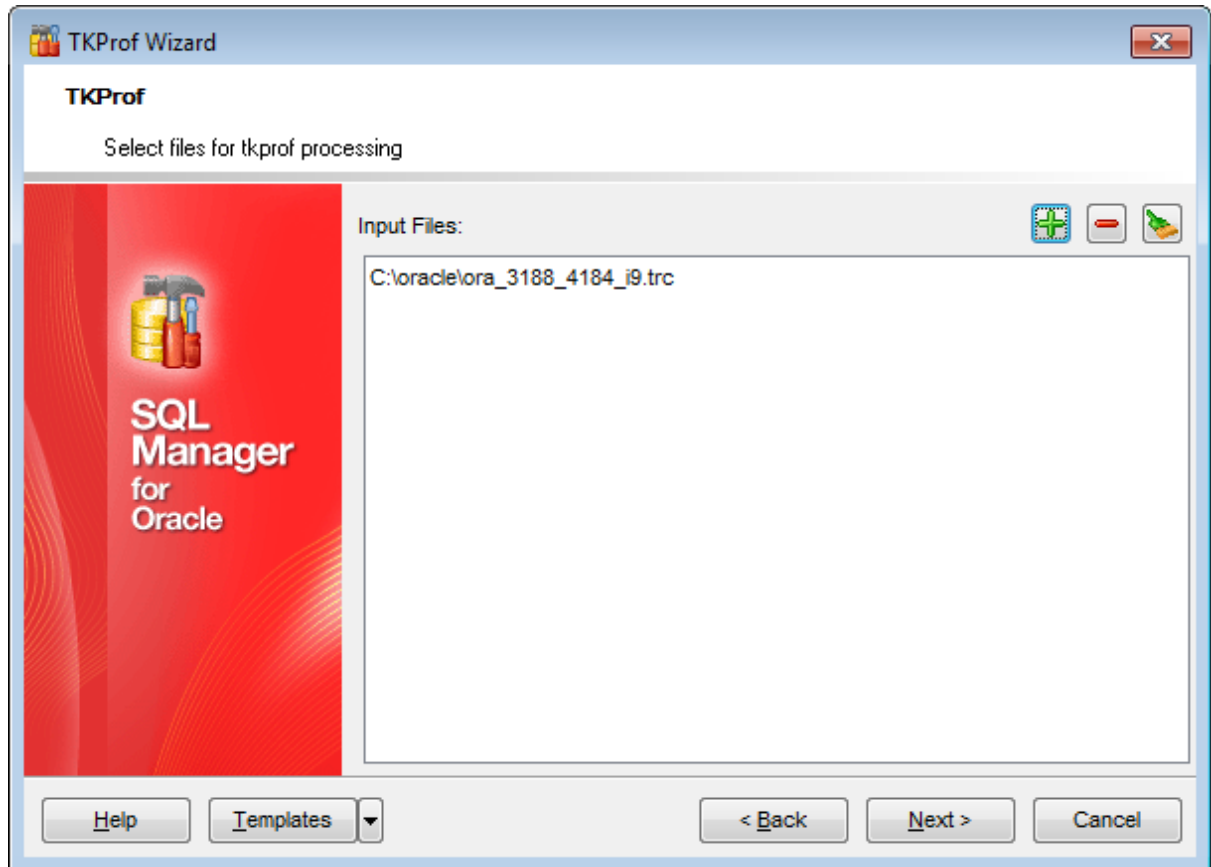
TKProf

Locates the 'tkprof.exe' file.

Click the **Next** button to proceed to the [Selecting input files](#) step of the wizard.

10.5.2 Selecting input files

At this step you need to define input files.



Press the  **Add trace file** button to open the standard *Open file* dialog and locate the needed trace file.

To remove a file from the list select it and press the  **Delete trace** file button.

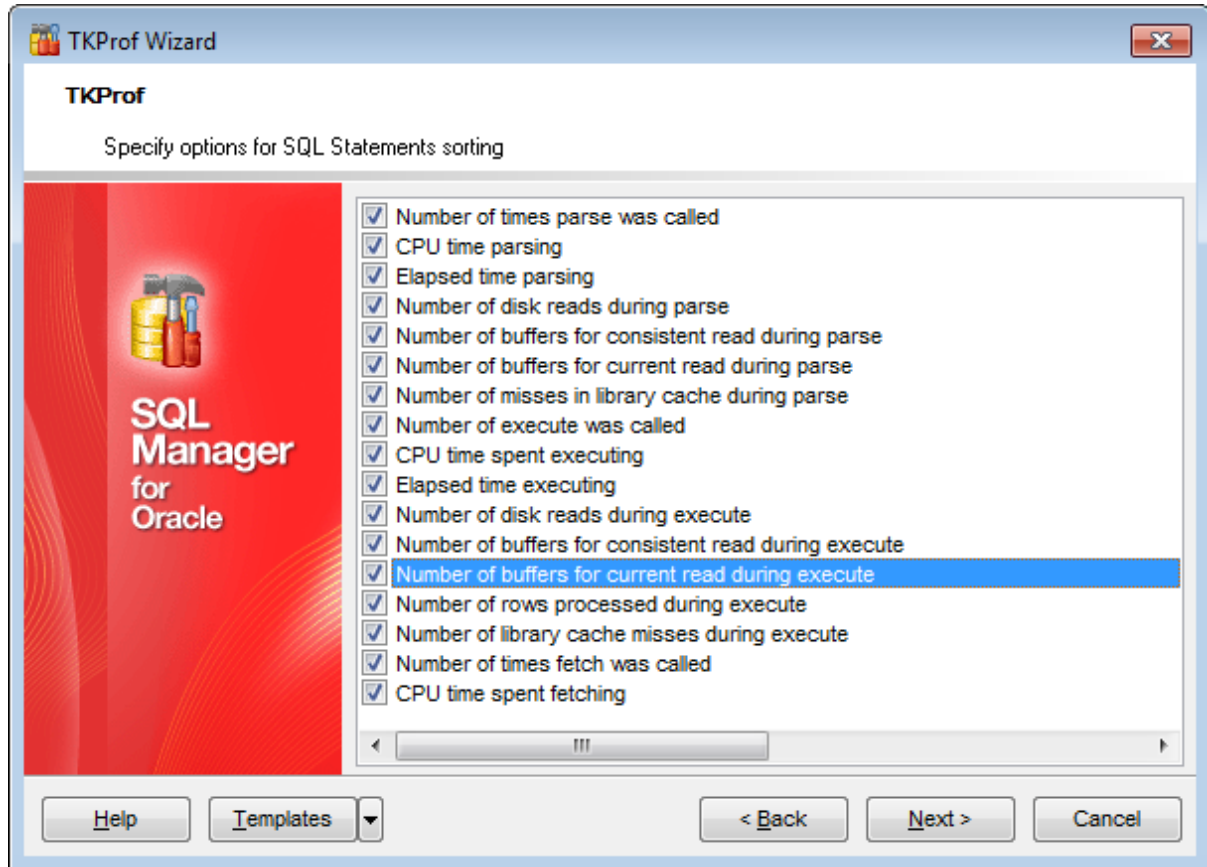
You can also clear list by pressing the  **Clear list** button.

Click the **Next** button to proceed to the [Setting sorting options](#) step of the wizard.

10.5.3 Setting sorting options

At this step you can set result file sorting options.

The utility sorts traced SQL statements in descending order of specified sort option before listing them into the output file. If more than one option is specified, then the output is sorted in descending order by the sum of the values specified in the sort options.



Check the parameters you need to sort statements by.

With no sorting parameters selected, TKProf lists statements into the output file in order of first use.

Press the **Next** button to proceed to the [Defining connection options](#) of the wizard.

10.5.4 Defining execution plan

At this step of the wizard you should indicate whether execution plan should be generated.

☒ **Don't use the EXPLAIN PLAN statement**

Use this option if you don't need to generate execution plan.

Decide whether utility should ☒ **Connect to the registered database** or to the ☐ **unregistered database**.

For the unregistered database you need to define connection parameters: *User/Password, Database name* and *Connection type*.

☒ **Explain to**

Use this option to insert execution plan data to a table. If the option is disabled the utility generates a file with the data.

Schema

Defines schema that contains table where the execution plan data should be inserted.

Name

Defines name of the existing table to insert execution plan into.

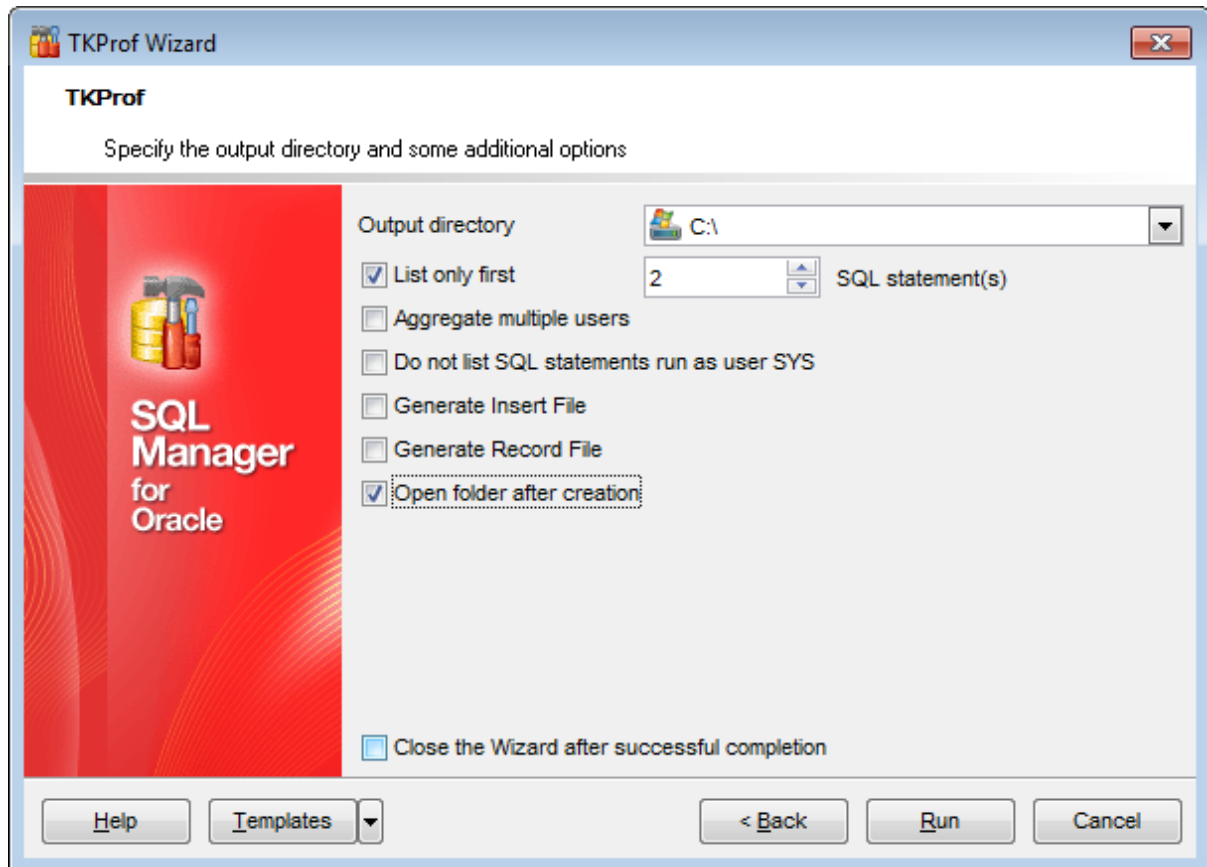
Press the Next button to proceed to the [Specifying additional options](#) step of the wizard.

10.5.5 Specifying additional options

Use this step to define additional options for the operation.

Output directory

Specify path to the output files.



☒ **List only first N SQL statement(s)**

Define the amount of the statements to be included into the result file.

☒ **Aggregate multiple users**

Enable the option to list statements of all users. By default only current user statements are included to the result file.

☒ **Do not list SQL statements run as user SYS**

Enable the options to exclude statements that were executed under the user SYS.

☒ **Generate Insert file**

Indicates whether the file containing *Insert* statements should be generated.

☒ **Generate Record File**

Indicates whether nonrecursive queries' results should be inserted to the record file.

☒ **Open folder after creation**

Enable the option to open the output directory after operation is performed.

To **Close the wizard after successful completion** use the corresponding option.

To launch TKProf with the defined settings press the **Run** button.

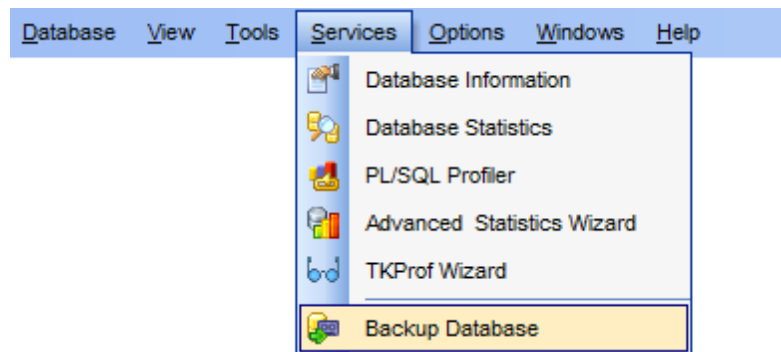
10.6 Backup Database

Backup Database Wizard is intended for creating backups of your Oracle database. During its work the script to perform backup will be created, which can be edited manually, if needed.

The wizard will guide through the entire process - checking current instance settings, tuning all the options necessary both for **User-managed backup script** and **Oracle Recovery Manager backup**.

Important: Please note that you must have a clear idea of the backup/restore mechanism. Note that a wrong combination of backup/restore settings can damage your database!

To start the wizard, select the **Services | Backup Database** [main menu](#) item, or right-click the database in [DB Explorer](#) and select the **Tasks | Backup Database** item from the [context menu](#).



- [Selecting database and backup strategy](#)
- [Checking database and instance settings](#)
- [User-managed script: Selecting datafiles](#)
- [User-managed script: Setting additional options](#)
- [RMAN: Specifying backup type and options](#)
- [RMAN: Setting additional options](#)
- [Scheduling backup scripts](#)
- [Running database backup operation](#)

Availability:

Full version (for Windows) **Yes**

Lite version (for Windows) **No**

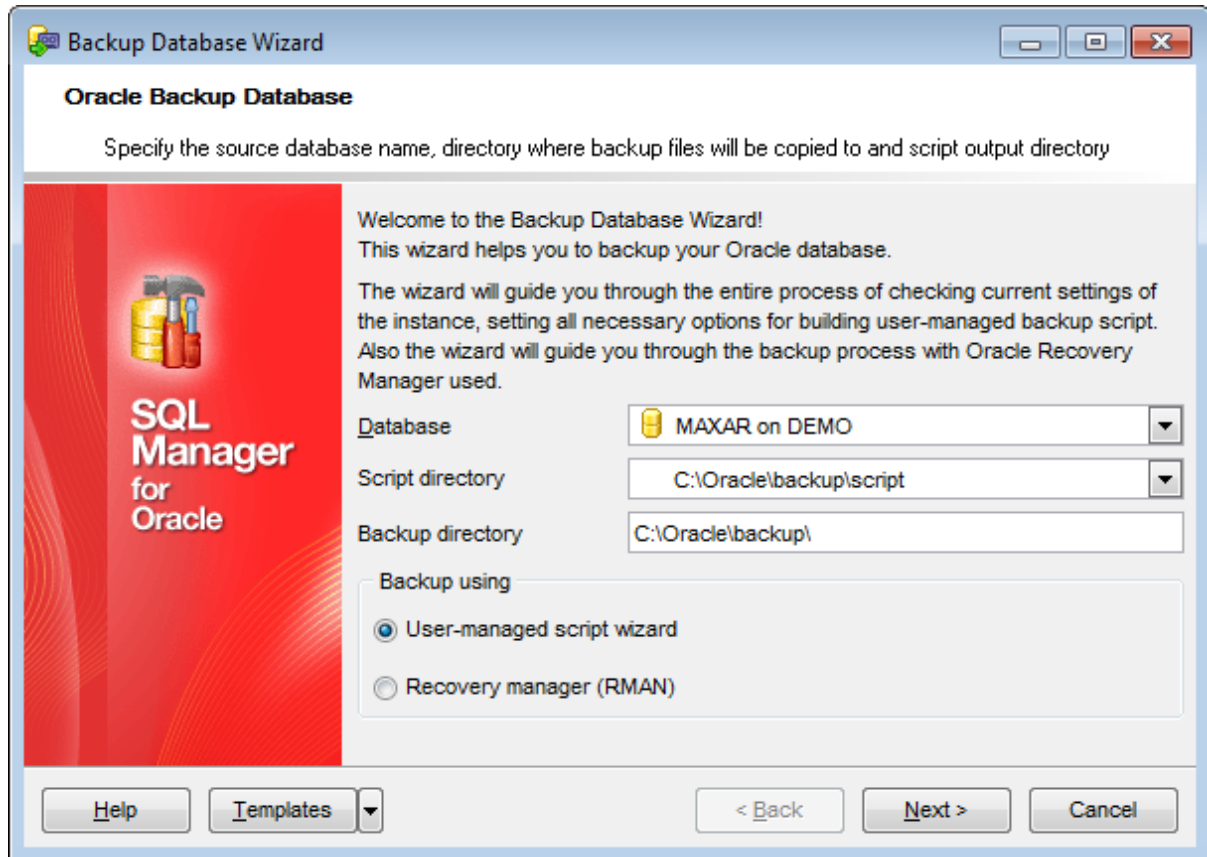
Note: To compare all features of the **Full** and the **Lite** versions of SQL Manager, refer to the [Feature Matrix](#) page.

See also:

[Restore Database](#)
[Templates](#)

10.6.1 Selecting database and backup strategy

Use this step of the wizard to specify the **database** name, script and backup **directories**, and the preferable **backup strategy**.



Database

Use the drop-down list to select the **database** to backup.

Script directory

Type in or use the arrow-down button to specify the path to the backup script on the local machine or in the LAN.

Backup directory

Specify the directory where the database backup will be stored.

Backup using

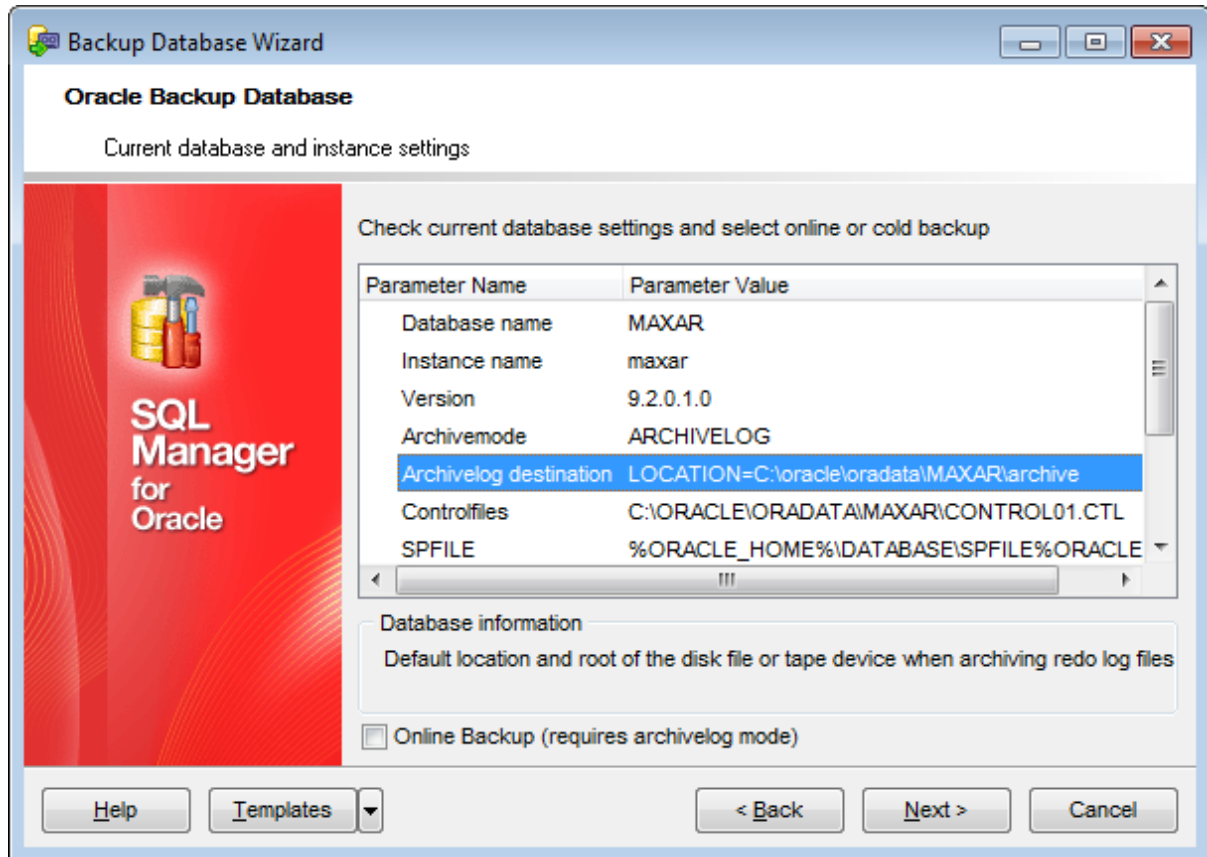
Use this group to define the preferable backup strategy:

- ☒ *User-managed script wizard*
- ☐ *Recovery manager (RMAN)*

Click the **Next** button to proceed to the [Checking database and instance settings](#) step of the wizard.

10.6.2 Checking database and instance settings

This step of the wizard allows you to check the current database settings and choose between online and cold backups.



Use the list area to check the current database parameters:

Database name
Instance name
Version
Archivemode
Archivelog destination
Controlfiles
SPFILE
PFILE
DB block size

The **Database information** area provides extended information for the parameter currently selected in the list.

☒ Online backup

Select this option to perform online backup. If this option is deselected, cold backup will be performed.

During cold backup the database is shut down and copying of the datafiles is performed by means of the operating system itself.

In online mode there is no need to shutdown the database but it requires the *ARCHIVELOG*

mode.

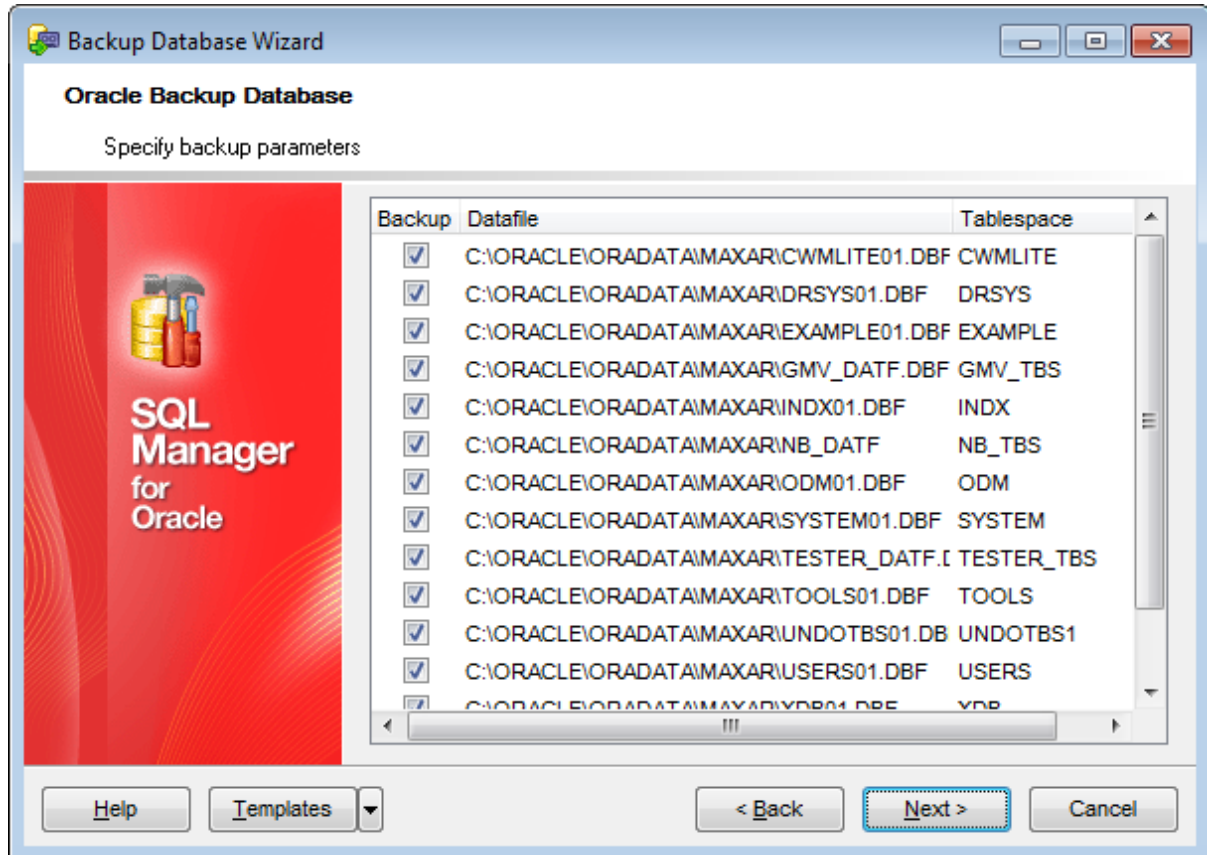
Click the **Next** button to proceed to the [Selecting datafiles](#) step (if the *User-managed script* strategy was specified at the [first step](#)) or to the [Specifying backup type and options](#) step of the wizard (if the *Recovery manager* strategy was specified).

10.6.3 User-managed script

10.6.3.1 Selecting datafiles

This step of the wizard allows you to **select datafiles** of the database to backup (for *User-managed script* strategy).

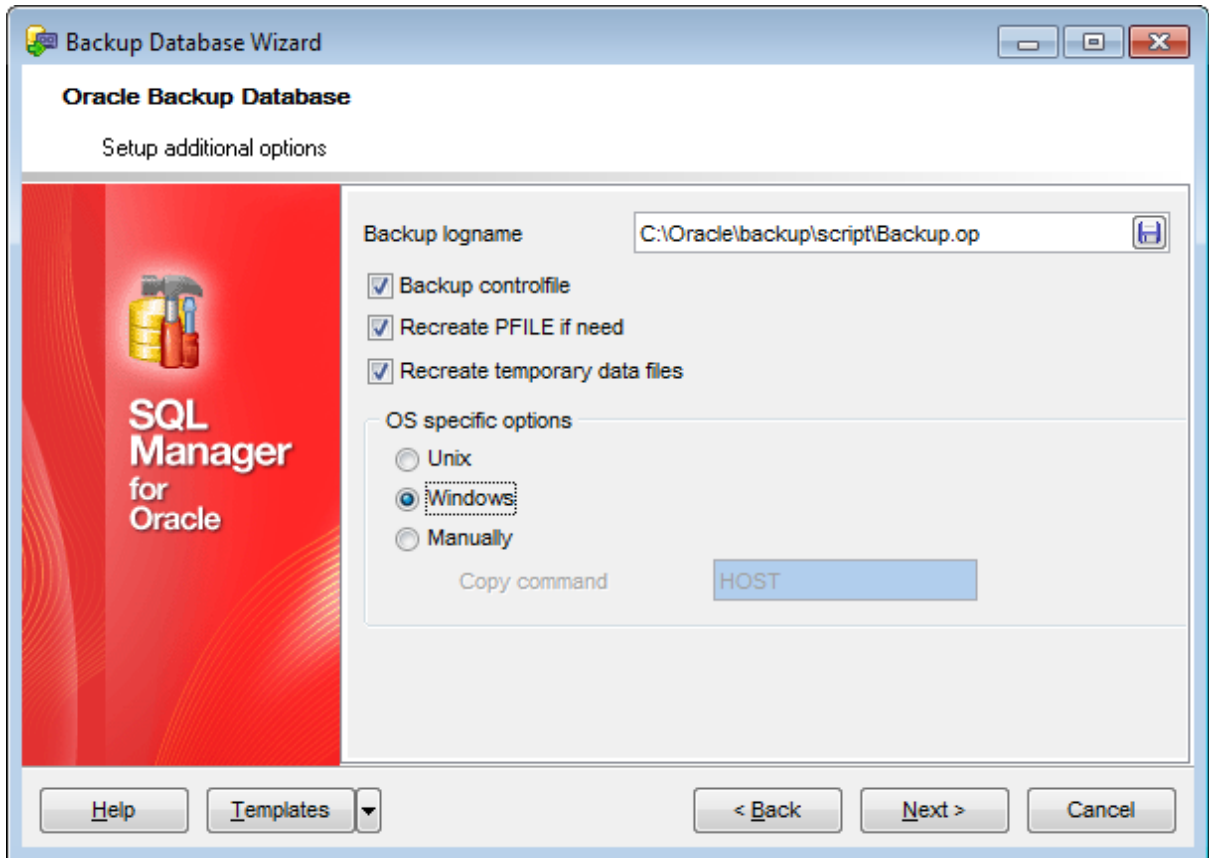
To add a file to the backup, select it in the list and set the respective flag in the **Backup** column.



Click the **Next** button to proceed to the [Setting additional options](#) step of the wizard.

10.6.3.2 Setting additional options

This step of the wizard allows you to set additional options for the database backup operation (for *User-managed script* strategy).



Backup logname

Set a name for the log 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.

☒ Backup controlfile

This option specifies whether the controlfile should be included into backup.

☒ Recreate PFILE if need

If this option is selected, the appropriate command which recreates the PFILE from existing SPFILE is added to the backup script.

☒ Recreate temporary data files

Specify whether the Oracle temporary datafiles should be recreated.

OS specific options

Specify the OS to use commands for in the generated script:

- ☒ Unix
- ☒ Windows
- ☒ Manually (specify the **copy command** in the corresponding box)

Click the **Next** button to proceed to the [Scheduling backup scripts](#) step of the wizard.

10.6.4 Recovery Manager (RMAN)

10.6.4.1 Specifying backup type and options

This step of the wizard allows you to specify backup parameters: select backup type and backup options for *RMAN* backup strategy.

Backup type

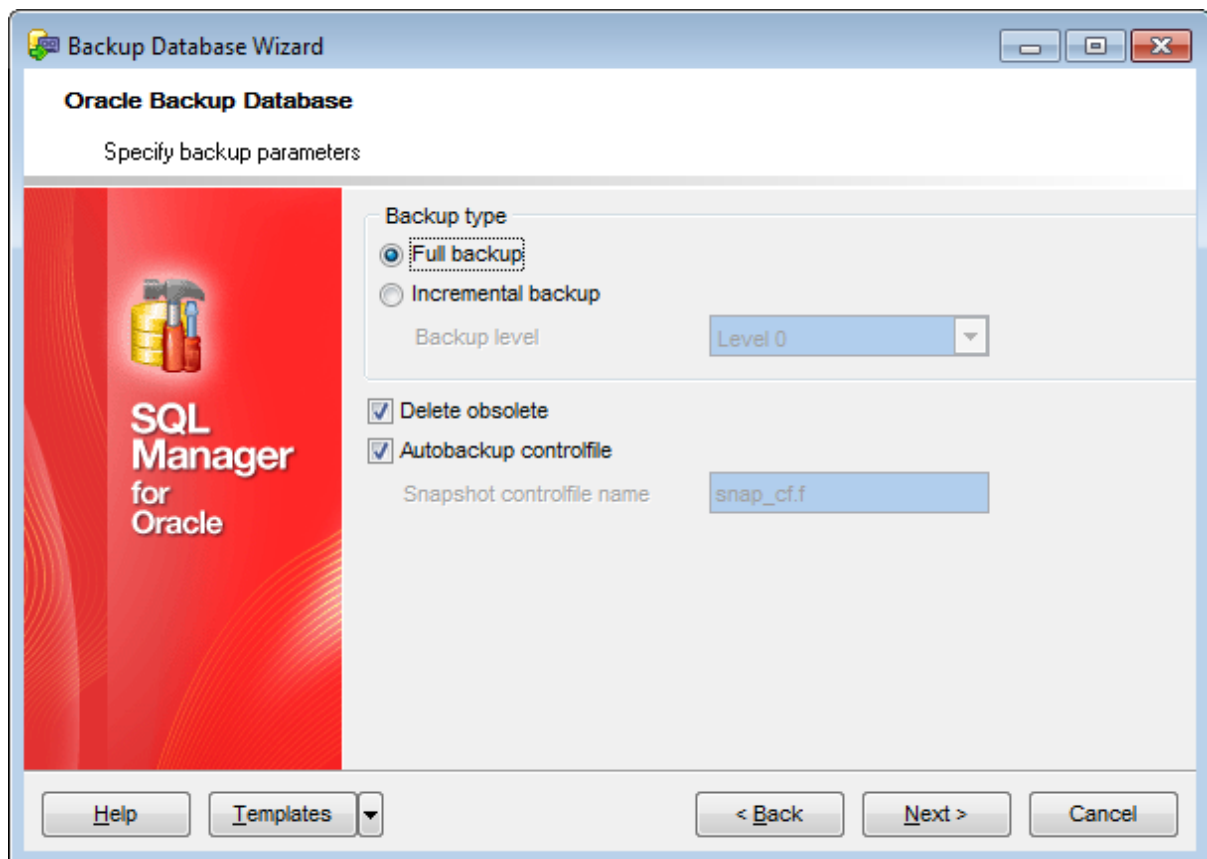
☒ Full backup

Specifies backup of a datafile that includes every allocated block in the file being backed up.

☐ Incremental backup

The goal of an incremental backup is to back up only those data blocks that have changed since a previous backup. You can use it to create incremental backups of datafiles, tablespaces, or the whole database.

Using the **Backup level** drop-down list you can specify either a *level 0 backup* which includes every block in the file except blocks compressed out because they have never been used, or a *N-level backup* (*N* between 1 and 4) which includes only those blocks that have been changed since the parent backup was taken.



☒ Delete expired archivelog

If this option is selected, a special command which removes expired archivelogs is added to the RMAN script.

☒ Autobackup controlfile

Checking the option ensures that a usable backup of the control file is included with the backup and tagged in order to simplify restoring the control file with the rest of the database (starting from Oracle version 9).

Snapshot controlfile name

All the changes made to the database when performing backup will be logged at the **Snapshot controlfile name** set (recommended for Oracle version 8).

Click the **Next** button to proceed to the [Setting additional options](#) step of the wizard.

10.6.4.2 Setting additional options

This step of the wizard allows you to set additional options for the database backup operation (for *RMAN* backup strategy).

User

Specify the target user under which the RMAN session will be created.

Password

Specify the password for the user under which the RMAN session will be created. This field is available only if you choose to ☒ *Run script now*.

☒ Using catalog

Catalog can be considered as a special database which stores backup settings. Specify **Catalog user**, **Password** and **Database name** to use it.

RMAN script execution

Specify the OS to build the command file for:

- ☒ Build command file for Unix
 - ☒ Build command file for Windows
- or select ☒ *Run script now* for immediate execution.

Click the **Next** button to proceed to the [Scheduling backup scripts](#) step of the wizard.

10.6.5 Scheduling backup scripts

This step of the wizard allows you to schedule backup performance.

☐ **Do not schedule**

Use this option if you don't need to schedule backup operation.

☒ **DBMS_SCHEDULER**

Use this option to create a backup database job.

The screenshot shows the 'Backup Database Wizard' window, specifically the 'Oracle Backup Database' step titled 'Schedule backup scripts'. On the left is a red sidebar with the 'SQL Manager for Oracle' logo. The main area contains the following controls:

- Schedule backup** section with two radio buttons:
☐ Do not schedule
☒ DBMS_SCHEDULER
- Database**: A dropdown menu showing 'ORTOZ on DEMO'.
- Job name**: A text field containing 'backup_db_daily'.
- Next time**: A date field showing '16.10.2012' and a time field showing '18:00:00'.
- Periodically** section with three radio buttons:
☒ Periodically
☐ Every minute (with a spinner box set to 0)
☐ Every hour (with a spinner box set to 0)
☒ Every day (with a spinner box set to 1)
- Custom interval**: A text field containing 'SYSDATE + 1'.

At the bottom are buttons for 'Help', 'Templates' (with a dropdown arrow), '< Back', 'Next >', and 'Cancel'.

Database

Database where job will be stored.

Job name

Defines the name of the job to be created.

Next time

Indicates date of the next job launch.

Periodically

Use the controls of this section to define time interval between job launches.

Custom interval

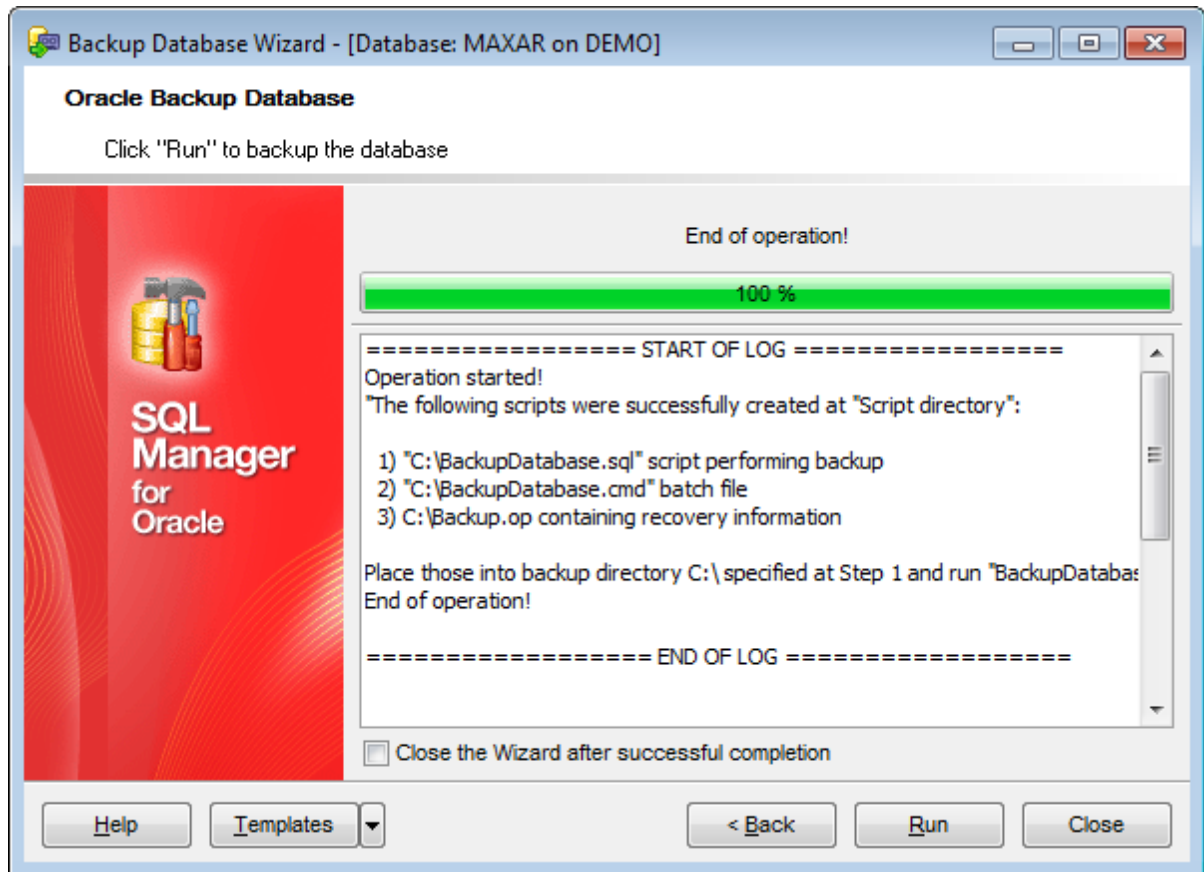
If needed you can edit the interval manually in this field.

Click the **Next** button to proceed to the [last](#) step of the wizard.

10.6.6 Running database backup operation

This step of the wizard is intended for informing you that all backup options have been set, and you can start the backup 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 backup process is completed.

If necessary, you can save a [template](#) for future use.

Click the **Run** button to run the backup process.

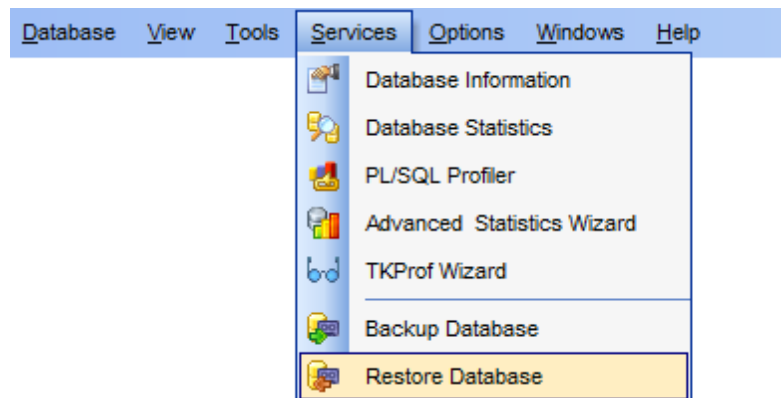
10.7 Restore Database

Restore Database Wizard is intended for restoring your Oracle database from backups. During its work the script to perform restore will be created, which can be edited manually, if needed.

The wizard will guide through the entire process - checking saving backup settings, tuning all the options necessary both for **User-managed script** and **Oracle Recovery Manager** restore.

Important: Please note that you must have a clear idea of the backup/restore mechanism. Note that a wrong combination of backup/restore settings can damage your database!

To start the wizard, select the **Services |  Restore Database [main menu](#)** item, or right-click the database in [DB Explorer](#) and select the **Tasks |  Restore Database** item from the [context menu](#).



- [Selecting database and restore strategy](#)
- [User-managed script: Verifying current settings](#)
- [User-managed script: Selecting datafiles](#)
- [User-managed script: Setting additional options](#)
- [RMAN: Setting additional options](#)
- [Running database restore operation](#)
- [Using templates](#)

Availability:

Full version (for Windows) **Yes**

Lite version (for Windows) **No**

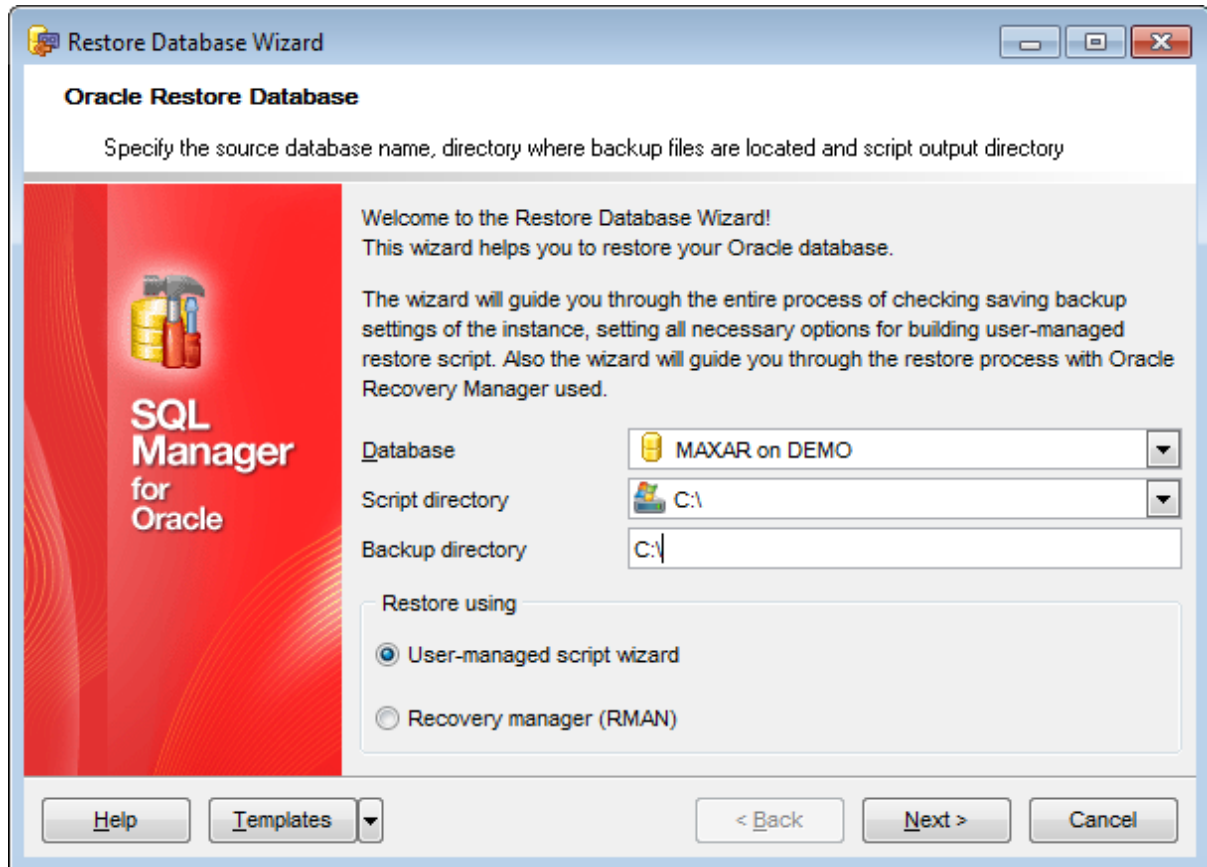
Note: To compare all features of the **Full** and the **Lite** versions of SQL Manager, refer to the [Feature Matrix](#) page.

