

EMS



MS SQL Manager

UsersGuide

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CHAPTER 1

GENERAL INFO

What is MS SQL Manager?

EMS MS SQL Manager provides you powerful and effective tools for MS SQL Server administration and object management. Its Graphical User Interface (GUI) allows you to create/edit all MS SQL database objects in a most easy and simple way, run SQL scripts, manage users and administrate user privileges, visually build SQL queries, extract or print metadata, export/import data, view/edit BLOBs and many more services that will make your work with the MS SQL server as easy as it can be...

MS SQL Manager features:

Easy management of all MS SQL objects:

- ✓ Creating/Dropping databases;
- ✓ Creating/Dropping/Altering tables, views, procedures, user-defined types, functions, users and roles
- ✓ Creating/Dropping defaults and rules
- ✓ Creating/Dropping/Altering table subobjects: fields, foreign keys, checks, indices, triggers
- ✓ Viewing/Editing data in tables
- ✓ Duplicating all database objects
- ✓ Support of all field types
- ✓ Adding/Editing/Deleting users and their privileges
- ✓ Adding/Editing/Deleting logins

Database Explorer featuring

- ✓ Multiple database connections
- ✓ Registering/Unregistering databases allows working only with the databases required
- ✓ Grouping/Ungrouping registered databases by host name
- ✓ Project View allows combining database object with user items
- ✓ Powerful Login Manager and Grant Manager

SQL processing and watching tools, including:

- ✓ Multiple SQL Editors
- ✓ Script Executing (SQL Script)
- ✓ Visual Query Builder

- ✓ SQL Monitor
- ✓ Extracting metadata into text files or SQL Script editor
- ✓ Export data to MS Access, Excel, RTF (Word), HTML, XML, DBF, TXT, CSV, SYLK, DIF, LaTeX and Windows Clipboard.
- ✓ Import Data Wizard

Customizable interface, including:

- ✓ Grid manipulations: custom colors, formats etc.
- ✓ Customizable editors: custom colors, fonts etc.
- ✓ Keyboard templates
- ✓ And other useful tools, including TO-DO list for each database, External Tool Manager, etc.

See <http://www.mssqlmanager.com/> for more information and latest news.

What do you need to start working with MS SQL Manager

EMS MS SQL Manager is developed for working with the MS SQL Server, so first of all you must have a possibility to connect to some local or remote MS SQL Server to work with MS SQL Manager. Besides you need your computer to meet the minimal system requirements. Pentium 166 and 32 MB RAM recommended.

All information about MS SQL Server you can find at <http://www.microsoft.com/sql/>.

How to purchase and register MS SQL Manager

For your convenience, we have contracted with RegSoft and ShareIt Companies to process orders you wish to make with your Visa, MasterCard, American Express and Discover. After registering you will receive the registered version within 48 hours by e-mail. Please make sure to include a valid e-mail address with your order.

ShareIt (<http://www.shareit.com>) accepts payments in US Dollars, Euro, Pound Sterlings, Japanese Yens, Australian Dollars, Canadian Dollars or Swiss Franks by Credit Card (Visa, MasterCard/Eurocard, American Express, Diners Club), Bank/Wire Transfer, Check or Cash.

RegSoft (<http://www.regsoft.com>) accepts payments in US Dollars by Credit Card (Visa, MasterCard/Eurocard, American Express, Discover), FAX, Postal Mail, TOLL-Free Phone or Purchase Order.

EMS MS SQL Manager (single license) - **\$195**

Share It! - <https://secure.element5.com/register.html?productid=192290&language=English>
RegSoft.com - <http://www.regsoft.net/purchase.php3?productid=62940>

Other EMS Hitech Software



EMS MySQL Manager (<http://www.ems-hitech.com/mymanager/>) provides you powerful and effective tools for MySQL Server administration and objects management. Its Graphical User Interface (GUI) allows you to create/edit all MySQL database objects in a most easy and simple way, run SQL scripts, manage users and administrate user privileges, visually build SQL queries, extract or print metadata, export/import data, view/edit BLOBs and many more services that will make your work with the MySQL server as easy as it can be...



EMS IB Manager (<http://www.ems-hitech.com/ibmanager/>) provides you with effective and powerful tools for InterBase/FireBird administration. It helps you to edit all database objects, search in metadata, extract metadata, print metadata, import data and export it into as many as 12 most popular formats. **IB Manager** also includes Database Designer, SP Debugger, SQL Editor, Visual Query Builder, Grant and User Managers, BLOB Viewer/Editor, SQL Script processor, Third-Party plugins support and many more other features.



EMS PostgreSQL Manager (<http://www.ems-hitech.com/pgmanager/>) is a powerful graphical tool for PostgreSQL administration and development. It makes creating and editing PostgreSQL database objects easy and fast, and allows you to run SQL scripts, manage users and their privileges, build SQL queries visually, extract, print and search metadata, export data to 14 available formats and import them from most popular formats, view and edit BLOB fields, and many more...



EMS DBISAM Manager (<http://www.ems-hitech.com/dbimanager/>) provides you with powerful tools for DBISAM Server administration and object management. Its Graphical User Interface (GUI) allows you to easily and simply create/edit all DBISAM database objects, run SQL scripts, manage users and administer user privileges, visually build SQL queries, extract and print metadata, export/import data, view/edit BLOBs, and supplies many more features that will make your work with the DBISAM server as easy as it can be...



EMS MS SQL Utils (<http://www.ems-hitech.com/mssqlutils>) are powerful data management utilities for **Microsoft® SQL Server** and **Microsoft® SQL Server Desktop Engine (MSDE)**, which make your work with the server much easier and faster. Currently **MS SQL Utils** include **MS SQL Query** - a powerful utility for building and executing queries, **MS SQL DataPump** - a wizard application for converting ADO-compatible databases to Microsoft® SQL, **MS SQL Data Generator** - a powerful tool for test data generation, **MS SQL Export** - a powerful tool for Microsoft® SQL data export, and **MS SQL Import** - a utility for quick importing data to Microsoft® SQL tables.



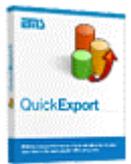
EMS MySQL Utils (<http://www.ems-hitech.com/mysqlutils>) are powerful data management utilities for **MySQL Server**, which make your work with the server much easier and faster. Currently **MySQL Utils** include **MySQL Comparer** - a powerful utility for comparing MySQL databases and discovering differences in their structure, **MySQL Query** - a powerful utility for building and executing queries, **MySQL DataPump** - a wizard application for converting ADO-compatible databases to MySQL, **MySQL Data Generator** - a powerful tool for test data generation, **MySQL Export** - a powerful tool for MySQL data export, **MySQL Import** - a utility for quick importing data to MySQL tables, and **MySQL Extract** - metadata and data extraction tool.



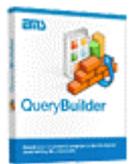
EMS PostgreSQL Utils (<http://www.ems-hitech.com/pgsqlutils/>) are powerful data management utilities for **PostgreSQL Server**, which make your work with the server much easier and faster. Currently **PostgreSQL Utils** include **PostgreSQL Database Comparer** - a useful tool for comparing PostgreSQL databases and discovering differences in their structures, **PostgreSQL Query** - a powerful utility for building and executing queries, **PostgreSQL DataPump** - a wizard application for converting ADO-compatible databases to PostgreSQL, **PostgreSQL Data Generator** - simple and powerful tool for test data generation, **PostgreSQL Export** - a powerful tool for PostgreSQL data export, **PostgreSQL Import** - a utility for quick importing data to PostgreSQL tables, and **PostgreSQL Extract** - metadata and data extraction tool.



EMS IB Utils (<http://www.ems-hitech.com/ibutils/>) are powerful data management utilities for **InterBase/FireBird Server**, which make your work with the server much easier and faster. Currently **IB Utils** include **IB Database Comparer** - a powerful utility for comparing InterBase/FireBird databases and discovering differences in their structure, **IB Query** - a powerful utility for building and executing queries, **IB DataPump** - a wizard application for converting ADO-compatible databases to InterBase/FireBird, **IB Data Generator** - a powerful tool for test data generation, **IB Export** - a powerful tool for InterBase/FireBird data export, **IB Import** - a utility for quick importing data to InterBase/FireBird tables, and **IB Extract** - metadata and data extraction tool.



EMS QuickExport Component Suite (<http://www.ems-hitech.com/quickexport/>) is a set of native Delphi/C++Builder components for exporting your data to 12 most popular formats (MS Excel, MS Word (RTF), HTML, XML, TXT, CSV, SYLK, DIF, LaTeX, SQL and Windows Clipboard) for the future viewing, modification, printing or web publication. There will be no need to spend your time for a tiresome data conversion - **EMS QuickExport** will do this task quickly and it will give the result in the desired format.



EMS QueryBuilder (<http://www.ems-hitech.com/querybuilder/>) is a powerful component intended for visual building SQL statement for the SELECT clause. It enables you to use visual query building or representing the existing statements in your project on Delphi. The component can work with different databases (not only through BDE). It simplifies writing a large and complicated statement and allows making up SQL statement without knowledge of the SQL syntax.



EMS QuickImport Component Suite (<http://www.ems-hitech.com/quickimport/>) allows you to import your data to the database from files in the most popular data formats. There will be no need to spend your time for a tiresome data conversion - **EMS QuickImport** will do this task quickly, irrespective of the source data format.



EMS QuickLocalizer (<http://www.ems-hitech.com/quicklocal/>) is an indispensable component suite for adding the ability of multilingual support to your Delphi applications. Using powerful component editors of this suite you can easily and quickly localize the properties of your project components within each form, generate the template of language file containing current values of component properties, manage the localization files, specify the components and properties to be localized and choose other localization options.



EMS ExcelReport (<http://www.ems-hitech.com/excelreport/>) component is a powerful band-oriented generator of template-based reports in MS Excel. Easy-to-use

component property editors allow you to create powerful reports in MS Excel quickly, easily and intuitively understandable. Now you can easily create reports, which can be edited, saved to file and viewed almost on any computer. ExcelReport supports Borland Delphi 5, 6, 7, and MS Office 97 SR-1, 2000, 2002 (XP).

EMS MS SQL Manager FAQ

Please read this page attentively if you have questions about EMS MS SQL Manager.

Q: What is EMS MS SQL Manager?

A: EMS MS SQL Manager provides you with powerful and effective tools for MS SQL Server administration and objects management. It allows you to create and edit all MS SQL database objects easily, run SQL scripts, manage users and administrate users' privileges, visually build SQL queries, extract or print metadata, export/import data, view/edit BLOBs and includes many more services to make your work with MS SQL server as easy as you want...

Q: How can I register EMS MS SQL Manager?

A: All the information about purchasing EMS MS SQL Manager can be found at <http://www.mssqlmanager.com/purchase.phtml>.

Q: Where can I download a trial version of EMS MS SQL Manager?

A: You can always download the latest version of EMS MS SQL Manager at <http://www.mssqlmanager.com/download.phtml>.

Q: How does the trial version of EMS MS SQL Manager differ from the registered version?

A: The trial version of EMS MS SQL Manager is fully functional. You can use it for evaluation purposes for a period of 30 days following the initial installation.

Q: What benefits shall I acquire if I register EMS MS SQL Manager?

A: As a registered user you will have a right to obtain a technical support, to receive information about all the product updates and to have free in-line upgrades and full version upgrades for half a price. Also your suggestions will be taken into consideration in developing the new versions of MS SQL Manager. And at last we will thank you very much for your help in developing the product.

Q: What is the difference between single and site licenses of MS SQL Manager?

A: If you buy a single license of MS SQL Manager you will get only one registered copy of the product without a right of giving it to anyone else. If you buy a site license then you will be able to make copies and give them to as many people as you want, but within the only one organization. Buying a site license is reasonable if you need to supply with our software all your company stuff or some company department stuff. In such case you can buy a site license instead of buying single licenses for each person and save a bunch of money.

Q: What discounts can I get buying EMS MS SQL Manager?

A: You can get significant discounts if you simultaneously purchase several copies of MS SQL Manager. Each additional copy will be cheaper than the previous. If you are a representative of some academic institution and you want to use MS SQL Manager for educational purposes then you can buy an Academic License that is much cheaper than the standard license. Please send us a written request at support@mssqlmanager.com.

Q: I am a registered user of EMS MS SQL Manager. How can I upgrade to a new version of MS SQL Manager?

A: There are two types of upgrades: in-line upgrade and full version upgrade. In-line upgrade is free. That means that if you are a registered user of EMS MS SQL Manager 1.XX you will receive all the upgrades labeled 1.01 up to 1.99 as they are released for free. The full upgrade means that you buy a newer version of the same software for half a price. If you are a registered user of the version 1.XX you will have to pay only 50 percent of the announced price to buy the version 2.01. See our [Upgrade Policy](#) for details.

Q: What do I need to start working with EMS MS SQL Manager?

A: First of all you must have a possibility to connect to some local or remote MS SQL Server 7 or MS SQL Server 2000 to work with MS SQL Manager. All the information about MS SQL Server you can find at <http://www.microsoft.com/sql>. Besides you need your computer to satisfy the system requirements of MS SQL Manager. MS SQL Manager runs on Windows 95/98/Me/NT4/2000/XP and Pentium 166, 32 Mb RAM is recommended.

Q: I need to work with several servers, located on different computers, is single license OK?

A: If you work with these servers from one single computer, then a single license is OK. But if you have several clients installed on different computers, you have to buy a license for each client or buy a site license.

Q: How can I import data to the table?

A: To import data to the table open the proper table from the DB Explorer. Open the 'Data' tab in the Table Editor and click the button 'Import Data' on the control panel or choose 'Import Data' from the popup menu. Then follow the instructions of the Import Data Wizard.

Q: How can I export data from the table?

A: To export data from the table open the proper table from the DB Explorer. Open the 'Data' tab in the Table Editor and click the button 'Export Data' on the control panel or choose 'Export Data' from the popup menu. Then fill in the forms of the Export Data Dialog.

Q: How can I edit create/edit my BLOB fields?

A: To create/edit a BLOB field, open the proper table from the DB Explorer. Open the 'Data' tab in the Table Editor and click the button 'BLOB Editor' on the control panel or right-click on the BLOB-field column in the grid and choose 'Edit BLOB' from the popup menu. Now you can create/edit BLOB fields in the BLOB Viewer/Editor window.

Q: I can't modify DDL. Why?

A: The 'DDL' tabs of all the object editors are read-only. It displays the SQL text of the operations you carry over the table on the tabs 'Fields', 'Indices', etc. To modify this text you can copy it to the clipboard and modify it using SQL Script Editor.

Q: Is registered copy of EMS MS SQL Manager locked to the definite computer?

A: No, we do not lock registered copies of our products to user's hardware ID, so if you change your hardware it will not cause any problems with using your registered copy of MS SQL Manager. If you still have any questions, write us to support@mssqlmanager.com.

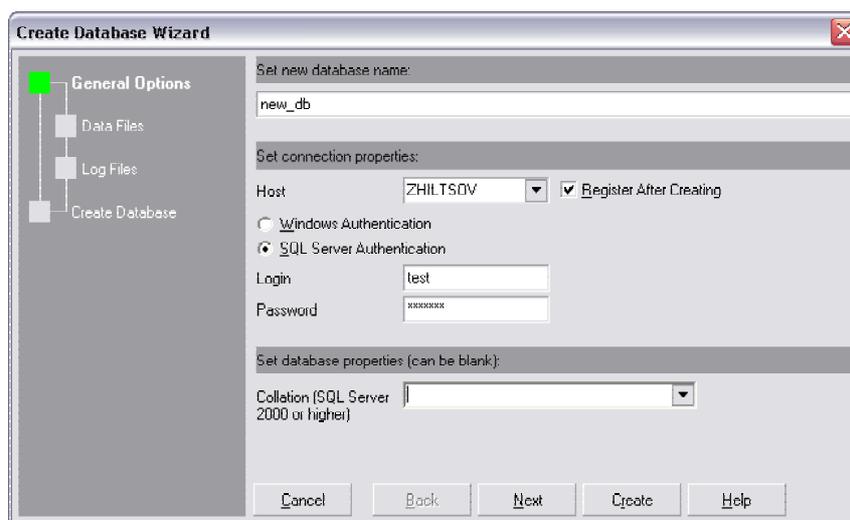
CHAPTER 2

DATABASE MANAGEMENT

Creating Database

If you have no database on local or remote server, you can create a new database right from the MS SQL Manager. To do this click button **Create Database**  on the control panel or choose the menu item **Database | Create Database**.

The first step of the **Create Database Wizard** is 'General Options'.



Set the name of the new database, and then set the following database host properties:

- ✓ **Host** - the server, where your database will be situated (default 'localhost' means that the server is situated on your machine);

Select the authentication type - the built-in **Windows authentication** or the **SQL Server authentication**. If the **SQL Server Authentication** is selected, define the following parameters:

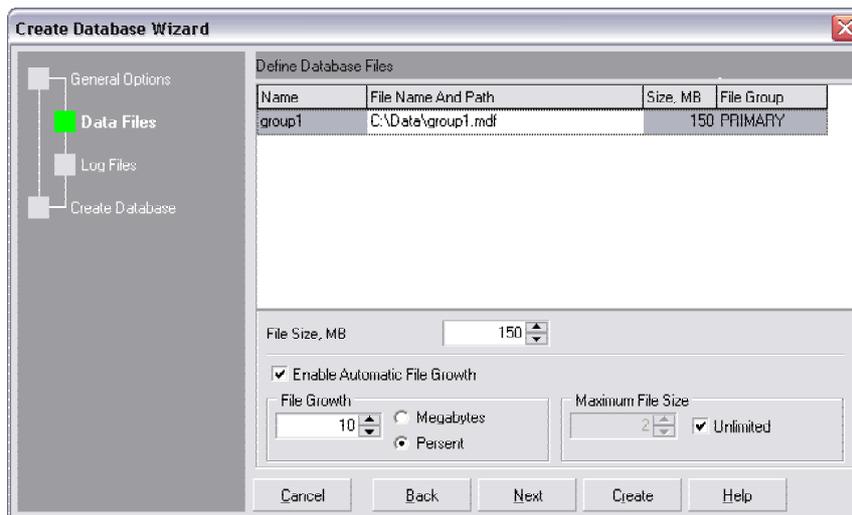
- ✓ **Login** - the name, by which you are registered on server;
- ✓ **Password** - your password for connecting to the server.

You can also set the following database properties, which are not obligatory:

- ✓ **Collation** (SQL Server 2000 or higher) - Specifies the default collation for the database. If not specified, the database is assigned the default collation of the SQL Server instance.

The **Register After Creating** option indicates, that the Register Database Dialog for the new database will appear right after creating the database (you need to register the database to start working with it in MS SQL Manager). If you want to register your database later, uncheck this option.

When you are done, click **Next** to continue.



The second step allows you to define a list of files of the primary filegroup. The primary filegroup contains all of the database system tables. It also contains all objects not assigned to user filegroups. If it is necessary, add one or more files by right-clicking and selecting the **Add File** menu item. Select the file name and path, and define the following parameters:

- ✓ **File Size, MB** - this field defines initial file size in megabytes.
- ✓ **Enable Automatic File Growth** - check this option to allow the SQL Server to increase file size automatically. Otherwise, you need to change the file size manually.
- ✓ **File Growth** - defines the growth size. Set the value and the measurement unit - megabytes or percent.
- ✓ **Maximum Size** - defines the maximum file size in megabytes. Check the **Unlimited** option to enable unlimited file growth.

Click **Next** to proceed to the next step.

The **Log Files** tab allows you to add the disk files used to store the database log (log files). If it is necessary, add one or more files by right-clicking and selecting the **Add File** menu item. The file parameters are same as for data files.

On the last step of the wizard you can view the result SQL statement for creating the database. You can't edit it. To finish the wizard and start creating the database, click **Create**.

