



**PUBLIC**

SQL Anywhere

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# SQL Anywhere Context-Sensitive Help

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# 1 SQL Anywhere - Context-Sensitive Help

This book describes the context-sensitive help provided for the Connect window, the Query Editor, the MobiLink Profiler, the SQL Anywhere Console utility, the Index Consultant, and Interactive SQL. It also contains context-sensitive help for all the properties windows that are available for the SQL Anywhere, MobiLink, and UltraLite plug-ins for SQL Central.

## In this section:

### [Connect Window Help \[page 12\]](#)

The *Connect* window is used by SQL Central and Interactive SQL.

### [ODBC Tab \[page 34\]](#)

This tab appears only when you are creating or modifying ODBC data sources.

### [Login Tab \[page 36\]](#)

This tab has the following components:

### [Network Tab \[page 39\]](#)

The Network tab is enabled when the *Host* field is empty on the *Login* tab. Otherwise, it is disabled.

### [Security Tab \[page 40\]](#)

Choose one of the following transport-layer security options: *NONE*, *SIMPLE* or *TLS*

### [Advanced Tab \[page 41\]](#)

Specify values for connection parameters.

### [DBMLSync Tab \[page 41\]](#)

Specify options for the dbmlsync SQL Anywhere client synchronization utility.

### [ODBC Tab \(ODBC Driver for Oracle\) \[page 42\]](#)

This window lets you set configuration information for the ODBC driver for Oracle, which is called *SQL Anywhere 17 - Oracle*.

### [SQL Central Context-sensitive Help \[page 44\]](#)

SQL Central allows you to administer your database.

### [SQL Anywhere Plug-in Help \[page 51\]](#)

There are several ways to receive SQL Anywhere plug-in help.

### [MobiLink Plug-in Help \[page 215\]](#)

The MobiLink 17 plug-in for SQL Central allows you to use a graphical interface to perform tasks that might otherwise be done programmatically, or with system procedures or SQL statements. SQL Central provides properties windows that let you configure object properties and wizards that walk you through common administrative tasks.

### [UltraLite Plug-in Properties Windows \[page 279\]](#)

The UltraLite plug-in provides several windows that let you configure object properties.

### [MobiLink Profiler Help \[page 298\]](#)

The MobiLink Profiler is a MobiLink administration tool that provides you with detailed information about the performance of your synchronizations, enabling you to analyze bottlenecks and maximize performance.

[Interactive SQL Help \[page 321\]](#)

Interactive SQL is a tool that lets you execute SQL statements and run SQL script files.

[Query Editor Help \[page 342\]](#)

The Query Editor is a tool in Interactive SQL that helps you build SELECT statements. You can create SQL queries in the Query Editor, or you can import queries and edit them.

## 1.1 *Connect* Window Help

The *Connect* window is used by SQL Central and Interactive SQL.

The settings in this window are preserved for the current SQL Central or Interactive SQL session only. You can preserve connection settings in SQL Central using connection profiles.

### In this section:

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[Connect Window: Connect to a Running Database on This Computer \[page 15\]](#)

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[Connect Window: Connect to a Running Database in a Cloud \[page 18\]](#)

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[Connect Window: Connect with a Connection String \[page 25\]](#)

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[Connect Window: Connect to a SQL Anywhere Database: Network Tab \[page 27\]](#)

Use this tab to specify TCP/IP protocol options

[Connect Window: Connect SQL Anywhere Database Window: Security Tab \[page 27\]](#)

By default communication packets sent between the database server and its clients aren't encrypted, which poses a potential security risk. If you are concerned about the security of network packets, use this tab to set up encryption for your client connection.

[Connect Window: Connect to a SQL Anywhere Database: Advanced Options Tab \[page 28\]](#)

Use this tab to set advanced connection parameters.

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[Connect Window: Connect to an SAP HANA Database: Advanced Options Tab \[page 34\]](#)

This tab has the following components:

## 1.1.1 *Connect Window: Connect with an ODBC Data Source*

This window has the following components:

### *Change database type*

If present, click to choose a different database type to connect to.

### *Authentication*

Choose *Database* and type a user ID and password for the connection. Passwords are case sensitive.

Or choose *Windows Integrated Login* and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

### *Action*

Use the action *Connect with an ODBC data source* when you want to connect to a database using an ODBC data source.

When this action is chosen, the following options are available:

#### **ODBC Data Source name**

Select this option and type the ODBC data source name to connect to the database. On Windows, you can view a list of data sources by clicking *Browse*.

This field is equivalent to the DSN connection parameter, which references a data source in the registry.

#### **Open The ODBC Data Source Administrator button**

Click the [Open the ODBC Data Source Administrator](#) button to open the [ODBC Data Source Administrator](#) window where you can select an ODBC data source from the list of available data sources, create a new data source, or configure an existing data source to use for the connection.

### **ODBC Data Source file**

Select this option and type the ODBC data source file name for the connection.

The ODBC data source file is often used for Unix systems. File data sources hold the same information as ODBC data sources stored in the registry.

#### **→ Tip**

Any information you enter in this [Connect](#) window, such as the user ID or password, is used instead of the parameters stored in an ODBC data source or an ODBC data source file.

## *Tools*

The following tools are available:

### **Test Connection**

This tool tests whether the information provided results in a proper connection. This tool is only available when you are connecting to a SQL Anywhere, SAP IQ, or SAP HANA database.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided, to the clipboard.

## *Advanced*

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## **Related Information**

[Microsoft Windows Integrated Login](#)

[ODBC Data Sources](#)

[Connection IDs](#)

[Userid \(UID\) Connection Parameter](#)

[Password \(PWD\) Connection Parameter](#)

[DataSourceName \(DSN\) Connection Parameter](#)

[FileDataSourceName \(FILEDSN\) Connection Parameter](#)

[Troubleshooting: Connections](#)

[Troubleshooting: Database Server Startup](#)

[Troubleshooting Network Communications](#)



## 1.1.2 **Connect Window:** *Connect to a Running Database on This Computer*

This window has the following components:

### *Change database type*

If present, click to choose a different database type to connect to.

### *Authentication*

Choose *Database* and type a user ID and password for the connection. Passwords are case sensitive.

Or choose *Windows Integrated Login* and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

### *Action*

Use the action *Connect To A Running Database On This Computer* when you want to connect to a database that is already running on your computer.

When this action is chosen, the following options are available:

#### **Server name**

Type the name of the personal database or network database server. For example, *demo17*. You can also choose a recently used database server name from the dropdown list.

You must supply a database server name to connect to a network server. You can omit the database server name if are connecting to the default personal server.

#### **Database name**

Type the name of the database you are connecting to. For example, *demo.db*. Each database running on a database server is identified by a database name. You can also choose a recently used database name from the dropdown list.

### *Tools*

The following tools are available:

#### **Test Connection**

This tool tests whether the information provided results in a proper connection. This tool is only available when you are connecting to a SQL Anywhere, SAP IQ, or SAP HANA database.

Click [Show Details](#) to see debugging information about how the connection parameters are used to find the database server.

#### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided, to the clipboard.

### *Advanced*

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## **Related Information**

[Microsoft Windows Integrated Login](#)  
[Database Server Names and Database Names](#)  
[Connection IDs](#)  
[Userid \(UID\) Connection Parameter](#)  
[Password \(PWD\) Connection Parameter](#)  
[ServerName \(Server\) Connection Parameter](#)  
[DatabaseName \(DBN\) Connection Parameter](#)  
[Troubleshooting: Connections](#)  
[Troubleshooting: Database Server Startup](#)  
[Troubleshooting Network Communications](#)

### **1.1.3 Connect Window: Connect to a Running Database on Another Computer**

This window has the following components:

#### *Change database type*

If present, click to choose a different database type to connect to.

#### *Authentication*

Choose [Database](#) and type a user ID and password for the connection. Passwords are case sensitive.

Or choose [Windows Integrated Login](#) and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

## Action

Use the action [Connect To A Running Database On Another Computer](#) when you want to connect to a database that is already running on another computer.

When this action is chosen, the following options are available:

### Host

Specify the computer name on which the database server is running. You can also click [Recent](#) to choose a recently used host and port combination.

### Ping

Click to test that a computer with the given host name can be found on your network.

### Port

If your database server is not using the default port of 2638, you must specify the port it is using. You can also click [Recent](#) to choose a recently used host and port combination from the dropdown list.

### Server name

Type the name of the network database server. For example, [demo17](#). You must supply a database server name to connect to a network server.

You can choose a recently used database server name from the dropdown list or click [Find](#) to search for a server.

### Find

Click [Find](#) to see a list of running local personal servers and network servers. To choose a database server from this window, select a database server from the list, and then click [OK](#). The database server name appears in the [Server Name](#) field.

### Database name

Type the name of the database you are connecting to, or choose a recently used database name from the dropdown list.

You only need a database name if there is more than one database running on the database server. Each database running on a database server is identified by a database name.

## Tools

The following tools are available:

### Test Connection

This tool tests whether the information provided results in a proper connection. This tool is only available when you are connecting to a SQL Anywhere, SAP IQ, or SAP HANA database.

Click [Show Details](#) to see debugging information about how the connection parameters are used to find the database server.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## *Advanced*

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## **Related Information**

[Microsoft Windows Integrated Login](#)  
[Connection IDs](#)  
[Connecting to the Utility Database \(Connect Window\)](#)  
[Userid \(UID\) Connection Parameter](#)  
[Password \(PWD\) Connection Parameter](#)  
[Host Connection Parameter](#)  
[ServerName \(Server\) Connection Parameter](#)  
[DatabaseName \(DBN\) Connection Parameter](#)  
[Troubleshooting: Connections](#)  
[Troubleshooting: Database Server Startup](#)  
[Troubleshooting Network Communications](#)

## **1.1.4** *Connect Window: Connect to a Running Database in a Cloud*

Use this window to connect to a database running in a cloud environment created using the SQL Anywhere on-demand edition.

### *Change database type*

If present, click to choose a to connect to a SQL Anywhere database.

## *Authentication*

Choose [Database](#) and type a user ID and password for the connection. Passwords are case sensitive.

Or choose [Windows Integrated Login](#) and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

## Action

Use the action [Connect to a running database in a cloud](#) when you want to connect to a database that is already running in a cloud configuration.

When this action is chosen, the following options are available:

### Host

Specify the computer name for any database in the cloud.

### Ping

Click to test that a computer with the given host name can be found on your network.

### Port

Specify the port number that corresponds with the host specified.

### Database name

Type the name of the database, which you are connecting to.

## Tools

The following tools are available:

### Test Connection

This tool tests whether the information provided results in a proper connection.

Click [Show Details](#) to see debugging information about how the connection parameters are used to find the database server.

### Copy Connection String to Clipboard

This tool copies the connection string, which is based on the information provided to the clipboard.

## Advanced

If required, you can click [Advanced](#) to specify options such as TCP/IP, encryption, and other advanced connection options. You can also click [Advanced](#) to specify options that allow you to connect to a tenant database's mirror or copy node in the cloud.

## Related Information

[Microsoft Windows Integrated Login](#)  
[Connection IDs](#)  
[Connecting to the Utility Database \(Connect Window\)](#)  
[Userid \(UID\) Connection Parameter](#)  
[Password \(PWD\) Connection Parameter](#)  
[Host Connection Parameter](#)  
[DatabaseName \(DBN\) Connection Parameter](#)  
[Troubleshooting: Connections](#)  
[Troubleshooting: Database Server Startup](#)  
[Troubleshooting Network Communications](#)

### 1.1.5 *Connect Window: Start and Connect to a Database on This Computer*

This window has the following components:

#### *Change database type*

If present, click to choose a different database type to connect to.

#### *Authentication*

Choose *Database* and type a user ID and password for the connection. Passwords are case sensitive.

Or choose *Windows Integrated Login* and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

#### *Action*

Use the action *Start and connect to a database on this computer* when you want to start and connect to a database on the current computer.

When this action is chosen, the following options are available:

##### **Database file**

Specify the full path and name of the database file, for example, `C:\sample.db`. Otherwise, the path of the file is relative to the working directory of the database server.



## Encryption key

If the database file is encrypted, you must supply a key to the database server every time the database server starts the database.

## Database name

Type the name of the database you are connecting to or choose a recently used database name from the dropdown list. Otherwise, a default name is assigned to the database. This default name is the root of the database file. For example, a database with the file name `C:\Database Files\demo.db` would be given the default name of demo.

Each database running on a database server is identified by a database name.

## Server name

Type the name of the personal server that you are starting. For example, `demo`. If you are connecting to the default personal server, you can omit the server name.

You can choose a recently used personal server name from the dropdown list.

### i Note

To start a network server, use the *Start line* field.

## Start line

Type a command to start a personal or a network database server on your computer. You can also choose a recently used start line from the dropdown list.

### Personal database server

Enter a start line only to connect to a local database server that is not currently running and to set your own start parameters.

For example to start the personal database server, enter `C:\Program Files\SQL Anywhere 17\Bin32\dbeng17.exe -c 8M`.

### Network database server

Enter a start line to start a network database server on this computer.

For example to start the network database server, enter `C:\Program Files\SQL Anywhere 17\Bin32\dsrv17.exe -x none`.

You can also include database server options in the *Start Line* field. Use the *Start Line* and options when you want to:

- Employ any advanced server features.
- Control protocol options.
- Provide diagnostic or troubleshooting messages.
- Set permissions.
- Set database parameters (including encryption).

### Stop database after last disconnect

Select this option to automatically shut down the database after the last user disconnects.

## Tools

The following tools are available:

### **Test Connection**

This tool tests whether the information provided results in a proper connection. This tool is only available when you are connecting to a SQL Anywhere, SAP IQ, or SAP HANA database.

Click [Show Details](#) to see debugging information about how the connection parameters are used to find the database server.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## Advanced

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## Related Information

- [Microsoft Windows Integrated Login](#)
- [Database Server Names and Database Names](#)
- [Connection IDs](#)
- [Connecting to the Utility Database \(Connect Window\)](#)
- [Userid \(UID\) Connection Parameter](#)
- [Password \(PWD\) Connection Parameter](#)
- [DatabaseFile \(DBF\) Connection Parameter](#)
- [DatabaseKey \(DBKEY\) Connection Parameter](#)
- [ServerName \(Server\) Connection Parameter](#)
- [StartLine \(START\) Connection Parameter](#)
- [SQL Anywhere Database Server Executable \(dbsrv17, dbeng17\)](#)
- [AutoStop \(ASTOP\) Connection Parameter](#)
- [Troubleshooting: Connections](#)
- [Troubleshooting: Database Server Startup](#)
- [Troubleshooting Network Communications](#)

## 1.1.6 *Connect Window: Start and Connect to a Database on Another Computer*

This window has the following components:

### *Change database type*

If present, click to choose a different database type to connect to.

### *Authentication*

Choose *Database* and type a user ID and password for the connection. Passwords are case sensitive.

Or choose *Windows Integrated Login* and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

### **Action**

Use the action *Start And Connect To A Database On Another Computer* when you want to start and connect to a database on another computer.

When this action is chosen, the following options are available:

#### **Database file**

Type the full path and name of the database file, for example, `C:\sample.db`. Otherwise, the path of the file is relative to the working directory of the database server.

You can also choose a recently used database file from the dropdown list.

#### **Encryption key**

If the database file is encrypted, you must supply a key to the database server every time the database server starts the database.

#### **Database name**

Type the name of the database you are starting, or choose a recently used database name from the dropdown list.

You only need a database name if there is more than one database running on the database server.

#### **Server name**

Type the name of the network database server or choose a recently used database server name from the dropdown list. For example, *demo*. You must supply a database server name to connect to a network server.

#### **Host**

Specify the computer name on which the database server is running.

#### **Ping**

Click to test that a computer with the given host name can be found on your network.

#### **Port(s)**

If your database server is not using the default port of 2638, you must specify the port it is using.

#### **Recent**

Click [Recent](#) to choose a recently used host and port combination from the dropdown list.

#### **Stop database after last disconnect**

Select this option to automatically shut down the database after the last user disconnects.

## *Tools*

The following tools are available:

#### **Test Connection**

This tool tests whether the information provided results in a proper connection. This tool is only available when you are connecting to a SQL Anywhere, SAP IQ, or SAP HANA database.

Click [Show Details](#) to see debugging information about how the connection parameters are used to find the database server.

#### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## *Advanced*

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## **Related Information**

[Microsoft Windows Integrated Login](#)  
[Database Server Names and Database Names](#)  
[Database Server Names and Database Names](#)  
[Connection IDs](#)  
[Connecting to the Utility Database \(Connect Window\)](#)  
[Userid \(UID\) Connection Parameter](#)  
[Password \(PWD\) Connection Parameter](#)  
[DatabaseFile \(DBF\) Connection Parameter](#)  
[DatabaseKey \(DBKEY\) Connection Parameter](#)  
[DatabaseName \(DBN\) Connection Parameter](#)

[ServerName \(Server\) Connection Parameter](#)  
[Host Connection Parameter](#)  
[AutoStop \(ASTOP\) Connection Parameter](#)  
[Troubleshooting: Connections](#)  
[Troubleshooting: Database Server Startup](#)  
[Troubleshooting Network Communications](#)

## 1.1.7 *Connect Window: Connect with a Connection String*

This window has the following components:

### *Change database type*

If present, click to choose a different database type to connect to.

### *Authentication*

Choose *Database* and type a user ID and password for the connection. Passwords are case sensitive.

Or choose *Windows Integrated Login* and connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the integrated login mechanism.

### **Action**

Use the action *Connect With A Connection String* when you want to connect to a database using a connection string.

When this action is chosen, the following options are available:

#### **Parameters**

Choose this action when your connection string uses an ODBC data source or ODBC data source file, as well as other connection parameters.

Type connection parameters in a semicolon-delimited list of parameter=value pairs:

```
parameter1=value1;parameter2=value2;...
```

For example:

```
DSN="SQL Anywhere 17 Demo;PWD=sql;Server=SampleServer;"
```

### → Tip

Any information you enter in the *Parameters* field, such as the user ID or database name, takes precedence over the parameters stored in an ODBC data source or an ODBC data source file.

## Tools

The following tools are available:

### **Test Connection**

This tool tests whether the information provided results in a proper connection.

Click *Show Details* to see debugging information about how the connection parameters are used to find the database server.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## Advanced

If required, you can click Advanced to specify options such as TCP/IP, encryption, and other advanced connection options.

## Related Information

[Microsoft Windows Integrated Login](#)  
[Connection Parameters and Connection Strings](#)  
[Alphabetical List of Connection Parameters](#)  
[Userid \(UID\) Connection Parameter](#)  
[Password \(PWD\) Connection Parameter](#)



## 1.1.8 *Connect Window: Connect to a SQL Anywhere Database: Network Tab*

Use this tab to specify TCP/IP protocol options

### Related Information

[Network Protocol Options](#)

[Database Server with Transport Layer Security](#)

[MobiLink Client Network Protocol Options](#)

## 1.1.9 *Connect Window: Connect SQL Anywhere Database Window: Security Tab*

By default communication packets sent between the database server and its clients aren't encrypted, which poses a potential security risk. If you are concerned about the security of network packets, use this tab to set up encryption for your client connection.

### Encryption type:

Choose *Simple* to accept communication packets from the remote database server that are encoded using simple obfuscation. This option does not provide secure encoding.

Choose *TLS* to accept communication packets from the remote database server that are encrypted securely using Transport Layer Security.

### Certificate source

Choose whether to use the operating system certificate store or to use a certificate file.

### Use the certificate only if it has the following attributes:

To ensure that this connection uses the correct certificate, specify values in the fields below.

If you do not specify any values for these attributes, then by default the connection checks the host name of the remote database server against the host name specified in the certificate.

### Certificate company

If specified, the application only accepts server certificates when the Organization field on the certificate matches this value.

### Certificate unit

If specified, the application only accepts server certificates when the Organization Unit field on the certificate matches this value.

### Certificate name

If specified, the application only accepts server certificates when the Common Name field on the certificate matches this value.

### Use FIPS-certified RSA encryption

Choose this option to use FIPS-certified TLS. FIPS-certified RSA encryption requires a separate license.