See also:

[Backup Database](#)

10.7.1 Selecting database and restore strategy

Use this step of the wizard to specify the **database** name, script and backup **directories**, and the preferable **restore strategy**.



Database

Use the drop-down list to select the **database** to restore.

Script directory

Type in or use the arrow-down button to specify the path to the backup script on the local machine or in the LAN.

Backup directory

Specify the directory where the database backup is stored.

Backup using

Use this group to define the preferable restore strategy:

- ☒ *User-managed script wizard*
- ☐ *Recovery manager (RMAN)*

Click the **Next** button to proceed to the [Verifying current settings](#) step (if the *User-managed script* strategy has been specified) or to the [Setting additional options](#) step of the wizard (if the *Recovery manager* strategy has been specified).

10.7.2 User-managed script

10.7.2.1 Verifying current settings

This step of the wizard allows you to verify the current database settings for the selected *User-managed script* backup strategy.

Backup logname

Check the path and name of the log file or use the  **Explorer** button to specify the path to this file on your local machine or on a machine in the LAN.

Database name

View/edit the name of the database to restore.

Instance name

View/edit the name of the Oracle instance where the database resides.

Server version

View/edit the version of the server.

Oracle home

Specify the Oracle Home storage.

Archivelog destination

View/edit the path to the archivelog.

Controlfile name

View/edit the name of the controlfile.

Controlfile destination

View/edit the path to the controlfile.

☒ **Restore from online backup**

If this option is selected, the previously created online backup will be used to restore the database.

☒ **Enforce shutdown of the instance**

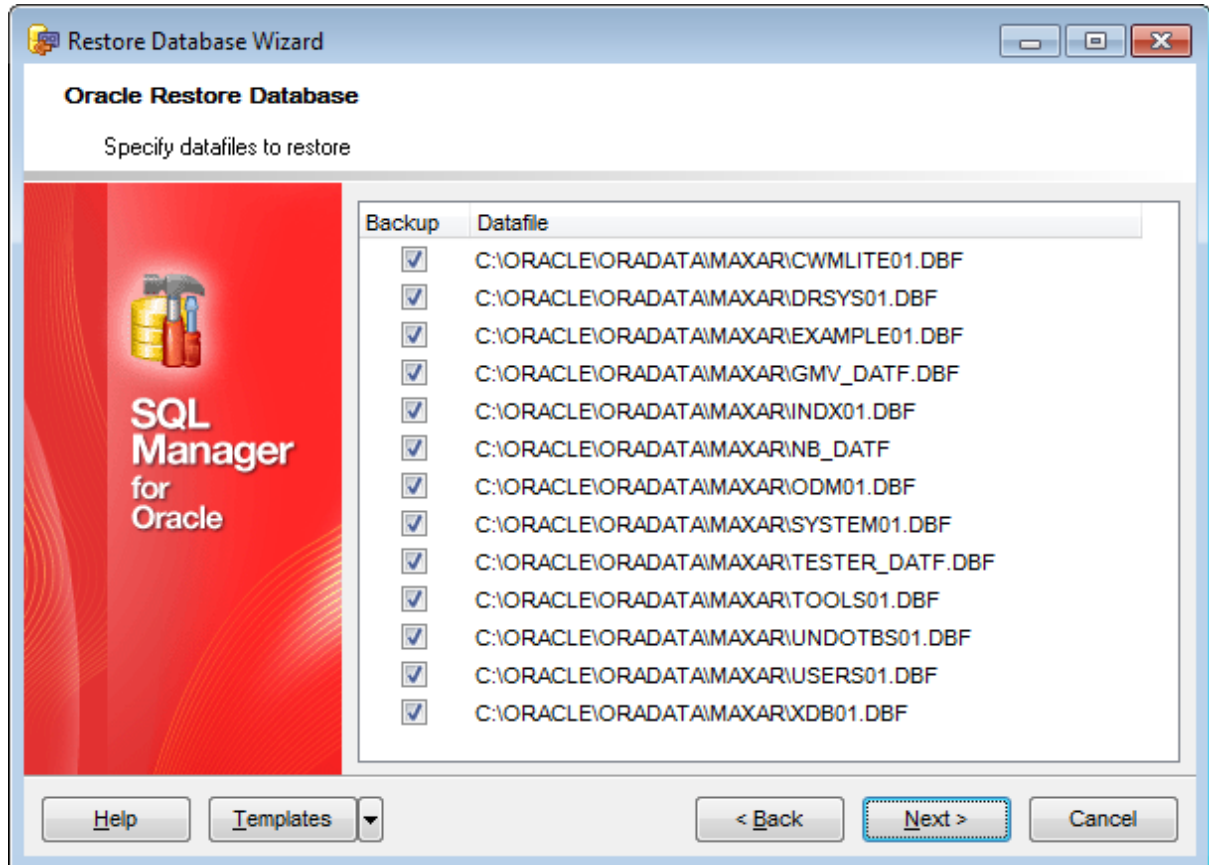
Select this option to add the command to shutdown the server to the result script.

Click the **Next** button to proceed to the [Selecting datafiles](#) step of the wizard.

10.7.2.2 Selecting datafiles

This step of the wizard allows you to **select datafiles** of the database to restore (for *User-managed script* strategy).

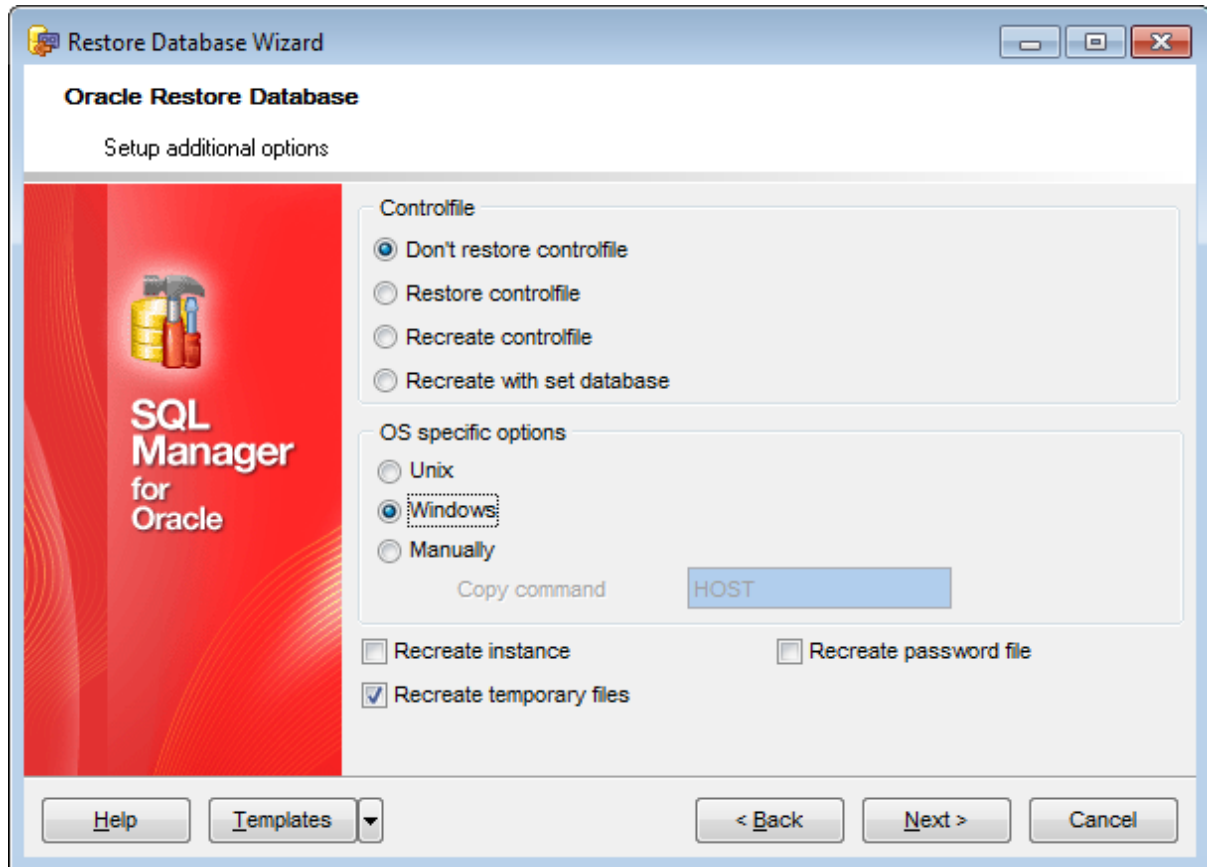
To add a file, select it in the list and set the respective flag in the **Backup** column.



Click the **Next** button to proceed to the [Setting additional options](#) step of the wizard.

10.7.2.3 Setting additional options

This step of the wizard allows you to set additional options for the database restore operation (for *User-managed script* strategy).



Controlfile

Specify the action for the controlfile:

- ☒ *Don't restore controlfile*
- ☐ *Restore controlfile*
- ☐ *Recreate controlfile*
- ☐ *Recreate with set database*

OS specific options

Specify the OS to use commands for in the generated script:

- ☒ *Unix*
- ☒ *Windows*
- ☒ *Manually* (specify the **copy command** in the corresponding box)

☒ **Recreate instance**

If this option is selected, a command to recreate the instance will be added to the result script.

☒ **Recreate temporary files**

If this option is selected, a command to recreate temporary files will be added to the result script.

 Recreate password file

If this option is selected, a command to recreate the password file will be added to the result script.

Click the **Next** button to proceed to the [last](#) step of the wizard.

10.7.3 Recovery Manager (RMAN)

10.7.3.1 Setting additional options

This step of the wizard allows you to set additional options for the database restore operation (for *RMAN* strategy).

Restore Database Wizard

Oracle Restore Database

Setup additional options

Target

Target database user: RMAN

Database name: MAXAR

Password: []

☐ Using catalog

Catalog user: RMAN

Database name: []

Password: []

RMAN script execution

☒ Build command file for Unix ☐ Run script now

☐ Build command file for Windows

☒ Restore from online backup

☒ Restore controlfile from autobackup

Snapshot controlfile name: snap_cf.f

Buttons: Help, Templates, < Back, Next >, Cancel

Target

Target database user

Specify the target user under which the RMAN session will be created.

Database name

Specify the name of the target database to restore.

Password

Specify the password for the user under which the RMAN session will be created.

☒ Using catalog

Catalog can be considered as a special database which stores backup settings. Specify **Catalog user**, **Password** and **Database name** to use it.

RMAN script execution

Specify the OS to build the command file for:

- ☒ Build command file for Unix

☒ *Build command file for Windows*
or select ☒ *Run script now* for immediate execution.

☒ **Restore from online backup**

If this option is selected, the previously created online backup will be used to restore the database.

☒ **Restore controlfile from autobackup**

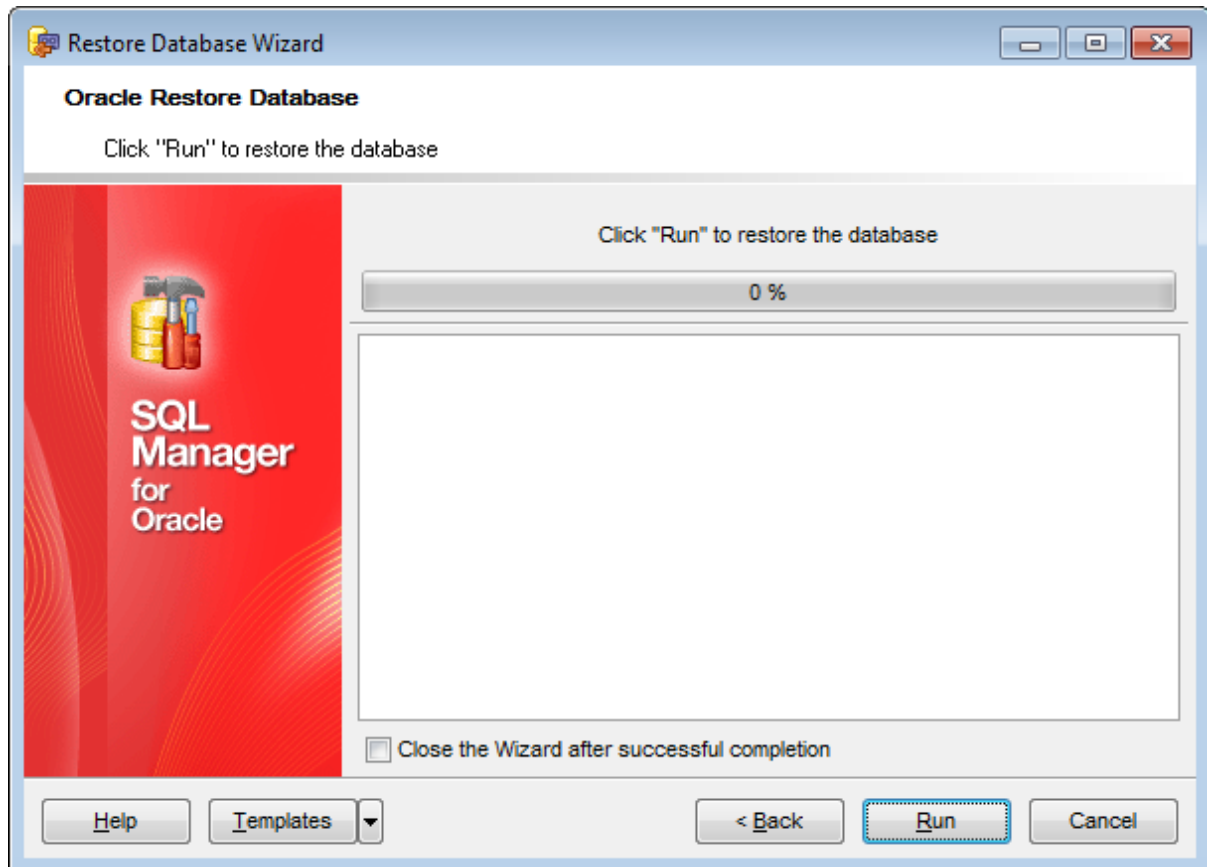
Select this option to restore the control file from autobackup, or specify the name of the **snapshot controlfile name** containing all the changes (if any) made to the database.

Click the **Next** button to proceed to the [last](#) step of the wizard.

10.7.4 Running database restore operation

This step of the wizard is intended for informing 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 restore process is completed.

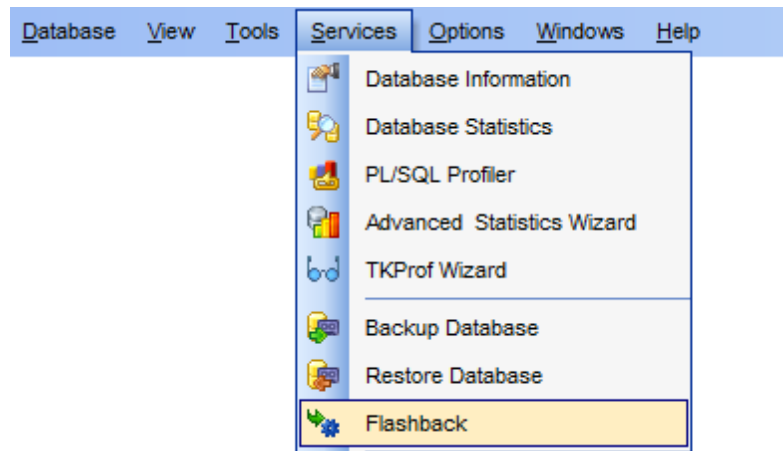
If necessary, you can save a [template](#) for future use.

Click the **Run** button to run the restore process.

10.8 Flashback

Flashback Wizard is a very powerful tool for restoring data to a certain state. You can either return table data to the recent state or restore dropped table to before-drop state.

To start the wizard select **Services |  Flashback [main menu](#)** item.



- [Specifying the source database and selecting the operation](#)
- [Selecting the table to flashback](#)
- [Specifying flashback settings](#)
- [Previewing the data in the selected flashback point](#)
- [Running flashback 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:

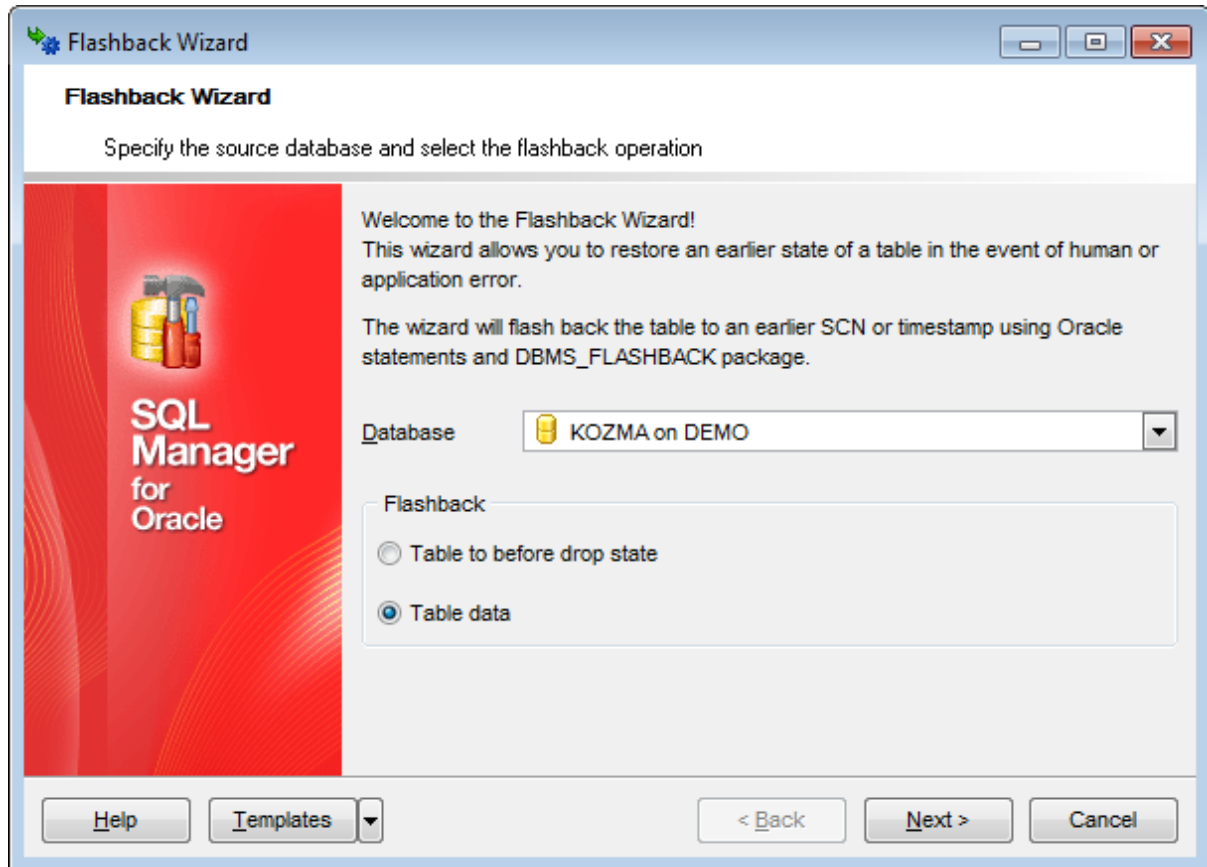
[Backup Database](#)

[Restore Database](#)

[Using templates](#)

10.8.1 Specifying the source database and selecting the operation

At this step of the wizard you can specify the source database, and **Flashback** operation type.



Database

Select the source database from the Database drop-down list.

Flashback

☒ Table to before drop state

This flashback type allows you to restore any dropped table back into the database.

☒ Table data

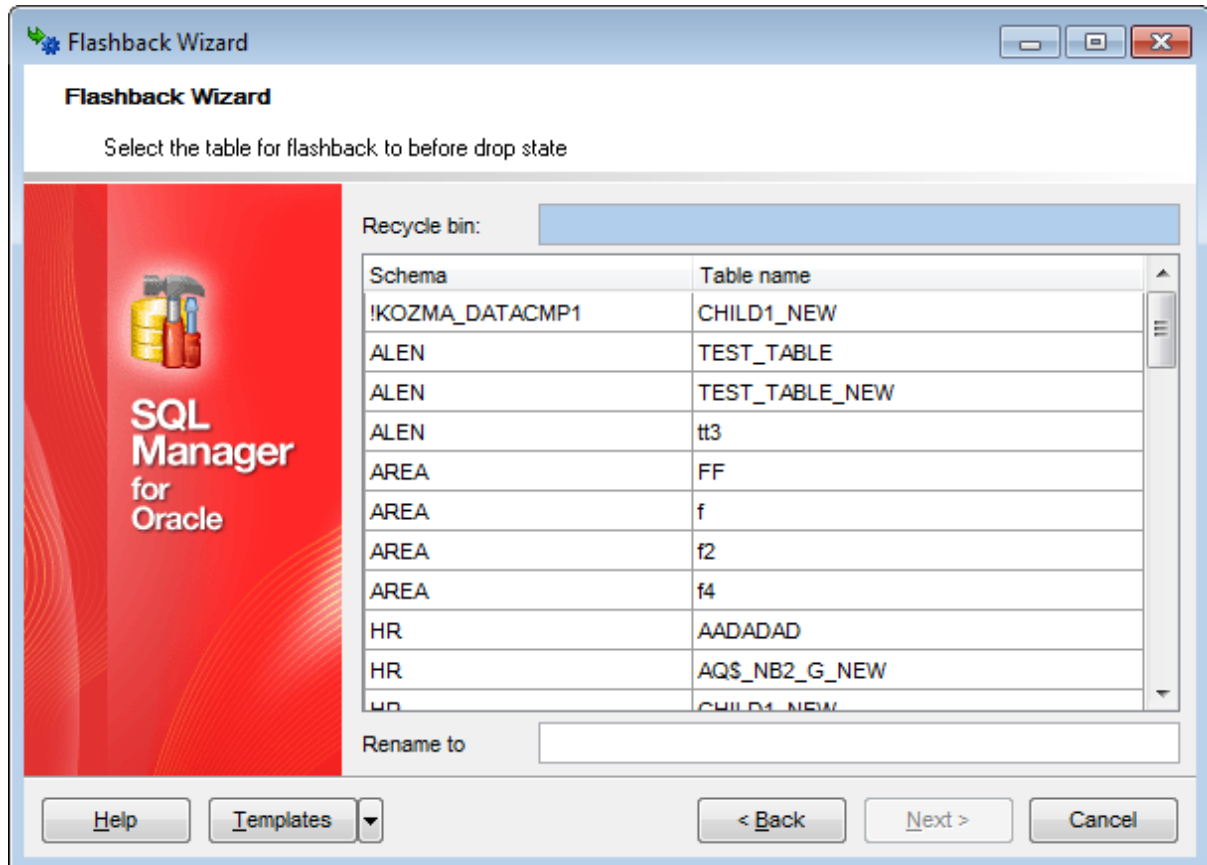
Use this flashback type to restore a table data to the recent state.

Note: You can't flash back a table to the state earlier than its last DDL changes.

Click the **Next** button to proceed to the [Selecting the table to flashback](#) step (if **Flashback to before drop state** was specified) or to the [Specifying flashback settings](#) step (if **Flashback table data** was specified).

10.8.2 Selecting the table to flashback

Use this step to specify the dropped table to be restored to the database.
(Available only if the **Flashback to before drop state** flashback mode was specified at the [first step](#).)



Use the **Rename to** field to assign the name for the result table.

Click the **Next** button to proceed to the [Running flashback operation](#) step of the wizard.

10.8.3 Specifying flashback settings

Use this step to specify the table to flash back and the [restore point](#).
(Available only when the **Flashback table data** mode was specified at the [first step](#).)

Flashback Wizard

Specify flashback settings

Current SCN: 73900693

Schema: HR

Table name: DEPARTMENT

Flashback SCN: 73900065

Flashback using:

- ☒ SCN
- ☐ Restore point
- ☐ EMS Manager restore point
- ☐ Timestamp

Timestamp point:

Before current timestamp: 0 Day 0 Hour 0 Min

Time	Scn
26.10.2012 17:01:53	73900065
26.10.2012 16:56:26	73899823
26.10.2012 16:51:50	73899697
26.10.2012 16:46:26	73899524

Buttons: Help, Templates, < Back, Next >, Cancel

Current SCN

The latest SCN is displayed at this field.

Schema

Select the needed schema from the drop-down list.

Table name

Specify the table you want to flash back.

Flashback SCN

This field displays the SCN of the chosen restore point. Type the value in only if you are sure the value is right.

Flashback using

☒ SCN

Choose the flashback point from the whole database SCN list.

☐ Restore point

Select the flashback point from the list of restore points contained in the built-in restore point table.

 EMS Manager restore point

Choose the flashback point from the list of restore points contained in SQL Manager restore point table.

 Timestamp

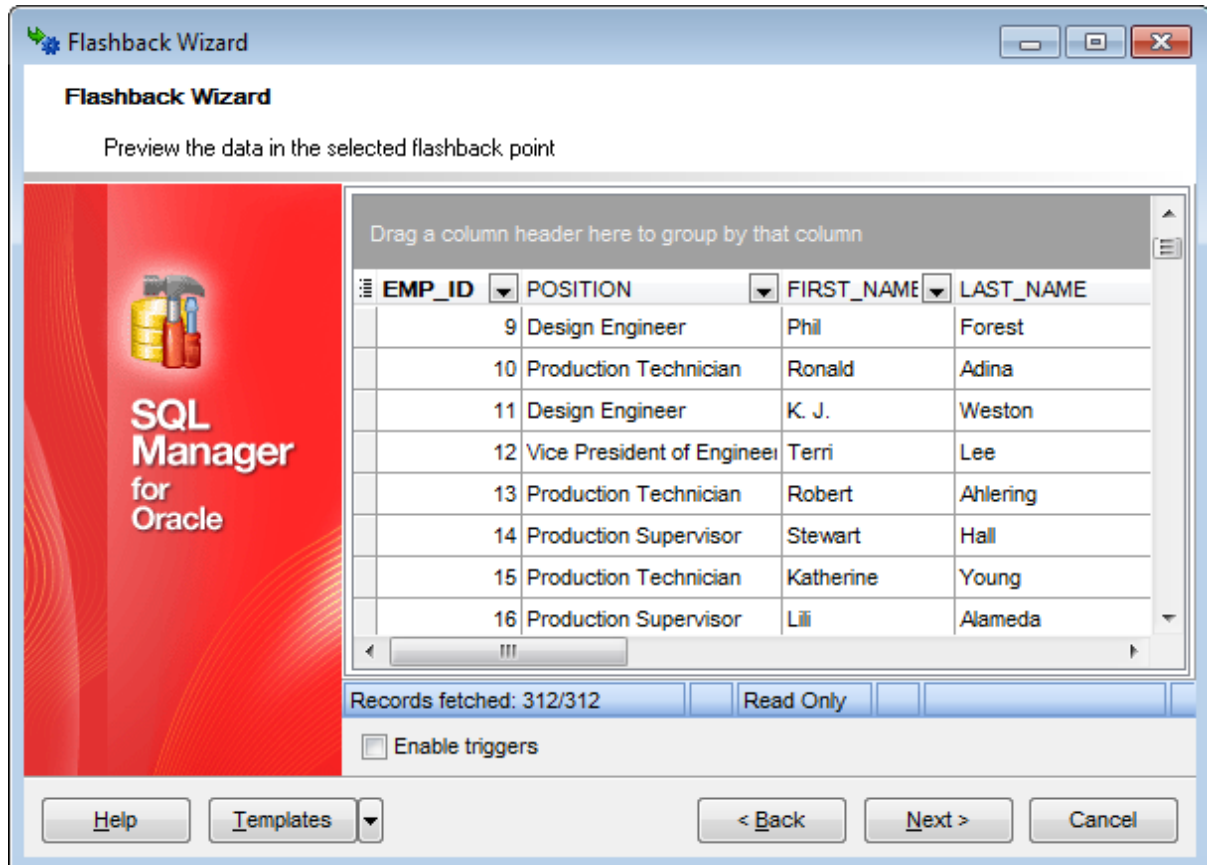
Use this variant either to define the approximate date and time of the needed flashback point (**Timestamp point**), or the date and time interval to use the closest flashback point (**Before current timestamp**).

Click the **Next** button to proceed to the [Previewing the data in the selected flashback point](#) step of the wizard.

10.8.4 Previewing the data in the selected flashback point

This step allows you to preview the data in the selected flashback point to ensure that it is the exact point you need.

(Available only when the **Flashback table data** mode was specified at the [first step](#).)



Use data [filtering](#) and [grouping](#) to make the preview process easier.

☒ **Enable triggers**

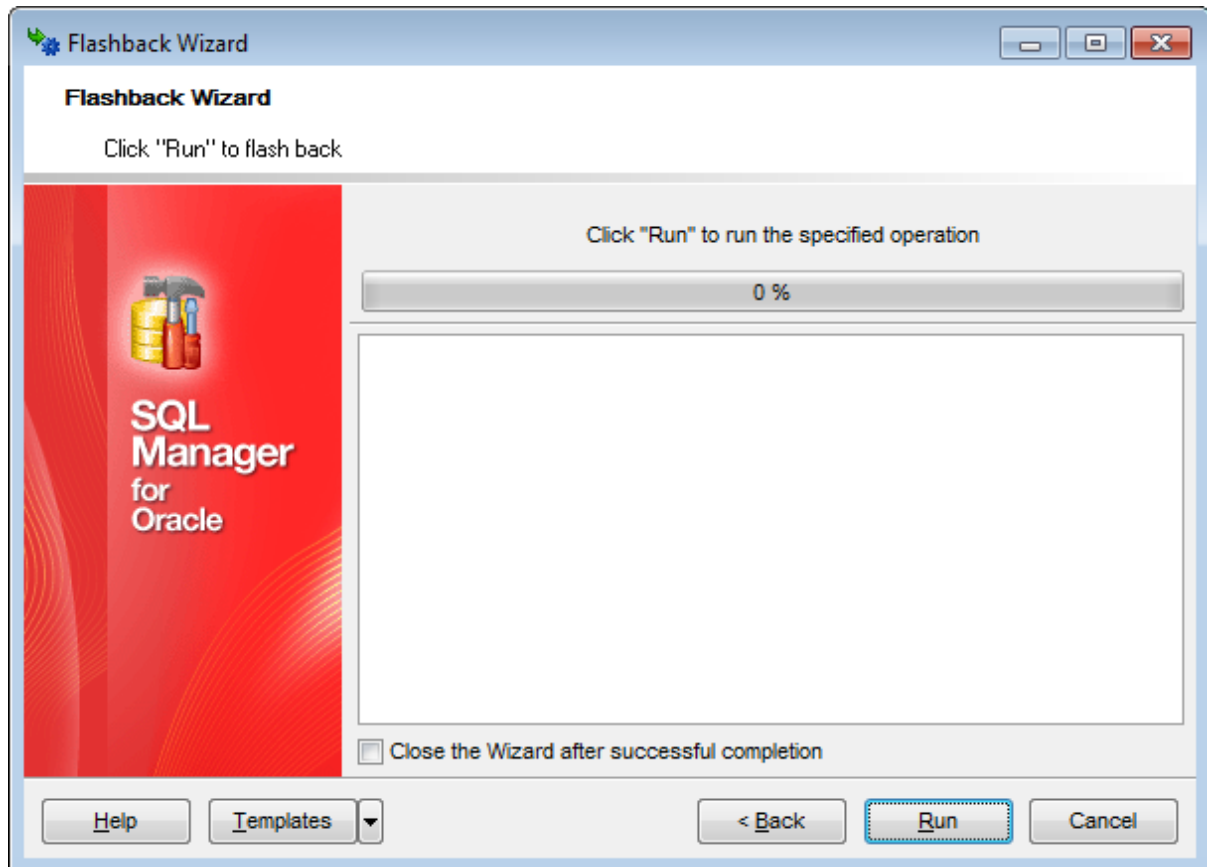
Use this option to enable/disable triggers when the flashback operation processes.

Click the **Next** to proceed to the [Running flashback operation](#) step of the wizard.

10.8.5 Running flashback operation

This step of the wizard is intended for informing you that all flashback options have been set, and you can start the flashback 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 flashback process is completed.

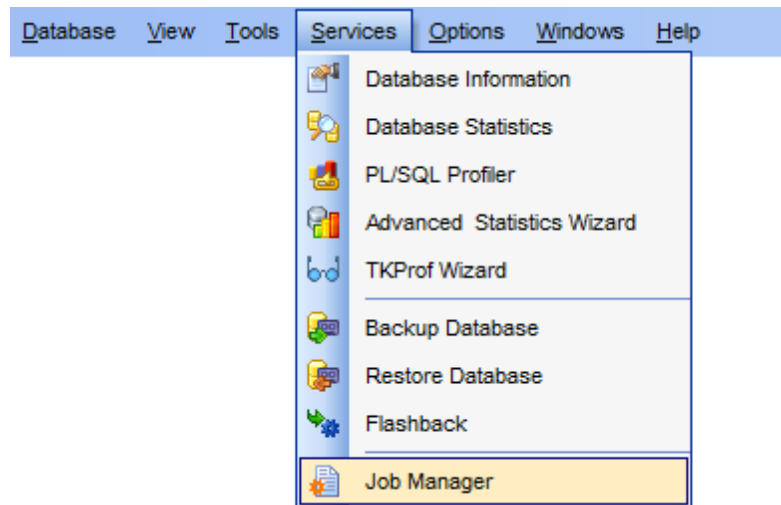
If necessary, you can save a [template](#) for future use.

Click the **Run** button to run the flashback process.

10.9 Job Manager

Job Manager allows you to create, schedule and run single or recurring execution of tasks in the database. Job (routine) is a stored procedure, PL/SQL anonymous block or external C/Java procedure. Jobs are executed in server processes in the background mode.

To open the tool, select the **Services |  Job Manager** [main menu](#) item, or use the **Job Manager** button on the main toolbar, or right-click the database in [DB Explorer](#) and select the **Tasks |  Job Manager** item from the [context menu](#).



- [Using Navigation bar and Toolbar](#)
- [Managing jobs](#)
- [Job Editor](#)

Availability:

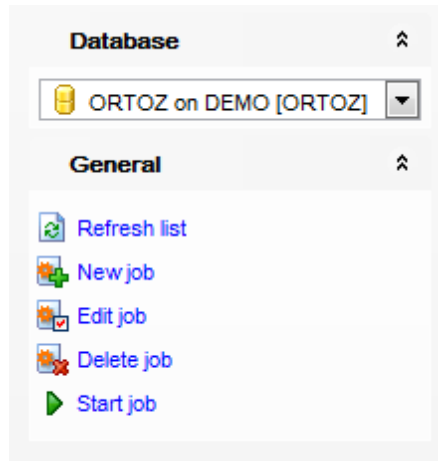
Full version (for Windows) **Yes**

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.

10.9.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in the **Job Manager** tool.



Database

 select a database

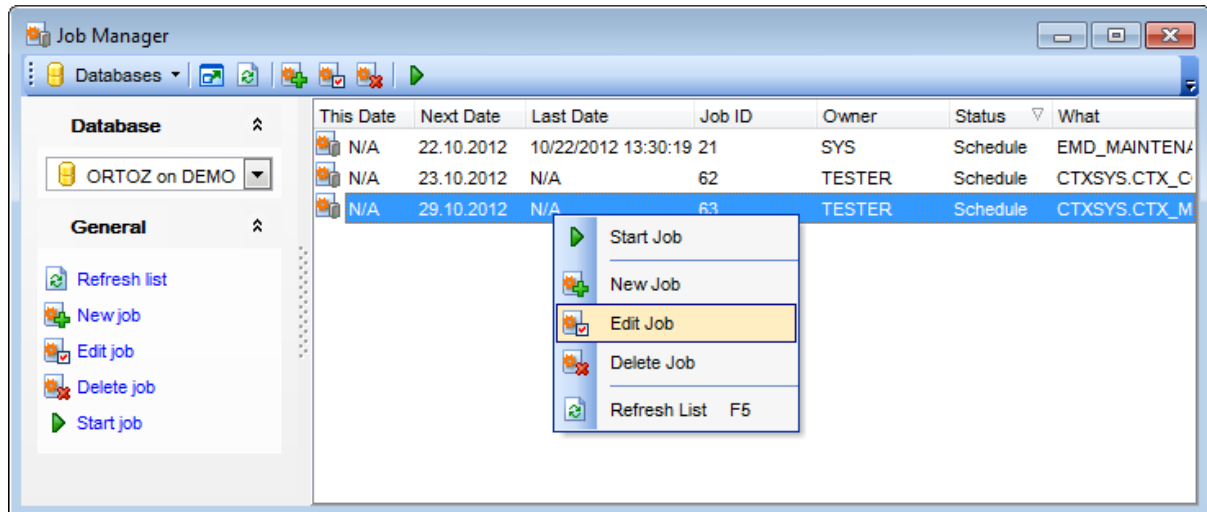
General

-  refresh currently displayed information
-  add new job
-  [edit](#) selected job
-  delete a job
-  start job

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

10.9.2 Managing jobs

Job Manager allows you to browse the list of **jobs** and manage them efficiently.



The list displays the existing jobs as a grid with the following columns: *Job ID*, *Owner*, *Status*, *This date*, *Next date*, *Last date*, *What*.

Right-click an item within the list to call the **context menu** allowing you to *create* a new job and specify its properties using [Job Editor](#), *start* an idle job manually, *stop* a running job, *edit*, *delete* the selected job, or *refresh* the list.

Jobs management tools are also available through the **Navigation bar** of **Job Manager**.

Note: the current user can only run a job manually if he owns it.

See also:

[Job Editor](#)

10.9.3 Job Editor

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

Job ID

This field is not editable. Job ID is allocated by the server automatically.

Job owner

This field stores the name of the user who creates the job.

General

Next time

Specify the next execution date and time for the job using the corresponding boxes.

☒ Periodically

This option specifies recurrent execution of the job.

Set the interval between executions for a specified job. Use the **Every minute**, **Every hour**, **Every day** and **Custom interval** fields for defining a recurrence period.

Specify the periodicity of the job execution:

☒ Every minute

Use the spinner control below to define the **Every ... minute(s)** value.

☒ Every hour

Use the spinner control below to define the **Every ... hour(s)** value.

☒ Every day

Use the spinner control below to define the **Every ... day(s)** value.

If more convenient, you can use the **Custom interval** field to specify the execution interval for the job.

The screenshot shows a dialog box titled "Add New Job to 'ORTOZ'". It has two tabs: "General" and "PL/SQL Code". The "General" tab is selected. Inside the "General" tab, there are several fields: "Job ID" (empty), "Job owner" (TESTER), "Object type" (Package), "Schema" (CTXSYS), "Package" (CTX_CATSEARCH), "Routine" (CATSEARCH), and "What" (CTXSYS.CTX_CATSEARCH.CATSEARCH;). There are also checkboxes for "Parse" and "Broken". At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

PL/SQL Code

Object type

Use the drop-down list to select the type of object (*procedure* or *package*) containing external C/Java procedures.

Schema

Use the drop-down list to select the schema that contains the [stored procedure](#) or [package](#).

Package

Use the drop-down list to select the [package](#) to be used by the job.

Routine

Use the drop-down list to select the [stored procedure](#) to be used by the job.

If necessary, you can also create a PL/SQL anonymous block directly in the **What** editor area.

☒ Parse

If this option is enabled, Oracle parses the procedure associated with the job.

☒ Broken

Disables job execution. Oracle does not attempt to run broken jobs. However, you can force a broken job to run.

When finished, press **OK** to run Execute Script that creates the specified job.

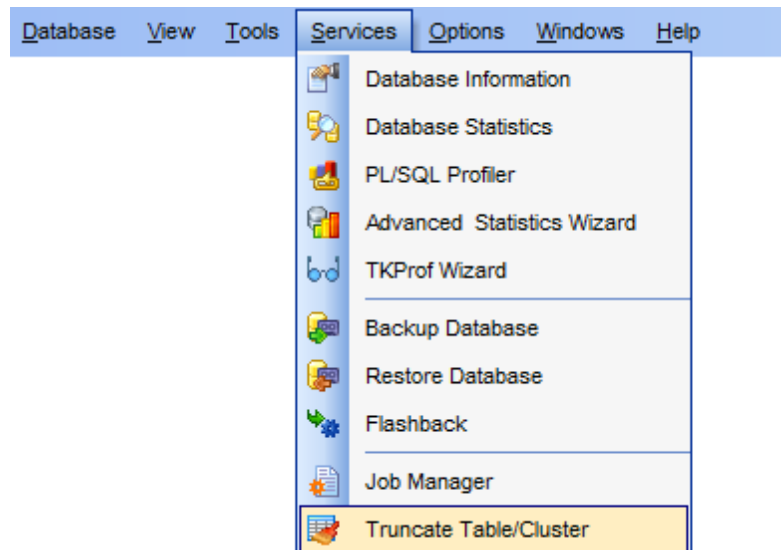
See also:

[Managing jobs](#)

10.10 Truncate Wizard

Truncate Wizard allows you to truncate tables and clusters in the selected database.

To start the wizard, select the **Services |  Truncate Table/Cluster** [main menu](#) item, or right-click a [table](#) or [cluster](#) in [DB Explorer](#) and select the **Tasks |  Truncate Table / Tasks |  Truncate Cluster** item from the [context menu](#).



- [Selecting database and object type](#)
- [Selecting objects](#)
- [Setting truncate 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:

[Using templates](#)

10.10.1 Selecting database and object type

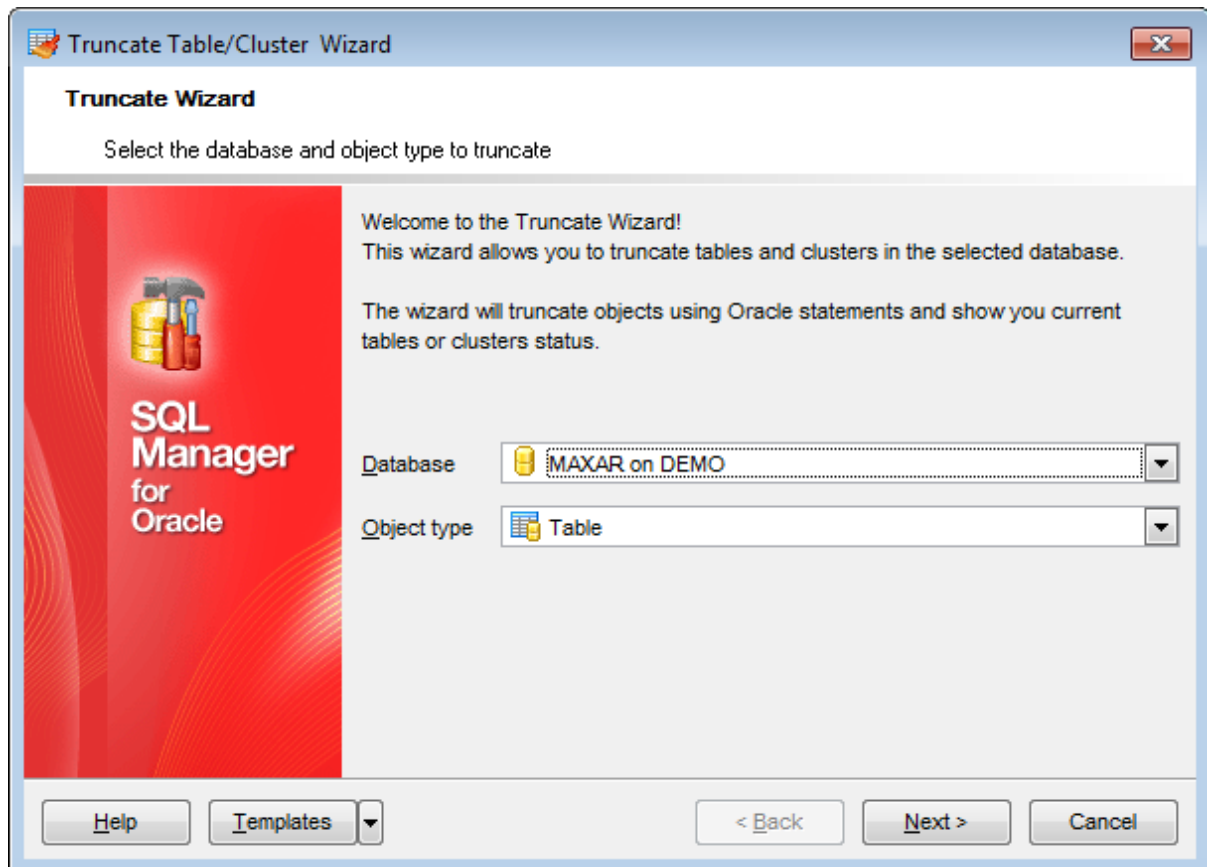
This step of the wizard allows you to select the source database and object type for truncation.