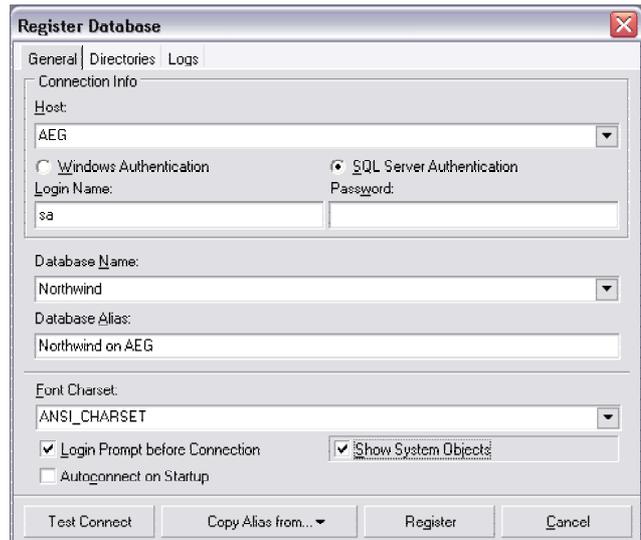
Registering Database

To make the database you created or an already existing database available for working in MS SQL Manager, you should register it. If you created this database in MS SQL Manager, and **Register after creating** was checked, then the **Register Database Dialog** is displayed automatically, otherwise you should click button **Register Database**  on the control panel or choose the menu item **Database | Register Database**.

This is the **General** tab of the **Register Database** window.

On the 'Connection Info' panel the database server connection parameters are set: host, authentication type, login name and password. These parameters should correspond to those set on creating the database.

Select the database name from the 'Database Name' drop-down list of all the databases available on the server and set the database alias in the 'Database Alias' edit field (choose any alias that suits you; the default alias is '<database_name> on <host>'). Set the character set to use in the data grids in the 'Font Charset' edit field. If you choose 'NONE' (default), then the default Windows charset will be used.

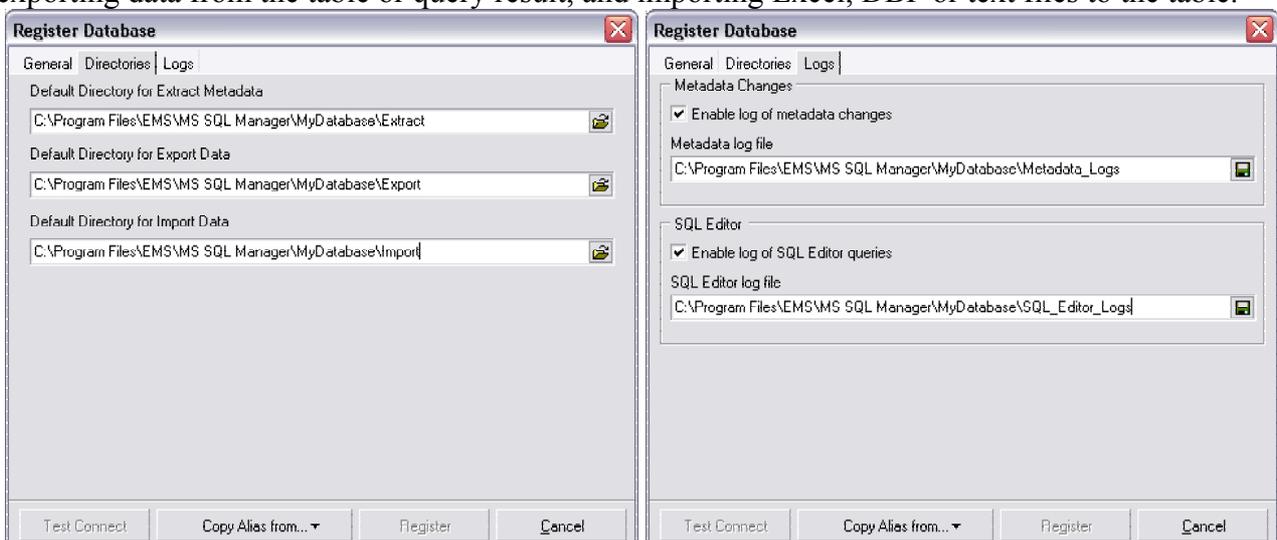


The **Login Prompt Before Connection** option is also available - if it is checked, MS SQL Manager will ask you to enter your login and password on each connection to the database.

If the **Autoconnect on Startup** option is checked, MS SQL Manager will automatically connect to this database on each startup.

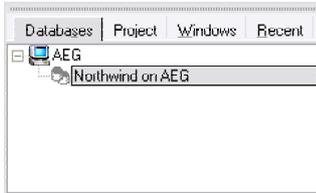
Check the **Show System Objects** option to allow displaying of all system objects for this database.

On the 'Directories' tab you can set the default directories for extracting database metadata, exporting data from the table or query result, and importing Excel, DBF or text files to the table.



On the 'Logs' tab you can enable logging changes in the database metadata ('Enable log of metadata changes' option) and enable logging queries executed in the **SQL Editor** or **Visual Query Builder**. After checking these options you should set filenames for storing this information in the 'Metadata log file' and the 'SQL Editor log file' edit fields.

Click button 'Test Connect' to check the connection with the database server. Button 'Copy Alias from' allows you to copy the registration parameters from one of the already registered databases and apply them to the current database.



When you are done, click 'Register'. If everything is correct, your database will be registered, and its icon and alias will appear in the **DB Explorer** window on the 'Databases' tab.

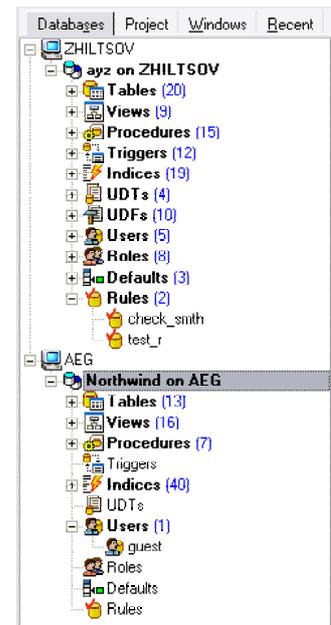
To unregister database, click button **Unregister Database**  on the control panel or choose the menu item **Database | Unregister Database**.

Connecting to the Database

To start working with the registered database, you should connect to it. Just double-click the database alias in the **DB Explorer** or click button **Connect to Database**  on the control panel to start connecting.

If connection is successful, the database alias changes its appearance, and the 'Tables', 'Views', etc. branches become available. These branches contain lists of database tables, views, etc. After connecting to the database you can create new objects or edit the existing through the popup menu of **DB Explorer**.

To disconnect from the database, click button **Disconnect from Database**  on the control panel.



Register Host Wizard

If you need to register several databases on one server, you can register all them at once, not registering them one by one. To do that you should use the **Register Host Wizard**. This wizard allows you to register "packs" of databases on one server.

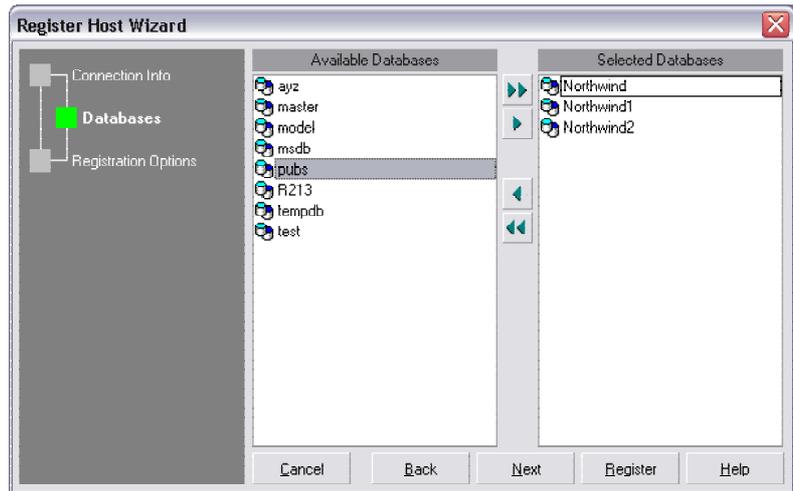
To activate the wizard, click button **Register Host**  on the toolbar or choose the menu item **Database | Register Host**.

On the first step the wizard - 'Connection Info' - you should set the server connection properties, which are common for all the databases you register:

- ✓ **Host** - server, where your databases are situated;

Select the authentication type - the built-in **Windows Authentication** or the **SQL Server Authentication**. For the second type you need to define the following parameters:

- ✓ **Login** - name, by which you are registered on server;
- ✓ **Password** - your password for connecting to the server.



On the ‘Databases’ step select the databases to register from those available on the server by moving them from the ‘Available Databases’ list to the ‘Selected Databases’.

To move all the databases from one list to another use buttons >>, <<; to move the selected databases, use buttons >, < or drag the databases; to move one database, just double-click it.

The last step of the wizard is ‘Registration Options’. Select databases in the list and set the following registration options for each of them. These properties are the same as in the **Register Database Dialog** (see above).

Click ‘Register’ when you are done to register all the databases on the host.

To unregister host, click button **Unregister Host**  on the control panel or choose the menu item **Database | Unregister Host**.

Database Explorer

DB Explorer is the basic MS SQL Manager navigation tool for working with databases and database objects.

Its control panel and popup menu allow you to perform various metadata and data operations, such as: registering and connecting to the database, creating, editing and dropping database objects, exporting and importing data and so on.

DB Explorer tabs allow you to access all the registered databases and database objects (‘Databases’ tab), create your own projects to work only with the selected objects (‘Projects’ tab), access any of the MS SQL Manager active windows (‘Windows’ tab) and recently edited objects (‘Recent’ tab). For easier navigation between the objects each tab has its own object tree.

The **SQL Assistant** area gives you short information for each database or database objects, e.g. object description or list of its subobjects.

Control Panel

Quick Jump To Database  – clicking this button activates the drop-down list of all registered databases. Choose the required database from the list to select it in the tree.

Register Database  / **Unregister Database**  - these two buttons allow you to register new database or to unregister the selected database.

Register Host  / **Unregister Host**  - these buttons allow you to register several databases on the host or to unregister the current host.

Connect to Database  / **Disconnect from Database**  - use this buttons to connect to the selected database or to disconnect from one.

Refresh  - this button refreshes the object tree.

View Mode  - using the drop-down menu of this button you can adjust the **DB Explorer** appearance. The following items are available in the menu:

Show Table Subobjects  - if this button is dropped, then the table fields and indices are available in the database tree of **DB Explorer**.

Page Mode  – this button enables the **DB Explorer** page mode, i.e. splitting the **DB Explorer** window in two and displaying the ‘Projects’ tab in the right area. This mode allows you to drag objects from the ‘Databases’ area to the ‘Projects’ one.

Show Hosts  - if this button is dropped, the database hosts are visible in the **DB Explorer** tree.

Tables’ Details – this submenu allows you to switch the **SQL Assistant** mode for displaying table fields, indices or table status (table properties set on creating).

Popup menu

New Object – this item allows you to create a new object of the current type (table, view, procedure, etc.).

Edit Object – this item allows you to edit the current table or UDF in the proper object editor.

Rename Object - this item allows you to edit the alias of the current object.

Drop Object - this item allows you to drop the current object.

Duplicate Object - this item allows you to create a new object with the same properties as the selected object has. E.g. if you duplicate a table, the new table will have the same fields, indices, data and other properties. They will only differ in names (you’ll be asked for a new table name when duplicating).

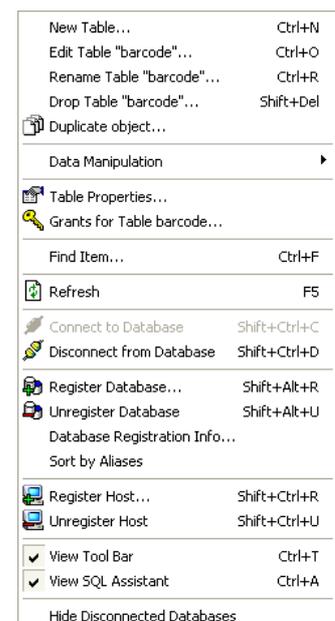
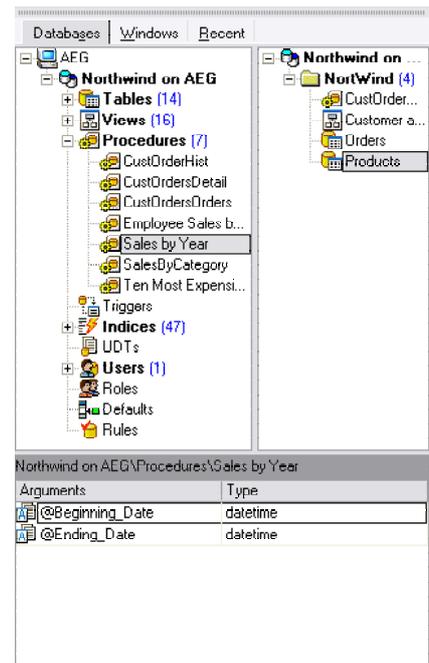
Data Manipulation - this submenu is available only if a table is selected. Its items allow you to export data, export data as INSERT statements, import data and load data to the selected table.

Object Properties - this item allows you to edit the object properties, set on its creation.

Grants for ... – this item activates the **Grant Manager**, which allows you to set the access grants for the selected object.

Find Item - this item allows you to find an object in the object tree by the first symbols of its name.

Refresh - this item refreshes the object tree.



Connect to Database / Disconnect from Database – these items allow you to connect/disconnect to/from the current database.

Register Database / Unregister Database – these items allow you to register new database or to unregister the selected one.

Database Registration Info - this item activates the **Database Registration** window, which allows you to view and edit the database registration parameters.

Sort by Aliases - this item sorts objects in alphabetical order by their aliases.

Register Host / Unregister Host – these items allow you to register several databases on the host or to unregister the current host.

View Toolbar - if this option is checked, **DB Explorer** control panel is visible.

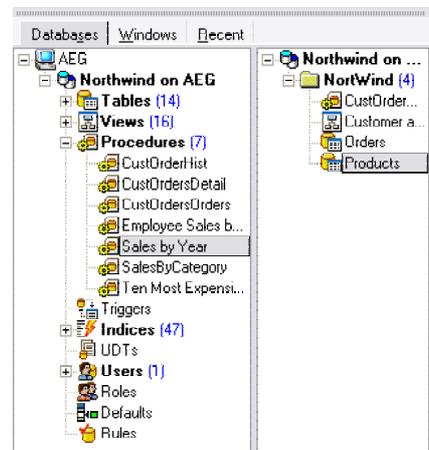
View SQL Assistant - if this option is checked, **SQL Assistant** area is visible.

Hide Disconnected Databases - if this option checked, databases not connected to server, are not displayed in the object tree.

Projects

This page is provided for working with the selected database objects. You can place objects from the database object tree and queries from **SQL Editor** here.

To move the objects from the tree, switch the **DB Explorer** view mode, using button **Page Mode** of the **View Mode** menu on the toolbar. Now the 'Projects' area is always displayed at the right of the window, and you can drag here objects from the 'Databases' area. To add query from the **SQL Editor**, select the text in the editor window and drag it to the folder, created in advance. To create a folder or a subfolder, right-click the object name and choose **New Folder** or **New Subfolder** in accordance.



If you need to find the **Project** tree object in the **Databases** tree, right-click the object and choose item 'Find Object in Database Tree'. **Databases** tab will be displayed, and the object you need will be selected.

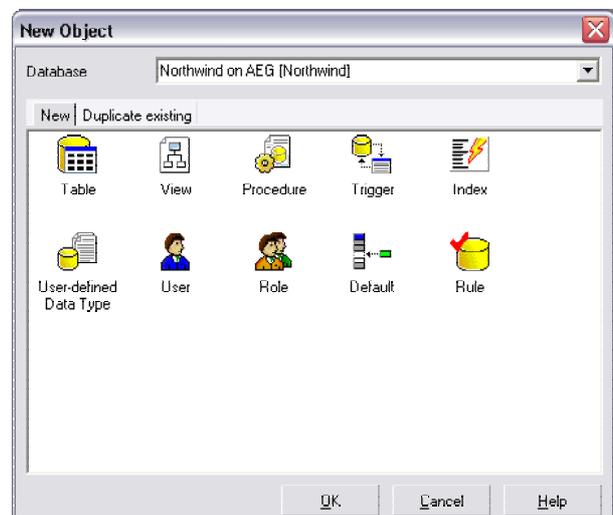
New Object / Duplicate Object

This window provides an alternative way of creating databases objects. To activate this window choose the menu item **Database | New Object** or **Database | Duplicate Object**.

First select a database, where a new object should be created, from the 'Database' drop-down list.

On the 'New' tab select the object type and click 'OK' to activate the **Create Table Dialog** or the proper object editor for setting the properties of the new object.

To create a new object with the same parameters as



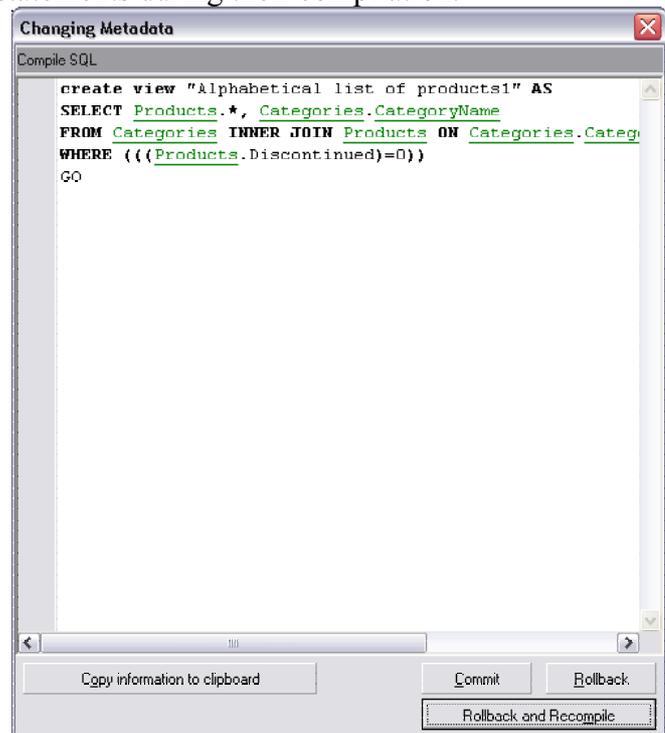
one of the existing database objects has, use the 'Duplicate existing' tab. Select an object type, using toolbar at the right of the window, then select an object to duplicate and click 'OK'. Set the name of the new object in the dialog window and the new object will be created.

Compile Window

MS SQL Manager compilation window is performed for step-by-step control of executing transactions, tracing the errors and editing SQL statements during their compilation.

The compilation window appears any time the transaction is executed, both when the compilation is successful and when there were errors in compilation. If you want this window to appear only in case of error, choose **Options | Environment Options** and uncheck option **Confirm successful compilation** (default checked) on the **Confirmations** page.

Window title contains information about the operation executed, e.g. 'Creating table TABLE1...'.
Compile SQL - in this area you can view and edit SQL text, corresponding to the selected statement. In case of error in compilation the 'Error' button also becomes available, by clicking which you can view the compilation error description.



Error – in case of error this area displays the error message.

The 'Rollback' button allows you to return to the previous stage (editor window or **DB Explorer**).

'Rollback and Recompile' calls for recompilation with the changes you made in the SQL statement.

Button 'Copy information to clipboard' allows you to copy both the compile statement and the error message to the clipboard.

The 'Commit' button fixes the executed statements. Click it to commit the current transaction. This button is available only if there were no errors in compilation.

CHAPTER 3

WORKING WITH TABLES

Creating Table

To create a new table

- 1 Select the **Database | New Object** menu item.
- 2 Select **Tables**  in the New Object window.

or

- 1 Select the **Tables** branch in the DB Explorer.
- 2 Right-click and select the **New Object** item from the popup menu.

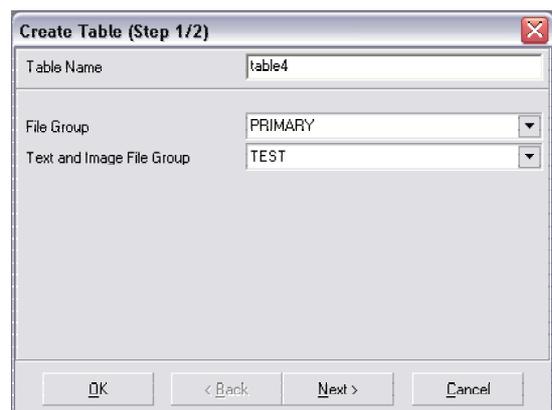


On the first step of the **Create Table Dialog** you should set various table parameters.