**Other protocol options** Specify a semicolon-delimited list of option=value pairs of network protocol option values.

## Related Information

[Database Server with Transport Layer Security](#)

[Client Application Configuration to Use Transport Layer Security](#)

### 1.1.10 *Connect Window: Connect to a SQL Anywhere Database: Advanced Options Tab*

Use this tab to set advanced connection parameters.

Use the (*other*) field to specify a semicolon-delimited list of option=value pairs of connection parameters and network protocol options.

## Related Information

[Alphabetical List of Connection Parameters](#)

[Network Protocol Options](#)

### 1.1.11 *Connect Window: Connect to a Generic ODBC Database*

This window has the following components:

#### **Change database type**

If present, click to choose a different database type to connect to.

#### **The following values are used to identify you to the database**

Connect to the database using a user ID and password.

#### **User ID**

Type a user ID for the connection. The user ID you supply must have permissions on a database to connect.

#### **Password**

Type a password for the connection.

## → Tip

Any information you enter in the [Connect](#) window, such as the user ID or database name, takes precedence over the parameters stored in an ODBC data source or an ODBC data source file.

### ODBC Data Source name

Select this option to choose a data source (a stored set of connection parameters) for connecting to your database. This field is equivalent to the DSN connection parameter, which references a data source in the registry. You can view a list of data sources by clicking [Browse](#).

#### Open the ODBC Data Source Administrator button

Click the [Open the ODBC Data Source Administrator](#) button to open the [ODBC Data Source Administrator](#) window where you can select an ODBC data source from the list of available data sources. To select a data source, select it from the list and then click [OK](#).

You may also choose to create a new data source or configure an existing data source to use for the connection.

### ODBC Data Source file

Select this option to choose a data source file for the connection. You can search for the file by clicking [Browse](#). The ODBC data source file is often used for UNIX and Linux systems. File data sources hold the same information as ODBC data sources stored in the registry.

## Tools

### Test Connection

This tool tests whether the information provided results in a proper connection.

### Copy Connection String to Clipboard

This tool copies the connection string, which is based on the information provided to the clipboard.

## Related Information

[ODBC Data Sources](#)

[DataSourceName \(DSN\) Connection Parameter](#)

[FileDataSourceName \(FILEDSN\) Connection Parameter](#)

[Troubleshooting: Connections](#)

[Troubleshooting: Database Server Startup](#)

[Troubleshooting Network Communications](#)

## 1.1.12 *Connect Window: Connect to a Generic ODBC Database:* **Advanced Options Tab**

This tab has the following components:

### **Enter connection parameters, one per line, in the form "name=value"**

Type any additional connection parameters in this field, entering one connection parameter per line. The following connection parameters log debugging information regarding connections:

```
LOG=connection.log
```

When you enter the connection parameters one per line, a semicolon is not required between the parameters.

## **Related Information**

[Alphabetical List of Connection Parameters](#)

## 1.1.13 *Connect Window: Connect to an UltraLite Database*

This window has the following components:

### **User ID**

Type a user ID for the database connection.

### **Password**

Type a password for the connection. Passwords are case sensitive.

### **Database file**

Specify the database file. Type the full path and name of the database file, for example, C:\myuldb.ldb. Otherwise, the path of the file is relative to the working directory of the database server.

### **Encryption key**

If the database file is encrypted, you must supply a key every time UltraLite starts the database.

## *Tools*

The following tools are available:

### **Test Connection**

This tool tests whether the information provided results in a proper connection.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## Related Information

[Connection IDs](#)  
[UltraLite UID Connection Parameter](#)  
[UltraLite PWD Connection Parameter](#)  
[UltraLite DBF Connection Parameter](#)  
[UltraLite DBKEY Connection Parameter](#)  
[Troubleshooting: Connections](#)  
[Troubleshooting: Database Server Startup](#)  
[Troubleshooting Network Communications](#)

### 1.1.14 *Connect Window: Connect to an UltraLite Database:* *Advanced Options Tab*

This tab has the following components:

**Enter connection parameters, one per line, in the form "name=value"**

Enter additional connection parameters in this field, entering one connection parameter per line. When you enter the connection parameters one per line, a semicolon is not required between the parameters. The following example sets the database name:

```
DBN="the test version"
```

Connection parameters set in this field take precedence over parameters set throughout the rest of this window. For example, if you enter the user ID **DBA** on the *Identification* tab, and set the connection parameter `UID=bsmith` in this field, a connection with the user ID **bsmith** is attempted.

## Related Information

[UltraLite Connection Strings and Parameters](#)  
[UltraLite Database Connections](#)  
[UltraLite Connection Strings and Parameters](#)  
[UltraLite Connection Parameters and the ULSQLCONNECT Environment Variable](#)  
[UltraLite Connection Parameters](#)

## 1.1.15 *Connect* Window: Connect to a Running SAP HANA Server

This window has the following components:

### *Change database type*

If present, click to choose a different database or server type to connect to.

### **Authentication**

Type a user ID and password for the connection.

### *Action*

Use the action *Connect To A Running Server* when you want to connect to an SAP HANA server that is already running.

When this action is chosen, the following options are available:

#### **Host**

Specify the computer name on which the server is running. You can also click *Recent* to choose a recently used host and port combination.

#### **Ping**

Click to test that a computer with the given host name can be found on your network.

#### **Port**

If your server is not using the default port of 2638, you must specify the port it is using.

### *Tools*

The following tools are available:

#### **Test Connection**

This tool tests whether the information provided results in a proper connection.

#### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided to the clipboard.

## Advanced

If required, you can click [Advanced](#) to specify options such as TCP/IP, encryption, and other advanced connection options.

### 1.1.16 *Connect* Window: Connect to an SAP HANA database with an ODBC Data Source

This window has the following components:

#### *Change database type*

If present, click to choose a different database or server type to connect to.

#### *Authentication*

Type a user ID and password for the server.

#### *Action*

Use the action [Connect with an ODBC data source](#) when you want to connect to a database using an ODBC data source.

When this action is chosen, the following options are available:

##### **ODBC Data Source name**

Select this option and type the ODBC data source name to connect to the database.

##### **Open The ODBC Data Source Administrator button**

On Windows, you can click the [Open the ODBC Data Source Administrator](#) button to open the [ODBC Data Source Administrator](#) window where you can select an ODBC data source from the list of available data sources, create a new data source, or configure an existing data source to use for the connection.

##### **ODBC Data Source file**

Select this option and type the ODBC data source file name for the connection.

#### **i** Note

Any information you enter in this [Connect](#) window, such as the user ID or password, is used instead of the parameters stored in an ODBC data source or an ODBC data source file.

## Tools

The following tools are available:

### **Test Connection**

This tool tests whether the information provided results in a proper connection.

### **Copy Connection String to Clipboard**

This tool copies the connection string, which is based on the information provided, to the clipboard.

## Advanced

If required, you can click [Advanced](#) to specify options such as TCP/IP, encryption, and other advanced connection options.

### **1.1.17 *Connect* Window: Connect to an SAP HANA Database: *Advanced Options* Tab**

This tab has the following components:

#### **Connection parameters table**

This table contains SAP HANA connection parameters.

## **1.2 *ODBC* Tab**

This tab appears only when you are creating or modifying ODBC data sources.

#### **Data source name**

Type a name to identify this ODBC data source. You can use any descriptive name for the data source (spaces are allowed), but a short name is recommended as it may be entered in connection strings.

#### **Description**

You can provide a description of the data source. This description may help you or your end users to identify this data source from among their list of available data sources. This is an optional field.

#### **Isolation level**

Type a numerical value to specify the initial isolation level for this data source:

**0**

This is also called the read uncommitted isolation level. It provides the maximum level of concurrency, but dirty reads, non-repeatable reads, and phantom rows may be observed in result sets. This is the default isolation level.



## 1

This is also called the read committed level. This provides less concurrency than level 0, but eliminates some of the inconsistencies in result sets at level 0. Non-repeatable rows and phantom rows may occur, but dirty reads are prevented.

## 2

This is also called the repeatable read level. Phantom rows may occur. Dirty reads and non-repeatable rows are prevented.

## 3

This is also called the serializable level. This provides the least concurrency, and is the strictest isolation level. Dirty reads, non-repeatable reads, and phantom rows are prevented.

### **snapshot**

This isolation level uses a snapshot of committed data from the time the first row is read, inserted, updated, or deleted by the transaction.

### **statement-snapshot**

This isolation level uses a snapshot of committed data from the time the first row is read by the statement. Each statement within the transaction sees a snapshot of data from a different time.

### **readonly-statement-snapshot**

For read-only statements, this isolation level uses a snapshot of committed data from the time when the first row is read. Each statement within the transaction sees a snapshot of data from a different time. For INSERT, UPDATE, and DELETE statements, use the isolation level specified by the `updatable_statement_isolation` option (can be one of 0 (the default), 1, 2, or 3).

### **Microsoft applications (Keys in SQLStatistics)**

Select this option if you want the `SQLStatistics` function to return foreign keys. The ODBC specification states that `SQLStatistics` should not return primary and foreign keys; however, some applications (such as Microsoft Visual Basic and Microsoft Access) assume that primary and foreign keys are returned by `SQLStatistics`.

### **Delphi applications**

Select this option if you use the Embarcadero Delphi application development tool to create applications that produce your data source.

When this option is selected, one bookmark value is assigned to each row instead of the two that are otherwise assigned (one for fetching forward and a different one for fetching backward).

Delphi cannot handle multiple bookmark values for a row. If the option is cleared, scrollable cursor performance can suffer since scrolling must always take place from the beginning of the cursor to the row requested to get the correct bookmark value.

### **Suppress fetch warnings**

Select this option to suppress warning messages that are returned from the database server on a fetch.

Versions 8.0 and later of the database server return a wider range of fetch warnings than earlier versions of the software. For applications that are deployed with an earlier version of SQL Anywhere software, you can select this option to ensure that fetch warnings are handled properly.

### **Prevent driver not capable errors**

The SQL Anywhere ODBC driver returns a `Driver not capable` error because it does not support qualifiers. Some ODBC applications do not handle this error properly. Select this option to prevent this error code from being returned, allowing these applications to work.

#### **Delay AutoCommit until statement close**

Select this option to delay the commit operation until a statement closes.

#### **Describe Cursor Behavior**

Choose how often you want a cursor to be redescrbed when a procedure is executed. The default setting is *If Required*.

##### **Never**

Select this option if you know that your cursors do not have to be redescrbed. Redescrbing cursors is expensive and can decrease performance.

##### **If required**

This is the default. When you select this option, the ODBC driver determines whether a cursor must be redescrbed. ODBC does not describe the cursor after it is opened.

##### **Always**

The cursor is redescrbed each time it is opened. If you use Transact-SQL procedures or procedures that return multiple result sets, you must redescrbe the cursor each time it is opened.

#### **Test Connection**

Tests whether the information provided results in a proper connection. For the test to work, a user ID and password must be specified on the *Login* tab.

## **1.3 Login Tab**

This tab has the following components:

#### **Authentication**

Choose one of the following options to connect to the database server:

##### **Database**

Connect to the database using a user ID and password.

##### **User ID**

Type a user ID for the connection. The user ID you supply must have permissions on a database to connect.

##### **Password**

Type a password for the connection. ID you supply. Passwords are case sensitive.

##### **i Note**

Do not include the password in the data source as it is a significant security risk.

##### **Encode password**

Select this option if you want the password to be stored in encoded form in the data source. You must re-enter the password to change an existing encoding option.

This option only appears when creating ODBC data sources. It does not appear when you access this window using the dbmsync utility.

### **Windows Integrated Login**

Choose this option to connect to the database using an integrated login on Microsoft Windows. When you choose this option, your Windows user ID and password are supplied to the database server integrated login mechanism.

To use integrated logins, you must have been granted integrated login privilege on the database and the database server must be set up to accept integrated logins.

### **Action**

From the *Action* dropdown list, choose a connection type:

#### **Connect to Data Lake IQ**

(SAP IQ only)When this action is chosen, the following options are available:

##### **Host**

Specify the computer name on which the database server is running. Optionally, you can include the port number by appending a colon separator and the number 443 (no other port number may be used).

Since connections to Data Lake IQ must be encrypted, basic encryption options are automatically added to the data source if no encryption options are selected from the *Security* tab. These correspond to TLS(tls\_type=rsa;trusted\_certificates=\*;direct=yes).

#### **Connect To A Running Database On This Computer**

When this action is chosen, the following options are available:

##### **Server name**

Type the name of the database server. For example type, *demo17*.

You must supply a database server name to connect to a network server. If you are connecting to the default personal server, you can omit the database server name.

##### **Database name**

Type the name of the database you are connecting to. For example, type *demo*. Each database running on a database server is identified by a database name.

#### **Connect To A Running Database On Another Computer**

When this action is chosen, the following options are available:

##### **Host**

Specify the computer name on which the database server is running.

##### **Port**

If your database server is not using the default port of 2638, you must specify the port it is using.

##### **Server name**

Type the name of the network database server. For example, type *demo17*. You must supply a database server name to connect to a network server.

### Database name

Type the name of the database you are connecting to.

You need a database name only if there is more than one database running on the database server. Each database running on a database server is identified by a database name.

### Connect to a logical server

(SAP IQ only) When this action is chosen, the following options are available:

#### Logical server

Specify the logical server name. Choose from COORDINATOR, OPEN, SERVER, or type in your own server name.

### Start And Connect To A Database On This Computer

When this action is chosen, the following options are available:

#### Database file

Type the full path and name of the database file. For example type, `C:\sample.db`. Otherwise, the path of the file is relative to the working directory of the database server.

#### Encryption key

If the database file is encrypted, you must supply a key to the database server every time the database server starts the database.

#### Database name

Type the name of the database you are connecting to. Otherwise, a default name is assigned to the database. This default name is the root of the database file. For example, a database with the file name `C:\Database Files\demo.db` would be given the default name of `demo`.

Each database running on a database server is identified by a database name.

#### Server name

Type the name of the server that you are starting. For example, type `demo`. If you are connecting to the default server, you can omit the database server name.

### i Note

To start a network server, use the *Start line* field.

### Start line

Type a command to start a personal or a network database server on your computer.

#### Personal database server

Enter a start line only if you must connect to a local database server that is not currently running and if you must set your own start parameters.

For example to start the personal database server, enter `C:\Program Files\SQL Anywhere 17\Bin32\dbeng17.exe -c 8M`.

#### Network database server

Type a start line to start a network database server on this computer.

For example to start the network database server, enter `C:\Program Files\SQL Anywhere 17\Bin32\dsrv17.exe -x none`.

You can also include database server options in the *Start Line* field. Use the *Start Line* and options when you want to:

- Employ any advanced server features.
- Control protocol options.
- Provide diagnostic or troubleshooting messages.
- Set permissions.
- Set database parameters (including encryption).

#### **Stop database after last disconnect**

Select this option to automatically shut down the database after the last user disconnects.

#### **Start And Connect To A Database On Another Computer**

When this action is chosen, the following options are available:

##### **Database file**

Type the full path and name of the database file, for example, C:\sample.db. Otherwise, the path of the file is relative to the working directory of the database server.

##### **Encryption key**

If the database file is encrypted, you must supply a key to the database server every time the database server starts the database.

##### **Database name**

Type the name of the database you are starting.

You need a database name only if there is more than one database running on the database server.

##### **Server name**

Type the name of the database server. For example, type *demo*. You must supply a database server name to connect to a network server.

##### **Host**

Specify the computer name on which the database server is running.

##### **Port(s)**

If your database server is not using the default port of 2638, you must specify the port it is using.

## **1.4 Network Tab**

The Network tab is enabled when the *Host* field is empty on the *Login* tab. Otherwise, it is disabled.

#### **Broadcast**

Specify the IP broadcast address that should be used to find servers. Default is to broadcast to all addresses on the same subnet.

#### **ClientPort**

Specify the port number on which the client application communicates using TCP/IP. Default is to assign the port dynamically.

#### **DoBroadcast**

Specify how a client searches for a database server (ALL, NONE, DIRECT). Default is ALL.

#### **Host**

(or IP) Specify the address or addresses of the database server.

#### **LDAP**

Specify YES to enable LDAP name server support (default). Specify NO to disable LDAP name server support.

#### **LocalOnly**

Specify YES to force the client to connect only to a database server on the local computer, if one exists. Default is NO.

#### **MyIP**

Specify which network interface controllers (NIC) or adapters to use when several are present on the client computer.

#### **Port**

(or ServerPort) Specify the port the database server is listening on.

#### **ReceiveBufferSize**

Specify the size of the receiving buffer used by the TCP/IP protocol stack.

#### **SendBufferSize**

Specify the size of the sending buffer used by the TCP/IP protocol stack.

#### **Timeout**

Specify the length of time, in seconds, to wait for a response when establishing communications (TCP/IP). Default is 5.

#### **VerifyServerName**

Specify YES to force the client to verify the database server name before connecting (default). Specify NO to skip the verification of the server name.

## 1.5 Security Tab

Choose one of the following transport-layer security options: *NONE*, *SIMPLE* or *TLS*

#### **Encryption type**

Choose one of the following options to connect to the database server:

##### **SIMPLE**

Communication packets are encoded with simple obfuscation. Simple obfuscation does not provide database server verification, strong encryption, or other features of Transport Layer Security.

##### **TLS**

Communication packets are encrypted using TLS.

##### **Certificate source**

Choose *A certificate file* or *The operating system certificate store*.

##### **File**

Enter the path to a certificate file.

**Certificate company**

Specify that the Organization field on the certificate must match this value.

**Certificate unit**

Specify that the Organization Unit field on the certificate must match this value.

**Certificate name**

Specify that the Common Name field on the certificate must match this value.

**Use FIPS-certified RSA encryption**

Select this option if you want to use FIPS-certified RSA encryption. This corresponds to FIPS=YES.

**Other protocol options**

Use this field to enter miscellaneous TLS-related encryption options, separated by semicolons. These include:

- IDENTITY
- IDENTITY\_PASSWORD
- TLS\_TYPE
- SKIP\_CERTIFICATE\_NAME\_CHECK
- ALLOW\_EXPIRED\_CERTIFICATES
- MIN\_TLS\_VERSION
- SNI\_HOSTNAME
- DIRECT

For example, DIRECT=YES;MIN\_TLS\_VERSION=1.2 could be specified here.

## 1.6 *Advanced* Tab

Specify values for connection parameters.

### Related Information

[Alphabetical List of Connection Parameters](#)  
[Connection Parameters and Connection Strings](#)

## 1.7 *DBMLSync* Tab

Specify options for the dbmlsync SQL Anywhere client synchronization utility.

### Subscription

Type the name of the subscription that is to be synchronized.

If there is only one subscription in your database, you do not need to enter anything in this field.

#### **ML password**

Type the MobiLink password for user authentication. If you have not entered a password, you must enter one here. If you are being prompted for a password, this is likely the only field you must complete. The password is case sensitive.

#### **Change ML password**

Select this option to change the MobiLink password when synchronization occurs. Unless you are changing the MobiLink password, leave the checkbox blank.

#### **New**

When changing the MobiLink password, type the new password. Unless you are changing the MobiLink password, leave this field blank.

#### **Verify**

When changing the MobiLink password, type the new password again for verification. Unless you are changing the MobiLink password, leave this field blank.

#### **Extended options**

Supply extended options to customize synchronization. You can supply schedule specifications and other extended options. For a list of available extended options, click the [Extended Option Help](#) button. This field is optional.

#### **Full verbosity**

Select this option to record debugging and other diagnostic information in the dbmlsync log file. This field is optional.

#### **Extended option help**

Click to view a list of the names, default values, and descriptions of available extended options. You can also supply these options in the [Extended Option](#) field to customize synchronization.

## **1.8 ODBC Tab (ODBC Driver for Oracle)**

This window lets you set configuration information for the ODBC driver for Oracle, which is called [SQL Anywhere 17 - Oracle](#).

#### **Data source name**

Type a name to identify your data source.

#### **User ID**

Type the default login ID that the application uses to connect to your Oracle database. A login ID is required only if security is enabled on your database. If so, contact your system administrator to get your login ID.