Database

Use the drop-down list to select the **source database** that contains objects to be truncated.

Object type

Use the drop-down list to select the type of object to be truncated: *table*, *cluster*.



Click the **Next** button to proceed to the [Selecting objects](#) step of the wizard.

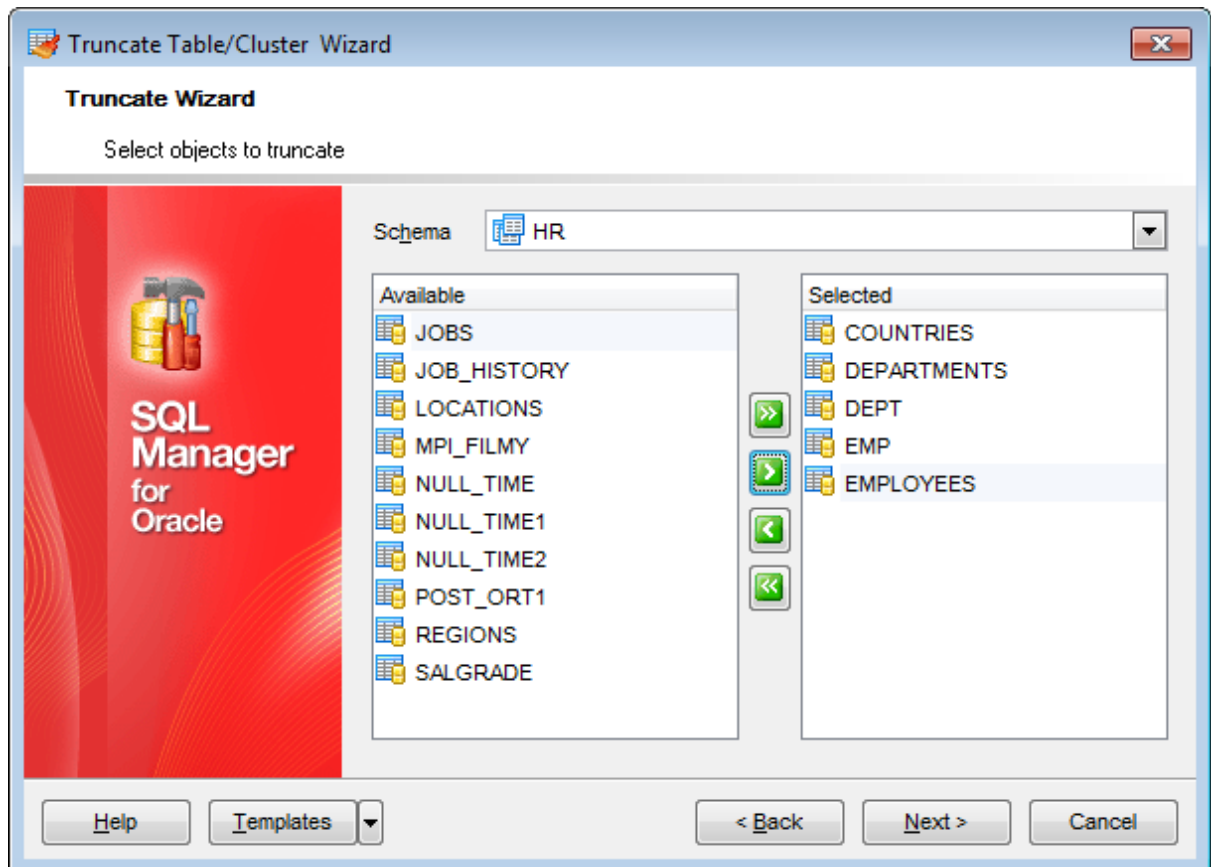
10.10.2 Selecting objects

This step of the wizard allows you to **select objects** of the specified type for the truncate operation.

Schema

Use the drop-down list to select the schema which contains [tables/clusters](#) to be processed.

To select a table/cluster, 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 [Setting truncate options](#) step of the wizard.

10.10.3 Setting truncate options

Materialized view log options

Specify whether a [materialized view log](#) defined on the [table/cluster](#) is to be preserved or purged when the table/cluster is truncated.

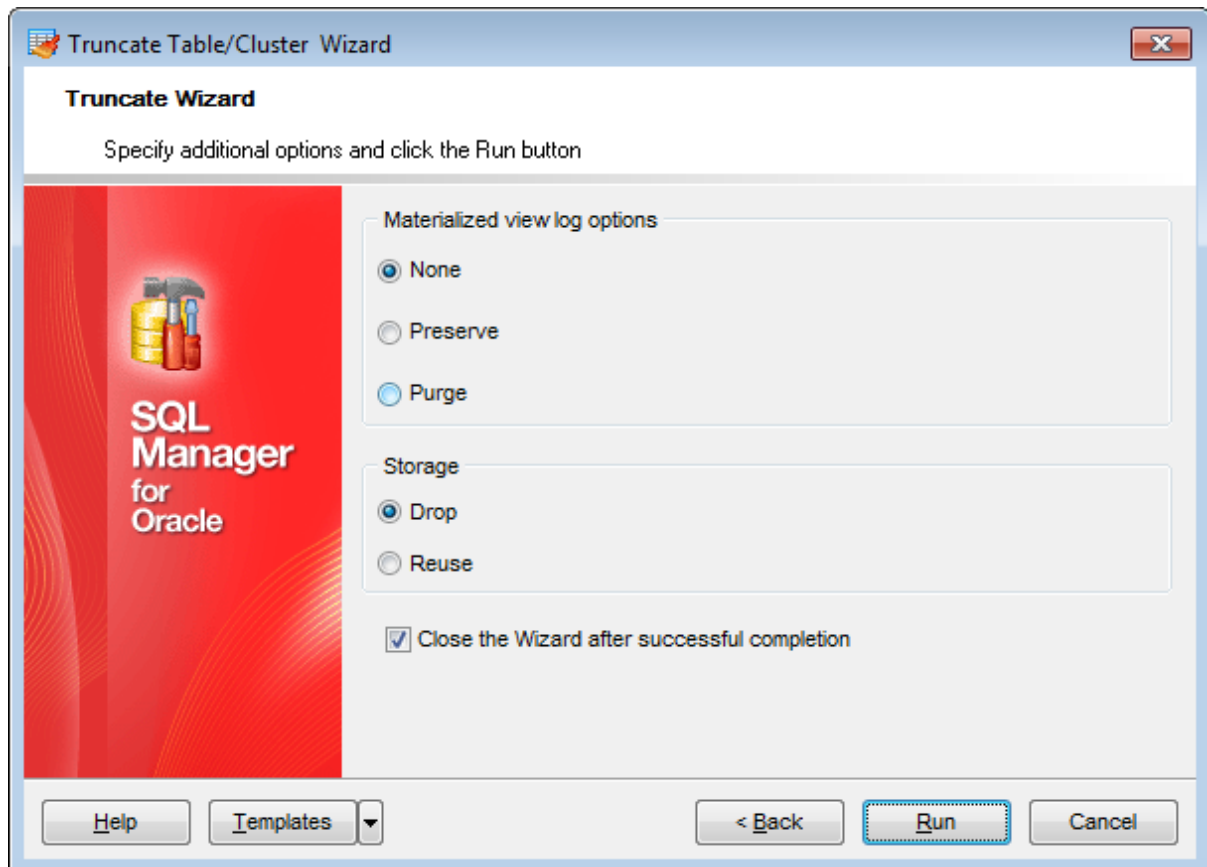
Storage

☒ Drop

Select this option to deallocate all space from the deleted rows from the table or cluster except the space allocated by the *MINEXTENTS* parameter of the table or cluster. This space can subsequently be used by other objects in the tablespace.

☐ Reuse

Select this option to retain the space from the deleted rows allocated to the table or cluster. Storage values are not reset to the values when the table or cluster was created. This space can subsequently be used only by new data in the table or cluster resulting from insert or update operations.



☒ Close the wizard after successful completion

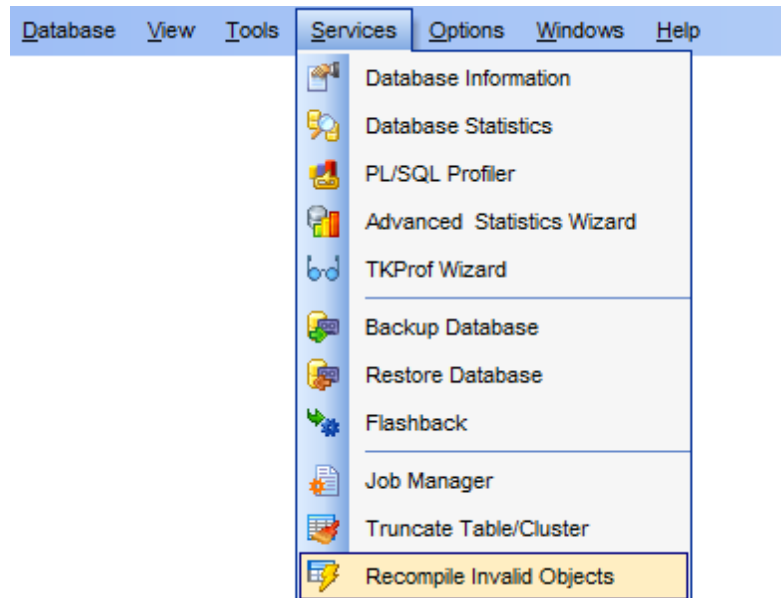
If this option is selected, the wizard is closed automatically when the process is completed.

Click the **Run** button to run the operation.

10.11 Recompile Invalid Objects

The **Recompile Invalid Objects** service allows you look up for invalid objects in the specified schema and recompile them.

To call the **Recompile Invalid Objects** service, select the **Services | ⚡ Recompile Invalid Objects** [main menu](#) item, or right-click the database in [DB Explorer](#) and select the **Tasks | ⚡ Recompile Invalid Objects** item from the [context menu](#).



- [Using Navigation bar and Toolbar](#)
- [Working with recompile service](#)

Availability:

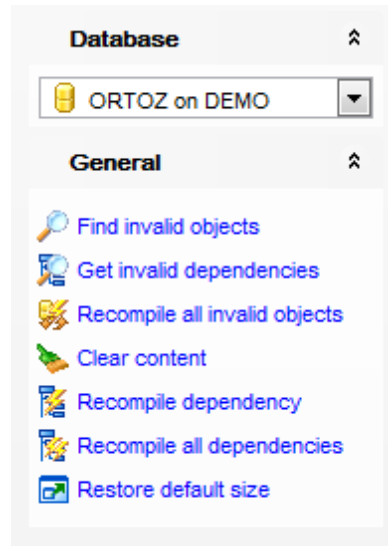
Full version (for Windows) **Yes**

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.

10.11.1 Using Navigation bar and Toolbar

The **Navigation bar** and **Toolbar** provide quick access to tools implemented in the **Recompile Invalid Objects** tool.



Database

 select a database recompiling invalid objects

General

-  Find invalid objects according to currently specified criteria
-  Get invalid dependencies
-  Recompile all invalid objects
-  Recompile dependency
-  Recompile all dependencies
-  Clear the content of the window
-  Restore the default size and position of the window

NB: You can enable\disable Toolbars and Navigation bars at [Environment Options](#).

10.11.2 Working with recompile service

Schema

Use the drop-down list to select the schema containing objects to search.

Object type

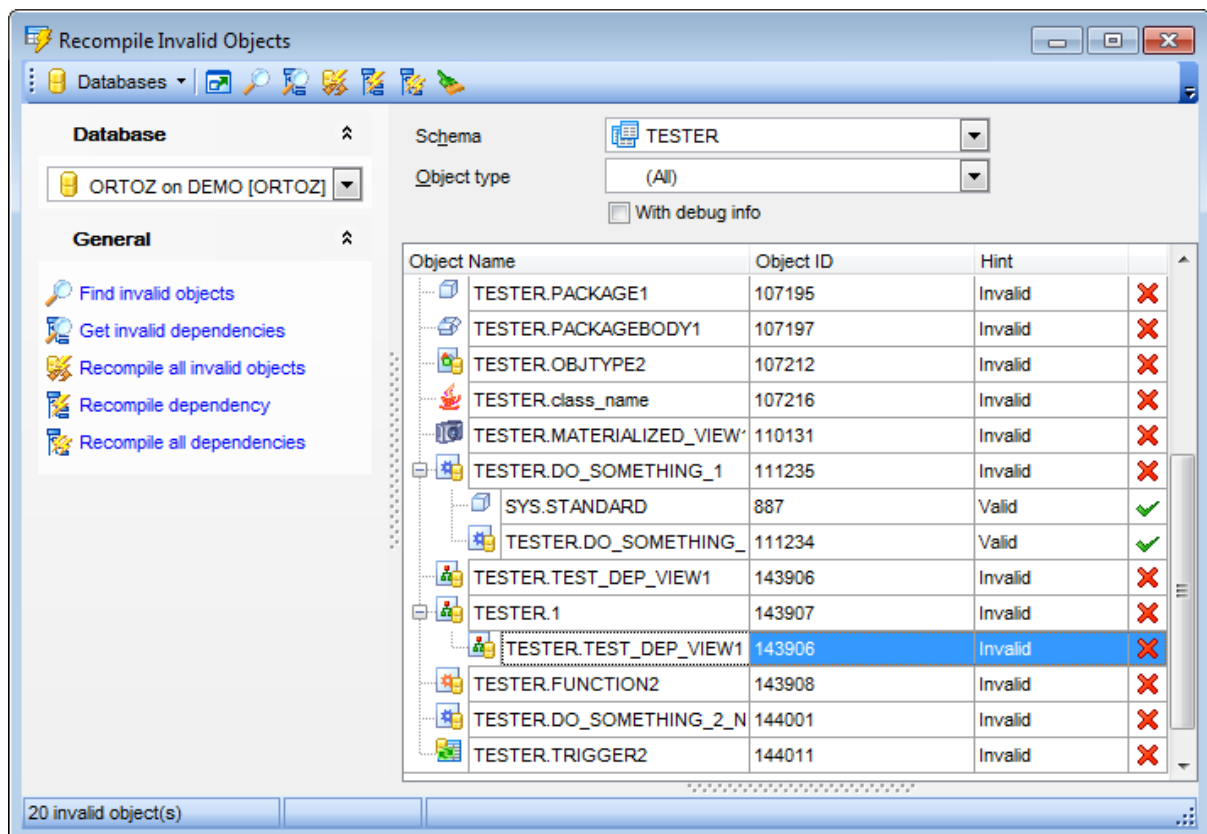
Use the drop-down list to select the object type to search.

☒ With debug info

Adds the code for PL/SQL debugger.

To perform the search, click the  **Find invalid objects** link on the [Navigation bar](#).

To get dependencies of invalid objects click the  **Get invalid dependencies** link on the [Navigation bar](#).



The list below displays invalid objects of the specified type found within the selected schema as a grid with the following columns: *Object name*, *Object ID*, *Hint*. If more convenient, you can [change the order](#) of the columns by dragging their headers horizontally.

Hint: Objects of different type are marked in the list by different icons.

To recompile invalid objects, click the  **Recompile all invalid objects** link on the [Navigation bar](#).

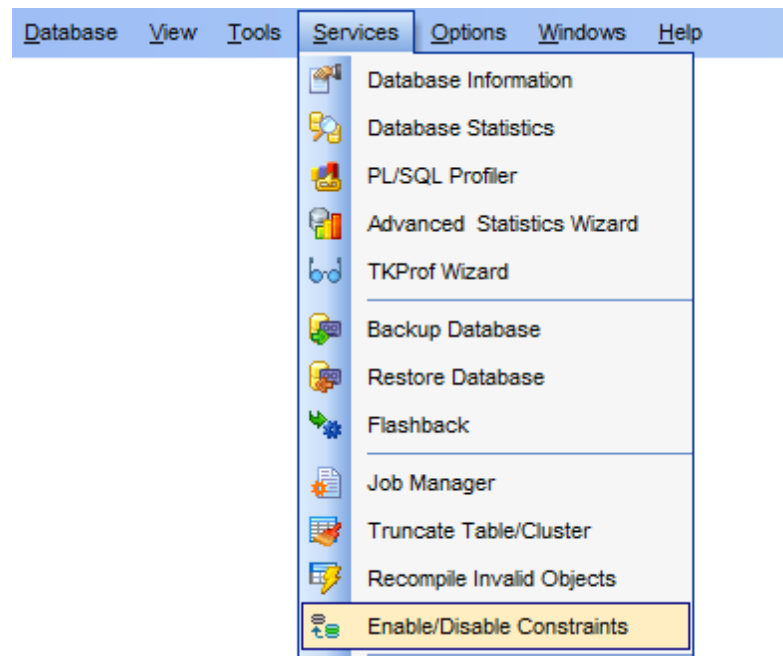
If you want to recompile a single dependency that is currently selected then click the  **Recompile dependency** link on the [Navigation bar](#).

If you want all dependencies to be recompiled then click the **Recompile all dependencies** link on the [Navigation bar](#).

10.12 Enable/Disable constraints

Enable/Disable constraints wizard allows you to enable and disable constraints; it finds the them and converts them using Oracle statements.

To start the wizard, select the **Services |  Enable/Disable constraints** [main menu](#) item, or right-click the database in [DB Explorer](#) and select the **Tasks |  Enable/Disable constraints** item from the [context menu](#).



- [Selecting database](#)
- [Selecting schema and tables](#)
- [Specifying operation and target](#)

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:

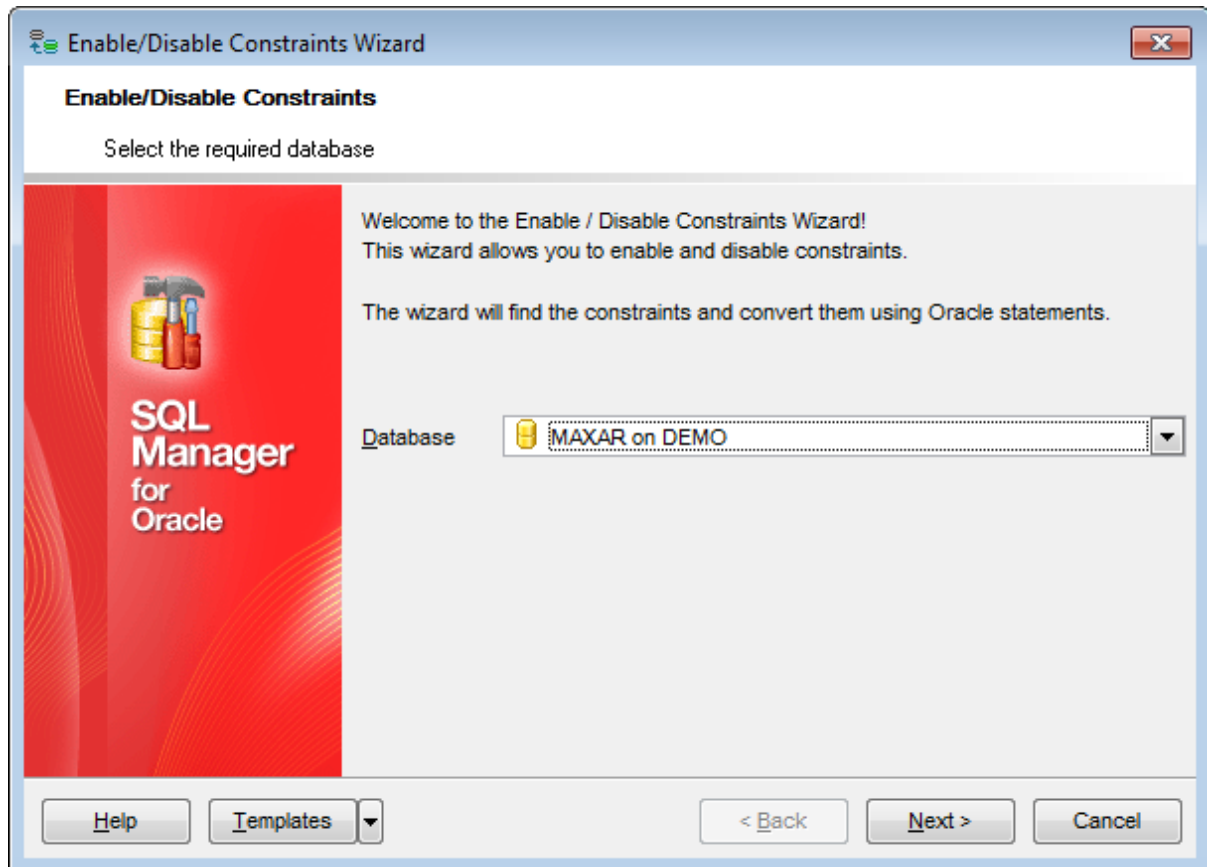
[Templates](#)

10.12.1 Selecting database

This step of the wizard allows you to select the source database.

Database

Use the drop-down list to select the **source database** that contains tables with constraints to be enabled/disabled.



Click the **Next** button to proceed to the [Selecting schema and tables](#) step of the wizard.

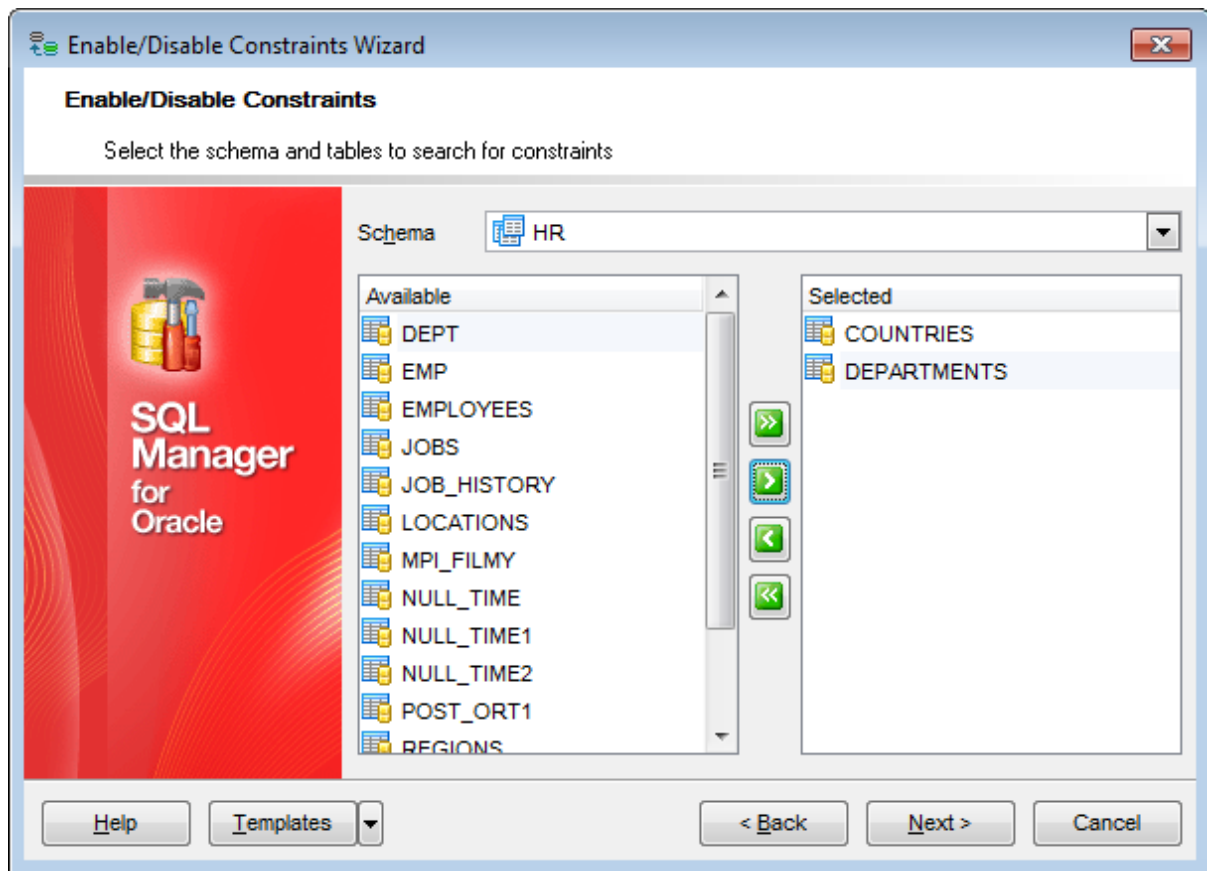
10.12.2 Selecting schema and tables

This step of the wizard allows you to **select tables** to enable/disable constraints.

Schema

Use the drop-down list to select the schema which contains [tables](#) to search for constraints.

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 objects from one list to another.



Click the **Next** button to proceed to the [Specifying operation and target](#) step of the wizard.

10.12.3 Specifying operation and target

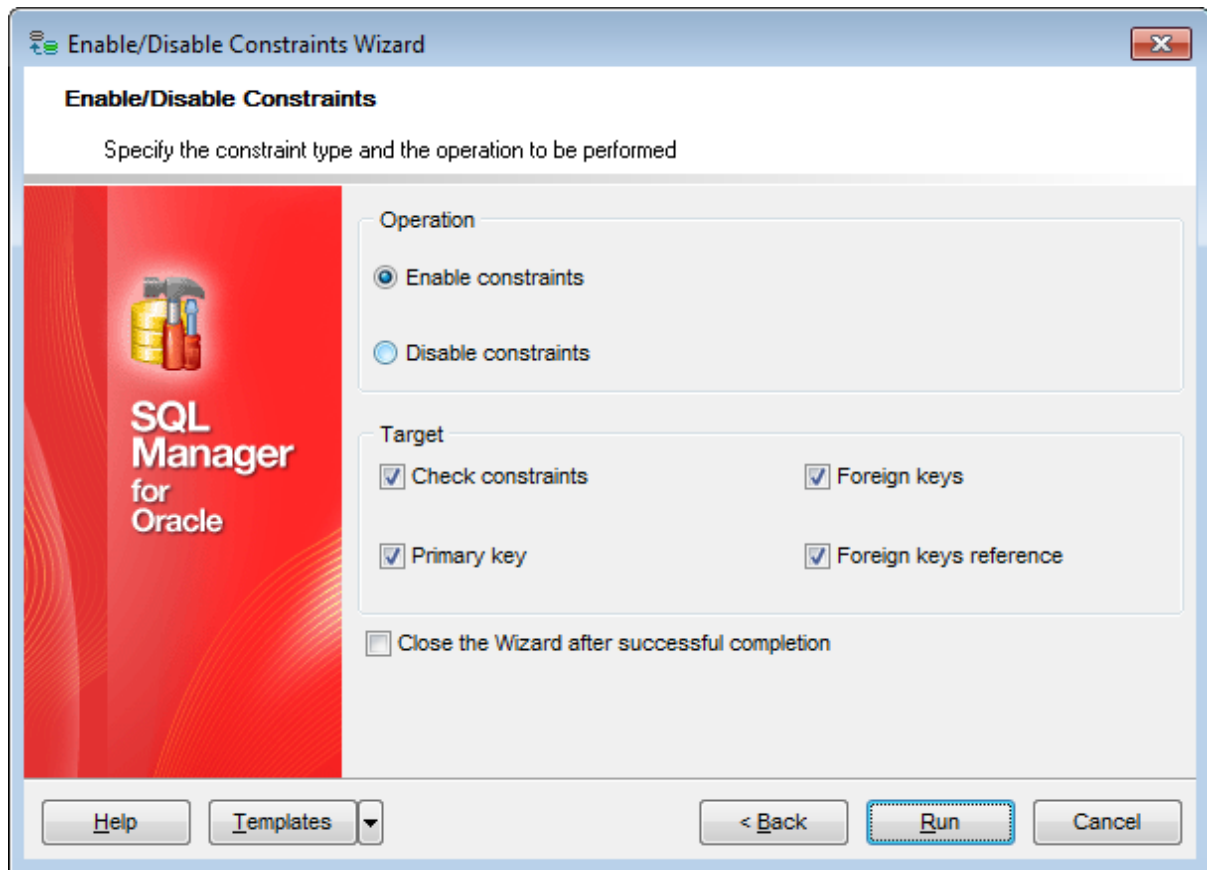
Operation

Specify the operation to be performed over the constraints:

- ☒ *Enable constraints*
- ☐ *Disable constraints*

Target

Select the constraint types to be enabled/disabled: *check constraints, primary key, foreign keys, foreign key reference*.



☒ **Close the wizard after successful completion**

If this option is selected, the wizard is closed automatically when the process is completed.

Click the **Run** button to run the operation.

Part

XI

11 Options

SQL Manager for Oracle 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](#)
- [Find Option dialog](#)
- [Keyboard Templates](#)
- [Object Templates](#)
- [Save Settings](#)
- [Localization](#)

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**.

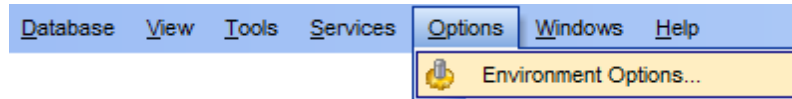
See also:

[Getting Started](#)
[Database Explorer](#)
[Database Management](#)
[Database Objects Management](#)
[Query Management Tools](#)
[Data Management](#)
[Import/Export Tools](#)
[Database Tools](#)
[Services](#)
[How To...](#)

11.1 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](#).



Preferences

[Full mode activation](#)

Confirmations

Appearance

Tools

[DB Explorer](#)

[Search](#)

[Object Editors](#)

[Query Data](#)

[SQL Monitor](#)

[Database Alerts](#)

[Execute Script](#)

Design Query

[Style & Color Palette](#)

Visual Database Designer

[Print Metadata](#)

[Data Export](#)

Fonts

Grid

[Data Options](#)

[Print Data](#)

[Color & Formats](#)

[Advanced](#)

[Column Options](#)

Localization

Global Shortcuts

Find Option

See also:

[Editor Options](#)

11.1.1 Preferences

☒ **Restore desktop on connection to database**

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 Oracle.

☒ **Show desktop panel** (for MDI Environment only)

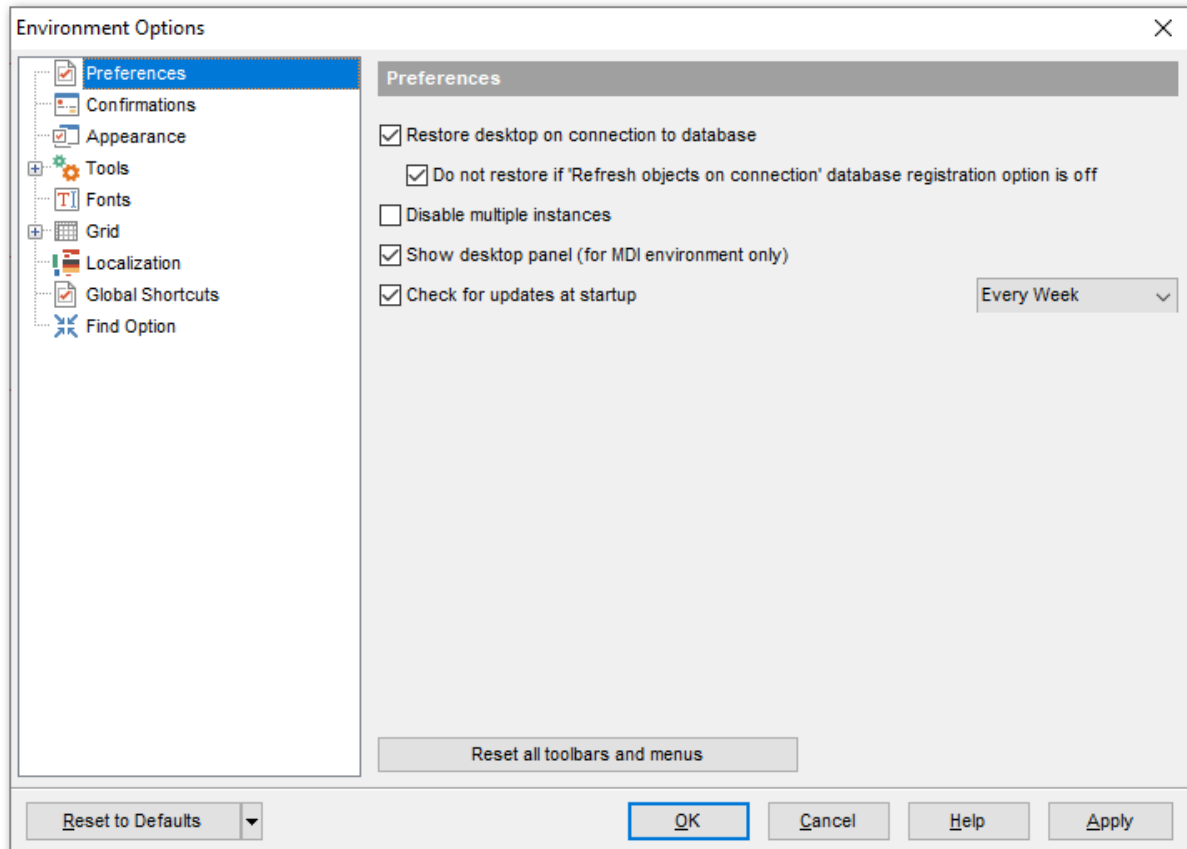
Displays [Desktop Panel](#) when no child windows are open.

☒ **Check for updates at startup**

Enable this option to automatically check for program updates. Use the drop-down list to specify the update check frequency: *Every Day, Every Week, Every Month*.

☒ **Show Full Version features***

This option is available in the Lite version of **SQL Manager**. When enabled, a 14-day period of fully-functional usage is [activated](#).



If necessary, you can **reset all toolbars and menus** of the application using the corresponding button.

Hint: The **Reset to Defaults** button, which is common for all sections of the **Environment Options** dialog, opens a menu that allows you to discard changes and restore default settings — either for the *current category* or for *all categories*.

See also:

[Confirmations](#)

[Windows](#)

[Tools](#)

[Fonts](#)

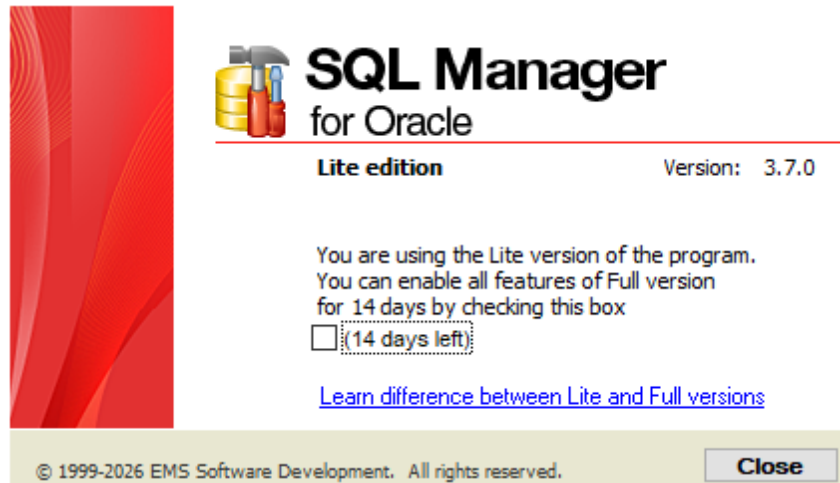
[Grid](#)

[Localization](#)

[Find Option](#)

11.1.1.1 Full mode activation

Note that when using **the FREE Lite version of** SQL Manager for Oracle (which contains functional limitations) you can activate a 14-day period of fully functional usage. During this period, a splash screen displaying the number of days remaining will appear each time you start the application. After the period expires, you can continue using the Lite version.



To activate *the 14-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).

11.1.2 Confirmations

☒ **Confirm saving the object (or document) upon closing the editor**

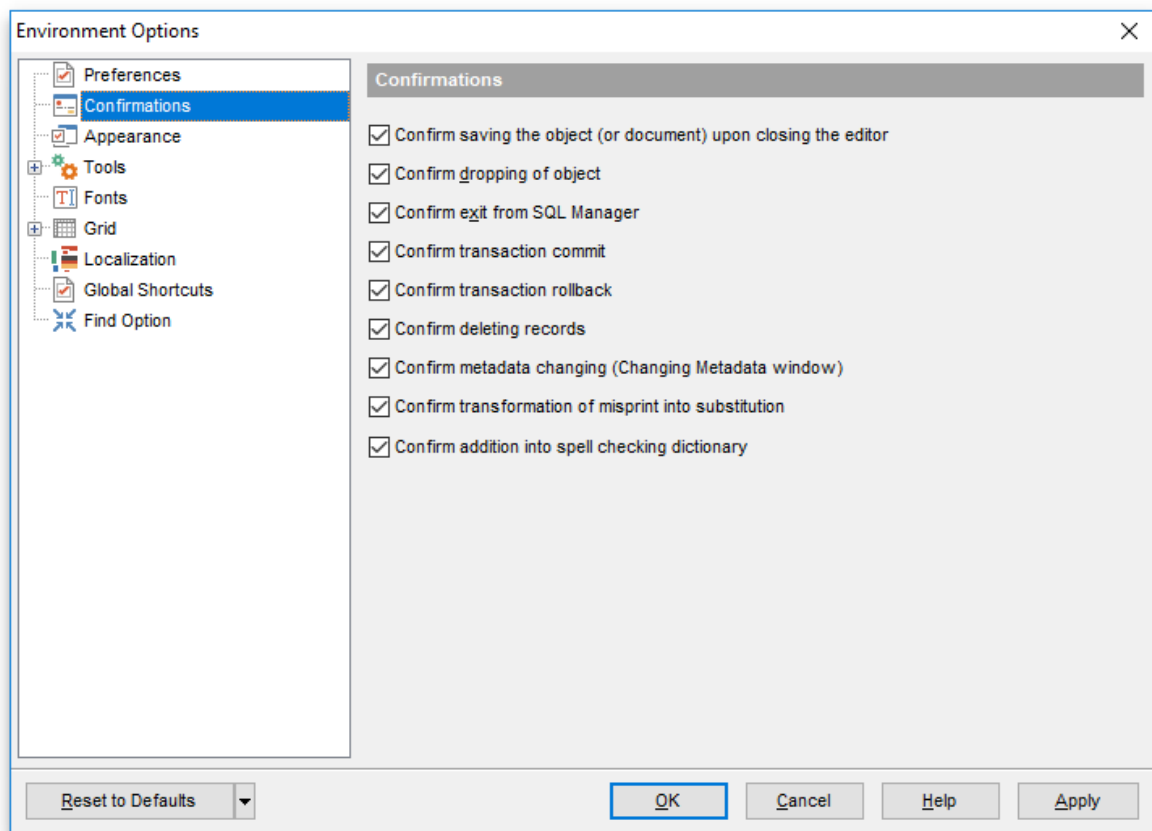
If this option is selected, the program requires confirmation each time you want to save changes in a database object or document.

☒ **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 selected, 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 metadata changing (Changing Metadata Window)**

This option enables/disables the [Changing Metadata](#) window.

☒ **Confirm transformation of misprint into substitution**

If this option is selected, you need to confirm replacing a misprinted word with a corresponding substitution word (see [Spell Checking](#)).

☒ **Confirm addition into spell checking dictionary**

The option defines whether confirmation is required to add new words into [spell checking](#) dictionary.

11.1.3 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).

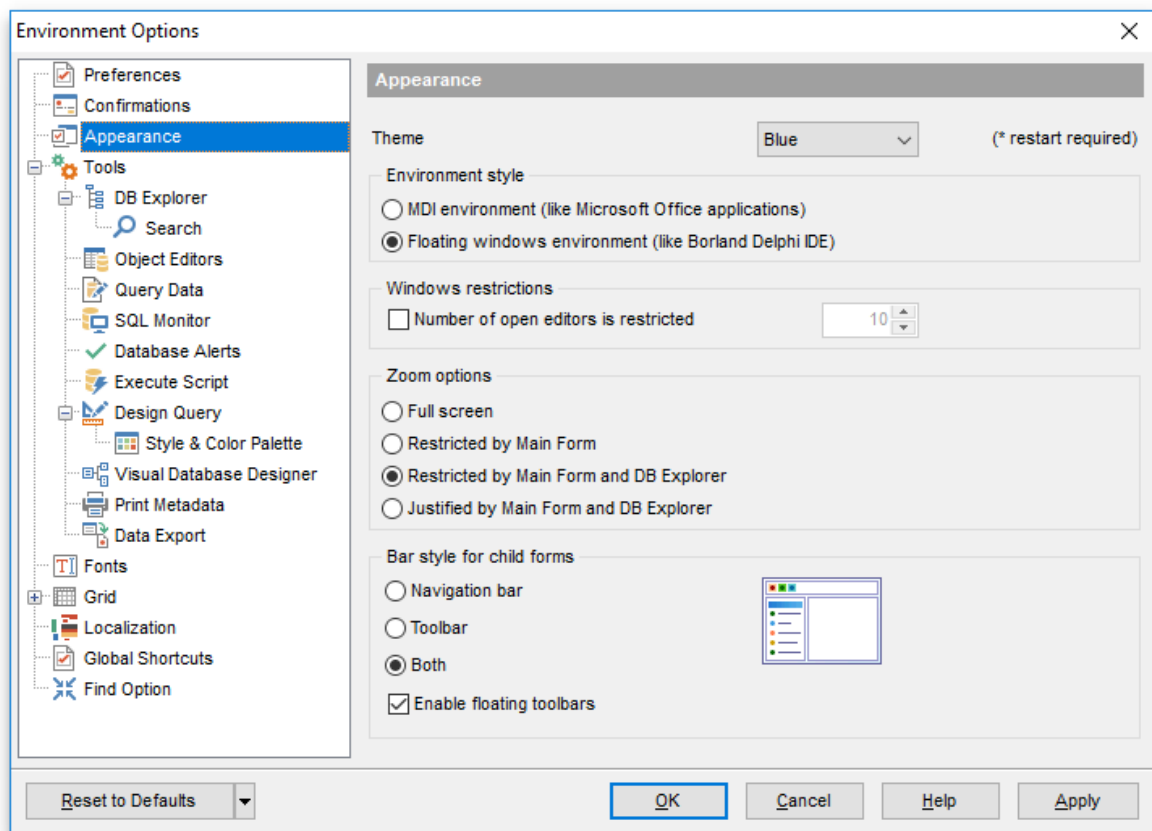
Windows restrictions

This option allows you to set the number of editors ([Table Editor](#), [Query data](#) 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.

11.1.4 Tools

☒ **Show only connected databases in drop-down menu**

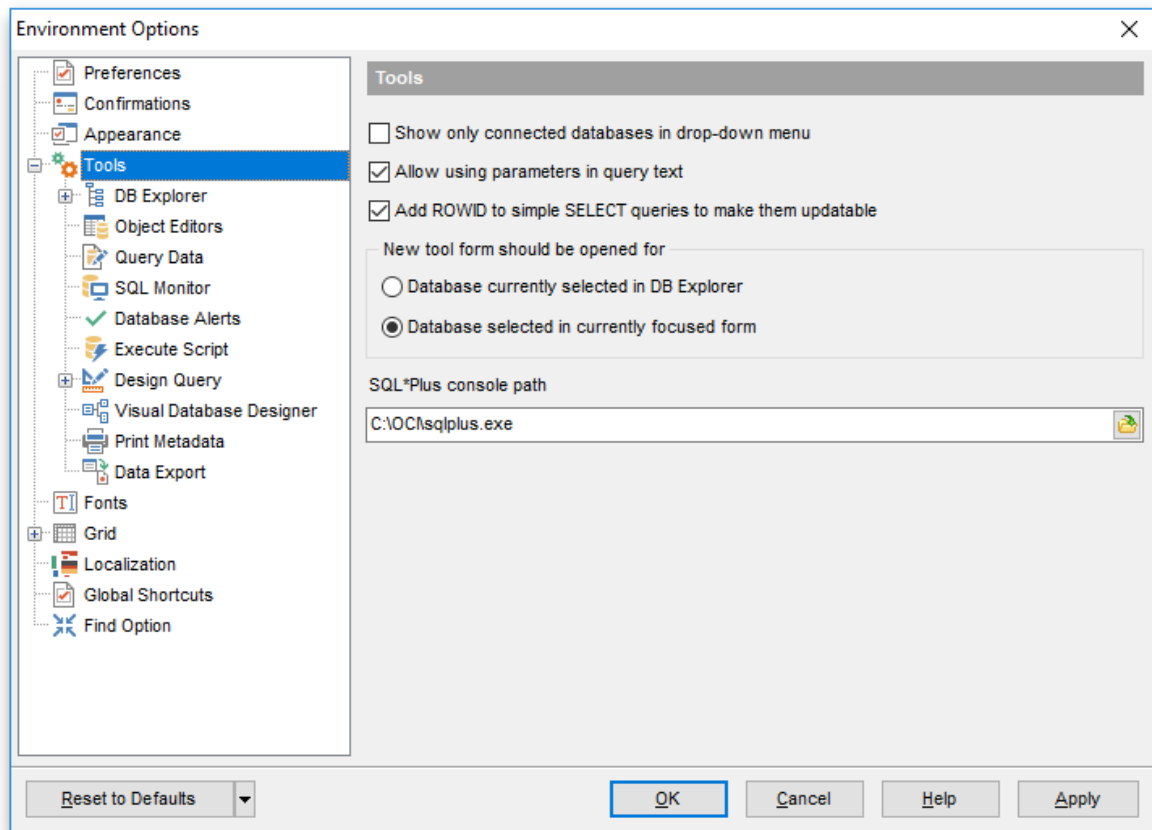
If this option is checked, only [connected](#) databases are displayed in drop-down menus of such tools as [Design query](#), [Execute Script](#) etc.

