SQL Anywhere Database Converter

User's guide

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1 Welcome to ASA Database Converter!

ASA Database Converter is a powerful tool for migrating schema and data from any ADO-compatible database to SQL Anywhere. It allows you to transfer tables, indexes, foreign key constraints. With this tool you can convert source objects directly to the target database or generate SQL scripts with objects definitions and INSERT statements to be used later.

Key features:

- Copying tables, indexes, and foreign keys
- Native support for most popular database servers
- Support for all other data sources accessible via ODBC / OLE DB
- Bulk data loading
- Flexible and customizable data type mappings
- Smart database integrity checker
- Command-line interface to automate the conversion

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1.1 System Requirements

Client environment

- Pentium PC or higher;
- Windows NT4/2000/XP/Vista/Windows 7/Windows 8/Windows 10/Windows 11;
- 512 MB RAM (1 GB recommended);
- 25 MB of free hard disk space;
- SVGA-compatible video adapter.

Server environment

- SQL Anywhere from 10 to 17.

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1.2 Installation

To install **ASA Database Converter** on your PC:

- download the ASA Database Converter distribution package from the download page at our site;
- run setup.exe from the local folder and follow the instructions of the installation wizard;
- find the ASA Database Converter shortcut in the corresponding program group of the Windows Start menu after the installation is completed.

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1.3 How can I purchase ASA Database Converter?

Thank you for your interest in purchasing **ASA Database Converter**!

You can select licensing options and register ASA Database Converter at its on-line order page. It is possible to purchase on-line, by fax, mail, toll-free phone call, or place a purchase order. We send the software activation key by email within 24 hours after completion of the order process. If you have not received the activation key within this period, please contact our sales department.

All our products and bundles are shipped with 12 months of free upgrades (minor and major ones) or with 36 months of free upgrades for a quite small additional fee. After this period you may renew your license for the next 12(36) months with a 50% discount.

ASA Database Converter has a free 30-day trial. Upon purchasing the product you confirm that you have tested it and you are completely satisfied with its current version.

To obtain technical support, please visit the appropriate section on our website or contact us by email to support@sqlmaestro.com.

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1.4 License Agreement

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1.5 About SQL Maestro Group

SQL Maestro Group is a privately-held company producing high-quality software for database administrators and developers. The united team of eminently qualified developers is pleased to create new software products for commercial, academic and government customers worldwide. We do our best to design and develop products that remove complexity, improve productivity, compress time frames, and increase database performance and availability. We are glad to realize that our products take usual chores upon themselves, so that our customers could have more time left for their creative work.

The company was founded in 2002 as an essential partner for every business that is trying to harness the explosive growth in corporate data. SQL Maestro Group employs an international team concentrating their efforts on cutting-edge DBA tools development.

The slogan of our company is **The Shortest Path to SQL**. It is aimed to denote that we set to create easy-to-use products meant for those who appreciate comfort, friendly program interface and support when working with SQL servers.

- We are pleased to facilitate your job.
- We aim at being of considerable assistance to our clients.
- We feel contented doing our beloved work.

At present, our company offers a series of Windows GUI admin tools for SQL management, control and development of the following servers: **MySQL, Microsoft SQL Server, PostgreSQL, Oracle, SQL Anywhere, DB2, SQLite, Firebird,** and **MaxDB**. We also produce universal tools to be used for administering any database engine accessible via ODBC driver or OLE DB provider. Such products may be the clear-cut decision for those who constantly work with several database servers.

SQL Maestro is the premier Windows GUI admin tool for database development, management, and control.

It provides you with the ability to perform all the necessary database operations such as creating, editing, copying, extracting and dropping database objects; moreover, you can build queries visually, execute queries and SQL scripts, view and edit data including BLOBs, represent data as diagrams, export and import data to/from most popular file formats, manage users and their privileges (if possible), and use a lot of other tools designed for making your work with your server comfortable and efficient.

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SQL PHP Generator is a powerful tool for creating database-driven web applications visually. It allows you to generate high-quality PHP scripts for working with tables, views and queries through the web. You needn't have any programming background to use it.	
SQL Data Wizard is a high-capacity Windows GUI utility for managing your data. It provides you with a number of easy-to-use wizards for performing the required data manipulation easily and quickly. The tool allows you to export data from SQL Anywhere tables and queries to most popular formats, import data into the tables, generate SQL dump of selected tables, and export/import BLOB fields from/to files.	
SQL Code Factory is a premier GUI tool aimed at the SQL queries and scripts development. It allows you to manage SQL queries and scripts using such useful features as code folding, code completion and syntax highlighting, build query visually, execute several queries at a time, execute scripts from files, view and edit result data with filtering, sorting and grouping abilities, export data to as many as 14 file formats including Excel, RTF and HTML, import data from Excel, CSV, XML and text files, view and edit BLOBs in various way, build diagrams based on Oracle data, and much more.	
Database Converter is a user friendly tool to migrate any local or remote ADO-compatible database to SQL Anywhere. Such tools transfer database schema and data and are equipped with native support for the most popular database servers.	
Data Sync is a powerful and easy-to-use tool for database contents comparison and synchronization. Such tools can be useful for database administrators, developers and testers that need a quick, easy and reliable way to compare and synchronize their data.	

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The software products are constantly optimized for the latest server versions support.

You can use the following contact information if necessary:

Our web-site www.sqlmaestro.com

Postal address: **SQL Maestro Group**
140 Broadway, Suite 706
New York City, New York 10005
United States

Thank you for your interest to our company!

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1.6 What's new

Please find out the latest ASA Database Converter news at http://www.sqlmaestro.com/products/sql_anywhere/converter/news/

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2 Getting Started

To convert a database with its structure and data,

- Set connection options of source 12 and target 24 databases;
- Select objects 27 to convert;
- Adjust options 30 of the objects to create;
- Select tables 31 for data import;
- Specify other transfer options 33.

ASA Database Converter allows you to save and restore all the options set during a session. You need not to specify all options each time you work with the application anew; instead you can load all settings from a project and change them if necessary. When working with a project, all the session parameters are loaded from a project file and may be edited if necessary. To run a wizard with a project, follow More... > Load Project on the first wizard step and enter the name of the project file, recently used projects are also available from this popup menu. Find out more about working with projects 25.

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2.1 Connecting to the source data

ASA Database Converter supports native connection to MySQL 12, PostgreSQL 15, Firebird 18, MS SQL Server 18, SQLite 21, and Oracle 21. To transfer schema and data from data sources accessible via ODBC driver or OLE DB provider such as MS Access, Text files, MS Excel, etc. specify the corresponding connection string.

2.1.1 MySQL

Specify the following credentials to connect to MySQL.

- **Direct connection**
  It is the most natural and the most preferable connection mode. Use it each time it is possible. Most of hosting companies allow direct connections to databases. However in most cases you have to go to your control panel and add your home/office computer IP address or domain name to the Access List - list of IP addresses allowed accessing from outside. More information.

- **SSH tunnel connection**
  If your SQL Anywhere server does not allow direct connections from your remote workstations, you can establish connection to an allowed intermediate SSH server and forward all MySQL commands through the Secure SHell (SSH) tunnel.

- **HTTP tunnel connection**
  HTTP tunneling is a technique used in conditions of restricted network connectivity including firewalled networks, networks behind proxy servers, and NATs. It is the slowest way and is recommended to use if the others are impossible.

Irrespectively of a connection mode you should specify common credentials as follows:

Host
The host name of the MySQL server.

Port number
The TCP/IP port to use (default MySQL port is 3306).

User name
The username used to connect to MySQL.

Password
The password for the user account on server.

Allow old style password
Turn this option ON only if your MySQL server still uses 16 bytes long password hashes. More information.

More about SSH tunnel connection

To establish connection to intermediate SSH server and forward all SQL Anywhere commands through the secure tunnel, you need to:

1. Check I can connect to the server directly or via SSH tunneling.

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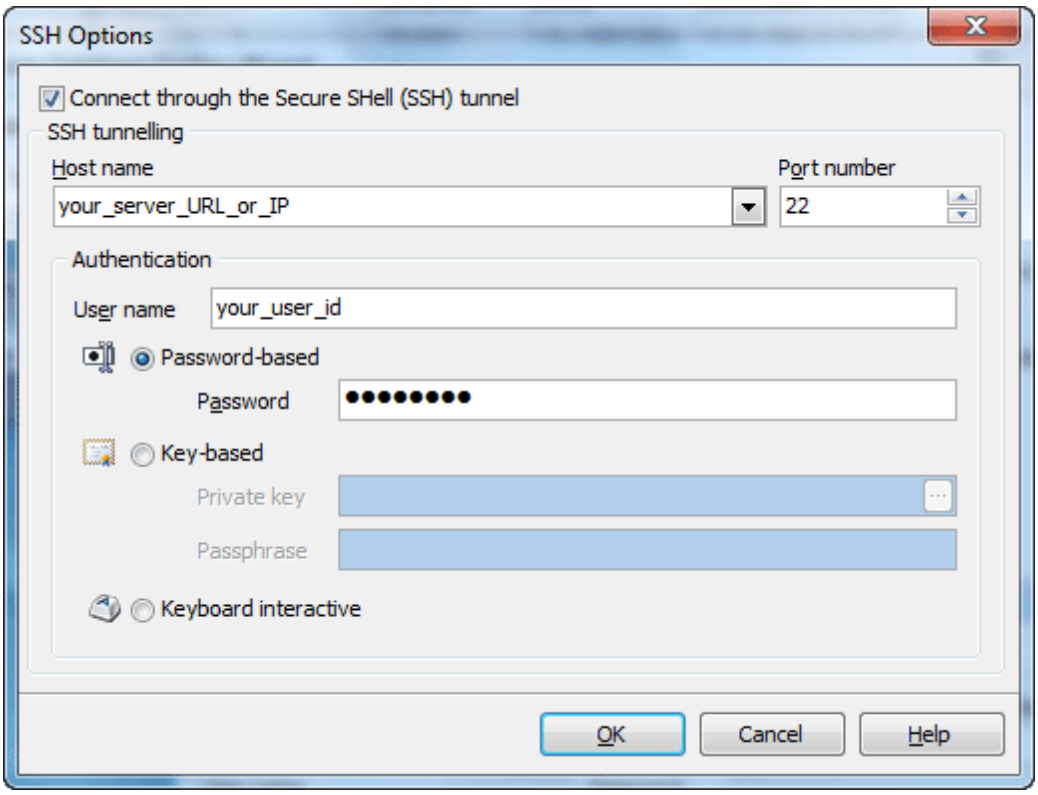
2. Follow the Configure SSH options link to open the SSH Options window.



3. Check Connect through the Secure Shell (SSH) tunnel and complete the following fields:

Host name
Specify the host name or IP of your site. Note, that SQL Anywhere host name always should be set relatively to the SSH server. For example, if both of SQL Anywhere and SSH servers are located on the same computer, you should specify localhost as Host name instead of server's external host name or IP address.

Port number
Enter the port number for the SSH server.

4. Enter valid User name for the remote server and select the Authentication method and set corresponding credentials.

Password-based
Set the password corresponding to the specified user.

Key-based
Specify the path to the Private key file with the corresponding Passphrase to log in to the remote server. ASA Database Converter accepts keys in **ssh.com** or **OpenSSH** formats. To convert a private key from PuTTY's format to one of the formats supported by our software, use the PuTTYgen utility that

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can be freely downloaded from the PuTTY website.

Keyboard interactive
Keyboard authentication is the advanced form of password authentication, aimed specifically at the human operator as a client. During keyboard authentication zero or more prompts (questions) is presented to the user. The user should give the answer to each prompt (question). The number and contents of the questions are virtually not limited, so certain types of automated logins are also possible.

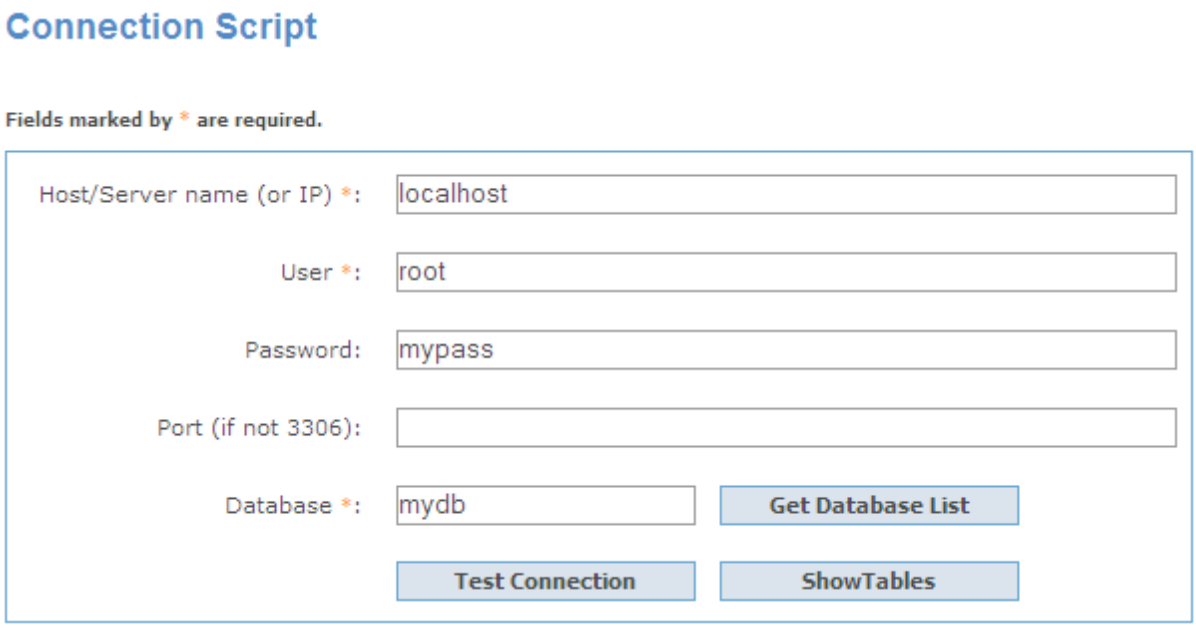
More about connection via HTTP tunnel

To connect to a remote server using an HTTP tunnel, you need to:

1. Upload the connection PHP script to your website. The installation folder, usually *C:\Program Files\SQL Maestro Group\ASA Database Converter,* contains two scripts: *mysqli_tunnel.php* and *mysql_tunnel.php*. We would recommend you to **use the *mysqli_tunnel.php* script always if possible** as it operates through the MySQLi PHP extension (available since PHP 5) while *mysql_tunnel.php* uses the original MySQL PHP API that is deprecated as of PHP 5.5.

2. Select the I have to use HTTP tunneling radio button.

3. Enter the connection PHP script URL, e.g. *www.yoursite.com/files/sqlite_tunnel.php*. You can test the connection before the profile is created. Just use Test script using default browser to open connection script in your browser, enter all the required connection parameters and click the Test connection button.



4. In case using of a proxy server use Configure tunnelling options to open the HTTP tunnelling options window and specify your proxy server connection parameters and HTTP authentication.

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Note: You are actually connecting to your database through the PHP script on the server, so in most cases the host/server name is "localhost" unless the target database server is not installed on the same computer as the Web server.

2.1.2 PostgreSQL

Specify the following credentials to connect to PostgreSQL.

- **Direct connection**
  It is the most natural and the most preferable connection mode. Use it each time it is possible.

- **SSH tunnel connection**
  If your PostgreSQL server does not allow direct connections from your remote workstations, you can establish connection to an allowed intermediate SSH server and forward all PostgreSQL commands through the Secure SHell (SSH) tunnel.

- **HTTP tunnel connection**
  HTTP tunneling is a technique used in conditions of restricted network connectivity including firewalled networks, networks behind proxy servers, and NATs. It is the slowest way and is recommended to use if the others are impossible.

Irrespectively of a connection mode you should specify common credentials as follows:

Host
The host name of the PostgreSQL server.

Port number
The TCP/IP port to use. Default PostgreSQL port is 5432.

User name
The username used to connect to PostgreSQL.

Password
The password for the user account on server.