Set the table name in the **Table** edit field.

Set the following table options:

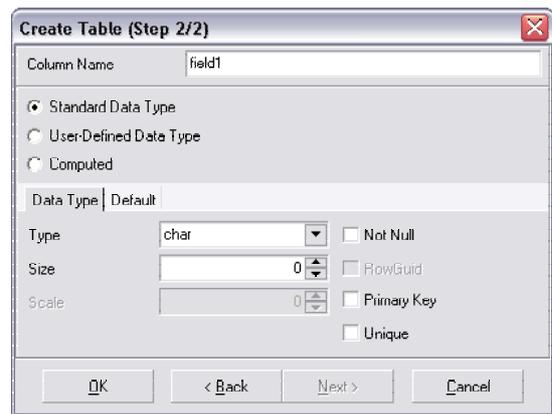
- ✓ **File Group** - specifies the filegroup on which the table is stored. If filegroup is specified, the table is stored in the named filegroup. The filegroup must exist within the database. If this parameter is not defined, the table is stored on the default filegroup.
- ✓ **Text and Image File Group** - defines the filegroup on which the **text**, **ntext**, and **image** columns are stored.



On the second step of the dialog you should set the properties of the first table field. Set the field name in the 'Column' edit field, and select the field type – the **Standard Data Type**, the **User-Defined Data Type** or the **Computed** field type.

Data Type

This tab is available if the **Standard Data Type** or the **User-Defined Data Type** is selected.



- ✓ **Type** - here you can set the field type by selecting it from the drop-down list of the standard or user-defined data types.
- ✓ **Size** - defines the length of the field value.
- ✓ **Scale** - defines the precision of the field value for float data types.
- ✓ **Collation** - defines the collation for text and char values.

Identity

This tab is available only for integer field types or for user-defined types based on integer types. It allows you to create an identity column.

- ✓ **Identity** - this option specifies that the new column is an identity column
- ✓ **Seed** - this value is used for the first row loaded into the table.
- ✓ **Increment** - this value is added to the identity value of the previous row loaded.

Formula

This tab is available if the **Computed** field type is selected. It allows you to set an expression that defines the value of the column.

Default

This tab allows you to define the default value for the column. You can either select the default object from the database defaults or define the default value for the column. The second option is unavailable for the **Computed** field type.

Click 'OK' when you are done to create the new table with the parameters you set.

The created table will be opened in the **Table Editor**, where you can create and edit table fields and indices, manage table data, and so on (see below).

The table will also become available in the database tree of the **DB Explorer**.



To edit the existing table (manage its fields, indices, data, etc)

- 1 Find the table you want to edit in the DB Explorer tree (press Ctrl+F for quick searching).
- 2 Double-click the table.

or

- 2 Right-click and select the **Edit Table** <Table_Name> item in the popup menu.

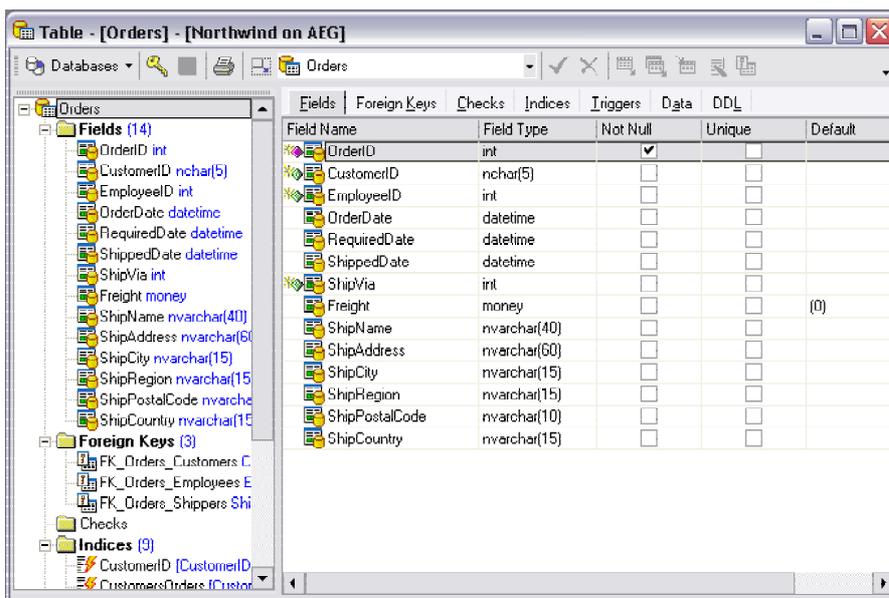
Now you can manage table subobjects and data on the appropriate tabs of the **Table Editor**.

Table Editor

Table Editor is a powerful tool, allowing you to create, edit and drop table fields and indices, manage table data and set other table properties. From the **Table Editor** you can activate various MS SQL Manager tools for working with the database table: **Grant Manager**, **Print Metadata Dialog**, **BLOB Viewer/Editor** and more.

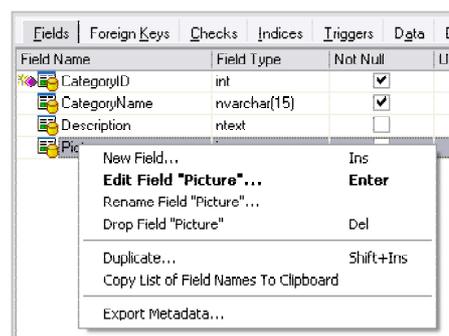
In the left part of the window there is a tree of table's subobjects and linked

objects: fields, foreign keys, checks, indices and triggers. It allows you to access the required object quickly. Using the **Databases** drop-down button on the editor toolbar you can switch between the active databases. The drop-down list of all the database tables on the toolbar allows you to change the edited table.



To manage the table subobjects and linked objects - fields, foreign keys, etc. - use the appropriate tabs of the **Table Editor**. On each of these tabs you can see the list of objects with their properties. The popup menus of these tabs allow you to create, edit and drop objects. Creating and editing objects takes place in the proper object editors, e.g. **Field Editor**, **Index Editor**, etc.

The popup menu of the 'Fields' tab also allows you to duplicate one of the fields (create a new field with the same properties as the selected field has) and copy all the field names to the Windows Clipboard.

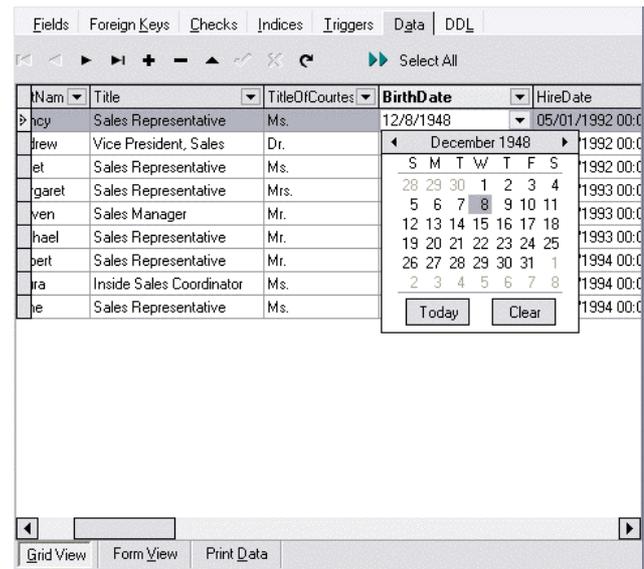


On the 'Data' tab the table data are displayed. They can be viewed in three modes (chosen by clicking the according button at the bottom of the window):

- ✓ **Grid View** - view data as a grid;
- ✓ **Form View** - view data as a form: there is only one record displayed at the time, to view another record use the navigation buttons.
- ✓ **Print Data** - view data in WYSIWYG mode, ready for printing. The acquired query can be saved to file and/or printed.

To navigate data, use buttons above the grid. To edit record data, just click in the appropriate cell. To edit BLOB data, click button  on the toolbar, or right-click in the grid and choose item 'Edit BLOB' in the popup menu.

You can also export these data to file ('Export Data' item in the popup menu or button  on the toolbar), export them as INSERT statement to the SQL Script ('Export as Insert' item in the popup menu or button  on the toolbar), or import data to the table from MS Excel, DBF, TXT or CSV file ('Import Data' item in the popup menu or button  on the toolbar).



The 'Description' tab displays a simple edit area, where you can set optional text, describing the current table. This tab is available only for SQL Server 200 or higher.

The 'DDL' tab displays the SQL text for creating the current table with all the parameters you set: fields, keys, etc. This text can't be edited, but it can be copied to the clipboard.

The control panel of the **Table Editor** provides the following functions:

Databases  - use this drop-down menu to switch between the databases. If you switch to the database, which is not currently active, you'll be offered to connect to it. After you switch to the new database, the first table of this database becomes active in the **Table Editor**. To switch between the tables, use the drop-down list of the current database tables in the middle of the panel.

Grants On Table  - use this button to activate the **Grant Manager** for the current table, where you can set the access grants for the table.

Save Description  - this button saves the table description, set on the 'Description' tab.

Print Table Metadata  - this button allows you to print the table metadata: fields, indices, description and DDL. The dialog window that appears after clicking this button also allows you to preview the report before printing or design it, using the FastReport report designer.

Default Size  - this button brings the window to its default size (restricted by the main window and the **DB Explorer**).

Table Properties  - this button allows you to edit the table properties, set on its creation: table type, attributes, etc.

Commit Transaction  / **Rollback Transaction**  - use these buttons to commit or rollback the current transaction.

Field Editor

To add a field to the table

- 1 Open the table in the Table Editor.
- 2 Open the **Fields** tab.
- 3 Right-click and select the **New Field** item from the popup menu (the Field Editor dialog will appear).
- 4 Set the field properties

Edit Field

To edit the table field

- 1 Open the table in the Table Editor.
- 2 Open the **Fields** tab.
- 3 Double-click the field to edit.

or

- 4 Right-click on the field and select the **Edit Field <Field_Name>** item from the popup menu.

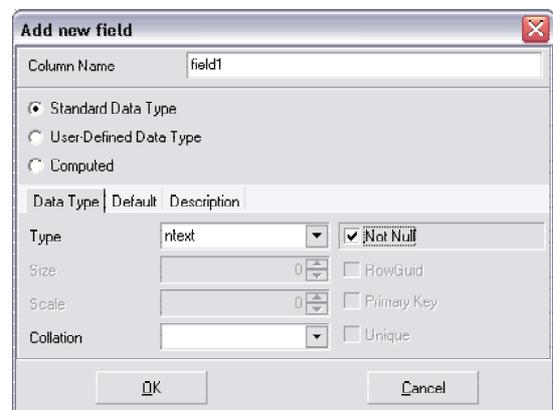
Now the field is available for editing in the Field Editor dialog.

Use **Field Editor** to create and edit table fields.

Set the field name in the 'Column' edit field, and select the field type – the **Standard Data Type**, the **User-Defined Data Type** or the **Computed** field type.

Data Type

This tab is available if the **Standard Data Type** or the **User-Defined Data Type** is selected.



- ✓ **Type** - here you can set the field type by selecting it from the drop-down list of the standard or user-defined data types.
- ✓ **Size** - defines the length of the field value.
- ✓ **Scale** - defines the precision of the field value for float data types.
- ✓ **Collation** - defines the collation for text and char values.

Identity

This tab is available only for integer field types or for user-defined types based on integer types. It allows you to create an identity column.

- ✓ **Identity** - this option specifies that the new column is an identity column
- ✓ **Seed** - this value is used for the first row loaded into the table.
- ✓ **Increment** - this value is added to the identity value of the previous row loaded.

Formula

This tab is available if the **Computed** field type is selected. It allows you to set an expression that defines the value of the column.

Default

This tab allows you to define the default value for the column. You can either select the default object from the database defaults or define the default value for the column. The second option is unavailable for the **Computed** field type.

Description

This tab is available only for SQL Server 2000 or higher. Here you can type any optional text describing this field.

Foreign Key Editor

To add a foreign key to the table

- 1 Open the table in the Table Editor.
- 2 Open the **Foreign Keys** tab.
- 3 Right-click and select the **Add Foreign Key** item from the popup menu.

To edit the table foreign key

- 1 Open the table in the Table Editor.
- 2 Open the **Foreign Keys** tab
- 3 Double-click the foreign key to edit

or

- 3 Right-click on the foreign key and select the **Edit Foreign Key** item from the popup menu

This opens the **Foreign Key Editor** dialog, where you can select fields for the key.

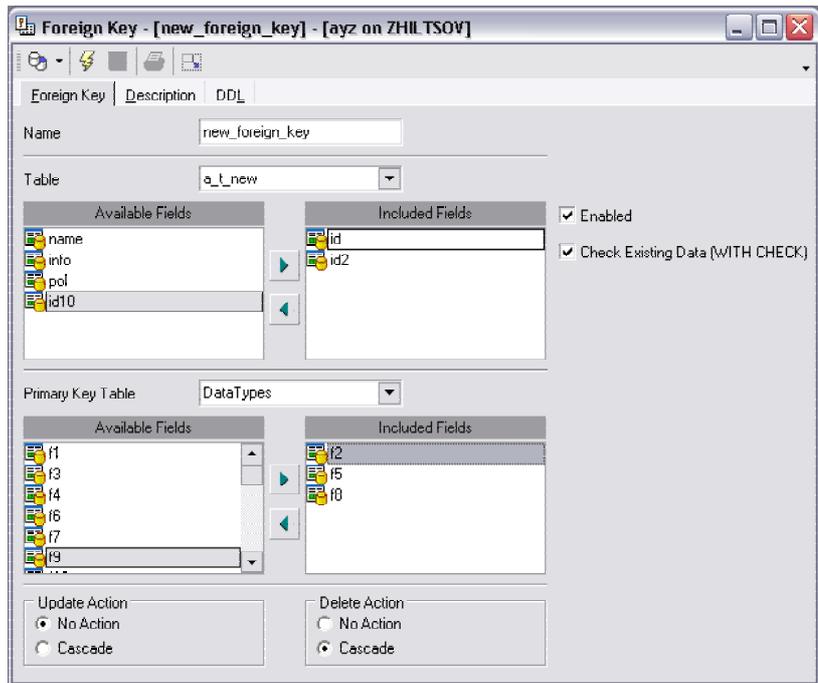
The **Foreign Key Editor** allows you to create and edit foreign keys for the table.

The following foreign key properties are available:

- ✓ **Foreign Key Name** – the name of the foreign key, it must be unique for the current database.
- ✓ **Table** - select the foreign table for the key from the drop-down list of the database tables.
- ✓ **Available Fields/Included Fields** - to include fields to the key, move the fields from the **Available Fields** list to the **Included fields** by double-clicking or dragging them. To remove the fields from the key, move them back in the same way. You can also use buttons >, < to move the selected fields (multiple fields are selected by *Ctrl* or *Shift*).

- ✓ **Primary Key Table** - select the foreign table for the primary key from the drop-down list of the database tables.

- ✓ **Available Fields/Included Fields** - to include fields to the primary key, move the fields from the **Available Fields** list to the **Included fields** by double-clicking or dragging them. To remove the fields from the key, move them back in the same way. You can also use buttons >, < to move the selected fields (multiple fields are selected by *Ctrl* or *Shift*).



- ✓ **On Delete Action, On Update Action** - these options are available only in SQL Server 2000 or higher. Choose an action for changing the foreign key in case of primary key change (separately on deleting and updating a record). The following variants are possible:

- NO ACTION** Does not change the foreign key; may cause the primary key update to fail due to referential integrity checks;
- CASCADE** For ON DELETE, deletes the corresponding foreign key; for ON UPDATE, updates the corresponding foreign key to the new value of the primary key;

- ✓ **Enabled** - specifies that the foreign key is enabled or disabled.
- ✓ **Check Existing Data** - specifies whether the data in the table is or is not validated against a newly added or re-enabled foreign key.

On the Description tab you can type any optional text describing the foreign key. This tab is available only for SQL Server 2000 or higher.

The 'DDL' tab displays the SQL text for creating the current foreign key with all the parameters you set. This text can't be edited, but it can be copied to the clipboard.

Check Editor

In this window you can set the new check condition for the table or edit the existing one.

The following check properties are available:

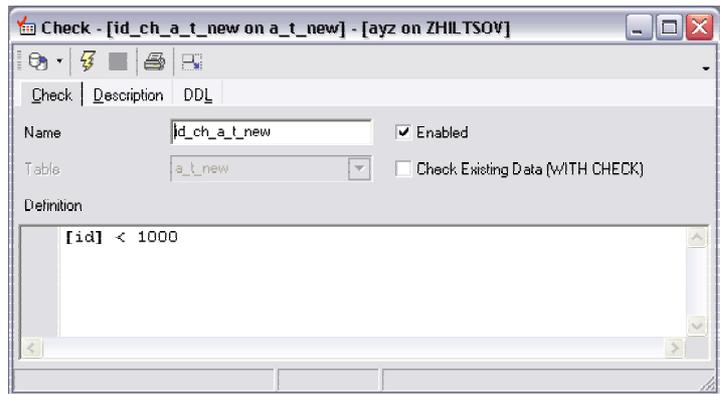
- ✓ **Name** - set the check name.
- ✓ **Table** - select the table for the check from the drop-down list of the database tables.
- ✓ **Enabled** - specifies that the check is enabled or disabled.

- ✓ **Check Existing Data** - specifies whether the data in the table is or is not validated against a newly added or re-enabled check.

On the Description tab you can type any optional text describing the check. This tab is available only for SQL Server 2000 or higher.

The 'DDL' tab displays the SQL text for

creating the current check with all the parameters you set. This text can't be edited, but it can be copied to the clipboard.



Index Editor

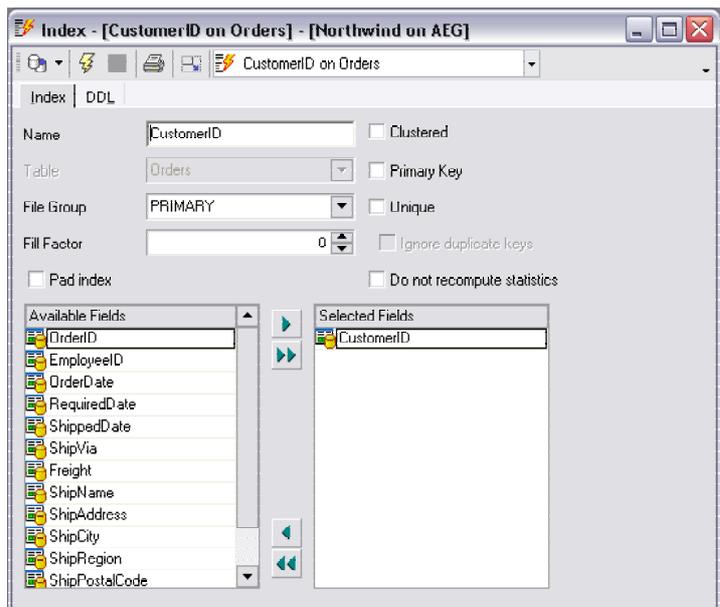
Use **Index Editor** to create the new table indices or edit the existing ones.

First set the index name in the 'Index Name' edit field. Then set the following index properties:

- ✓ **Table** - select the table that contains the column or columns to be indexed.

- ✓ **File Group** - select the file group to store the index.

- ✓ **Fill Factor** - specifies a percentage that indicates how full SQL Server should make the leaf level of each index page during index creation. When an index page fills up, SQL Server must take time to split the index page to make room for new rows, which is quite expensive. For update-intensive tables, a properly chosen **Fill Factor** value yields better update performance than an improper **Fill Factor** value.



- ✓ **Clustered** - creates an object where the physical order of rows is the same as the indexed order of the rows, and the bottom (leaf) level of the clustered index contains the actual data rows. A table or view is allowed one clustered index at a time.