☒ **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.

☒ **Add ROWID to simple SELECT queries to make them updatable**

Determines whether the *ROWID* is added to *SELECT* queries for update purposes.



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.

SQL *Plus console path

In this field set the path to the console application.

11.1.4.1 DB Explorer

General options

☒ **Show database groups**

Shows/hides database groups in the [DB Explorer](#) tree.

☒ **Show table subobjects**

Shows/hides [table](#) subobjects (fields, indexes, etc.) in the [DB Explorer](#) tree.

☒ **Show view subobjects**

Shows/hides [view](#) subobjects (fields, keys, etc.) in the [DB Explorer](#) tree.

☒ **Sort by aliases**

Use this option to apply sorting registered 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**

Enable this option if you need navigation pane be expanded when the program is launched.

☒ **Show hints**

If this option is selected, popup hints will be shown when setting a cursor on the object in the database explorer.

Recent objects count

Defines the number of objects displayed within the [Recent](#) menu of the [DB Explorer](#).

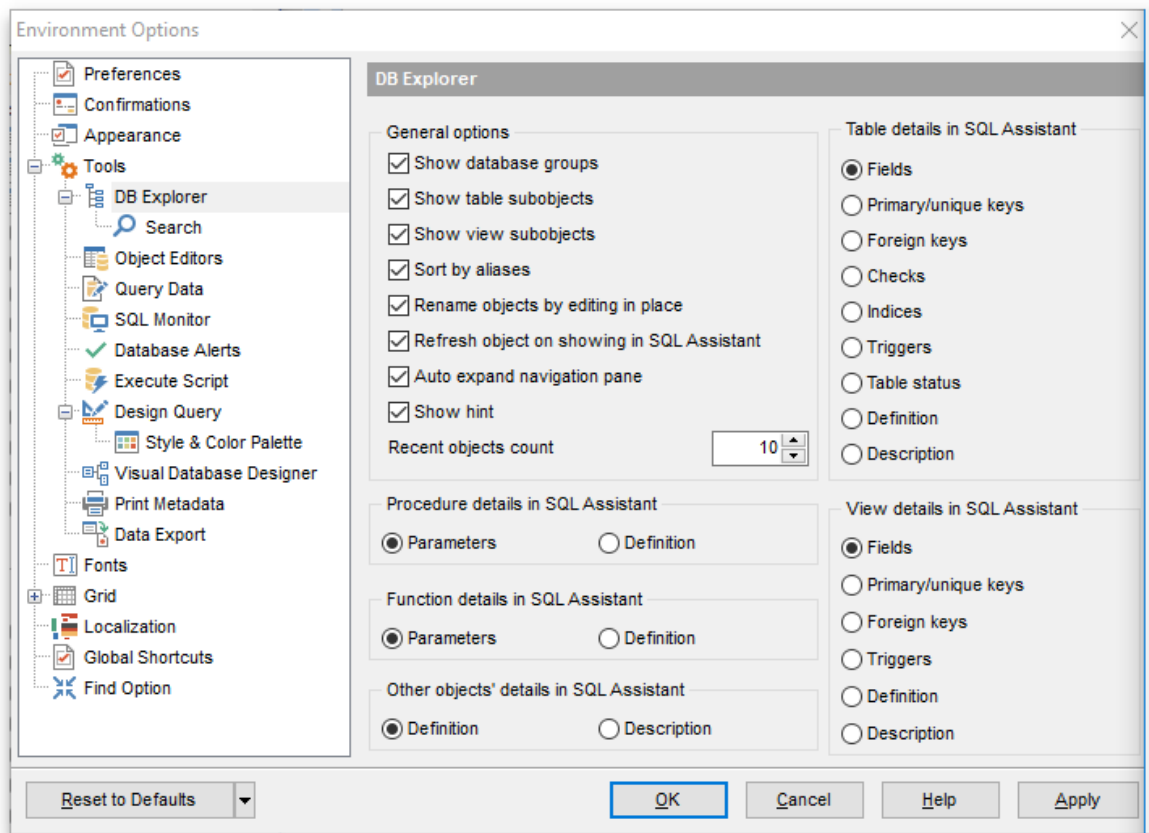


Table / Procedure / Function / View / Other objects' details in SQL Assistant

These options switch the [SQL Assistant](#) mode for displaying details for Oracle [objects](#) selected in the [DB Explorer](#) tree:

for [tables](#): *fields, primary/unique keys, Foreign keys, checks, indexes, triggers, table status, definition or description*;

for [views](#): *fields, primary/unique keys, Foreign keys, triggers, definition or description*;

for [procedures/functions](#): *parameters or definition*;

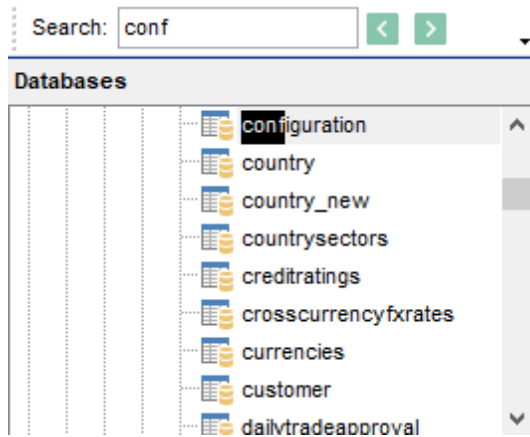
for other objects: *definition or description*.

See also:

[Database Explorer](#)

11.1.4.1.1 Search

Here you can set search options for DB Explorer search string:



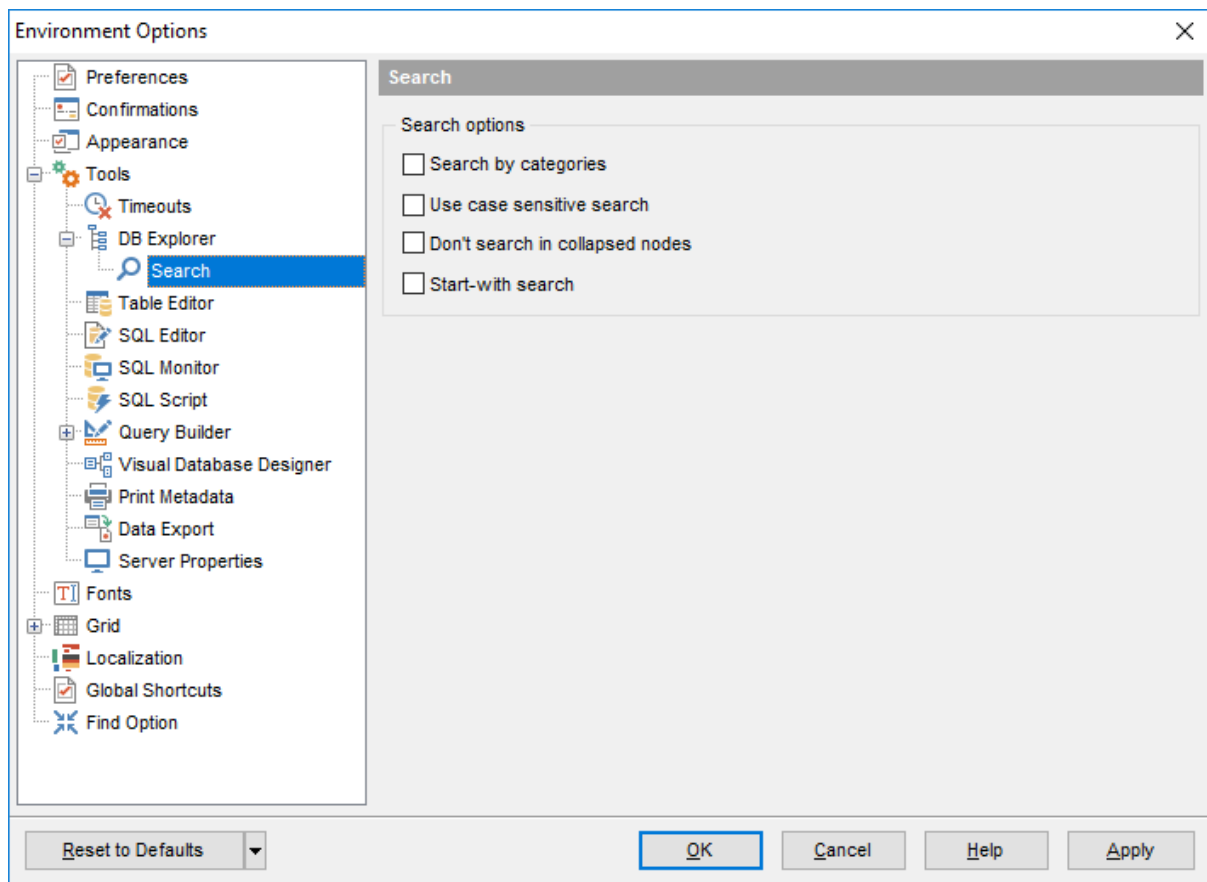
Search options

☒ **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.

11.1.4.2 Object Editors

All

☒ Quote low case identifiers

Enable the option to quote identifiers containing low case symbols.

☒ Always open the first tab

If this option is checked, the first tab is activated by default on opening an object in its editor.

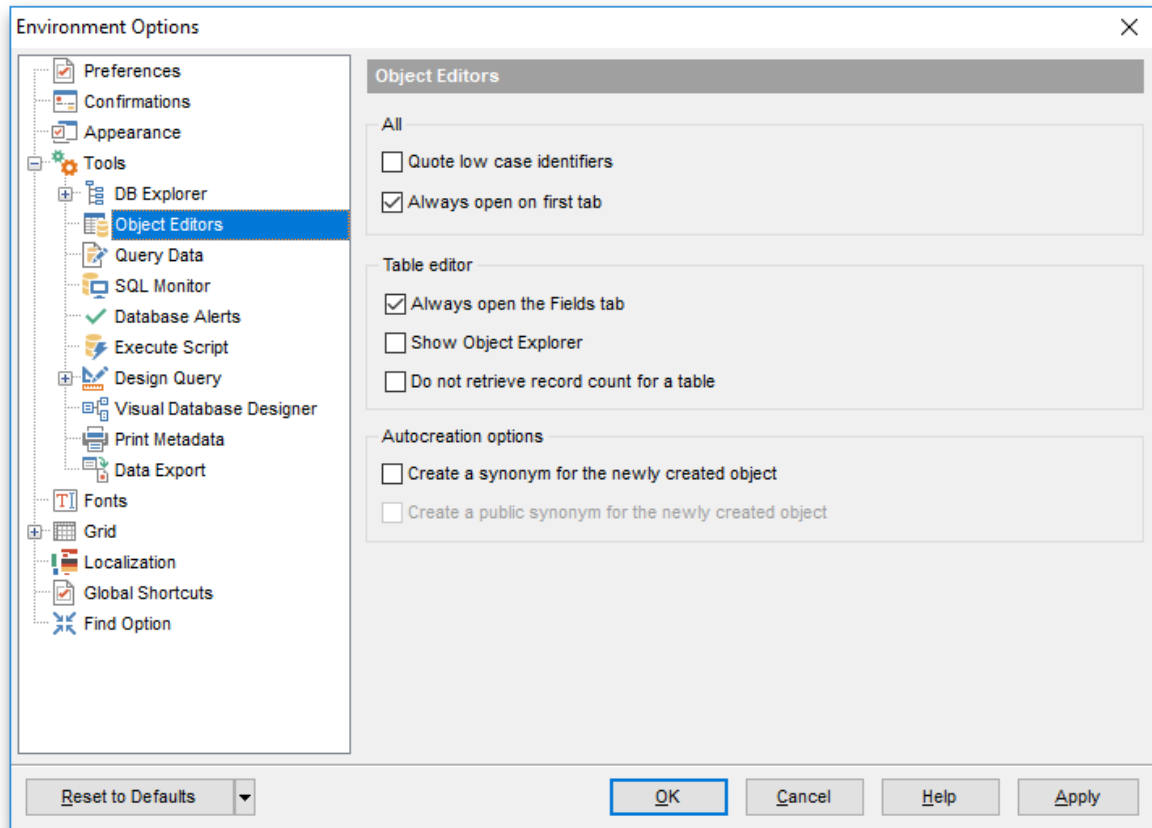


Table Editor

☒ Always open the Fields tab

If this option is checked, the [Fields](#) tab is activated by default on opening a table in [Table Editor](#).

☒ Show Object Explorer

Enables/disables the Object Explorer panel within the [Navigation bar](#) of [Table Editor](#).

☒ 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).

Autocreation options

☒ Create a synonym for the newly created object

If the option is enabled a synonym for the newly created object will be created automatically in the current schema.

 Create a public synonym for the newly created object

If the option is enabled a synonym for the newly created object will be created automatically in the public schema.

See also:

[Database Objects Management](#)

11.1.4.3 Query data

☒ **Explain query on execution**

If this option is checked, the [query plan](#) is displayed at the bottom of the [Query Data](#) window.

☒ **Show result for each query**

With this option checked, when you [execute](#) two or more queries, the result of each query will be displayed. 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 Query Data 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.

☒ **Show DBMS output**

Enables/disables redirection of DBMS output to [Query Data](#) log.

☒ **Always save changes in Favorite Queries before closing**

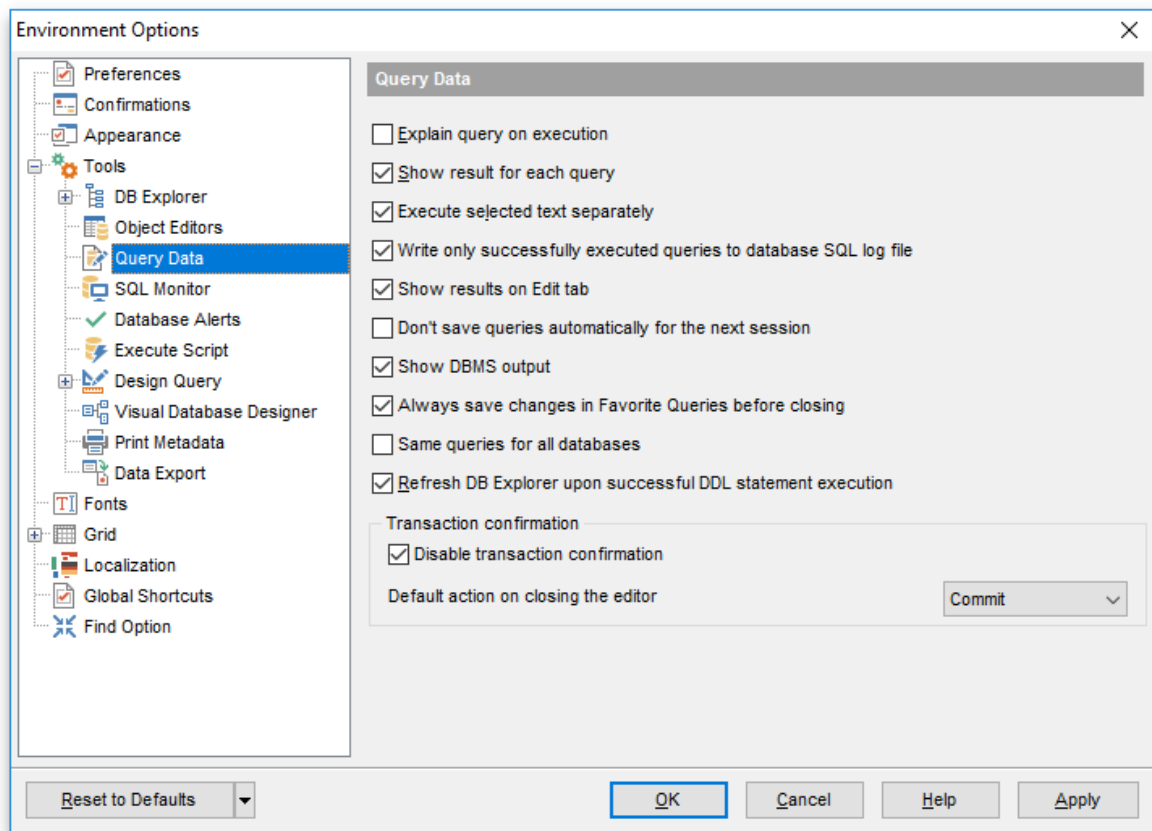
This option enables/disables saving changes in SQL queries marked as [Favorite](#) automatically upon closing the editor.

☒ **Same queries for all databases**

If this option is selected, all queries will be shared among all registered databases selected in [Query Data](#).

☒ **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 [Query Data](#).



Transaction confirmation

☒ **Disable transaction confirmation**

If this option is checked, no transaction confirmation will be required on closing [Design Query](#) and [Query Data](#).

Specify the **default action** (*Commit* or *Rollback*) and this action will be performed automatically each time when you close the editor.

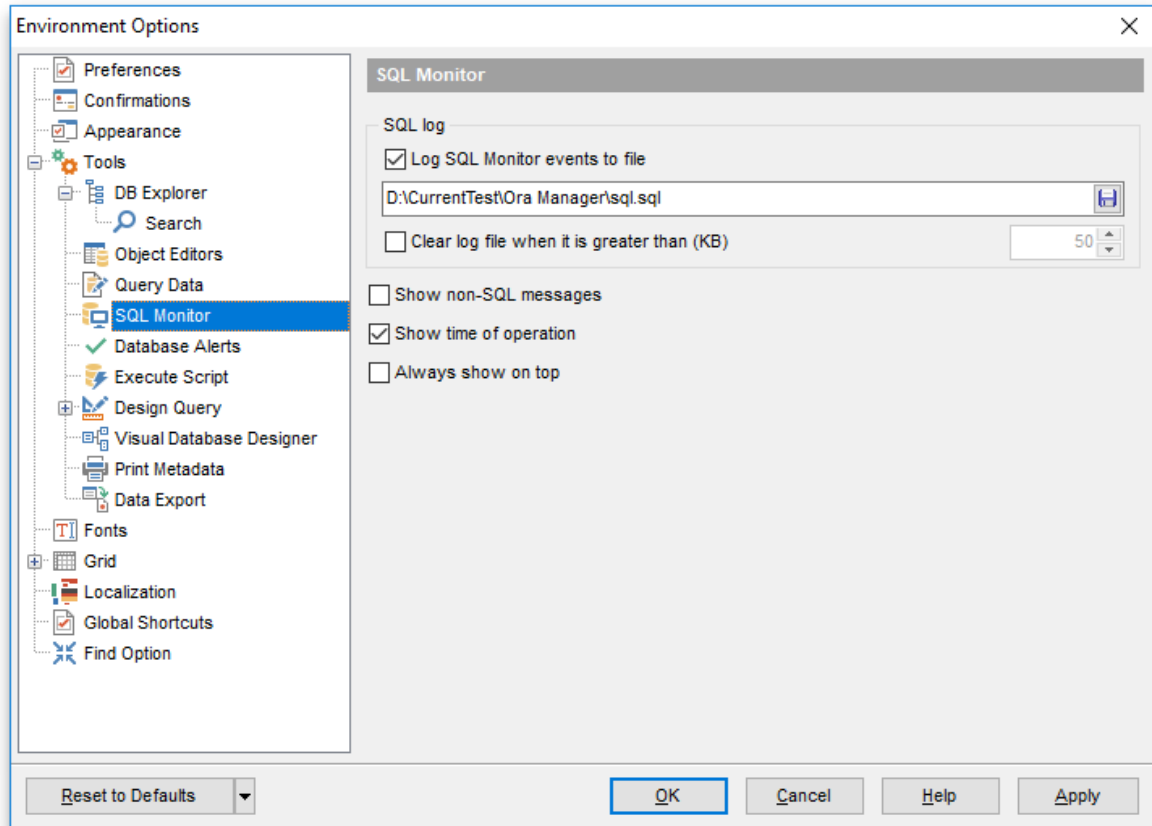
See also:

[Query Data](#)

11.1.4.4 SQL Monitor

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 non-SQL messages**

Enable this option if you wish to log non-SQL messages as well.

☒ **Show time of operation**

If this option is checked, the execution time of logged operations is added.

☒ **Always show on top**

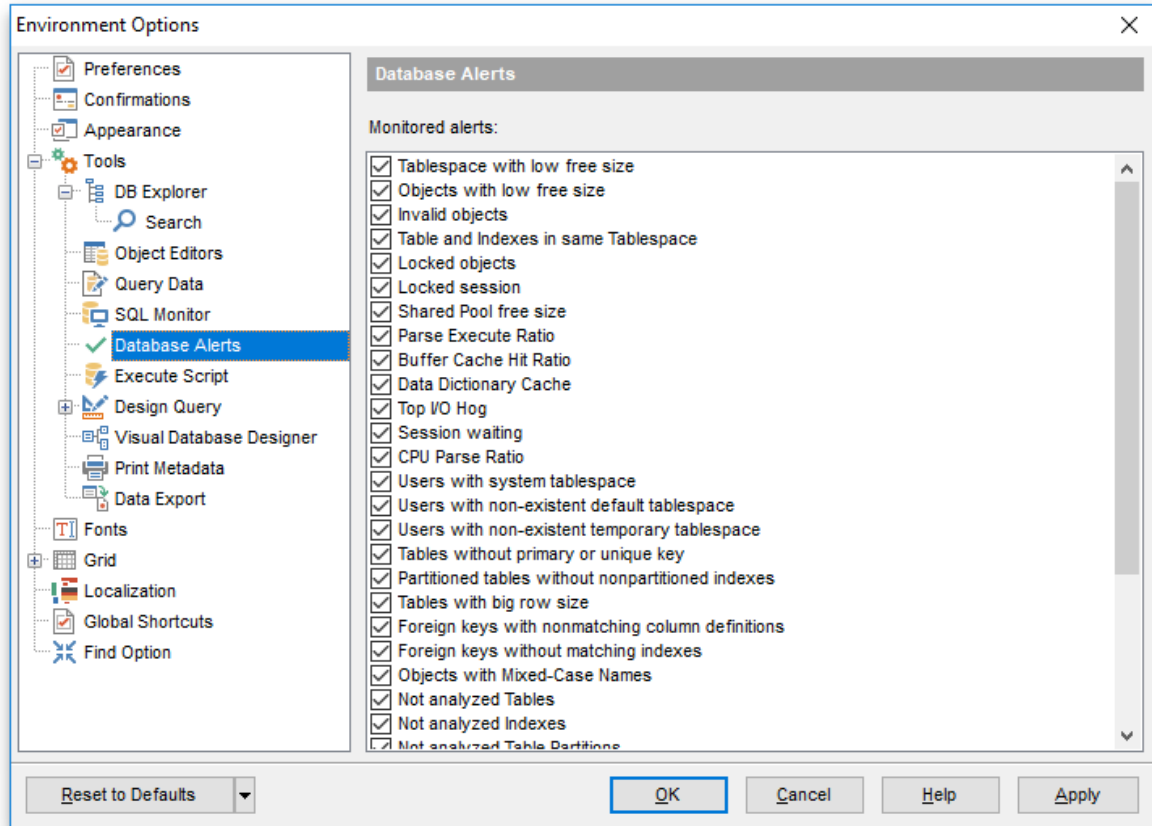
Select this option if you want to display the [SQL Monitor](#) window in the foreground permanently.

See also:

[SQL Monitor](#)

11.1.4.5 Database Alerts

This section allows you to select the [alerts](#) monitored with the help of the [Database Statistics](#) tool.



Monitored alerts

Check a box against a database alert in the list to specify it for monitoring.

See also:

[Database Statistics](#)

11.1.4.6 Execute Script

☒ **Abort script on error**

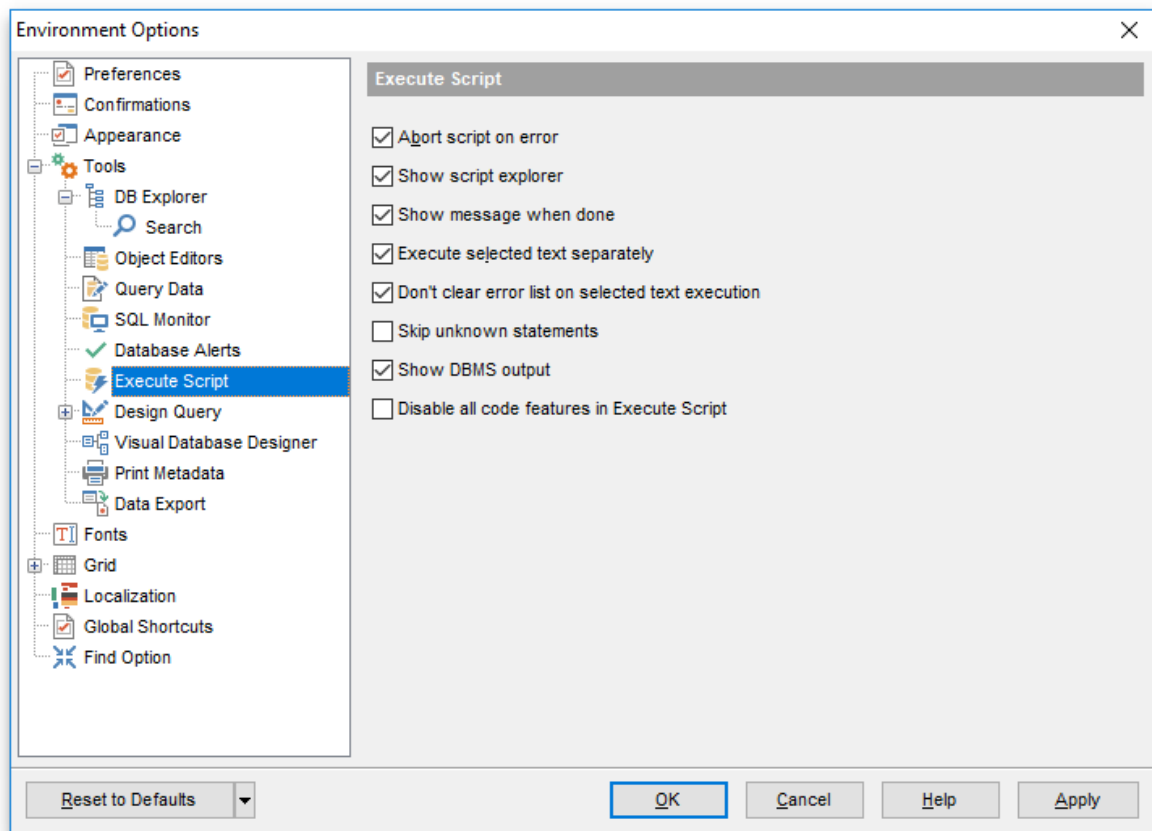
If this option is checked, script execution is aborted if an error occurs.

☒ **Show script explorer**

If this option is checked then an Explorer group of the Navigation bar is displayed.

☒ **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**

Select this option to exclude unidentified statements from parsing.

☒ **Show DBMS output**

Enables/disables redirection of DBMS output to [Execute Script](#) log.

☒ **Disable all code features in Execute Script**

This option disables code completion, code folding, highlight and all options that are set

on the [Code completion](#) page. For options that are set on the [Color Scheme](#) page, the defaults will be applied.

See also:

[Execute Script Editor](#)

11.1.4.7 Design Query

General options

☒ **Allow SELECT queries only**

When this option is checked, the *INSERT*, *UPDATE* and *DELETE* statements are not allowed in [Design query](#).

☒ **Select condition row**

Displays the selected condition in different rows on the **Criteria** and **Grouping Criteria** tabs of [Design query](#).

☒ **Drag field name**

Displays the dragged field name in the **Builder** area.

☒ **Hide selection when inactive**

Hides the selection when the [Design Query](#) window is inactive.

☒ **Show field types**

Displays the field data type next to the field name in the table box.

☒ **Union all by default**

Check this option to use the *UNION ALL* expression in [Design Query](#) by default.

The *UNION* keyword allows you to include the results of two *SELECT* statements in one resulting table.

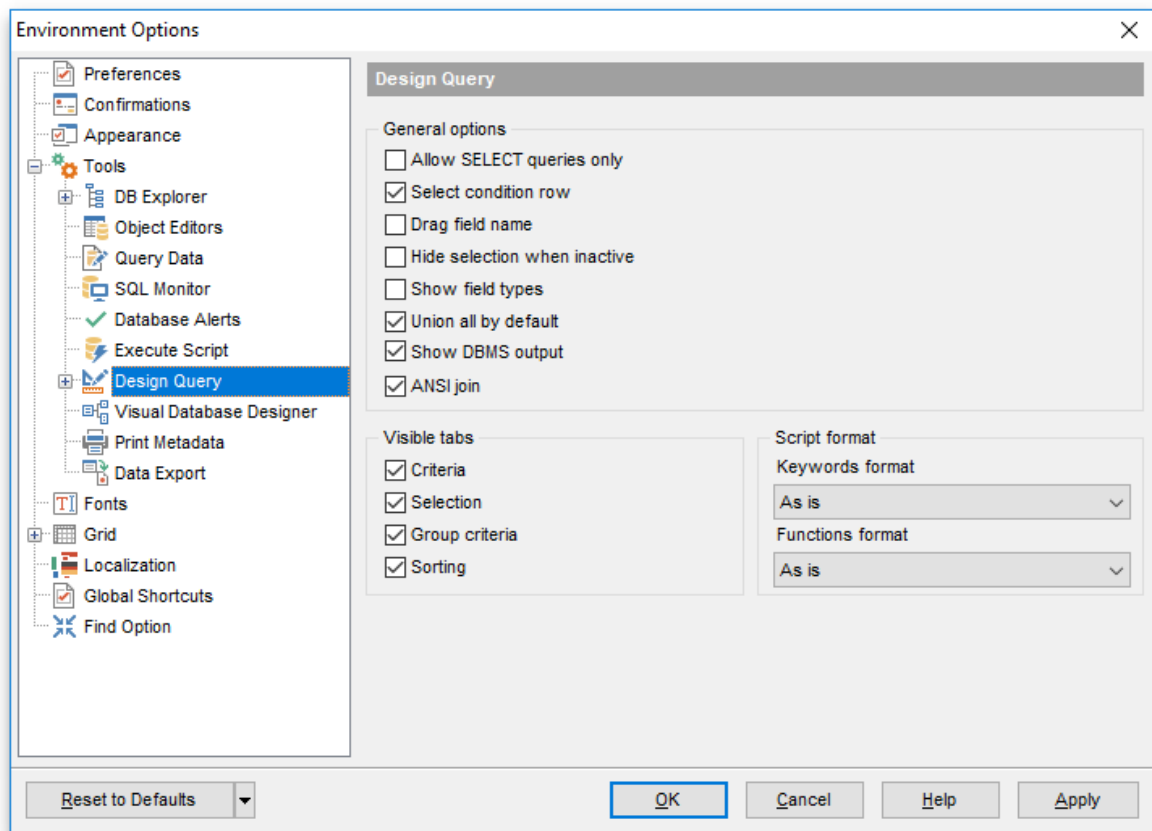
The *ALL* parameter incorporates all rows into the results, including duplicates. If not specified, duplicate rows are removed.

☒ **Show DBMS output**

Enables/disables redirection of DBMS output to [Design Query](#) log.

☒ **ANSI join**

Enable this option if you want to use ANSI-92 standard in join's construction.



Visible tabs

These options specify which [Design Query](#) 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 Query 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 **Design Query** objects by using [Style & Color Palette](#).

See also:

[Design Query](#)

11.1.4.7.1 Style & Color Palette

Style

These options specify the way various [Design Query](#) 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.

☒ **Flat object buttons**

This option sets flat style for buttons.

☒ **Flat objects**

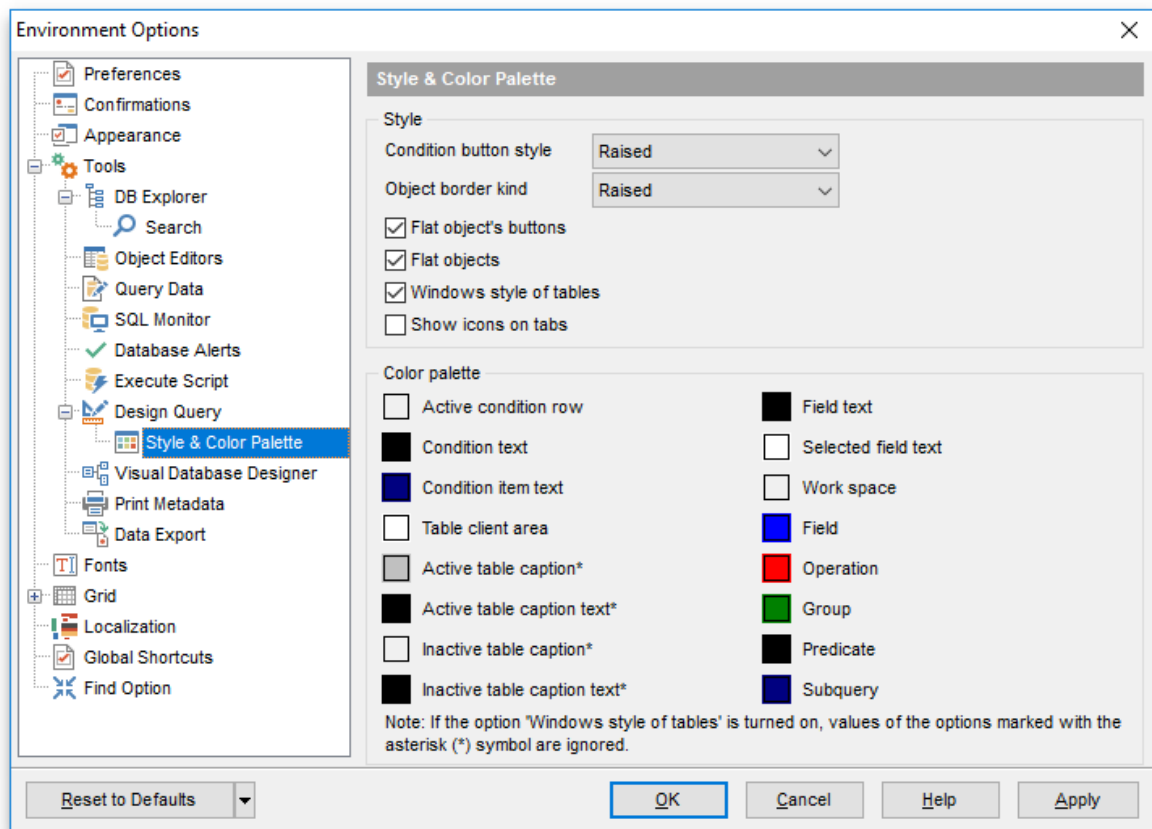
This option sets the flat appearance of objects in [Design Query](#).

☒ **Windows style of tables**

This option determines the appearance of tables in the Builder tab.

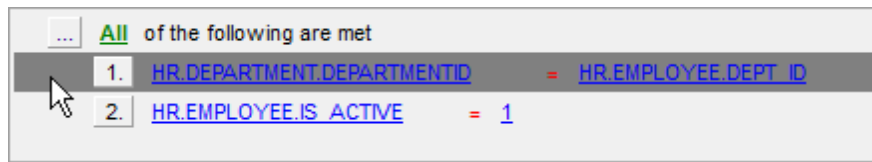
☒ **Show icons on tabs**

With this option selected, you can see icons next to the tab names in [Design Query](#).

**Color palette**

These options define the colors of various [Design Query](#) 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):

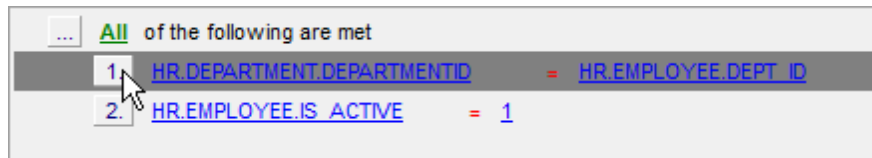
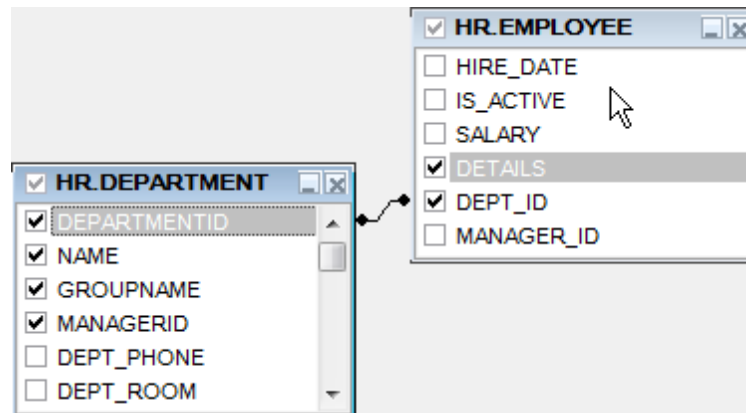
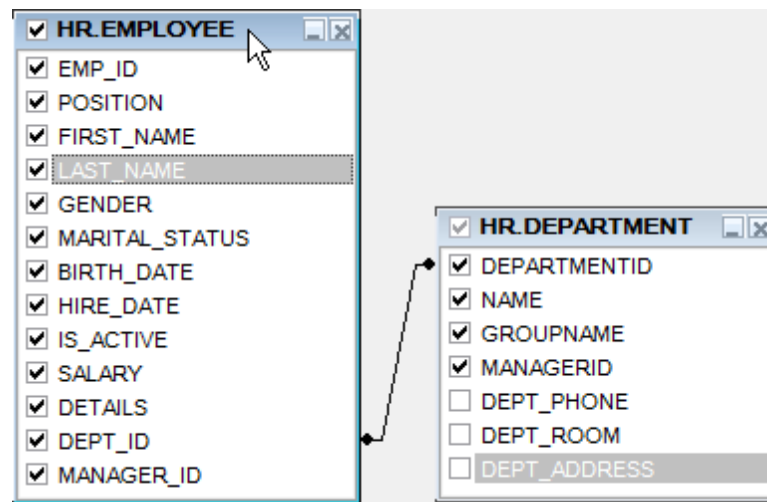


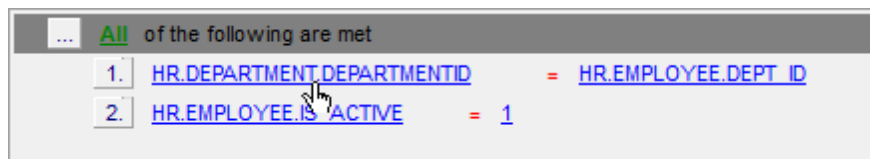
Table client area (in the [diagram area](#)):



Active table caption (in the [diagram area](#)):



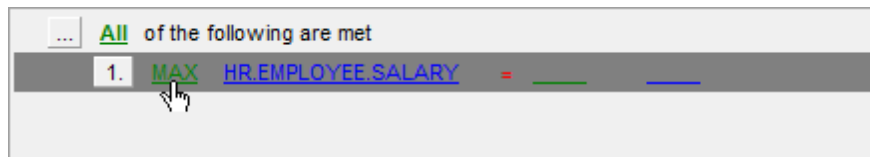
Field (at the [Criteria](#) and [Grouping criteria](#) tabs):



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.

11.1.4.8 Visual Database Designer

☒ **Automatically open last diagram file**

With this option enabled the designer is opened with the last diagram edited.

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 fields separately**

Separates Primary key fields from other fields with a horizontal line.

☒ **Draw entities icons**

Displays icons at the left of each entity header according to its type.

☒ **Draw attributes icons**

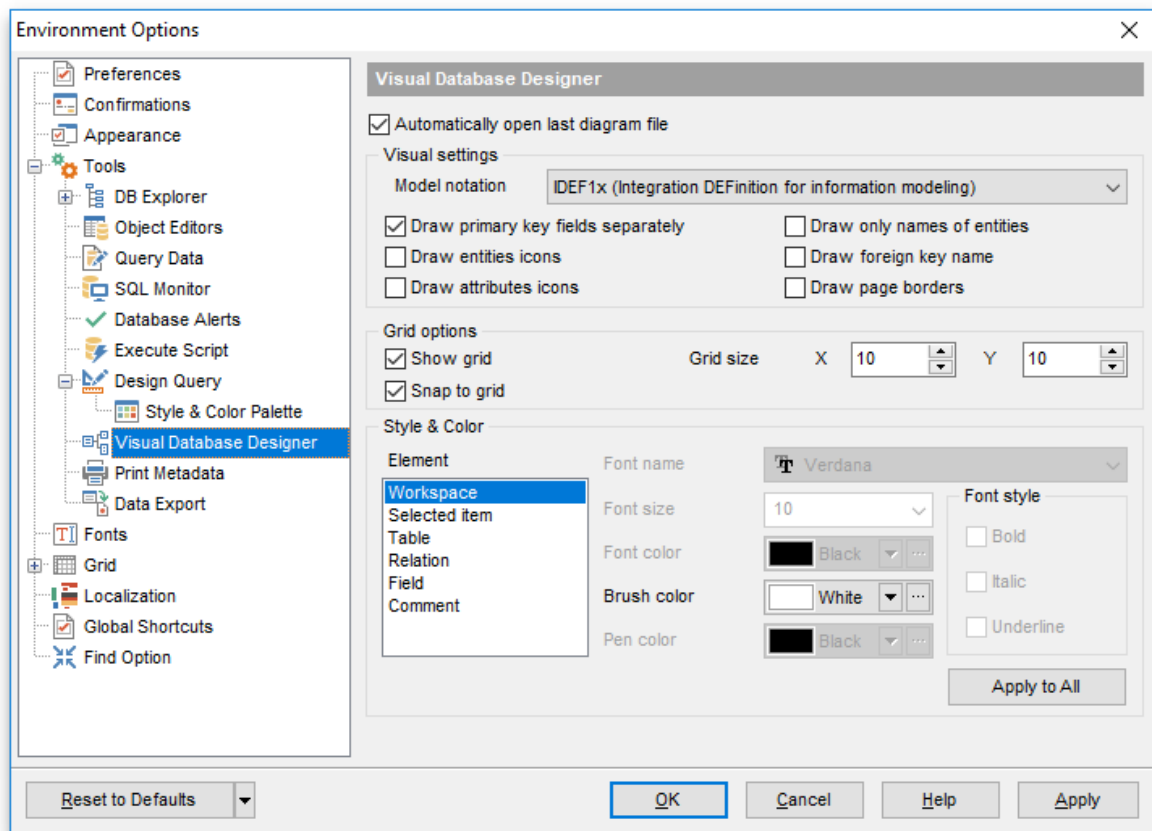
Displays icons at the left of each attribute according to its type (Primary key, Foreign key, ordinary field).

☒ **Draw only names of entities**

Enables highlight for entity names only.

☒ **Draw FOREIGN KEY name**

Enables highlight for Foreign key fields.



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.

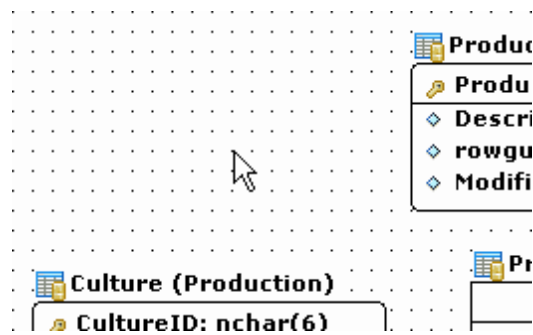
Style & Color

Additionally, you can set color for all [VDBD](#) diagram objects using the **Style and Color** section.

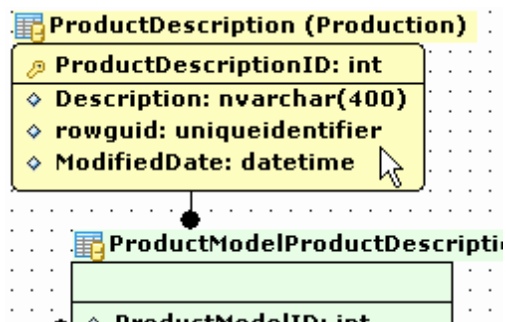
This section allows you to customize the default appearance of the diagram.