#### **Password**

Type the password that the application uses to connect to your Oracle database.

#### **TNS service name**



Type the TNS Service Name. The TNS Service Name is stored in `network/admin/tnsnames.ora` under your Oracle installation directory.

#### **Encode password**

Select this option if you want the password to be stored in encrypted form in the data source. You must re-enter the password to change an existing encoding option.

## **Performance**

#### **Procedure returns results or uses VARRAY parameters**

Select this option if your stored procedure can return results or if the stored procedures use Oracle VARRAYs. The default is that this option is not selected. If your `download_cursor` or `download_delete_cursor` scripts are stored procedure invocations, select this checkbox. If no stored procedures use VARRAYs and none of them returns a result set, clear this checkbox to improve performance.

#### **⚠ Caution**

If the *Procedure returns results or uses VARRAY parameters* option is enabled in your ODBC data source, the driver caches which procedures require these options. If you change these requirements for a procedure, you must shut down and restart all the MobiLink servers.

#### **Array size**

Type the size, in bytes, of the byte array used to prefetch rows, on a per-statement basis. Increasing this value can significantly improve fetch performance (such as during MobiLink server downloads) at the cost of extra memory allocation. The default is 60000.

#### **Fetch array size (rows)**

Type the number of rows fetched from the Oracle database. The default value is 20. Increasing the value reduces the number of round trips on the network and increases performance, but also increases ODBC driver memory use.

## **Transactions**

#### **Enable Microsoft distributed transactions**

Select this option to enlist your transactions in the Microsoft Distributed Transaction Coordinator (MSDTC). When selected, the Oracle ODBC driver requires an Oracle binary file, `oramts10.dll` for Oracle 10g clients or `oramts11.dll` for Oracle Database 11g clients.

#### **Test Connection**

Click to test whether the information provided results in a proper connection. For the test to work, specify a user ID and password.

## Related Information

[Oracle VARRAY](#)  
[SQL Anywhere 17 - Oracle ODBC Driver](#)

# 1.9 SQL Central Context-sensitive Help

SQL Central allows you to administer your database.

### In this section:

#### [Connection Profiles Window \[page 44\]](#)

The *Connection Profiles* window lets you view and edit connection profiles (named sets of connection parameters, such as user name, password, and server name).

#### [Disconnect Window \[page 45\]](#)

The *Disconnect* window has the following components:

#### [Import Connection Profile File Window \[page 46\]](#)

You can import and export connection profiles so that they can be used on multiple computers.

#### [New Connection Profile Window \[page 46\]](#)

The *New Connection Profile* window has the following components:

#### [Options Window \[page 47\]](#)

The *Options* window for SQL Central lets you configure basic appearance options.

#### [Plug-in Properties Window \[page 47\]](#)

The *Plug-in Properties* window lets you configure the properties of the selected plug-in.

#### [Register a Plug-in Wizard \[page 48\]](#)

Use this wizard to register a plug-in.

#### [Search Pane \[page 49\]](#)

Use this pane to search a database for a specified object.

#### [SQL Central Plug-ins Window \[page 50\]](#)

The *SQL Central Plug-ins* window allows you to configure plug-in settings and register new plug-ins.

## 1.9.1 Connection Profiles Window

The *Connection Profiles* window lets you view and edit connection profiles (named sets of connection parameters, such as user name, password, and server name).

The *Connection Profiles* window has the following components:

### Connection profiles

Lists and describes all connection profiles. To connect, select a profile and then click *Connect*, or double-click the connection profile.

### **Connect**

Connects using the selected connection profile.

### **New**

Opens the [New Connection Profile](#) window, which lets you create a new connection profile.

### **Rename**

Opens the [Rename Connection Profile](#) window, which lets you change the name of a selected connection profile.

### **Edit**

Opens the [Edit Connection Profile](#) window, which lets you edit the selected connection profile.

### **Change Description**

Opens the [Change Connection Profile Description](#) window, which lets you change the description of a selected connection profile.

### **Delete**

Deletes the selected connection profile. SQL Central prompts you to continue if you click this button.

### **Export**

Lets you save an existing connection profile to a file.

### **Import**

Opens the [Import Connection Profile File](#) window, which lets you import a connection profile from a file on the computer.

### **Set Startup**

Toggles the automatic startup option for the selected connection profile (the value in the [Use On Startup](#) column in the connection profiles list). When this option is turned on, the connection profile is automatically used each time SQL Central is started.

## **Related Information**

[Connection Profiles \(SQL Central\)](#)

## **1.9.2 Disconnect Window**

The [Disconnect](#) window has the following components:

### **Connections list**

Lists all the connections to SQL Central, including the [Connection Name](#), [Description](#), and [Plug-in Name](#). Select a connection from the list and click [Disconnect](#) to disconnect the connection. You can select multiple connections by holding Shift while you click. Click [OK](#) to disconnect from the selected connection.

## 1.9.3 *Import Connection Profile File* Window

You can import and export connection profiles so that they can be used on multiple computers.

The connection profile is saved to a file and is added to SQL Central using the *Import Connection Profile File* window. The *Import Connection Profile File* window has the following components:

### **File name**

Type the name of the file containing the connection profile. Connection profiles end with the extension `.cpr`.

### **Share this connection profile with other users**

Select this option to allow other users to access the connection profile.

#### **Connect this connection profile on startup for other users**

Select this option to make this connection connect for other users when they start SQL Central.

## Related Information

[Connection Profiles \(SQL Central\)](#)

## 1.9.4 *New Connection Profile* Window

The *New Connection Profile* window has the following components:

### **Name**

Type a name for the new connection profile.

### **Description**

Provides a place for you to type a description of the connection profile.

### **Share this connection profile with other users**

Select this option to allow other users to access the connection profile.

#### **Connect this connection profile on startup for other users**

Select this option to make this connection connect for other users when they start SQL Central.

### **New connection profile**

Select this option if you do not want to base the new connection profile on an existing profile.

### **Plug-in**

Select a plug-in for the new connection.

### **Copy connection profile**

Select this option to copy an existing connection profile.

### **Existing connection profiles**

Lists all existing connection profiles by name and plug-in type.

## Related Information

[Connection Profiles \(SQL Central\)](#)

### 1.9.5 *Options* Window

The *Options* window for SQL Central lets you configure basic appearance options.

The *General* tab of the *Options* window has the following components:

#### **Tab placement**

Lets you configure the placement of the tabs in the right pane of SQL Central. For some plug-ins, there is only one tab. For other plug-ins, there are multiple tabs. You can select one of the following options for tab placement: *Top*, *Bottom*, *Left*, or *Right*. By default, tabs appear at the top of the right pane.

#### **Show tips on startup**

Shows the *Tip of the Day* window when you start SQL Central.

#### **Show welcome window on startup**

Shows the *Welcome* window when you start SQL Central.

#### **Use Defaults**

Resets all settings on this tab to their default values.

## Related Information

[SQL Central](#)

### 1.9.6 *Plug-in Properties* Window

The *Plug-in Properties* window lets you configure the properties of the selected plug-in.

This window consists of two tabs: *General* and *Advanced*.

If you change the properties of a plug-in, you may need to unload it and then reload it again for the changes to take effect. SQL Central notifies you if this is the case.

#### *Plug-in Properties* Window: **General** Tab

This window has the following components:

#### **Name**

Shows the name of the selected plug-in.

#### **Type**

Shows the type of the selected object.

#### **Plug-in classpath**

Shows the classpath of the current plug-in. A classpath is the set of locations of the required classes for the plug-in. The field is read-only if the `.screpository610_32` or `.screpository610_64` file is read-only. On a multi-user operating system, the System Administrator is responsible for plug-in changes and you may not have permission to write to this file.

#### **Load on startup**

Specifies whether the plug-in loads automatically when you start SQL Central. If you do not select this option, you need to manually load the plug-in each time you start SQL Central.

## *Plug-in Properties* **Window: Advanced Tab**

This window has the following components:

#### **Additional classpaths field**

Lets you enter additional paths to add to the current classpath. You can type the path or search for a path by clicking *Browse*. If you are entering more than one path, each one must be entered on a separate line.

The Additional Classpaths field is read-only if the `.screpository610_32` or `.screpository610_64` file is read-only. On a multi-user operating system, the System Administrator is responsible for plug-in changes and you may not have permission to write to this file.

## **Related Information**

[SQL Central Plug-in Architecture](#)

## **1.9.7** *Register a Plug-in Wizard*

Use this wizard to register a plug-in.

### *Register a Plug-in Wizard: Registration File Name* **page**

This page has the following components:

#### **Register a plug-in by specifying a plug-in registration file**

Select this option if you know the name of the plug-in registration (.jpr) file, and enter the path and file name. The .jpr file contains the name and location of the `plug-in.jar` file and the classpath information.

#### **Register a plug-in by specifying a JAR file**

Select this option if you cannot specify a .jpr file name, and enter the path and file name. With this method, you may need to enter a classpath at a later step.

#### **→ Tip**

In the *Register a Plug-in Wizard*, you can choose to automatically load the plug-in when you start SQL Central.

After you register a plug-in, you can add additional Java class files or JAR files to the plug-in classpath from the plug-in properties window.

### *Register a Plug-in Wizard: Plug-in Loading Option* **page**

This page has the following component:

#### **Automatically load on startup**

Select this option if you want this plug-in to be loaded automatically when SQL Central starts.

### *Register a Plug-in Wizard: Additional JARs or Classes* **page**

This page has the following component:

#### **Directory paths**

Specify any additional directory paths that need to be added to the classpath when loading this plug-in.

## **Related Information**

[Registering a Plug-in](#)

## **1.9.8 Search Pane**

Use this pane to search a database for a specified object.

#### **Find what**

Specify the database object you want to search for, or choose an item from the dropdown list.

#### **Look in**

Choose an item from the dropdown list to narrow your search. If you choose SQL Central, it searches everywhere.

#### **Match case**

Select this option to find only text that exactly matches the text in the *Find what* field, including matching upper- and lowercase.

#### **Find whole words only**

Select this option to match one or more whole words. For example, if you select this option and search for the word *serve*, the search does not find the word *serve* within the word *server*.

#### **Search In SQL**

Select this option to include the SQL of procedures, events, functions and triggers in the search.

#### **Search dynamic properties (connections, statistics, locks)**

Select this option to include dynamic properties, such as connected users, SQL Remote statistics, table locks, and table page usage information in the search.

#### **Search In Scripts**

Select this option to include synchronization scripts in the search.

#### **Search**

Click *Search* to find the object specified in the *Find what* field.

#### **Results**

Shows the name, object type, and context for each item that is found.

## **Related Information**

[Searching for Database Objects](#)

### **1.9.9 SQL Central Plug-ins Window**

The *SQL Central Plug-ins* window allows you to configure plug-in settings and register new plug-ins.

This window lists the loaded and unloaded plug-ins. Loaded plug-ins are active and ready for use in SQL Central. Unloaded plug-ins are unusable until you load them again; they remain listed in the *SQL Central Plug-ins* window, but are not visible in the main SQL Central window.

This window has the following components:

#### **Plug-ins list**

Lists and describes each plug-in currently registered with SQL Central. SQL Central has its own version number that may be different from the version number listed for the plug-ins.

#### **Register**

Displays the *Register a Plug-In Wizard*, which lets you register a new plug-in by specifying a plug-in registration file or a JAR file. In this wizard, you can also type additional directory paths to add to the plug-in classpath (the set of locations of the required classes for the plug-in). The *Register* button is disabled if



the `.screpository610_32` or `.screpository610_64` file is read-only. On a multi-user operating system, the System Administrator is responsible for registering new plug-ins and you may not have permission to write to this file.

### **Unregister**

Allows you to unregister a plug-in from SQL Central. Once a plug-in has been unregistered, it cannot be used unless it is registered again. The *Unregister* button is disabled if the `.screpository610_32` or `.screpository610_64` file is read-only. On a multi-user operating system, the System Administrator is responsible for unregistering plug-ins and you may not have permission to write to this file.

### **Load**

Loads the selected plug-in for use. Loaded plug-ins are active and ready for use in SQL Central.

### **Unload**

Unloads the selected plug-in. Unloaded plug-ins are unusable until you load them again; they remain listed in the window, but are not visible in the main SQL Central window. If there is only one plug-in that you commonly use, it may be helpful to unload all others.

### **Properties**

Displays plug-in properties window, which lets you set startup options and add additional paths to the current classpath.

## **Related Information**

[SQL Central Plug-in Architecture](#)

[Register a Plug-in Wizard \[page 48\]](#)

[Plug-in Properties Window \[page 47\]](#)

## **1.10 SQL Anywhere Plug-in Help**

There are several ways to receive SQL Anywhere plug-in help.

### **In this section:**

[Add Service Dependencies Window \[page 62\]](#)

This window has several components.

[Add Service Group Dependencies Window \[page 63\]](#)

This window has several components.

[Add Tracing Level Window \[page 63\]](#)

This window has several components.

[Article Properties Window: General Tab \[page 64\]](#)

In MobiLink or SQL Remote, an article is a database object that represents a whole table, or a subset of the columns and rows in a table. Articles are grouped together in a publication.

[Article Properties Window: Columns Tab \[page 64\]](#)

This tab allows the user to select either all or some of the columns from the table.

[Article Properties Window: WHERE Clause Tab \[page 64\]](#)

The *WHERE Clause* tab only appears if the publication that contains the articles has a type of log scan.

[Article Properties Window: SUBSCRIBE BY Restriction Tab \[page 65\]](#)

This tab only applies to MobiLink and SQL Remote.

[Certificate Properties Window: General Tab \[page 65\]](#)

This tab lists the properties of the certificate. Click *Update Now* to replace the certificate with an updated certificate file. The certificate file must be located on the client computer.

[Certificate Properties Window: Attributes Tab \[page 66\]](#)

This tab lists the attributes and their values for the certificate.

[Update Certificate Window \[page 66\]](#)

Replaces a certificate in the database from the specified file.

[Change Settings Window \[page 66\]](#)

This window has several components.

[Change Tracing Level Window \[page 68\]](#)

This window has several components.

[Change User To Consolidated User Window \[page 68\]](#)

This window has several components.

[Change User To Remote User Window \[page 69\]](#)

This window has several components.

[Check Constraint Properties Window: General Tab \[page 70\]](#)

This tab lists the check constrain properties.

[Check Constraint Properties Window: Definition Tab \[page 70\]](#)

Specify a check constraint. A column check constraint is used to ensure that no inappropriate values are entered into any column of the specified type, while a table check constraint ensures that no row in a table violates the constraint.

[Column Properties Window: General Tab \[page 71\]](#)

This tab lists the column properties.

[Column Properties Window: Data Type Tab \[page 71\]](#)

This tab has several components.

[Column Properties Window: Value Tab \[page 72\]](#)

This tab has several components.

[Column Properties Window: Constraints Tab \[page 73\]](#)

Set the constraints for the columns.

[Column Properties Window \(View\): General Tab \[page 74\]](#)

This tab has several components.

[Compatibility Role Properties Window \[page 74\]](#)

This tab lists the properties for the compatibility role.

[Configure Type Filter Window \[page 74\]](#)

This window has several components.

[Configure Owner Filter Window \[page 75\]](#)

This window has several components.

[\(Blocked\) Connection Details Window \[page 75\]](#)

This window has several components.

[Connection Properties Window: General Tab \[page 76\]](#)

This tab has several components.

[Connection Properties Window: Extended Information Tab \[page 77\]](#)

This tab lists the connected user properties.

[Consolidated User Options Window \[page 77\]](#)

This window has several components.

[Consolidated User Properties Window: General Tab \[page 78\]](#)

This tab has several components.

[Consolidated User Properties Window: Authorities Tab \[page 80\]](#)

This tab applies to version 12.0.1 and earlier databases and has several components.

[Consolidated User Properties Window: SQL Remote Tab \[page 80\]](#)

This tab has several components.

[Create Trigger Condition Window \[page 81\]](#)

This window has several components.

[Database Options Window \[page 82\]](#)

Any options you set in this window are set for the PUBLIC role.

[Database Properties Window: General Tab \[page 83\]](#)

Database properties listed on this tab cannot be changed without rebuilding the database.

[Database Properties Window: Settings Tab \[page 84\]](#)

Database properties listed on this tab cannot be changed without rebuilding the database.

[Database Properties Window: Extended Information Tab \[page 86\]](#)

This tab lists the name and value of the properties for the database. Click *Refresh* to update the values. You can also press F5 to refresh the values.

[Database Properties Window: SQL Remote Tab \[page 86\]](#)

This tab has several components.

[Database Properties Window: Profiling Settings Tab \[page 87\]](#)

This tab has several components.

[Dbospace Properties Window: General Tab \[page 88\]](#)

This tab has several components.

[Directory Access Server Properties Window: General Tab \[page 89\]](#)

A directory access server is a remote server that gives you access to the local file structure of the computer running the database server.

[Domain Properties Window: General Tab \[page 90\]](#)

This tab has several components.

[Domain Properties Window: Check Constraint Tab \[page 90\]](#)

View the check constraint that applies to the domain. The check constraint is defined when the domain is created.

[Edit Trigger Condition Window \[page 91\]](#)

This window has several components.

[Event Properties Window: General Tab \[page 91\]](#)

This tab has several components.

[Event Properties Window: Conditions Tab \[page 92\]](#)

Specify when events are to be triggered.

[External Environment Properties Window: General Tab \[page 93\]](#)

This tab has several components.

[External Environment Object Properties Window: General Tab \[page 93\]](#)

This tab lists the properties for the external environment object. Click *Update Now* to update the external object.

[External Login Properties Window: General Tab \[page 94\]](#)

This tab lists the external login properties.

[Foreign Key Properties Window: General Tab \[page 94\]](#)

This tab lists the properties of the foreign key.

[Foreign Key Properties Window: Columns Tab \[page 96\]](#)

This tab lists the foreign column and primary columns for the foreign key.

[Function Properties Window: General Tab \[page 97\]](#)

This tab has several components.

[Function Properties Window: Parameters Tab \[page 97\]](#)

This tab has several components.

[Graphical Plan Window \[page 98\]](#)

This window has several components.

[Group Options Window \[page 98\]](#)

This window applies to version 12.0.1 and earlier databases and has several components:

[Group Properties Window: General Tab \[page 99\]](#)

This tab has several components:

[Group Properties Window: Authorities Tab \[page 100\]](#)

This tab applies to version 12.0.1 and earlier databases, and has several components.

[Index Properties Window: General Tab \[page 101\]](#)

This tab has several components.

[Index Properties Window: Columns Tab \[page 102\]](#)

Shows all the columns in the index, and their order, either *Ascending* or *Descending*. You set the order when you create a new index. The columns are sorted by their sequence, which is a unique number starting at 0. The order of the numbers determines the relative position of the columns in the index.

[JAR File Properties Window: General Tab \[page 102\]](#)

This tab has several components.

[Java Class Properties Window: General Tab \[page 103\]](#)

This tab lists the properties for the Java Class. Click *Update JAR File* to update the JAR file.

[LDAP Server Properties Window: General Tab \[page 103\]](#)

This tab has several components.

[LDAP Server Properties Window: Settings Tab \[page 104\]](#)

This tab has several components.

[Test Connection to LDAP Server Window \[page 105\]](#)

Tests a connection to the LDAP server. Validates the LDAP server's search URL, access distinguished name and password, and authentication URL.

[Listener Properties Window: General Tab \[page 105\]](#)

This window lists the properties for the connection listener.

[Login Mapping Properties Window: General Tab \[page 105\]](#)

This tab lists the properties of the login mapping.

[Login Policy Properties Window: General Tab \[page 106\]](#)

This tab lists the properties for the login policy.

[Login Policy Properties Window: Options Tab \[page 106\]](#)

This tab lists the login policy options and allows you to review and edit their values.

[Login Policy Properties Window: Users Tab \[page 106\]](#)

This tab lists the users assigned to the login policy.

[Materialized View Properties Window: General Tab \[page 106\]](#)

This tab has several components.

[Materialized View Properties Window: Columns Tab \[page 108\]](#)

This tab lists the columns included in the materialized view.

[Materialized View Properties Window: Options Tab \[page 109\]](#)

This tab lists the options that were set when the materialized view was created.