- ✓ **Primary Key** - check this option to create the primary key.

- ✓ **Unique** - check this option to create the unique index (one in which no two rows are permitted to have the same index value). A clustered index on a view must be unique.

- ✓ **Ignore Duplicate Keys** - this option is available if the **Unique** option is checked. This option controls what happens when an attempt is made to insert a duplicate key value into a column

that is part of a unique clustered index. If this option is checked for the index and an INSERT statement that creates a duplicate key is executed, SQL Server issues a warning and ignores the duplicate row.

- ✓ **Pad Index** - this option specifies the space to leave open on each page (node) in the intermediate levels of the index. The **Pad Index** option is useful only when **Fill Factor** is specified, because **Pad Index** uses the percentage specified by Fill Factor.
- ✓ **Do not recompute statistics** - specifies that out-of-date index statistics are not automatically recomputed
- ✓ **Available Fields/Included Fields** - to include fields to the index, move the fields from the **Available Fields** list to the **Included fields** by double-clicking or dragging them. To remove the fields from the index, move them back in the same way. You can also use buttons >, < to move the selected fields (multiple fields are selected by *Ctrl* or *Shift*)

On the Description tab you can type any optional text describing the index. This tab is available only for SQL Server 2000 or higher.

The 'DDL' tab displays the SQL text for creating the current index with all the parameters you set. This text can't be edited, but it can be copied to the clipboard.

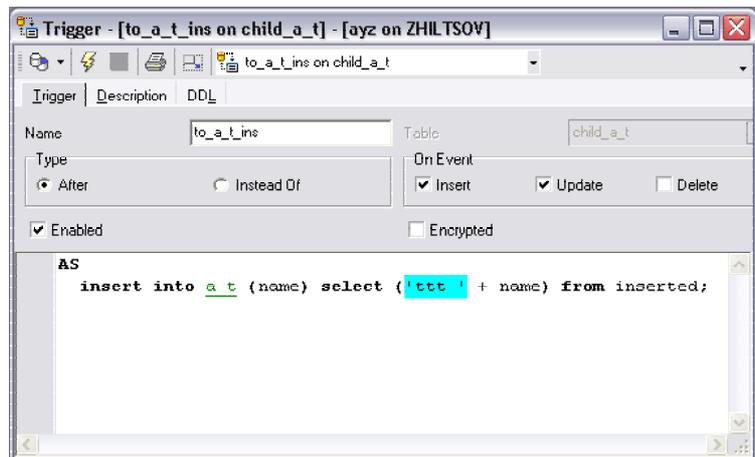
Trigger Editor

The **Trigger Editor** allows you to create new triggers and to edit the existing ones (see How to create a trigger and How to edit a trigger).

Trigger

The main trigger parameters are set on the **Trigger** tab.

- ✓ **Name** - set the name of the new trigger in the edit field.
- ✓ **Table** - the drop-down list allows you to select the table from the list of all database tables and views, for which the current trigger is created.
- ✓ **Type** - select the trigger behaviour type. If the **After** switch is selected, the trigger fires just after the event selected below. If the **Instead of** switch is selected, the trigger fires instead of the event. This option is available only for SQL Server 2000 or higher.
- ✓ **On Event** - select the events when the trigger fires - Insert, Update or Delete.
- ✓ **Enabled** - specifies that the trigger is enabled or disabled.



✓ **Encrypted** - check this option to encrypt the trigger.

The edit area allows you to enter the trigger body.

Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the trigger description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the trigger with the properties you set. This text can't be edited, but can be copied to the clipboard.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database triggers on the toolbar allows you to switch the edited trigger.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new trigger. Commit the transaction, and if it is successful, the new trigger will be created or the trigger parameters will be changed.

CHAPTER 4

DATABASE OBJECTS

View Editor

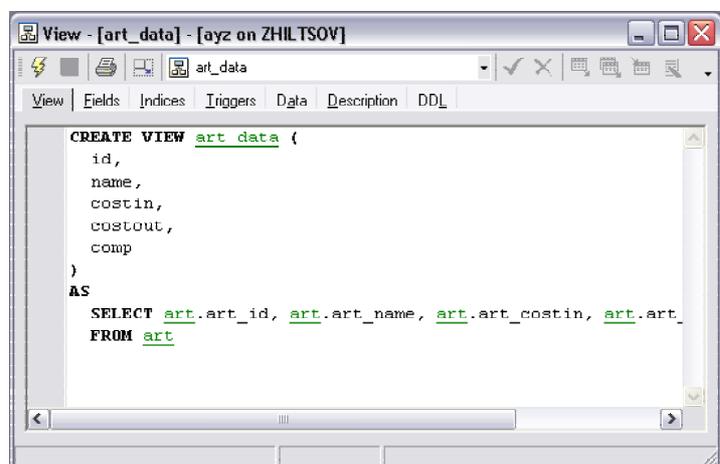
The **View Editor** allows you to create new views and edit the existing ones.

View

The basic view parameters are set on the **View** tab as SQL text for creating the view: the list of the view fields is set in brackets after the view name, the list of the selected fields is set after the SELECT statement and the condition for the selection is set after the WHERE statement.

Fields

The **Fields** page contains the properties of the view fields as a grid. The following properties are displayed: the field name, type, if the field is not null, and the default sources of the field (if any). In the edit field at the bottom of the window you can set the description of the current field (SQL Server 2000 or higher).



Clicking the column title sorts fields by the current parameter or changes the sorting direction. Right-clicking activates the popup menu, which allows you to copy the field name list to the clipboard.

Data

On the **Data** page the view data are displayed. They can be viewed in three modes (chosen by clicking the according button at the bottom of the window):

- ✓ **Grid View** - view data as a grid.
- ✓ **Form View** - view data as a form: there is only one record displayed at the time, to view another record use the navigation buttons.
- ✓ **Print Data** - view data in WYSIWYG mode, ready for printing. The acquired query can be saved to file and/or printed.

These data can't be edited, but can be exported (**Export Data** item in the popup menu or button  on the toolbar) or exported as INSERT statement to the SQL Script (**Export as Insert** item in the popup menu or button  on the toolbar).

DDL

On the **DDL** tab you can view the SQL text for creating the view with the properties you set. This text can't be edited, but can be copied to the clipboard.

Description

This tab is available only for SQL Server 2000 or higher. On the **Description** tab you can set the view description that can be any optional text. The description can be saved by clicking button **Save Description**  on the toolbar.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database views on the toolbar allows you to switch the edited view.

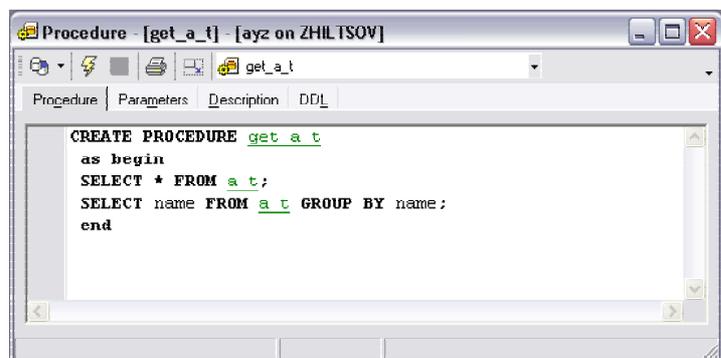
When you are done, click button **Compile**  on the toolbar to start the compilation process. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new view. Commit the transaction, and if it is successful, the new view will be created or the view parameters will be changed.

Procedure Editor

The **Procedure Editor** allows you to create new procedures and to edit the existing ones.

Procedure

The basic parameters of the stored procedure are set on the **Procedure** tab as SQL text for creating the procedure: the input parameters are set after the procedure name, the output parameters are marked with the OUTPUT keyword, and the procedure body written in Transact-SQL language, is bracketed by BEGIN and END statements.



Parameters

This tab allows you to view the procedure parameters and their properties in a form of grid. You can view the parameter type, default value and comment. You can also see if the parameter is an output parameter. You can export metadata from this tab by right-clicking and selecting the **Export Metadata** item from the drop-down menu.

DDL

On the **DDL** tab you can view an SQL text for creating the procedure with the properties you set. This text can't be edited, but can be copied to the clipboard.

Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the procedure description. Button **Save Description**  saves the edited description.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database procedures on the toolbar allows you to switch the edited procedure.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new procedure. Commit the transaction, and if it is successful, the new procedure will be created or the procedure parameters will be changed.

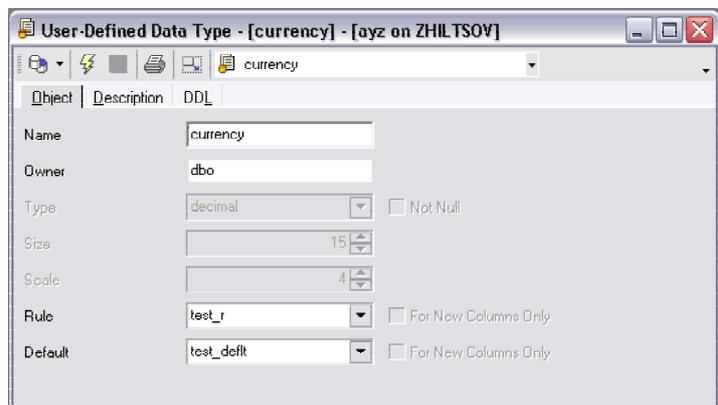
UDT Editor

The **User-Defined Type Editor** allows you to create new types and to edit the existing ones.

Object

The main type parameters are set on the **Object** tab.

- ✓ **Name** - set the name of the new type in the edit field.
- ✓ **Owner** - this field displays the UDT owner. You can't edit this value.
- ✓ **Type** - select the basic data type from the drop-down list of the standard data types.
- ✓ **Size** - defines the length of the field value.
- ✓ **Scale** - defines the precision of the field value for float data types.
- ✓ **Rule** - select the rule for the type from the drop-down list of all database rules.
- ✓ **Default** - select the default value for the type from the drop-down list of all database defaults.



Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the type description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the type with the properties you set. This text can't be edited, but can be copied to the clipboard.

The drop-down list of the current database types on the toolbar allows you to switch the edited type.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new type. Commit the transaction, and if it is successful, the new type will be created or the type parameters will be changed.

UDF Editor

The **UDF Editor** allows you to create new user-defined functions and to edit the existing ones. User-Defined Functions are available only in SQL Server 2000 or higher.

Function

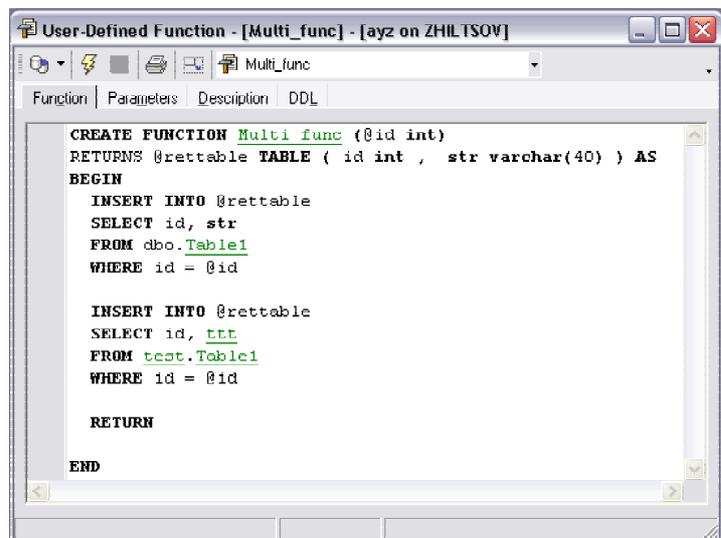
The basic parameters of the user-defined function are set on the **Function** tab as SQL text for creating the function: the input parameters are set in brackets after the function name, the output data type is set after the RETURNS statement, and the function body written in Transact-SQL language, is bracketed by BEGIN and END statements.

Parameters

This tab allows you to view the function parameters and their properties in a form of grid. You can view the parameter type, default value and comment. You can also see if the parameter is an output parameter. You can export metadata from this tab by right-clicking and selecting the **Export Metadata** item from the drop-down menu.

DDL

On the **DDL** tab you can view the SQL text for creating the function with the properties you set. This text can't be edited, but can be copied to the clipboard.



Description

The **Description** tab contains the function description. Button **Save Description**  saves the edited description.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database UDFs on the toolbar allows you to switch the edited function.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new function. Commit the transaction, and if it is successful, the new function will be created or the function parameters will be changed.

User Editor

The **User Editor** allows you to create new users and to edit the existing ones.

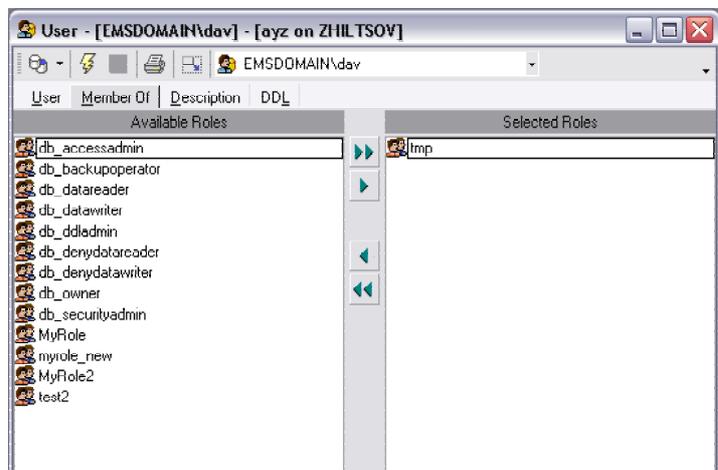
User

The main user parameters are set on the **User** tab.

- ✓ **Login** - select the name of the login for the new security account in the current database.
- ✓ **Name** - define the name for the account in the database.

Member Of

On this tab you can define the roles for the user. To include the user to the roles, move the roles from the **Available Roles** list to the **Included Roles** by double-clicking or dragging them. To remove the user from the roles, move them back in the same way. You can also use buttons >, < to move the selected roles (multiple roles are selected by *Ctrl* or *Shift*).



Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the user description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the user with the properties you set. This text can't be edited, but can be copied to the clipboard.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database users on the toolbar allows you to switch the edited user.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new user. Commit the transaction, and if it is successful, the new user will be created or the user parameters will be changed.

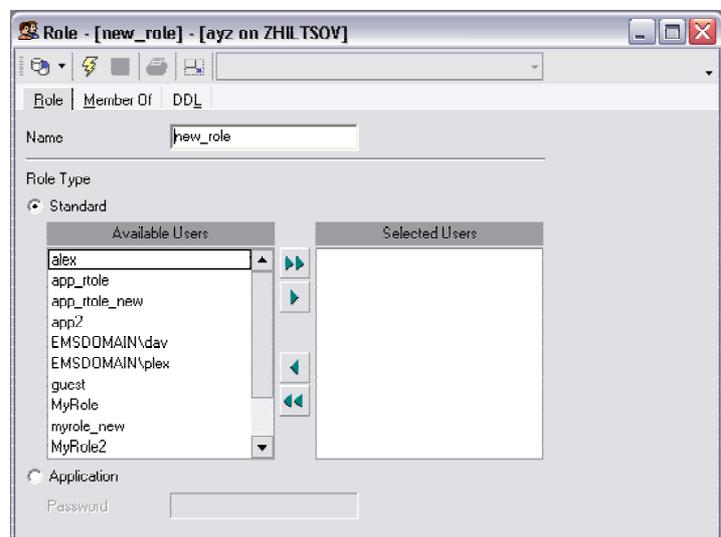
Role Editor

The **Role Editor** allows you to create new role and to edit the existing ones.

Role

The main role parameters are set on the **Role** tab.

- ✓ **Name** - defines the name of the role.
- ✓ **Role Type** - select the role type - **Standard** or **Application**. If the **Standard** role type is selected, you can add the users to this role by selecting them from the **Available Users** list and dragging them to the **Selected Users** list, or double-clicking them. To create the application role select the **Application** switch and define the role password in the **Password** edit field.



Member Of

On this tab you can define the roles of this role. To include the role to another roles, move the roles from the **Available Roles** list to the **Included Roles** by double-clicking or dragging them. To remove the role from another roles, move them back in the same way. You can also use buttons >, < to move the selected roles (multiple roles are selected by *Ctrl* or *Shift*).

Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the role description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the role with the properties you set. This text can't be edited, but can be copied to the clipboard.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

The drop-down list of the current database roles on the toolbar allows you to switch the edited role.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new role. Commit the transaction, and if it is successful, the new role will be created or the role parameters will be changed.

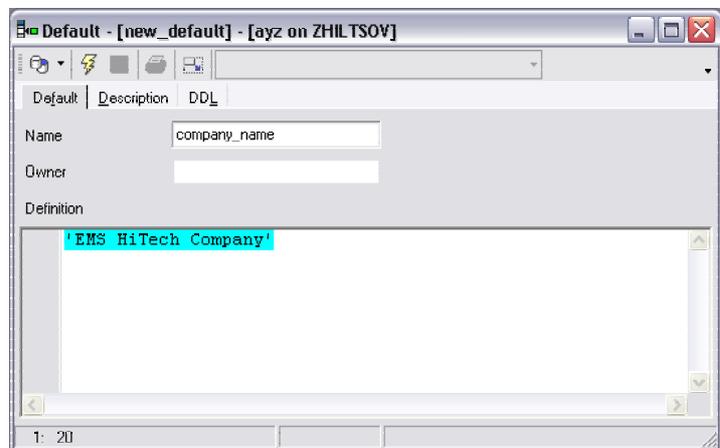
Default Editor

The **Default Editor** allows you to create new database defaults.

Default

The main default parameters are set on the **Default** tab.

- ✓ **Name** - set the name of the new default in the edit field.
- ✓ **Owner** - this field displays the default owner. You can't edit this value.
- ✓ **Definition** - set the value of the default in this edit area.



Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the default description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the default with the properties you set. This text can't be edited, but can be copied to the clipboard.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new default. Commit the transaction, and if it is successful, the new default will be created.

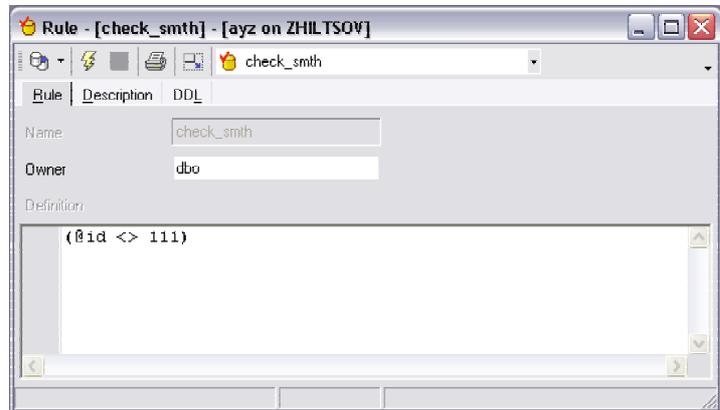
Rule Editor

The **Rule Editor** allows you to create new database rules (See How to create a rule).

Rule

The main rule parameters are set on the **Rule** tab.

- ✓ **Name** - set the name of the new rule in the edit field.
- ✓ **Owner** - this field displays the rule owner. You can't edit this value.
- ✓ **Definition** - set the statement of the rule in this edit area.



Description

This tab is available only for SQL Server 2000 or higher. The **Description** tab contains the rule description. Button **Save Description**  saves the edited description.

DDL

On the **DDL** tab you can view the SQL text for creating the rule with the properties you set. This text can't be edited, but can be copied to the clipboard.

When you are done, click button **Compile**  on the toolbar to start the process of compilation. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new rule. Commit the transaction, and if it is successful, the new rule will be created.

CHAPTER 5

DATA MANIPULATION

Export Data Dialog

You can export data from table, view or query result to any of 14 available formats (MS Access, MS Excel, MS Word, RTF, HTML, TXT and more). **Export Data Dialog** is a very powerful tool, allowing you to export data easily and quickly, and set various export options. It is based on **EMS QuickExport Component Suite** (check <http://www.ems-hitech.com/quickexport/> for details).