More about SSH tunnel connection

To establish connection to intermediate SSH server and forward all SQL Anywhere commands through the secure tunnel, you need to:

1. Check I can connect to the server directly or via SSH tunneling.

2. Follow the Configure SSH options link to open the SSH Options window.

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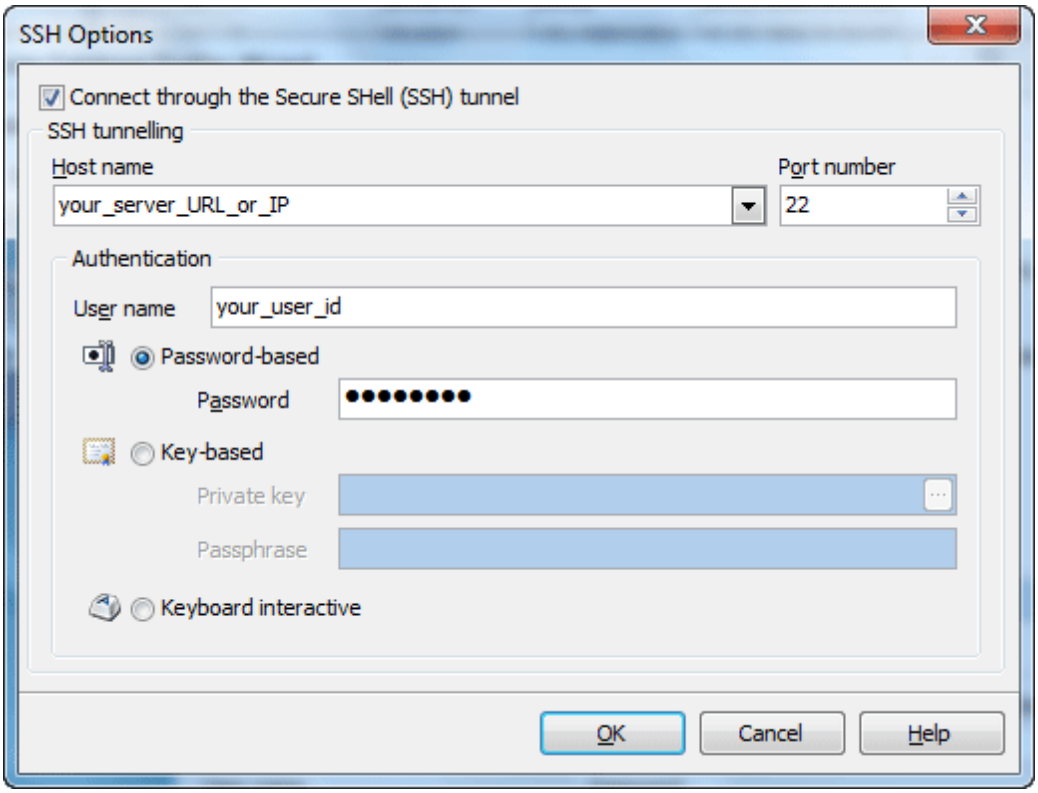

3. Check Connect through the Secure Shell (SSH) tunnel and complete the following fields:

Host name
Specify the host name or IP of your site. Note, that SQL Anywhere host name always should be set relatively to the SSH server. For example, if both of SQL Anywhere and SSH servers are located on the same computer, you should specify localhost as Host name instead of server's external host name or IP address.

Port number
Enter the port number for the SSH server.

4. Enter valid User name for the remote server and select the Authentication method and set corresponding credentials.

Password-based
Set the password corresponding to the specified user.

Key-based
Specify the path to the Private key file with the corresponding Passphrase to log in to the remote server. ASA Database Converter accepts keys in **ssh.com** or **OpenSSH** formats. To convert a private key from PuTTY's format to one of the formats supported by our software, use the PuTTYgen utility that can be freely downloaded from the PuTTY website.

Keyboard interactive

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Keyboard authentication is the advanced form of password authentication, aimed specifically at the human operator as a client. During keyboard authentication zero or more prompts (questions) is presented to the user. The user should give the answer to each prompt (question). The number and contents of the questions are virtually not limited, so certain types of automated logins are also possible.

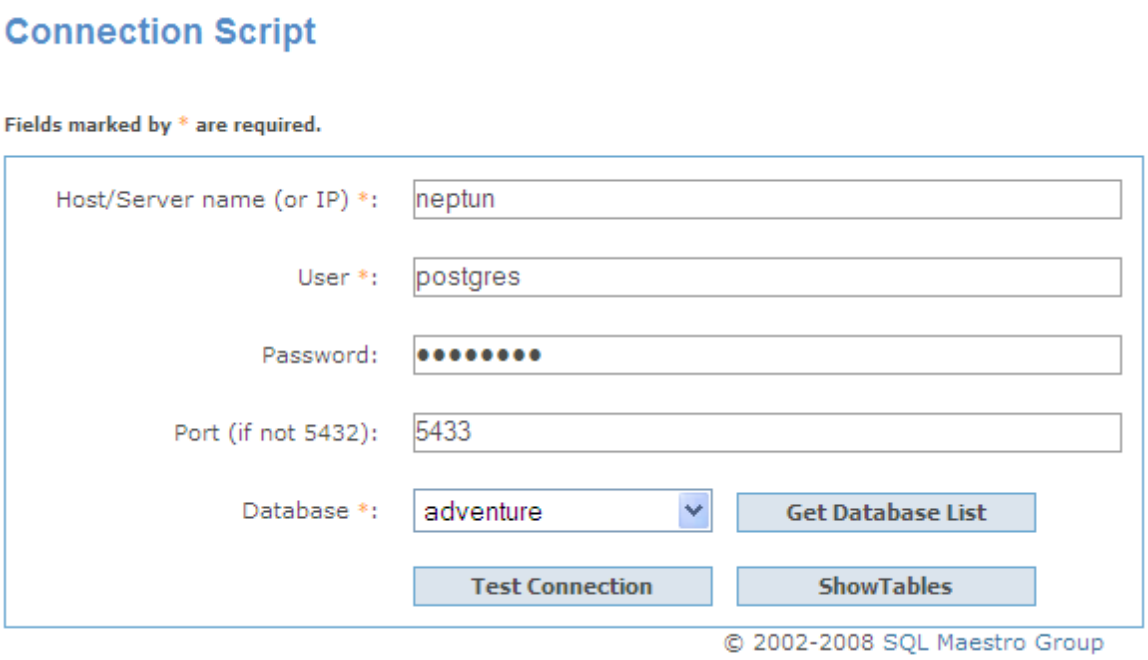
More about connection via HTTP tunnel

To connect to a remote server using an HTTP tunnel, you need to:

1. Upload the connection PHP script to your website. The script is named *sqlite_tunnel.php* and can be found under the installation folder, usually *C:\Program Files\SQL Maestro Group\ASA Database Converter*.

2. Select the I have to use HTTP tunneling radio button.

3. Enter the connection PHP script URL, e.g. *www.yoursite.com/files/sqlite_tunnel.php*. You can test the connection before the profile is created. Just use Test script using default browser to open connection script in your browser, enter all the required connection parameters and click the Test connection button.



4. In case using of a proxy server use Configure tunnelling options to open the HTTP tunnelling options window and specify your proxy server connection parameters and HTTP authentication.

Note: You are actually connecting to your database through the PHP script on the server, so in most cases the host/server name is "localhost" unless the target database server is not installed on the same computer as the Web server.

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2.1.3 MS SQL Server

Specify the following credentials to connect to Microsoft SQL Server.

Server
The full name of SQL Server you want to connect to. Can be specified as *computer_name* (for default SQL Server instances) or as *computer_name\server_name* (for named instances). To connect to an SQL Server running on a non-default port, specify the value of this field as *computer_name,port_number* (or *computer_name \server_name, port_number*). Press the arrow button to scan for SQL Servers accessible in your network.

Provider
The application allows you to connect to SQL Server using any of SQL Server clients installed on your computer. To choose a client you want to use, select the appropriate item in the Provider combobox. The table below shows the correspondence between the value selected in this combobox and SQL Server client to be used.

Value	SQL Server client	Introduced with
SQLOLEDB	Microsoft OLE DB Provider for SQL Server (default value)	Comes with Windows
SQLNCLI	SQL Server Native Client	SQL Server 2005
SQLNCLI10	SQL Server 2008 [R2] Native Client	SQL Server 2008 [R2]
SQLNCLI11	SQL Server 2012 Native Client (recommended)	SQL Server 2012

We would recommend you to install and use **SQL Server 2012 Native Client** as it (and only it) supports SQL Server Express LocalDB. Also it provides the best support for data types implemented in the recent versions of SQL Server.

Windows Authentication (more preferable)
Microsoft Windows Authentication mode allows a user to connect through a Windows user account.

SQL Server Authentication
When a user connects with a specified Login name and Password from a non-trusted connection, SQL Server performs the authentication itself by checking to see if a SQL Server login account has been set up and if the specified password matches the one previously recorded.

2.1.4 Firebird

Specify the following credentials to connect to Firebird.

- **Direct connection**

Direct connection is the most preferable connection mode.

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- **SSH tunnel connection**

If your Firebird server does not allow direct connections from remote workstations, you can establish connection to intermediate SSH server and forward all Firebird commands through the Secure SHell (SSH) tunnel.

Irrespectively of a connection mode you should specify common credentials as follows:

Protocol
Select "Standard server" to connect to a local or remote standalone Firebird server or "Embedded server 2.5-" / "Embedded server 3.0+" to use the embedded Firebird servers that come with the software (2.5 and 3.0 accordingly).

Host
The name of machine the Firebird server and database file resides on. It is usually possible to specify TCP/IP address instead of name (like 192.168.12.34), however this functionality is not built into Firebird, instead, it is provided by underlying network layer (e.g. WinSock2), and for some implementations/configurations it can be much slower than using name. In case the server is not localhost, specify the TCP/IP port as Port number.

Login information
Since Firebird 2.1, Windows authentication has been used for configuring the server authentication mode along with the traditional login info, requiring users to log in using a user name and password defined in the security database. To use Windows authentication, check the corresponding box. Under the right conditions, this may be the most secure way to authenticate on Windows. Otherwise, set the following server security options:

User name	The username used to connect to Firebird. User names are case insensitive on the server.
Password	The password for the user account on server. The server checks the user name and password against the security database. Case sensitivity is retained for the comparison. Only first 8 characters of Password are verified.
Role	Specify the role that the user adopts on connection to the database or leave it blank. Regardless of role memberships granted, the user has the privileges of a role at connect time only if a Role clause is specified in the connection. The user must have previously been granted membership in the role to gain the privileges of that role.

Database name
This is either a full name of the database file (as seen from the server), or an alias defined in the server's aliases.conf file.

More about SSH tunnel connection

To establish connection to intermediate SSH server and forward all SQL Anywhere commands through the secure tunnel, you need to:

1. Check I can connect to the server directly or via SSH tunneling.

2. Follow the Configure SSH options link to open the SSH Options window.

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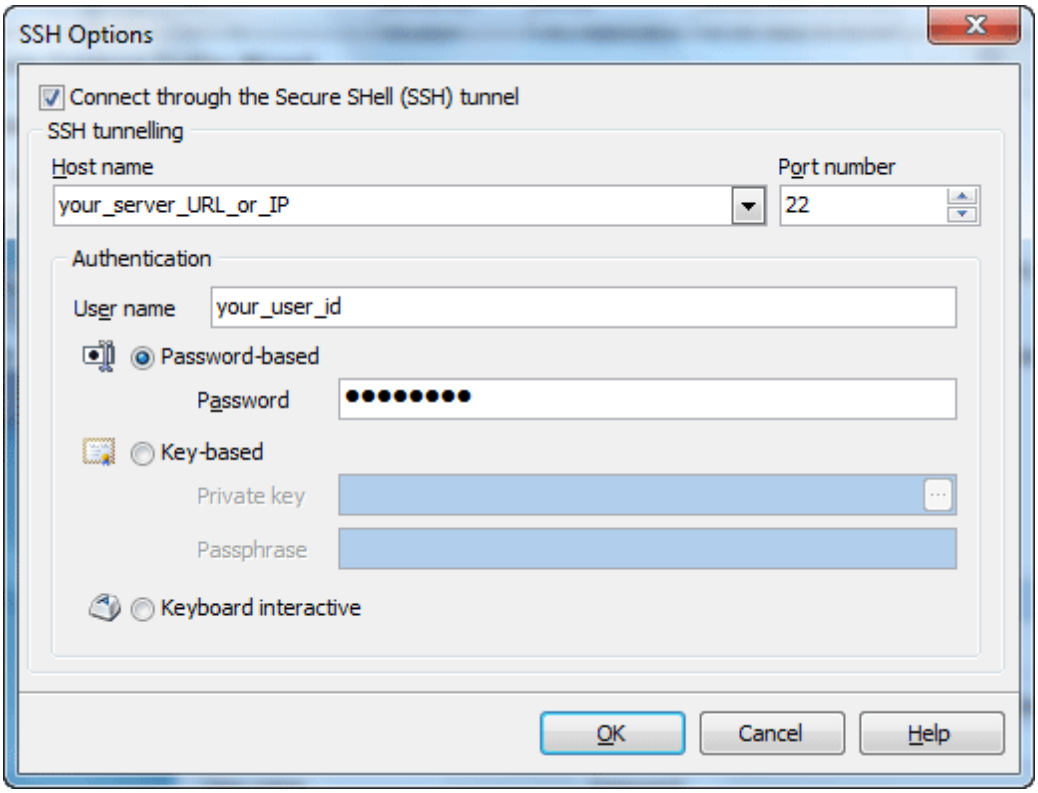

3. Check Connect through the Secure Shell (SSH) tunnel and complete the following fields:

Host name
Specify the host name or IP of your site. Note, that SQL Anywhere host name always should be set relatively to the SSH server. For example, if both of SQL Anywhere and SSH servers are located on the same computer, you should specify localhost as Host name instead of server's external host name or IP address.

Port number
Enter the port number for the SSH server.

4. Enter valid User name for the remote server and select the Authentication method and set corresponding credentials.

Password-based
Set the password corresponding to the specified user.

Key-based
Specify the path to the Private key file with the corresponding Passphrase to log in to the remote server. ASA Database Converter accepts keys in **ssh.com** or **OpenSSH** formats. To convert a private key from PuTTY's format to one of the formats supported by our software, use the PuTTYgen utility that can be freely downloaded from the PuTTY website.

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Keyboard interactive
Keyboard authentication is the advanced form of password authentication, aimed specifically at the human operator as a client. During keyboard authentication zero or more prompts (questions) is presented to the user. The user should give the answer to each prompt (question). The number and contents of the questions are virtually not limited, so certain types of automated logins are also possible.

2.1.5 Oracle

To connect to an Oracle database with ASA Database Converter, specify the following connection options:

User name
Use the field to specify the username to be used to connect to Oracle.

Password
Enter the password for the user account on server.

Database name
An entry from TNSNames.ora.

Connect mode
Allows you to connect with required administrative privileges (SYSDBA or SYSOPER). More information.

Check Use Operating system authentication to allow Oracle to pass control of user authentication to the operating system. The technology works as follows:

- First, create an OS user (if it doesn't exist).
- Check a value of the Oracle *OS_AUTHENT_PREFIX* initialization parameter. Current value of this parameter can be retrieved using the followng query:

  ```
  SELECT VALUE FROM  V$PARAMETER
  WHERE NAME  = 'os_authent_prefix'
  ```

  The default value is OPS$. The initialization parameter can be modified with the ALTER SYSTEM command.

- Create a database user. The user must use the external identification and its name must be the prefix value concatenated to the OS username (on Windows platforms you would expect an Oracle username of "OPS$DOMAIN\MY_USER" for the user "my_user").

2.1.6 SQLite

As SQLite is implemented as an embedded database engine contained in a single DLL, SQLite databases usually are stored locally or in the shared folders. To connect to such database, you should provide only a full database file name (e.g. C:\Data\SQLite \MyDatabase.db3) and a password (only for encrypted databases).

To read and write encrypted databases, ASA Database Converter uses the free wxSQLite3 library that is included into the installation package. This means it can

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operate only with encrypted databases created by itself or by any other tool that uses the same library. Unfortunately, our software cannot connect to databases encrypted by any other library because different SQLite security extensions use different algorithms, which are not compatible with each other.

SQLite engine does not support network connections, however ASA Database Converter allows you to manage remote SQLite databases using the HTTP tunneling technique. For this purpose, you need to have a webserver running on a computer that stores the database file. Of course this webserver should be accessible from your workstation and you should be able to upload files there.

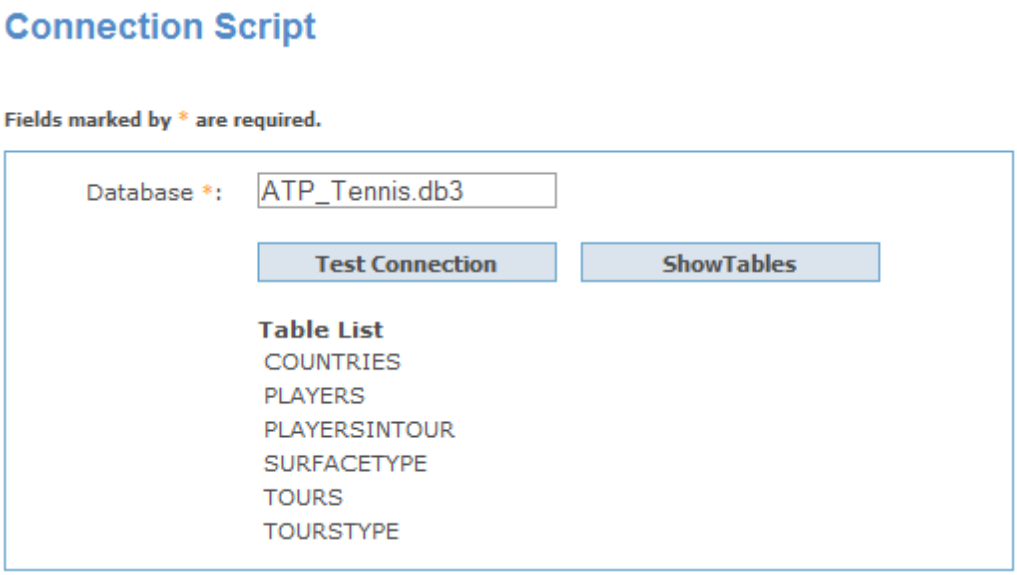
More about connection via HTTP tunnel

To connect to a remote SQLite database using an HTTP tunnel, you need to:

1. Upload the connection PHP script to your website. The scripts are named *sqlite_tunnel.php* and *sqlite3_tunnel.php* for SQLite databases versions 2 and 3 accordingly and can be found under the installation folder, usually *C:\Program Files\SQL Maestro Group\ASA Database Converter*.