[Materialized View Properties Window: Miscellaneous Tab \[page 110\]](#)

This tab has several components.

[Maintenance Plan Report Properties Window: General Tab \[page 111\]](#)

This tab has several components.

[Message Type Properties Window: General Tab \[page 111\]](#)

This tab has several components.

[Message Type Properties Window: SQL Remote Users Tab \[page 112\]](#)

This tab has several components.

[Migrate Compatibility Role Window \[page 112\]](#)

This window migrates the compatibility role to a renamed, user-defined role. The compatibility role is deleted.

[MobiLink User Properties Window: General Tab \[page 112\]](#)

This tab displays the name of the MobiLink user.

[MobiLink User Properties Window: Connection Tab \[page 113\]](#)

This tab has several components.

[MobiLink User Properties Window: Extended Options Tab \[page 115\]](#)

This tab lists the MobiLink client extended options and the values set for the MobiLink user. Click the *Value* field beside the option name to set the value for the MobiLink user.

[Mutex and Semaphore Properties Window: General Tab \[page 116\]](#)

This tab lists the general properties for the mutex or semaphore.

[Mutex and Semaphore Properties: Connections Tab \[page 116\]](#)

For mutexes, this tab lists connections that have locked the mutex and lists the connections that are waiting for the mutexes. For semaphores, this tab lists connections that are waiting for the semaphore.

[New Members Window \[page 117\]](#)

This tab lists the names and comments for all the users and roles in the database that can be added to the selected role.

#### [New Memberships Window \[page 117\]](#)

This tab lists the names and comments for all the roles in the database to which the selected user or role can be added.

#### [ODATA Producer Properties Window: General Tab \[page 117\]](#)

Use this tab to enable or disable your ODATA producer, and to review your authentication and database administrator settings.

#### [ODATA Producer Properties Window: Options Tab \[page 118\]](#)

This window lists the ODATA producer options and their values.

#### [ODATA Producer Properties Window: Service Model Tab \[page 118\]](#)

Use this tab to review and to update your ODATA producer service model.

#### [Update ODATA Producer Service Model Window \[page 118\]](#)

Use this tab to specify the file path to the updated ODATA producer service model.

#### [Options Window \[page 119\]](#)

This tab has several components.

#### [Options for compatibility-role-name \[page 119\]](#)

This window is only applicable when a system role that supports logins (such as PUBLIC, dbo, diagnostics, rs\_systabgroup, and SA\_DEBUG) or a user-extended roles is granted one of several compatibility roles.

#### [Options for system-privilege \[page 120\]](#)

Use this window to restrict the users to which the system privilege applies.

#### [Parameter Properties Window: General Tab \[page 120\]](#)

This tab has several components.

#### [Plug-in Preferences Window: General Tab \[page 121\]](#)

This window has several components.

#### [Plug-in Preferences Window: Utilities Tab \[page 124\]](#)

This window has several components.

#### [Plug-in Preferences Window: Table Data Tab \[page 126\]](#)

This window has several components.

#### [Plug-in Preferences Window: Automatic Refresh Tab \[page 126\]](#)

This window has several components.

#### [Pre-allocate Space for Dbspace Window \[page 127\]](#)

Specifies the amount of space you want to pre-allocate to the dbspace. Pre-allocating disk space for the dbspace extends the size of the corresponding database file by the amount of space you specify.

#### [Primary Key Properties Window: General Tab \[page 127\]](#)

This tab lists the properties of the primary key including the table to which it applies and the index used to enforce it.

#### [Primary Key Properties Window: Columns Tab \[page 127\]](#)

This tab lists the columns included in the primary key.

#### [Procedure Properties Window: General Tab \[page 128\]](#)

This tab lists the properties of the procedure, including the dialect in which the code was last saved.

[Procedure Properties Window: Parameters Tab \[page 128\]](#)

This tab has several components.

[Proxy Table Properties Window: General Tab \[page 129\]](#)

This tab has several components.

[Proxy Table Properties Window: Columns Tab \[page 129\]](#)

Lists all the columns in the proxy table, and their type.

[Proxy Table Properties Window: Miscellaneous Tab \[page 129\]](#)

This tab has several components.

[Publication Properties Window: General Tab \[page 130\]](#)

This tab has several components.

[Publication Properties Window: Tables Tab \[page 130\]](#)

This tab has several components.

[Publication Properties Window: Columns Tab \[page 131\]](#)

The *Columns* tab lets you select columns from tables and add them to the list of articles that are included in the client database.

[Publication Properties Window: WHERE Clauses Tab \[page 131\]](#)

Articles defined for MobiLink and SQL Remote publications use a WHERE clause to define a subset of rows of a table to be included in an article.

[Publication Properties Window: SUBSCRIBE BY Restrictions Tab \[page 132\]](#)

The *SUBSCRIBE BY Restrictions* tab lets you define a subset of rows of a table for inclusion in the article.

[Publication Properties Window: Upload Procedures Tab \[page 133\]](#)

This tab only applies to scripted upload publications.

[Publication Properties Window: Connection Tab \[page 133\]](#)

The settings you can specify on the *Connection* tab depend on the communication protocol you are using.

[Publication Properties Window: Extended Options Tab \[page 136\]](#)

This tab has several components.

[Publisher Options Window \[page 137\]](#)

This window has several components.

[Publisher Properties Window: General Tab \[page 138\]](#)

This tab has several components.

[Publisher Properties Window: Authorities Tab \[page 139\]](#)

This tab applies to version 12.0.1 and earlier databases and has several components.

[Query Rewrite Optimization History Window \[page 140\]](#)

This window has several components.

[Refresh Data Window \[page 140\]](#)

This window has several components.

[Remote Procedure Properties Window: General Tab \[page 141\]](#)

This tab lists the remote procedure's properties including its dialect.

[Remote Procedure Properties Window: Parameters Tab \[page 141\]](#)

This tab has several components.

[Remote Server Properties Window: General Tab \[page 142\]](#)

This tab has several components.

[Remote User Options Window \[page 143\]](#)

This window has several components.

[Remote User Properties Window: General Tab \[page 144\]](#)

This tab has several components.

[Remote User Properties Window: Authorities Tab \[page 145\]](#)

This tab applies to version 12.0.1 and earlier databases and has several components.

[Remote User Properties Window: SQL Remote Tab \[page 146\]](#)

This tab has several components.

[Role Options Window \[page 147\]](#)

This window has several components.

[Role Properties Window \[page 148\]](#)

This tab has several components.

[Schedule Properties Window: General Tab \[page 148\]](#)

This tab has several components.

[Schedule Properties Window: Recurrence Tab \[page 149\]](#)

All the settings on this tab are optional.

[Sequence Generator Properties Window: General Tab \[page 149\]](#)

This tab has several components.

[Server Properties Window: General Tab \[page 150\]](#)

This tab has several components.

[Server Properties Window: Extended Information Tab \[page 151\]](#)

This window lists contains an extended list database server properties and their values. Click *Refresh* or press F5 to update the values.

[Server Properties Window: Options Tab \[page 151\]](#)

The database server options on this tab correspond to options that can be reset while the database server is running.

[Server Properties Window: Request Logging Tab \[page 152\]](#)

This tab has several components.

[Service Properties Window: General Tab \[page 153\]](#)

This tab has several components.

[Service Properties Window: Configuration Tab \[page 155\]](#)

This tab has several components.

[Service Properties Window: Account Tab \[page 156\]](#)

This tab has several components.

[Service Properties Window: Dependencies Tab \[page 157\]](#)

This tab has several components.

[Set Consolidated User Window \[page 157\]](#)

You can only select one consolidated user for the database.

[Set Clustered Index Window \[page 158\]](#)

Use this window to a clustered index.



[Set Publisher Window \[page 158\]](#)

You can only select one publisher for the database.

[Set Service Group Window \[page 159\]](#)

This window has several components.

[Spatial Reference System Properties Window: General Tab \[page 159\]](#)

This tab has several components.

[Spatial Reference System Properties Window: Settings Tab \[page 160\]](#)

This tab has several components.

[Spatial Reference System Properties Window: Coordinates Tab \[page 161\]](#)

This tab has several components.

[Spatial Reference System Properties Window: Transform Definition Tab \[page 163\]](#)

This tab specifies the transform definition in use for the spatial reference system.

[SQL Remote Subscription Properties Window: General Tab \[page 163\]](#)

This tab has several components.

[SQL Remote Subscription Properties Window: Advanced Tab \[page 164\]](#)

This tab has several components.

[SQL Statement Details Window \[page 164\]](#)

The *SQL Statement Details* window has a *SQL Statement Details* pane and a *Query Information* pane.

[Start Database Window \[page 166\]](#)

This window has several components.

[Synchronize Using Synchronization Profile Window \[page 167\]](#)

This tab has several components.

[Synchronization Profile Properties Window: General \[page 167\]](#)

This tab lists the properties of the synchronization profile.

[Synchronization Profile Properties Window: Basic Dbmlsync Tab \[page 168\]](#)

This tab has several components.

[Synchronization Profile Properties Window: Advanced Dbmlsync \[page 169\]](#)

This tab has several components.

[Synchronization Profile Properties Window: Miscellaneous Dbmlsync \[page 171\]](#)

This tab has several components.

[Synchronization Profile Properties Window: Connection \[page 172\]](#)

This tab has several components.

[Synchronization Profile Properties Window: Extended Options \[page 174\]](#)

This tab has several components.

[Synchronization Subscription Properties Window: General Tab \[page 176\]](#)

This tab has several components.

[Synchronization Subscription Properties Window: Connection Tab \[page 177\]](#)

The settings you can specify on the *Connection* tab depend on the communication protocol you are using.

[Synchronization Subscription Properties Window: Extended Options Tab \[page 180\]](#)

This tab lists the extended options and the values set for the MobiLink user. Click the *Value* field beside the option name to set the value for the MobiLink user.

[System Privilege Properties Window: General Tab \[page 180\]](#)

This tab lists the properties for the system privilege.

[System Role Properties Window: General Tab \[page 180\]](#)

This window has several components.

[System Role Options Window \[page 181\]](#)

This window has several components.

[System Trigger Properties Window: General Tab \[page 182\]](#)

This tab has several components.

[Table Properties Window: General Tab \[page 183\]](#)

This tab has several components.

[Table Properties Window: Columns Tab \[page 183\]](#)

Lists all the columns of the table, and their ID, data type, and comments.

[Table Properties Window: Miscellaneous Tab \[page 184\]](#)

This tab has several components.

[Change Owner Window \[page 184\]](#)

Use this window to change the owner of a table.

[Text Configuration Object Properties Window: General Tab \[page 185\]](#)

This tab lists the properties of the text configuration object including the collation that it uses.

[Text Configuration Object Properties Window: Settings Tab \[page 185\]](#)

This tab has several components.

[Text Configuration Object Properties Window: Stolist Tab \[page 186\]](#)

This tab has several components.

[Text Configuration Object Properties Window: Options \[page 187\]](#)

This tab has several components.

[Text Index Properties Window: General Tab \[page 187\]](#)

This tab specifies information about the selected text index.

[Text Index Properties Window: Columns Tab \[page 189\]](#)

Lists all the columns of the table, and their ID, data type, and comments.

[Refresh Data \(Text Index\) Window \[page 189\]](#)

Select one of the following isolation levels to specify the type of locking to use on the underlying base tables during the refresh.

[Time Zone Properties Window: General Tab \[page 190\]](#)

Use this tab to adjust your time zone settings.

[Time Zone Properties Window: Daylight Savings Time Tab \[page 190\]](#)

Use this tab to adjust your daylight savings time settings.

[Trigger Event Window \[page 191\]](#)

This window has several components.

[Trigger Properties Window: General Tab \[page 191\]](#)

This window has several components.

[Unique Constraint Properties Window: General Tab \[page 192\]](#)

This tab has several components.

[Unique Constraint Properties Window: Columns Tab \[page 193\]](#)

Lists all the columns in the unique constraint, and their type and comments.

[Unit of Measure Properties Window: General Tab \[page 193\]](#)

This tab has several components.

[Unload Data Window \[page 193\]](#)

This window has several components.

[Update External Environment Object Window \[page 195\]](#)

Specifies the location of the updated external object.

[Update JAR File Window \[page 195\]](#)

This window has several components.

[Update Java Class Window \[page 195\]](#)

This window has several components.

[User Options Window \[page 196\]](#)

This window has several components.

[User Properties Window: General tab \[page 197\]](#)

This tab has several components.

[User Properties Window: Authorities Tab \[page 198\]](#)

This tab applies to version 12.0.1 and earlier databases and has several components.

[User-extended Role Properties Window: General tab \[page 199\]](#)

A user-extended role is a user that has been extended to be a role, and is a type of user-defined role. Use this tab view the properties of the user-extended role and reset its password.

[User-extended Role Options Window \[page 200\]](#)

This window has several components.

[View Properties Window: General Tab \[page 201\]](#)

This tab has several components.

[View Properties Window: Columns Tab \[page 202\]](#)

This tab lists the columns included in the view.

[Variable Properties Window: General Tab \[page 202\]](#)

This tab lists the properties of the variable.

[Variable Properties Window: Data Type Tab \[page 202\]](#)

This tab lists the data type of the variable.

[Variable Properties Window: Values Tab \[page 203\]](#)

Use this tab to view and edit the initial values for the variable.

[Web Service Properties Window: General Tab \[page 203\]](#)

This tab has several components.

[Web Service Properties Window: SQL Statement Tab \[page 205\]](#)

Shows the SQL statement for the web service (if one has been specified), or allows you to specify a SQL statement for the web service.

[Microsoft Windows Mobile Message Types for SQL Remote Window \[page 205\]](#)

This window has several components.

[Debugger Help \[page 209\]](#)

There are several ways to receive debugger help.

[Index Consultant \[page 212\]](#)

The Index Consultant guides you in the proper selection of indexes for your database.

#### [UltraLite Projects \[page 212\]](#)

In version 9.0.2 and earlier, you can assign SQL statements in a reference database to an UltraLite project.

#### [UltraLite Statements \[page 212\]](#)

In version 9.0.2 and earlier, you define the data access requests available to an UltraLite application by adding a set of SQL statements to the UltraLite project for that application in your reference database.

#### [Publications \[page 213\]](#)

A publication is a database object that identifies the data that is to be synchronized.

#### [Articles \[page 213\]](#)

In MobiLink or SQL Remote, an article represents a whole table, or a subset of the columns and rows in a table.

#### [Subscriptions \[page 213\]](#)

In MobiLink, a **synchronization subscription** links a particular MobiLink user with a publication.

#### [Indexes Folder \[page 214\]](#)

The Indexes folder provides a way for you to view all the indexes in a database.

#### [Table Edit Undo \[page 215\]](#)

When editing tables in SQL Central, you can undo your changes on a row by row basis.

#### [QAnywhere \[page 215\]](#)

Support for QAnywhere has been deprecated and removed. To administer QAnywhere, you must use the QAnywhere plug-in in an earlier version of SQL Central.

## 1.10.1 *Add Service Dependencies* Window

This window has several components.

### **Choose one or more services from the list of candidates**

Lists all the services on your system. Select a service from this list and then click *OK* to add it to the list of services and service groups on the *Dependencies* tab of the *Service Properties* window.

You can select multiple services by holding Ctrl while you click. Double-clicking a service adds the selected service to the list on the *Dependencies* tab and closes the window.

## Related Information

[Managing Service Groups](#)

## 1.10.2 *Add Service Group Dependencies* Window

This window has several components.

### **Choose one or more service groups from the list of candidates**

Lists all the service groups on your system. Select a service group from this list and then click *OK* to add it to the list of services and service groups on the *Dependencies* tab of the *Service Properties* window.

You can select multiple service groups by holding Ctrl while you click. Double-clicking adds the selected service group to the list on the *Dependencies* tab and closes the window.

## Related Information

[Managing Service Groups](#)

## 1.10.3 *Add Tracing Level* Window

This window has several components.

### **Scope**

Choose an option from the dropdown list to specify the scope of the tracing. An additional dropdown list may appear, depending on the scope you choose. For example, if you choose *Origin*, an *Origin* dropdown list appears.

### **Tracing type**

Choose an option from the dropdown list to specify the type of tracing. The tracing types available vary depending on the scope chosen.

### **Condition**

Choose an option from the dropdown list to specify a condition. The conditions available vary depending on the tracing type chosen.

### **Value (milliseconds)**

Type a value in milliseconds for the selected condition. This option is only available if a condition is selected.

## Related Information

[Diagnostic Tracing \(Deprecated\)](#)

[Diagnostic Tracing Configuration Settings \(Deprecated\)](#)

## 1.10.4 *Article Properties* Window: *General* Tab

In MobiLink or SQL Remote, an article is a database object that represents a whole table, or a subset of the columns and rows in a table. Articles are grouped together in a publication.

### Related Information

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

## 1.10.5 *Article Properties* Window: *Columns* Tab

This tab allows the user to select either all or some of the columns from the table.

### **This article contains the following columns:**

#### **All columns**

Select this option to include all the columns of the table in the article.

#### **Selected columns**

Select this option if you want the article to contain only some of the columns from the table. Selecting this option enables the checkboxes beside the column names in the selected columns list. The list includes all the columns of the table the article is based on.

When you choose this option, you must include at least one column in the article. To include a column in the article, select the checkbox beside the column name so that a checkmark appears.

### Related Information

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

## 1.10.6 *Article Properties* Window: *WHERE Clause* Tab

The *WHERE Clause* tab only appears if the publication that contains the articles has a type of log scan.

Articles defined for MobiLink and SQL Remote publications can use a WHERE clause to define a subset of rows of a table to be included in an article.

### **This article has the following WHERE clause**

You can edit the WHERE clause in the window to restrict the table rows that are included in the article.

For example, to include only the rows that contain a salary of more than \$50000, type:

```
WHERE Salary > 50000
```

## Related Information

[The WHERE Clause: Specifying Rows](#)

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### 1.10.7 *Article Properties Window: SUBSCRIBE BY Restriction Tab*

This tab only applies to MobiLink and SQL Remote.

#### **None**

Configures the article to avoid using SUBSCRIBE BY columns or clauses to partition rows.

#### **Column**

Configures the article to partition rows from the table based on a column (SUBSCRIBE BY columns). Once you select this option, you must choose a column from the dropdown list.

#### **Expression**

Sets the article to partition rows from the table based on an expression specified in the field below.

## Related Information

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### 1.10.8 *Certificate Properties Window: General Tab*

This tab lists the properties of the certificate. Click [Update Now](#) to replace the certificate with an updated certificate file. The certificate file must be located on the client computer.

## Related Information

[Digital Certificates](#)

[CREATE CERTIFICATE Statement](#)

## 1.10.9 *Certificate Properties Window: Attributes Tab*

This tab lists the attributes and their values for the certificate.

### Related Information

[Digital Certificates](#)

[Certificate Viewer Utility \(viewcert\)](#)

## 1.10.10 *Update Certificate Window*

Replaces a certificate in the database from the specified file.

### Related Information

[Digital Certificates](#)

[CREATE CERTIFICATE Statement](#)

## 1.10.11 *Change Settings Window*

This window has several components.

#### **Allow null values**

Determines whether the foreign key columns allow NULL values. To use this option, the foreign key columns must all have Allow Nulls set to Yes.

#### **Match Type**

##### **Simple**

Select this option to have a match occur for a row in the referencing table if at least one column in the key is NULL, or all the column values match the corresponding column values present in a row of the referenced table. This option is only available if [Allow Null Values](#) is selected.

##### **Full**

Select this option to have a match occur for a row in the referencing table if all column values in the key are NULL, or if all the column values match the values present in a row of the referenced table. This option is only available if [Allow Null Values](#) is selected.

#### **Update action**

Uses one of the following settings to define the behavior of the table when a user tries to update data:

##### **Not permitted**



Prevents updates of the associated primary table's primary key value if there are no corresponding foreign keys.

**Cascade values**

Updates the foreign key to match a new value for the associated primary key.

**Set values to null**

Sets all the foreign key values that correspond to the updated primary key of the associated primary table to NULL.