To export data from a table

- 1 Select the table to export data from in the DB Explorer tree (press Ctrl+F for quick searching).
- 2 Right-click and select the **Data Manipulation** item from the popup menu.
- 3 Select the **Export Data**  item from the **Data Manipulation** submenu.

or

- 1 Open the table to export data from in the Table Editor.
- 2 Open the **Data** tab.
- 3 Click the **Export Data**  button on the toolbar.

To export data from a query

- 1 Build a query in the SQL Editor or Visual Query Builder.
- 2 Execute the query.
- 3 Open the **Results** tab.
- 4 Click the **Export Data**  button on the toolbar.

Any of the actions above open the **Export Data Dialog**.

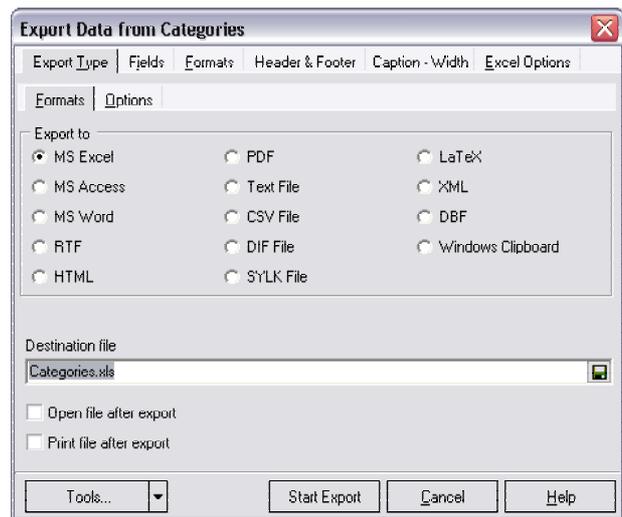
Export Type

Formats

Select the result data format. The file name extension in the **Destination File** box changes according to the selected export type.

Options

- ✓ **Go to the first record** - checked option starts exporting from the first record of the data set.
- ✓ **Export empty table** - checked option allows exporting empty data set.
- ✓ **Current record only** - checked option exports only current data set record.
- ✓ **Skip ... records** - defines the number of records, which are not exported.
- ✓ **Export all records / Export only ... records** - defines whether all records are exported from the dataset or only a certain number of records.
- ✓ **Destination file** - set the name of the result file to export data to.
- ✓ **Open file after export** - check to open the result file in the appropriate program after export.
- ✓ **Print file after export** - check to send the result file for printing after export.



Fields

This tab allows you to select certain fields from the data set for exporting. If you want all the fields to be exported you can skip this tab.

To select fields, move them from the **Available Fields** list to the **Included Fields** one. To move the field from one list to another double-click it or select it (use *Ctrl* or *Shift* to select multiple fields) and click button > or <. To move all the fields click button >> or <<.

If you leave the **Included Fields** list empty, all the fields are exported default, except BLOB fields. To export BLOB fields, you must select them for export.

Formats

Standard

This tab allows you to customize the data formats applied to exported data. Edit the format masks to adjust the result format in the way you need.

User

On this tab you can set the required data format for certain fields only. This tab is available only if there are fields with adjusted formats in the data set. These fields are listed in the **Field Name** column. The field format is set in the **Format** column, and the sample field value in the given format is displayed in the **Sample** column.

Header & Footer

This tab allows you to set headers and footers for the result documents. It is unavailable for Access, XML and DBF types.

Caption & Align & Width

✓ **Allow Captions** - checked option allows column captions in the result file.

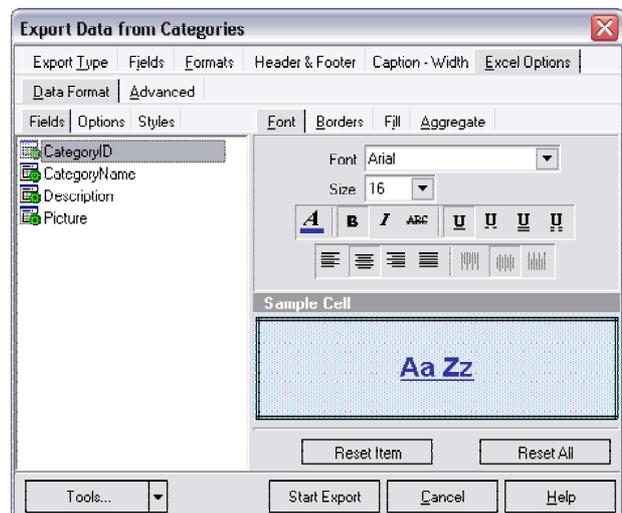
Use grid to set the captions of the result table columns. Default column captions correspond to the database field names.

For some of the export types columns **Width** and/or **Align** are also available. In the **Align** column you can select the text alignment for the certain column (Left, Right or Center). In the **Width** column you can set the numeric value, defining the width of the result column. This tab is unavailable for DBF export type.

Excel Options

Data Format

This tab allows you to define a specific format for each data column, header, footer, column captions and aggregate functions. Select the field from the **Fields** list or select an element of the result Excel sheet (captions, footer, etc.) from the **Options** list and set its font, borders and fill. All the changes you make are displayed in the sample cell. For data columns you can also define aggregate functions (**Aggregate** tab): AVG (average value), MAX (maximum value), SUM (sum of the values), and MIN (minimum value). The aggregate function is added to the cell under the column. Click **Reset item** to reset all format setting for the current item, click **Reset all** to reset format settings for all items.



You can also define repeating styles for data columns or rows on the **Styles** tab. Click button  to add a style and set its format. After you define all the styles, set the strip style to **Col** or **Row** (on this depends if these styles will be applied to columns or rows). To delete a style, use button . To load and save styles use buttons  and .

Advanced

This tab allows you to define headers and footers of the result document pages (the default page footer is page number) and the sheet title.

Access Options

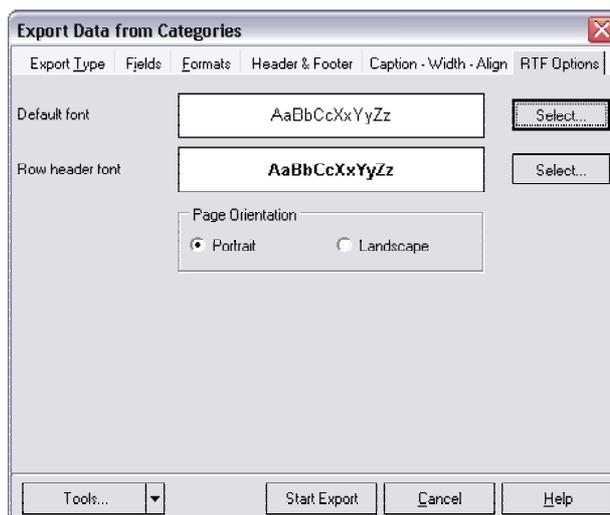
✓ **Table Name** - set the name of the Access table, already exists or needs to be created.

✓ **Create Table if it does not exist in the database** - checked option creates the table with the given name in the result Access database.

Word / RTF Options

This tab defines options for MS Word and RTF export.

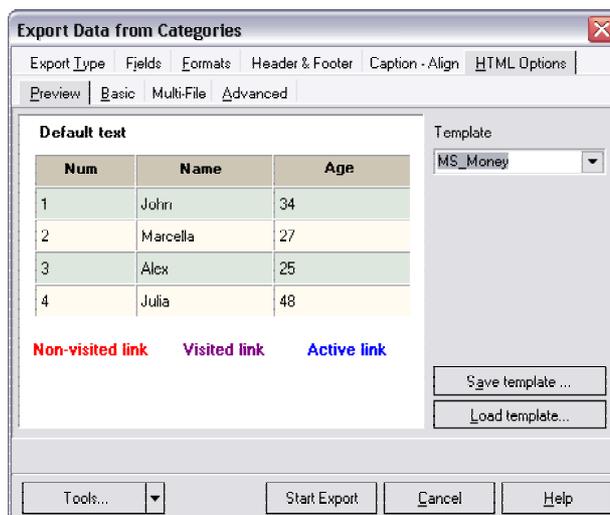
- ✓ **Default font** - select the font to use for displaying the table data in the result file.
- ✓ **Row header font** - set the font for the column captions.
- ✓ **Page Orientation** - select the result page orientation - portrait or landscape.



HTML Options

Preview

This tab allows you to define the colors of various elements of the result HTML document, such as: default font color, header font color, table font color, background colors and link colors. To change the color of some element, just click this element and set the color you need. You can also use various HTML templates to make the result document look in the way you need. Select a template from the **Template** drop-down list or click **Load template** to browse for templates. If you have changed some HTML elements manually and you like the result, you can save it as a template for future using by clicking **Save as template** button.



Basic

This tab allows you to define the title of the result document and set the mode of the CSS (Cascade Style Sheets) using. The default CSS using is internal, but you can set to external and define your own CSS file in the **CSS file name** edit field.

Multi-File

This tab allows you to export your data not to a single HTML document, but to a number of documents. Check option **Use multi-file export** to enable this mode and define the maximum number of records in each result file in the appropriate edit field. The **Generate index** option defines if an index page should be generated without any data but only with links to data pages. To customize these links use **Index Link Template**. Set a template for links on the index page, e.g. 'Page_' or 'Part '. The **Navigation** panel allows you to define whether navigation links are placed on the top and bottom of data pages or not (**On Top**, **On Bottom** options) and set templates for these links.

Advanced

On the **Body options** panel you can set the default font name of the result document and set the document background. In the **Advanced attributes** edit field you can define any attribute values for the HTML tag <BODY>. The **Table options** panel allows you to define such attributes as **Cell padding**, **Cell Spacing**, **Border** and **Background**. In the **Advanced attributes** box you can define any attribute values for the HTML tag <TABLE>.

PDF Options

Select the document font in the list at the left (Header Font, Caption Font, Data Font, Footer Font) and set its properties at the right - font name, encoding, size and color. The **Sample** box shows how the selected element will look like in the result PDF document.

Grid Options

Set options for displaying tables in the result PDF document.

Page Options

- ✓ **Page Size** - allows you to set a pre-defined fixed page size for the result document. If you change page height or width manually, **Page Size** becomes User.
- ✓ **Width** - page width in **Units** for the result document.
- ✓ **Height** - page height in **Units**.
- ✓ **Units** - units in which page width and height are set.
- ✓ **Orientation** - page orientation - portrait or landscape.
- ✓ **Margins** - set margins for the result pages in the appropriate boxes.

ASCII Options

This tab defines options for Text and CSV export.

TXT Options

If option **Calculate column width** is checked (default), then width of each column in the result file is set automatically depending on the maximum number of symbols in the column cells. **Spacing** sets the distance (in symbols) between the data columns in the result file.

CSV Options

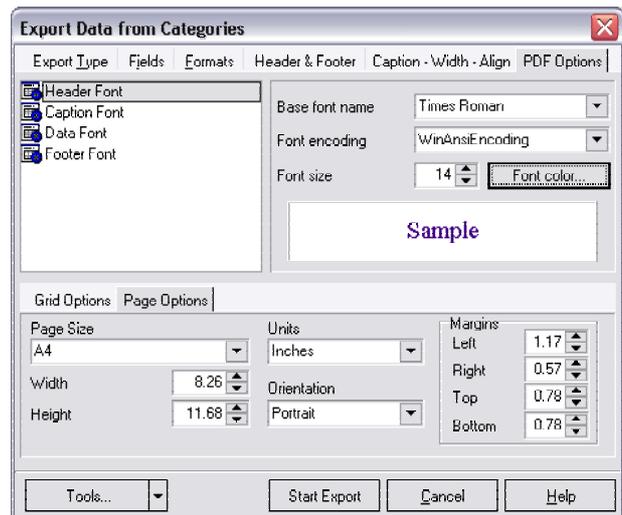
If option **Quote Strings** is checked, then all the strings are exported as quotations, and the apostrophes are doubled. **Comma** defines the symbol, delimiting columns in the result file.

XML Options

- ✓ **Encoding** - defines the encoding of the result XML document.
- ✓ **Standalone** - check this option to make the result document standalone.

Export Data as INSERT Dialog

You can export data from table, view or query result as SQL statement INSERT to the SQL script. After that you'll be able to execute this script and load all the exported data to another table. This can be useful for data transfer, e.g. from one database to another.



To export data as INSERT from a table

- 1 Select the table to export data from in the DB Explorer tree (press Ctrl+F for quick searching).
- 2 Right-click and select the **Data Manipulation** item from the popup menu.
- 3 Select the **Export Data as INSERT**  item from the **Data Manipulation** submenu.

or

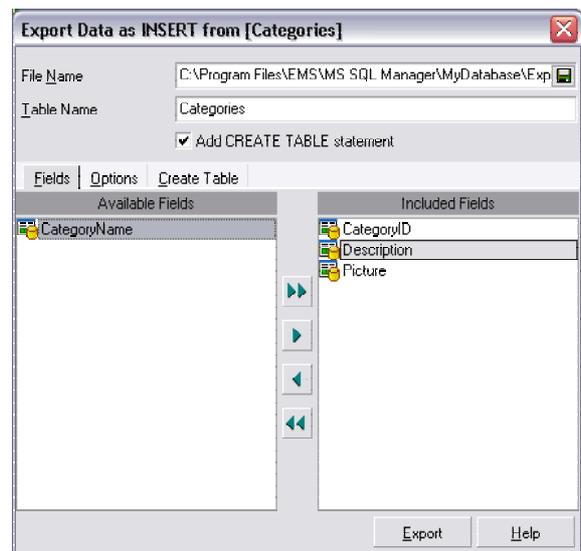
- 1 Open the table to export data from in the Table Editor.
- 2 Open the **Data** tab.
- 3 Click the **Export Data as INSERT**  button on the toolbar.

To export data as INSERT from a query

- 1 Build a query in the SQL Editor or Visual Query Builder.
- 2 Execute the query.
- 3 Open the **Results** tab.
- 4 Click the **Export Data as INSERT**  button on the toolbar.

Any of the actions above open the **Export Data As INSERT Dialog**.

- ✓ **File Name** - set the name of the result file to export data to.
- ✓ **Table Name** - set the table name to use in the INSERT statements and in the CREATE TABLE statement.
- ✓ **Add CREATE TABLE statement** - checked option adds the CREATE TABLE statement to the result SQL script with the table name set in **Table Name**. You can view and edit this statement on the **Create Table** tab.



Fields Tab

On this tab the list of fields to export is set. All the table fields are included to the **Included Fields** list default; if you don't want some fields to be exported, move them back to the **Available Fields** list. To move the field from one list to another double-click it or select it (use *Ctrl* or *Shift* to select multiple fields) and click button > or <. To move all the fields click button >> or <<.

Options Tab

- ✓ **Replace non-print characters in strings with spaces** - checked option replaces all non-print characters in the result SQL script with spaces.
- ✓ **Load script into Script Editor after export** - checked option load the created SQL script into the SQL Script Editor after export.
- ✓ **Insert 'COMMIT' after each ... records** - defines the number of records, after exporting which the COMMIT statement will be automatically inserted into the result SQL script.

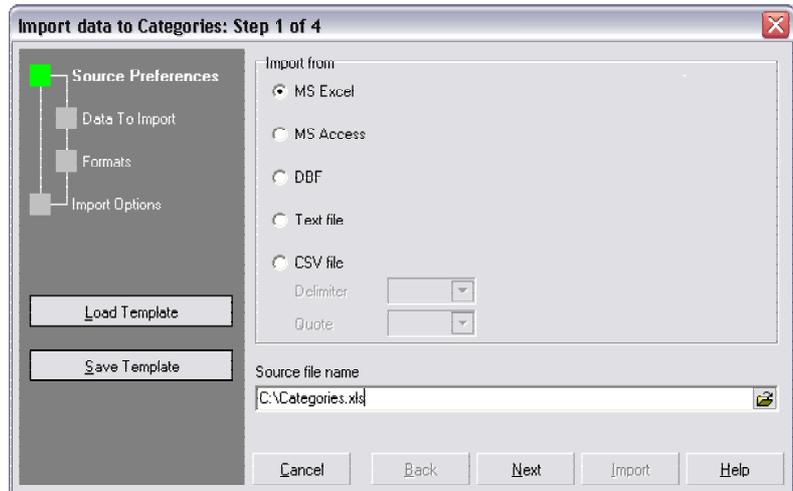
When you are done, click **Export** to start export. If **Load script into Script Editor after export** was checked, the result SQL file will be opened in the SQL Script Editor.

Import Data Wizard

You can import data to the table from MS Excel, DBF, TXT or CSV file, using the **Import Data Wizard**. This wizard is a very powerful tool, allowing you to import data easily and quickly, and set various import options. It is based on the **EMS QuickImport Component Suite** (check <http://www.ems-hitech.com/quickimport/> for details).

To activate the **Import Data Wizard**, select the table in the **DB Explorer**, right-click and choose item 'Import Data' from the 'Data Manipulation' submenu or open the 'Data' tab of the **Table Editor**, click button **Import Data**  on the toolbar or right-click in the grid and choose item 'Import Data' in the popup menu.

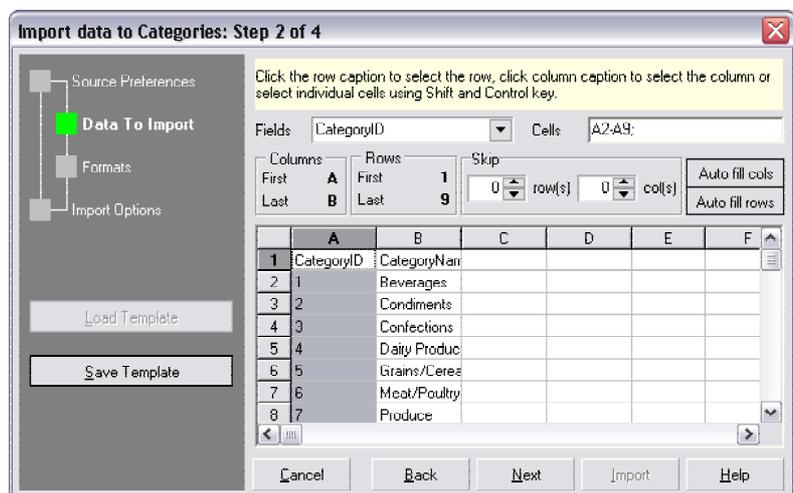
On the first step of the wizard you should choose the file type and set the filename of the source file (use button  to browse for files). If you choose 'Import from CSV' then you should also select the character, delimiting columns in the source table. Click 'Next' to proceed to the next step.



Step 2 allows you to set the correspondence between the source table columns and the database table fields. It varies for each import type.

Import from Excel

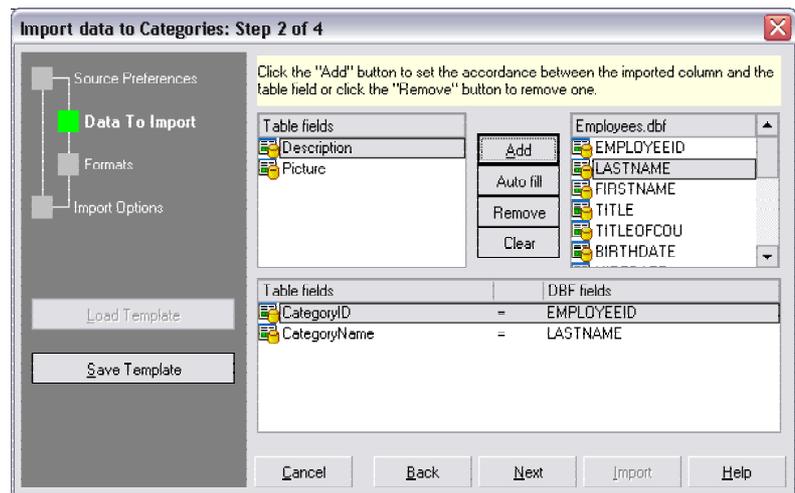
Select the database table field from the 'Fields' drop down-list and select the cells to import to this field in the grid. To select column or row in the grid, just click its caption. You can also set this value manually in the 'Cells' edit field. Then select the next field and set the cells for this field. If the source table columns (or rows) and the database table fields are ordered in the same way, you can set the correspondence automatically by clicking button 'Auto fill cols' (or 'Auto fill rows'). The first table field will correspond to the first source table column (or row), second field to the second column (row), etc. If the first rows (or columns) of the source table contains data, not intended for import, you can skip them by setting the appropriate value in the 'Skip ... row(s)' (or 'Skip ... col(s)') edit field.