2. Turn ON the I have to use HTTP tunneling checkbox.

3. Enter the connection PHP script URL, e.g. *www.yoursite.com/files/sqlite_tunnel.php*. You can test the connection before the profile is created. Just use Test script using default browser to open connection script in your browser, enter all the required connection parameters and use the Test connection button.



4. In case using of a proxy server use Configure tunnelling options to open the HTTP tunnelling options window and specify your proxy server connection parameters and HTTP authentication.

Note 1. Do not forget to enable read/write permissions for a database file and read/write/execute permissions for the directory where the database file is

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stored.

Note 2 (only for SQLite 3 databases). The webserver PDO_SQLite library must be compatible (not earlier in the most cases) with the library the database was created with. If they are not compatible, you will get an error message "Could not retrieve table list from _database_name_ ... " on getting a table list at the connection script. If you've got the message, check the PDO_SQLite library version using, for example, the *phpinfo()* function, download a compatible library from the SQLite official website, get an SQL dump of the database and create a new one from the dump file with this library.

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2.2 Connecting to the target database

To connect to an SQL Anywhere database with ASA Database Converter, specify the following connection options:

Host
The host name of the SQL Anywhere server.

Engine name
The name of a running database server to which you want to connect. Click the ellipsis button to scan your network for available SQL Anywhere servers.

Port number
The TCP/IP port to use (default value is 2638).

ASA Database Converter allows you to use integrated login (only for database servers running on Windows). Otherwise, set the following server security options.

User name
The username used to connect to SQL Anywhere.

Password
The password for the user account on server.

Start database before connection
Starts a local database server (if available).

Stop database after last disconnect
Stops local database server when there are no more open non-HTTP connections.

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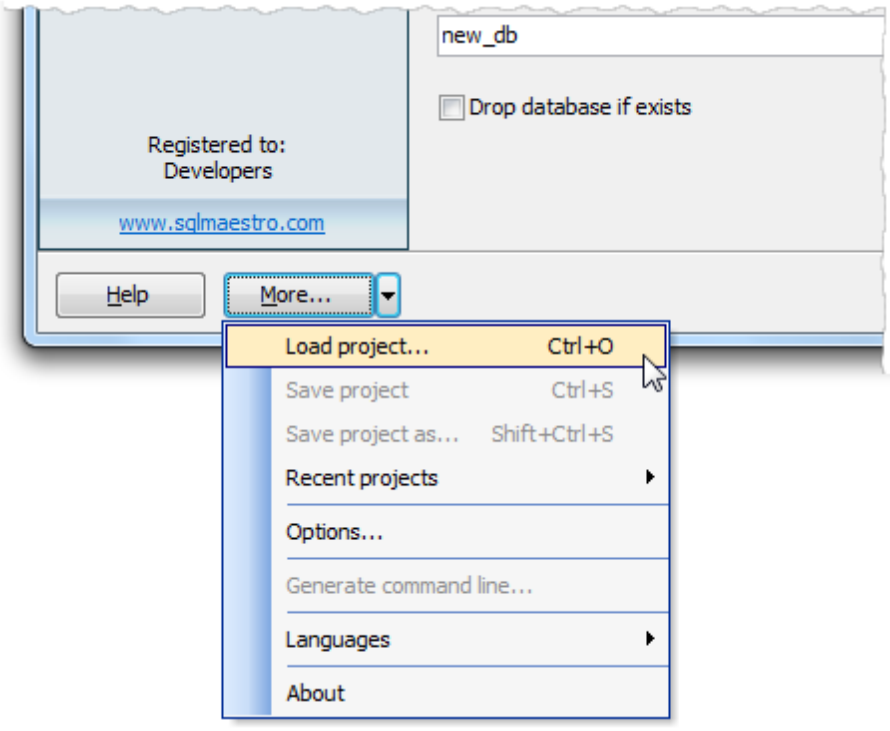
2.3 Projects

ASA Database Converter allows you to save and restore all the options set during a session. You need not to specify all options each time you work with the application anew; instead you can load all settings from a project and change them if necessary.

Projects are very useful when working with ASA Database Converter. If you will close the application without saving a project, all carefully adjusted settings will be lost. To set the same options next time, you'll need to repeat the process step by step again while with a project all the session parameters can be restored in a few mouse clicks.

To create a project, click More > Save Project. All the settings you have made will be saved to a file.

To restore previously saved settings from a project, click More > Load Project at the first wizard step. Recently used projects are available from the More > Recent Projects popup menu.



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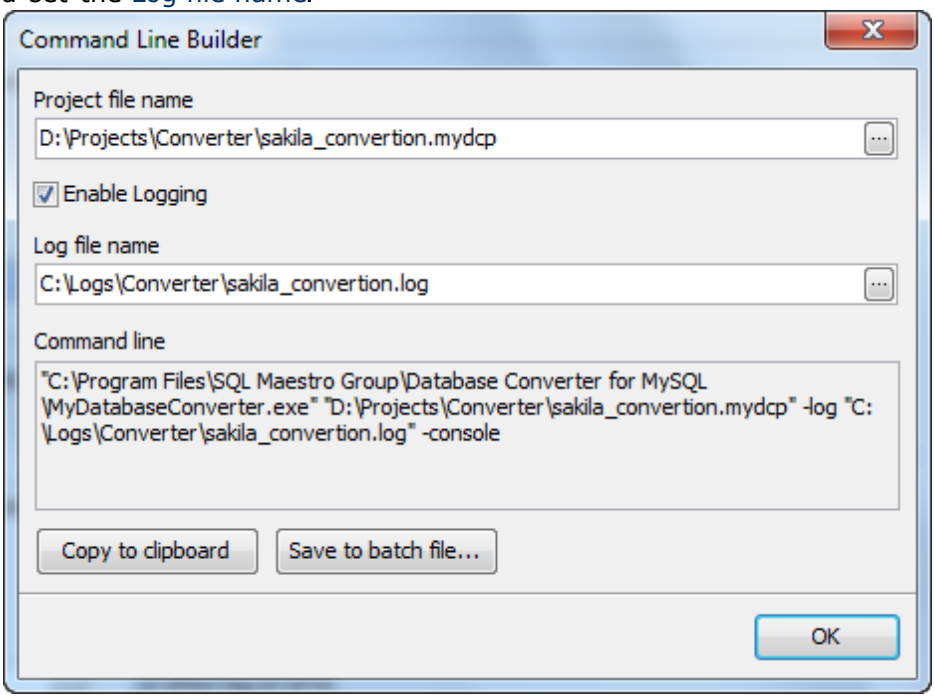
2.4 Command line options

ASA Database Converter supports a number of command line options that make it possible to fully automate database migration. To generate the command line automatically, load the project to be used or specify the comparison options and click More > Generate command line. To log the conversion process, check the corresponding option and set the Log file name.



The ASA Database Converter command line syntax is as follows:

MyDatabaseConverter[.exe] <project_file_name> [-l|log <log_file_name>] -console

MyDatabaseConverter[.exe]	The ASA Database Converter program file.
<project_file_name>	The project 25 with all the task's settings.
-c|console	Runs the wizard in console mode. This option is required.
-l|log	Enables logging, requires the log file name.

Examples
The example below assumes that you are entering the command lines in the ASA Database Converter program directory. Don't forget to enclose all paths and filenames containing spaces in quotes.
"C:\Program Files\SQL Maestro Group\Database Converter for MySQL \MyDatabaseConverter.exe" "D:\Projects\sakila_conversion.mydcp" -console

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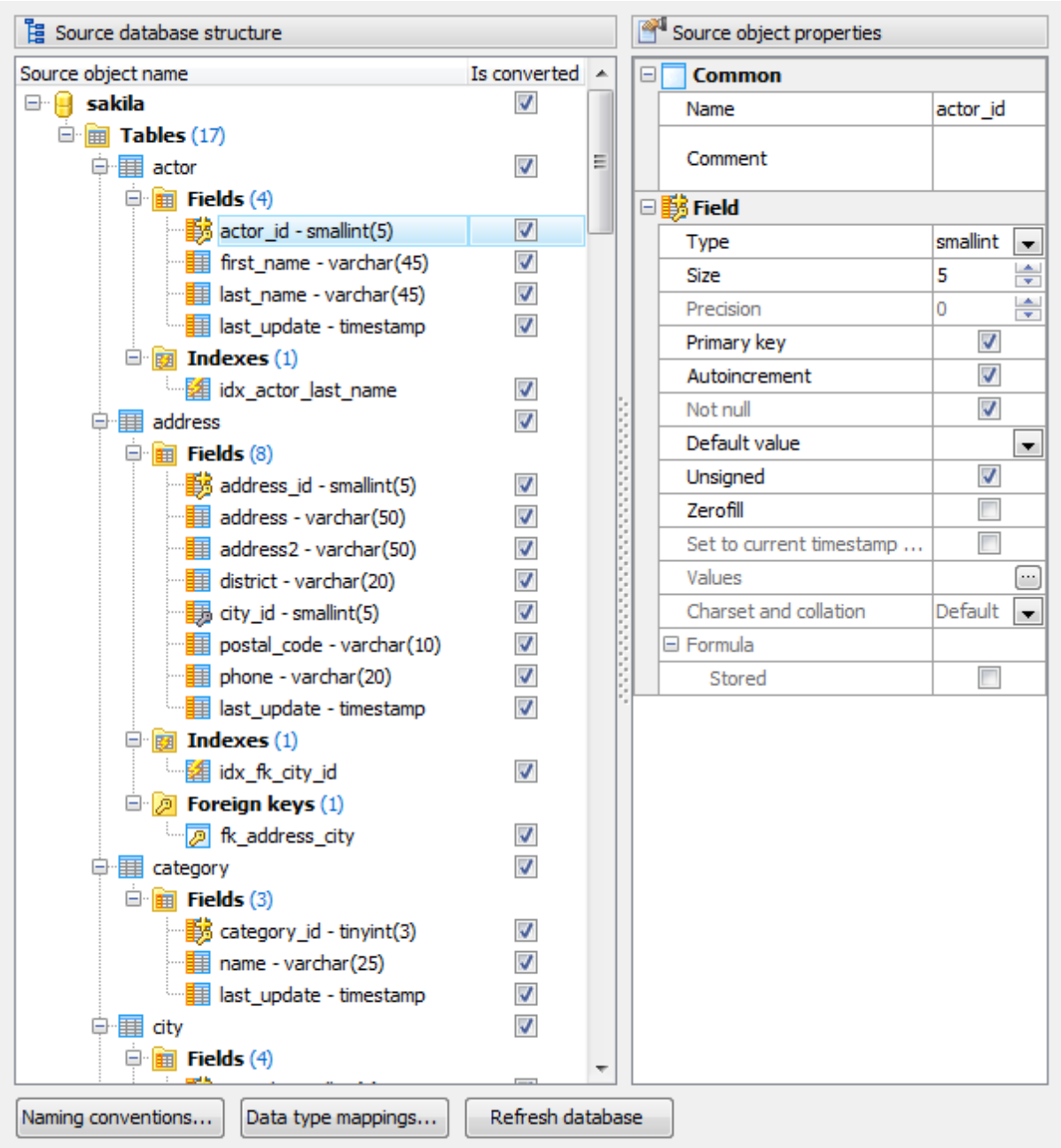
3 Source objects

The Source database structure tab represents the schema of the source database and allows you to specify objects to be transferred to the target one. To include an object to the conversion process, turn on the corresponding "Is converted" option. To get the actual database objects tree, use the Refresh database button. The Source object properties tab allows you to browse the selected object's options.

To set rules of the data types conversion 28 and naming conventions 29 to be applied during the schema transferring, use the corresponding windows.



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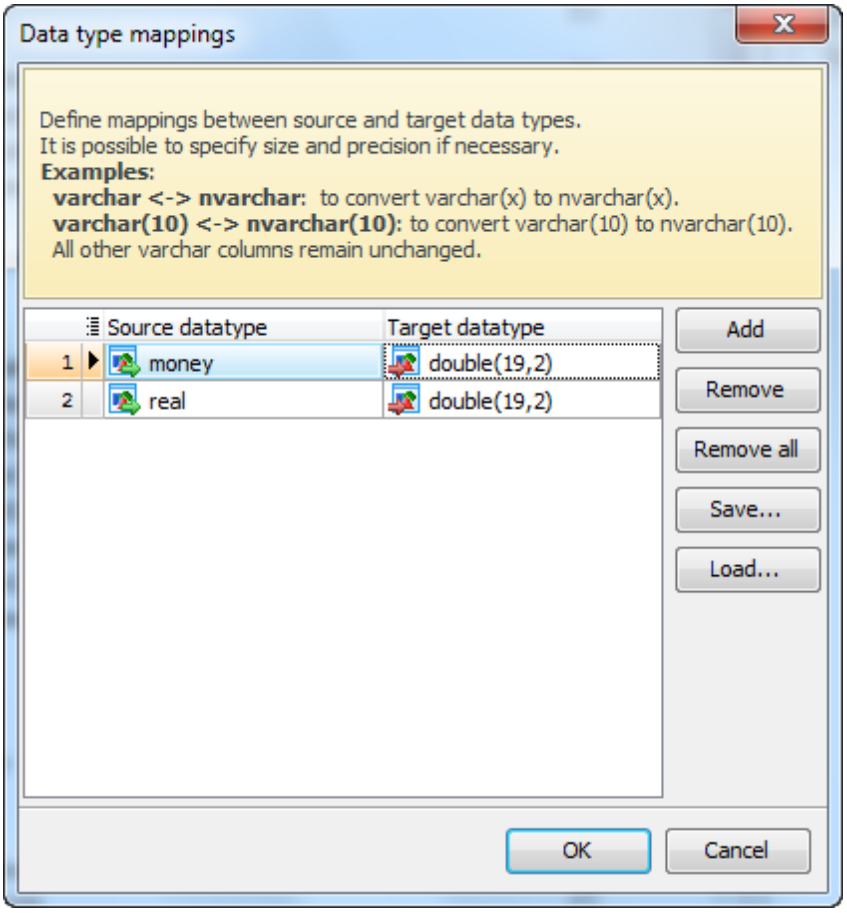
3.1 Data type mappings

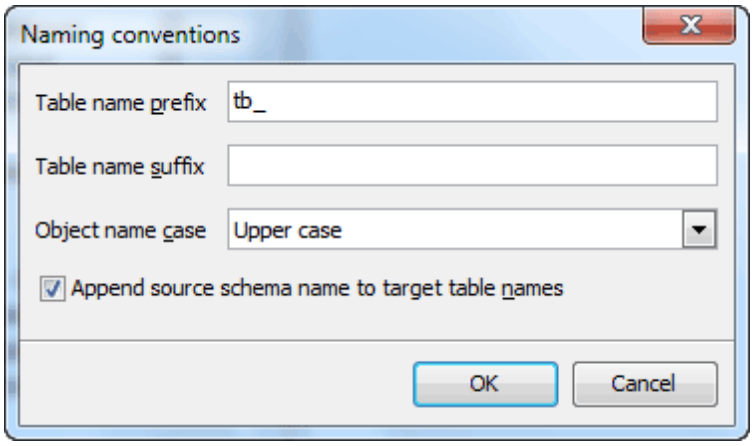
The necessary condition of successful conversion is the accurate mappings between source and target data types. To set rules of the data type conversion, use the Datatype mapping... button at the Selecting source objects step and define the rules to be used for the transferring data.

To define a mapping, use the Add button and select Source and Target datatypes from the corresponding drop-down lists. To set size and precision, type it directly to the according cell. You can also save specified mapping to a file to be used for other conversions.



3.2 Naming conventions

The Naming conventions window allows you to define rules to be applied for the names of the created objects. Here you can specify prefix and suffix for the target tables as well as the case of names of objects to be created. The Append source schema name to target table names checkbox allows you to choose whether source schema name will be added to target table names.