Select a diagram element from the list:

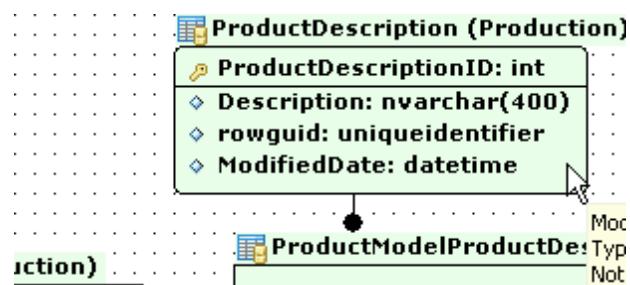
Workspace



Selected item

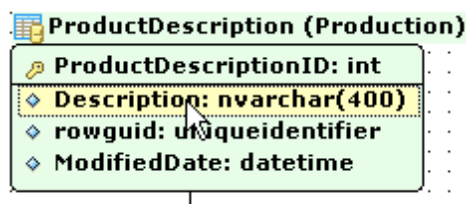


Table



Relation

Field



Comment

See also:

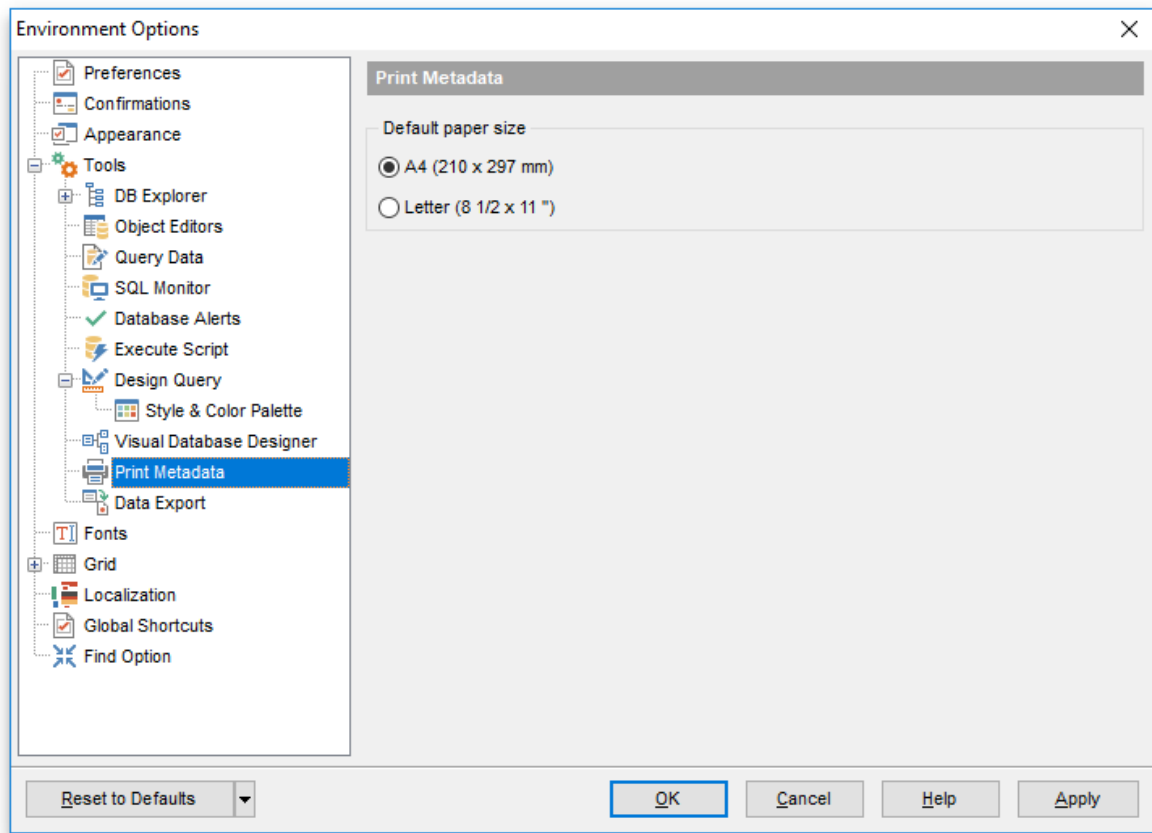
[Visual Database Designer](#)

11.1.4.9 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 ")

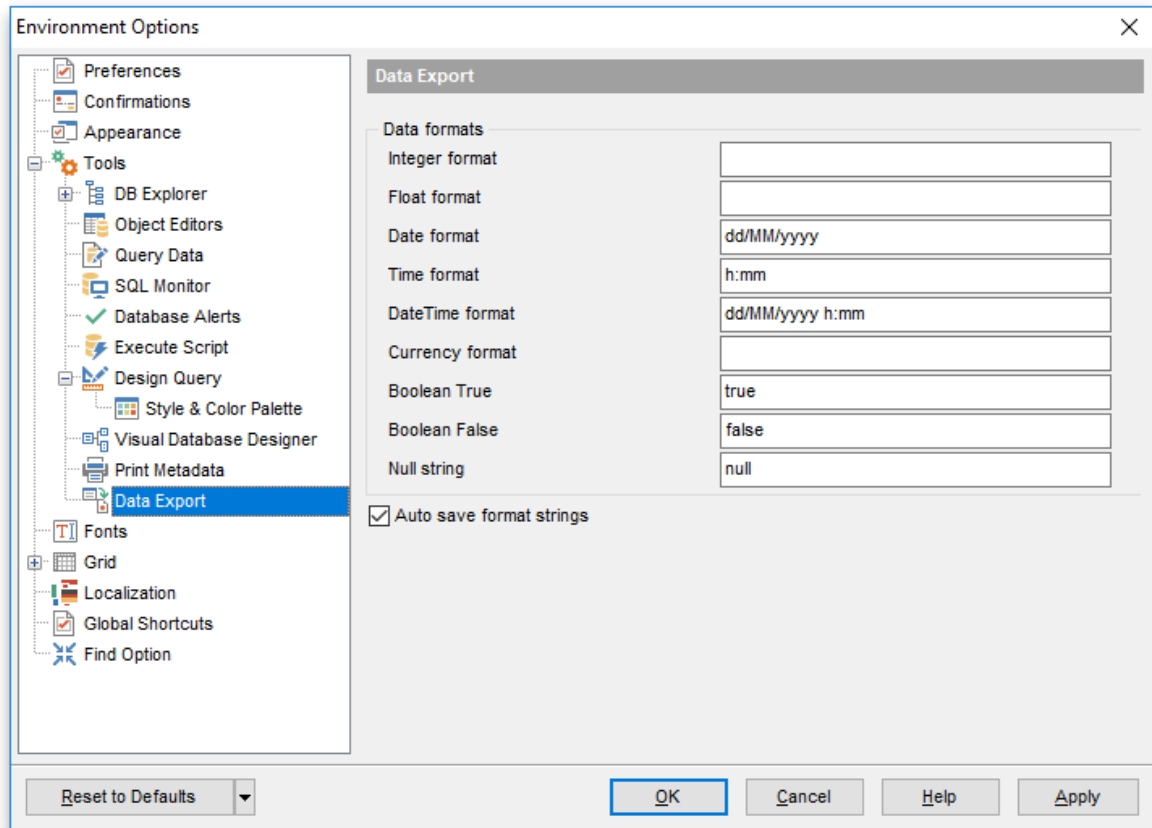


See also:

[Print Metadata](#)

11.1.4.10 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.

These settings can also be specified at the [Adjusting data formats](#) step of [Export Data Wizard](#).

For more details see [Format specifiers](#).

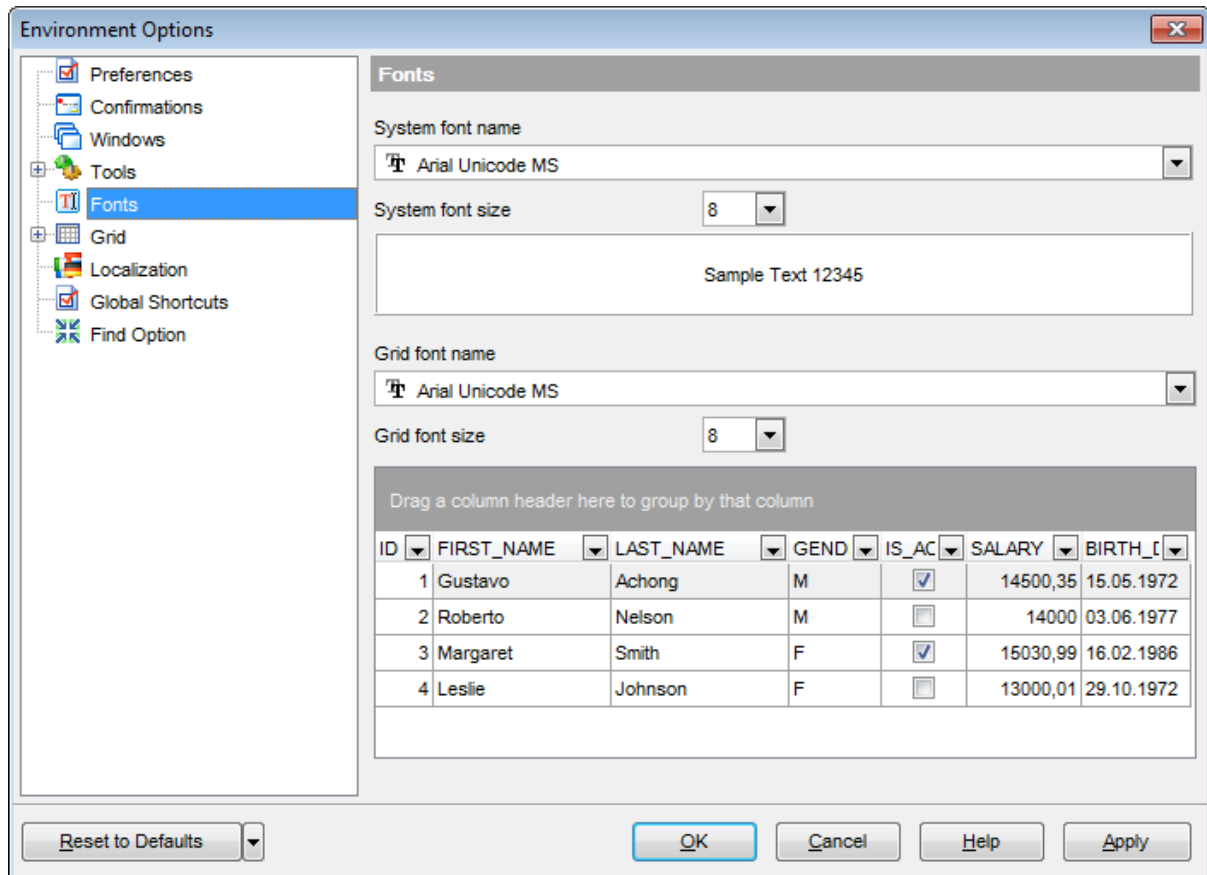
See also:

[Export Data Wizard](#)

11.1.5 Fonts

This section 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 Oracle. 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 Oracle. Type in or use the drop-down list to select the required value.

Grid font name

Defines the font used in [Grid](#). Select the font name from the drop-down list of available system fonts.

Grid font size

Defines the font size used in [Grid](#). Type in or use the drop-down list to select the required value.

11.1.6 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**

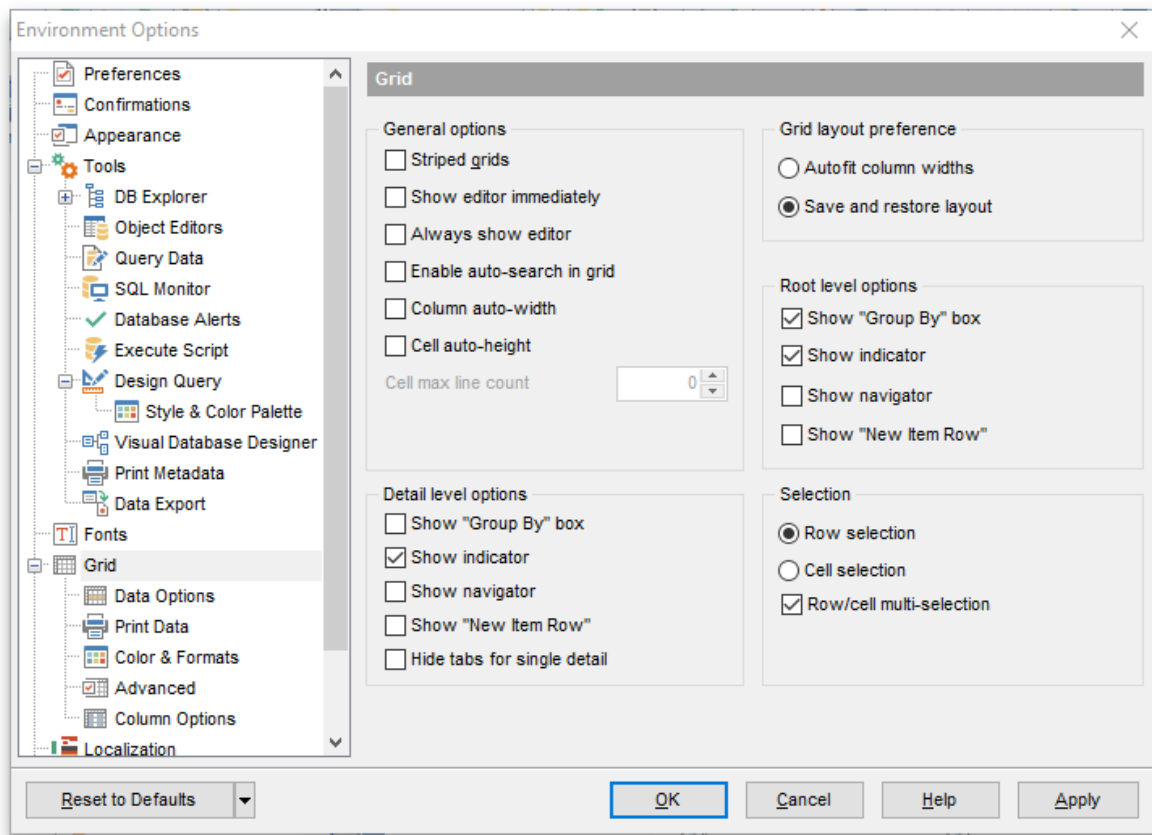
With this option set, column widths are changed in order to display all columns without using the horizontal scroll bar. If the content a column is still too large to display without a need to resize the grid, then the column values are truncated and the hidden characters are replaced with an ellipsis at the end.

☒ **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.

Cell max line count

Sets the number of lines to display on using the Cell auto-height option.



Grid layout preference

☒ **Autofit column widths**

Use this option to shrink the grid columns so that the longest visible column value fits.

☒ **Save and restore layout**

Use this option to keep the original grid width.

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](#)

11.1.6.1 Data Options

Advanced

☒ **Shared connection within 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. It is also recommended to enable the **Auto commit** option available in the [Data Options](#) section of the [Database Registration info](#).

☒ **Asynchronous query execution**

Check this option to allow executing a query/getting object data in the background mode.

☒ **Perform data filtration on client in data view***

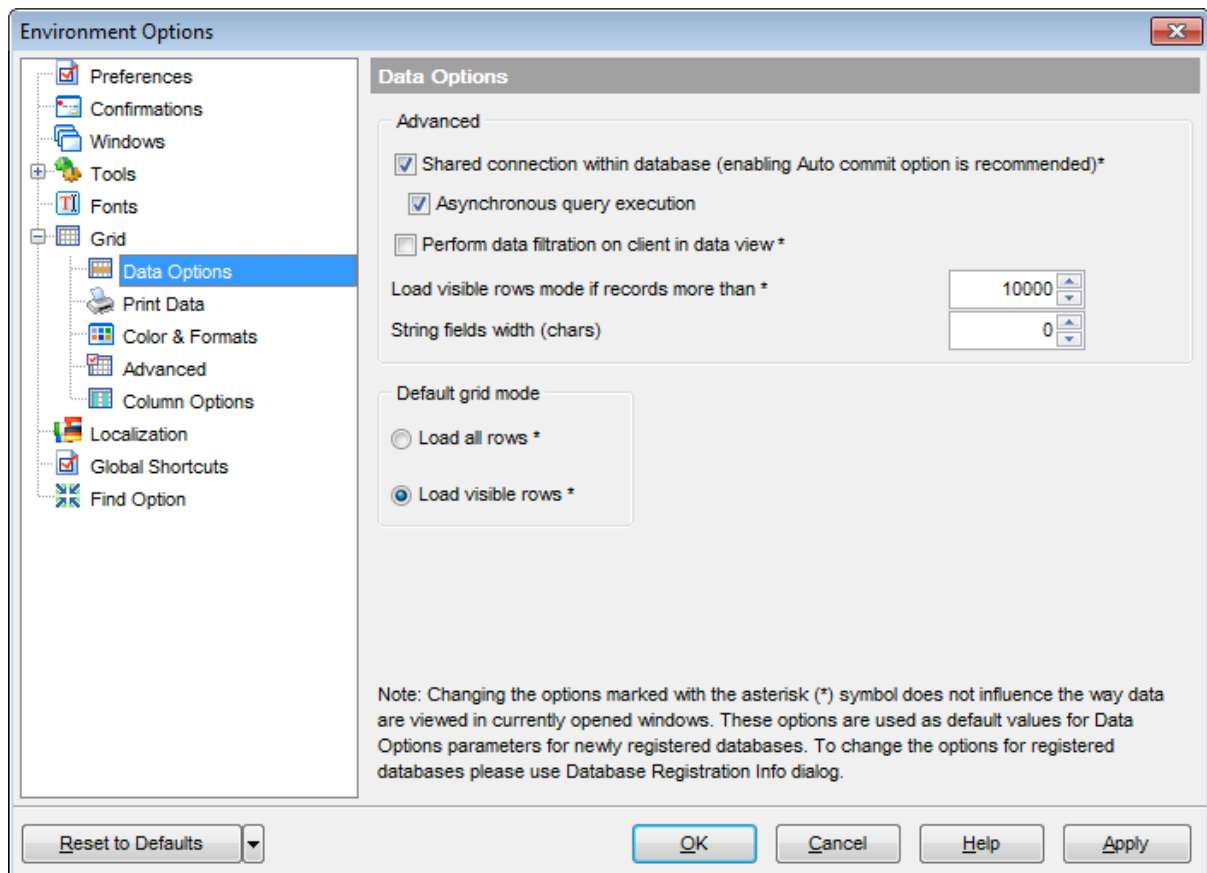
If enabled, the data are filtered by SQL Manager for Oracle (on the client side). If disabled, SQL filter is used in [data view](#). In this case filtering is performed on the Oracle server with the help of the *WHERE* clause used in SQL query.

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 through the [context menu](#) of the grid).

See also:

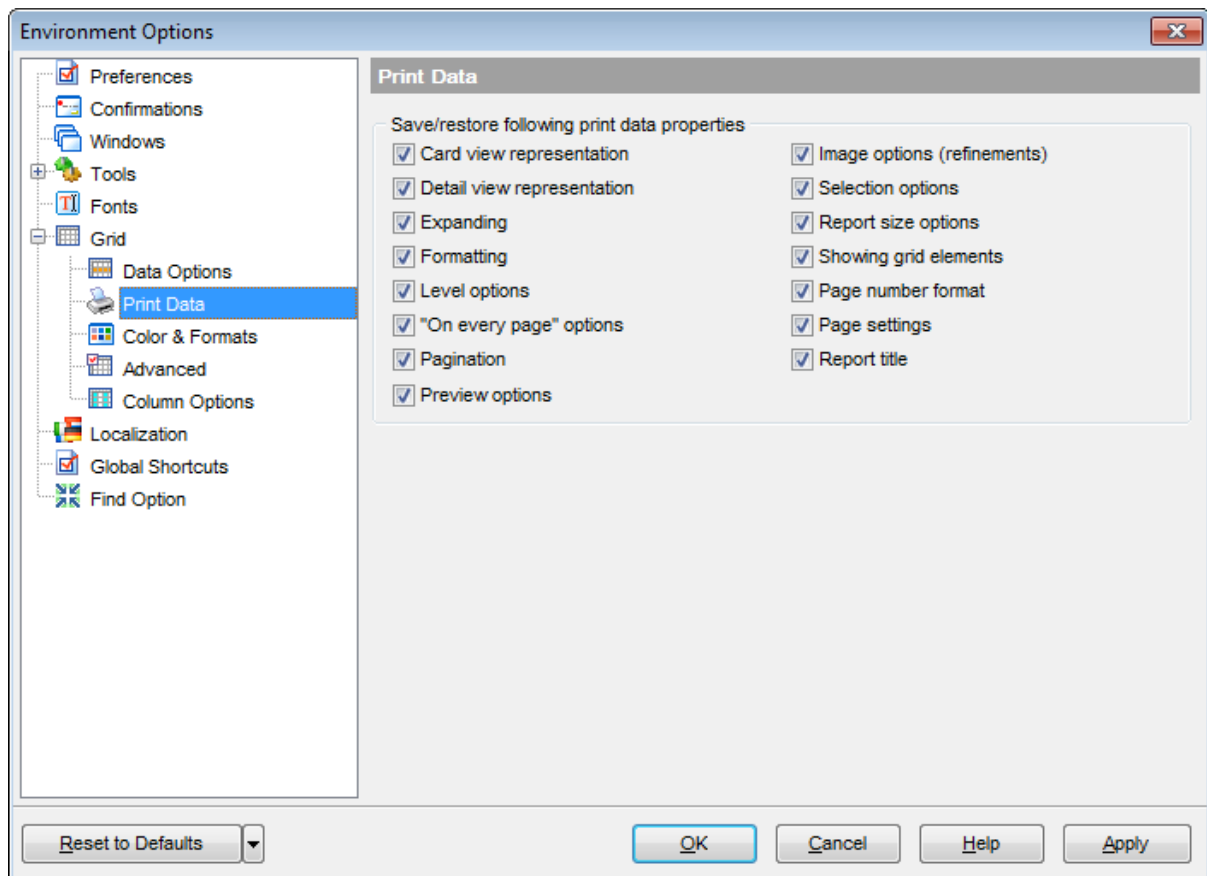
[EMS SQL Manager FAQ](#)

11.1.6.2 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.*



11.1.6.3 Color & Formats

Display formats

Integer fields

Defines the format for displaying *NUMBER* fields.

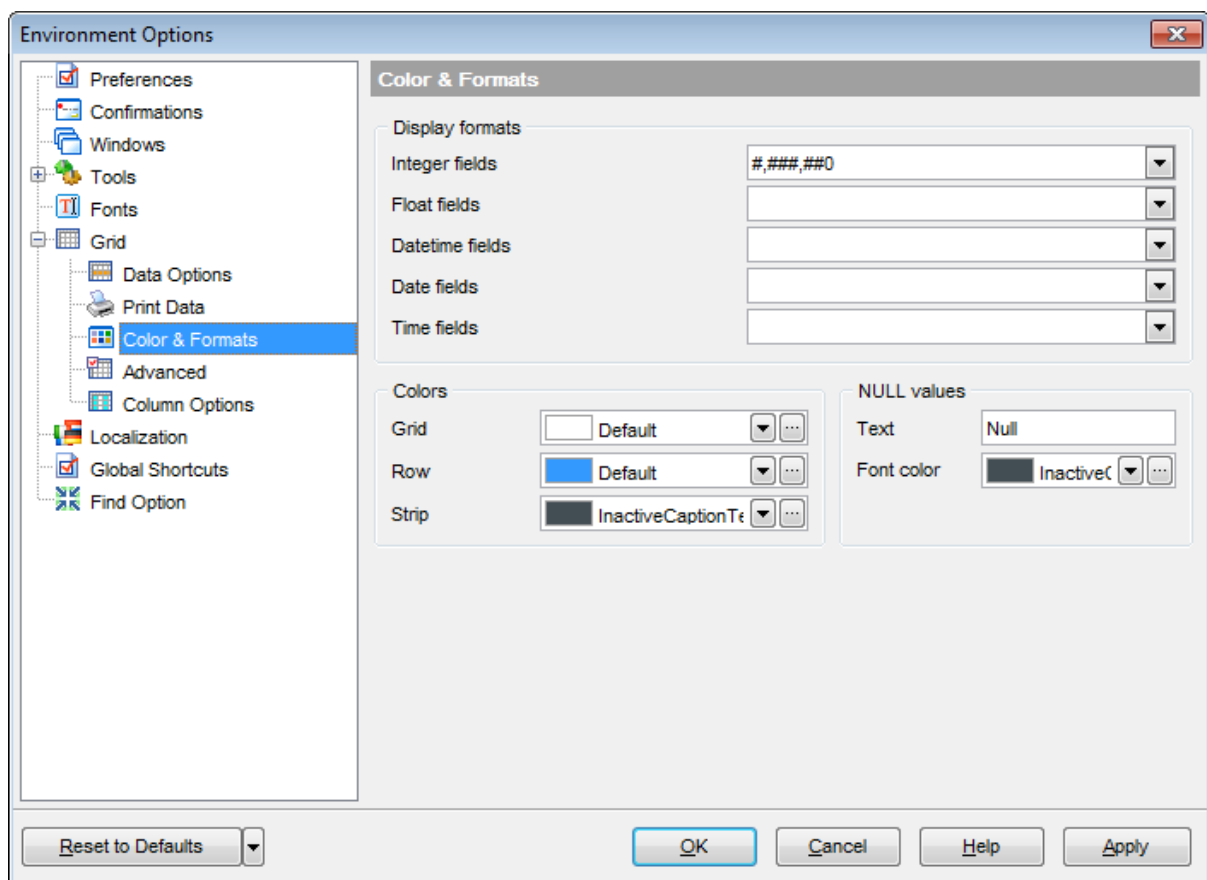
Float fields

Defines the format for displaying *NUMERIC* and *DOUBLE PRECISION* fields.

Date / Time fields

Defines the format for displaying *DATE* / *TIME* fields.

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.

11.1.6.4 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**

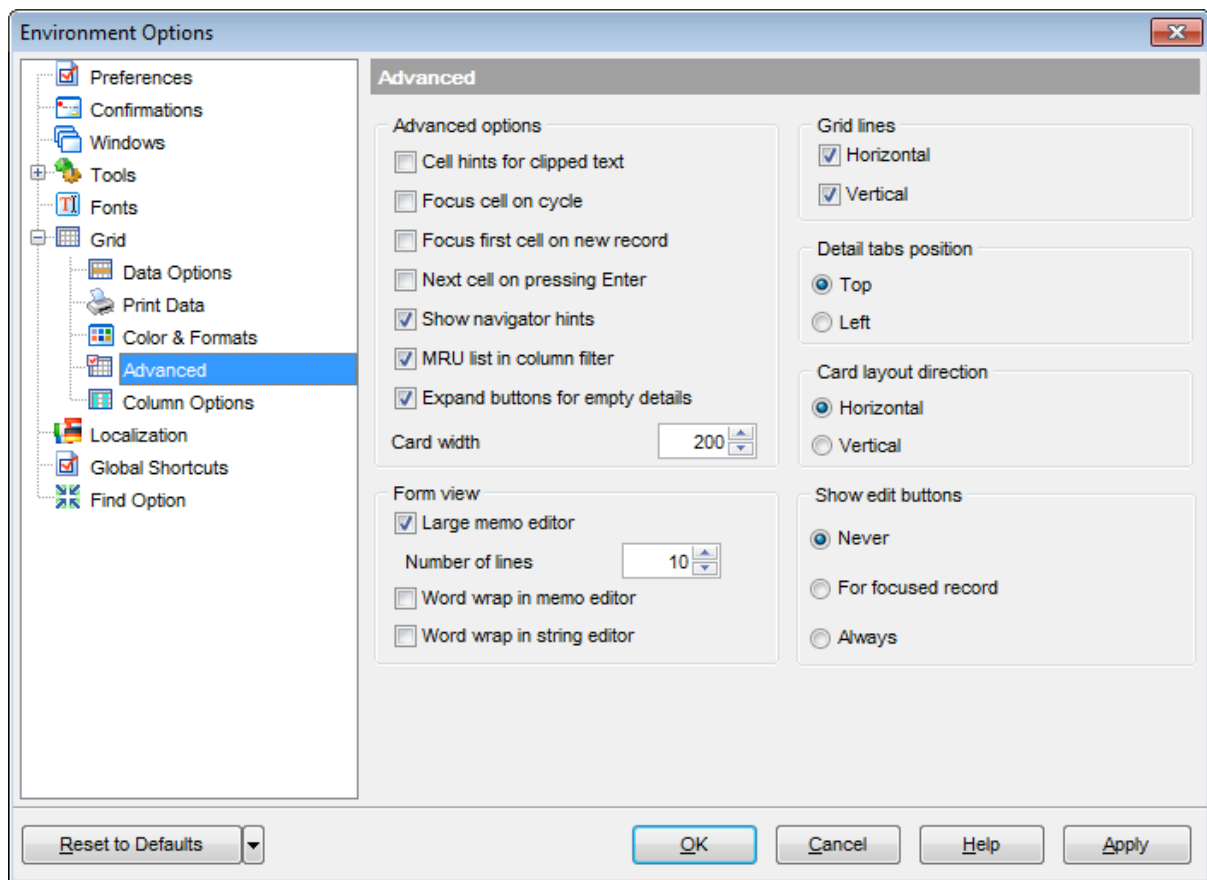
Enables showing of *Most Recently Used* items when filtering columns

☒ **Expand buttons for empty details**

Specifies whether to display expand buttons within master rows that do not have associated details.

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 fields 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*.

11.1.6.5 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**

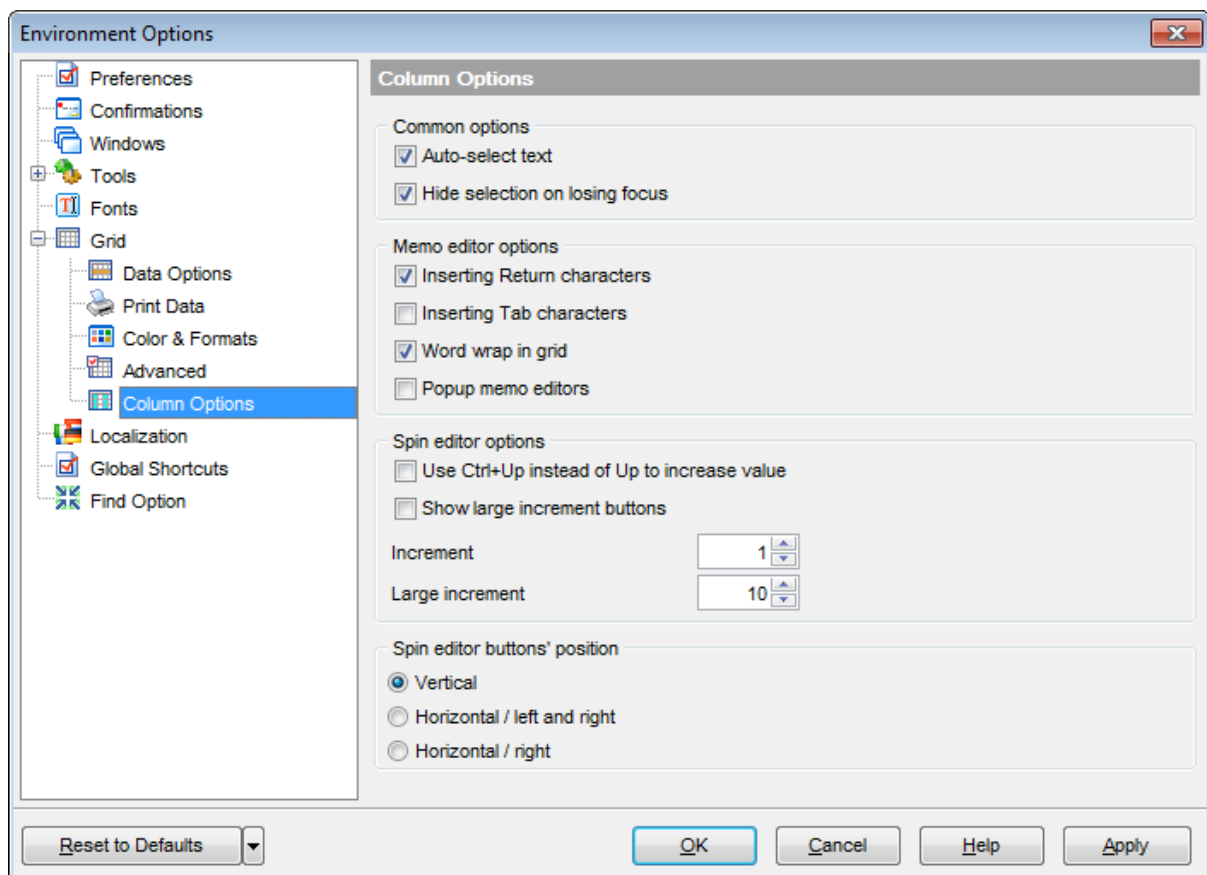
Specifies whether a user can insert tab characters into text.

☒ **Word wrap in grid**

Determines whether long strings are wrapped in grid.

☒ **Popup memo editors**

Turns on popup memo editors for text BLOB type fields.



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 numeric field 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*.

11.1.7 Localization

The **Localization** section of the **Environment Options** dialog is provided for managing the localization files of SQL Manager for Oracle.

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

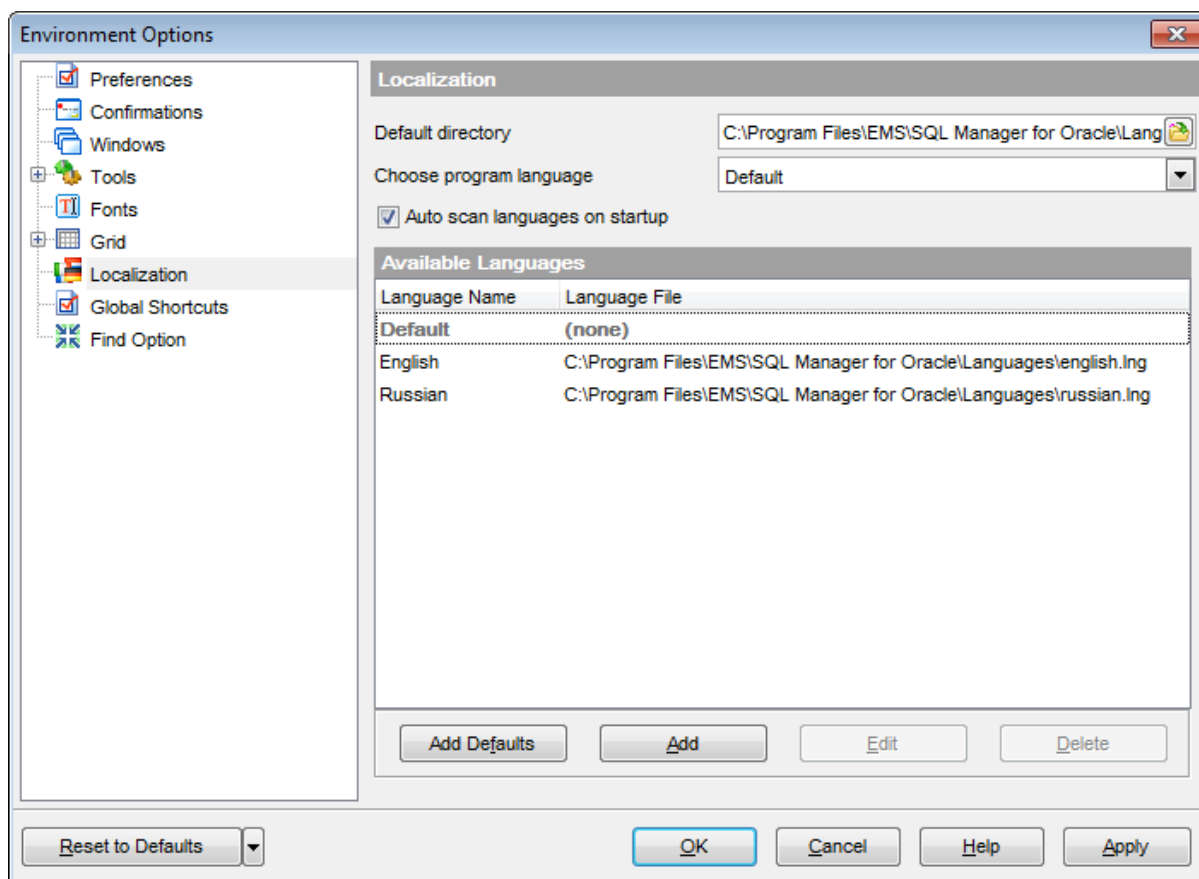
Opens the [Add language](#) dialog where you can specify your own localization file and set the language name.

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).

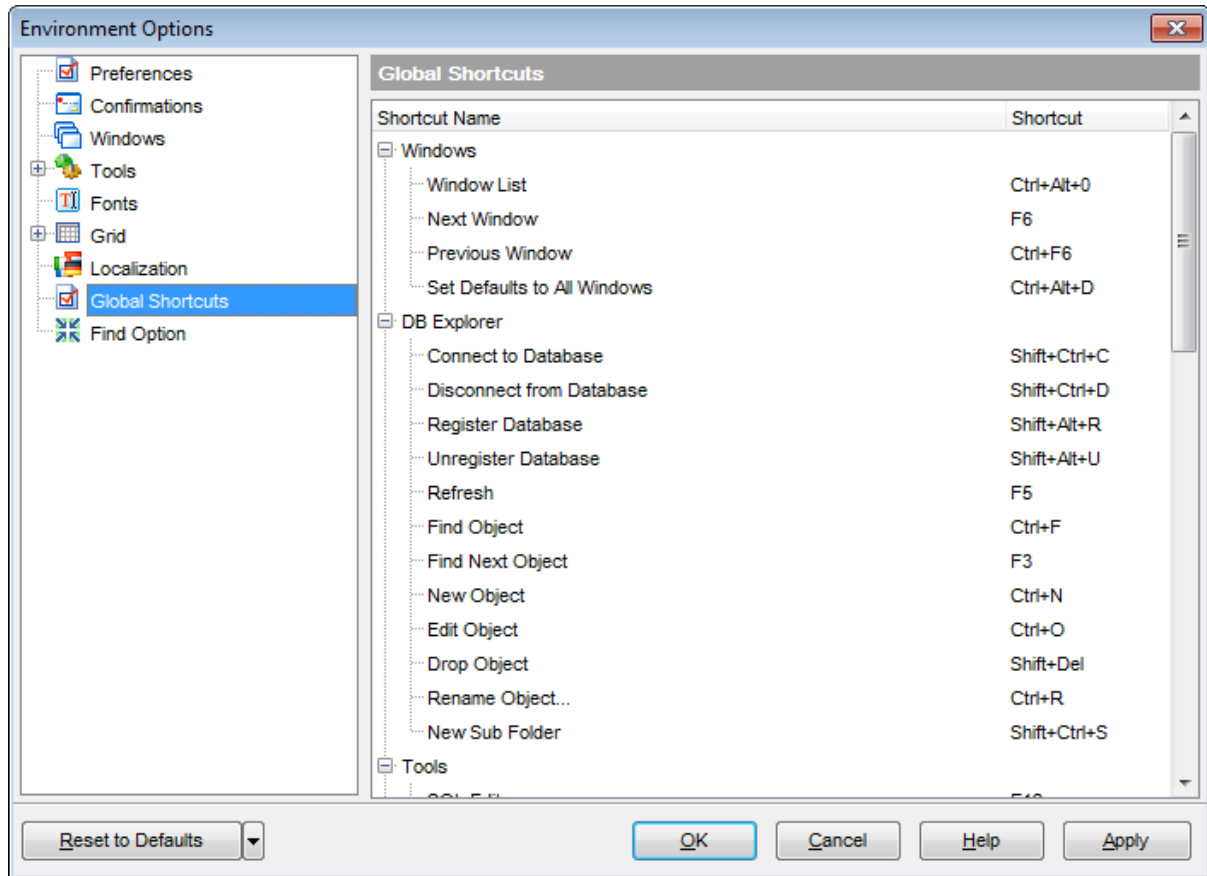


See also:

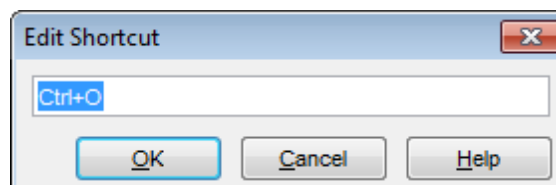
[Localization](#)

11.1.8 Global Shortcuts

This section allows you to view/edit shortcuts most needed actions when working with SQL Manager for Oracle.



To edit shortcut, select the required action click the ellipsis button and press the preferred key combination to assign it with the action.

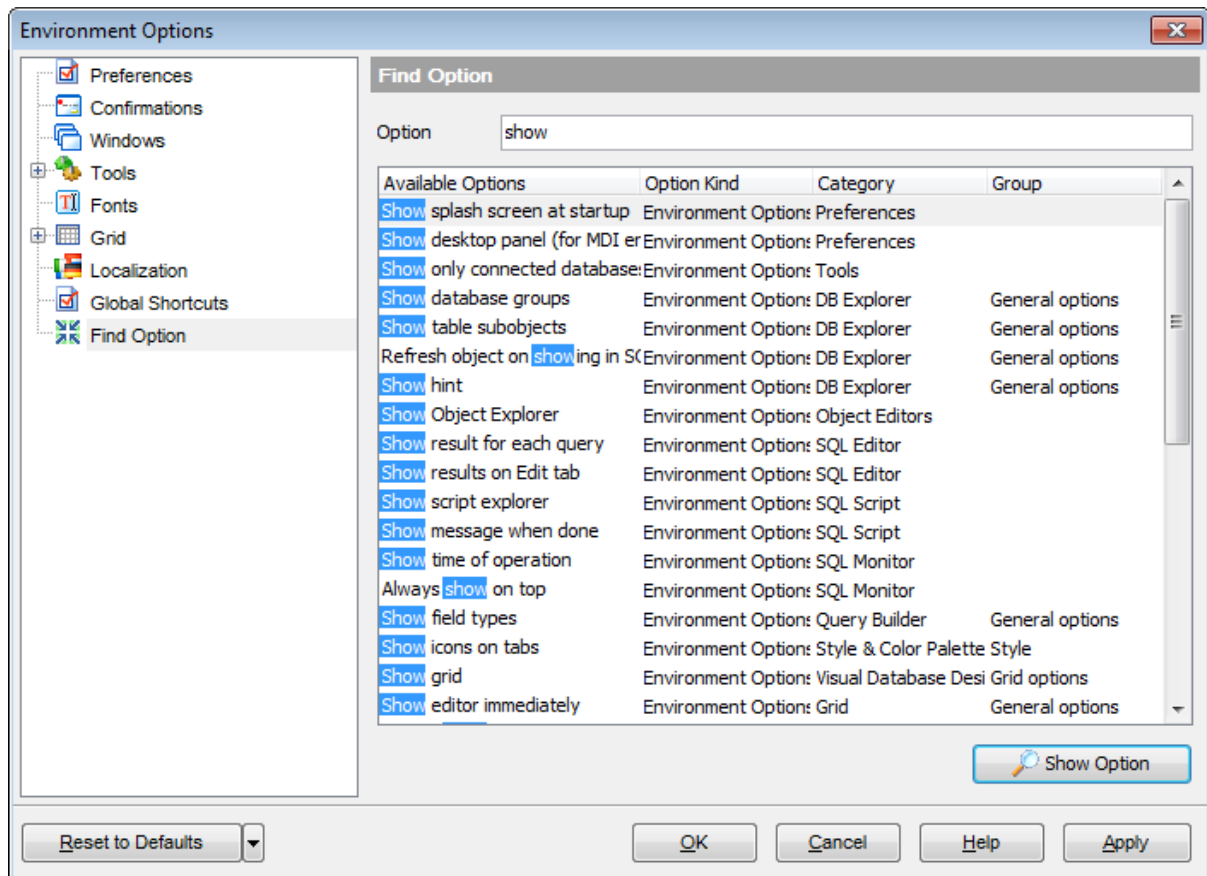


11.1.9 Find Option

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.

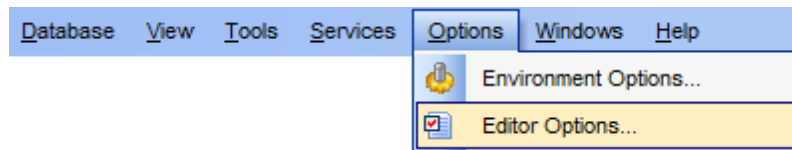
Select the required option in the list and click **Show Option** to open the corresponding section where you can view/edit the value of this option. For your convenience the required option is marked with an animated icon.