**Set values to default**

Sets foreign key values that match the updated or deleted primary key value to values specified in the DEFAULT clause of each foreign key column. To use this option, the foreign key columns must all have default values.

**Delete action**

Uses one of the following settings to define the behavior of the table when a user tries to delete data:

**Not permitted**

Prevents deletion of the associated primary table's primary key value if there are no corresponding foreign keys in the table.

**Cascade values**

Deletes the rows from the table that match the deleted primary key of the associated primary table.

**Set values to null**

Sets all the foreign key values in the table that correspond to the deleted primary key of the associated primary table to NULL. To use this option, the foreign key columns must all have Allow Nulls set to Yes.

**Set values to default**

Sets foreign key values that match the updated or deleted primary key value to values specified in the DEFAULT clause of each foreign key column. To use this option, the foreign key columns must all have default values.

**Check only on a commit**

Forces the database to wait for a COMMIT before checking the integrity of the foreign key, overriding the setting of the wait\_for\_commit database option.

## Related Information

- [Foreign Keys](#)
- [Data Integrity](#)
- [SYSFKEY System View](#)
- [wait\\_for\\_commit Option](#)

## 1.10.12 *Change Tracing Level* Window

This window has several components.

### **These levels are currently stored for the database**

Shows a list of the tracing levels for the database. The scope, name, level, condition, and value are displayed for each level.

In the *Enabled* column, place a checkmark in the checkbox beside a level to enable it. If a checkmark is removed, the level is not enabled.

### **New**

Displays the *Add Tracing Level* window, which lets you create a new tracing level.

### **Delete**

Removes the selected tracing level. This is only available if a level is selected.

### **Refresh**

Refreshes the list of tracing levels. This is only available if the Enabled option is changed for one or more levels.

## Related Information

[Diagnostic Tracing \(Deprecated\)](#)

## 1.10.13 *Change User To Consolidated User* Window

This window has several components.

### **User**

Shows the name of the selected user.

### **Message type**

Select a message type for communicating with the publisher.

### **Address**

Type the destination for replication messages. Publishers and consolidated users each have their own address. The address must be valid for the Message Type you select.

### **Send frequency**

Select one of the following values to specify how often the Message Agent (dbremote) should run.

#### **Send then close**

Select this option to set the replication frequency so that the Message Agent (dbremote) runs once, sends all pending messages to this consolidated user, and then shuts down. The Message Agent must be restarted each time the publisher wants to send messages. This option is only useful when you are running the Message Agent at a remote site.

**Send every**

Select this option to set the replication frequency so that the Message Agent (dbremote) runs continuously, sending messages to this consolidated user at the given periodic interval. This option is useful at both consolidated and remote sites.

**Send daily at**

Select this option to set the replication frequency so that the Message Agent (dbremote) runs continuously, sending messages to this consolidated user each day at the given time. This option is particularly useful at remote sites.

## Related Information

[Message System Setup](#)

[GRANT CONSOLIDATE Statement \[SQL Remote\]](#)

### 1.10.14 *Change User To Remote User* Window

This window has several components.

**User**

Shows the name of the selected user.

**Message type**

Select a message type for communicating with the publisher.

**Address**

Type the destination for replication messages. Publishers and remote users each have their own address. The address must be valid for the Message Type you select.

**Send frequency**

Select one of the following values to specify how often the Message Agent (dbremote) should run.

**Send then close**

Select this option to set the replication frequency so that the publisher's agent runs once, sends all pending messages to this remote user, and then shuts down. The agent must be restarted each time the publisher wants to send messages. This option is only useful when you are running the Message Agent (dbremote) at a remote site.

**Send every**

Select this option to set the replication frequency so that the publisher's agent runs continuously, sending messages to this remote user at the given periodic interval. This option is useful at both consolidated and remote sites.

**Send daily at**

Select this option to set the replication frequency so that the publisher's agent runs continuously, sending messages to this remote user each day at the given time. This option is particularly useful at remote sites.

## Related Information

[Message System Setup](#)

[User Privileges](#)

[GRANT REMOTE Statement \[SQL Remote\]](#)

### 1.10.15 *Check Constraint Properties* Window: *General* Tab

This tab lists the check constrain properties.

#### **Name**

Shows the name of the selected check constraint. You can edit this field.

#### **Table**

Shows the table to which the check constraint belongs.

#### **Column**

Shows the column to which the check constraint applies. This information appears only for column check constraints, not for table constraints.

## Related Information

[CHECK Constraints on Columns](#)

[CHECK Constraints on Tables](#)

[Constraint Considerations](#)

### 1.10.16 *Check Constraint Properties* Window: *Definition* Tab

Specify a check constraint. A column check constraint is used to ensure that no inappropriate values are entered into any column of the specified type, while a table check constraint ensures that no row in a table violates the constraint.

## Related Information

[CHECK Constraints on Columns](#)

[CHECK Constraints on Tables](#)

[Constraint Considerations](#)

## 1.10.17 Column Properties Window: General Tab

This tab lists the column properties.

### Related Information

[Tables](#)

## 1.10.18 Column Properties Window: Data Type Tab

This tab has several components.

### Built-in type

This option enables you to choose a built-in data type for the column from the dropdown list. Integers, character strings, and dates are examples of built-in data types. For some of these types, you can specify size and/or scale:

<i>Size</i>	Specifies the length of string columns, or the total number of digits to the left and right of the decimal point in the result of any decimal arithmetic for numeric columns. For numeric columns, the size is also called the precision value.
<i>Units</i>	Displays the unit corresponding to the data type's size. Possible units include: <i>bits</i> , <i>bytes</i> , <i>characters</i> , or <i>digits</i> .  For CHAR and VARCHAR data types, you can specify the unit as <b>bytes</b> or <b>characters</b> .
<i>Scale</i>	Specifies the minimum number of digits after the decimal point when an arithmetic result is truncated to the maximum precision value.

### Set Spatial Reference System

Select this option to specify the spatial reference system. This option is available when you specify a spatial data type (such as ST\_Point or ST\_Polygon) in the *Built-in Type* field. Possible spatial reference systems include *0: Default*, *4326: WGS 84*, *1000004326: WGS 84 (planar)*, *2147483646: sa\_planar\_unbounded*, and *2147483647: sa\_octahedral\_gnomonic*.

### Domain

Select this option to choose a domain from the dropdown list. A domain is a named combination of built-in data types, default value, check condition, and nullability.

### Java class

This option is only shown for version 8.0.x databases. Select this option to choose a Java class for the column from the dropdown list.

### Compress values

Select this option to compress column values. If a column is compressed, database server activities such as indexing, data comparisons, and statistics generation may be slightly slower if they involve the compressed column because the values must be compressed when written, and decompressed when read.

#### **Maintain BLOB indexes for large values**

Select this option to maintain BLOB indexes for large values. Only character, binary, and bit types support this option.

## **Related Information**

[Column Compression Considerations](#)

[Column Data Type Considerations](#)

[How to Use Domains to Improve Data Integrity](#)

[Data Integrity](#)

[Tables](#)

[Tutorial: Using Java in the Database](#)

[precision Option](#)

[CREATE TABLE Statement](#)

[SQL Data Types](#)

### **1.10.19 Column Properties Window: Value Tab**

This tab has several components.

#### **No default or computed value**

Select this option if the column has no default or computed value.

#### **Default value**

Select this option if the column has a default value. If the column is based on a domain, this setting inherits the domain's default value (if any), but the value can be overridden for the column. Choosing the *Default Value* option enables the *User-defined* and *System-defined* options.

#### **User-defined**

Type a custom value (string, number, or other expression) for the default value. If you based the column on a domain, you can retain the domain's default value (if any) or override it for the column.

#### **Literal string**

Specifies whether the default value for the column should be treated as a literal string. This option is selected by default for character columns and domains with a character base type. When you select this option, the default text does not need to be enclosed in single quotes, and you do not need to escape embedded single quotes or backslashes in the string.

When you clear this option, the automatic quoting and escaping behavior is turned off and the specified default value text is passed as is to the database server.

#### **System-defined**

Select a predefined value (for example, *current date*) for the default value. You must select a value from the dropdown list. If you based the column on a domain, you can retain the domain's default value (if any) or override it for the column.

#### **Partition size**

When you select *global autoincrement* for the system-defined value, you can also supply a partition size.

#### **Computed value**

Select this option to define a computed value for the column. A computed column derives its values from calculations of values in other columns. Type an expression in the text box to describe the relationship between the other columns and the value that appears in the computed column.

## **Related Information**

[String and Number Defaults](#)

[Constant Expression Defaults](#)

[Column Defaults](#)

[The GLOBAL AUTOINCREMENT Default](#)

[Computed Columns](#)

[SQL Functions](#)

## **1.10.20 Column Properties Window: Constraints Tab**

Set the constraints for the columns.

#### **Values can be null**

Select this option if values in the column can be NULL. If the column is based on a domain, you can retain the domain's nullability or override it for the column.

#### **Values cannot be null**

Select this option to allow duplicate values, but not allow NULL values in this column.

#### **Values cannot be null and must be unique**

Select this option if values in the column cannot be NULL and must be unique. This option is disabled if you specified a spatial type for the column's built-in data type or if you specified a domain whose base type is a spatial type.

## **Related Information**

[The NULL Default](#)

[NULL and NOT NULL Columns](#)

[Constraint Considerations](#)

[Data Integrity](#)

## 1.10.21 *Column Properties Window (View): General Tab*

This tab has several components.

### **Name**

Shows the name of the selected column.

### **View**

Shows the name and owner of the view to which the column belongs.

### **Data type**

Shows the data type of the selected column.

### **Allows null**

Shows whether the selected column allows NULL values.

## **Related Information**

[Constraint Considerations](#)

[SQL Data Types](#)

## 1.10.22 *Compatibility Role Properties Window*

This tab lists the properties for the compatibility role.

## **Related Information**

[Compatibility Roles](#)

## 1.10.23 *Configure Type Filter Window*

This window has several components.

### **Database**

Shows the name of the database.

### **Select the object types you want to view**



Lists the names for all the objects connected to the database. Select the checkbox beside an object if you want the object to appear in the left pane of SQL Central.

#### **Make This The Default Type Filter For New Databases**

Select this option to set the specified selections as the default type filter. This filter will be used to filter the objects for databases that have no type filter associated with them. For example, when you connect to a new database, this filter is applied to the objects in the left pane of SQL Central.

Clearing this option resets the default type filter.

## **Related Information**

[SQL Central Navigation](#)

### **1.10.24 *Configure Owner Filter* Window**

This window has several components.

#### **Database**

Shows the name of the selected database.

#### **Select the users and groups whose objects you want to view**

Lists the names and comments for all the users and groups connected to the database. Select the checkbox beside a user or group if you want their objects to appear in the left pane in SQL Central.

The user SYS owns system tables.

## **Related Information**

[Tables, Views, and Indexes](#)

[Viewing a List of System Objects \(SQL Central\)](#)

### **1.10.25 *(Blocked) Connection Details* Window**

This window has several components.

#### **Connection ID**

Shows the connection ID for the selected blocked connection.

#### **Connection name**

Shows the name of the connection.

#### **User**

Shows the user ID for the connection.

**Communication link**

Shows the type of communication link.

**Node address**

Shows the node address for the client in a client/server connection.

**Application information**

Shows the application information.

**Connect time**

Shows the start time of the connection.

**Disconnect time**

Shows the time the connection was disconnected.

## Related Information

[Deadlocks](#)

[sa\\_conn\\_info System Procedure](#)

## 1.10.26 *Connection Properties* Window: *General* Tab

This tab has several components.

**Connection ID**

Shows the connection ID for the user. When a user connects to a database, the database server assigns the connection a unique connection ID. For each new connection to the database server, the server increments the connection ID value by 1.

**User**

Shows the database user ID.

**Connection name**

Shows the connection name for the database to which the user is connected. Naming your connections makes it easy to distinguish between multiple connections to the same database, or multiple connections to the same or different database server.

**Communication link**

Shows the type of communications link used by the user's connection. If the connection is between a SQL Anywhere client and network database server, the link type represents the network protocol being used.

**Node address**

Shows the node for the client in a client/server connection. When the client and server are both on the same computer, an empty string is returned.

**Last request type**

Shows the type of the last request.

### Last request time

Shows the time at which the last request for the connection started.

### Blocked on connection

Shows whether the connection is blocked. If the current connection is not blocked, this field is blank. If it is blocked, then this field shows the connection number on which the connection is blocked.

## Related Information

[Managing Connected Users \(SQL Central\)](#)

[List of Connection Properties](#)

## 1.10.27 *Connection Properties Window: Extended Information Tab*

This tab lists the connected user properties.

### Connected user properties list

Lists the name and value of the properties for the connected user. Click [Refresh](#) to update the values. You can also press F5 to refresh the values.

### Refresh

Click this button to update the values in the *Connected user properties list*.

### Description

Describes the selected property.

## Related Information

[Managing Connected Users \(SQL Central\)](#)

[List of Connection Properties](#)

## 1.10.28 *Consolidated User Options Window*

This window has several components.

### i Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

### Consolidated user

Displays the name of the selected consolidated user.

#### Show

Provides a list of option types. For example, if you choose Database Options, only database-related options appear in the Options list.

#### Options list

Shows the option settings and default values based on the type of options selected in the Show list.

#### Value

Choose an option in the Options list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for an individual user ID unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window:

#### New

This button is not enabled when you are setting consolidated user options. You must open the *Database Options* window to add new options.

#### Remove Now

This button is not enabled when you are setting consolidated user options. You must open the *Database Options* window to remove options.

#### Set Permanent Now

To change a setting for the consolidated user permanently, select an option from the *Options* list, type the setting in the *Value* field, then click *Set Permanent Now*.

Permanent values last between sessions until they are explicitly changed again.

## Related Information

[Alphabetical List of Database Options](#)  
[Changing Database Options \(SQL Central\)](#)  
[SET OPTION Statement](#)

## 1.10.29 Consolidated User Properties Window: General Tab

This tab has several components.

#### Name

Shows the name of the consolidated user.

#### This consolidated user has a password

Select this option to assign the user a password. A user cannot connect without an assigned password. However, the presence of a password does not guarantee that the user can connect. For example, the user account may be locked. Clearing this option removes the user's password and disables the *Password* and *Confirm password* fields.

**Password**

Type the password for the user. Passwords are case sensitive.

**Confirm password**

Confirm the password that you typed in the *Password* field by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

**Password creation time**

Shows the date and time when the current password was created.

**Require a new password to be specified at next login**

Select this option to require the user to create a new password at the next login.

**Login policy**

Specifies a login policy for the user.

**Last login time**

Shows the date and time when the user last logged in.

**Failed login attempts**

Shows the number of failed login attempts by the user.

**Locked**

Shows whether the user's account is locked. Shows *No* if the user is not locked from the database.

**Unlock Now**

Click this button to unlock the user's account from the database. *Unlock Now* is disabled if the user's login policy has at least one of the following option settings:

- locked=On
- max\_connections=0
- max\_failed\_login\_attempts=0

**Distinguished Name**

Shows the user's Distinguished Name (DN) if the user was authenticated by an LDAP server.

**Clear Now**

Clears the cached DN from the database for this user, causing the database server to refetch the DN when the user next authenticates to the LDAP server.

## Related Information

[Password and User ID Restrictions and Considerations](#)

[GRANT CONSOLIDATE Statement \[SQL Remote\]](#)

[max\\_connections Option](#)

## 1.10.30 *Consolidated User Properties* Window: *Authorities* Tab

This tab applies to version 12.0.1 and earlier databases and has several components.

### **DBA**

Select this option to grant DBA authority to the user; a user with DBA authority can fully administer the database.

### **Resource**

Select this option to grant RESOURCE authority to the user; a user with RESOURCE authority can create database objects.

### **Remote DBA**

Select this option to grant Remote DBA authority to the user. The SQL Remote Message Agent (dbremote) should also be run using a user ID with Remote DBA authority to ensure that actions can be performed without creating security loopholes.

### **Backup**

Select this option to grant backup authority to the user.

### **Validate**

Select this option to grant validate authority to the user. A user with validate authority can perform the operations executed by the different VALIDATE statements, such as database, table, index, and checksum validation.

### **Profile**

Grants profiling and database tracing capabilities to the user.

### **Read file**

Grants the ability to use query files using the OPENSTRING clause of the SELECT statement.

### **Read Client File**

Grants the ability to read a file on the client computer.

### **Write Client File**

Grants the ability to write to a file on the client computer.

## 1.10.31 *Consolidated User Properties* Window: *SQL Remote* Tab

This tab has several components.

### **Message type**

Lets you select a message type for communicating with the publisher.

### **Address**

Provides a place for you to type the remote address of the consolidated user. The address is a string, according to the specified message type, to which the replication messages should be sent for the user.

### **Send frequency**

Select one of the following options to set the frequency with which messages are sent.

#### **Send then close**

Sets the replication frequency so that the publisher's agent runs once, sends all pending messages to the consolidated user, and then shuts down. The agent must be restarted each time the publisher wants to send messages.

In most replication setups, this option is not used for sending publications from the consolidated publisher to the consolidated user.

**Send every**

Sets the replication frequency so that the publisher's agent runs continuously, sending messages to the consolidated user at the given periodic interval.

**Send daily at**

Sets the replication frequency so that the publisher's agent runs continuously, sending messages to the consolidated user each day at the specified time.

## Related Information

[SQL Remote Message Systems](#)

[Send Frequency](#)

[GRANT REMOTE Statement \[SQL Remote\]](#)

[GRANT CONSOLIDATE Statement \[SQL Remote\]](#)

## 1.10.32 *Create Trigger Condition* Window

This window has several components.

**Condition**

Select a preset trigger condition from the list. When this condition and the value (specified below) are satisfied, the selected event is triggered.

**Operator**

Select an operator from the list. The comparison operator compares the condition and value in the trigger condition.

**Value**

Enter a value for the condition. When this value and the condition (specified above) are satisfied, the selected event is triggered.

## Related Information

[Trigger Conditions for Events](#)

## 1.10.33 Database Options Window

Any options you set in this window are set for the PUBLIC role.

Changing the value of an option for the PUBLIC role sets the value of the option for all users who have not set their own value. An option value cannot be set for an individual user ID unless there is already a PUBLIC role setting for that option.

### **i** Note

When you change options, some of the settings take effect immediately, while for others to take effect, you must restart the database.

This window has the following components:

#### **Database**

Displays the name of the selected database.

#### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list. When you select an option, the *Value* field is enabled.

#### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*.

#### **New**

Displays the *Create Public Option* window. In this window, you can define new options and set their values.

Once you select an option, you can use the buttons at the side of the window.

#### **Remove Now**

Removes the selected option from the list.

#### **Set Permanent Now**

To change an option setting for the database permanently, select an option from the *Options* list, type the setting in the *Value* field, then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)

[Database Options](#)

[SET OPTION Statement](#)



## 1.10.34 Database Properties Window: General Tab

Database properties listed on this tab cannot be changed without rebuilding the database.

### **Name**

Shows the name of the database.

### **ID**

Shows a unique number assigned by the database server to each database that is started on it. The number makes it possible to distinguish between databases running on the same database server.

### **Capability ID**

Shows the capability bits enabled for the database.

### **Java location**

Shows the location of the `java.exe` file for the external Java VM used by the database.

### **Page size**

Shows the page size of the database in bytes.

### **Database file**

Shows the name and location of the root database file for the database.

### **Log file**

Shows the name and location of the transaction log file for the database.

### **Log mirror file**

Shows the name and location of the transaction log mirror file for the database.

### **Temporary file**

Shows the name and location of the temporary file for the database.

### **User**

Shows the user ID of the user connected to the database.

### **Connection ID**

Shows the connection ID for the database's connection from SQL Central.

### **Connection name**

Shows the connection name for the user connected to this database. Naming your connections makes it easy to distinguish between multiple connections to the same database, or multiple connections to the same or different database server.

### **Communication link**

Shows the type of communications link used by the user's connection. If the connection is between a SQL Anywhere client and a network database server, the link type represents the network protocol being used.

### **Total connections**

Shows the total number of current connections to the database from all users, including the SQL Central connection.