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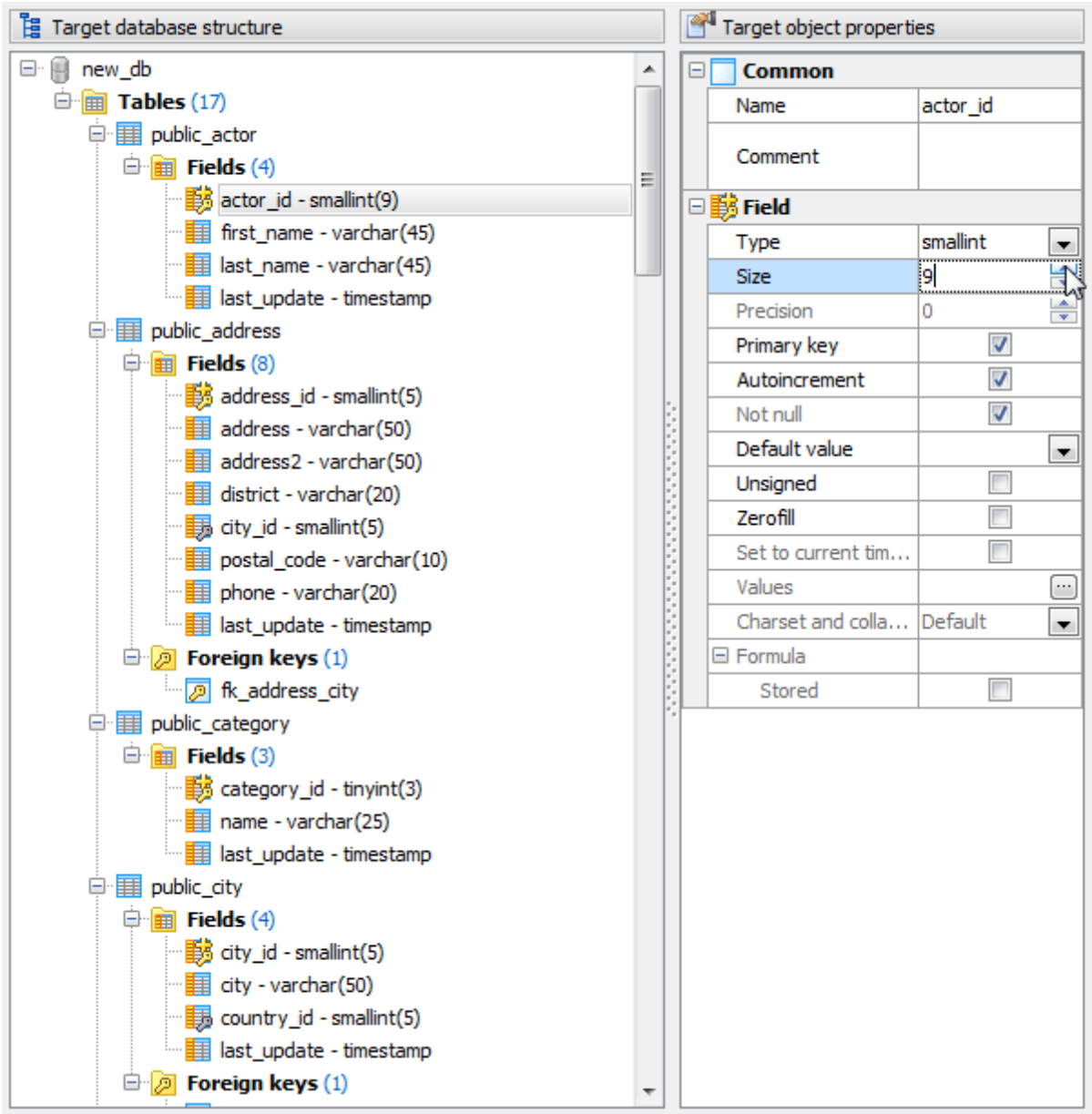
4 Target objects

On this step you can customize the objects to be created in the target database. The Target object properties area on the right of the window allows you to change characteristics of the selected object such as name, comment, data type, etc.



To validate the integrity of the target database after all modifications, invoke the Database integrity errors dialog with the corresponding button. ASA Database Converter recognizes if an identifier name is longer than allowed by SQL Anywhere or if a field in foreign key and referenced field have no similar data types. To define the behavior of the software in these cases, use the corresponding application options 36.

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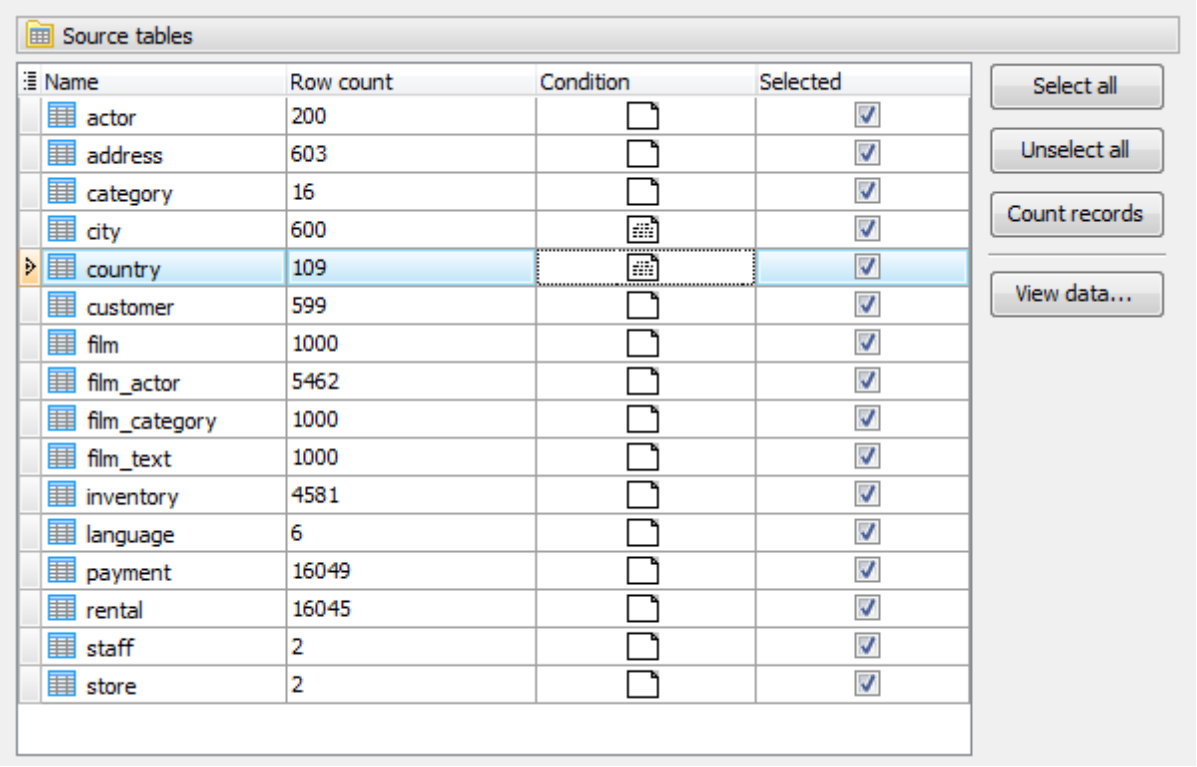
5 Data import

Use this step to setup data conversion. The Source tables
To import data from a table, turn on the corresponding Selected option.

By default the number of records of the source table are not displayed. To find out them, use the Count records button. This process may take some time especially if you have a slow database connection. You can restrict the number of transferred rows with a filter condition.



The View data button allows you to browse the source table content.

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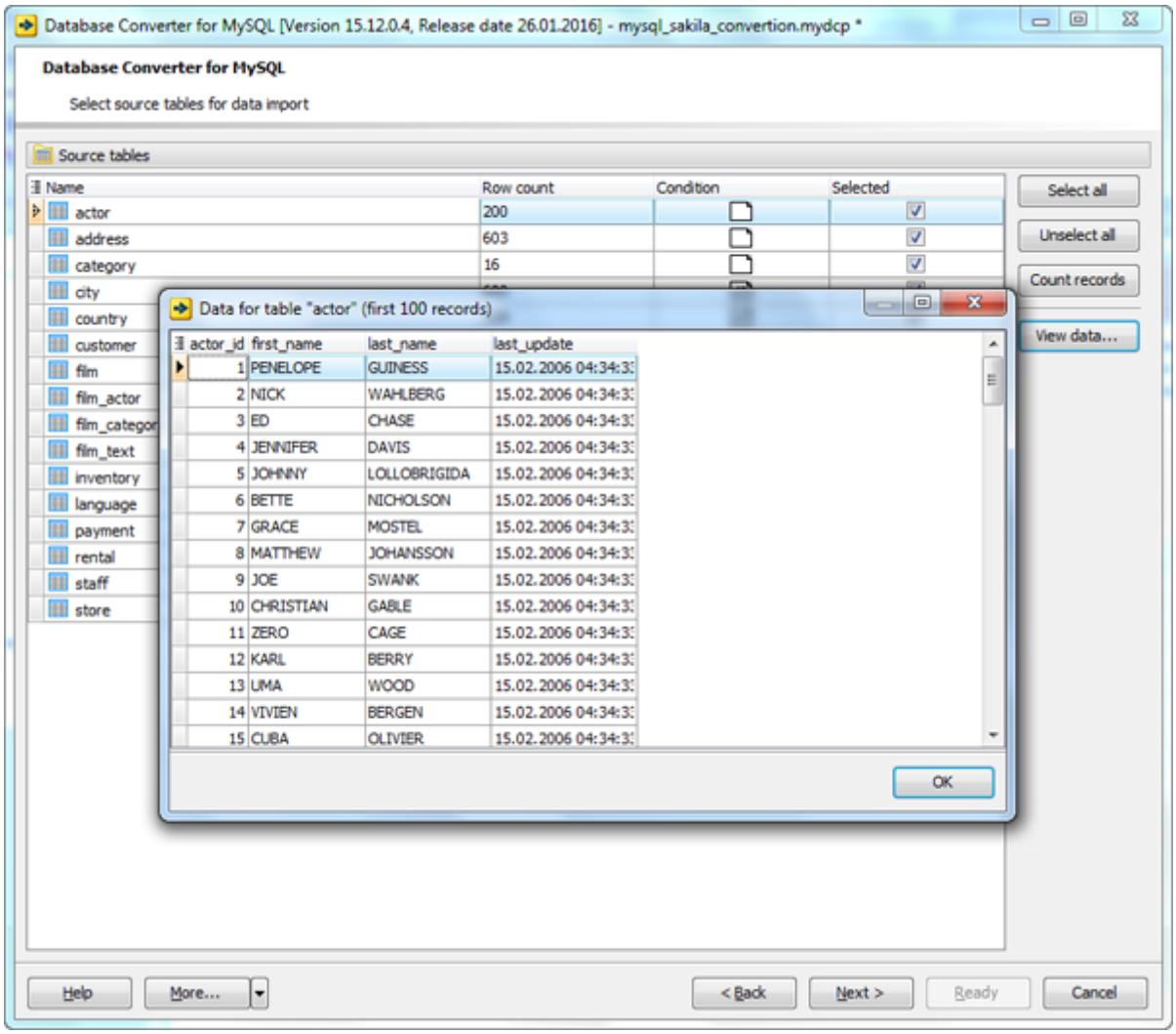

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6 Converting options

Use this step to define whether the source objects will be converted directly to the target database or/and SQL scripts with objects definitions and INSERT statements will be generated.

To generate objects directly to the target database, turn on the Generate database objects checkbox (do not activate this option if you want only to generate an SQL script). To import data to selected tables, turn the Insert records into database option "ON".

Import Data Wizard supports the LOAD DATA INFILE command to insert data to the table. This feature can speed up the import process up to 10 times so it is recommended to use it always if possible. Uncheck this option to use INSERT statements instead.

To generate SQL scripts to a file to be executed later using any appropriate software product, use the Script generation
checkbox group. To save SQL definitions of the target objects to .sql file, turn on the Save metadata script to file option and specify the file path. To equip this file with insert statements, turn on the corresponding option.

Scripts
Follow the Customize scripts link to specify SQL scripts to be executed during the transfer. The scripts are executed as follows:

- *After connect*: after connecting to the target database but before creating schema objects;
- *Before data importing*: after creating schema objects but before transferring tables' data;
- *After converting*: after completing the deal.

Logging
This option group allows you to enable/disable logging of the converting process.

Projects
On this step you can save all parameters that have been set during the wizard session to a project file 25 for a further using. For this purpose, click the More... button and select the corresponding link.

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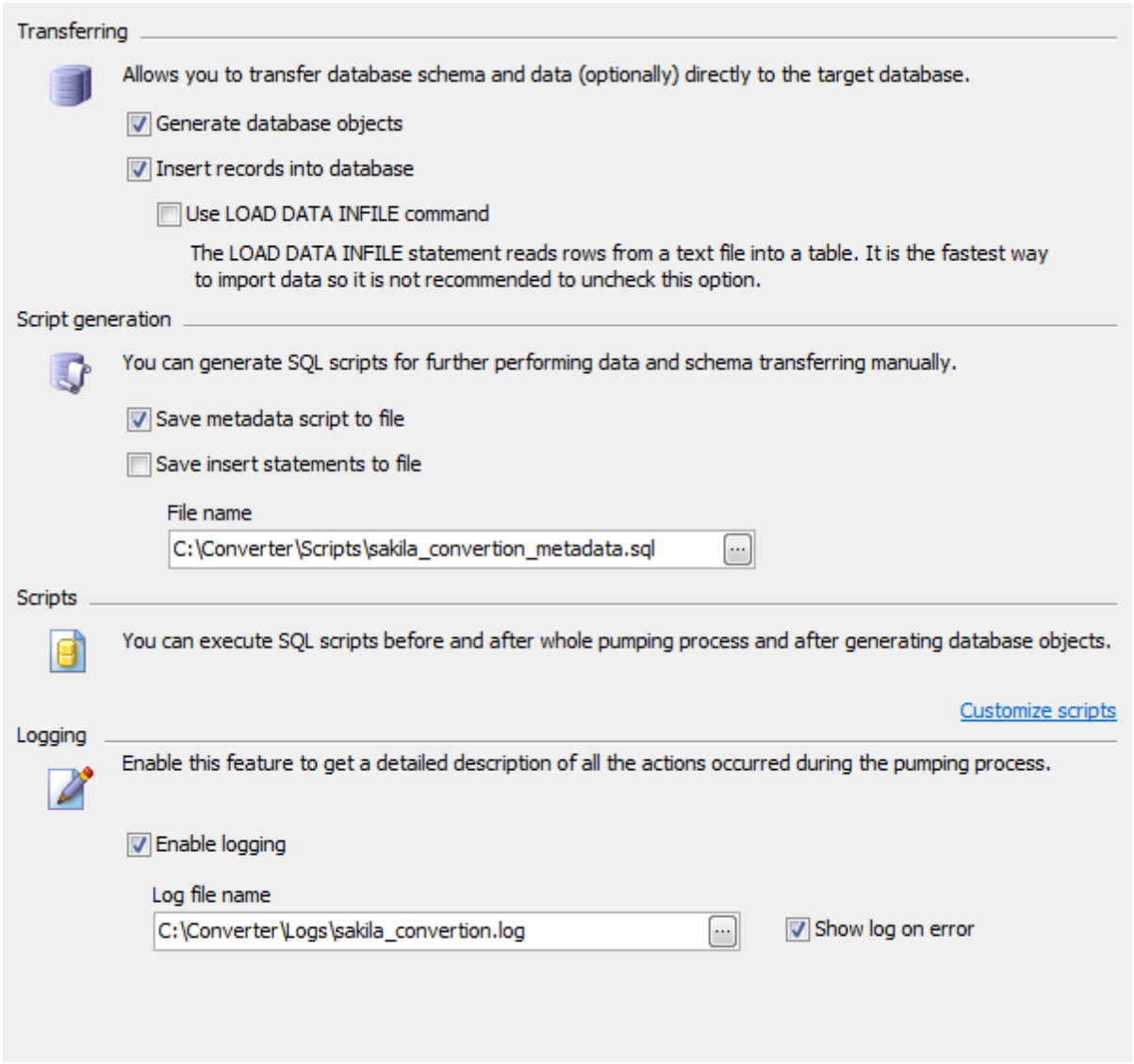

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7 Options

ASA Database Converter allows you to customize the way it works within the Options dialog.

The window allows you to customize the options grouped by the following sections:

- **Application** 36
  General ASA Database Converter options: environment style, confirmations, window restrictions
- **Editors & Viewers** 39
  Customizing of all the SQL editors.
- **Appearance** 47
  Customizing program interface - bars, trees, menus, etc.

It is a good idea to check through these settings before you start working with ASA Database Converter. You may be surprised at all the things you can adjust and configure!

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7.1 Application

The Application section allows you to customize common rules of ASA Database Converter behavior. The section consists of several tab; follow the links to find out more about each of them.

- Common 36
- Confirmations 37

7.1.1 Common

Use this tab to define rules to be used for converting process.

Converting error behavior

On creating

Select the action to be executed when an error occurs on creating a schema object: continue or abort objects creation.

On importing

Select the action to be executed when an error occurs during the data importing: abort importing, skip current table, or continue importing.

Action on database integrity error

Identifier name is too long

Use this option to define the application behavior in case the target schema contains an identifier which name is longer than allowed by SQL Anywhere.

- Select Ignore to use this name in the object definition. In this case this identifier will be included into the SQL definition with the specified name.
- Use Set name manually to enter a new name allowed by server in the Database integrity errors 30 dialog window or in the Target object properties 30 tab.
- It the Define name automatically option is selected, a name like "Table01", "Index03", and so on will be assigned for this object by the server.

Field in foreign key and referenced field have no similar data types

This option defines whether the application will change the data type of the foreign field to the data type of the referenced field automatically or will ignore this integrity error.

Options

☑ Drop existing target tables before converting

Check this option to recreate existing target tables.

☑ Use unidirectional cursors

To improve data import performance, set this option to true, restricting a cursor to forward movement through a result set.