Import from DBF

First select the database field from the 'Table fields' list. Then select the corresponding field in the '<table_name>.dbf' list.

Click button 'Add' to link these fields. These fields will be added to the list at the bottom of the window. Repeat these operations for each database table field. If you want to remove the accordance you set, select the linked fields in the bottom list and click button 'Remove'. If the source table fields and the database table fields are ordered in the same way, you can set the correspondence automatically by clicking button 'Auto fill'. First field of the source table will correspond to the first field of the database table, second field to the second field, etc.



Import from TXT

First select the database table field from the 'Fields' drop-down list. Then set two separator lines to delimit the source table column. Click to add a separator, double-click to delete one. Drag separators to change the column width. You can also set the column starting position and the column width manually in the edit fields 'Pos' and 'Size'. When you set the separators correctly, proceed to another field and repeat these operations for each database table field. If you don't want some first rows of the source table to be imported set the number of such rows in the 'Skip ... first line(s)' edit field.

Import from CSV

If the delimiter you have defined on the first step was found in the source table, then you will find the table columns already separated and delimited. Select the database table field from the 'Fields' drop-down list. Then click the corresponding source table column or set the 'Col' value manually. Repeat these operations for each database table field. If the source table fields and the database table fields are ordered in the same way, you can set the correspondence automatically by clicking button 'Auto fill'. First field of the source table will correspond to the first field of the database table, second field to the second field, etc. If you don't want some first rows of the source table to be imported set the number of such rows in the 'Skip ... first line(s)' edit field.

When you are done, click 'Next' to proceed to the next step.

On the step 3 of the wizard you can edit the formats of the imported fields.

On the 'Base Formats' tab the following format options are available:

- ✓ **Decimal separator** - set a character, which delimits the decimal parts of the imported numbers.
- ✓ **Thousand separator** - set a



character, which separates the digit groups in the imported numbers.

- ✓ **Short date format, Long date format, Short time format, Long time format** - use these edit fields to set the date and time formats.
- ✓ **Left quotation** - set a character or a number of characters, which denote quoting in the imported strings.
- ✓ **Right quotation** - set a character or a number of characters, which denote unquoting in the imported strings.
- ✓ **Quotation action** - you can select 'Add' to add quotation marks to each imported string or 'Remove' to remove all the quotation marks from the imported strings. 'As Is' saves the original quotation marks.
- ✓ **Boolean true** - set some variants of TRUE value representation in the imported table, e.g. 'Yes' or '+'. Use new line for each new variant.
- ✓ **Boolean false** - set some variants of FALSE value representation in the imported table, e.g. 'No' or '-'. Use new line for each new variant.

On the 'Data Formats' tab you can customize the format of each imported field in case when additional formatting is required. Select the field in the 'Field Name' list and set its format in the proper edit fields.

Generator

- ✓ **Value** - use this edit field to set the initial value of the autoincrement field.
- ✓ **Step** - set the step of the autoincrement field. If it is 0 then the value of the generator will be ignored.

Constant

- ✓ **Value** - use this edit field to set the constant value of the field.

Default

- ✓ **Null** - set the value, which will be understood as NULL to set the default value.
- ✓ **Default** - set the default value of the NULL field.

Quotation

- ✓ **Left quotation** - set a character or a number of characters, which denote quoting in the imported string.
- ✓ **Right quotation** - set a character or a number of characters, which denote unquoting in the imported string.
- ✓ **Quotation action** - you can select 'Add' to add quotation marks to the imported string, 'Remove' to remove all the quotation marks from the imported string or 'As is' to save the original quotation marks.

String conversion

- ✓ **Char case** - set the case of the imported string. 'As is' saves the original string case, 'Upper' sets the whole string to upper case, 'Lower' sets the whole string to lower case, 'UpperFirst' sets the first letter of the string to upper case, 'UpperFirstWord' sets the first letter of each word to upper case.
- ✓ **Char set** - set the char set of the imported string to ANSI or OEM. 'As is' saves the original string char set.

Click 'Next' to proceed to the next step.

On the last step of the wizard the following import options are set:

- ✓ **Commit after done** - check this option to commit the transaction after import is finished.
- ✓ **Commit after ... records** - set a number of records, after importing which the transaction shall be committed.
- ✓ **Import all records** - check this option to import all records from the source table.
- ✓ **Import only ... first record(s)** - if you don't want all the records to be imported, set a number of records to import them from the source file. In this case only this number of records (beginning from the first one) will be imported.

Note, that on each step of the wizard you can use buttons 'Load Template' and 'Save Template' on the left panel, which allow you to save/restore all the import settings (file type and name, field correspondence, format options, etc.) to/from the template file. This is very useful, if you often use the same import configuration: you don't have to choose fields or edit field formats on each import session – you can simply load a previously saved template and skip all the unneeded steps.

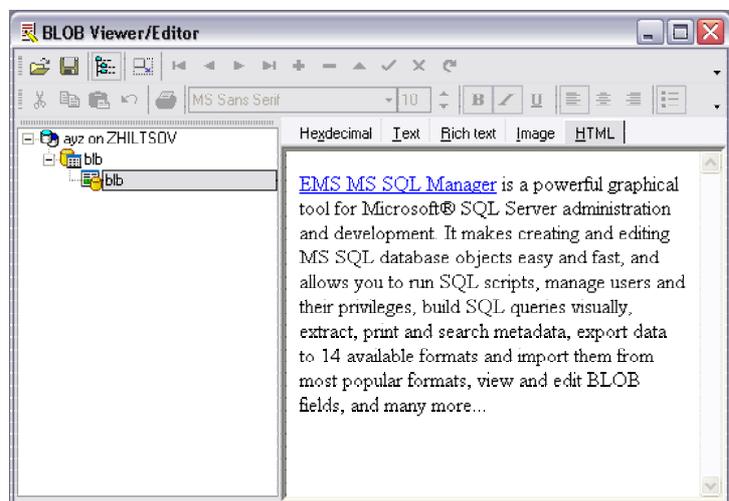
When you are done, click 'Finish' to start import.

BLOB Viewer/Editor

If there are BLOB (TEXT) fields in the table, you can edit them, using the **BLOB Viewer/Editor**. To activate the BLOB Viewer/Editor window open the appropriate table in the **Table Editor** then open the 'Data' tab. Click the **BLOB Editor**  button on the toolbar, or right-click on the grid and select the 'Edit BLOB' item in the popup menu. Note that the button and the popup menu item are disabled if active table has no TEXT fields.

The window of the editor is divided into two areas: object tree area and data view/edit area. In the object tree you can view the current database and the database table, edited field belongs to, and in the data area you can view BLOB data in different formats by choosing the proper tab ('Hexadecimal', 'Text', 'Rich Text', 'Image' and 'HTML').

Data, performed as **Image** or **HTML** are not available for editing. **Image** tab supports the following image formats: bitmaps, WMF, icons, JPEG and GIF.



The toolbars of the editor allows you to load and save files (buttons **Load from File**  and **Save to File** ) , navigate through records (the navigation panel is the same as on the 'Data' tab of the **Table Editor**) and provide various tools for editing text.

When you are done editing BLOB, just confirm the changes you made and close the editor.

CHAPTER 6

DATABASE TOOLS

SQL Editor

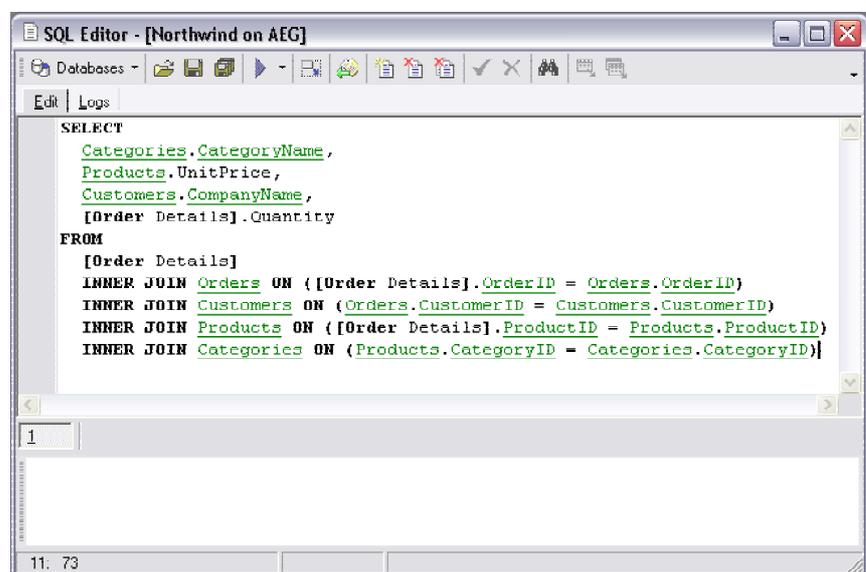
SQL Editor is the basic MS SQL Manager tool for creating and executing database queries. It allows you to create and edit SQL text for the query, prepare and execute queries and view the results of execution. **SQL Editor** supports Quick Code and Syntax Highlight systems, which make your work much easier.

Edit

The main area of the editor is situated on the **Edit** tab. This area is provided for working with the text of the query. For your convenience the Quick Code system is enabled, i.e. when you type first word symbols in the SQL text editor you are offered some variants for the word completion in a popup list (analogue of the **Code Insight** in **Delphi IDE**).

You can activate these popup lists yourself by pressing the following key combinations:

- Ctrl+Space All SQL keywords and database objects;
- Ctrl+Alt+W Keyword list;
- Ctrl+Alt+Q SQL function list;
- Ctrl+Alt+T Table list;
- Ctrl+Alt+V View list;
- Ctrl+Alt+R Role list;



Ctrl+Alt+U	User list;
Ctrl+Alt+P	Procedure list;
Ctrl+Alt+Y	Type list;
Ctrl+Alt+G	Trigger list;
Ctrl+Alt+I	Index list;
Ctrl+Alt+F	UDF list;
Ctrl+Alt+A	Default list;
Ctrl+Alt+L	Rule list;
Ctrl+Alt+E	List of all table fields (this list appears if the table name is copied to clipboard).

You can change the sorting mode of the Code Completion list items by right-clicking in the popup list and switching to the sorting mode you need: sort alphabetically by item names or sort by the scope categories (SQL keywords, tables, functions, etc).

Database objects are highlighted in the text. You can open the proper object editor by clicking the object name in the text, holding button *Ctrl* pressed on the keyboard.

The popup menu of the edit area contains standard functions for working with text (Cut, Copy, Paste, Find, Replace, Toggle Bookmarks, etc) and also functions for processing the whole query, which allow you to execute/prepare query, save/load query to/from file, and preview/print query.

When the query text is ready, click button **Execute**  on the toolbar or press F9 to check the query text for errors. If there are any errors in the query text, these errors will be displayed in the bottom area of the editor window, and the text line, containing the first error, will be indicated with a purple line.

If the text is correct the query is executed and the **Results** area becomes active.

Results

This area displays the result data returned by the query. They can be viewed in three modes (chosen by clicking the according button at the bottom of the window):

- ✓ **Grid View** - view data as a grid;
- ✓ **Form View** - view data as a form: there is only one record displayed at the time, to view another record use the navigation buttons.
- ✓ **Print Data** - view data in WYSIWYG mode, ready for printing. The acquired query can be saved to file and/or printed.

These data can't be edited, but can be exported (**Export Data** item in the popup menu or button  on the toolbar) or exported as INSERT statement to the SQL Script (**Export as Insert** item in the popup menu or button  on the toolbar).

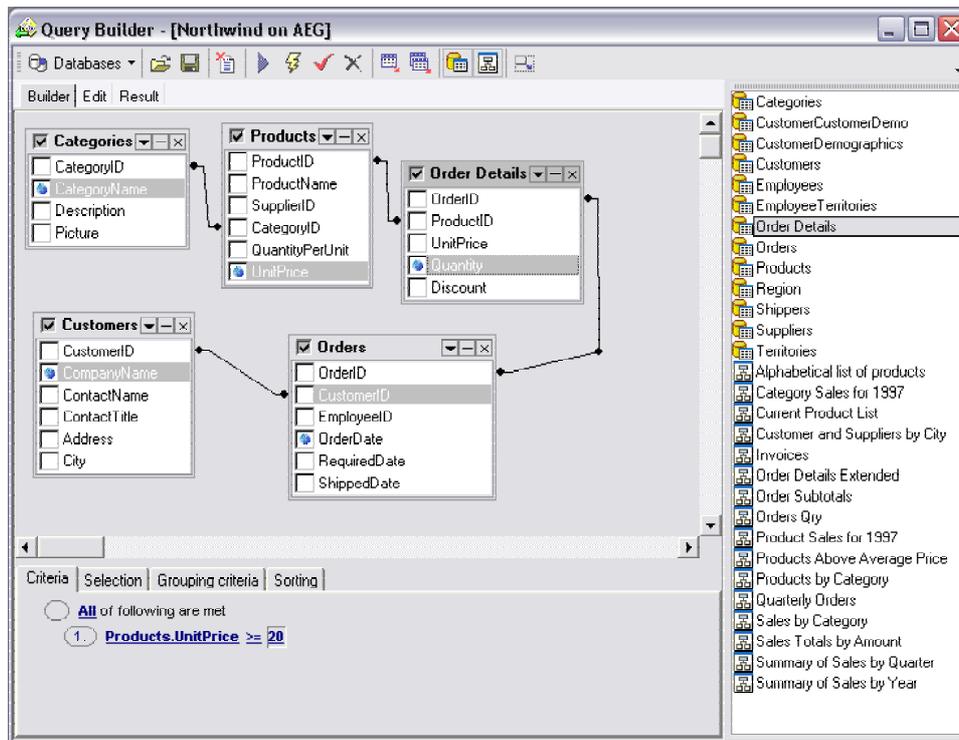
The status bar displays the number of records, acquired while executing the query. The comment bar also displays time of execution.

Logs

On the **Logs** page information of all the executed statements, including queries and carried out transactions, is displayed.

Visual Query Builder

Visual Query Builder is a powerful tool, provided for visual building database queries. Using **Query Builder** you can select tables and fields, join tables, set conditions for the selection and perform many more query operations without knowledge of SQL. **Visual Query Builder** is based on the **EMS QueryBuilder Component** (check <http://www.ems-hitech.com/querybuilder/> for details).



The main area of the **Query Builder** is the **Builder** area. Here you can build your query by placing the database tables on the area, selecting the required data and setting links between objects.

To add a table to the query, choose it in the table list at the right, then double-click it or drag it to the **Builder** area. The selected table will appear on the **Builder** area with the list of its fields. To include the table field to the query, click at the left of the field name in the list or double-click it to set the blue icon next to the field name. To include all the fields, set a flag at the left of the table alias. To remove the fields from the query, uncheck the fields; to remove the table, close it by clicking the button 'x' next to the table alias. To edit the table alias, double-click it.

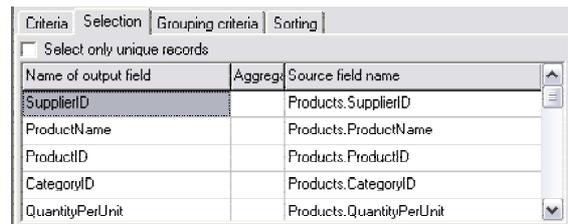
To associate tables by two fields, just drag one field from the table field list to another. This will set a link between these tables by the selected fields. When you drop a field, a line will appear between the linked fields. You can view and edit the properties of object association. To view the properties, just aim cursor to the link line and a hint, containing the association condition, will appear. To edit the properties, double click the line or right-click and choose 'Properties' item from the popup menu. A dialog window will appear, where you can change the association condition by choosing it from the list (=, >, <, >=, <=, <>). Also you can check or uncheck 'Include all from <table_name>' option for each object, included into the association. Click 'OK' to confirm the changes you made. To drop a link between the tables, right-click on the link line and choose 'Delete Link' item from the popup menu. To delete all the links of the table, click button '-' next to the table alias. To insert a point to the link line, right-click on the line and choose 'Insert Point' item from the popup menu. A new

point will appear, using which you can move the link line. It doesn't cause any changes in the query but makes the diagram performing more obvious and the visual building handler.

In the 'Criteria' area you can set the selection conditions. To add a condition, click button at the left and select 'Add condition' in the popup menu. Edit the condition by clicking its parts and setting their values. Clicking the button at the left of the condition string activates the popup menu, which allows you to add a new condition of the same enclosure level, add a new enclosure level, delete the current condition, open or close the condition, if it is composite. A simple condition string contains three fields: an argument, a condition and a second argument (if required for the condition). Clicking each field allows you to set its value. Clicking the argument field allows editing it as a text field. You can set a table name or a definite value in this field. Right-clicking the field in the edit mode activates the popup menu, which contains the 'Insert Field' function (also called by Shift+Enter). This function allows you to choose a field from the list of all the table fields, available in the query. Clicking the condition field activates the popup menu, where you choose the condition you need. The way of processing the condition is set in the upper string of the area (All, Any, None, or Not all of the following are met). Click the underlined word to change it.



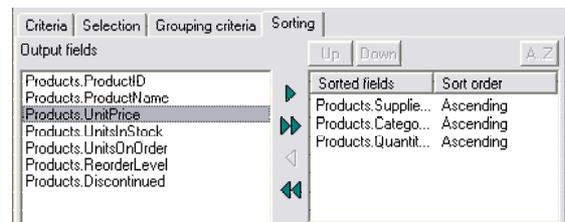
The 'Selection' area displays the output fields of the query. It allows you to edit the names of the query output fields, set their displaying order and set the aggregate functions (SUM, MIN, MAX, AVG, COUNT) for each field. To remove the field from the list, right-click the field row and choose 'Delete current row' from the popup menu. To change the input query field, double click it and then type the field name on the keyboard or choose it from the drop-down



list. To change the output query field name, double click it and type the field name on the keyboard. To set the aggregate function for the field, double click the field row in the 'Aggregate' column and then type the function name on the keyboard or choose it from the drop-down list. If you check option 'Include only unique records' then the repeated records will not be included into the query result.

In the 'Grouping Criteria' area you can set the conditions for grouping the query records. They are set in the same way as the selection conditions (see above). These conditions will be included into the HAVING statement of the current query.

Set the way of sorting the query records in the 'Sorting' area. The field list at the left represents all the output query fields; the list at the right contains fields, by which the query records will be sorted. To move the field from one list to another, drag the selected field or use buttons 'Add' and 'Remove'. To change the sorting order, select a field in the right list and move it using buttons 'Up' and 'Down'. To change the sorting direction, select a field in the right list and switch the direction (Ascending, Descending) using button 'A..Z'/'Z..A'.