## Related Information

[Database Rebuilds](#)  
[Database File Types](#)  
[Database Connections](#)  
[Lesson 2: Selecting a Java VM](#)  
[List of Connection Properties](#)

### 1.10.35 Database Properties Window: Settings Tab

Database properties listed on this tab cannot be changed without rebuilding the database.

This tab has the following components:

#### Encryption type

Shows the encryption algorithm used in connection with the *Encryption scope* setting. If *Encryption scope* is either *Database* or *Table* (that is, either the database is encrypted or table encryption is enabled, respectively), the encryption type is either *Simple*, *AES*, *AES256*, *AES\_FIPS*, or *AES256\_FIPS*. If *Encryption scope* is *None*, *Encryption type* is *None*.

#### Encryption scope

Shows whether the database is encrypted, or whether table encryption is enabled for the database. The possible values are *Table*, *Database*, or *None*. If the setting is *Table*, table encryption is enabled and the database is not encrypted. If the setting is *Database* then the database is encrypted and table encryption is not enabled. If the setting is *None*, the database is not encrypted and table encryption is not enabled.

#### Case sensitive

This property applies to version 10 and earlier databases. Shows the status of the case sensitivity feature. Returns *On* if the database is case sensitive. Otherwise, it returns *Off*. In case sensitive databases, data comparisons are case sensitive. This setting does not affect the case sensitivity of identifiers. Passwords are always case sensitive.

#### Ignore trailing blanks

Shows whether the database ignores trailing blanks in comparisons. For example, if this option is set to *No*, then `'Dirk'` is not the same as `'Dirk '`.

#### Collation sequence

This property applies to version 10 and earlier databases. Shows the collation algorithm for the database. Two collation algorithms are supported: the SQL Anywhere Collation Algorithm (SACA), and the Unicode Collation Algorithm (UCA). SACA provides fast, compact, and reasonable sorting at the expense of linguistic correctness. UCA provides linguistic correctness, but with a small expense in storage requirements and execution time.

#### Character set encoding

The character set that is used for the database. This property applies to pre-version 10 databases.

#### CHAR collation sequence

The collation that is used for CHAR data.

#### CHAR character set encoding

The character set that is used for CHAR data.

#### **CHAR case sensitivity**

Shows the case sensitivity setting for the CHAR collation. Possible values are: *Ignore*, *Respect*, *UpperFirst*, and *LowerFirst*. This property applies to version 10 and later databases.

#### **NCHAR collation sequence**

The collation used for NCHAR data. This value is either *UCA* or *UTF8BIN*.

#### **NCHAR character set encoding**

The character set that is used for NCHAR data. This is always *UTF-8*.

#### **NCHAR case sensitivity**

Shows the case sensitivity setting for the NCHAR collation. Possible values are: *Ignore*, *Respect*, *UpperFirst*, and *LowerFirst*. This property applies to version 10 and later databases.

#### **Checkpoint urgency**

Shows the time that has elapsed since the last checkpoint, as a percentage of the checkpoint time setting of the database. Click *Refresh* or press F5 to update the *Checkpoint Urgency* and *Recovery Urgency* values.

#### **Recovery urgency**

Shows an estimate of the amount of time required to recover the database, as a percentage of the recovery urgency setting of the database. Click *Refresh* or press F5 to update the *Checkpoint Urgency* and *Recovery Urgency* values.

#### **Refresh**

Click this button to update the *Checkpoint Urgency* and *Recovery Urgency* values.

## **Related Information**

[Database Rebuilds](#)

[Database Encryption and Decryption](#)

[Case Sensitivity](#)

[Collations](#)

[Collations in a Database](#)

[Database File Types](#)

[Database Creation](#)

[Character Sets](#)

[Collations](#)

[Deadlocks](#)

[Collation Tailoring Options](#)

[List of Database Server Properties](#)

## 1.10.36 Database Properties Window: Extended Information Tab

This tab lists the name and value of the properties for the database. Click [Refresh](#) to update the values. You can also press F5 to refresh the values.

### Related Information

[Database File Types](#)

[Database Creation](#)

[List of Database Server Properties](#)

## 1.10.37 Database Properties Window: SQL Remote Tab

This tab has several components.

### This database has a publisher

Select this option to supply the name of the database's publisher. Selecting this option enables the **Publisher** field.

#### Publisher

Shows the name of the publisher for the database. You can click [Change](#) to select a publisher in the [Set Publisher](#) window.

### This remote database has a corresponding consolidated database

Select this option if the database is acting as a remote database.

#### Consolidated user

Click [Change](#) to select the consolidated user from the list of available candidates in the [Set Consolidated User](#) window.

#### Message type

Select the message type for communicating with the publisher of the consolidated database from the dropdown list.

#### Address

Provides a place for you to type the remote address of the consolidated user. The address is a string, according to the specified message type, to which the replication messages should be sent for the user.

#### Send frequency

Select one of the following options for the send frequency:

##### Send then close

Sets the replication frequency so that the Message Agent (dbremote) runs once, sends all pending messages, and then shuts down. The Message Agent (dbremote) must be restarted each time the publisher wants to send messages. This option is only useful when you are running the Message Agent (dbremote) at a remote site.

In most replication setups, this option is not used for sending publications from the consolidated publisher to the remote group.

**Send every**

Select this option to set the replication frequency so that the Message Agent (dbremote) runs continuously, sending messages to this consolidated user at the given periodic interval. This option is useful at both consolidated and remote sites.

**Send daily at**

Select this option to set the replication frequency so that the Message Agent (dbremote) runs continuously, sending messages each day at the given time.

**Subscribers**

Shows the number of remote users subscribing to publications in the database.

**Subscriptions**

Shows the number of subscriptions to publications in the database.

**Started subscriptions**

Shows the number of subscriptions in the database that have been started.

## Related Information

[SQL Remote Message Systems](#)

[Subscriptions](#)

[Set Publisher Window \[page 158\]](#)

[Set Consolidated User Window \[page 157\]](#)

## 1.10.38 Database Properties Window: Profiling Settings Tab

This tab has several components.

**Capture and view profiling information in this database for**

Select this option if you want the database server to monitor the execution times of stored procedures, functions, events, and triggers. You can use database profiling information to determine which procedures can be fine-tuned to increase performance within your database. Profiling information appears on the [Profile](#) tab in SQL Central.

Selecting this option activates the following options:

**All connections**

Select this option to enable profiling on all connections.

**Connections with the following user ID**

Select this option and choose a user ID from the dropdown list to specify a particular user ID to capture profiling information for.

**Clear Now**

Select this option to delete all the collected profiling data for the database and turn off profiling for the database. This button is only enabled when profiling is turned on for the database.

#### **View profiling information from the following profiling log file**

Select this option to view profiling information from a profiling log file. Specify the name and location of the profiling log file (a file with an extension of `.plg`). This option is only enabled when profiling is turned off for the database.

#### **Use the profiling information in the following profiling log file as a baseline for comparison**

Select this option to specify a second profiling log file to use as a baseline for comparison to profiling information being collected, or to the profiling log file selected in the previous option. This option is only enabled if *Capture and View Profiling Information in This Database For* or *View Profiling Information From the Following Profiling Log File* is selected.

#### **Save the profiling information currently in the database to the following profiling log file**

Select this option to save the current profiling information in the database to a profiling log file. Specify the file name and location, with an extension of `.plg`.

#### **Reset Now**

Deletes all the collected profiling data for the database. If profiling is turned on, the database immediately starts collecting new profiling information about procedures, functions, events, and triggers.

## **Related Information**

[Procedure Profiling \(System Procedures\)](#)

### **1.10.39 Dbspace Properties Window: General Tab**

This tab has several components.

#### **Name**

Shows the name of the dbspace.

#### **File**

Shows the name of the database file to which the dbspace points.

Specifying a new file name or file location in this field updates only the catalog; it does not create the file or change the file's name or location. You must ensure that the dbspace file can be found by the database server. Changing the file name in this field is equivalent to running the ALTER DBSPACE statement with the RENAME clause. You cannot change the file name for the *system* or the *temporary* dbspaces.

#### **Pre-allocate Space Now**

Displays the *Pre-allocate Space for Dbspace* window, which lets you pre-allocate storage in the dbspace by adding pages to it. Adding pages may improve performance for bulk-loading operations.

## Related Information

[Preallocating Database File Space \(SQL Central\)](#)  
[ALTER DBSPACE Statement](#)

### 1.10.40 *Directory Access Server Properties* Window: *General* Tab

A directory access server is a remote server that gives you access to the local file structure of the computer running the database server.

You use proxy tables to access any subdirectories on the computer.

This tab has the following components:

#### **Directory information**

Shows information about the root directory.

#### **Root directory**

Shows the path for the root directory of this directory access server. When you create proxy tables for this directory access server, they are relative to this root directory.

#### **Subdirectories**

Shows the number of levels of subdirectories that are accessible to this directory access server. This value must be between 0 and 10. If the value is 0, then only the files in the root directory are accessible via the directory access server. You can create proxy tables to any of the directories or subdirectories available via the directory access server.

#### **Directory creation**

Shows whether directories can be created using the directory access server.

#### **Read only**

Shows whether the root directory is read only.

#### **File name delimiter**

Shows what type of file name delimiter has been selected for this directory access server.

## Related Information

[Remote Data Access](#)  
[Directory Access Servers](#)  
[Creating Directory Access Servers \(SQL Central\)](#)

## 1.10.41 *Domain Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the domain.

### **Creator**

Shows the database user who created and owns the domain.

### **Base type**

Shows the predefined data type of the domain. If the data type has a format, it is listed after the type's name.

### **Allows null**

Shows whether columns based on the domain allow NULLs. If the domain uses the database's default NULL setting, then *Database default* appears.

### **Default value**

Shows the default value of the domain. If the domain does not have a default value, nothing appears. Columns based on the domain inherit the default value, but you can subsequently override it.

## **Related Information**

[Domains](#)

[allow\\_nulls\\_by\\_default](#) Option

## 1.10.42 *Domain Properties* Window: *Check Constraint* Tab

View the check constraint that applies to the domain. The check constraint is defined when the domain is created.

## **Related Information**

[CHECK Constraints on Columns](#)

[How to Use Domains to Improve Data Integrity](#)

[Constraint Considerations](#)



## 1.10.43 *Edit Trigger Condition* Window

This window has several components.

### **Condition**

Select a preset trigger condition from the list. When this condition and the value (specified below) are satisfied, the selected event is triggered.

### **Operator**

Select an operator from the list. The comparison operator compares the condition and value in the trigger condition.

### **Value**

Enter a value for the condition. When this value and the condition (specified above) are satisfied, the selected event is triggered.

## **Related Information**

[Trigger Conditions for Events](#)

## 1.10.44 *Event Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the event.

### **Owner**

Shows the database user who created and owns the event.

### **Running**

Shows *Yes* if the event is currently running and shows *No* if the event is not running.

### **Enabled**

Select this option to execute the event when the scheduled time or trigger condition occurs. You must enable the event to trigger it manually from SQL Central.

### **Location**

Shows which of the following locations the event executes at:

#### **All databases**

For databases involved in SQL Remote replication, this executes the event at all remote locations.

#### **Consolidated database**

For databases involved in SQL Remote replication, this executes the event at the consolidated database only, and not at any of the remote locations.

#### **Remote database**

For databases involved in SQL Remote replication, this executes the event at a remote database only, and not at the consolidated database.

**Mirroring location: Primary**

For databases involved in a mirroring or read-only scale-out system, this executes the event only on the primary server.

**Mirroring location: All**

For databases involved in a mirroring or read-only scale-out system, this executes the event on primary server, the mirror server, and all read-only scale-out copy nodes.

**Next scheduled time**

Shows the date and time of the next scheduled event, if the event is scheduled.

**Comment**

Provides a place for you to type a text description of the event. For example, you could use this area to describe the event's purpose in the system. Later, if you use the *Database Documentation Wizard* to document your database, you can include these comments in the output.

## Related Information

[Task Automation Using Schedules and Events](#)

[Documenting a Database \(SQL Central\)](#)

[CREATE EVENT Statement](#)

[Trigger Event Window \[page 191\]](#)

### 1.10.45 *Event Properties* Window: *Conditions* Tab

Specify when events are to be triggered.

**The event is triggered when the following system event occurs**

Executes the event when a circumstance or condition is met.

**System event**

Select a system event that must occur to trigger the event.

**And the following trigger conditions are true**

Set trigger conditions that must be satisfied, in addition to the system event which triggers the event.

## Related Information

[System Events](#)

[Trigger Conditions for Events](#)

[Task Automation Using Schedules and Events](#)

[CREATE EVENT Statement](#)

## 1.10.46 *External Environment Properties* Window: **General Tab**

This tab has several components.

### **Name**

Shows the name of the external environment or language.

### **Scope**

Shows whether the external environment is launched as *Connection* (one per connection) or *Database* (one per database).

### **Supports result sets**

Specifies whether the external environment can return result sets to the user. This option applies only to Perl, PHP, and JavaScript.

### **Location**

Specifies the directory on the database server computer where the executable/binary for the external environment can be found. Include the executable/binary name in the path. This path can either be fully qualified or relative. If the path is relative, then the executable/binary must be in a location where the database server can find it.

### **Test Configuration**

Click this button to determine if the external environment is configured correctly. This button applies to Java, JavaScript, Perl and PHP.

## **Related Information**

[External Environment Support](#)

## 1.10.47 *External Environment Object Properties* Window: **General Tab**

This tab lists the properties for the external environment object. Click *Update Now* to update the external object.

## **Related Information**

[External Environment Support](#)

## 1.10.48 *External Login Properties* Window: *General* Tab

This tab lists the external login properties.

### **Name**

Shows the name of the remote server and database user if the external login is for a remote server. Shows the name of the directory access server and database user if the external login is for a directory access server.

### **Remote server**

This field is only shown if the external login applies to a remote server. Shows the name of the remote server to which the external login applies.

### **Directory access server**

This field is only shown if the external login applies to a directory access server. Shows the name of the directory access server the external login is used to communicate with.

### **User**

Shows the name of the database user the external login is for.

### **Login name**

Shows the login name on the remote server. Values for the *Login name* are restricted to 128 bytes. This only applies to external logins to remote servers.

## **Related Information**

[External Logins](#)

[Remote Servers and Remote Table Mappings](#)

[Directory Access Servers](#)

[CREATE EXTERNLOGIN Statement](#)

## 1.10.49 *Foreign Key Properties* Window: *General* Tab

This tab lists the properties of the foreign key.

### **Name**

Shows the name of the foreign key. You can edit this field.

### **Unique**

Shows whether the foreign key is unique.

### **Foreign table**

Shows the name and owner of the table to which the foreign key applies.

### **Foreign Index**

Shows the name of the index used to enforce the foreign key.

### **Primary Constraint**

Shows the name of the primary key or unique constraint that the foreign key references.

#### **Primary Constraint Type**

Shows the type of constraint the foreign key references. The type can only be *Primary Key Constraint* or a *Unique Constraint*.

#### **Primary Table**

Shows the table containing the primary key or unique constraint in this foreign key relationship.

#### **Primary Index**

Shows the name of the index used to maintain the primary key or unique constraint.

#### **Allows Null**

Shows whether the foreign key columns allow NULL values. To use this option, the foreign key columns must all have *Allow Nulls* set to *Yes*.

#### **Match Type**

Shows the match type selected for the foreign key. The match type determines what is considered a match when using a multi-column foreign key where NULL values are allowed. This only applies if the foreign key allows NULL.

The following lists the possible match types:

##### **Simple**

A match occurs for a row in the referencing table if at least one column in the key is NULL, or all the column values match the corresponding column values present in a row of the referenced table.

##### **Full**

A match occurs for a row in the referencing table if all column values in the key are NULL, or if all the column values match the values present in a row of the referenced table.

##### **n/a**

Not applicable. The foreign key does not allow NULLs.

#### **Update Action**

Uses one of the following settings to define the behavior of the table when a user tries to update values in the foreign key.

##### **Not Permitted**

Prevents updates of the associated primary table's primary key value if there are no corresponding foreign keys.

##### **Cascade values**

Updates the foreign key to match a new value for the associated primary key.

##### **Set vales to null**

Sets all the foreign key values that correspond to the updated primary key of the associated primary table to NULL.

To use this option, the foreign key columns must all have *Allow Nulls* set to *Yes*.

##### **Set values to default**

Sets foreign key values that match the updated or deleted primary key value to values specified in the DEFAULT clause of each foreign key column. To use this option, the foreign key columns must all have default values.

### Delete action

Uses one of the following settings to define the behavior of the table when a user tries to delete data.

#### Not Permitted

Prevents deletion of the associated primary table's primary key value if there are no corresponding foreign keys in the table.

#### Cascade values

Deletes the rows from the table that match the deleted primary key of the associated primary table.

#### Set Values To NULL

Sets all the foreign key values in the table that correspond to the deleted primary key of the associated primary table to NULL.

To use this option, the foreign key columns must all have *Allow Nulls* set to *Yes*.

#### Set values to default

Sets foreign key values that match the updated or deleted primary key value to values specified in the DEFAULT clause of each foreign key column. To use this option, the foreign key columns must all have default values.

#### Check On Commit

Forces the database to wait for a COMMIT before checking the integrity of the foreign key, overriding the setting of the wait\_for\_commit database option. To change this setting, click [Change](#).

#### Change

Opens the [Change Settings](#) window where you can change the settings for this primary key.

## Related Information

[Foreign Keys](#)

[Data Integrity](#)

[wait\\_for\\_commit Option](#)

[Set Clustered Index Window \[page 158\]](#)

[Change Settings Window \[page 66\]](#)

### 1.10.50 Foreign Key Properties Window: Columns Tab

This tab lists the foreign column and primary columns for the foreign key.

## Related Information

[Foreign Keys](#)

## 1.10.51 *Function Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the function.

### **Owner**

Shows the name of the database user who owns the function.

### **Dialect**

Shows the SQL dialect in which the code was last saved. The dialect is either *Watcom SQL* or *Transact-SQL*.

The value (*unknown*) is displayed if the object definition is too large (greater than 64 KB).

## **Related Information**

[Function Types](#)

[Documenting a Database \(SQL Central\)](#)

[CREATE FUNCTION Statement](#)

## 1.10.52 *Function Properties* Window: *Parameters* Tab

This tab has several components.

### **Parameters list**

Displays the name, ID, data type, parameter type, and mode of the function's parameters. The mode has one of the following values:

#### **In**

The parameter is an expression that provides a value to the function.

#### **Out**

The parameter is a variable that could be given a value by the procedure.

#### **In/out**

The parameter is a variable that provides a value to the procedure, and could be given a new value by the procedure.

## **Related Information**

[Parameter Declaration for Procedures](#)

[Stored Procedures, Triggers, Batches, and User-defined Functions](#)

[CREATE FUNCTION Statement](#)

## 1.10.53 *Graphical Plan* Window

This window has several components.

### **Recorded graphical plan**

Shows a graphical representation of the selected execution plan that was considered by the optimizer. Click an object inside the graphical plan to see the details.

### **Details**

Shows details for the selected object.

## Related Information

[Graphical Plans](#)

## 1.10.54 *Group Options* Window

This window applies to version 12.0.1 and earlier databases and has several components:

### **i Note**

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

### **Group**

Displays the name of the selected group.

### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the Options list.

### **Options list**

Shows the option settings and their default values based on the type of options selected in the *Show* list.

### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for a group unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window.

### **New**

This button is not enabled when you are setting group options. You must open the *Database Options* window to add new options to the *Options* list.

### **Remove Now**

This button is not enabled when you are setting group options. You must open the *Database Options* window to remove options from the *Options* list.



## Set Permanent Now

To change an option setting for a group permanently, select an option from the *Options* list, type the setting in the *Value* field, then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)  
[Changing Database Options \(SQL Central\)](#)  
[SET OPTION Statement](#)

## 1.10.55 Group Properties Window: General Tab

This tab has several components:

### Name

Shows the name of the group.

### This group has a password

Select this option to assign the group a password. A group cannot connect without an assigned password. However, the presence of a password does not guarantee that the group can connect; for example, the group account may be locked. Clearing this option removes the group's password and disables the *Password* and *Confirm Password* options.