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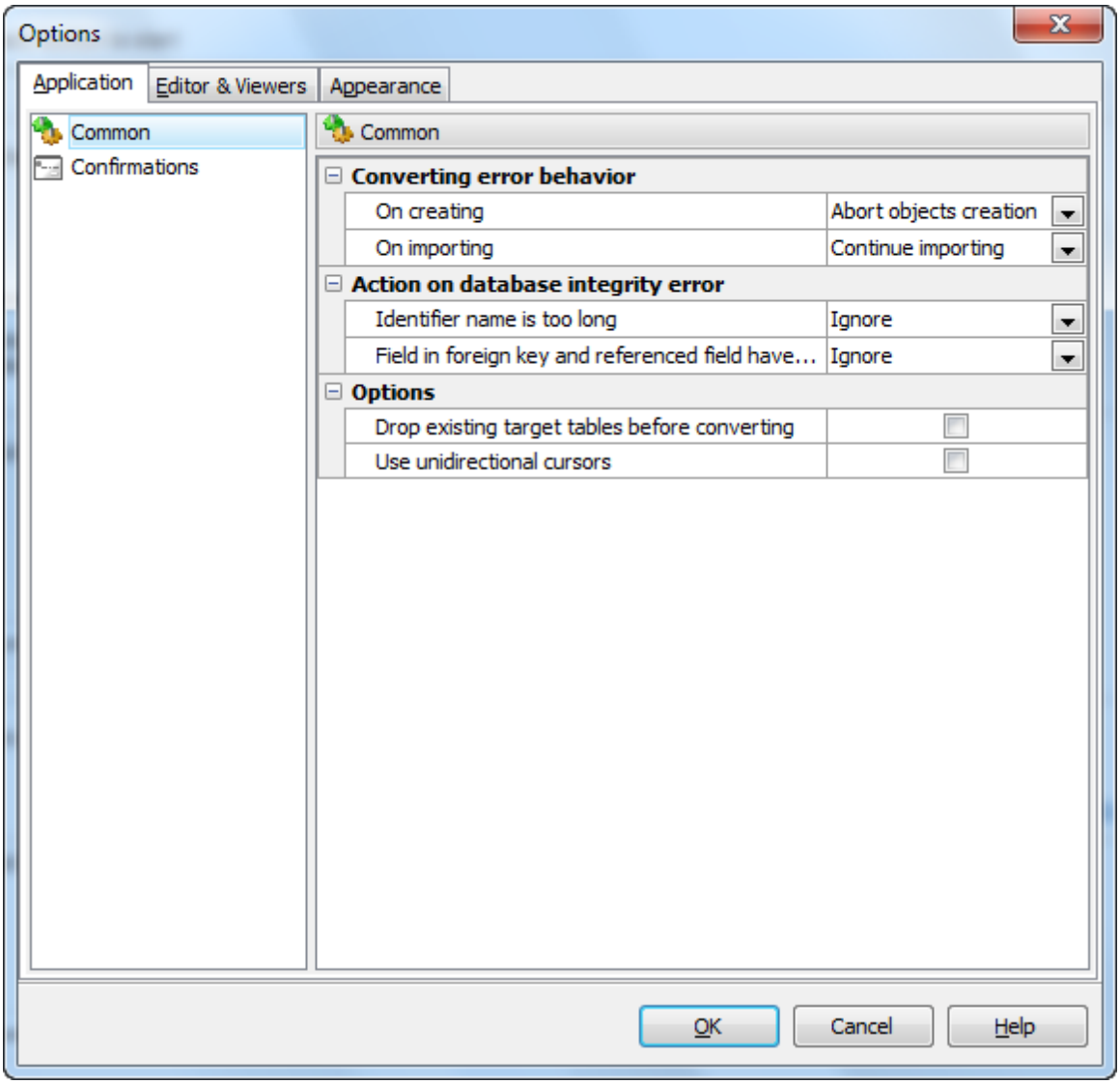

7.1.2 Confirmations

Use this tab to manage application confirmations.

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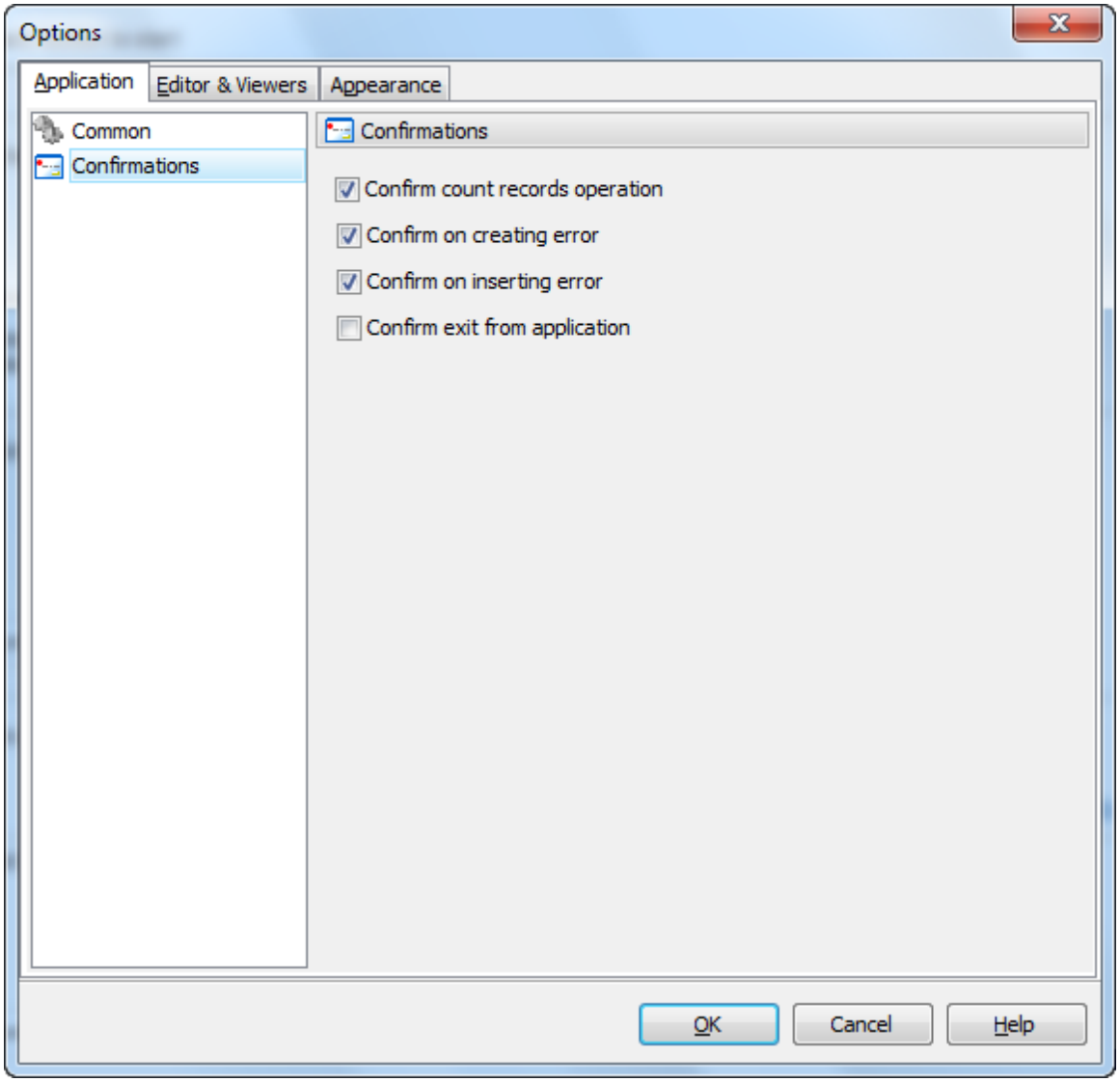

Confirm count records operation

If this option is checked, the program asks you to confirm for count records operation.

Confirm on creating error

If this option is checked, the program requires confirmation each time an error occurs during schema creating.

Confirm on inserting error

If this option is checked, the program requires confirmation each time an error occurs during data inserting.

Confirm exit from application

If this option is checked, the program requires confirmation when you want to exit <% PRODUCT_NAME%.

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7.2 Editors & Viewers

The Editors & Viewers section allows you to set the parameters of viewing and editing the SQL statements within ASA Database Converter.

- General 39
- Display 40
- SQL highlight 41
- PHP highlight 43
- XML highlight 42
- Code Insight 44
- Code Folding 45

7.2.1 General

If the Auto indent option is checked, each new indention is the same as the previous when editing SQL text.

☑ Insert mode
If this option is checked, insert symbols mode is default on.

☑ Use syntax highlight
Enables syntax highlight in the object editor window.

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

☑ Show line numbers
If this option is checked, line numbers are displayed in the editor window.

☑ Show special chars
If this option is checked, special chars (like line breaks) are displayed in the editor window.

☑ Use smart tabs
With this option on the number of tab stops is calculated automatically, depending on the previous line tab.

☑ Convert tabs to spaces
If this option is checked, each time you press the Tab key, the appropriate number of spaces will be added to the edited text.

Tab Stops
Defines the tab length, used when editing text.

Undo Limit

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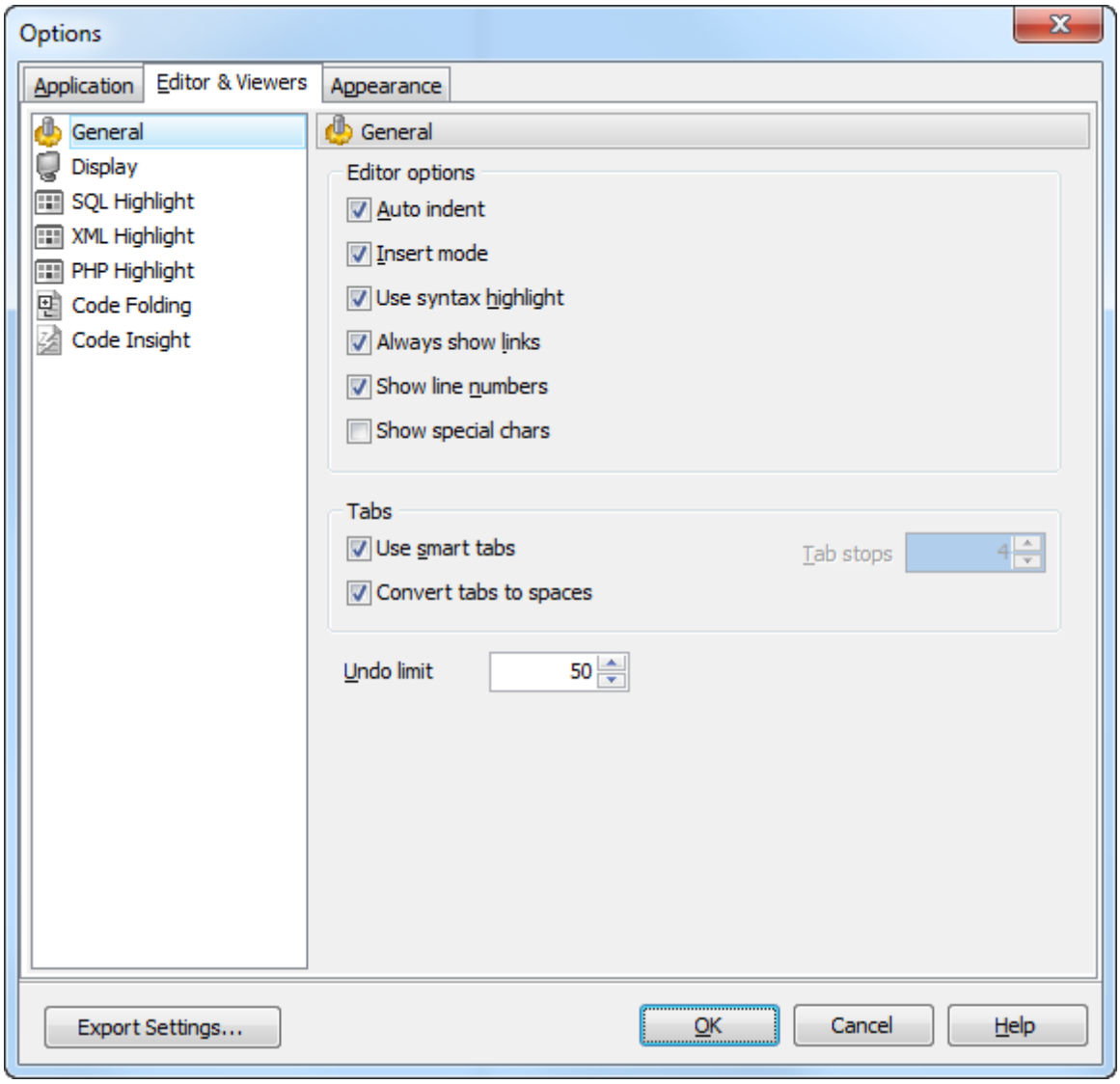
Defines the maximum number of changes possible to be undone.



7.2.2 Display

You can disable/enable the right text margin and the gutter of the editor area, set the position of the right text margin as Right margin, and the Gutter width.

Use the Editor font and Font size to define the font used in all program editors and viewers. The panel below displays the sample of the selected font.

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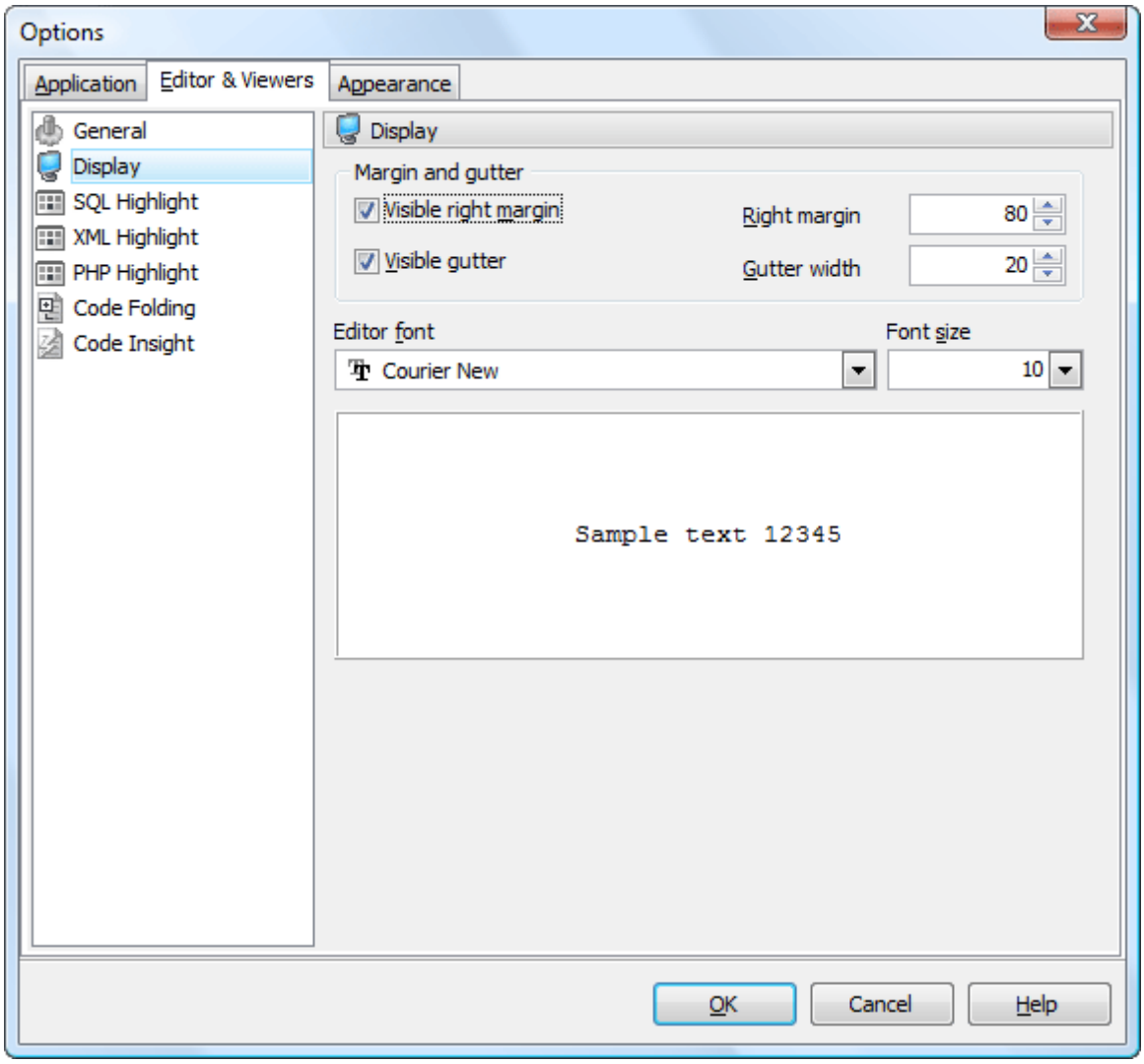

7.2.3 SQL highlight

Use the SQL highlight item to customize syntax highlight in all SQL editors and viewers. Select the text element from the list, e.g. *comment* or *SQL keyword* and adjust its foreground color, background color and text attributes according to your preferences.