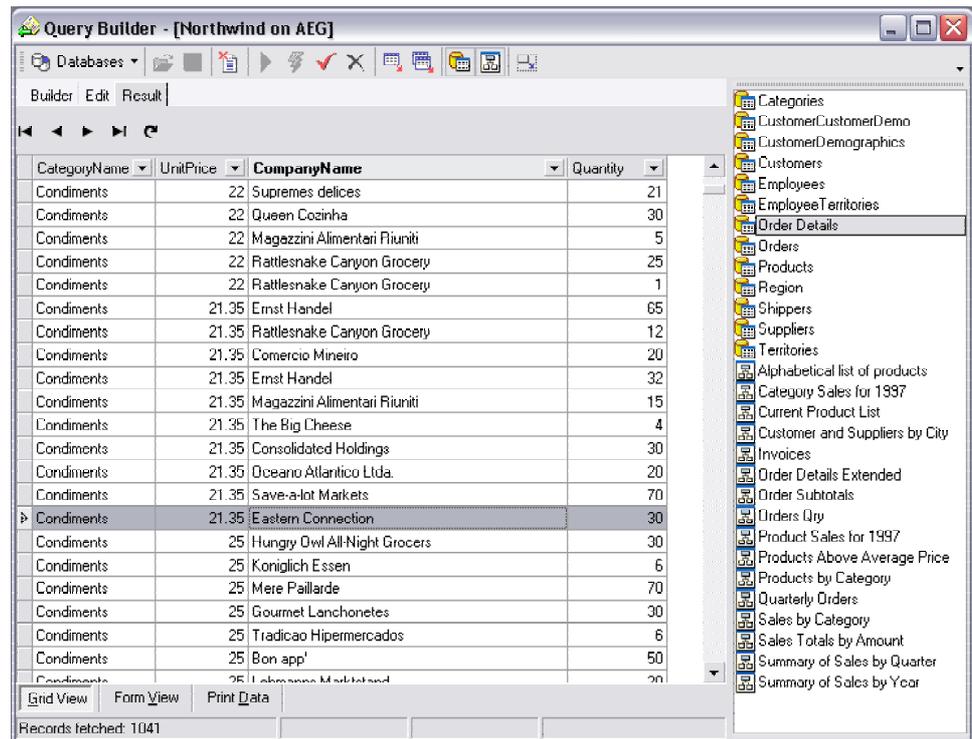


When the query is ready, click button **Prepare Query** ⚡ on the toolbar or press Ctrl+F9 to check the query for errors. If there were any errors in building the query text, you will get the appropriate

message, describing the error. If everything is correct, you can execute the query by clicking button **Execute**  on the toolbar. This will display the 'Results' area.

This area displays the result data returned by the query. They can be viewed in three modes (chosen by clicking the according button at the bottom of the window):

- ✓ **Grid View** - view data as a grid;
- ✓ **Form View** - view data as a form: there is only one record displayed at the time, to view another record use the navigation buttons.
- ✓ **Print Data** - view data in WYSIWYG mode, ready for printing. The acquired query can be saved to file and/or printed.



These data can't be edited, but can be exported ('Export Data' item in the popup menu or button  on the toolbar) or exported as INSERT statement to the SQL Script ('Export as Insert' item in the popup menu or button  on the toolbar).

The status bar displays the number of records, acquired while executing the query.

In the 'Edit' area the query text is automatically generated while you build query. You can edit this text according to the rules of SQL, and all the changes will be displayed on the other pages of the **Query Builder**.

To select the database for the query, click button **Databases**  on the toolbar and select the required database from the drop-down list of the available databases. The alias of the selected database will be displayed in the window caption.

You can load a query from file by clicking button **Load Query**  on the toolbar. To save the query to file, click button **Save Query** .

To commit or rollback the current transaction, click button **Commit Transaction**  or **Rollback Transaction**  in accordance.

To clear the current query, click button **Clear Current Query**  on the toolbar.

To hide the table list at the right of the window, click button **View**  on the toolbar and uncheck the appropriate item in the drop-down menu.

SQL Monitor

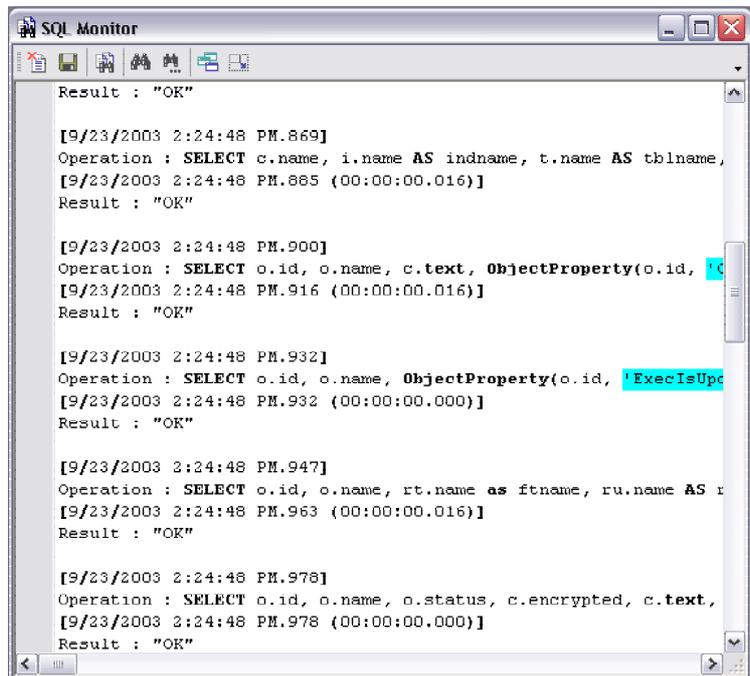
SQL Monitor allows you to view the SQL code of all the operations executed over databases and database objects in MS SQL Manager.

The content of the window can't be edited, but can be copied to the clipboard, saved to the text file or printed.

To save the content, click button **Save**  on the toolbar.

To clear the content, click button **Clear Content**  on the toolbar.

The popup menu of **SQL Monitor** provides standard functions for searching text in the window, copying it to the clipboard and printing the content of the window.

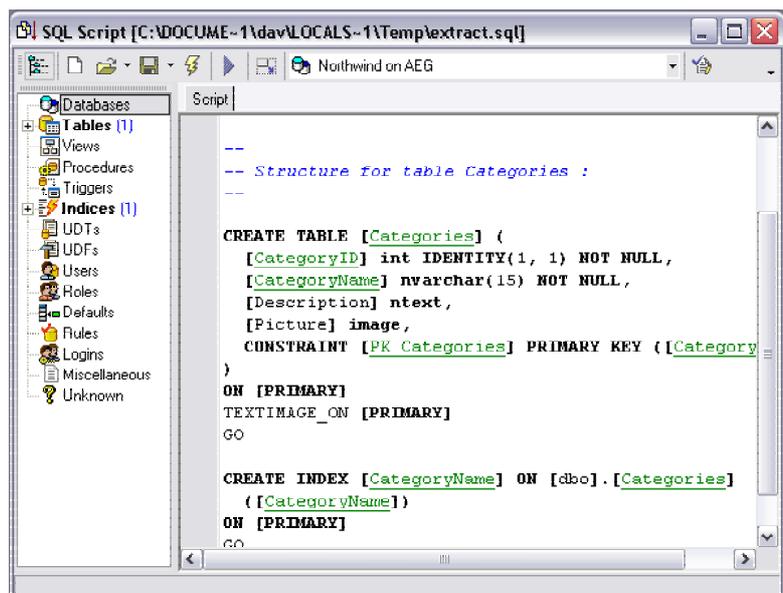


SQL Script Editor

Using this editor, you can view, edit and execute SQL scripts.

In the **Script** area you can view and edit the SQL script text. You can use quick code to fasten this process: when you type the first word symbols in the edit area, you are offered some variants for the word completion in a popup list (analogue of the **Code Insight** in **Delphi IDE**).

The popup menu of the edit area contains standard functions for working with text (Cut, Copy, Paste, Find, Replace, Toggle Bookmarks, etc) and also functions for processing the script, which allow you to save/load script to/from file, and preview/print script.



The **Object Explorer** at the left of the window displays the tree of objects, used in the current script and allows you to get to the needed script fragment quickly by clicking the object in the tree. To change the database for the script, use the drop-down menu on the toolbar.

To load the script from the *.sql file, click button **Open Script File**  on the toolbar; to save script, click **Save Script** . To create the new script, click button  on the toolbar.

To execute the script, click button **Execute** . You can also execute script right from the file without opening it by clicking button **Execute Script from File** . To stop executing script, click button **Stop Script** .

The results of executing the script are displayed on the **Results** page. This text can't be edited, but can be copied to the clipboard.

The errors in executing the script are displayed in the bottom area of the window. The popup menu of this area allows you to copy the selected error message or to copy all the error messages.

If you want the script to be aborted on errors, check option 'Abort Script on Error' in the **Environment Options** window on **Tools: SQL Script** page. In the case of successful executing the script you will receive message, informing you about the execution time.

Extract Metadata Expert

Using the **Extract Metadata Expert** you can extract the database metadata and table data to SQL script.

Select Extract Type

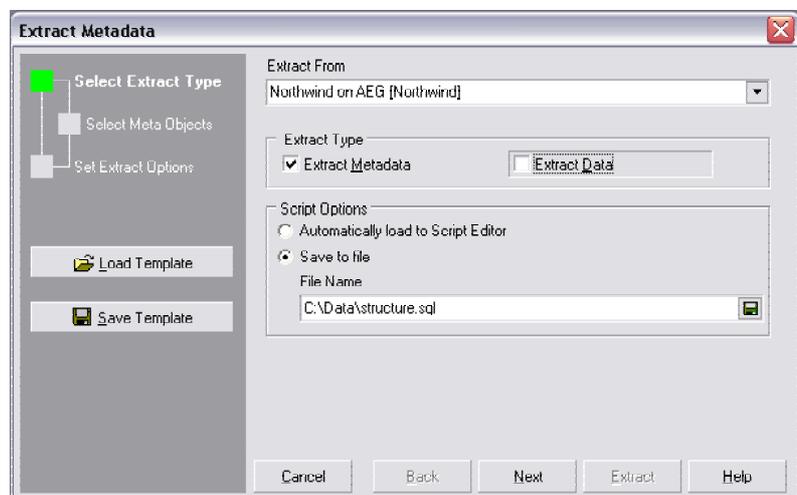
- ✓ **Extract From** - select the database to extract metadata.
- ✓ **Extract Type** - select what to extract - database metadata and/or table data.
- ✓ **Script Options** - select where to extract - to the *.sql file or directly to the SQL Script Editor.
- ✓ **File Name** - set the *.sql file name for the result script.

Select Meta Objects

This page is available only if you select **Extract Metadata**. Select the object type from the **Objects** drop-down list and move the objects to extract from the **Available** to the **Selected** list.

To move all the objects from one list to another click the double arrow buttons (>> or <<). To move only the selected objects click the single arrow buttons (> or <), drag the selected objects or double-click the required object. To select multiple objects, hold down the *Shift* or *Ctrl* key while selecting the object names.

Check **Extract All** to extract all the database metadata.



Select Data Tables

This page is available only if you select **Extract Data**. Select the database tables to extract their data by moving them from the **Available Tables** list to the **Selected Tables**.

To move all the tables from one list to another click the double arrow buttons (>> or <<). To move only the selected tables click the single arrow buttons (> or <), drag the selected tables or double-click the required table. To select multiple tables, hold down the *Shift* or *Ctrl* key while selecting the table names.

Set Extract Options

- ✓ **Generate DROP statements** - generates the DROP statement for the selected metadata.
- ✓ **Data Options** - defines the number of records to insert the COMMIT statement after.
- ✓ **Load script into Script Editor** - if this option is checked, the created SQL script will be opened in the **Script Editor** after extract.

You can save the extract configuration (extract type, meta and data objects, extract options) for future use as a template. Just click button **Save Template**  on the left panel and set the template name. Next time you will be able to configure your extract quickly by clicking the button **Load Template**  and choosing the appropriate previously saved template.

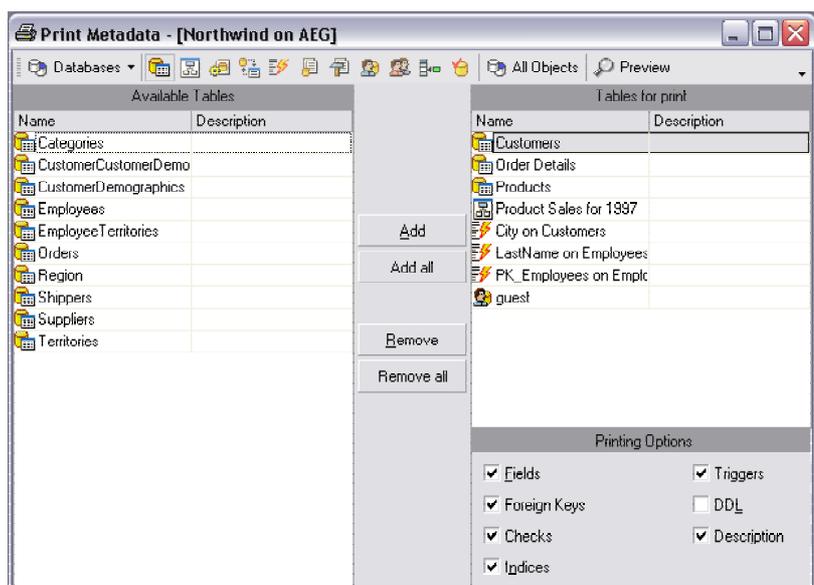
When you are done, click **Extract**.

Print Metadata

The powerful module **Print Metadata** allows you to print all the database metadata: object fields, indices, description and properties. The created report can be previewed before printing and saved to file.

Select objects (tables, views, functions, etc) for printing, using buttons on the toolbar. Move the objects from the list **Available...** to the list **...for Print**, using buttons 'Add', 'Add all', 'Remove' and 'Remove all', by double-clicking or dragging them (multiple objects can be selected using buttons *Ctrl* and *Shift*).

After you select an item in the **...for Print** list in the right lower corner of the window the list of available for printing metadata appears (e.g. fields, DDL, description). Uncheck the unnecessary items and check items you want to send for printing.



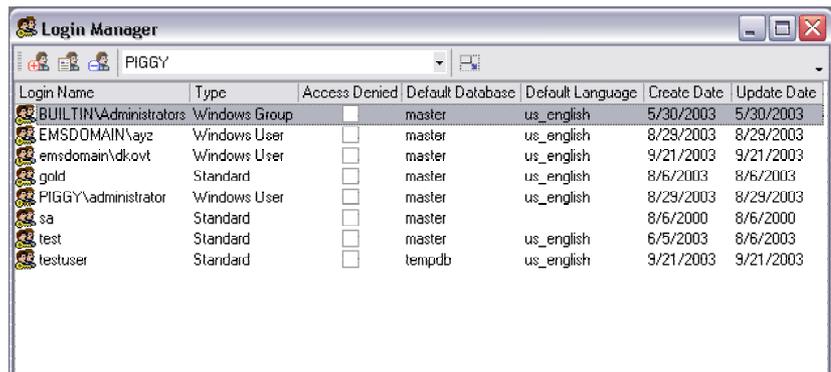
Button **Print**  on the control panel prints the selected metadata; button **Preview**  enables the metadata preview mode.

Print Metadata is available only in the Professional Edition of MS SQL Manager.

Login Manager

The **Login Manager** is provided for administrating database logins.

The main window of the Login Manager allows you to view all the server logins in form of a grid. You can view the login name, login type, default database and default language. You can also see if the access for the login is denied.



Login Name	Type	Access Denied	Default Database	Default Language	Create Date	Update Date
BUILTIN\Administrators	Windows Group	<input type="checkbox"/>	master	us_english	5/30/2003	5/30/2003
EMSDOMAIN\ayz	Windows User	<input type="checkbox"/>	master	us_english	8/29/2003	8/29/2003
emsdomain\dkovt	Windows User	<input type="checkbox"/>	master	us_english	9/21/2003	9/21/2003
gold	Standard	<input type="checkbox"/>	master	us_english	8/6/2003	8/6/2003
PIGGY\Administrator	Windows User	<input type="checkbox"/>	master	us_english	8/29/2003	8/29/2003
sa	Standard	<input type="checkbox"/>	master	us_english	8/6/2000	8/6/2000
test	Standard	<input type="checkbox"/>	master	us_english	6/5/2003	8/6/2003
testuser	Standard	<input type="checkbox"/>	tempdb	us_english	9/21/2003	9/21/2003

You can select the server for the administration using the **Servers** drop-down list.

To add a new login use the **Add** button. Set the login properties in the **Login Editor** window.

The **Login Editor** allows you to create new logins and edit existing ones.

Login

This tab allows you to define the main login parameters, such as authentication parameters and default settings.

Authentication Parameters

Select the authentication type - **Windows Authentication** or **SQL Server Authentication**.

If the **Windows Authentication** is selected, define the domain which the user or group belongs to (check the **Built-in Account on Server** if the user or group has an account on server) and set the name of the user or group in the proper edit fields. Check the **Access Denied** option to deny the access for the user.

If the **SQL Server Authentication** is selected, set the login name and the password in the proper edit fields. Confirm the password to avoid misprints.

Default Parameters

Set the default database to connect to and the default language for the login.



The dialog box 'New Login on 'DKOVT'' has two tabs: 'Login' and 'Server Roles'. The 'Login' tab is active. It is divided into 'Authentication Parameters' and 'Default Parameters'.

Authentication Parameters:

- Windows Authentication:** Selected with a radio button. Includes a 'Built-in Account on Server' checkbox (unchecked), a 'Domain' text box with 'emsdomain', and a 'User or Group Name' text box with 'dkovt'. The 'Access Denied' checkbox is checked.
- SQL Server Authentication:** Unselected with a radio button. Includes 'Login Name', 'Password', and 'Confirm Password' text boxes.

Default Parameters:

- 'Default Database' dropdown menu with 'ayz' selected.
- 'Default Language' dropdown menu with 'British English' selected.

Buttons: OK, Cancel, Help.

Server Roles

This tab allows you to add roles to the login. To add the roles, move them from the **Available Server Roles** list to the **Selected Server Roles** list by double-clicking or dragging them. To delete the roles from the login, just move them back in the same way.

When you are done, click the **OK** button. The **Compile Window** will appear where you will be able to view and edit the result SQL statement for creating the new login. Commit the transaction, and if it is successful, the new login will be created or the login parameters will be changed.

To edit or delete an existing login, select the login in the list and click button **Edit** or **Delete** in accordance.

Button **Default Size**  brings the window to the default size (restricted by the main window and the DB Explorer).

Grant Manager

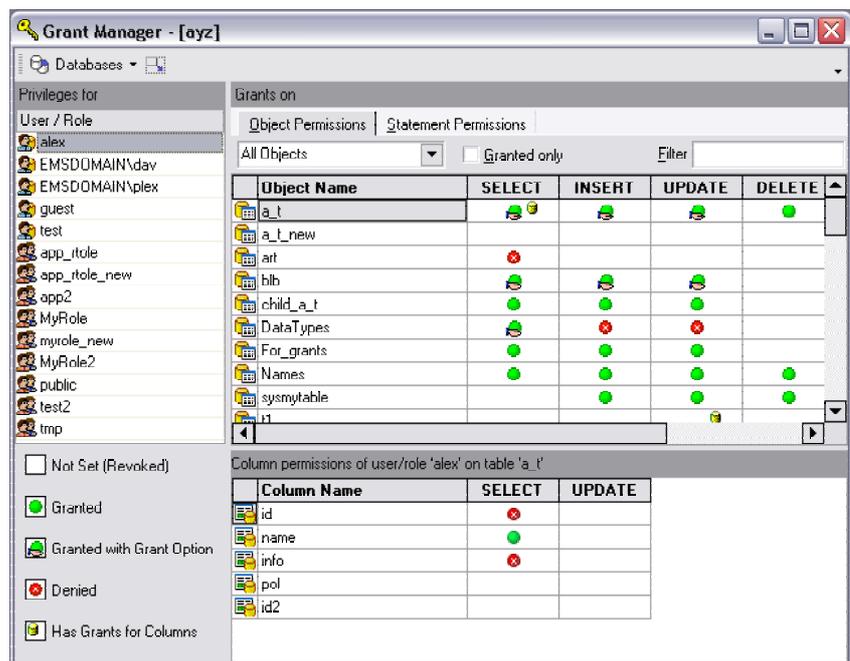
The **Grant Manager** allows you to set the access grants for users and roles.

Select a database from the drop-down list at the top of the window to set the access grants on its objects.

To modify the user's access grants select the user from the list **Privileges for** and select the object type to set grants on (tables, views, procedures or UDFs) from the drop-down list **Grants on**.

If option **Granted only** is checked, only granted objects are displayed in the grid.

You can also use **Filter** in the upper right corner of the window to display only the objects you need. E.g. to display objects, which names begin from 'c' letter type 'c' in the filter edit field.



After you choose the user/role and the required objects, right-click in grid to change the access grants for statements Select, Insert, Update, Delete, Reference and Execute.

The Statement Permissions tab allows you to change permissions to execute the statements for the users/roles. Select the user/role and the required statement and right-click in grid to change the access grants for the statement.