Users are almost always allowed to connect. For a group, however, turning this option off prevents anyone from connecting to the database using the group account.

### Password

Type the password for the group. Passwords are case sensitive.

### Confirm password

Confirm the password that you typed in the Password text box by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

### Password creation time

Shows the date and time when the current password was created.

### Require a new password to be specified at next login

Select this option to require the group to create a new password at the next login.

### Login policy

Select a login policy for the group.

### Last login time

Shows the date and time when the group last logged in.

### Failed login attempts

Shows the number of failed login attempts by the group.

### Locked

Shows whether the group's account is locked. Shows *No* if the group is not locked from the database.

#### **Unlock Now**

Click this button to unlock the group's account from the database. *Unlock Now* is disabled if the user's login policy has at least one of the following options set as follows:

- *locked=On*
- *password\_expiry\_at\_next\_login=On*
- *max\_connections=0*
- *max\_failed\_login\_attempts=0*

## **1.10.56 Group Properties Window: Authorities Tab**

This tab applies to version 12.0.1 and earlier databases, and has several components.

#### **DBA**

Grants DBA authority to the group; a group with DBA authority can fully administer the database.

#### **Resource**

Grants resource authority to the group; a group with resource authority can create database objects.

#### **Remote DBA**

Grants Remote DBA authority to the group. The MobiLink client utility (dbmlsync) requires REMOTE DBA authority. A user ID with this type of authority should run the SQL Remote Message Agent (dbremote) to ensure that actions can be performed without creating security loopholes.

#### **Backup**

Select this option to grant backup authority to the group.

#### **Validate**

Select this option to grant validate authority to the group; a group with validate authority can perform the operations executed by the different VALIDATE statements, such as database, table, index, and checksum validation.

#### **Profile**

Grants profiling and database tracing capabilities to the group.

#### **Read File**

Grants the ability to use query files using the OPENSTRING clause of the SELECT statement.

#### **Read Client File**

Grants the ability to read a file on the client computer.

#### **Write Client File**

Grants the ability to write to a file on the client computer.

## 1.10.57 *Index Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the index. You can edit this field.

### **Type**

Shows the type of object. The object type can be *Foreign key index*, *Primary key index*, *Unique constraint index*, or *Index*.

### **Unique**

Shows whether values in the index must be unique.

### **Nulls Distinct**

Shows whether NULLs are considered to distinct in the index columns. This option only appears if the type is *Index* and the index is *Unique*.

When set to *Yes*, NULLS are considered distinct. For each row, the set of indexed columns must be unique or contain a NULL in at least one column. For example, for a unique index on two character columns, the index entries ('a', NULL) and ('a', NULL) are each considered distinct.

When set to *No*, NULLS are considered not distinct. For each row, the set of indexed columns must be unique regardless of the NULL values. For example, for a unique index on two character columns, the index entries ('a', NULL) and ('a', NULL) are considered not distinct; hence, the index will prohibit these two entries.

### **Table**

Shows the name and owner of the table with which the index is associated. This only appears if the index is on a table.

### **Materialized view**

Shows the name and owner of the materialized view with which the index is associated. This only appears if the index is on a materialized view.

### **DbSPACE**

Shows the database file, or dbSPACE, where the index is located. This only applies to indexes on base tables and materialized views.

### **Clustered**

Shows whether this index is a clustered index. Clustered indexes are supported for SQL Anywhere databases that are version 8.0.2 and later.

Clustered indexes store the table rows in approximately the same order as they appear in the corresponding index. Using a clustered index can lead to performance benefits by reducing the number of times each page needs to be read into memory. Only one index on a table can be a clustered index.

### **Set Clustered Index Now**

Opens the Set Clustered Index window where you can specify that this index is a clustered index.

### **Format**

Indicates that the store type of index the table has is compressed B-tree.

## Related Information

[Clustered Indexes](#)

[Indexes](#)

[CREATE INDEX Statement](#)

### 1.10.58 *Index Properties Window: Columns Tab*

Shows all the columns in the index, and their order, either *Ascending* or *Descending*. You set the order when you create a new index. The columns are sorted by their sequence, which is a unique number starting at 0. The order of the numbers determines the relative position of the columns in the index.

## Related Information

[Indexes](#)

[CREATE INDEX Statement](#)

### 1.10.59 *JAR File Properties Window: General Tab*

This tab has several components.

#### **Name**

Shows the name of the JAR file.

#### **Creator**

Shows the database user who created and owns the JAR file.

#### **Date created**

Shows the date the JAR file was created.

#### **Comment**

Provides a place for you to type a text description of the JAR file. For example, you could use this area to describe the JAR file's purpose in the system.

#### **Update Now**

Displays the *Update JAR File* window, which lets you update the JAR file.

## Related Information

[Updating Classes and JAR Files](#)

[Installing a JAR File](#)

## 1.10.60 *Java Class Properties* Window: *General* Tab

This tab lists the properties for the Java Class. Click [Update JAR File](#) to update the JAR file.

### Related Information

[How to Install Java Classes into a Database](#)  
[Updating Classes and JAR Files](#)

## 1.10.61 *LDAP Server Properties* Window: *General* Tab

This tab has several components.

#### **Name**

Shows the name of the LDAP Server.

#### **State**

Shows the current state of the LDAP server.

#### **Last state change time**

Shows the date and time from which the LDAP server's state was last modified.

To change the state, click one of the following buttons in the tab:.

#### **Activate Now**

Click this button to activate the LDAP server for immediate use. This setting changes the state of the LDAP server communications to READY.

#### **Suspend Now**

Click this button to suspend the LDAP server and set the state of the LDAP server communications to SUSPENDED (maintenance mode). All connections to the LDAP server are closed and authentication with the LDAP server is no longer performed.

#### **Refresh Now**

Click this button to reinitialize the LDAP user authentication. If the state of the LDAP server is SUSPENDED, then the state does not change. If the state of the LDAP server is READY or ACTIVE, then connections to the LDAP server are closed.

### Related Information

[Activating or Suspending an LDAP Server Configuration Object \(SQL Central\)](#)  
[ALTER LDAP SERVER Statement](#)

## 1.10.62 *LDAP Server Properties* Window: *Settings* Tab

This tab has several components.

### **Search URL**

Specify the host (by name or by IP address), port number, and search for a given user ID. The maximum size for this string is 1024 bytes.

The format of `url-string` must comply with the LDAP URL standard.

### **Access Distinguished Name**

Specify the Distinguished Name (DN) used by the database server to connect to the LDAP server. This user is not a SQL Anywhere user, but a user created in the LDAP server specifically for logging in to the LDAP server. This user must have permissions within the LDAP server to search for Distinguished Names by user ID in the locations specified in the [Search URL](#) field. The maximum size for this string is 1024 bytes.

### **Access password**

Specify the password associated with the user identified in the [Access Distinguished Name](#) field. The maximum size is 255 bytes, and it cannot be set to NULL.

### **Authentication URL**

Specify the URL that identifies the host by name or IP address, and the port number of the LDAP server to authenticate a user. The DN of the user obtained from a prior DN search and the user password are used to bind a new connection to the authentication URL. A successful connection to the LDAP server is considered proof of the identity of the connecting user. There is no default value for this parameter.

### **Use TLS**

Select to use the TLS protocol for connections to the LDAP server, both for the DN searches and for authentication. Do not select this option if you are using secure LDAP.

### **Connection timeout**

Specify the connection timeout, in milliseconds, to the LDAP server for searches for the DN and for authentication. The default value is 10 seconds.

### **Connection retries**

Specify the number of retries for connections to the LDAP server, both for searches for the DN and for authentication. The valid range of values is 1-60. The default value is 3.

### **Clear Cached User Distinguished Names Now**

Reinitializes LDAP user-authentication.

### **Test Connection**

Opens the [Test Connection to LDAP Server](#) window.

## **Related Information**

[SYSLDAPSERVER System View](#)

[Test Connection to LDAP Server Window \[page 105\]](#)

[ALTER LDAP SERVER Statement](#)

## 1.10.63 *Test Connection to LDAP Server* Window

Tests a connection to the LDAP server. Validates the LDAP server's search URL, access distinguished name and password, and authentication URL.

### **LDAP server**

The LDAP server with which you want to test the connection.

### **LDAP user**

The user with which to test the connection.

### **Expected Distinguished Name**

The distinguished name for the user.

## 1.10.64 *Listener Properties* Window: *General* Tab

This window lists the properties for the connection listener.

### **Related Information**

[Connection Listeners](#)

[Creating a Connection Listener \(SQL Central\)](#)

[Deleting a Connection Listener \(SQL Central\)](#)

[sp\\_start\\_listener System Procedure](#)

[sp\\_stop\\_listener System Procedure](#)

## 1.10.65 *Login Mapping Properties* Window: *General* Tab

This tab lists the properties of the login mapping.

### **Related Information**

[Microsoft Windows Integrated Login](#)

[GRANT Statement](#)

## 1.10.66 *Login Policy Properties* Window: *General* Tab

This tab lists the properties for the login policy.

### Related Information

[Login Policies](#)

[CREATE LOGIN POLICY Statement](#)

## 1.10.67 *Login Policy Properties* Window: *Options* Tab

This tab lists the login policy options and allows you to review and edit their values.

If a login policy option is selected, a description appears below. To change a login policy option, double-click in the *Overridden Value* column, edit the value, and then click *Apply*.

### Related Information

[Login Policies](#)

[Login Policy Options and Default Values](#)

## 1.10.68 *Login Policy Properties* Window: *Users* Tab

This tab lists the users assigned to the login policy.

### Related Information

[Login Policies](#)

[Assigning a Login Policy to an Existing User](#)

## 1.10.69 *Materialized View Properties* Window: *General* Tab

This tab has several components.

**Name**



Shows the name of the materialized view.

#### **Owner**

Shows the database user who owns the view.

#### **DbSPACE**

Shows the database file (or dbSPACE) where the view is located.

#### **Status**

Shows the status of the view. If the status is Enabled, the view is available for use by the database server. This status is synonymous with the ENABLED clause in the ALTER MATERIALIZED VIEW statement. If the status is Disabled, the view has been explicitly disabled by the user.

#### **Recompile and Enable Now**

Click this button to recompile and enable the view, making it available for use. Afterward, click [Refresh Now](#) to refresh the view, and then rebuild the indexes. If necessary, change the view back to an immediate view.

#### **Disable Now**

Click this button to disable the view. When you disable a materialized view, the data and indexes for the view are dropped. Also, when you disable an immediate view, it is changed to a manual view. The database server keeps the definition of the materialized view in the database.

Regular views that are dependent on a materialized view are automatically disabled by the database server if the view is disabled.

#### **Used in optimization**

Select this option to indicate whether the materialized view can be used by the optimizer. The optimizer ignores disabled views. If you disable the view, the [Used In Optimization](#) option remains selected, so that when you re-enable the view, its setting is remembered.

#### **Initialized**

Shows whether the view is initialized. You must initialize a materialized view to make it available for use by the database server. To initialize the view, click [Refresh Now](#).

#### **Refresh Now**

Click this button to refresh the view; you are prompted to specify the type of refresh to perform.

#### **Truncate Now**

Click this button to delete all the rows in the view and to change the state to uninitialized.

#### **Refresh type**

Specifies whether the view is a manual view or an immediate view. The default is Manual.

#### **Manual**

You must refresh this view manually. Data in manual views can become stale because manual views are not refreshed until a refresh is explicitly requested.

Select this option to convert an immediate view to a manual view.

#### **Immediate**

The database server automatically refreshes this view immediately after changes to underlying data impact data in the view. When you disable an immediate view, it is changed to a manual view. When you re-enable it, you must change it back to an immediate view.

### **Immediate Compatible**

Specifies whether the view is compatible with an immediate view. If immediate view is not compatible, clicking [Details](#) explains the reason.

### **Last refresh time**

Shows the date and time that the view was last refreshed.

### **Known stale time**

Shows the time at which the view became known as stale. This property only applies to manual views and corresponds to the time that a change was made to an underlying base table.

### **Comment**

Provides a place for you to type a description of the view. For example, you could use this area to describe the view's purpose in the system. If you use the [Database Documentation Wizard](#) to document your database, you can include these comments in the output.

## **Related Information**

[Materialized Views](#)

[Materialized View Statuses](#)

[Whether to Set Refresh Type to Manual or Immediate](#)

[Advanced: Status and Properties for Materialized Views](#)

[Enabling or Disabling a Materialized View](#)

[Changing the Refresh Type for a Materialized View](#)

[Documenting a Database \(SQL Central\)](#)

[CREATE MATERIALIZED VIEW Statement](#)

[REFRESH MATERIALIZED VIEW Statement](#)

[TRUNCATE Statement](#)

## **1.10.70 *Materialized View Properties* Window: *Columns* Tab**

This tab lists the columns included in the materialized view.

## **Related Information**

[Materialized Views](#)

## 1.10.71 *Materialized View Properties* Window: *Options* Tab

This tab lists the options that were set when the materialized view was created.

### The materialized view was created with the following option settings

Option	Description
<i>date_format</i>	Sets the format for dates retrieved from the database. The default is YYYY-MM-DD.
<i>date_order</i>	Controls the interpretation of date formats. The default is YMD. For SAP Open Client and jConnect connections, the default is set to MDY.
<i>default_timestamp_increment</i>	Specifies the number of microseconds to add to a column of type TIMESTAMP to keep values in the column unique. The default is 1.
<i>first_day_of_week</i>	Sets the numbering of the days of the week. The default is 7 (Sunday is the first day of the week).
<i>nearest_century</i>	Controls the interpretation of two-digit years in string-to-date conversions. The default is 50.
<i>precision</i>	Specifies the maximum number of digits in the result of any decimal arithmetic. The default is 30.
<i>scale</i>	Specifies the minimum number of digits after the decimal point when an arithmetic result is truncated to the maximum precision. The default is 6.
<i>time_format</i>	Sets the format for times retrieved from the database. The default is HH:NN:SS.SSS.
<i>timestamp_format</i>	Sets the format for timestamps that are retrieved from the database. The default is YYYY-MM-DD HH:NN:SS.SSS.
<i>timestamp_with_time_zone_format</i>	Returns the format for TIMESTAMP WITH TIME ZONE values retrieved from the database.
<i>uuid_has_hyphens</i>	Controls the formatting of unique identifier values when they are converted to strings.

## Related Information

[Materialized Views](#)

[Alphabetical List of Database Options](#)

[date\\_format Option](#)

[date\\_order Option](#)

[default\\_timestamp\\_increment](#) Option  
[first\\_day\\_of\\_week](#) Option  
[nearest\\_century](#) Option  
[precision](#) Option  
[scale](#) Option  
[time\\_format](#) Option  
[timestamp\\_format](#) Option  
[timestamp\\_with\\_time\\_zone\\_format](#) Option  
[uuid\\_has\\_hyphens](#) Option

## 1.10.72 *Materialized View Properties* Window: *Miscellaneous* Tab

This tab has several components.

### **Number of rows**

Shows the approximate number of rows in the view. To update this value, click [Calculate](#).

#### **Calculate**

Calculates the number of rows in the view.

### **Free space**

Specifies the amount of free space to reserve for each database page used for the materialized view. The free space is used when rows increase in size, for example due to updates.

#### **Default**

Choose this option to reserve 200 bytes in each page.

#### **Percentage**

Choose this option to specify an integer between 0 and 100. The former specifies that no free space is to be left on each page; each page is to be fully packed. A high value causes each row to be inserted into a page by itself.

### **Materialized view data is encrypted**

When the database is created with table encryption scope, you can select this option to encrypt this materialized view's data.

## **Related Information**

[Views](#)

[ALTER VIEW Statement](#)

## 1.10.73 *Maintenance Plan Report Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the maintenance plan.

### **Start time**

Shows the date and time that the maintenance plan started running.

### **Finish time**

Shows the date and time that the maintenance plan finished running.

### **Duration**

Shows the amount of time that the maintenance plan ran for.

### **Successful**

Shows whether the maintenance plan ran successfully.

### **Details**

Shows the text of the entire maintenance plan.

## **Related Information**

[Maintenance Plans Automate Validation and Backup](#)

## 1.10.74 *Message Type Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the message type.

### **Publisher address**

Provides a place for you to type the address of the publisher. Each remote database sends a replication message back to the consolidated database at the address.

### **Comment**

Provides a place for you to type a text description of the message type. For example, you could use this area to describe the message type's purpose in the system.

## **Related Information**

[SQL Remote Message Systems](#)

## 1.10.75 *Message Type Properties* Window: *SQL Remote Users* Tab

This tab has several components.

### **Remote Users list**

Lists all the remote users who are currently using the message type by name, address, and comment.

### **Properties**

Displays the properties window for the remote user selected in the *Remote Users* list.

## **Related Information**

[SQL Remote Message Systems](#)

## 1.10.76 *Migrate Compatibility Role* Window

This window migrates the compatibility role to a renamed, user-defined role. The compatibility role is deleted.

## **Related Information**

[Roles](#)

[Compatibility Roles](#)

[Migrating a Compatibility Role to a User-defined Role \(SQL Central\)](#)

## 1.10.77 *MobiLink User Properties* Window: *General* Tab

This tab displays the name of the MobiLink user.

## **Related Information**

[MobiLink Users in a Synchronization System](#)

## 1.10.78 *MobiLink User Properties* Window: *Connection* Tab

This tab has several components.

### Protocol

Choose the communication protocol to use for synchronization. TCP/IP is used by default.

#### TCP/IP

Select this option to use the TCP/IP protocol for synchronization.

#### TLS

Select this option to use transport layer security (TLS) for synchronization.

#### HTTP

Select this option to use the HTTP protocol for synchronization.

#### HTTPS

Select this option to use the HTTPS protocol for synchronization.

### Host

The IP number or host name of the computer on which the MobiLink server is running. The default value is *localhost*. You can specify **localhost** if the MobiLink server is running on the same computer as the client.

For Microsoft Windows Mobile, the default value is the value of `ipaddr` in the registry folder `Comm\Tcpip\Hosts\ppp_peer`. This allows a Microsoft Windows Mobile device to connect to a MobiLink server executing on the desktop computer where the Microsoft Windows Mobile device's cradle is connected.

### Port

The MobiLink server communicates over a specific port. The default port number is 2439 for TCP/IP, 80 for HTTP, and 443 for HTTPS. If you choose a different value, you must configure your MobiLink server to listen on the port you specify.

### Proxy host

Type the host name or IP address of the proxy server. The default value is *localhost*. This option is only available for HTTP and HTTPS synchronization.

### Proxy port

Type the port number of the proxy server. The default value is 80 for HTTP and 443 for HTTPS. This option is only available for HTTP and HTTPS synchronization.

### URL suffix

Type the suffix to add to the URL on the first line of each HTTP request. The default value is *MobiLink*. This option is only available for HTTP and HTTPS synchronization.

When synchronizing through a proxy server, the suffix may be necessary to find the MobiLink server.

### HTTP Version

Type the value specifying the version of HTTP to use for synchronization. You have a choice of 1.0 or 1.1. The default value is 1.1.

### Automatic connection

The following options allow MobiLink clients running on Microsoft Windows or Microsoft Windows Mobile to connect through dial-up network connections.

When used with scheduling, your remote device can synchronize unattended. When used without scheduling, you can run dbmlsync without manually dialing a connection.

### **Network name**

Specifies the network name so that you can use the MobiLink auto-dial feature. This allows you to connect from Microsoft Windows or Microsoft Windows Mobile without dialing manually. The name should be the network name that you specified in the dropdown list ► [Settings](#) ► [Connections](#) ► [Connections](#) ► (Microsoft Windows Mobile) or ► [Settings](#) ► [Connections](#) ► [Network Connections](#) ► (Microsoft Windows).

### **Leave open**

When you supply a network name, you can optionally specify whether the connection should be left open (1) or closed (0) after synchronization finishes. By default, the connection is 0 (closed).

## **Security**

These options allow you to use an algorithm suite to encrypt all communication through this connection. You can provide information about the certificate used to authenticate the database server in the fields below for both the elliptic-curve cryptography and RSA algorithms.