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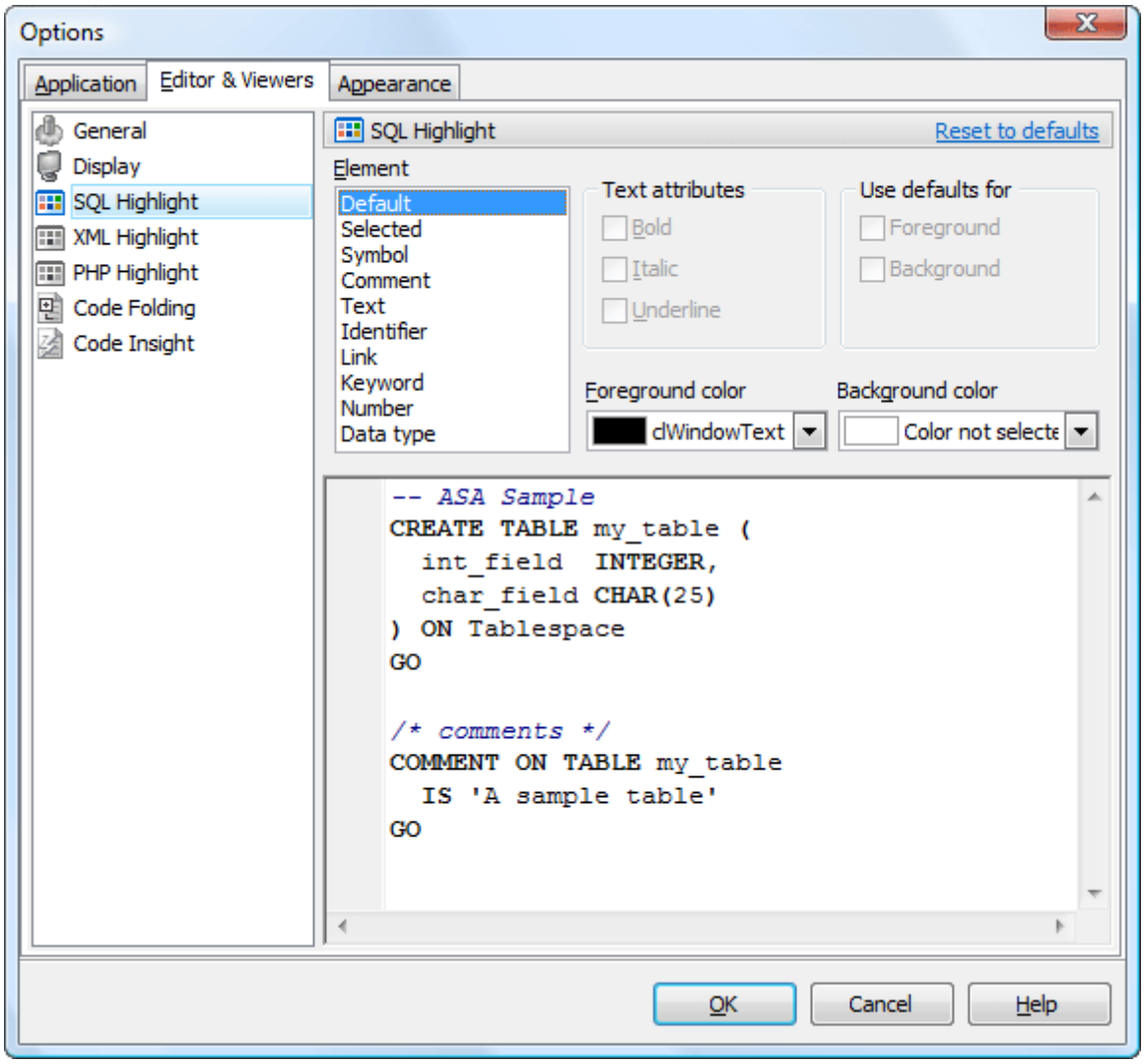

7.2.4 XML highlight

Use the XML highlight item to customize XML syntax highlight for the text representation of BLOBs. Select the text element from the list, e.g. attribute or attribute value and adjust its foreground color, background color and text attributes according to your wishes.

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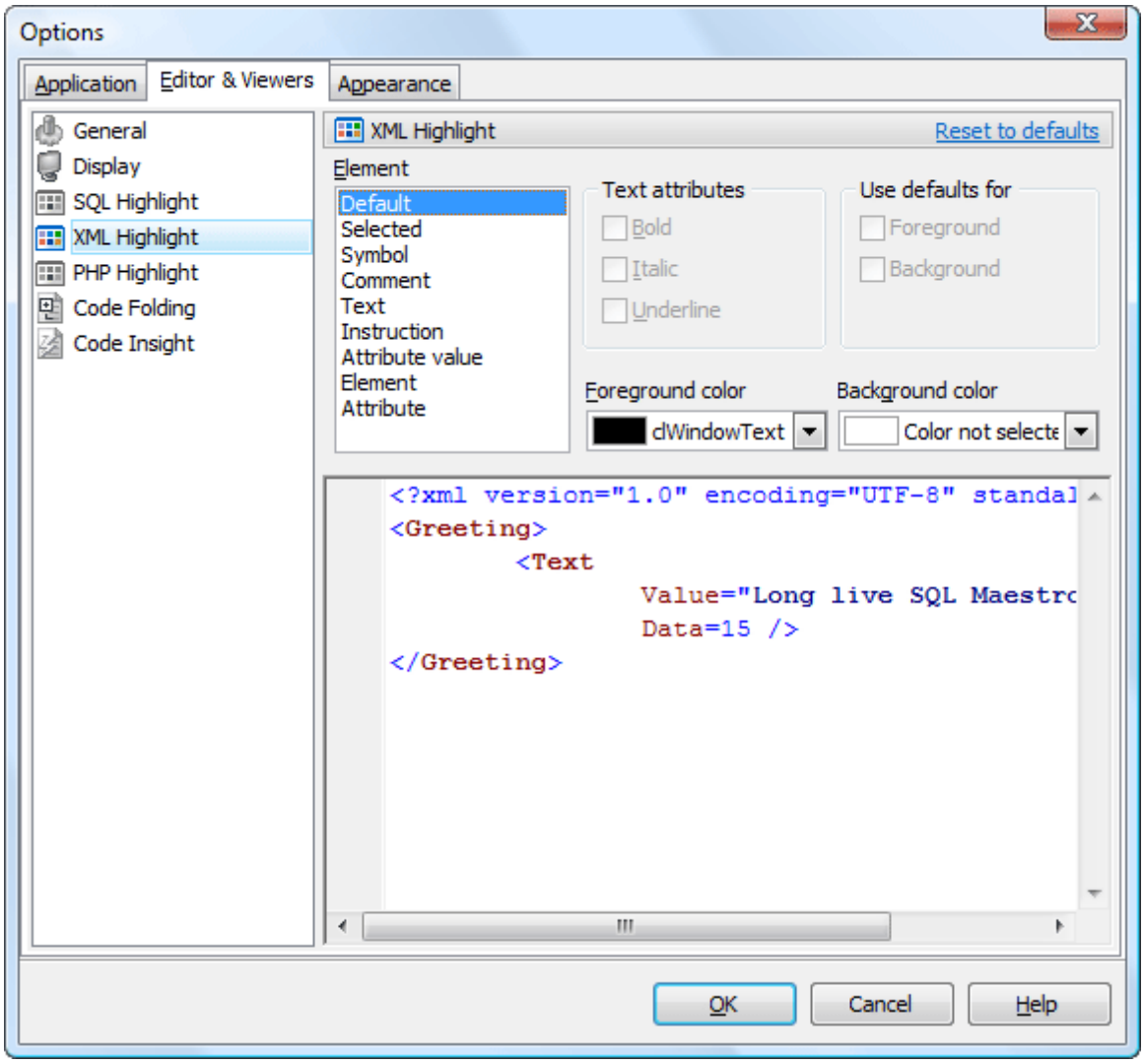

7.2.5 PHP highlight

Select the text element from the list (e.g. Keyword, Comment, Identifier), and adjust its foreground color, background color and text attributes according to your wishes.

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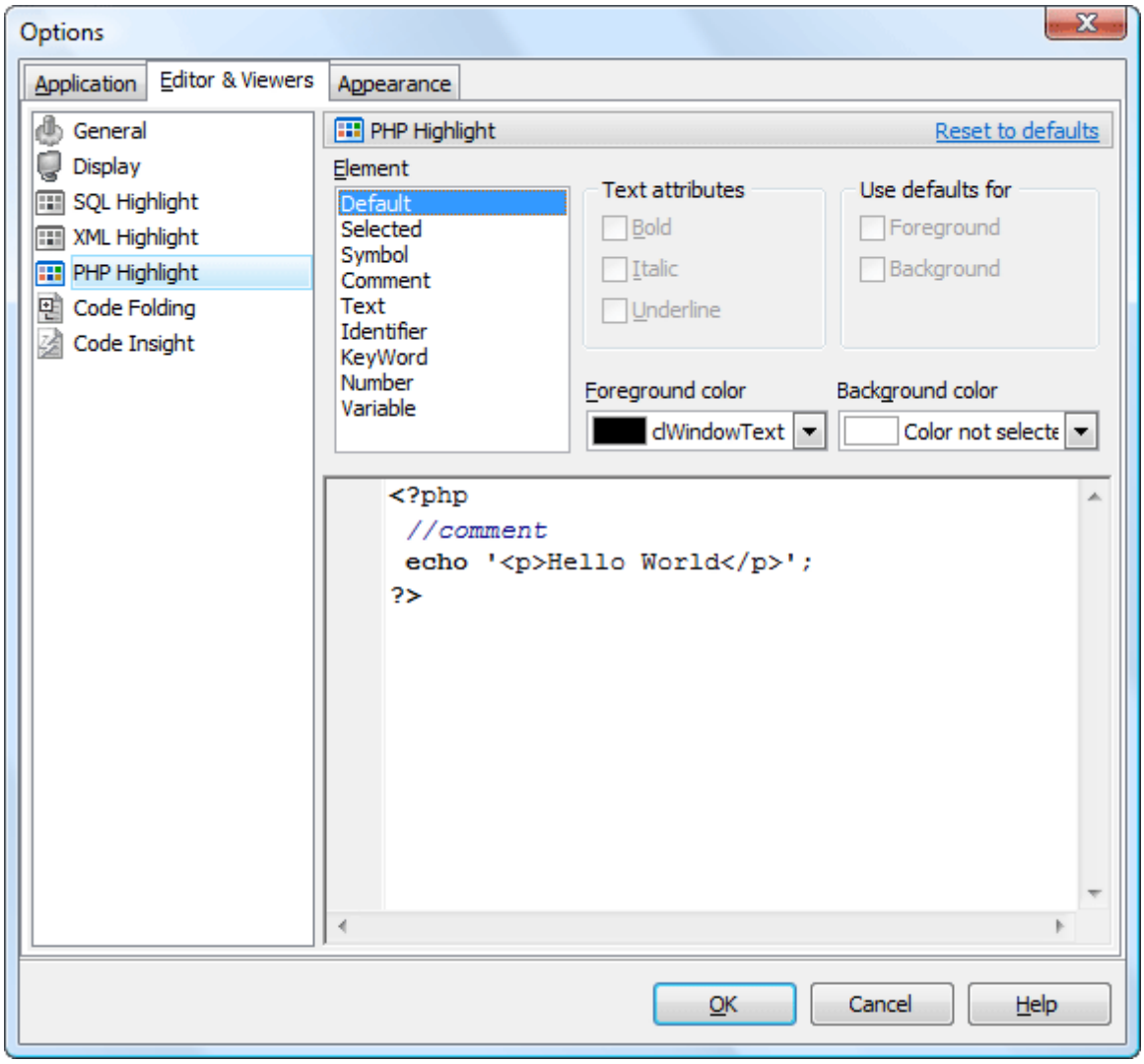

7.2.6 Code Insight

You can disable/enable the code completion with the corresponding option and also set the time is appears as Delay, and case of words inserted automatically.

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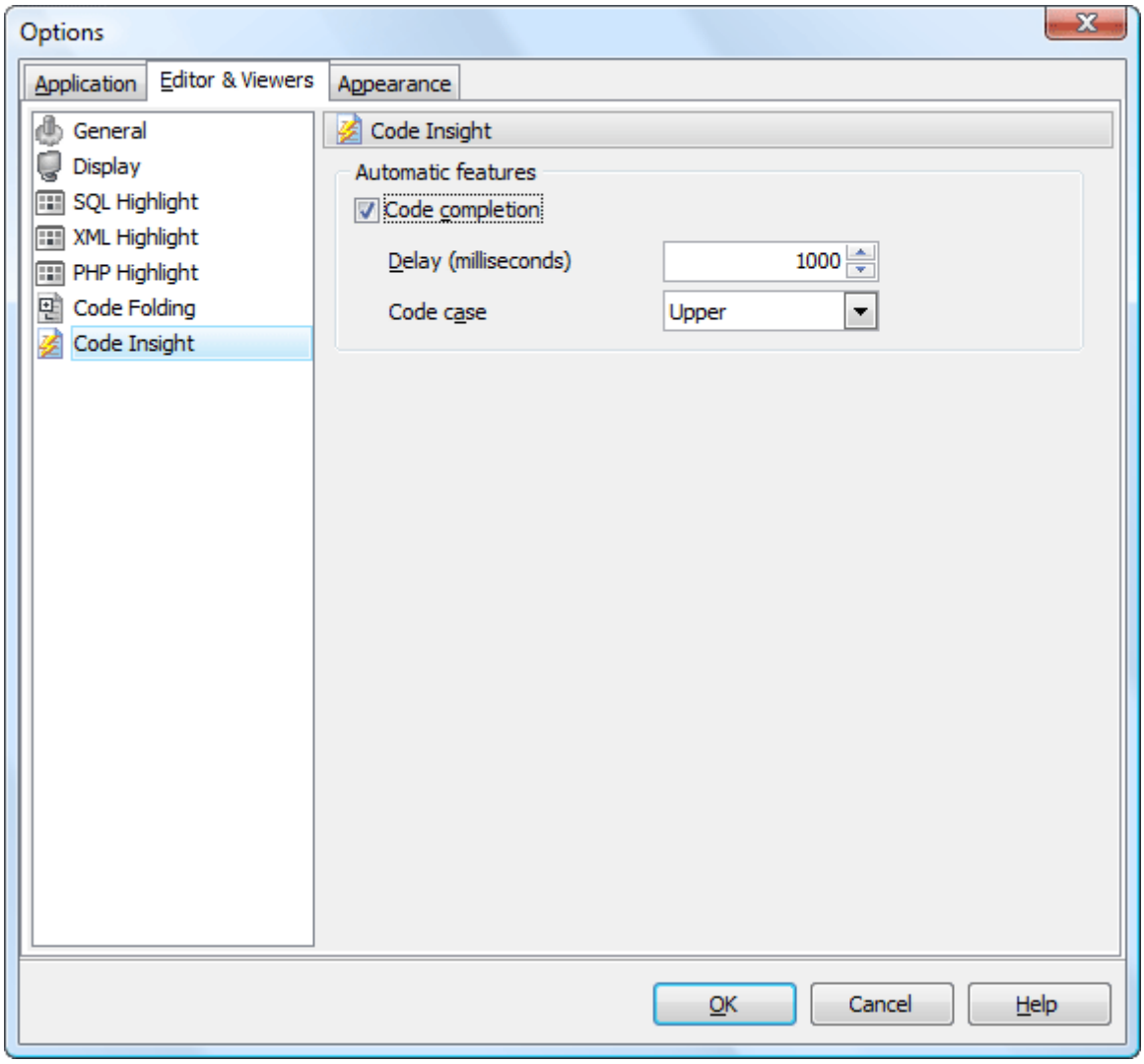

7.2.7 Code Folding

The Code Folding item group makes it possible both to view the whole text and to divide it into logical parts (regions). Each part can be collapsed and extended. In extended mode the whole text is displayed (set by default), in collapsed mode the text is hidden behind one text line denoting the first line of the collapsed region.

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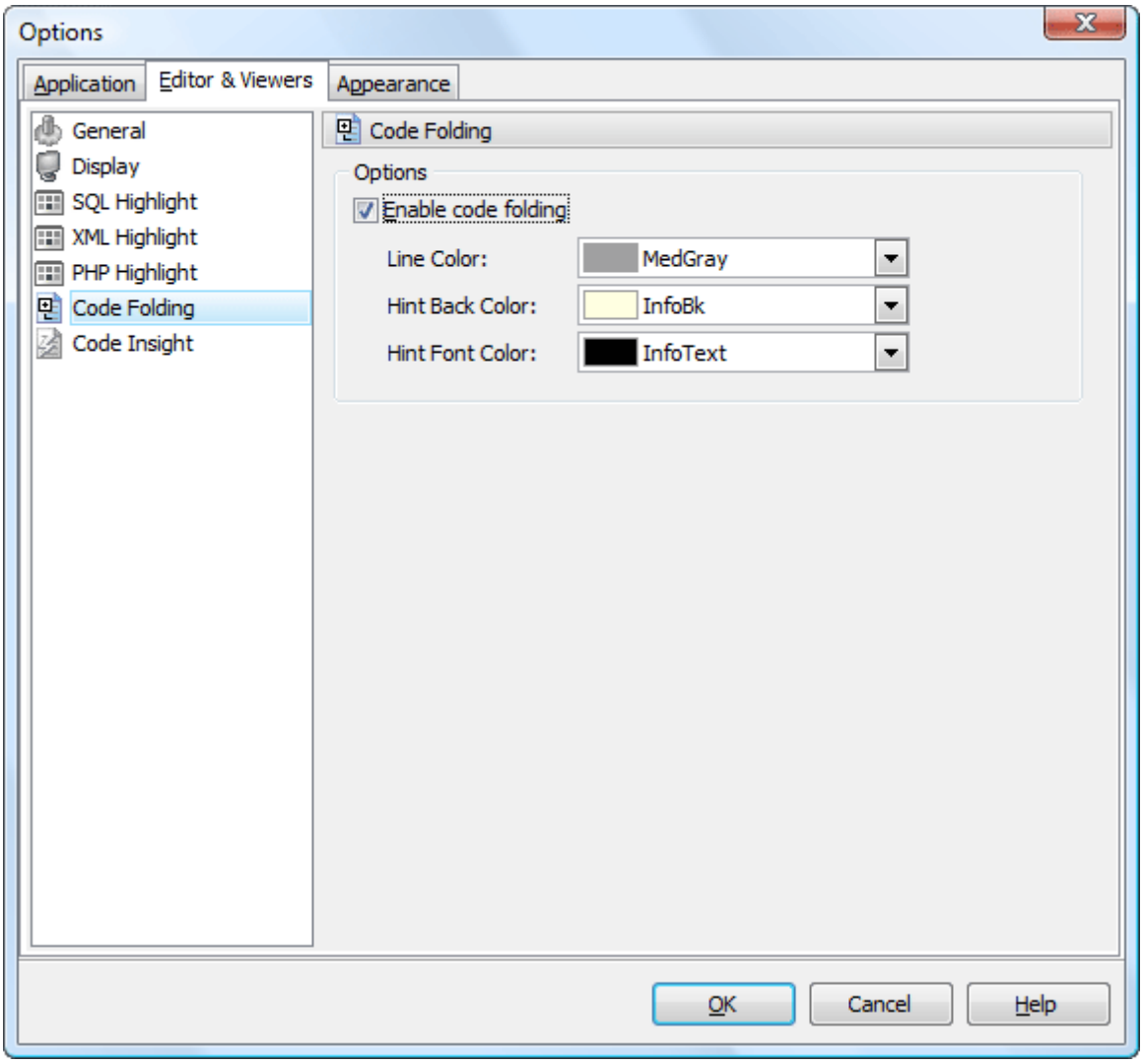

You can enable/disable code folding in SQL editors and viewers and customize the colors of its items.