CHAPTER 8

MS SQL MANAGER

OPTIONS

Environment Options

The **Environment Options** window allows you to set the general MS SQL Manager options.

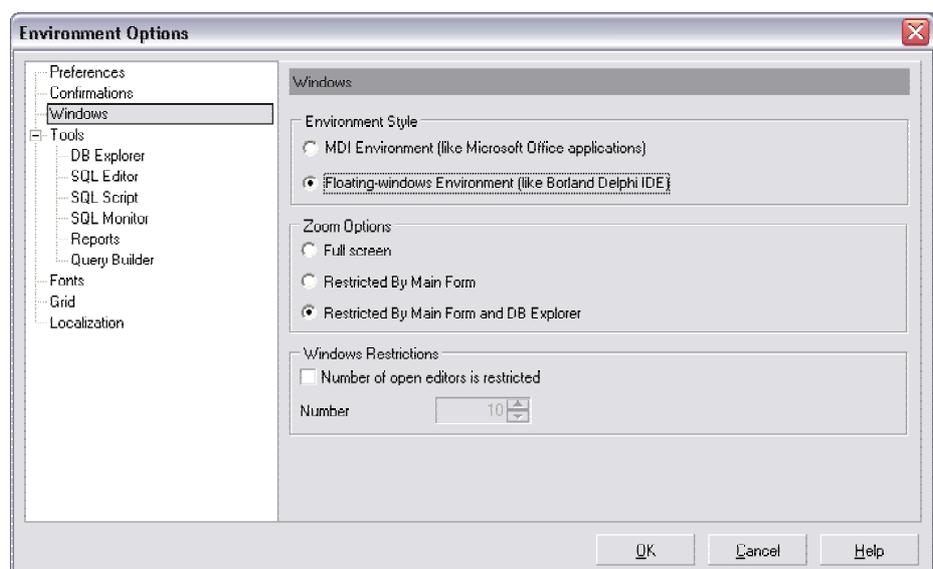
To call the **Environment Options** window select the **Options | Environment Options** menu item.

The options are divided into several groups, which correspond to the tabs of the **Environment Options** dialog:

Preferences

This tab contains common program options - splash screen, sounds, etc.

- ✓ **Show splash screen on startup** - if this option is checked, the splash screen is shown on each MS SQL Manager startup.
- ✓ **Save desktop on disconnect** - if this option is checked, all object editors, active on disconnecting from the database, will be opened on next connection.



- ✓ **Convert created object's names to lower case** - this option enables automatic object's names conversion to lower case.
- ✓ **Disable multiple instances** - check this option to disable a multiple instances of MS SQL Manager.

Confirmations

This tab allows enabling/disabling various program confirmations - on closing editor, program, etc.

- ✓ **Confirm saving of object** - if this option is checked, the program requires confirmation each time you want to save changes in database object.
- ✓ **Confirm exit from editor** - if this option is checked, the program asks you to confirm exit from the editor, if you have made any changes.
- ✓ **Confirm dropping object** - if this option is checked, the program requires confirmation for dropping database object.
- ✓ **Confirm exit from the program** - if this option is checked, the program requires confirmation when you want to exit MS SQL Manager.
- ✓ **Confirm successful compilation** - if this option is checked, the program requires confirmation of the successful compilation.
- ✓ **Confirm transaction commit** - if this option is checked, the program requires confirmation of the transaction commit.
- ✓ **Confirm transaction rollback** - if this option is checked, the program requires confirmation of the transaction rollback.

Windows

This tab defines the style and behaviour of all program windows.

- ✓ **Environment style** - this switch allows you to define the basic window behavior style - MDI (like MS Office) or Floating Windows (like Borland Delphi IDE).
- ✓ **Zoom options** - this option is available only if **Environment Style** is 'Floating-windows environment'. It allows you to set the window maximization size: full screen, restricted by main form, restricted by main form and DB Explorer.
- ✓ **Restrictions** - this option allows you to set the number of editors (Table Editor, SQL Editor, etc.) that can be opened at the same time.

Tools

This tab contains the specific options for DB Explorer, SQL Editor, Query Builder and other MS SQL Manager tools.

- ✓ **Control Toolbar Buttons Action** - this option allows you to choose the reaction on clicking buttons on the control panel. If you choose 'Create New Object', then the new database objects will be created on clicking these buttons, if you choose 'Show Last Object', then the last viewed database objects will be opened for editing.
- ✓ **Show only connected databases in drop-down menu** - check this option to hide the databases that are not connected.
- ✓ **Use transactions in grids, SQL Editor and Query Builder** - if this option is on, the transaction is active until the grid is closed or the Commit button is pressed; all edited records are blocked until the transaction commit. If this option is off, then the transaction starts and immediately commits (autocommit) on saving each record, which is blocked only for a little time period.

Tools: DB Explorer

- ✓ **Show hosts in Database Explorer** - if this option is checked, database hosts are visible in the **DB Explorer** database tree.
- ✓ **Show table subobjects** - if this option is checked, table subobjects (fields and indices) are visible in the **DB Explorer** database tree.
- ✓ **Recent Object Count** - this option defines number of database objects on the **Recent** tab of the DB Explorer.
- ✓ **Expand after Connection** - select branches to expand automatically in the DB Explorer tree on connect to the database.
- ✓ **Tables' Details in SQL Assistant** - this panel allows you to switch the **SQL Assistant** mode for displaying table fields, indices or table status (table properties set on creating).

Tools: SQL Editor

- ✓ **Execute selected text separately** - check this option to allow the separate executing of the selected text.
- ✓ **Show result for each query** - if this option is checked, the **Results** tab is activated after executing each query.
- ✓ **Disable Transaction Confirmation** - if this option is checked, no transaction confirmation will be required on closing Visual Query Builder and SQL Editor. Specify the default action ('Commit' or 'Rollback') and this action will be performed automatically each time when you exit **Query Builder** or **SQL Editor**. Check the Perform default action after each operation

Tools: SQL Script

- ✓ **Abort Script on Error** - if this option is checked, script execution aborts when an error occurs.
- ✓ **Rollback on Abort** - this option is available only if **Abort Script on Error** is checked. This option evokes automatic rollback on script execution abort.

Tools: SQL Monitor

- ✓ **Operations** - select operations to log in the SQL Monitor.
- ✓ **Log SQL Monitor events to file** - check this option to enable logging of all the SQL Monitor events to external file, selected below.
- ✓ **Show Time of Operation** - check this option to display time required for the operation in the SQL Monitor window.

Tools: Query Builder

- ✓ **General Options** - these options allows you to customize the Query Builder behaviour.
- ✓ **Visible Tabs** - select the tabs you want to see in the Query Builder main area.
- ✓ **Color Palette** - you can define some color setting for Query Builder here.
- ✓ **Script Format** - here you can define the script formatting options.
- ✓ **Style** - these options set defines Query Builder visible objects style.

Fonts

This tab defines the MS SQL Manager system font.

- ✓ **System Font Name** - defines the font name used by MS SQL Manager.
- ✓ **System Font Size** - defines the font size used by MS SQL Manager.

The box below displays the sample text using the selected font.

Grid

Defines the appearance of the data grid in Table Editor, SQL Editor, and Visual Query Builder.

Localization

This tab allows you to translate the MS SQL Manager string resources in your native language.

The list of the available languages is displayed in the **Available Languages** panel.

To add a language, click the button **Add**, then in the **Add Language** dialog form choose the proper language file (*.lng file containing the translated string resources, e.g. french.lng or dutch.lng), using the button  and set the language name in the proper edit field. Click **OK** when done. After you add a language, it appears in the **Choose program language** drop-down list. Choose it and click **OK** to set this language as a program language.

You can edit the language names and the related files by choosing any language in the **Available Languages** list and clicking **Edit**. To remove the language from the list, select the language and click **Delete**.

Default directory - the default directory to store the *.lng files (files where the translated string resources are stored) is \$(MS SQL Manager)\Languages. You can change this directory if necessary using button .

You can edit any language file using the **Localization Editor** window. Just press Shift+Ctrl+L on any form to edit the string resources of this form. You can also create your own *.lng file based on any of the existing ones (see \$(MS SQL Manager)\Languages folder to find them).

Editor Options

This window allows you to set the parameters of database object editors.

General

- ✓ **Auto Indent** - if this option is checked, each new indentation will be the same as previous when editing SQL text.
- ✓ **Insert Mode** - if this option is checked, insert symbols mode is default on.
- ✓ **Use Syntax Highlight** - this option enables syntax highlight in the object editor window.
- ✓ **Find Text at Cursor** - if this option is checked, **Text to Find** field in the **Find Text Dialog** window is automatically filled with the text, cursor set on.
- ✓ **Always Show Hyperlinks** - if this option is checked, hyperlinks are displayed in the editor



window. To open link click with button Ctrl pressed.

- ✓ **Smart Tabs** - check this option to enable Smart Tabs mode, when the tab positions are set according to the space characters in the previous non-empty lines.
- ✓ **Tab Stops** - this option allows you to define the tab length, used when editing text.
- ✓ **Undo Limit** - this option defines maximum number of changes, you will be able to undo.

Display

- ✓ **Visible Right Margin** - this option makes the right text margin visible.
- ✓ **Visible Gutter** - this option makes the gutter visible in the editor window.
- ✓ **Right Margin** - this option defines the position of the right text margin in the editor window.
- ✓ **Gutter Width** - this option defines the gutter width in the editor window.
- ✓ **Editor Font, Size** - using these options you can choose editor font and its size.

Color

On this tab you can set font and background colors and attributes of the text, editor uses to mark out different text fragments: default, comments, strings, SQL keywords, numbers, links, wrong symbols, identifiers, symbols, and selected text.

Quick Code

- ✓ **Code Completion** - if this option is checked, then when you type first word symbols in the SQL text editor you are offered some variants for the word completion in a popup list (analogue of the **Code Insight** in **Delphi IDE**). The popup list will appear at a time, defined by the **Delay** option. You can activate popup lists yourself by pressing the following key combinations:

Ctrl+Space	All SQL keywords and database objects;
Ctrl+Alt+W	Keyword list;
Ctrl+Alt+Q	SQL function list;
Ctrl+Alt+T	Table list;
Ctrl+Alt+V	View list;
Ctrl+Alt+R	Role list;
Ctrl+Alt+U	User list;
Ctrl+Alt+P	Procedure list;
Ctrl+Alt+Y	Type list;
Ctrl+Alt+G	Trigger list;
Ctrl+Alt+I	Index list;
Ctrl+Alt+F	UDF list;
Ctrl+Alt+A	Default list;
Ctrl+Alt+L	Rule list;
Ctrl+Alt+E	List of all table fields (this list appears if the table name is copied to clipboard).

- ✓ **Code Parameters** - if this option is checked, MS SQL Manager automatically offers you procedure parameter list after the procedure name and left bracket.
- ✓ **Delay** - using this option you can change the time, at which the popup list will appear.
- ✓ **Code Case** - this option allows you to change the case of the automatically inserted words.
- ✓ **Auto Launch Keyboard Templates** - this option allows you to use keyboard templates for faster typing regularly met expressions.
- ✓ **Emulate Typewriting** - this option defines the delay of the symbols displaying.

- ✓ **Color Scope Categories** - if this option is checked, the scope categories (SQL keywords, tables, functions) are colored in the Code Completion list.
- ✓ **Sort By Scope / Sort By Name** - this switch allows you to change the sorting mode of the Code Completion list items: alphabetically by name, or by the scope categories.

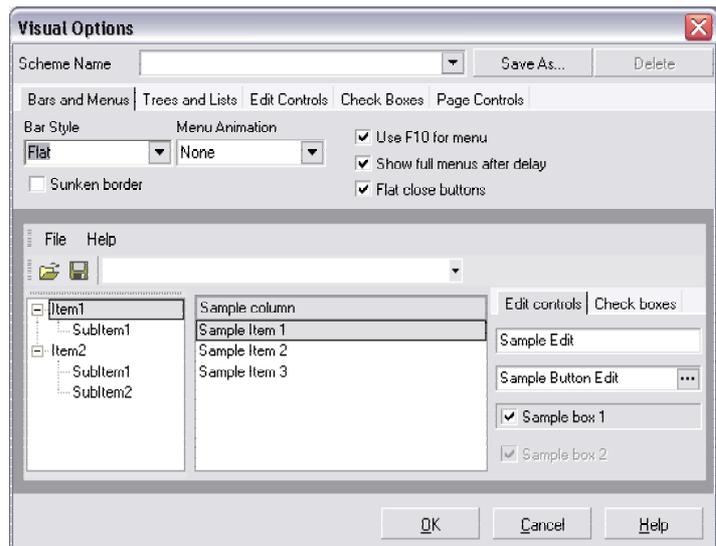
Visual Options

This window allows you to customize the application interface style to your liking.

Scheme - select the interface scheme you like: Classic Windows or Windows XP style.

You can create your own interface schemes by customizing any visual options you like on the appropriate tabs ('Bars and Menus', 'Trees and Lists', 'Edit Controls', 'Check Boxes' and 'Page Controls') and clicking the button 'Save'. You can also delete your own scheme by clicking 'Delete'. 'Classic Style' and 'Windows XP' schemes can't be deleted.

All the customizing you make is displayed on the 'Sample' panel.



Bars and Menus

- ✓ **Bar Style** - choose the style of displaying the application toolbars. Check the 'Sunken border' option to change the panel display style.
- ✓ **Menu Animation** - choose the style of animating the menu items. Use options at the right to customize the application menus.

Trees and Lists

- ✓ **Look and Feel** - choose the style of flattening the application trees and lists.
 - ✓ **Tree Lines Style** - choose the style of displaying the application tree lines.
 - ✓ **Border Style** - choose to display or not the borders of the application trees and lists.
- Use options at the right to customize the object selection in the application trees and lists.

Edit Controls

- ✓ **Border Style** - choose the style of displaying the borders of the application controls.
 - ✓ **Button Style** - choose the style of displaying the application buttons.
 - ✓ **Button Transparency** - choose the style of displaying the transparent buttons.
 - ✓ **Edges** - check the edges to display in the application controls.
- Use also 'Hot Track' and 'Shadow' options to customize the application control view in accordance.

Check Boxes

- ✓ **Border Style** - choose the style of displaying the borders of the application check boxes.
- ✓ **Button Style** - choose the style of displaying the check box buttons.
- ✓ **Button Transparence** - choose the style of displaying the transparent check box buttons.
- ✓ **Edges** - check the edges to display in the application check boxes.

Use also 'Hot Track' and 'Shadow' options to customize the application check box view in accordance.

Page Control

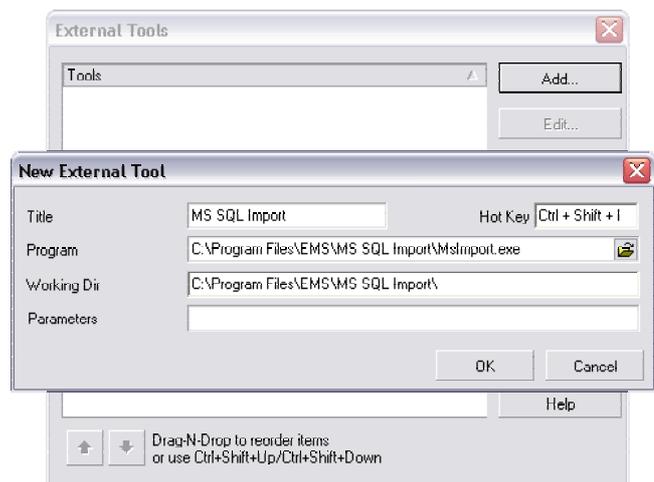
- ✓ **Tab style** - choose the style of displaying the application tabs.

Use also 'Multiline pages' and 'Hot track' options to customize the application tab view in accordance.

External Tools

This window allows you to define new tools for working with the MS SQL Manager. To add a new tool click 'Add', set the tool name and the path to the application (you can use the button ). You can define a hot key to access the tool quickly, its working directory and the program execution parameters, if necessary

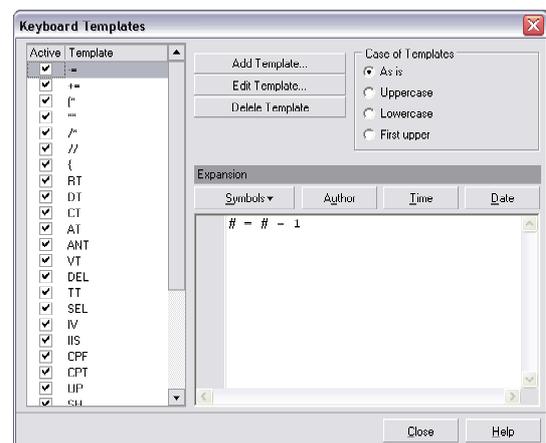
You can edit or delete the existing tools using buttons 'Edit' and 'Delete' and also you can change the order of the created tools using buttons and the bottom of the window, by dragging or by pressing Shift+Ctrl+Up, Shift+Ctrl+Down. The created tools become available in the **Tools** menu.



Keyboard Templates

This window allows you to create new keyboard templates for quicker typing regular met expressions and to edit the existing ones.

You can deactivate the existing template by choosing it from the list at the left of the window and removing flag from its name. Also you can edit template name, using button 'Edit', delete a template, using button 'Delete' and edit template expression in the right part of the window. For faster editing you can use the 'Symbols' menu and buttons 'Author', 'Time', 'Date'.



To add a new template, click 'Add', set the template name and define the template expression. In the upper left corner of the window you can choose the case of the template expression.

Save Settings Wizard

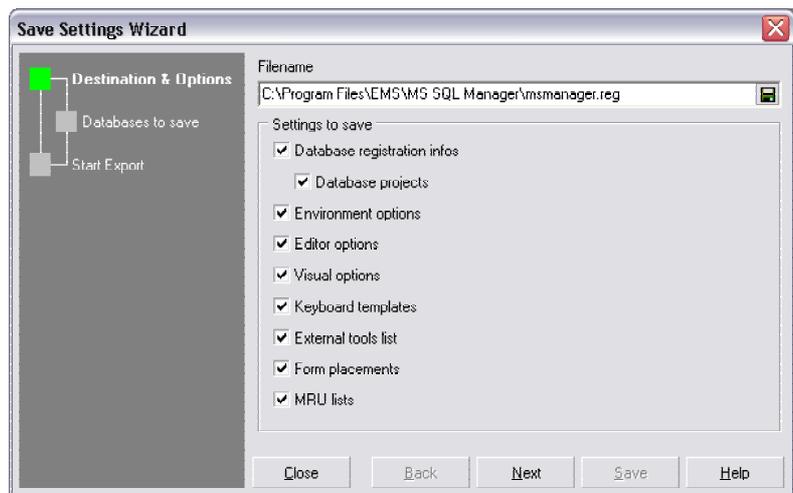
Save Settings Wizard allows you to export all or partial MS SQL Manager settings to single *.reg file, which you can apply to MS SQL Manager installed on another machine or use to backup previous settings.

Step 1 - Destination & Options

Filename to export - specify a *.reg file, to save MS SQL Manager setting to.

Set the following options:

- ✓ **Database registration infos** - if this option is checked, then all the information about the registered databases will be included in the result file.
- ✓ **Database projects** - if this option is checked then all the projects you created in the **DB Explorer - Project** will be included in the result file.
- ✓ **Environment options** - if this option is checked then all the **Environment Options** will be included in the result file.
- ✓ **Editor options** - if this option is checked then all the **Editor Options** will be included in the result file.
- ✓ **Visual options** - if this option is checked then all the **Visual Options** will be included in the result file.
- ✓ **Form placements** - if this option is checked then current positions of all the MS SQL Manager forms will be included in the result file.
- ✓ **MRU lists** - if this option is checked then all the lists of most recently used hosts will be included in the result file.



Step 2 - Databases to save

Available - a list of databases with settings available for export.

Selected - a list of databases to export their settings.

To move the database from one list to another double-click it or select it (use *Ctrl* or *Shift* to select multiple databases) and click button > or <. To move all the databases click button >> or <<.

Step 3 - Start Export

This page is activated automatically on clicking button 'Save'. It displays the exporting process (**Exporting log**).