11.2 Editor Options

Editor Options allow you to set the parameters of viewing and editing SQL statements within [Query Data](#) 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](#)

11.2.1 General

Editor options

☒ **Auto indent**

If this option is checked, each new indentation 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**

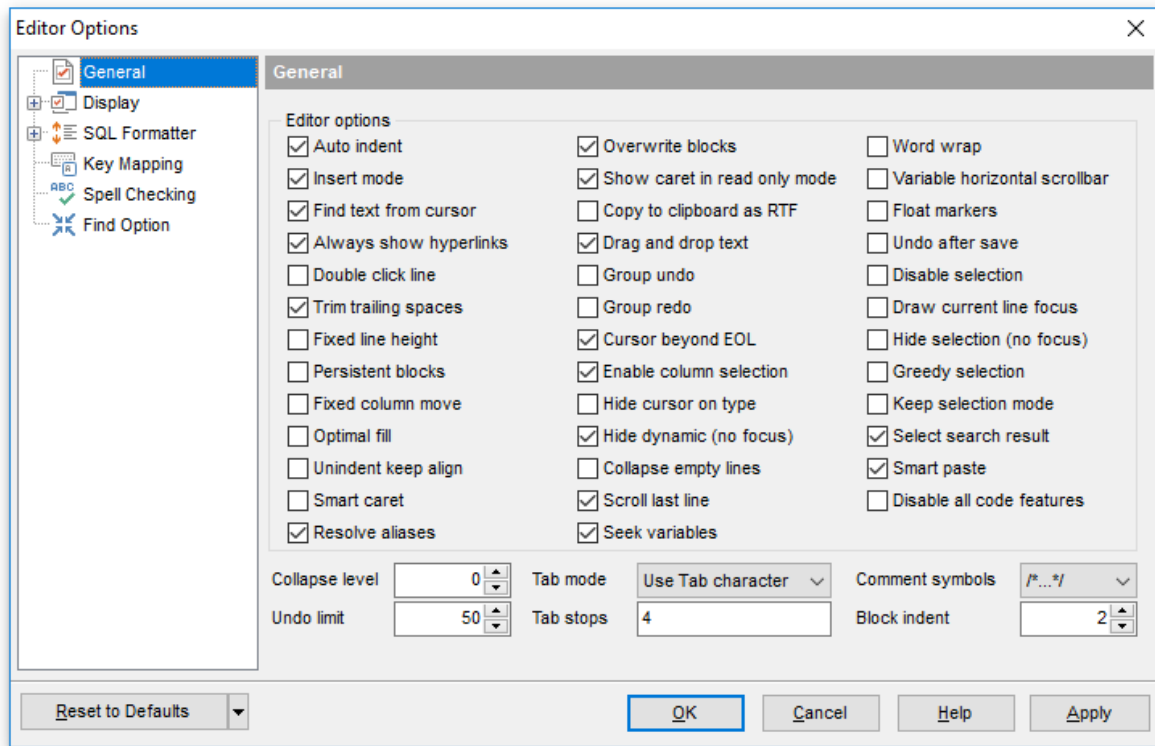
Keeps align for the lines that are not indented.

☒ **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 last line**

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 [Highlight](#) 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 opens a menu with items allowing you to discard all changes and reset options of the *current category* or of *all categories* to their defaults.

11.2.2 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 Query data.

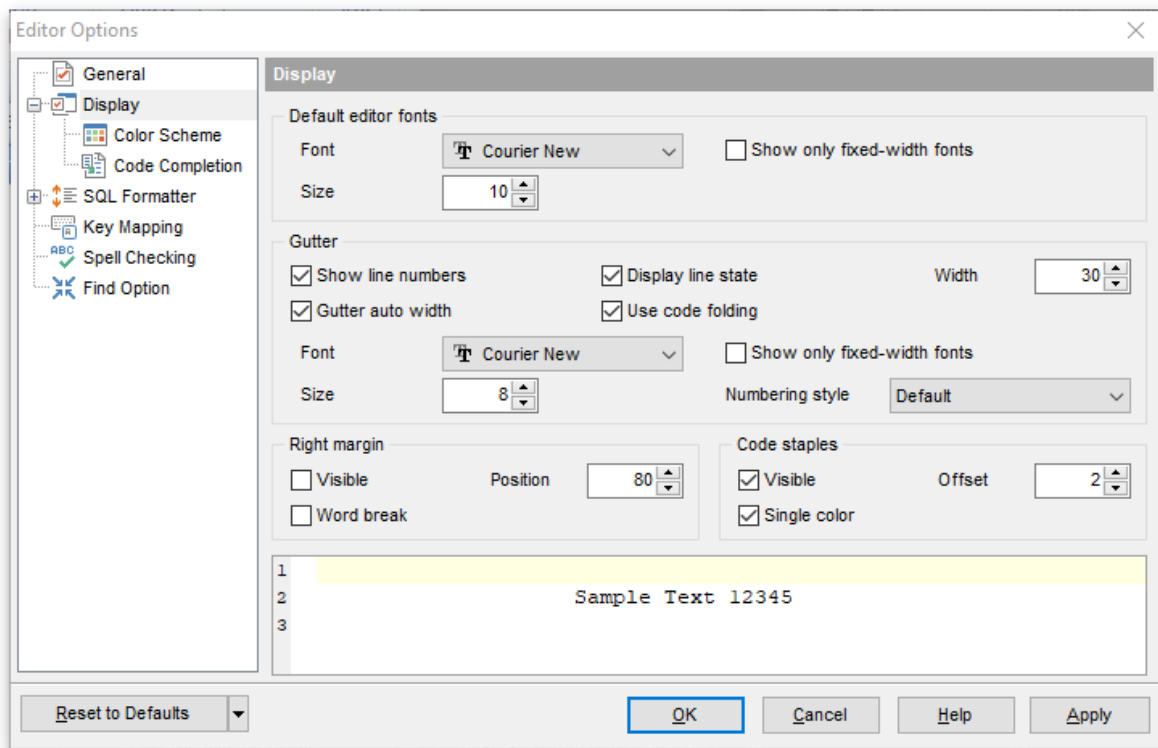
Width

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.

Color

Defines the color of the right margin in the editor window. Select an item from the drop-down list or click the ellipsis  button to select a color using the **Color** dialog where you can specify the required color from the palette.

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.

Color

Defines the code staples color in the editor window (if the **Single color** option is deselected). Select an item from the drop-down list or click the ellipsis  button to

select a color using the **Color** dialog where you can specify the required color from the palette.

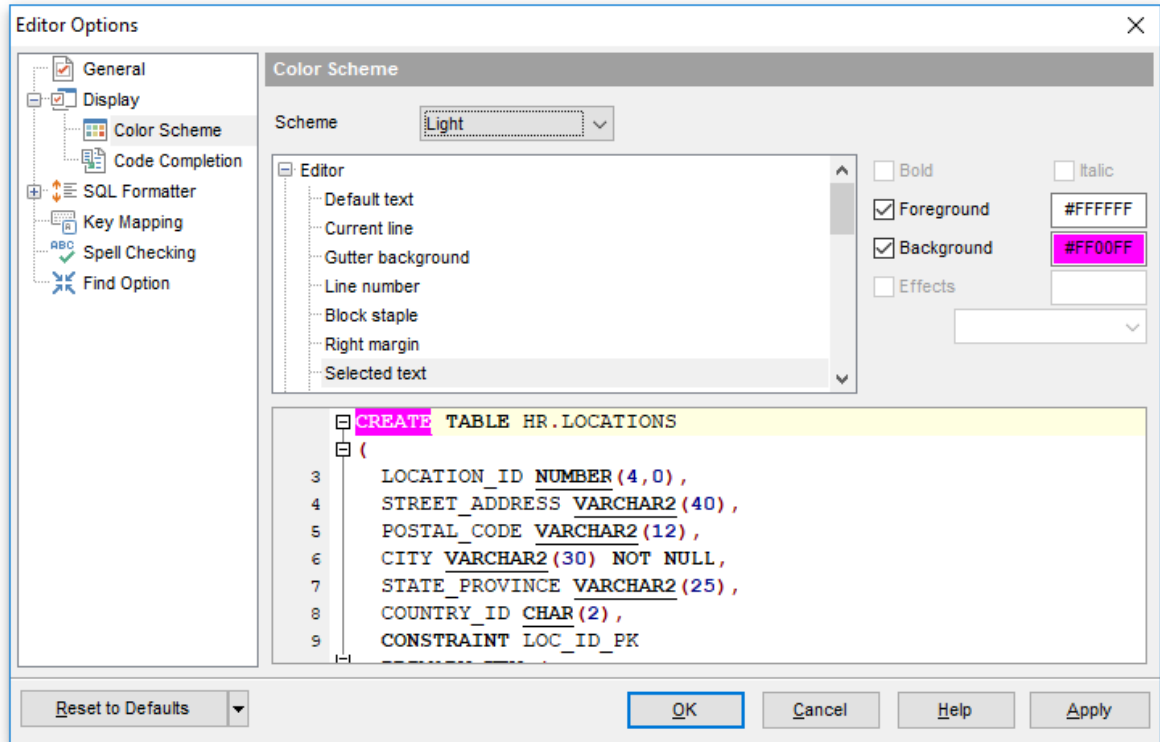
Fonts

Use these options to set the *fonts*, *style*, *size* and *color* used in the editor. If the **Show only fixed-width fonts** option is checked, only fonts with fixed width are displayed in the **Font** dialog.

11.2.2.1 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.

11.2.2.2 Code Completion

The **Quick Code** section of the **Editor Options** 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, fields, 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 field names.

☒ **Show information hints**

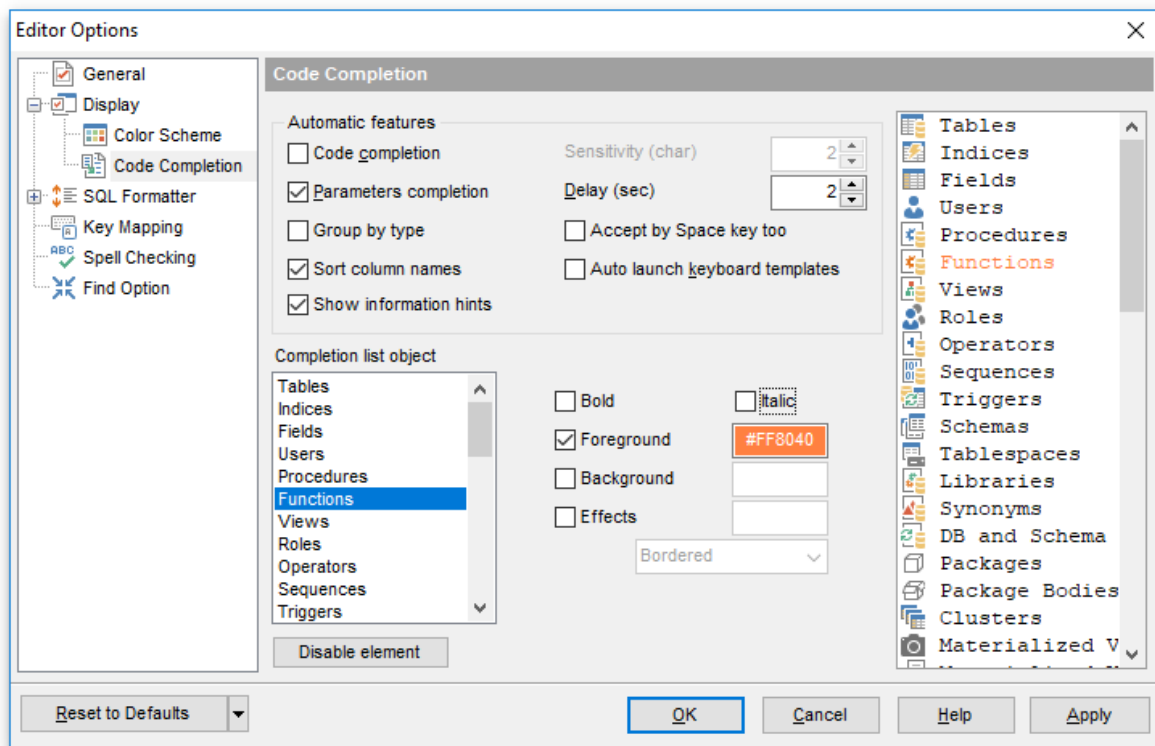
This option enables/disables information hints for variants offered by *code completion* feature.

☒ **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.

11.2.3 SQL Formatter

SQL Formatter is a feature implemented in SQL Manager for Oracle and is a useful tool for formatting SQL queries and scripts, making SQL statements easy to read. SQL Formatter is introduced in [Query Data](#), [Execute Script](#) and some object editors.

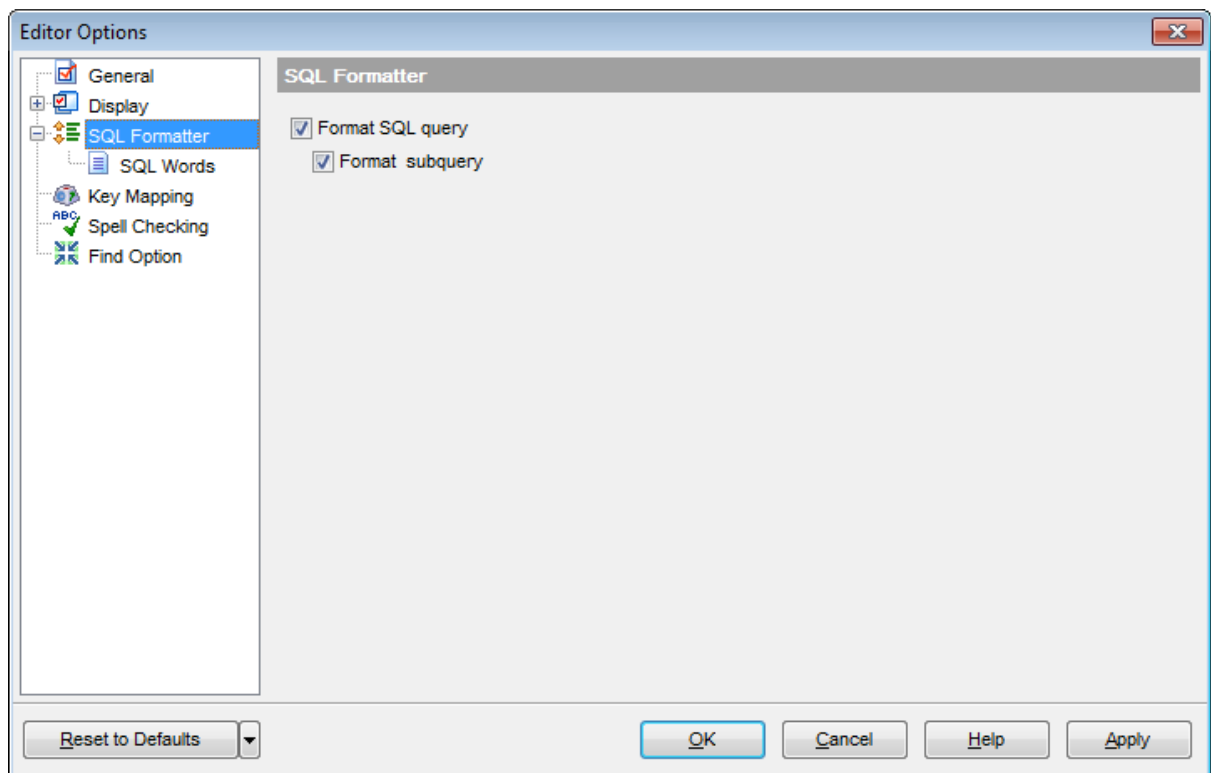
The **Settings** tab of the **SQL Formatter** section allows you to enable this feature and apply SQL formatting to subqueries, if necessary.

☒ **Format SQL query**

Check this option to enable SQL formatting.

☒ **Format subquery**

Enables SQL formatting for subqueries.



11.2.3.1 SQL Words

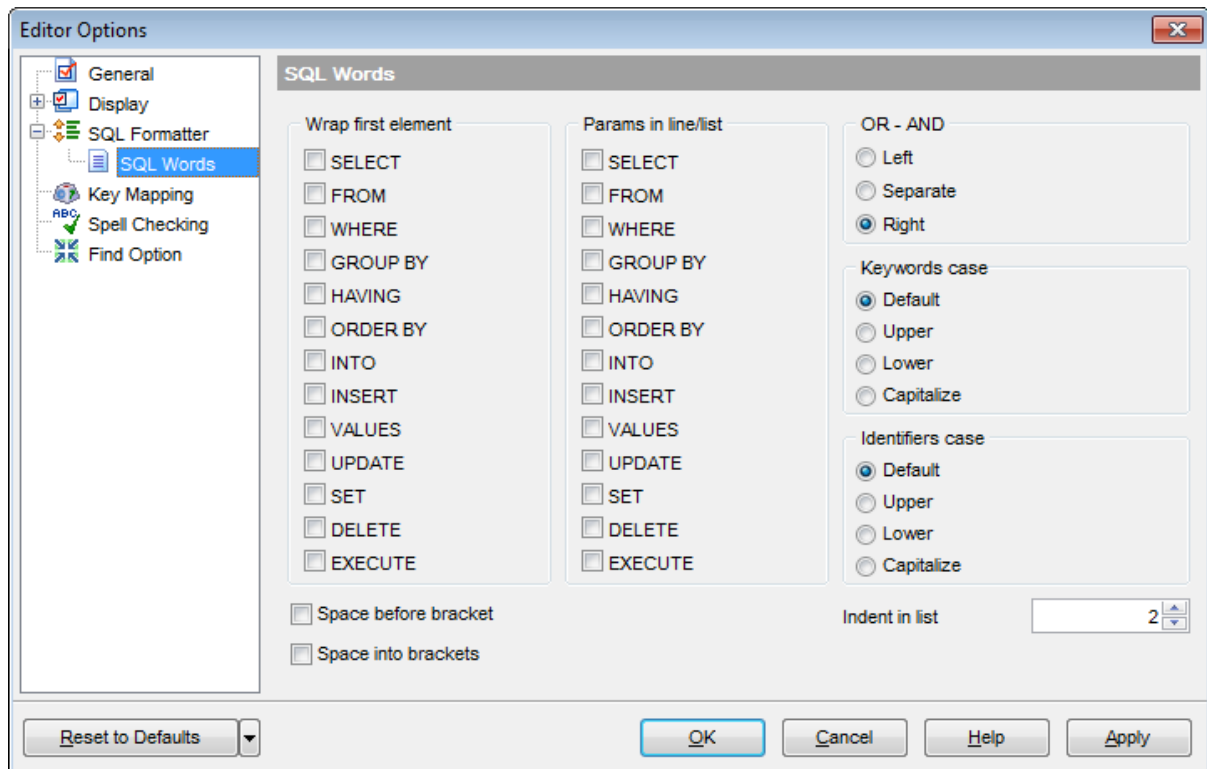
The **SQL words** page of the **SQL Formatter** section allows you to select the key words for each action of SQL formatter and to set formatting parameters.

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 and 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.

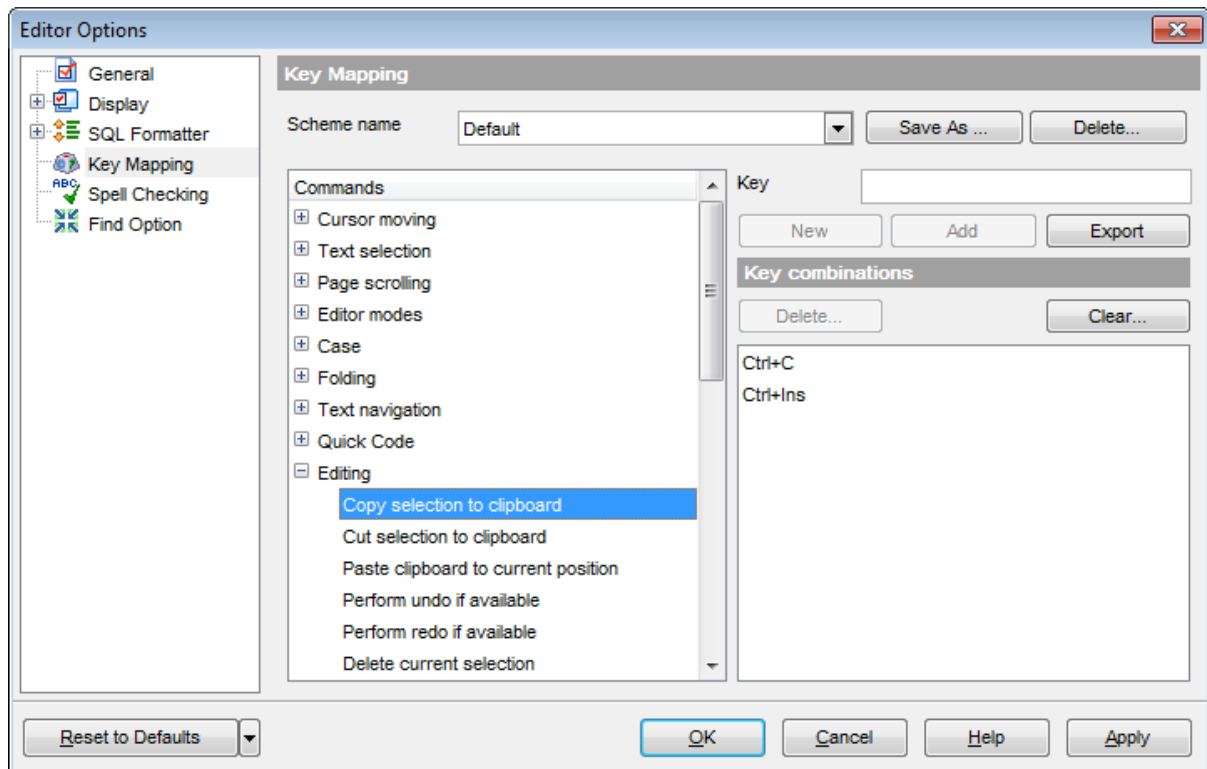
Indent in list

Sets the size of indent relatively to the previous string.

11.2.4 Key Mapping

For your convenience **key mapping** is provided in SQL Manager for Oracle. 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:[Query Data](#)[SQL Manager shortcuts](#)

11.2.5 Spell Checking

Spell checking is a new feature implemented in SQL Manager for Oracle for your convenience.

Set the necessary **Spell checker mode**:

☒ **Highlighting**

In this mode incorrectly spelled and misprinted words are highlighted in the editor.

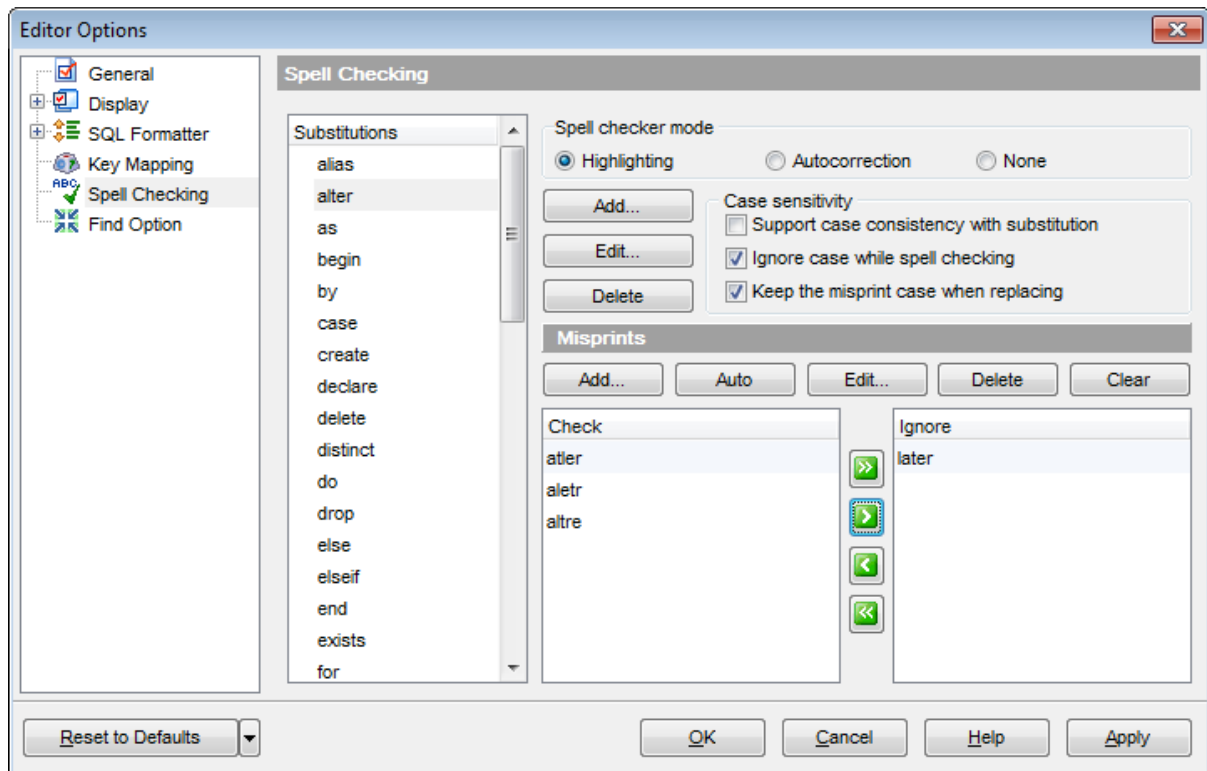
☒ **Autocorrection**

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.

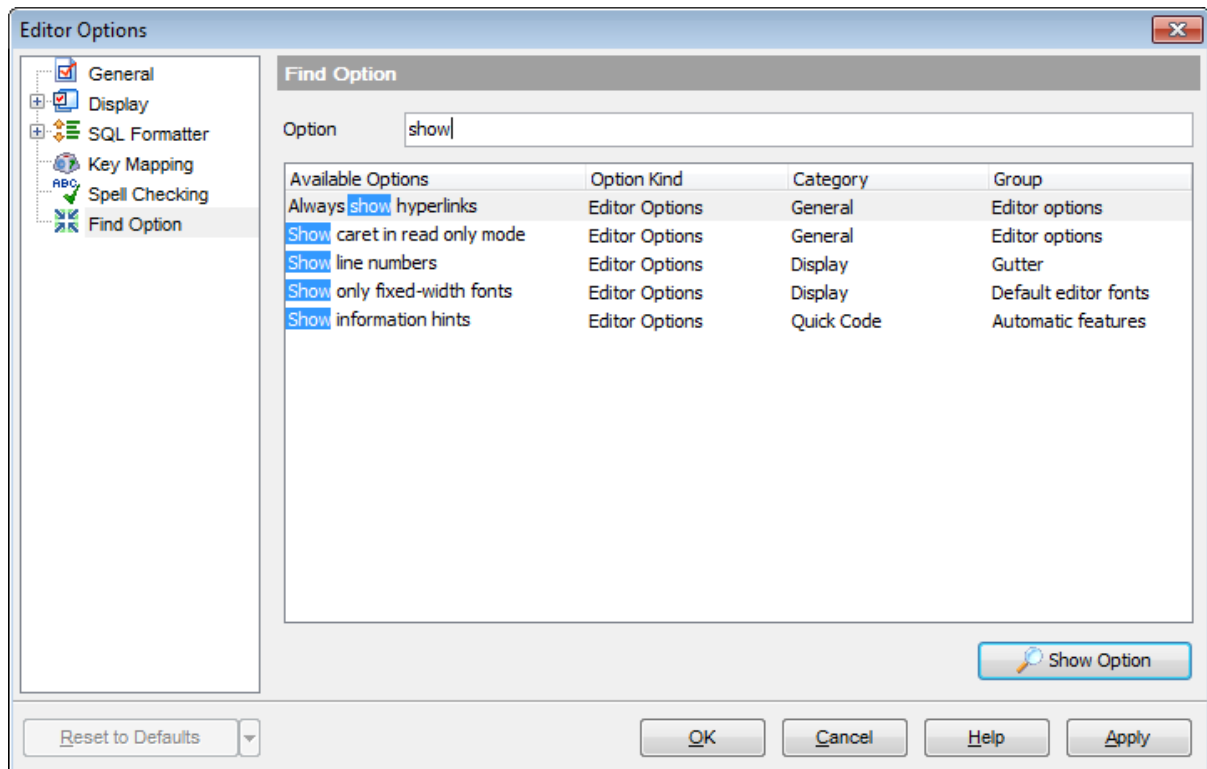
To mark a misprint as excluded, you need to move it from the **Check** list to the **Ignore** list. Use the     buttons or drag-and-drop operations to move the misprints from one list to another.

11.2.6 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.

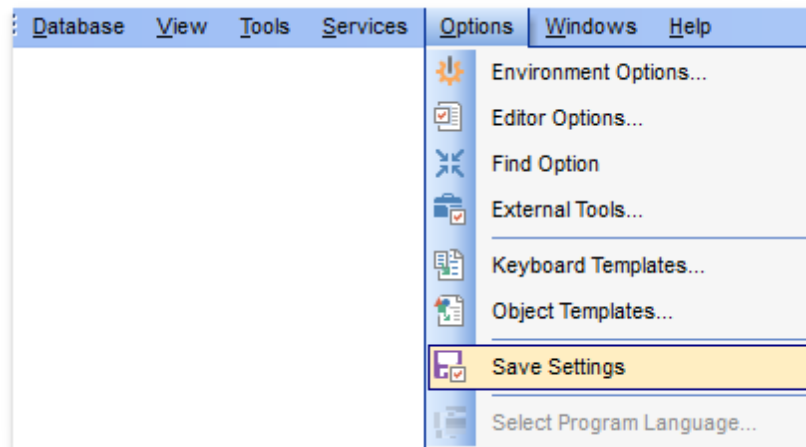
Select the required option in the list and click  **Show Option** to open the corresponding section where you can view/edit the value of this option. For your convenience the required option is marked with an animated .

11.3 Save Settings

Save Settings Wizard allows you to export the settings of SQL Manager for Oracle - wholly or partially - to a single *.reg file which can be applied afterwards to SQL Manager for Oracle 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.

- [Specifying destination file](#)
- [Selecting settings](#)
- [Selecting databases](#)
- [Saving settings](#)



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).

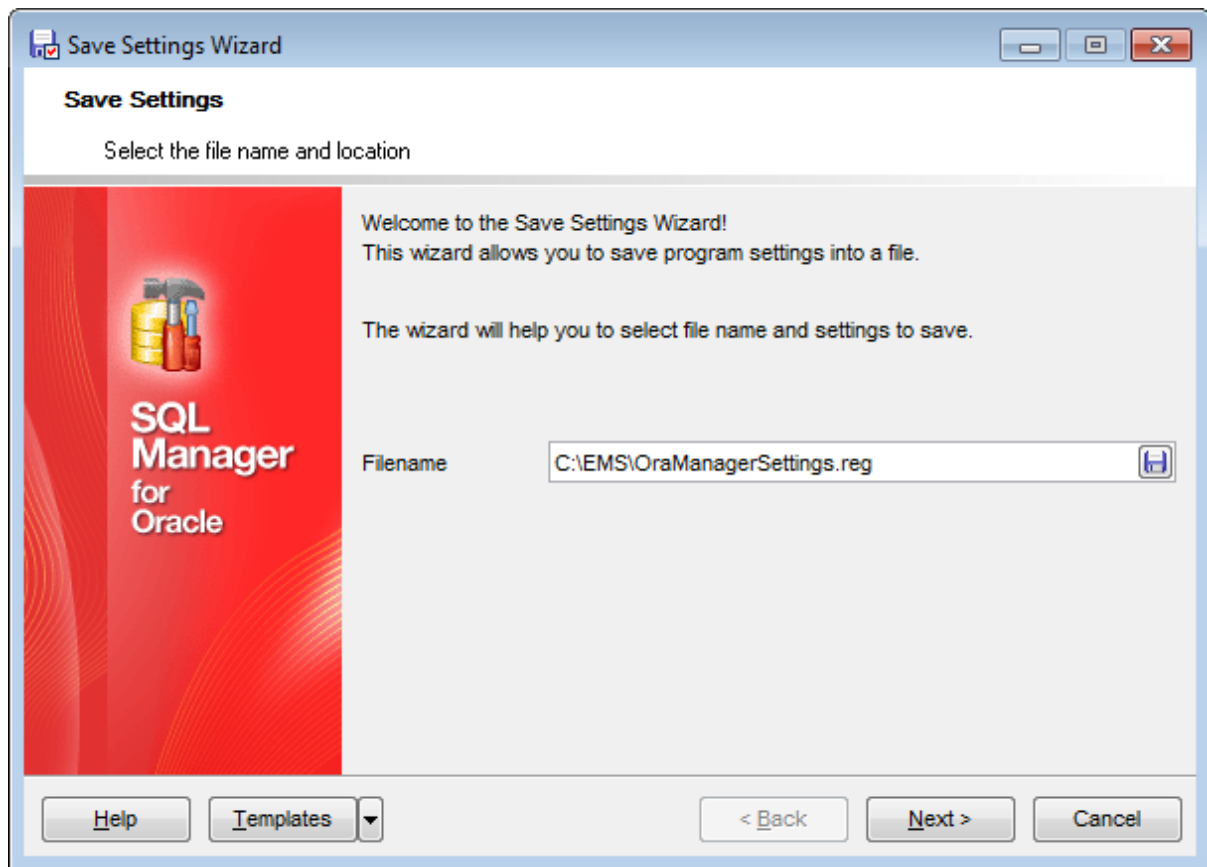
11.3.1 Specifying destination file

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.

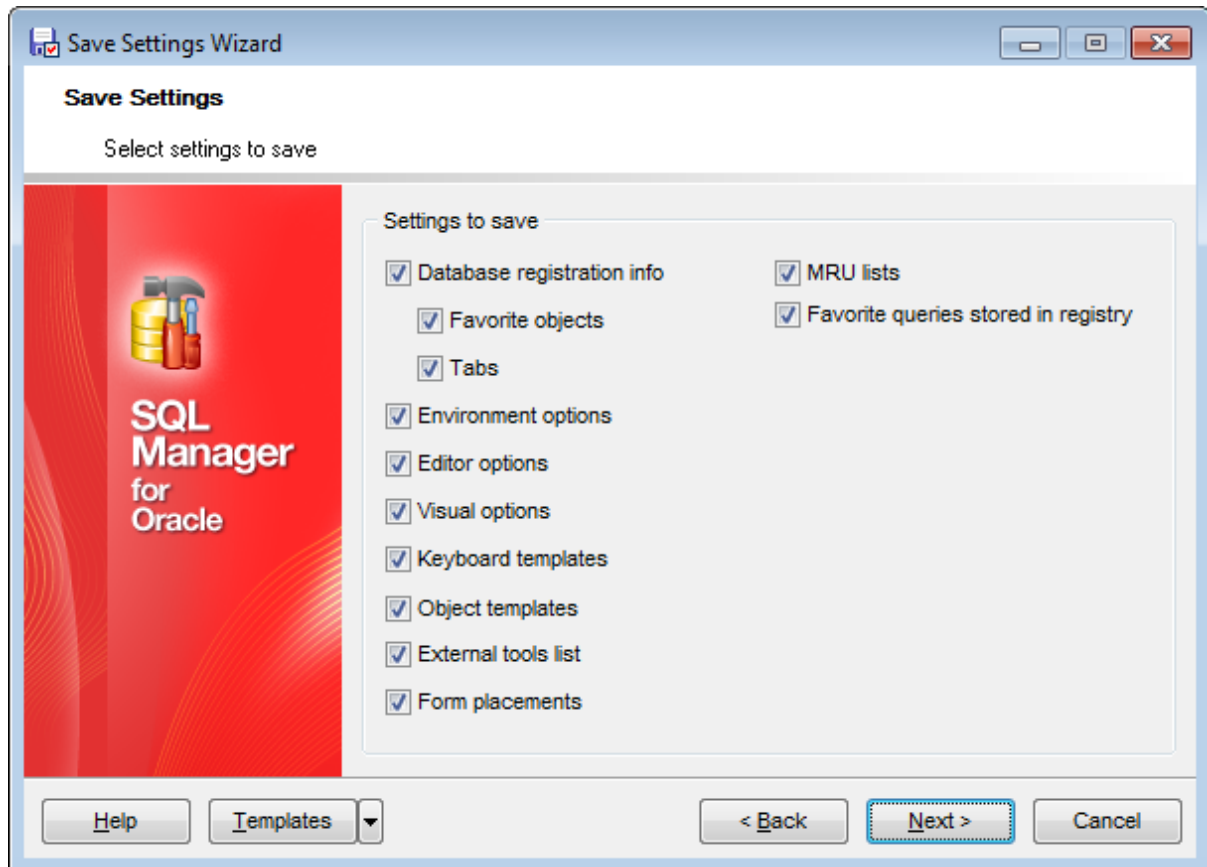
Note: If the target file already exists, the application will show a [warning](#) dialog where you can choose the action you need.



Press the **Next** button to proceed to the [next step](#) of the wizard.

11.3.2 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.*

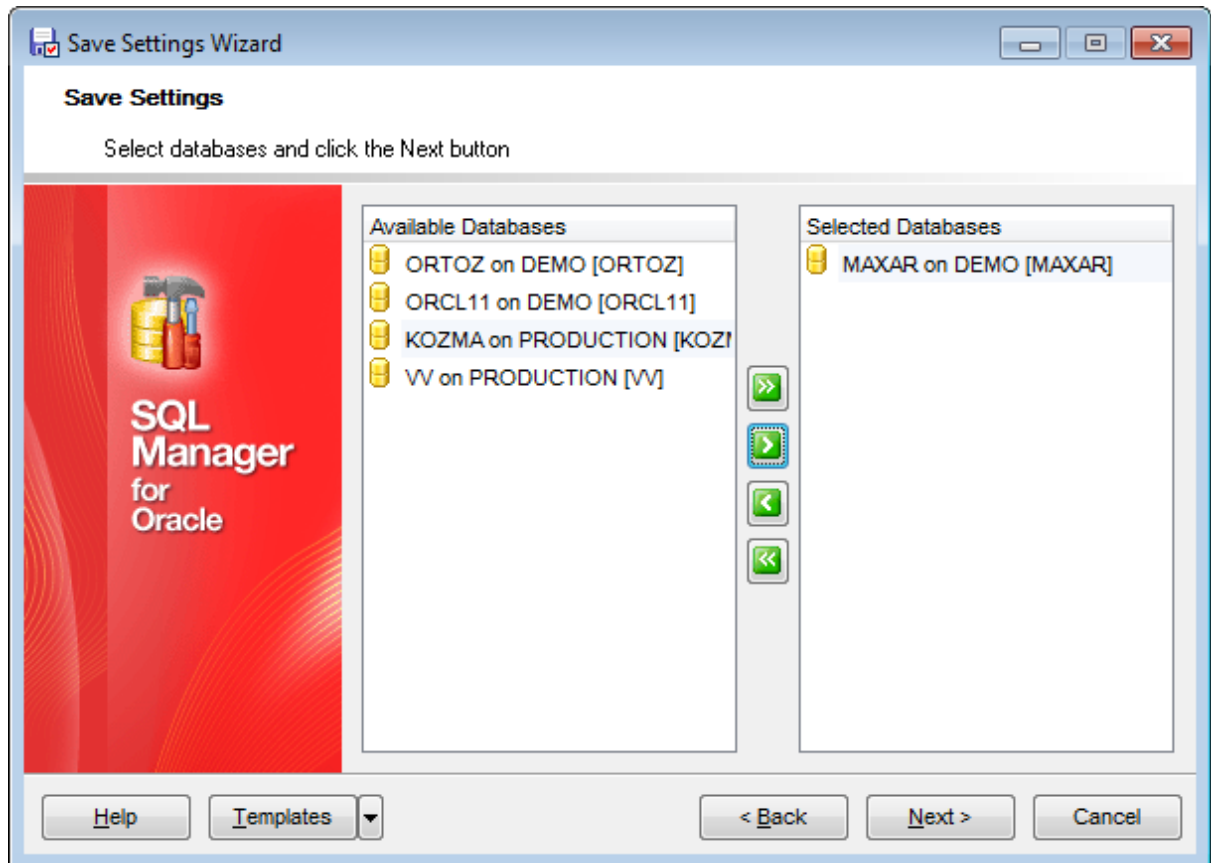


Press the **Next** button to proceed to the [next step](#) of the wizard.

11.3.3 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.

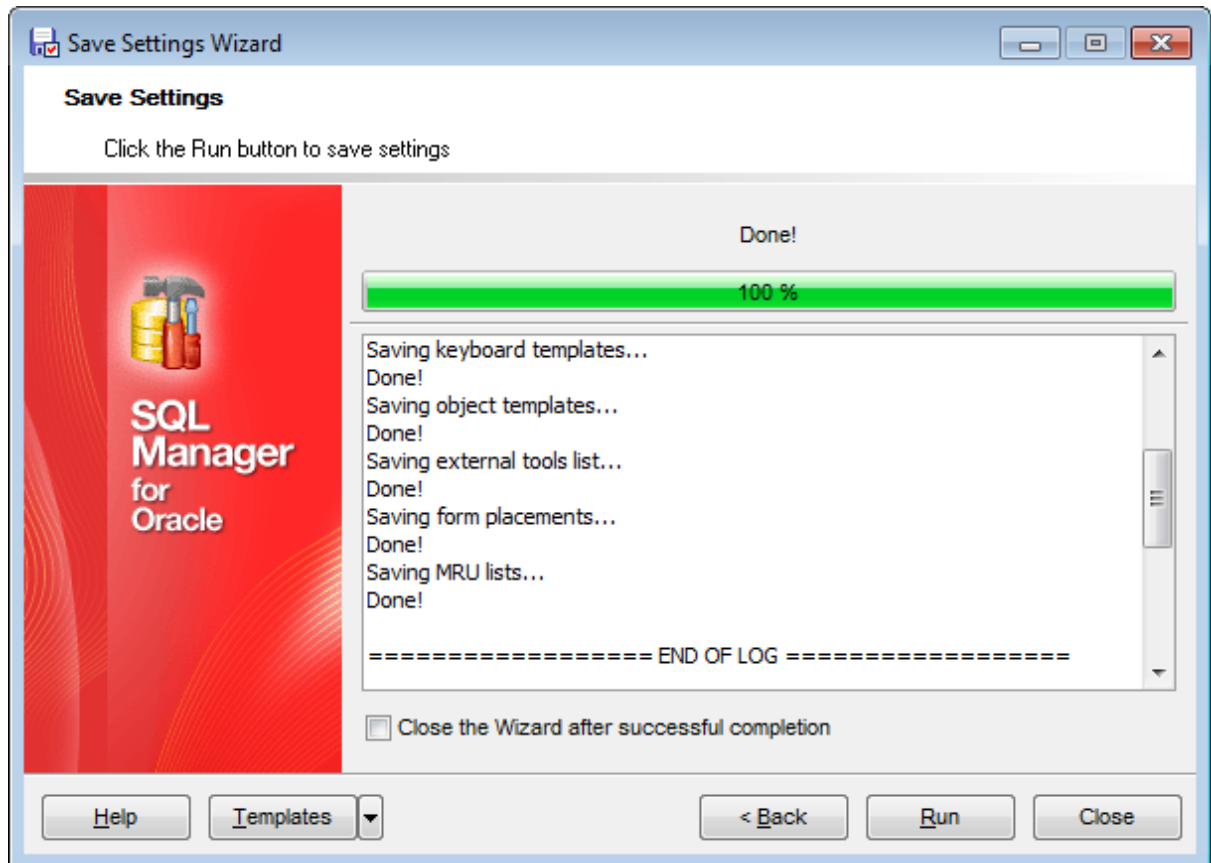


Press the **Next** button to proceed to the [last step](#) of the wizard.

11.3.4 Saving settings

This step of the wizard is intended to inform you that the saving settings operation has been configured, and the wizard is ready to save the application settings to the specified file.

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 start saving settings.

11.4 Localization

When using SQL Manager for Oracle, you 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

- 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

- open one of the program windows (e.g. [Table Editor](#), [Query Data](#)) 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

- 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](#)

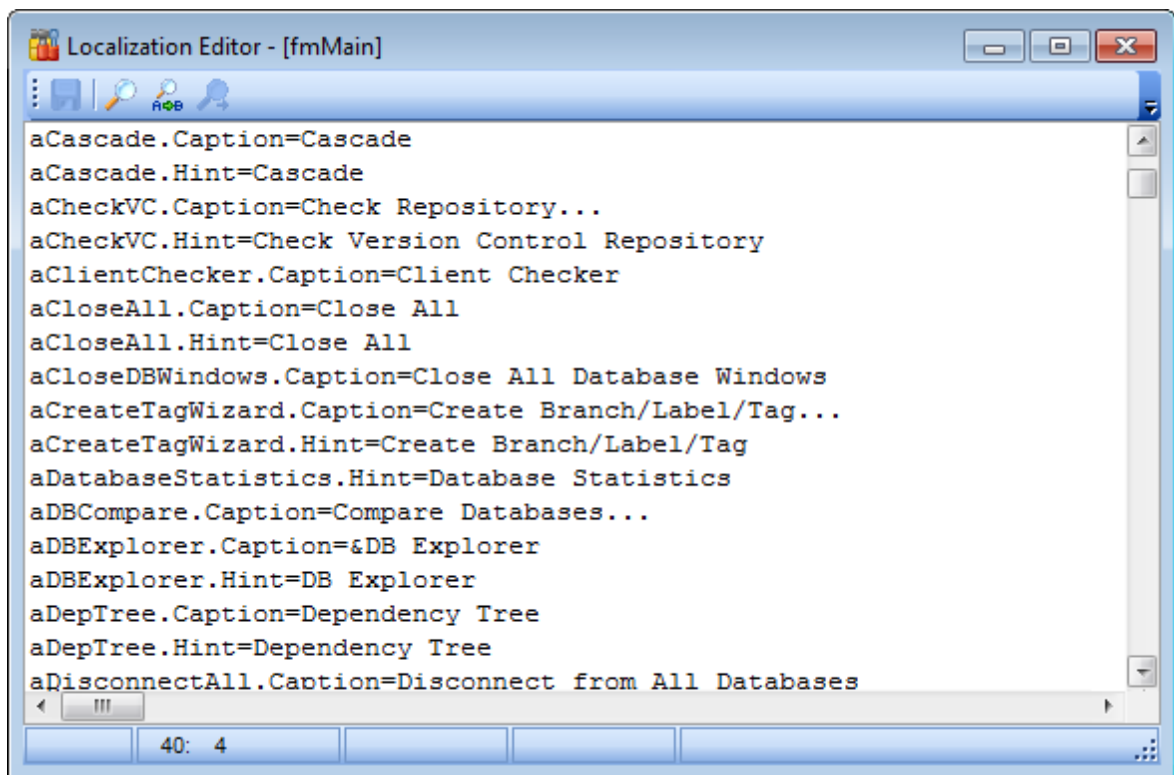
11.4.1 Localization Editor

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 Oracle.