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7.3 Appearance

The Appearance section allows you to customize the application interface style to your preferences.

Use the Scheme name box to select the interface scheme you prefer: *Office XP style*, *Windows XP native style*, etc. You can create your own interface schemes by customizing any visual options (Bars and menus, Trees and lists, Edit controls, Check boxes, Buttons, etc.) and clicking the Save As button. All the customized options are displayed on the sample panel.

- Bars and menus 47
- Trees and lists 48
- Edit controls 49
- Check boxes 50
- Buttons 51
- Page controls 52
- Group boxes 53
- Splitters 54

7.3.1 Bars and menus

Use the Bars and menus item to customize ASA Database Converter toolbars style and menus animation.

The item allows you to select Bar style and menu animation from the corresponding drop-down lists and to enable or disable such options as sunken border, F10 key for opening menu, viewing full menus after delay, flat close buttons, gray-scale images.

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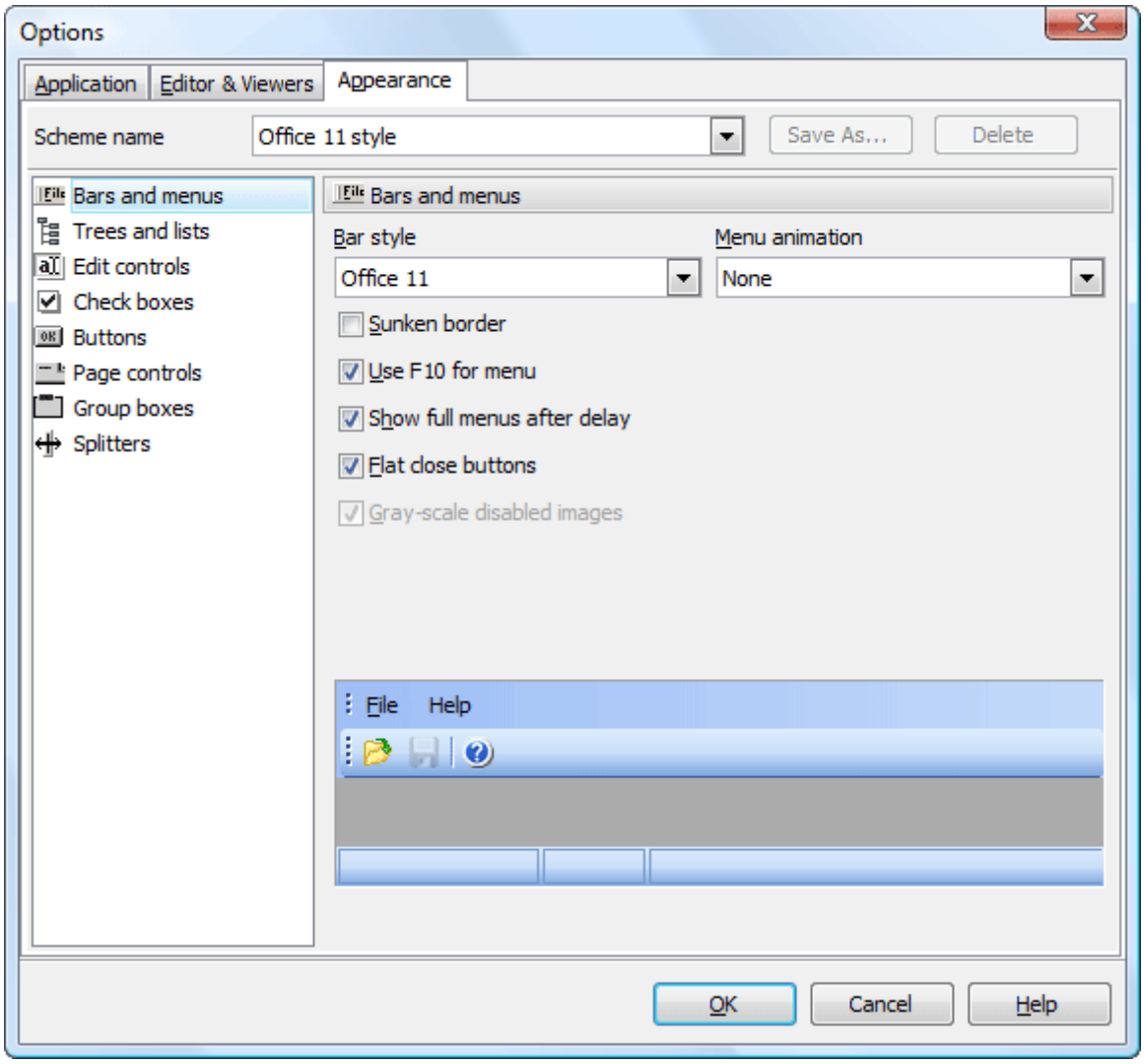

7.3.2 Trees and lists

Use the Trees and lists item to select various tree view options. Use the item to select *standard*, *flat* or *ultraflat* styles, check or uncheck the *hide selection*, *hide focus rectangle* and *native style* options.

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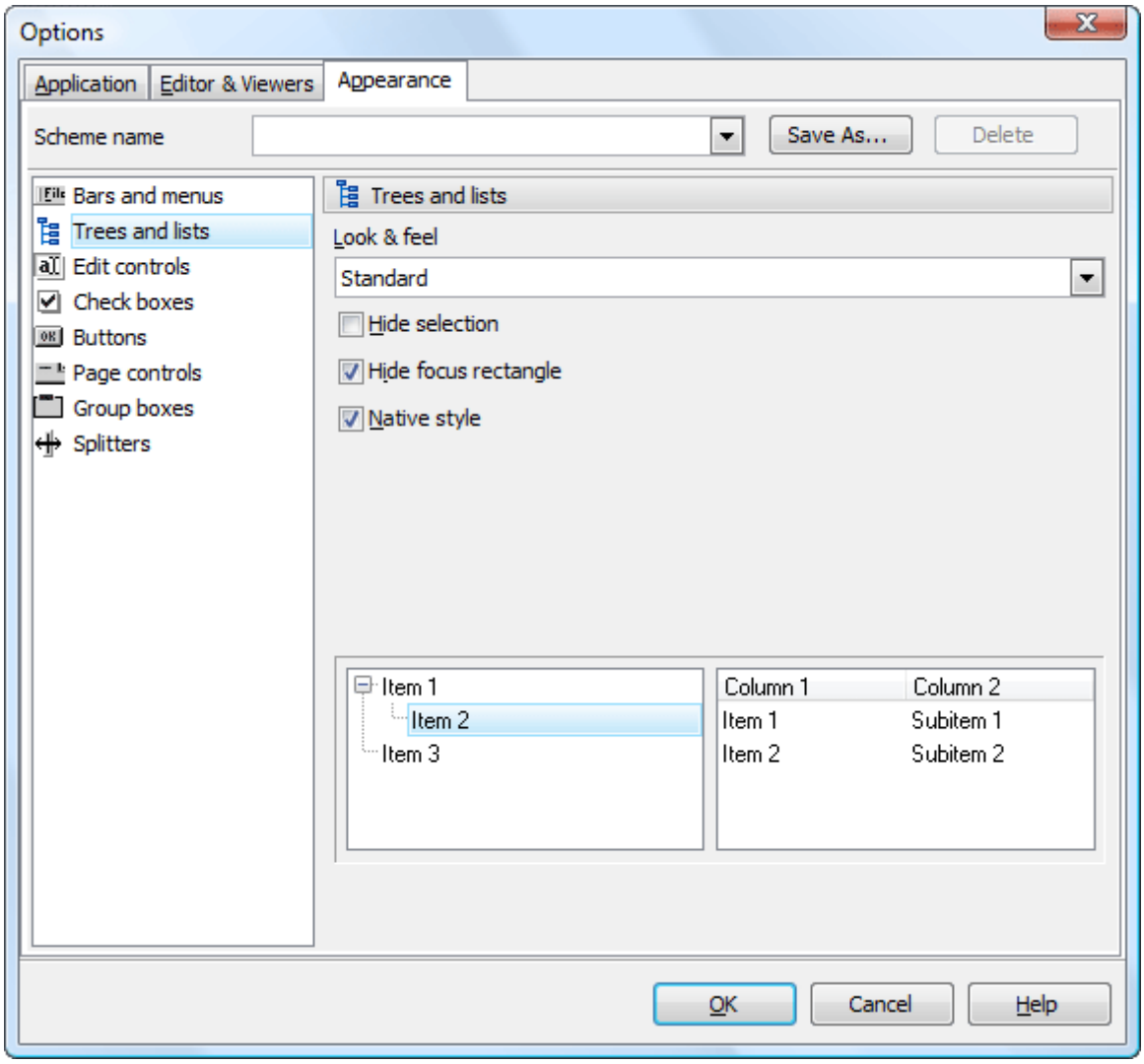

7.3.3 Edit controls

Use the Edit controls item to customize the appearance of different ASA Database Converter edit controls. The tab allows you to select the edit controls border style, button style and transparency, enable/disable hot tracks, shadows, native style and customize edges. It is also possible to define samples for the text edit, button edit and combo box controls.

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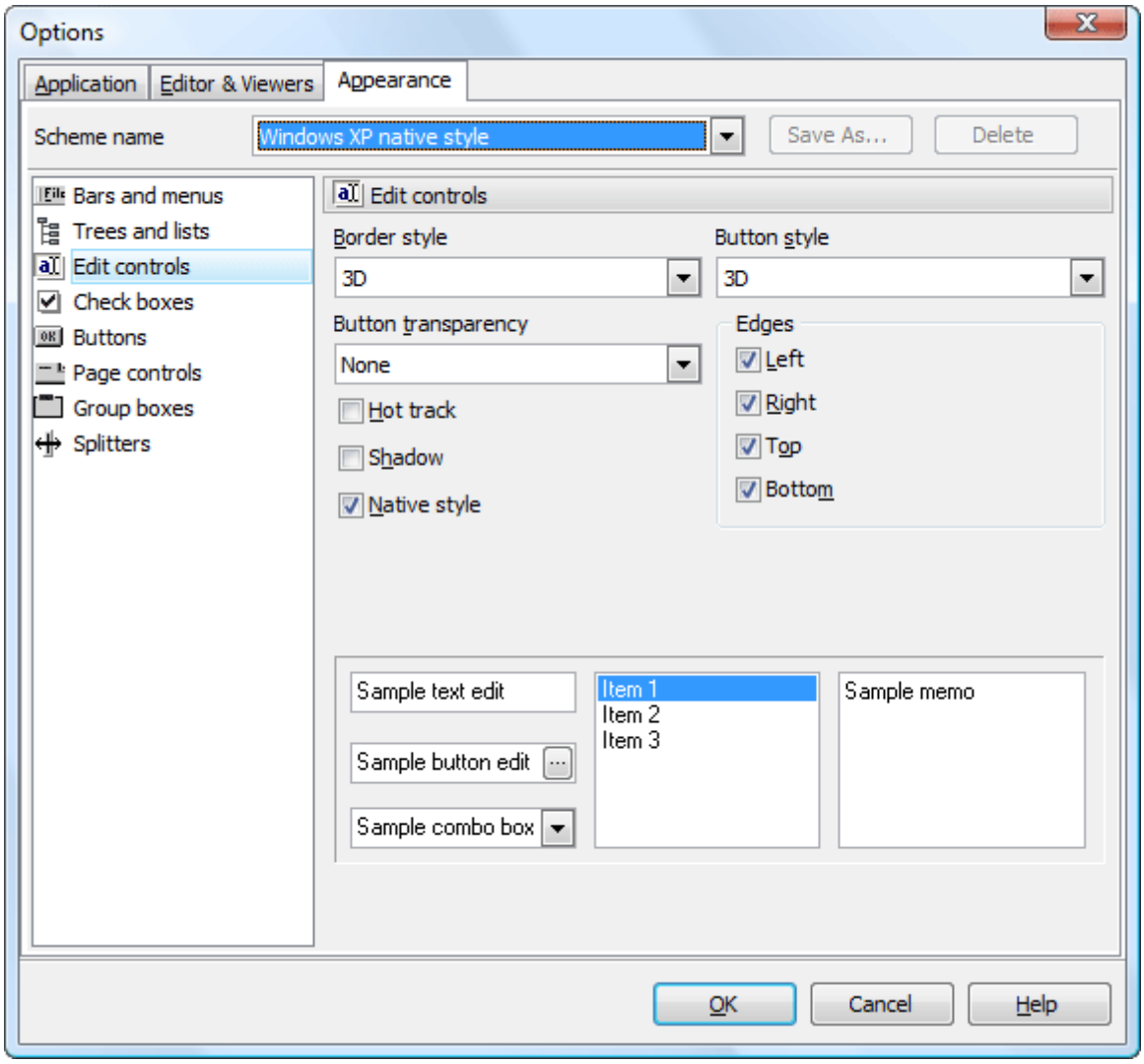

7.3.4 Check boxes

The Check boxes item allows you to customize the appearance of check boxes and radio buttons. The tab allows you to customize the appearance of check boxes: set border style, enable/disable hot tracks, shadows, native style. It is also possible to define samples for check boxes and radio buttons.

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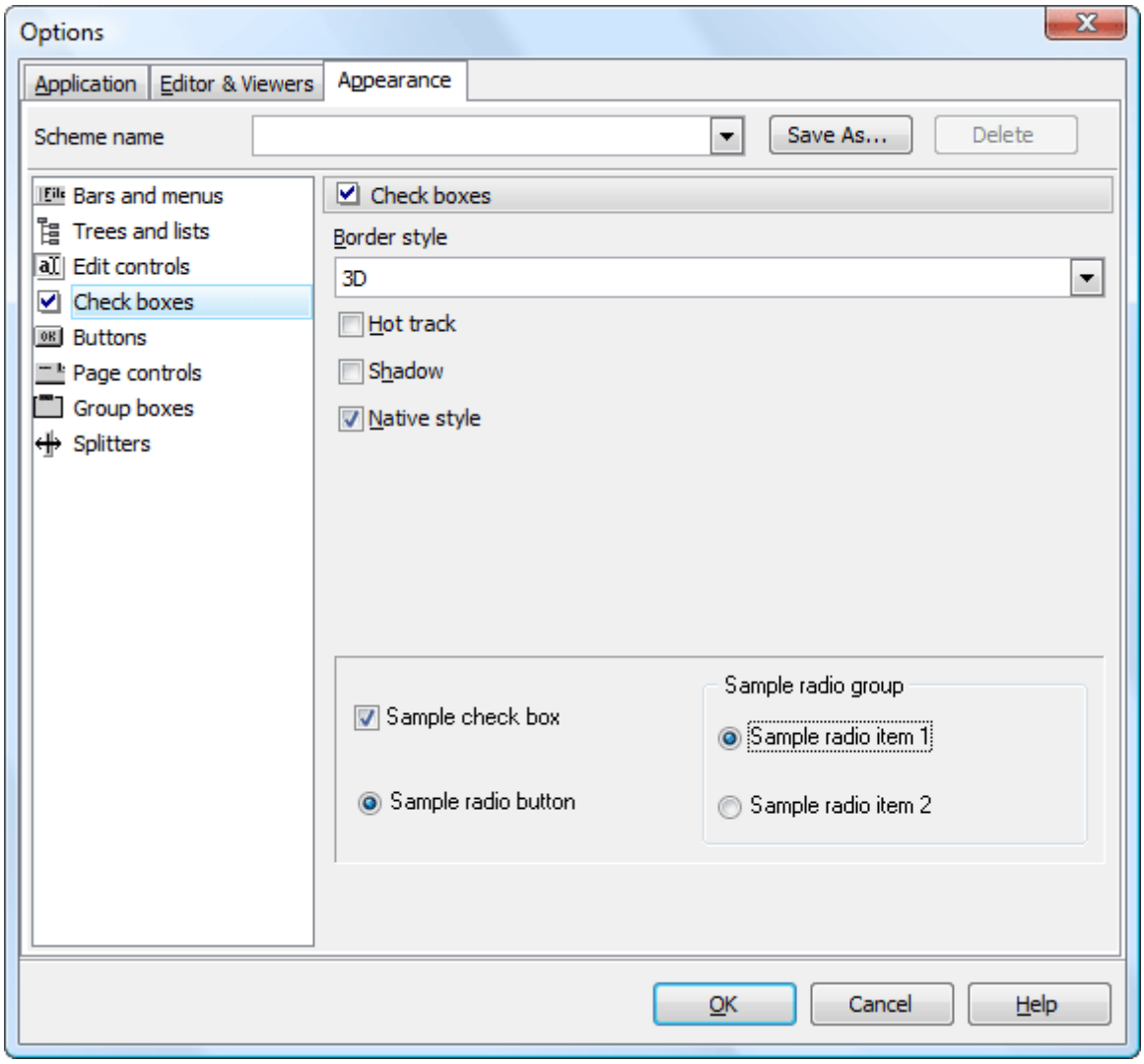

7.3.5 Buttons

Use the Buttons item to customize ASA Database Converter buttons. The tab allows you to adjust the appearance of buttons and define sample buttons as well.

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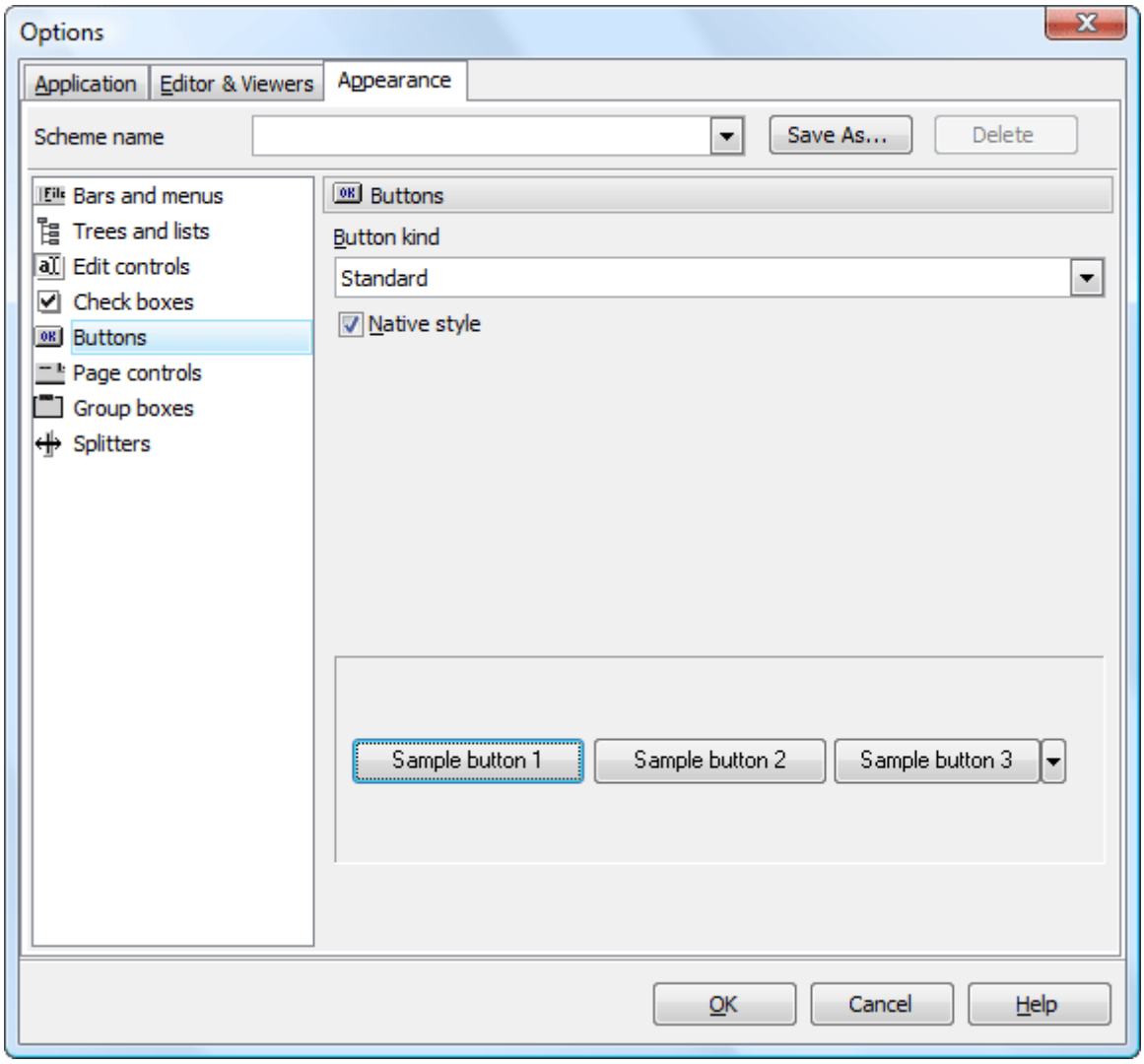

7.3.6 Page controls

The Page controls item allows you to customize the style of all ASA Database Converter page controls. The tab allows you to select tab styles, enable/disable hot track, multi-line pages and native style.

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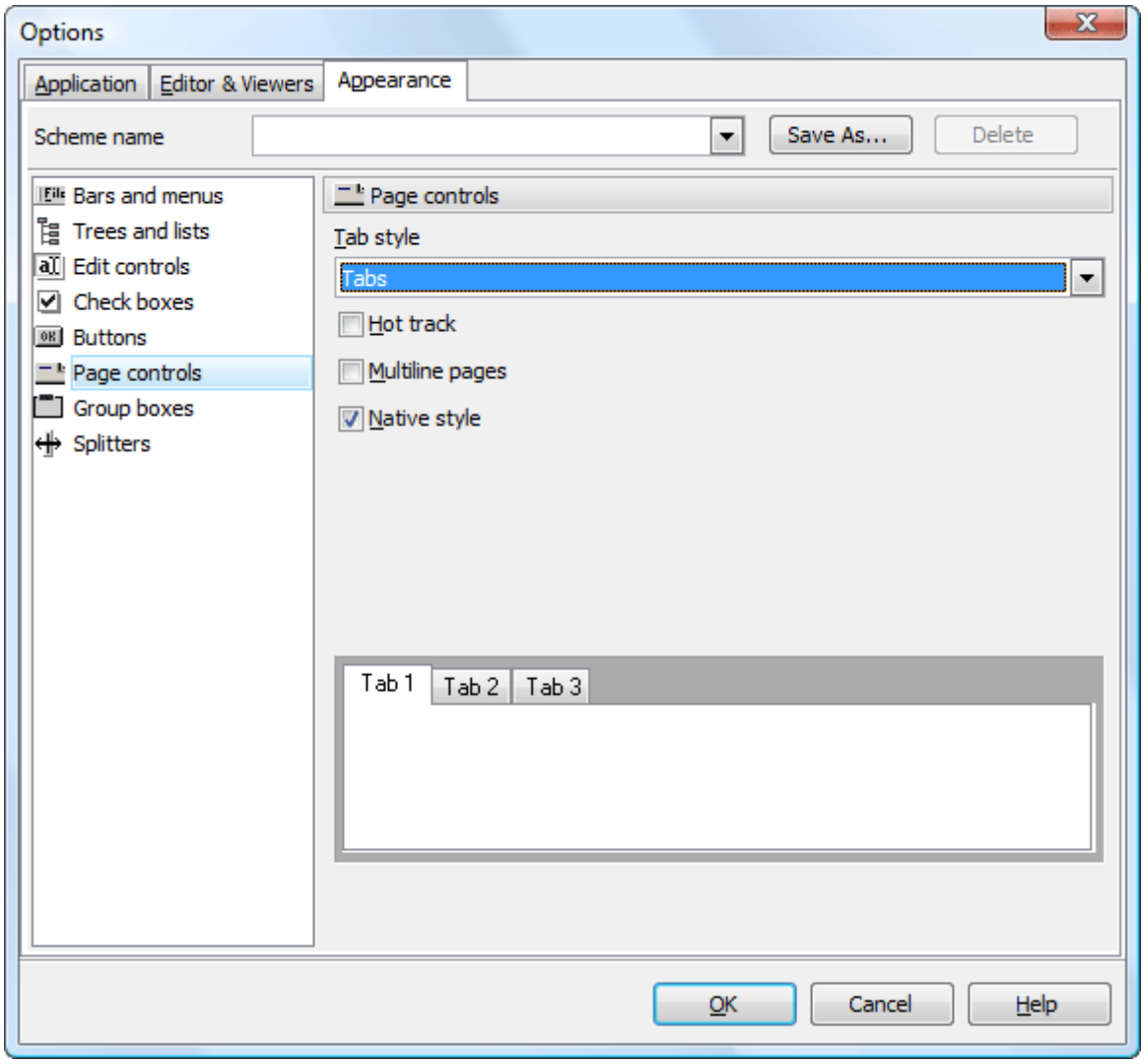

7.3.7 Group boxes

Use the Group boxes item to customize all ASA Database Converter group boxes according to your preferences. Use tab to apply styles for group boxes, enable/disable native style and define samples.

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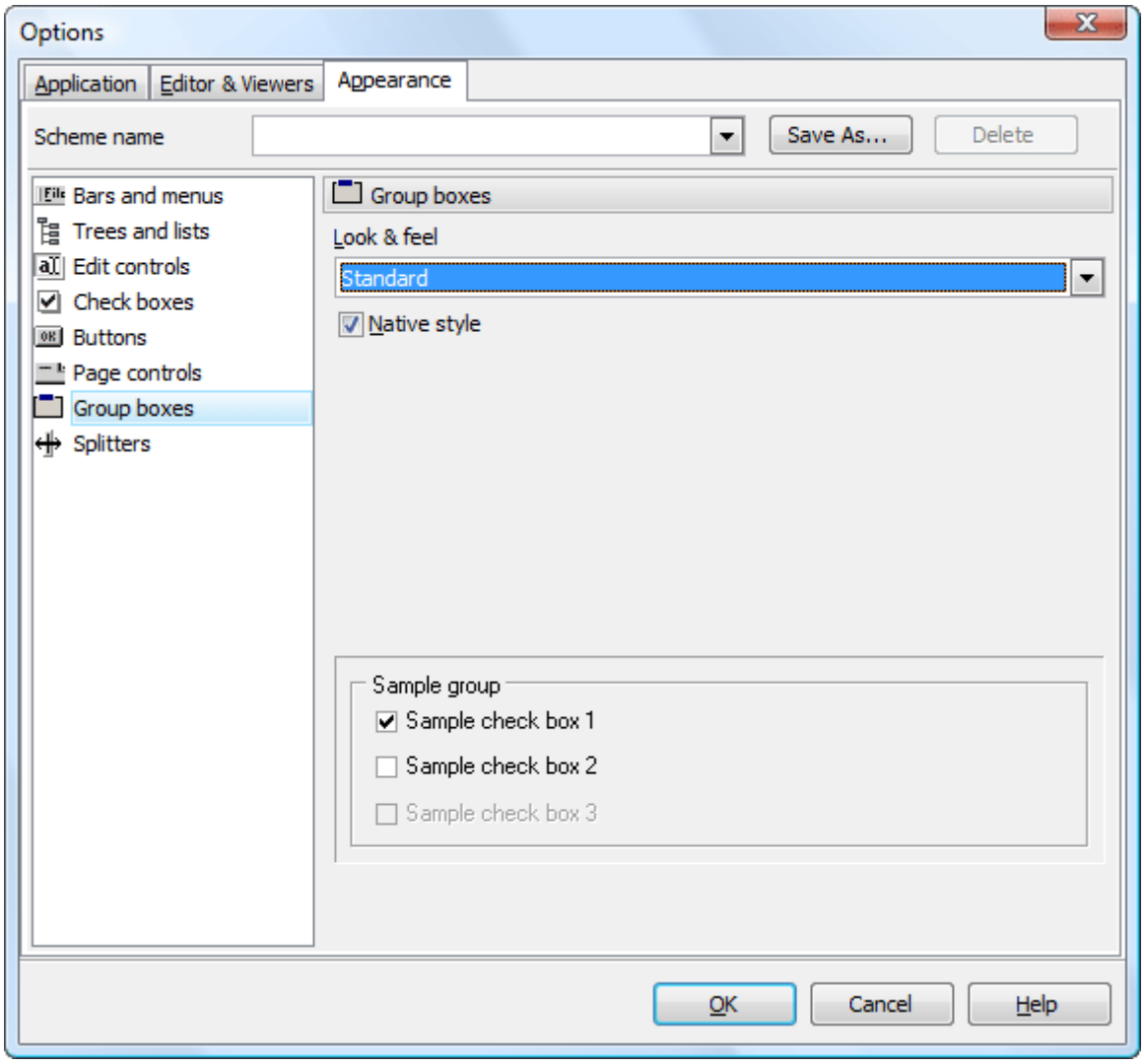

7.3.8 Splitters

Use the Splitters item to customize all ASA Database Converter splitters according to your preferences. Use the tab to select hot zone style (*Windows XP task bar*, *Media Player 8*, *Media Player 9*, *Simple* or *none*) and specify the Hot zone drags a splitter option.

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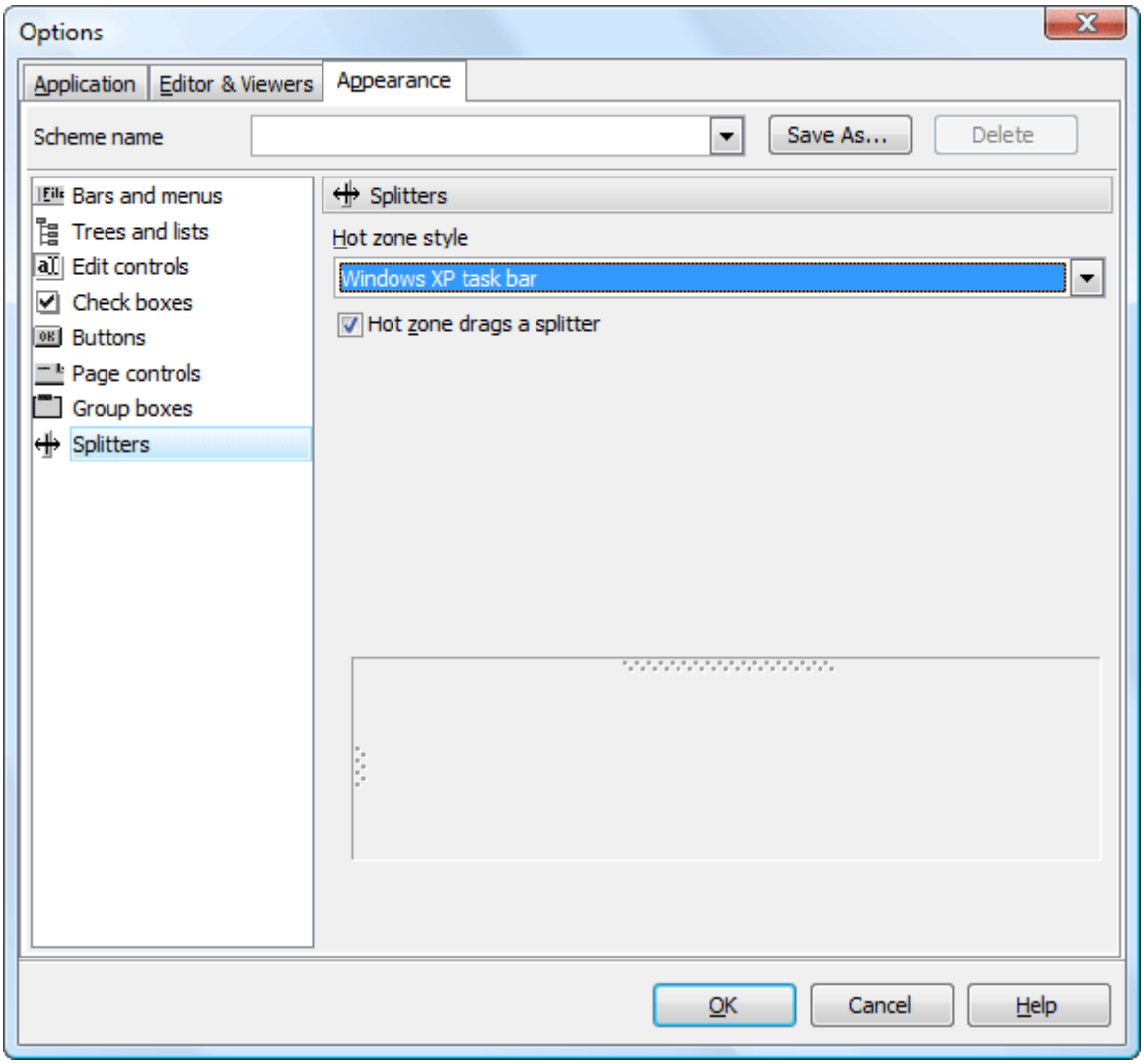

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