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.

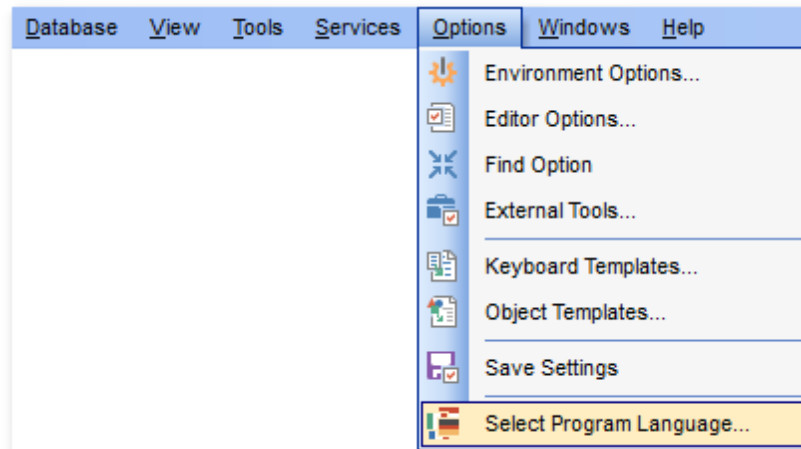
See also:

[Select Program Language](#)
[Localization](#)

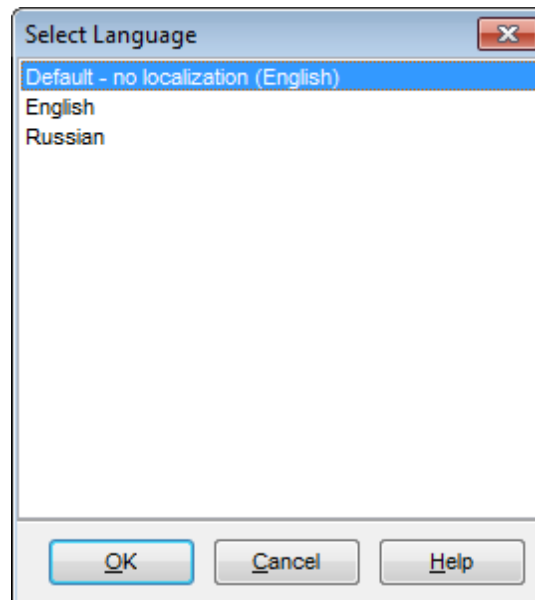
11.4.2 Select Program Language

The **Select Language** dialog allows you to select a language for SQL Manager for Oracle 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:

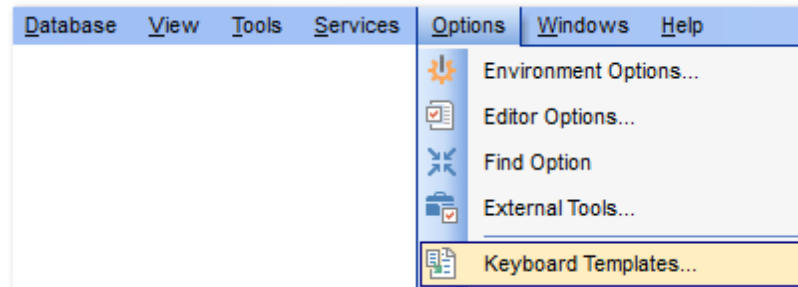
[Localization Editor](#)

[Localization](#)

11.5 Keyboard Templates

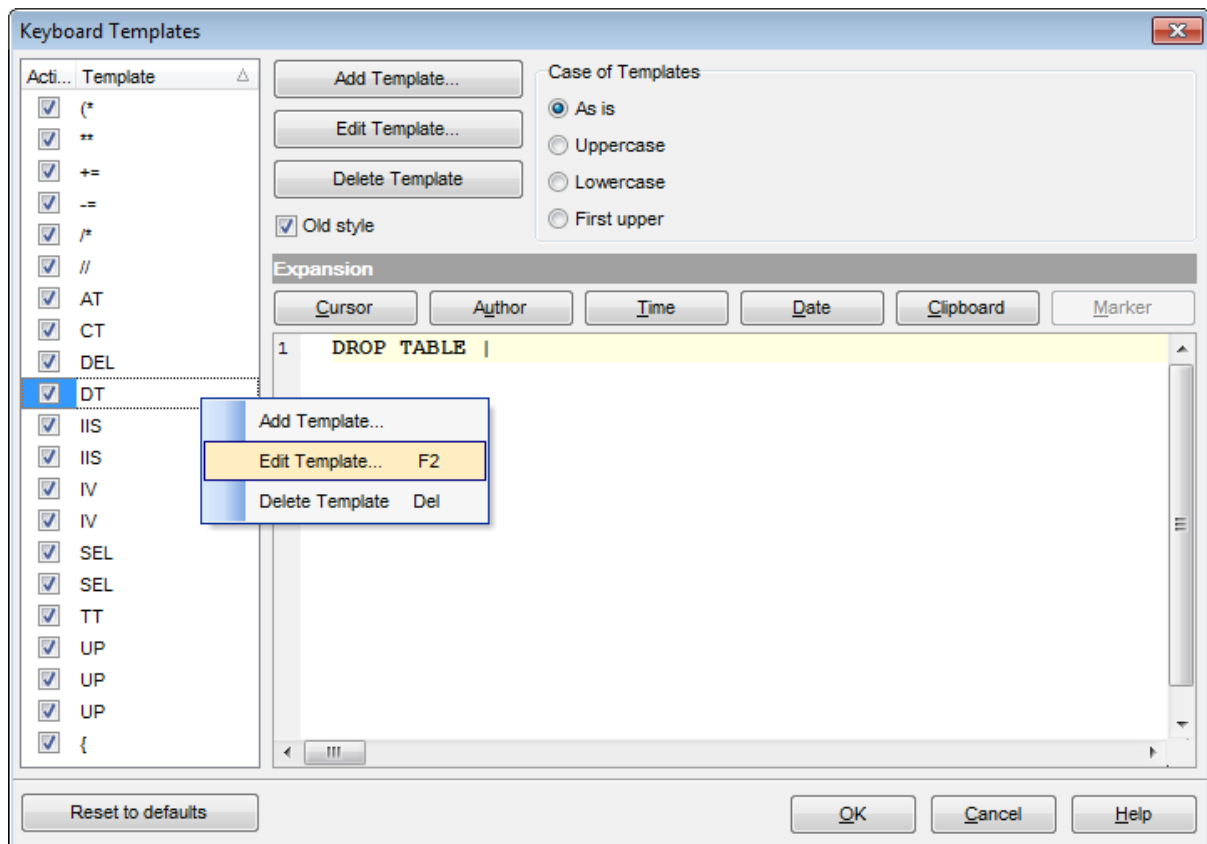
The **Keyboard Templates** window allows you to create new keyboard templates for quicker typing regularly used expressions and to edit the existing ones.

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 Oracle.

Once you have defined the templates, you can use them in [Query Data](#). First of all, make sure that the ☒ **Auto launch keyboard templates** option is selected on the [Code Completion](#) page of the [Editor Options](#) dialog. When [editing SQL text](#) in Query Data, 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:

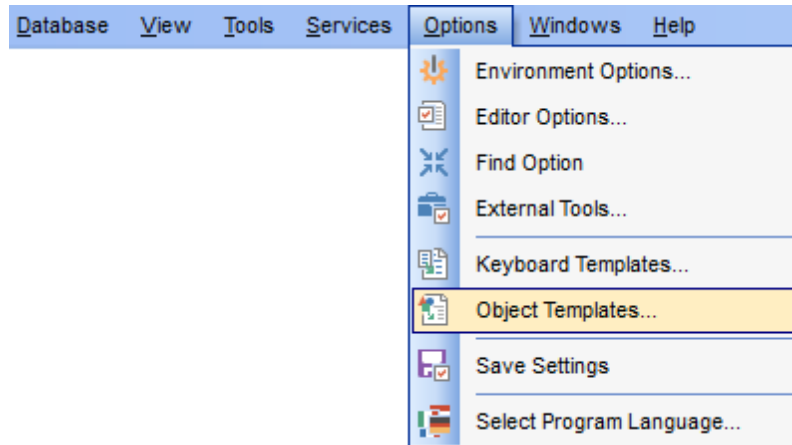
[Code Completion](#)

[SQL Manager shortcuts](#)

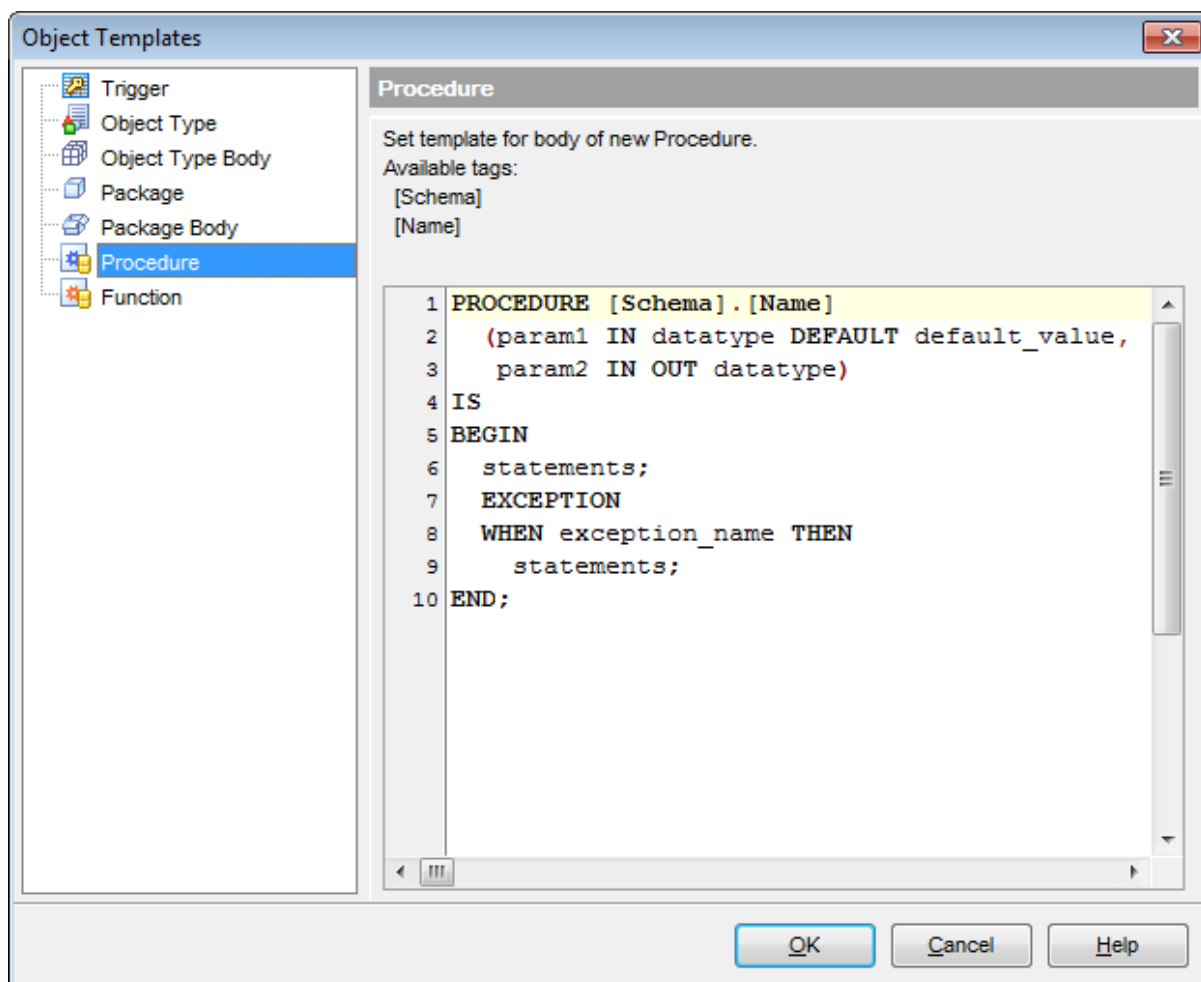
11.6 Object Templates

The **Object Templates** window allows you to preset the definition template for the name and/or body of an object to be created.

To open this window, select the **Options | Object Templates...** [main menu](#) item.



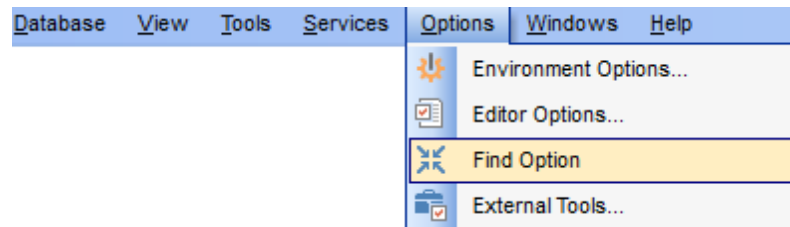
Select an object in the tree (*Object Type*, *Object Type Body*, *Package*, *Package Body*, *Procedure*, *Function*) and set its template using the editor area.

**See also:**[Database Objects Management](#)

11.7 Find Option dialog

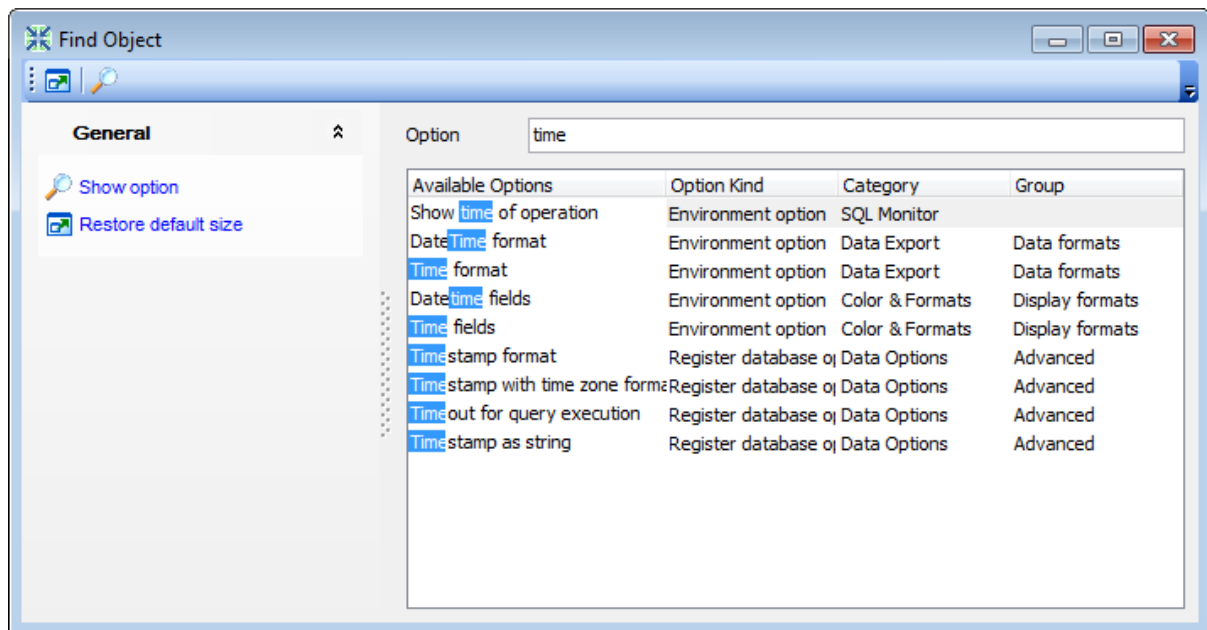
The **Find Option** dialog allows you to search for SQL Manager options easily.

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.

Part

XII

12 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 Oracle**.

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- [Make work with a database faster](#)
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12.1 Work with Databases

12.1.1 Connect to a database

If you want to connect to a database that has not been registered yet then perform the following operations:

1. Launch the [Register Database wizard](#) by selecting the **Database |  Register Database...** main menu item.
2. On the [first step](#) specify connection parameters: *Oracle Home* storage for this connection and *DB group name*. If needed you can set [Tunneling parameters](#) as well.
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 are to define databases you want to be registered.
3. On the [last step](#) of the wizard set database name and Authentication parameters.
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.

12.1.2 Edit database connection parameters

If you have made a mistake when [creating](#) or [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: *Server name*, *User name*, *Password*, *Database name*, *Database alias* and *Font charset*.

12.1.3 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 unchecking the ☒ **Refresh objects on connection** option when registering database or editing the [Database Registration Info](#).

12.1.4 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 fields, set relations between tables and perform other operations you may need to achieve your purpose. All new objects are displayed on a diagram.

12.1.5 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 *.ord file ( **Save Diagram** button) or as an image ( **Save as Picture** button).

12.1.6 Backup a database

A database backup is created by means of the [Backup Database Wizard](#). To launch it choose **Services | Backup Database** main menu item.

There are two ways to create a backup of an oracle database: User-managed script and Recovery manager (RMAN).

Recovery Manager (RMAN) is an Oracle utility that can back up and restore database files. It is a feature of the Oracle database server and does not require separate installation.

User-managed script method consists in using operating system commands for backups.

Note: Use of RMAN is highly recommended because it is more robust and greatly simplifies administration.

The following are possible circumstances in which you may choose to employ user-managed methods rather than use RMAN:

- You are migrating from an older version of the database to the current version and do not immediately want to update your legacy backup scripts.
- You maintain a network containing Oracle7 and later databases and want a single backup and recovery method to handle all databases in the same way. RMAN only supports Oracle databases of release 8.0 or greater.
- All your RMAN backup are lost and you are forced to restore user-managed backups and perform recovery with the SQL*Plus RECOVER command.

To perform Oracle backup with user-managed script:

1. Select the ☒ *User-managed script wizard* option in the **Backup using** group on the [first step](#) of the wizard.
2. On the [second step](#) define whether you want to perform hot (on-line) or cold (off-line) backup. A hot backup is performed while the database is open and available for use. A cold backup is performed while the database is off-line and unavailable to its users.

Note: It is easier to restore from off-line backups as no recovery (from archived logs) would be required to make the database consistent. Nevertheless, on-line backups are less disruptive and don't require database downtime.

3. Select datafiles of the database to backup on the [third step](#).
4. On the [next step](#) set additional options for user-managed script, including OS to use commands for in the generated script: *Unix*, *Windows* or *Manually* (specify the **copy command**).

To perform Oracle backup with Recovery manager:

1. Select the ☒ *Recovery manager (RMAN)* option in the **Backup using** group on the [first step](#) of the wizard.
 2. On the [second step](#) define whether you want to perform hot (on-line) or cold (off-line) backup. A hot backup is performed while the database is open and available for use. A cold backup is performed while the database is off-line and unavailable to its users.
- Note:** It is easier to restore from off-line backups as no recovery (from archived logs) would be required to make the database consistent. Nevertheless, on-line backups are less disruptive and don't require database downtime.
3. On the [third step](#) specify the backup type: *Full* or *Incremental*.
 4. On the [next step](#) set additional options for Recovery manager such as: *Username* and *Password* to define under which user the RMAN session will be created; Catalog settings (catalog is considered as a special database which stores backup settings); RMAN script execution (the OS to build the command file for).

12.1.7 Restore a database from backup

Use the [Restore Database Wizard](#) to restore a database from a backup. To launch the wizard and set restore options choose the **Services |  Restore Database** main menu item.

There are two ways to restore an Oracle database: User-managed script and Recovery manager (RMAN).

Recovery Manager (RMAN) is an Oracle utility that can back up, restore, and recover database files. It is a feature of the Oracle database server and does not require separate installation.

User-managed script method consists in using operating system commands to restore a database.

Note: Use of RMAN is highly recommended because it is more robust and greatly simplifies administration.

The following are possible circumstances in which you may choose to employ user-managed methods rather than use RMAN:

- You are migrating from an older version of the database to the current version and do not immediately want to update your legacy backup scripts.
- You maintain a network containing Oracle7 and later databases and want a single backup and recovery method to handle all databases in the same way. RMAN only supports Oracle databases of release 8.0 or greater.
- All your RMAN backup are lost and you are forced to restore user-managed backups and perform recovery with the SQL*Plus RECOVER command.

To perform Oracle restore with user-managed script:

1. Select the ☒ *User-managed script wizard* option in the **Restore using** group on the [first step](#) of the wizard.
2. On the [second step](#) verify and edit the current database settings for the selected *User-managed script* backup strategy.
3. Select datafiles of the database to restore on the [third step](#).
4. On the [fourth step](#) set additional options for the database restore operation, including action to be taken on the control file and OS used when performing a restore process.

To perform Oracle restore with Recovery manager:

1. Select the ☒ *Recovery manager (RMAN)* option in the **Restore using** group on the [first step](#) of the wizard.
2. On the [second step](#) set additional options for the database restore operation (for RMAN strategy).

12.1.8 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 Execute Script using the [Extract Database Wizard](#). The result script can be used to copy or restore your database.
2. Create database backups with the help of the [Backup Database Wizard](#).
3. Create copies of separate database objects by using the [Duplicate Object Wizard](#).
4. Generate a synchronization script that will convert a source database into a target one using the [Compare Databases Wizard](#).

12.1.9 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 *.ord file for future use. If necessary, you can also save the diagram as an image.

12.1.10 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 program 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.

12.1.11 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 Query Data 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.

12.1.12 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 Execute Script, e.g. for backup purposes.

12.1.13 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.

12.2 Work with Database Objects

12.2.1 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 an object is not a tree node, it cannot be placed on a separate tab.

12.2.2 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.

12.2.3 View dependencies

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.

12.2.4 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 Query Data | Create** context menu item.
2. Right-click the object and select the **Edit Table <table_name>...** context menu item or double-click the table and then proceed to the DDL tab in the opened table editor window.
3. Right-click the object in the [DB explorer](#) tree and select the **Data Manipulation | Export Data as Execute Script** context menu item.

12.3 Work with Data

12.3.1 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](#).

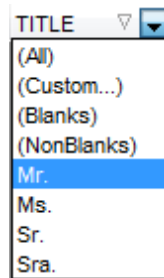
Default settings for newly registered databases can be defined on the [Grid | Data Options](#) page of the [Environment Options](#) dialog.

12.3.2 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

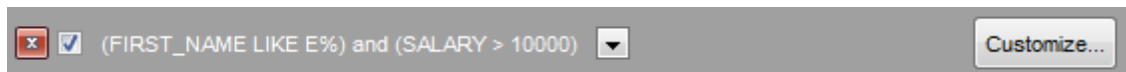


Open the drop-down list on the column title and choose a filter condition from the list. You can set advanced conditions by using the **Custom...** menu item. When choosing this item, the special [window for setting filter conditions](#) opens.

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.

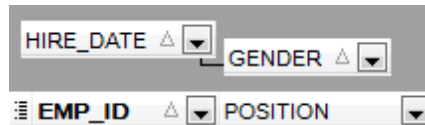
12.3.3 Sort and group data

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 table.



Note: To disable grouping, drag the column title from the group bar back to the table.

12.3.4 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 it:

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**.

12.3.5 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](#).

12.3.6 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 Oracle 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.

12.3.7 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.

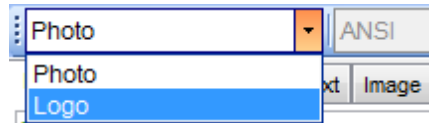
12.3.8 Create an autoincrement field

To create an autoincrement field you need to check ☒ **Autoincrement** option when [creating or editing field](#). If this option is enabled then an autoincremental field will be created using [trigger](#) and [sequence](#).

12.3.9 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](#).

12.3.10 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.

12.4 Work with Queries and Scripts

12.4.1 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 Query Data** context menu item.
3. Select the necessary query type.

In the Design Query

1. Open [Design Query](#).
2. On the **Builder** tab drag an object from the [DB Explorer](#) tree to the diagram area.
3. Choose necessary fields to include in the query by checking the corresponding box located to the left from the field name in the list, or just by double-clicking it. To include all fields of the table/view, check the box located to the left of the table/view caption.
4. [Associate two objects](#) by their fields. Drag a field from one object list to another. This will set a link between these objects by the selected fields. It is indicated by a bidirectional arrow between the linked fields.
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 [Design Query](#).

12.4.2 Control 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 **Query Data** and use the  **Show estimated execution plan** item of the [Navigation bar](#) or [toolbar](#).

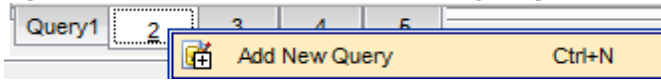
12.4.3 Work with several queries at once

[Query Data](#) provides a possibility to open and edit several queries. You can create tabs in the lower part of the **Query Data**, each tab may contain a separate query. There are several ways for creating tabs:

1. Open  **Query Data** and choose  **Add New Query** on one of the [toolbars](#).
2. Open  **Query Data** 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](#).

12.4.4 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 [Query Data](#) or remove a query if you don't need it any longer.

12.4.5 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.

12.4.6 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.

12.4.7 Execute scripts

[Execute Script](#) allows you to create, view, edit and execute SQL scripts. To open Execute Script Editor select the **Tools |  Execute 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 Execute 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 [Execute Script](#), not [Query Data](#). 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.

12.4.8 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 [Execute 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 [Execute Script editor](#).

12.4.9 Make SQL script work faster

In order to make the Execute Script editor work faster, you can disable some functions.

Parsing

Choose and disable the  **Disable Parsing** item on [one of Execute Script Editor toolbars](#).

Automatic Creation of Hierarchical Text Structure

Uncheck the ☒ **Use code folding** box on the [Display](#) tab of the [Editor options](#).

Syntax Highlight and Quick Code for Aliases

Choose **Options | Editor options** in the main menu, proceed to the [General](#) tab and uncheck the ☒ **Resolve aliases** box - the [syntax highlight](#) and [quick code](#) for aliases will be disabled.

12.4.10 Customize work with Query/Script text

Using Internal Link

The name of the object existing on a database is highlighted in a query/script text. You can open such an object by holding the *Ctrl* key and clicking the object with a mouse.

Adding Text Template

To add a [keyboard template](#), use *Ctrl+J* shortcut.

Automatic Completion (Object List)

You can call the autocompletion list by starting to enter 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.

Automatic Formatting of Query/Script

Choose **Quick Code | Format** in the Query Data/Execute Script context menu or the *Shift+Ctrl+F* shortcut to apply automatic formatting.

Setting 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 Query Data/Execute Script.

Setting 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.

12.4.11 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 Oracle during current session.

12.5 Debug procedures

To debug [procedures](#) as well as [functions](#), [packages](#), [triggers](#), [object types](#) you may use [PL/SQL Code Debugger](#). It provides step-by-step debugging session.

To debug a PL/SQL object you need it to compile it with debug info.

12.6 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 fields Page1. Move the required fields from Data Tree to **Band MasterData**.

12.7 Transfer program settings

If you want to apply current program settings (wholly or partially) to SQL Manager for Oracle 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 that [Favorite Queries](#) are not saved in this case. To get access to your queries from another machine please [store](#) them in the database.

12.8 Update SQL Manager

SQL Manager for Oracle can be updated in the following ways:

1. Download the SQL Manager for Oracle distribution package from the [download](#) page, then extract archive to the preferable directory (e.g. c:\unzipped). Close SQL Manager for Oracle if it's opened and run *OraManagerFullSetup.exe* or *OraManagerLiteSetup.exe*.
2. Use the **Help | Check For Updates** main menu item. If new SQL Manager for Oracle version is released it will be offered for downloading. Click Yes in the dialog window to update SQL Manager for Oracle automatically.

12.9 Report bugs and suggestions

1. Before reporting bugs and suggestions make sure you are using the latest version of the SQL Manager for Oracle.
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, Oracle server version and program version.
4. Describe the steps to reproduce the bug in detail and illustrate them with screenshots.

Part



13 Appendix

13.1 Advanced connection settings

You need the installed Oracle client on the client computer where SQL Manager for Oracle will be used. The version of the Oracle client should be compatible with the version of Oracle server you need to connect.

You need to add the connection settings of Oracle server databases to your TNS names file (tnsnames.ora file). This is a configuration file which contains databases description.

If you use Database Client the tnsnames.ora file is located in the %HOME_name%\NETWORK\ADMIN directory.

If you use Instant Client for oracle, you should create tnsnames.ora file manually. since it does not exist. File should be created in the same directory where Oracle instant client is installed (e.g. C:\OracleInstantClient\). This file can be created using any text editor (create a simple text file and then change its name and extension).

Only for Instant Client: After the tnsnames.ora file is created and database description is added, create TNS_ADMIN environment variable. For this please do the following:

1. Right-click 'My computer'.
2. Select 'Properties' menu item.
3. Proceed to the 'Advanced' tab and press 'Environment Variables' button.
4. Press 'New...' button in the 'System variables' section.
5. Set 'Variable name:' TNS_ADMIN, 'Variable value:' C:\OracleInstantClient\tnsnames.ora
6. Press 'OK' button to save the variable.

Find PATH variable in the same dialog, double-click it and add path to the Oracle Instant client libraries (they are located in the directory where client is installed, i.e. C:\OracleInstantClient\). Remember that the paths entries should be separated with semicolons (;).

SQL Manager for Oracle connects to the server (with the help of Oracle client) via TCP/IP protocol. Here is an example of TCP/IP connection specified in TNS names file:

```
DB_Alias =
(DESCRIPTION =
(ADDRESS_LIST =
(ADDRESS = (PROTOCOL = TCP)(HOST = Host_name)(PORT = 1521))
)
(CONNECT_DATA =
(SERVER = DEDICATED)
(SERVICE_NAME = Database_Name)
)
)
```

PROTOCOL is the keyword that identifies the specific protocol adapter used. For this protocol, the value is TCP. The value can be entered in either uppercase or lowercase.

HOST is the host name or IP address.

PORT is the TCP/IP port number.

SERVICE_NAME the name of service on server; the database instance name may differ

from the actual database name, but generally the names match.
DB_Alias any name of the connection

When the client is installed, you can [register a database](#) in SQL Manager for Oracle. To open 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.

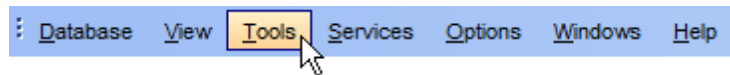
At the [firs step](#) select Oracle client HOME in **Home name** dropdown list. Proceed to the step [Setting registration options](#) and select database from the **Database name** dropdown list. The databases names are taken from the tnsnames.ora file.

Note: If you have a 64-bit version of OS, you might probably have a 64-bit Oracle client. Since SQL Manager for Oracle is a 32-bit program, it cannot work a 64-bit client. In this case you need to install a 32-bit Oracle client.

13.2 Program interface

Main menu

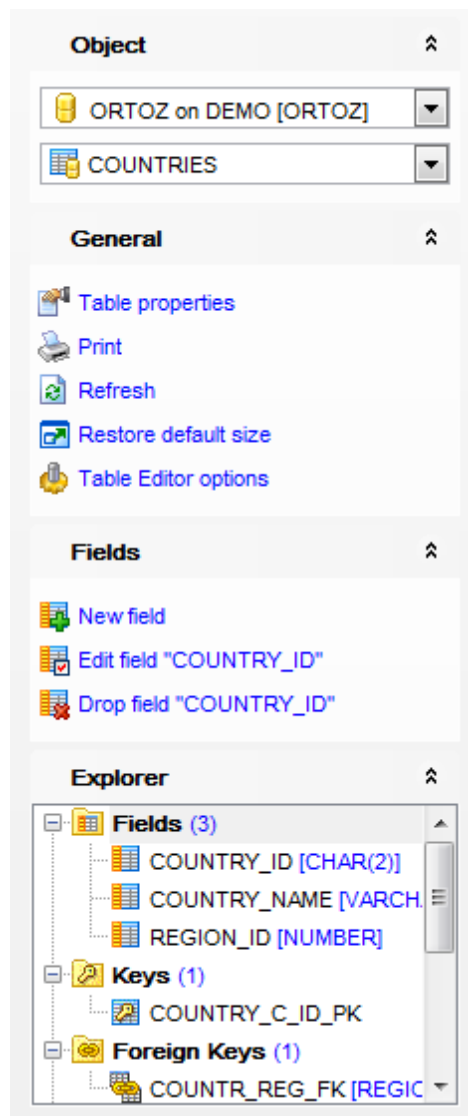
The main menu allows you to perform various **Database** operations, open [To-Do List](#) and activate/deactivate [Database Explorer](#), [SQL Assistant](#) and various [toolbars](#) within the **View** menu, manage your databases using items of the **Tools** and **Services** menus, [customize](#) the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



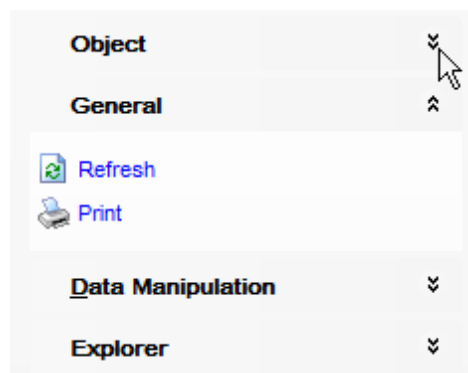
Note: To learn how to configure SQL Manager menus, refer to the [Customize toolbars and menus](#) page.

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.



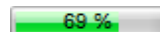
To enable the **toolbars** in SQL Manager for Oracle, open the [Environment Options](#) dialog, proceed to the [Windows](#) section there and select ☒ *Toolbar* (if you need the toolbar only) or ☒ *Both* (if you need both the toolbar and the [Navigation bar](#)) in the **Bar style for child forms** group.

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. [Execute 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 Oracle 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.

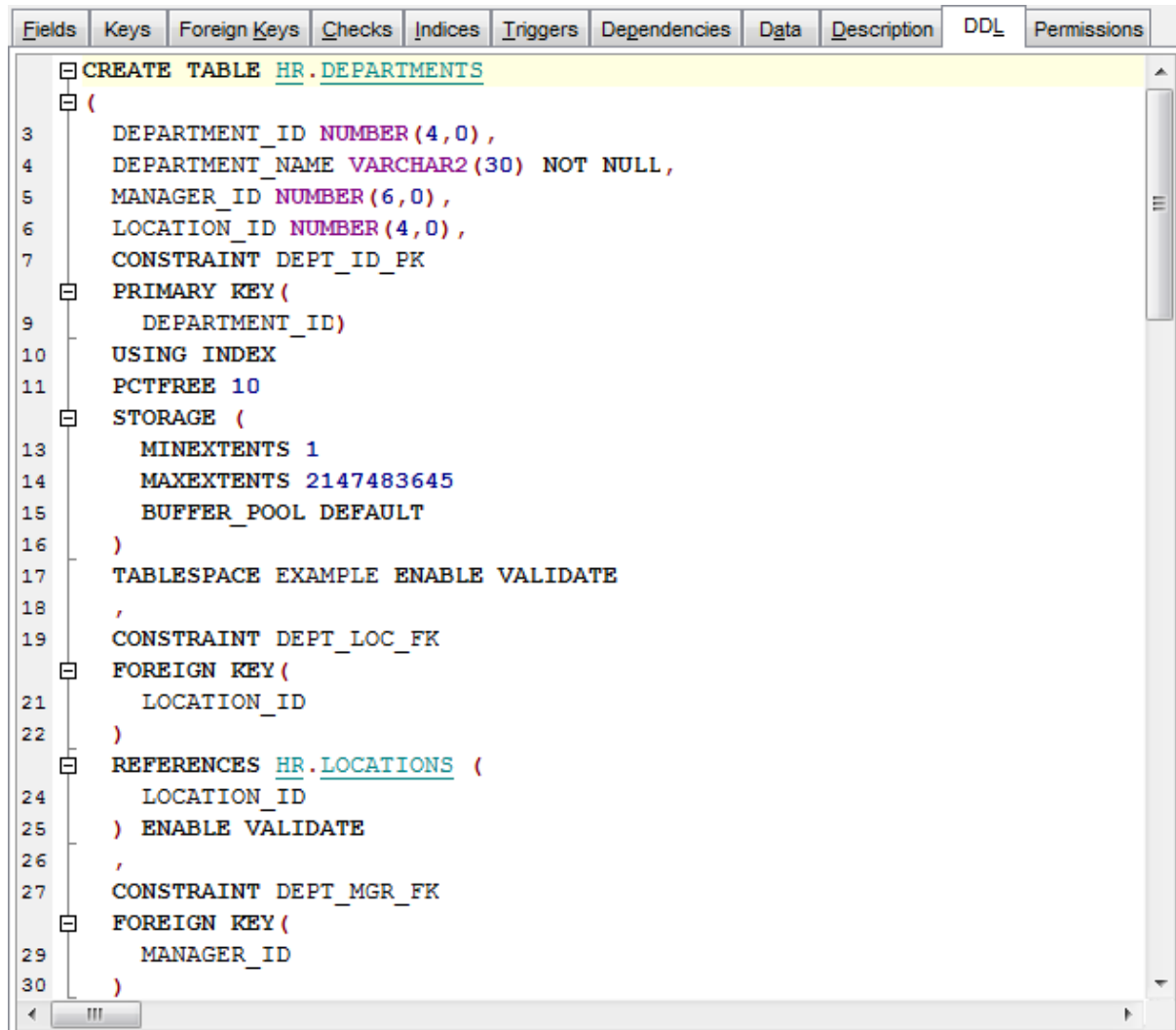


Incremental Search bar

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.

13.3 Viewing object DDL structure

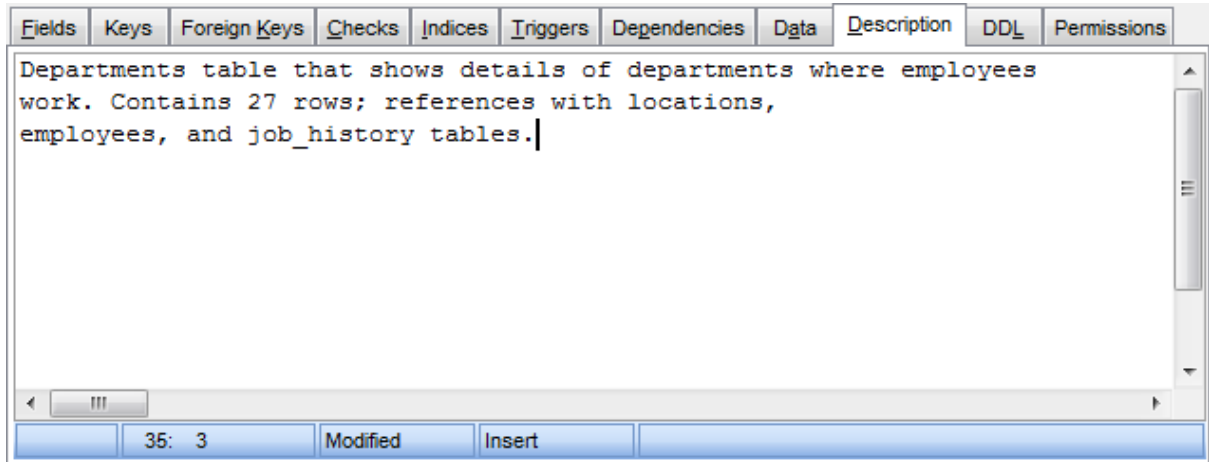
The **DDL** (Data Definition Language) tab displays the SQL statements for creating the object with all its subobjects (if there are any). This text is read-only. If you want to change the object definition, use the appropriate editor tabs instead, or copy the text to the Windows Clipboard and paste it in the [Query Data](#) or [Execute Script Editor](#).



Hint: If more convenient, you can use the **Save DDL to file** and **Open DDL in Execute script** items available on the DDL pane within the [Navigation bar](#) of object editors.

13.4 Editing object description

The **Description** tab allows you to view and edit the comment for the object (optional).



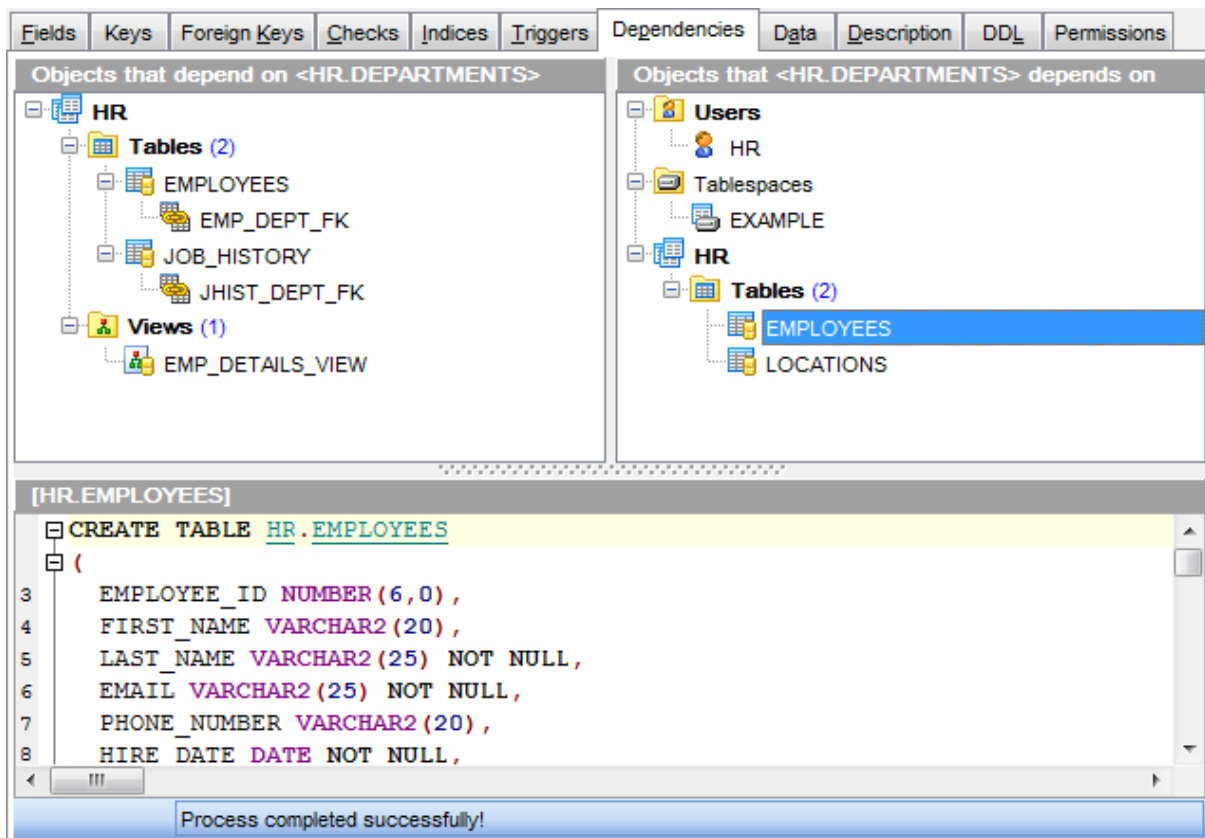
You can save changes made in this area by clicking the **Save Description** item on the [Navigation bar](#).

If the changes have not been saved, on attempt to select another tab of the editor you will be prompted for an action whether changes in the object description should be saved or discarded.

13.5 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](#)

13.6 Setting object permissions

The **Permissions** tab allows you to view the permissions currently allocated for this object, and to [grant permissions](#) on the object to any of the existing [users and roles](#).

The screenshot displays the SQL Manager for Oracle interface, specifically the **Permissions** tab. The interface is divided into two main sections.

Top Section: Roles and Permissions

Grantee	Alter	Delete	Debug	Flashback	Index	Insert	On Commit	Refresh	Query Rewr
Roles									
AQ_ADMINISTRATOR_ROLE									
AQ_USER_ROLE									
AUTHENTICATEDUSER									
CONNECT	●	●	●	●		●	●		●
CTXAPP									
DBA									
DELETE_CATALOG_ROLE									
EJBCLIENT									
EXECUTE_CATALOG_ROLE									
EXP_FULL_DATABASE									
GATHER_SYSTEM_STATISTICS									
GLOBAL_AQ_USER_ROLE									
HS_ADMIN_ROLE									
IMP_FULL_DATABASE									
JAVADEBUGPRIV									
JAVAINPRIV									

Bottom Section: Column Permissions

Column Name	Insert	Update	References
DEPARTMENT_ID	●		
DEPARTMENT_NAME	●		
MANAGER_ID	●		
LOCATION_ID	●		

A context menu is open over the **References** column, showing the following options:

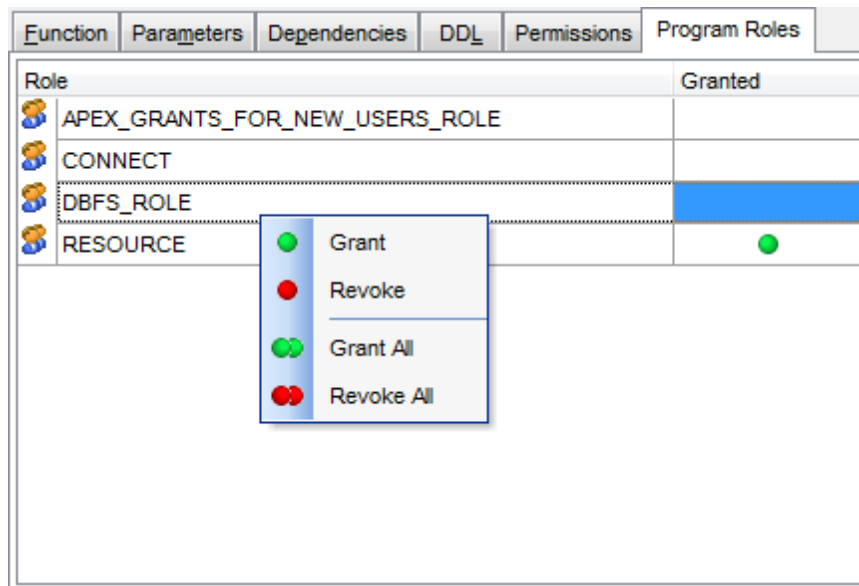
- Grant
- Revoke
- Grant All
- Revoke All
- Grant on All
- Revoke On All

For details see [Grant Manager](#).

13.7 Setting program roles

The **Program Roles** tab allows you to grant and revoke roles to program units.

This tab is available for [function](#), [procedure](#) and [package](#) editors.



The table lists available roles that can be granted to program units.

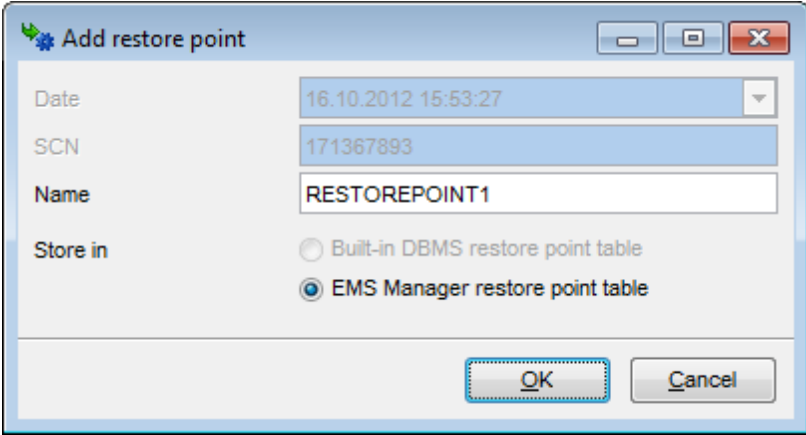
The **context menu** allows you to:

- grant code based access control role to program unit;
- revoke a previously granted permission;
- grant all code based access control roles to program unit;
- revoke all previously granted permissions.

13.8 Adding restore point

You can add a restore point before changing the data, to get possibility to [flash back](#) to the current data state.

Click the  **Add restore point** item of the Navigation bar or toolbar to open the **Add restore point** dialog:



The dialog box titled "Add restore point" contains the following fields and options:

- Date:** A text field with the value "16.10.2012 15:53:27" and a dropdown arrow on the right.
- SCN:** A text field with the value "171367893".
- Name:** A text field with the value "RESTOREPOINT1".
- Store in:** Two radio button options:
 - ☐ Built-in DBMS restore point table
 - ☒ EMS Manager restore point table
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

Date

Date and time when the restore point was created. This field can't be modified.

SCN

System Change Number - the unique number of the restore point. The value is generated automatically and can't be modified.

Name

Define the restore point name at this field.

Store in

The ☒ **Built-in DBMS restore point table** is available in Oracle 10 and higher. The alternative ☐ **EMS Manager restore point table** allows you to create the restore point in Oracle 9 too.

13.9 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.

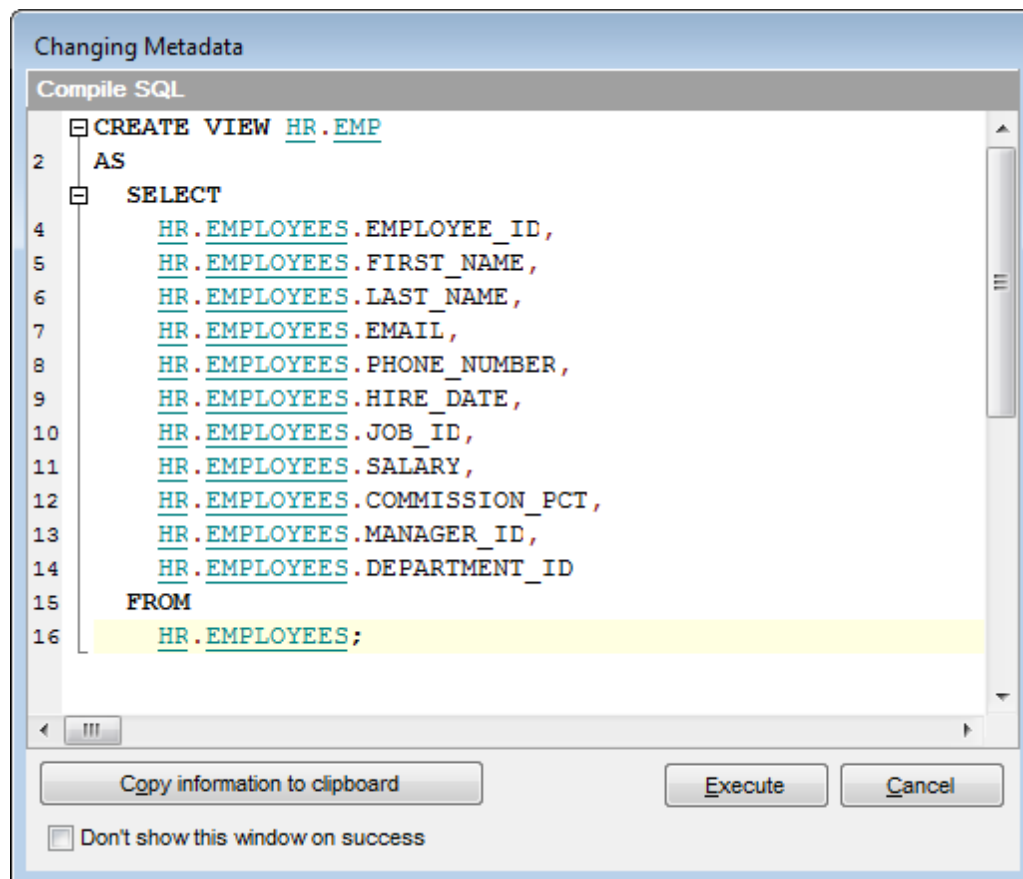
In case of a compilation error the **Error** tab also becomes visible - here you can view the error description returned by the server.

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](#)).



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.

13.10 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

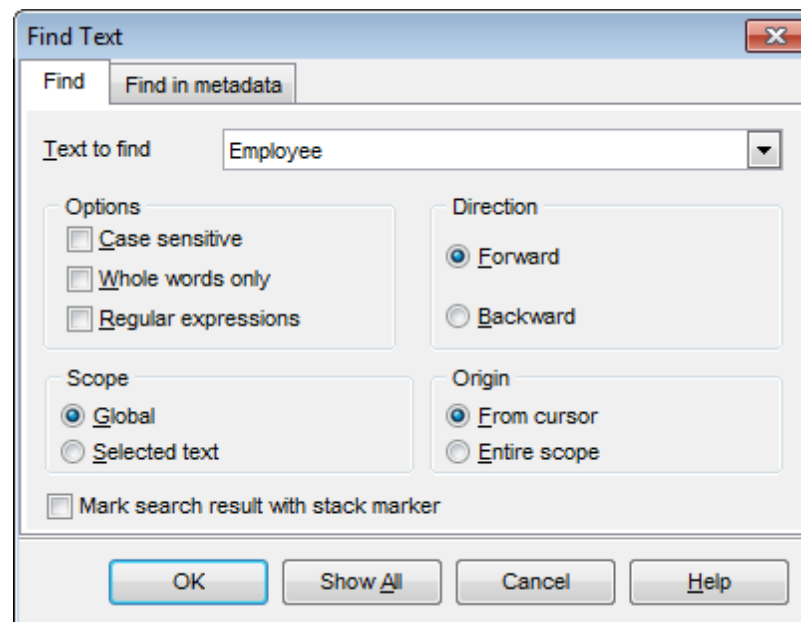
Use this option to search for words only (with this option off, the search string might be found within longer words.)

☒ 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.

13.11 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**

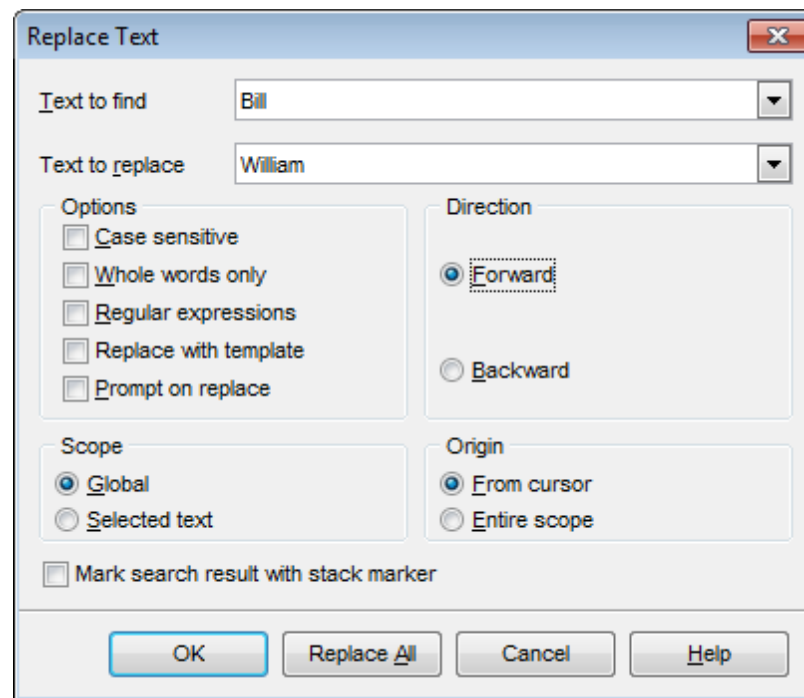
This option requires the **Regular expressions** option selection.

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.

13.12 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.

dddd

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.

13.13 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

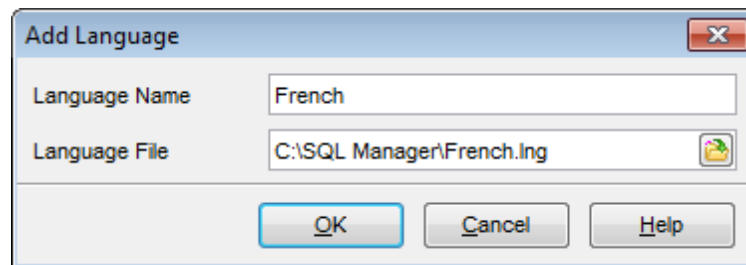
The name of the language that is displayed in the [Select Program Language](#) dialog and within the **Available Languages** list of the [Environment Options | Localization](#) section.

Language File

The *.lng file containing the translated string resources. See the %program_directory%\Languages folder to find already existing localization files.

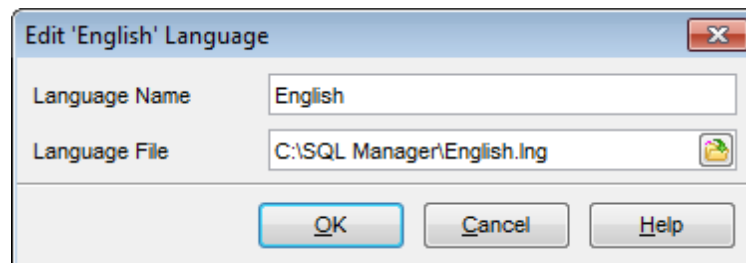
Adding a language

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.



13.14 Using templates

For your convenience the ability to use templates is provided by SQL Manager for Oracle. 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.

Note that saving/loading of templates is possible at any step of the wizard.

13.15 Supported file formats

• **MS Excel**

The contemporary e-table format used by Microsoft® (*.xls).

• **MS Access**

The database file of Microsoft® Access format (*.accdb)

• **MS Word**

The contemporary text processing format used by Microsoft® Word (*.docx). The result files are fully compatible with Microsoft® Word 2007.

• **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 97-2003**

The older e-table format used by Microsoft® Excel (*.xls).

• **MS Word 97-2003**

One of the most popular text processing formats used by Microsoft® Word (*.doc).

• **MS Access 97-2003**

File of Microsoft® Access format (*.mdb) with an ADO connection used.

• **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.

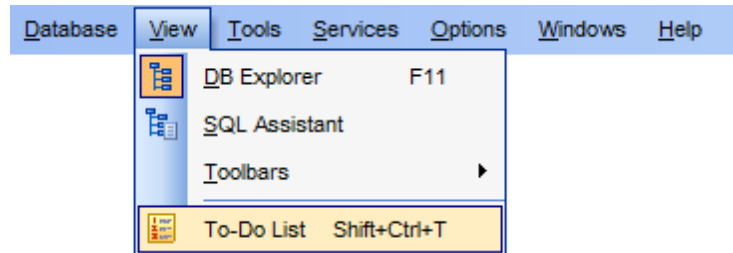
• **ODF Text**

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.

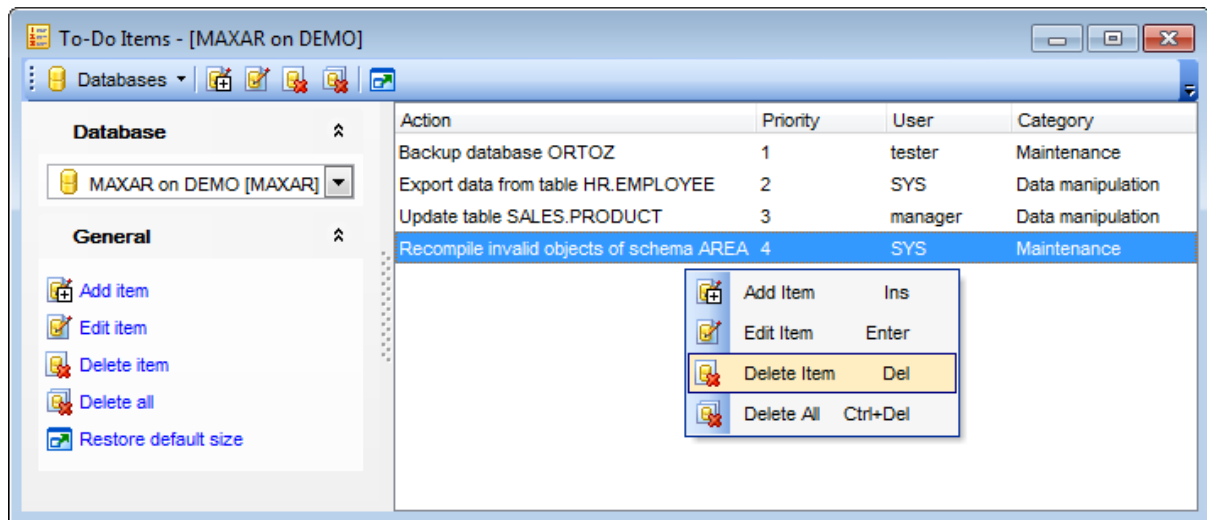
13.16 To-Do List

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](#).



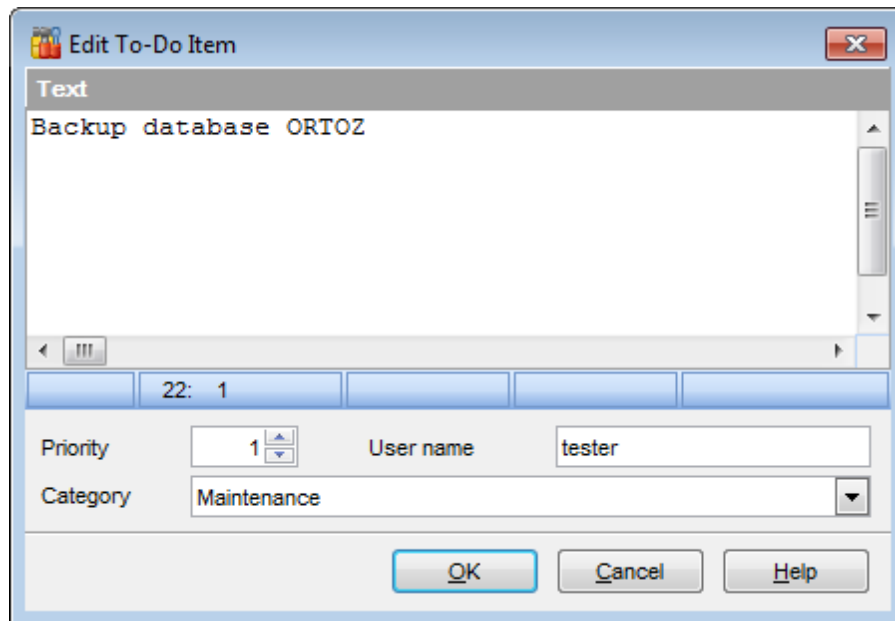
The task list is displayed in a form of a grid. Its columns (*Action*, *Priority*, *User*, *Category*) correspond to the task parameters. Click the column caption to sort the task list by the current parameter or change the sorting direction. Use the Navigation bar and context menu to *add*, *edit*, 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.

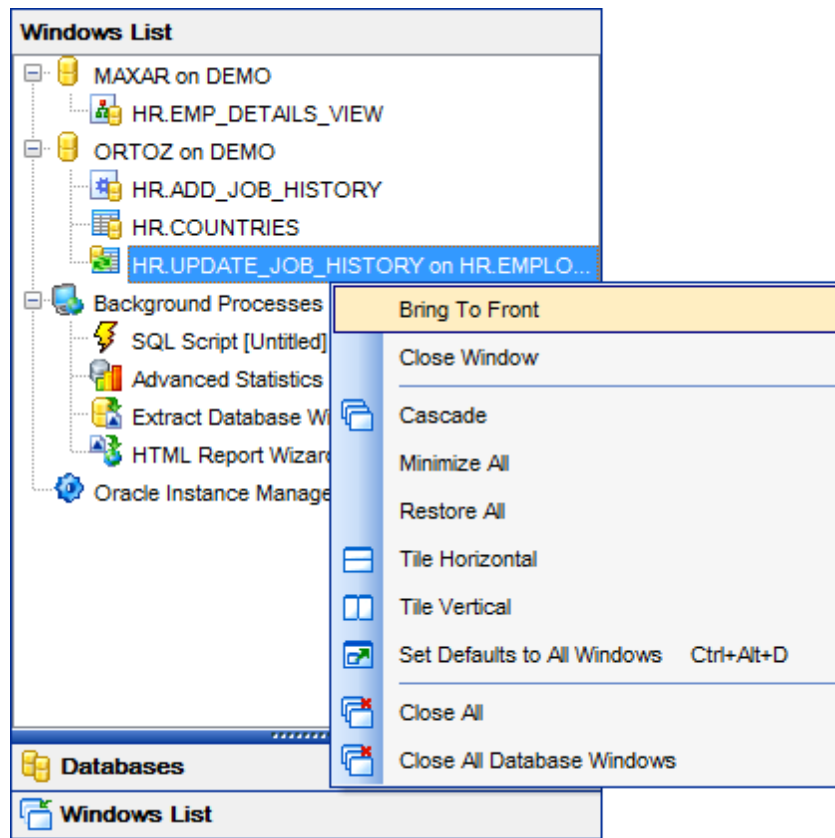
To remove a task, select the task in the list and click the **Delete Item** link of the Navigation bar, or select **Delete Item** in the context menu. You can also use the *Del* key for the same purpose.

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.

13.17 Window List

The **Windows List** panel allows you to browse the list of windows that are currently opened within SQL Manager for Oracle IDE.

To activate this panel as a DB Explorer [tab](#), select the **Windows | Window List** [main menu](#) item, or use the *Ctrl+Alt+O* [shortcut](#).



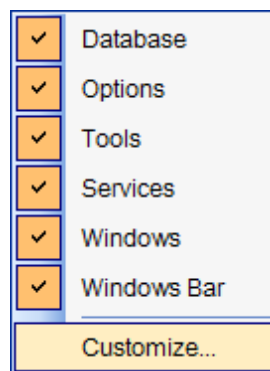
If necessary, you can right-click within the list area to call the **popup menu** which allows you to bring a window to foreground, close windows one by one or in groups, and to arrange the windows according to your preferences.

13.18 Customize toolbars and menus

For your convenience SQL Manager for Oracle 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

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...

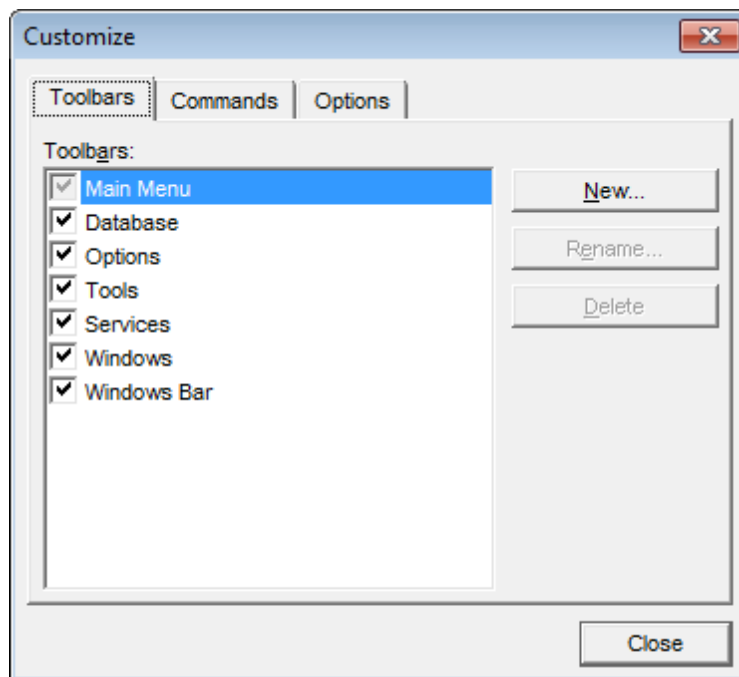
Use this button to add a new user-defined toolbar to the **Toolbars** list. Set a name for the newly created toolbar and dock it by dragging it to any permitted location within the application window.

Rename...

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

Delete

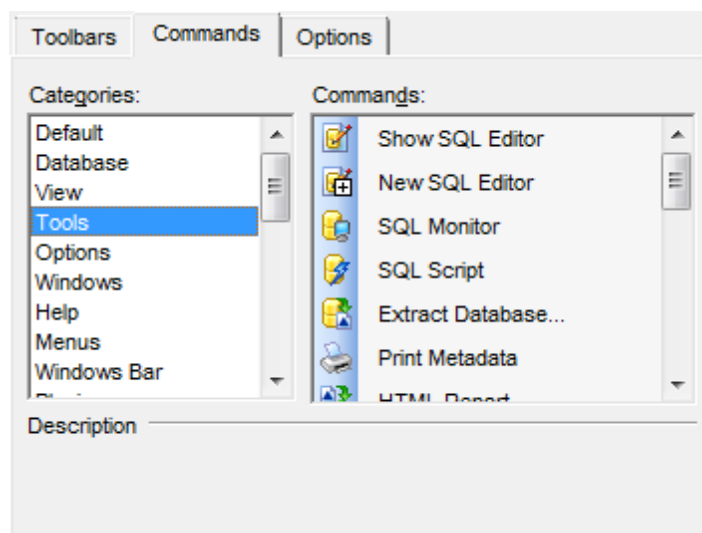
Use this button to delete the selected user-defined toolbar.



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".

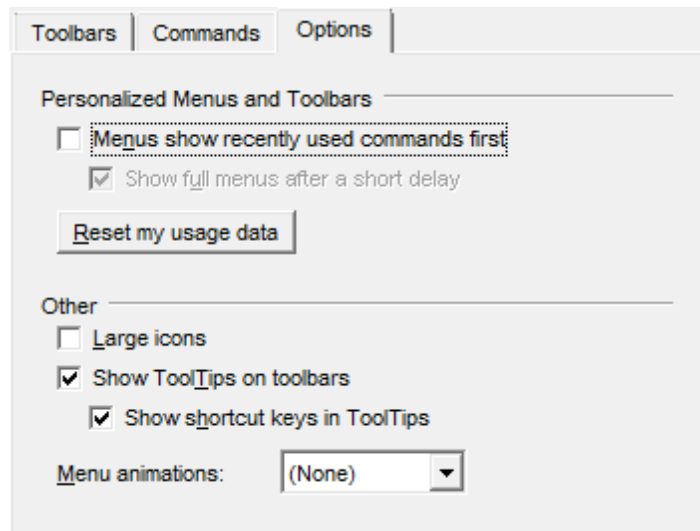
☒ **Show full menus after a short delay**

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)

13.19 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 Oracle servers when working over insecure connection channels. You can also use SSH tunnel to get access to the remote Oracle servers when port 3306 is closed for external connections for some reasons.

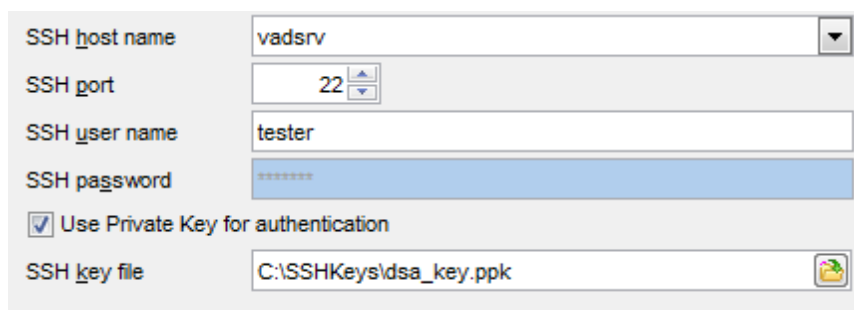
The connection via SSH tunnel works in the following way.

First, a connection is established and the process of authentication between SSH client built in SQL Manager and remote Oracle server is performed. Then all incoming and outgoing information between the application and Oracle is transmitted through SSH server with the help of a communication port (regularly port 22), and SSH server transfers this information directly to Oracle 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 Oracle server)
- **SSH password** is the Linux/Windows user password

Please note that Oracle **host name** should be set relatively to the SSH server in this case. For example, if both Oracle 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.



SSH host name: vadsrv

SSH port: 22

SSH user name: tester

SSH password: *****

☒ Use Private Key for authentication

SSH key file: C:\SSHKeys\dsa_key.ppk

☒ 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.

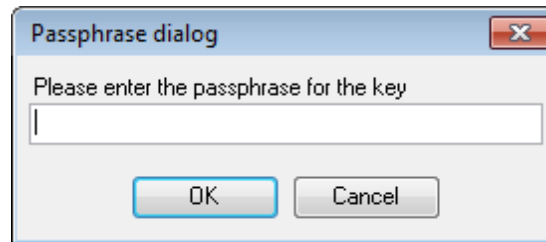
Supported Private Key file formats are:

OpenSSH

Putty

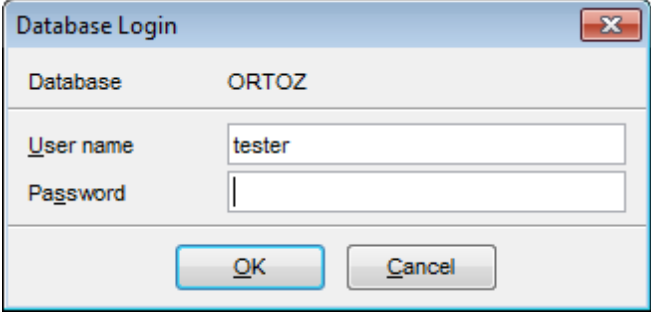
SSH.com

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.



13.20 Database Login dialog

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.



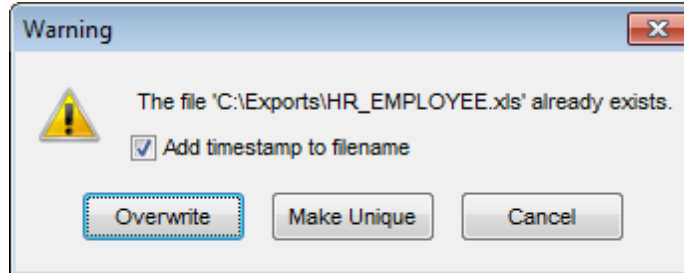
Database Login	
Database	ORTOZ
User name	tester
Password	
OK Cancel	

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.

13.21 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.

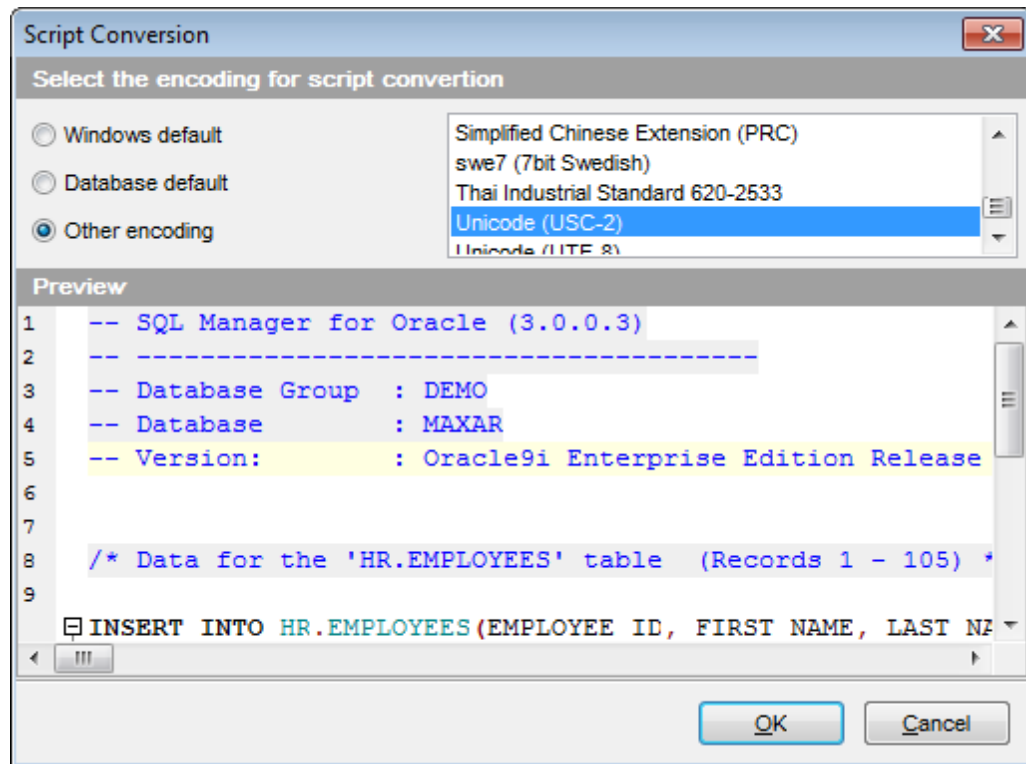


You can **Overwrite** the file, **Make** it **Unique**, or **Cancel** both and change the path or file name manually.

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.

13.22 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 ([Query Data](#), [Execute 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.

13.23 Storage attributes

The **Physical Attributes / Storage** tab available in object editors lets you specify how a [database object](#) should be stored in the database. Storage parameters affect both how long it takes to access data stored in the database and how efficiently space in the database is used.

The screenshot displays the 'Physical Attributes' tab in a software interface. At the top, there are tabs for 'Table', 'Fields', 'Foreign Keys', 'Physical Attributes' (selected), 'Description', and 'DDL'. Below the tabs, the 'Physical attributes' section contains several groups of settings:

- Physical attributes:**
 - Tablespace:** A dropdown menu set to 'EXAMPLE'.
 - Buffer pool:** A dropdown menu set to 'KEEP' and a checkbox for 'Cache'.
 - Initial number of transactions:** A dropdown menu set to 'DEFAULT' and a checkbox for 'Row dependencies'.
- Extents:**
 - Initial extent:** A dropdown menu set to 'DEFAULT' with a 'bytes' unit indicator.
 - Next extent:** A dropdown menu set to 'DEFAULT' with a 'bytes' unit indicator.
 - Percent increase:** A dropdown menu set to 'DEFAULT' with a '%' unit indicator.
 - Minimum extents:** A dropdown menu set to 'DEFAULT'.
 - Maximum extents:** A dropdown menu set to 'DEFAULT'.
- Space usage:**
 - Percent free:** A dropdown menu set to 'DEFAULT'.
 - Percent used:** A dropdown menu set to 'DEFAULT'.
- Free lists:**
 - Free lists:** A dropdown menu set to 'DEFAULT'.
 - Groups:** A dropdown menu set to 'DEFAULT'.
- Parallel:**
 - Parallel options:**
 - Degree:** A dropdown menu set to 'DEFAULT'.
 - Instances:** A dropdown menu set to '0'.
- Data storage options:**
 - Compress data:** A checkbox.
 - Enable row movement:** A checkbox.
 - Compress for:**
 - All operation:** A radio button (selected).
 - Direct load operation:** A radio button.

Physical attributes

Tablespace

A **tablespace** is an allocation of space in the database that can contain schema objects. Use the drop-down list to select the [tablespace](#) where the object will be stored.

Buffer pool

This option allows you to specify a default buffer pool or cache for the object. All blocks for the object are stored in the specified cache. Use the drop-down list to select one of the following values:

KEEP: the buffer pool retains the schema object's data blocks in memory;

RECYCLE: the buffer pool eliminates data blocks from memory as soon as they are no longer needed.

DEFAULT: the buffer pool contains data blocks from schema objects that are not assigned to any buffer pool, as well as schema objects that are explicitly assigned to the *DEFAULT* pool.

Initial number of transactions

Specify the initial number of concurrent transaction entries allocated within each data block allocated to the database object, or select *DEFAULT* from the drop-down list.

☒ **Cache**

Use this option to indicate how Oracle Database should store blocks in the buffer cache.

☒ **Row dependencies**

Select this option if you want to enable row-level dependency tracking. This setting is useful primarily to allow for parallel propagation in replication environments.

Extents

An extent is a logical unit of database storage space allocation made up of a number of contiguous data blocks. One or more extents in turn make up a segment. When the existing space in a segment is completely used, Oracle allocates a new extent for the segment.

Initial extent

Specify the size (in bytes) of the first extent of the object. Oracle allocates space for this extent when you create the schema object, or select *DEFAULT* from the drop-down list.

Next extent

Specify the size (in bytes) of the next extent to be allocated to the object, or select *DEFAULT* from the drop-down list.

Percent increase

Specify the percent by which the third and subsequent extents grow over the preceding extent, or select *DEFAULT* from the drop-down list (the default value is 50, meaning that each subsequent extent is 50 per cent larger than the preceding extent)

Minimum extents

Specify the total number of extents to allocate when the object is created, or select *DEFAULT* from the drop-down list. This parameter lets you allocate a large amount of space when you create an object, even if the space available is not contiguous.

Maximum extents

Specify the total number of extents, including the first, that Oracle can allocate for the object, or select *DEFAULT* or *UNLIMITED* from the drop-down list.

Space usage

Parameters of this group allow you to control the use of free space for inserts and updates to the rows in all the data blocks of a particular segment.

Percent free

This parameter sets the minimum percentage of a data block to be reserved as free space for possible updates to rows that already exist in that block. Specify a value, or select *DEFAULT* from the drop-down list.

Percent used

This parameter sets the minimum percentage of a block that can be used for row data plus overhead before new rows are added to the block. Specify a value, or select *DEFAULT* from the drop-down list.

Free lists**Free lists**

Specify the number of free lists that can be contained in each free list group, or select *DEFAULT* from the drop-down list (the default and minimum value for this parameter is 1, meaning that each free list group contains one free list).

Groups

Specify the number of groups of free lists for the database object being created, or select *DEFAULT* from the drop-down list (the default and minimum value for this parameter is 1).

Parallel

Use this group to specify the degree of parallel access to the object.

- ☒ *Default*
- ☐ *No parallel* (serial execution)
- ☐ *Parallel* (parallelized execution)

Parallel options**Degree**

Specify the degree of parallelism which is the number of parallel threads used in the parallel operation, or select *DEFAULT* from the drop-down list.

A degree of parallelism equals to the number of CPUs available on all participating

Instances.**Data storage options**

This group is only available for tables which store data.

☒ **Compress data**

Use this option to instruct the database whether to compress data segments to reduce disk and memory use (for [heap-organized](#) tables).

☒ **Enable row movement**

This option allows you to specify whether the database can move a table row. It is possible for a row to move, for example, during table compression or an update operation on partitioned data. Note that when a row is moved, the rowid is changed.

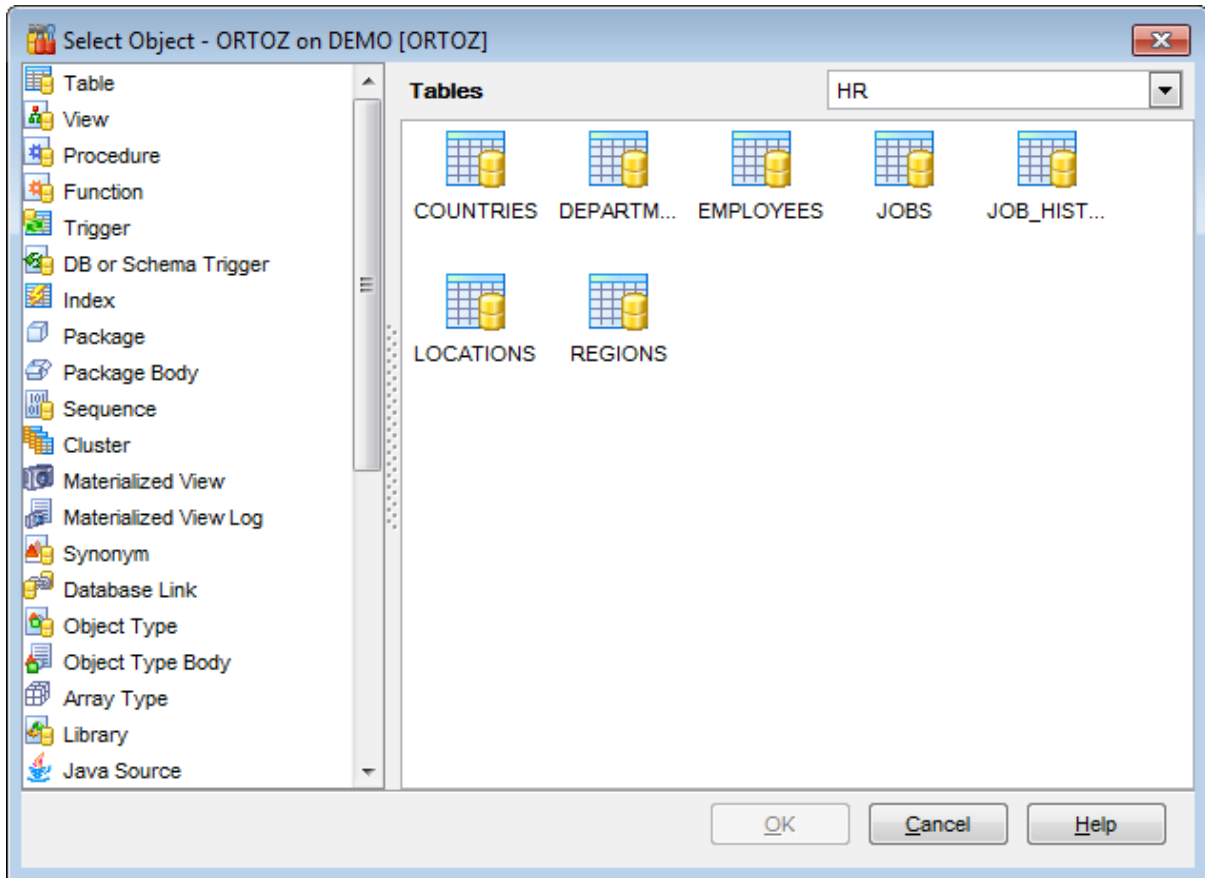
Compress for

Use this group to specify the table compression mode:

- ☒ *All operations* (Oracle Database attempts to compress data during all DML operations on the table)
- ☐ *Direct load operation* (Oracle Database attempts to compress data during direct-path INSERT operations when it is productive to do so)

13.24 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](#). This dialog is also called from [DB Explorer](#) and some object editors ([Operator Editor](#), [Synonym Editor](#)).



First select the object type in the list on the left-hand side of the window. Use the drop-down list at the top to select the schema, pick the object you need and click **OK** to apply your selection.

13.25 SQL Manager shortcuts

Database management

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 [Query Data](#)
Shift+F12 Open a new instance of [Query Data](#)
Shift+Ctrl+M Open [SQL Monitor](#)
Shift+Ctrl+S Open [Execute Script Editor](#)
Shift+Ctrl+L Open [Localization Editor](#)
Ins Add a new table subobject (the subobject type depends on the current tab selection)

Data Grid

Ctrl+Shift+0 Set the selected column value to NULL

Query Data and Execute Script editors

F9 Execute query/script
Alt+F9 Execute selected only
Ctrl+Alt+F9 Execute under cursor
Ctrl+Alt+F2 Reset execution point (Query Data only)
Shift+Ctrl+<digit> Toggle bookmark # <digit>
Ctrl+<digit> Go to bookmark # <digit>
Ctrl+Q Go to next bookmark
F2 Drop marker to current position
Ctrl+Z; Undo
Alt+BkSp
Shift+Ctrl+Z; Redo
Shift+Alt+BkS
p
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 Save 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 (Query Data only)
Ctrl+J Insert a [keyboard template](#)
Ctrl+D Toggle query results display mode (at the Edit tab or at a separate one)
Shift+Ctrl+Le Select the previous word
ft
Shift+Ctrl+Rig Select the next word
ht
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+PageDo Select one page down
wn
Shift+Ctrl+Pa Select text to the first line on the page
geUp
Shift+Ctrl+Pa Select text to the last line on the page
geDown
Shift+Ctrl+Ho Select text to the absolute beginning
me
Shift+Ctrl+En Select text to the absolute end
d
Shift+Alt+Left Select column symbol-by-symbol to the left
Shift+Alt+Rig Select column symbol-by-symbol to the right
ht
Shift+Alt+Up Select column upwards
Shift+Alt+Do Select column downwards
wn
Shift+Ctrl+Alt Select column word-by-word to the left
+Left
Shift+Ctrl+Alt Select column word-by-word to the right
+Right
Shift+Alt+Ho Select column to the first char of line
me
Shift+Alt+End Select column to the last char 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, Ctrl+F Collapse block at current line
Ctrl+G, Ctrl+E 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
Esc Collect marker (jump back)

Shift+Esc Swap marker to current position
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
Shift+Ctrl+Sp Show code parameters
ace
Ctrl+Alt+Spac Show character map
e
Ctrl+Alt+L Show functions
Ctrl+Alt+3 Show packages
Ctrl+Alt+A Show [array types](#)
Ctrl+Alt+K Show [clusters](#)
Ctrl+Alt+7 Show [contexts](#)
Ctrl+Alt+X Show [indices](#)
Shift+Alt+P Insert procedure parameters
Ctrl+Alt+J Show [java sources](#)
Ctrl+Alt+M Show [materialized views](#)
Ctrl+Alt+O Show [object types](#)
Ctrl+Alt+Z Show [object type bodies](#)
Ctrl+Alt+P Show [procedures](#)
Ctrl+Alt+5 Show [operators](#)
Ctrl+Alt+B Show [package bodies](#)
Ctrl+Alt+9 Show [profiles](#)
Ctrl+Alt+G Show SQL functions
Ctrl+Alt+S Show schemas
Ctrl+Alt+E Show [sequences](#)
Ctrl+Alt+T Show [tables](#)
Ctrl+Alt+C Show table fields
Ctrl+Alt+Y Show synonyms
Ctrl+Alt+Ente Show table in [SQL Assistant](#)
r
Ctrl+Alt+U Show [users](#)
Ctrl+Alt+V Show [views](#)
Ctrl+Alt+1 Show SQL keywords
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 beginning of the 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; Break line at current position, move caret to a new line
Enter;
Shift+Enter
Ctrl+Alt+I Insert Tab char
Shift+Ctrl+P Play macro
Shift+Ctrl+R Start macro recording
Alt+End Skip misprint
Ctrl+Alt+End Skip all misprints

Alt+Home Correct all misprints

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 [Window 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

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