### **Cipher**

#### **Elliptic curves**

This option is only available for version 12 and earlier databases. Uses the elliptic-curve algorithm to encrypt connections. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

#### **RSA**

Uses the RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

#### **FIPS-certified**

Uses the FIPS-certified RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections. FIPS-certified encryption requires a separate license.

### **Trusted certificate**

- Select *File*, and type the name of the certificate file the client uses to authenticate the database server.
- Select *Name*, and choose a certificate from the dropdown list of certificates stored in the remote database

### **Certificate company**

Type the name of the certificate authority or organization that issued the certificate. The server's and the client's values must match.

### **Certificate unit**

Type the certificate unit. This is also called the organizational unit. The server's and the client's values must match.

### **Certificate name**

Type the certificate's common name. The server's and the client's values must match.

## **Advanced**



Type any additional connection parameters in this field, entering them in the form `parameter=value`, with multiple parameters separated by semicolons. For example, to set the maximum body size for a fixed content length message and to instruct the client to attempt to use the same TCP/IP connection for all HTTP requests in a synchronization, you would enter the following in the *Advanced* field:

```
buffer_size=58000;persistent=TRUE
```

#### **i** Note

If a field is blank on the *Connection* tab of the *MobiLink User Properties* window, the MobiLink user may be inheriting the connection parameter setting from the synchronization subscription. You should only supply connection parameters on the *Connection* tab of the *MobiLink User Properties* window to override the publication's settings.

## Related Information

[Synchronization Schedules](#)  
[How dbmlsync Resolves Conflicting Options](#)  
[MobiLink SQL Anywhere Client Extended Options](#)  
[CREATE SYNCHRONIZATION USER Statement \[MobiLink\]](#)  
[-eu dbmlsync Option](#)  
[CommunicationAddress \(adr\) Extended Option](#)

### 1.10.79 *MobiLink User Properties* Window: *Extended Options* Tab

This tab lists the MobiLink client extended options and the values set for the MobiLink user. Click the *Value* field beside the option name to set the value for the MobiLink user.

## Related Information

[How dbmlsync Resolves Conflicting Options](#)  
[MobiLink SQL Anywhere Client Extended Options](#)

## 1.10.80 *Mutex and Semaphore Properties* Window: *General Tab*

This tab lists the general properties for the mutex or semaphore.

### **Mutex**

#### **Scope**

Select *Transaction* to hold the lock until the end of the transaction that has locked the mutex.

Select *Connection* to hold the lock until a RELEASE MUTEX statement is executed by the connection or until the connection terminates.

### **Semaphore**

#### **Start value**

Specify an initial value for the semaphore counter. The default value is 0.

### **Related Information**

[Mutexes and Semaphores](#)  
[Creating Mutexes and Semaphores \(SQL Central\)](#)  
[CREATE MUTEX Statement](#)  
[CREATE MUTEX Statement](#)  
[DROP MUTEX Statement](#)  
[DROP SEMAPHORE Statement](#)  
[NOTIFY SEMAPHORE Statement](#)  
[WAITFOR SEMAPHORE Statement](#)

## 1.10.81 *Mutex and Semaphore Properties: Connections Tab*

For mutexes, this tab lists connections that have locked the mutex and lists the connections that are waiting for the mutexes. For semaphores, this tab lists connections that are waiting for the semaphore.

### **Related Information**

[Mutexes and Semaphores](#)

[Creating Mutexes and Semaphores \(SQL Central\)](#)

[CREATE MUTEX Statement](#)

[CREATE MUTEX Statement](#)

[DROP MUTEX Statement](#)

[DROP SEMAPHORE Statement](#)

[NOTIFY SEMAPHORE Statement](#)

[WAITFOR SEMAPHORE Statement](#)

## 1.10.82 *New Members* Window

This tab lists the names and comments for all the users and roles in the database that can be added to the selected role.

### Related Information

[Granting a Role \(SQL Central\)](#)

## 1.10.83 *New Memberships* Window

This tab lists the names and comments for all the roles in the database to which the selected user or role can be added.

### Related Information

[Granting a Role \(SQL Central\)](#)

## 1.10.84 *ODATA Producer Properties* Window: *General* Tab

Use this tab to enable or disable your ODATA producer, and to review your authentication and database administrator settings.

### Related Information

[OData Support](#)

[How to Create an OData Producer Service Model](#)

[CREATE ODATA PRODUCER Statement](#)  
[OData Support](#)  
[How to Create an OData Producer Service Model](#)  
[CREATE ODATA PRODUCER Statement](#)

## 1.10.85 ODATA Producer Properties Window: Options Tab

This window lists the ODATA producer options and their values.

### Related Information

[OData Support](#)  
[How to Create an OData Producer Service Model](#)  
[CREATE ODATA PRODUCER Statement](#)

## 1.10.86 ODATA Producer Properties Window: Service Model Tab

Use this tab to review and to update your ODATA producer service model.

### Related Information

[OData Support](#)  
[How to Create an OData Producer Service Model](#)  
[CREATE ODATA PRODUCER Statement](#)

## 1.10.87 Update ODATA Producer Service Model Window

Use this tab to specify the file path to the updated ODATA producer service model.

### Related Information

[OData Support](#)  
[How to Create an OData Producer Service Model](#)  
[ALTER ODATA PRODUCER Statement](#)

## 1.10.88 *Options* Window

This tab has several components.

### **Enable Logging**

Select this option to enable logging for a database.

### **Add Date And Time To Output**

Select this option to include the date and time of each SQL statement occurrence in the *Server Messages and Executed SQL* pane or log file.

### **Log Queries**

Select this option to include log queries in the *Server Messages and Executed SQL* pane or log file.

### **Wrap Text**

Specifies the length of each line in the *Server Messages and Executed SQL* pane or log file. Each line wraps automatically to the next line after the number of characters that you specify. By default, there are 80 characters per line.

### **Save**

Click this button to save the logging information to a file.

### **Clear**

Clears the contents of the selected tab in the *Server Messages and Executed SQL* pane.

## Related Information

[Logging SQL Statements](#)

## 1.10.89 Options for `compatibility-role-name`

This window is only applicable when a system role that supports logins (such as PUBLIC, dbo, diagnostics, rs\_systabgroup, and SA\_DEBUG) or a user-extended roles is granted one of several compatibility roles.

- SYS\_AUTH\_DBA\_ROLE
- SYS\_AUTH\_RESOURCE\_ROLE
- SYS\_AUTH\_BACKUP\_ROLE
- SYS\_AUTH\_VALIDATE\_ROLE
- SYS\_RUN\_REPLICATION\_ROLE

When you disable system-privilege inheritance for one of these roles, you cannot grant administrative rights except for the SYS\_AUTH\_DBA\_ROLE, and you cannot grant administrative only rights.

## Related Information

[Inheritance of Roles and Privileges](#)  
[Granting a Compatibility Role \(SQL Central\)](#)  
[GRANT Statement](#)

### 1.10.90 *Options for system-privilege*

Use this window to restrict the users to which the system privilege applies.

When you grant the CHANGE PASSWORD or SET USER system privilege, you can restrict whose passwords the user can change or who the user can impersonate.

#### **All users**

For the SET USER system privilege, the user can impersonate any user. This option is the default. For the CHANGE PASSWORD system privilege, the user can change the password of any user. This option is the default.

#### **These users**

For the CHANGE PASSWORD system privilege, the user can only change the password for the users listed.

For the SET USER system privilege, the user can only impersonate the users listed.

#### **Users with one or more of these roles**

For the CHANGE PASSWORD system privilege, the user can only change the password for users that have one of listed roles.

For the SET USER, the user can only impersonate users that have one of the listed roles.

## Related Information

[System Privileges](#)  
[GRANT Statement](#)

### 1.10.91 *Parameter Properties Window: General Tab*

This tab has several components.

#### **Name**

Shows the name of the selected parameter.

#### **Procedure**

Shows the name and owner of the procedure to which the parameter belongs.

#### **Data type**

Shows the data type of the parameter.

#### **Parameter type**

Shows the type of parameter. The parameter has one of the following types:

##### **Variable**

A normal procedure parameter.

##### **Result**

A column in a result set returned by the procedure.

##### **Return**

The return value. This parameter type only applies to functions.

##### **SQLSTATE**

The special SQLSTATE output parameter. This parameter is an OUT parameter that outputs the SQLSTATE value when the procedure ends.

##### **SQLCODE**

The special SQLCODE output parameter. This parameter is an OUT parameter that outputs the SQLCODE value when the procedure ends.

#### **Mode**

Shows the mode of the parameter. The mode has one of the following values:

##### **In**

The parameter is an expression that provides a value to the function.

##### **Out**

The parameter is a variable that could be given a value by the function.

##### **In/out**

The parameter is a variable that provides a value to the function, and could be given a new value by the function.

## **Related Information**

[SQL Data Types](#)

[CREATE FUNCTION Statement](#)

[CREATE PROCEDURE Statement](#)

## **1.10.92 *Plug-in Preferences* Window: *General* Tab**

This window has several components.

### **Settings**

The preferences on the *General* tab govern how SQL Anywhere responds when you perform specific tasks in SQL Central:

**Warn when connecting to a read-only database**

Select this preference to be warned when you are connecting to a read-only database.

**Warn when connecting as a user without the PUBLIC system role (version 16 databases only)**

Select this preference to be warned when you are connecting with a user ID that does not have the PUBLIC system role. You must log in as a user with the PUBLIC system role to use SQL Central.

**Warn when connecting as a user without DBA authority (version 12 and earlier databases only)**

Select this preference to be warned when you are connecting with a user ID that does not have DBA authority. You must log in as a user with the DBA authority to enable all plug-in functionality.

**Warn when connecting to a server version that is newer than the version of the plug-in**

Select this preference to be warned when you are connecting to a server whose version is newer than the version of the plug-in.

**Warn when including a column with an approximate data type in an index or text index**

Select this preference to be warned when a column with an approximate data type is included in an index. It is recommended that you do not use approximate data types such as FLOAT and DOUBLE for primary keys or for columns with unique constraints. Approximate numeric data types are subject to rounding errors after arithmetic operations.

**Warn when including a column with a spatial data type in a text index**

Select this preference to be warned when a column with a spatial data type is included in an index or text index.

**Warn when creating or renaming an object if a SQL reserved word is used as the object name**

Select this preference to be warned when you are creating or renaming an object that has a SQL keyword in its name.

**Warn when modifying the SQL for a materialized view**

Select this preference to be warned when you modify a materialized view.

**Warn when modifying an active LDAP server**

Select this preference to be warned when you try to modify an active LDAP server.

**Warn when choosing the JDBC connection type for a remote server if support is deprecated by the database server**

Support for remote servers that use the JDBC connection type is deprecated for SQL Anywhere version 12 and later database servers. Select this preference to be warned when you choose a JDBC connection type for a remote server.

**Inform when the SQL editor automatically reformats the beginning of a SQL statement**

Select this preference to be informed when the SQL editor automatically reformats the beginning of a SQL statement.

**Inform when a breakpoint is hit while debugging**

Select this preference to be notified when a breakpoint is hit when you are working in *Debug* mode.

**Inform when a statement is canceled while debugging**

Select this option to be notified when a statement is canceled when you are working in *Debug* mode.

**Confirm adding user to group via clipboard and drag-and-drop operations**



SQL Central allows you to use drag-and-drop operations and copy and paste operations to add users and groups.

Select this preference if you want SQL Central to prompt you before a user or role is added by dragging and dropping or by copying and pasting.

#### **Confirm granting of object privileges via clipboard and drag-and-drop operations**

SQL Central allows you to use drag-and-drop operations and copy and paste operations to grant object privileges on tables, views, procedures, and functions to users or roles.

Select this preference if you want SQL Central to prompt you before privileges are granted to a user or role by dragging or copying and pasting them to a table, view, procedure, or function.

#### **Confirm creation of SQL Remote subscriptions via clipboard and drag-and-drop operations**

SQL Central allows you to use drag-and-drop operations and copy and paste operations to create SQL Remote subscriptions for remote users and consolidated users.

Select this preference if you want SQL Central to prompt you before you subscribe a remote user or consolidated user to a publication by dragging or copying and pasting the user to a publication.

#### **Confirm creation of SQL Remote synchronization subscriptions via clipboard and drag-and-drop operations**

SQL Central allows you to use drag-and-drop operations and copy and paste operations to create synchronization subscriptions for MobiLink users.

Select this preference if you want SQL Central to prompt you before you subscribe a MobiLink user to a publication by dragging or copying and pasting the MobiLink user to a publication.

#### **Confirm deletions when editing table data**

Select this preference if you want SQL Anywhere to prompt you before table data is deleted on the *Data* tab in SQL Central.

#### **Confirm updates when editing table data**

Select this preference if you want SQL Anywhere to prompt you before table data is updated on the *Data* tab in SQL Central.

#### **Confirm inserts when adding table data**

Select this preference if you want SQL Anywhere to prompt you before table data is inserted on the *Data* tab in SQL Central.

#### **Confirm implicit updates when editing table data**

Select this preference if you want SQL Anywhere to prompt you before implicit updates are made in SQL Central. Implicit updates are made when you are editing a row on the *Data* tab and then click anywhere else in SQL Central outside the row you are currently editing.

#### **Confirm cancellations when editing table data**

Select this preference if you want SQL Central to prompt you when you cancel changes to table data on the *Data* tab in SQL Central.

**Show the current timestamp when the database's current time zone is changed** Select this preference if you want SQL Central to show the current timestamp when you change the database's time zone.

#### **Inform when a maintenance plan is started**

Select this preference if you want SQL Central to show an information message when you start a maintenance plan by selecting it and choosing *Run Now* from the menu.

### **Warn when modifying or deleting an event associated with a maintenance plan**

Select this preference if you want SQL Central to show a warning message when you modify or delete an event associated with a maintenance plan.

### **Inform if attempting to modify a non-editable object privilege**

Select this preference if you want SQL Central to show a message when you attempt to modify an object privilege that was granted by another database user.

### **Inform if revoking an object privilege for a user automatically revokes it for other users**

Select this preference if you want SQL Central to show a message who also had WITH GRANT OPTION for that privilege and granted the privilege to other users. When you revoke the object privilege from that user, then everyone who that user granted the privilege to also has their privilege revoked.

### **Restore Defaults**

Click this button to return the preferences on this tab to their default values (selected or cleared). By default, all the preferences on this tab are selected.

## **Related Information**

[Indexes on Spatial Columns](#)

## **1.10.93 *Plug-in Preferences Window: Utilities Tab***

This window has several components.

### **Settings**

The preferences on the *Utilities* tab govern whether wizard introduction pages appear and whether wizard message windows close when the wizard is finished:

#### **Show Create Database Wizard introduction page**

Select this preference if you want the *Create Database Wizard* introduction page to appear when you open the wizard.

#### **Show Upgrade Database Wizard introduction page**

Select this preference if you want the *Upgrade Database Wizard* introduction page to appear when you open the wizard.

#### **Show Backup Database Wizard introduction page**

Select this preference if you want the *Backup Database Wizard* introduction page to appear when you open the wizard.

#### **Show Restore Database Wizard introduction page**

Select this preference if you want the *Restore Database Wizard* introduction page to appear when you open the wizard.

#### **Show Create Backup Images Wizard introduction page**

Select this preference if you want the *Create Image Backup Wizard* introduction page to appear when you open the wizard.

#### **Show Unload Database Wizard introduction page**

Select this preference if you want the [Unload Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Extract Database Wizard introduction page**

Select this preference if you want the [Extract Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Validate Database Wizard introduction page**

Select this preference if you want the [Validate Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Translate Log File Wizard introduction page**

Select this preference if you want the [Translate Log File Wizard](#) introduction page to appear when you open the wizard.

#### **Show Change Log File Settings Wizard introduction page**

Select this preference if you want the [Change Log File Settings Wizard](#) introduction page to appear when you open the wizard.

#### **Show Erase Database Wizard introduction page**

Select this preference if you want the [Erase Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Migrate Database Wizard introduction page**

Select this preference if you want the [Migrate Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Database Documentation Wizard introduction page**

Select this preference if you want the [Show Database Documentation Wizard](#) introduction page to appear when you open the wizard.

#### **Show Start Synchronization Schema Change Wizard introduction page**

Select this preference if you want the [Show Start Synchronization Schema Change Wizard](#) introduction page to appear when you open the wizard.

#### **Close Wizard messages window when completed**

Select this preference if you want the wizard messages window to close after it is finished. By default, this preference is not selected.

#### **Warn when creating a database if a deprecated page size is specified**

Select this preference if you want to be warned when you create a database with a deprecated page size.

#### **Warn when unloading a running database when the database file name is specified**

This preference applies only to the [Unload Database Wizard](#). If the database you want to unload is already running, and you start the [Unload Database Wizard](#), the database server automatically stops the database before proceeding with the unload. Select this preference to receive a warning before the database is stopped.

#### **Restore Defaults**

Click this button to return the preferences on this tab to their default values (selected or cleared). By default, all preferences on this tab except [Close Wizard Messages Window When Completed](#) are selected.

## Related Information

[Tips on Exporting Data with the Unload Database Wizard](#)

### 1.10.94 *Plug-in Preferences Window: Table Data Tab*

This window has several components.

#### **Which font do you want to use to show table data?**

Select one of the following options to specify the font that is used for table data on the *Data* tab when viewing table data in SQL Central:

##### **System**

Select this option to use the computer's normal text font. This is the default setting.

##### **Editor**

Select this option to use the same font as the Code Editor.

##### **Custom**

Select this option to specify the font, font style, and point size you want to use.

## Related Information

[Code Editor](#)

### 1.10.95 *Plug-in Preferences Window: Automatic Refresh Tab*

This window has several components.

#### **Enable Automatic Refreshing**

Select this option to have SQL Central automatically refresh dynamic objects and dynamic properties.

Selecting *Enable Automatic Refreshing* enables the option below.

##### **Refresh Every X Seconds**

Specifies how often the dynamic objects are refreshed. The refresh time you set remains in effect for subsequent sessions until you change it. The default interval is 10 seconds.

## Related Information

[Task Automation Using Schedules and Events](#)

## 1.10.96 *Pre-allocate Space for Dbspace* Window

Specifies the amount of space you want to pre-allocate to the dbspace. Pre-allocating disk space for the dbspace extends the size of the corresponding database file by the amount of space you specify.

You cannot change the *page size* of a database because the page size is fixed when the database is created.

### Related Information

[Preallocating Database File Space \(SQL Central\)](#)  
[ALTER DBSPACE Statement](#)

## 1.10.97 *Primary Key Properties* Window: *General* Tab

This tab lists the properties of the primary key including the table to which it applies and the index used to enforce it.

### Related Information

[Documenting a Database \(SQL Central\)](#)  
[Managing Primary Keys \(SQL Central\)](#)  
[CREATE TABLE Statement](#)

## 1.10.98 *Primary Key Properties* Window: *Columns* Tab

This tab lists the columns included in the primary key.

### Related Information

[Primary Keys](#)  
[Primary Keys Enforce Entity Integrity](#)  
[Managing Primary Keys \(SQL Central\)](#)  
[CREATE TABLE Statement](#)

## 1.10.99 Procedure Properties Window: General Tab

This tab lists the properties of the procedure, including the dialect in which the code was last saved.

### Dialect

The dialect is either *Watcom SQL* or *Transact-SQL*.

The value (*unknown*) is displayed if the object definition is too large (greater than 64 KB).

## Related Information

[Documenting a Database \(SQL Central\)](#)  
[CREATE PROCEDURE Statement \[Web Service\]](#)

## 1.10.100 Procedure Properties Window: Parameters Tab

This tab has several components.

### This procedure has the following parameters

Displays the name, ID, data type, parameter type, and mode of the procedure's parameters. The mode has one of the following values:

#### In

The parameter is an expression that provides a value to the procedure.

#### Out

The parameter is a variable that could be given a value by the procedure.

#### In/out

The parameter is a variable that provides a value to the procedure, and could be given a new value by the procedure.

## Related Information

[Parameter Declaration for Procedures](#)  
[Stored Procedures, Triggers, Batches, and User-defined Functions](#)  
[CREATE PROCEDURE Statement](#)

## 1.10.101 *Proxy Table Properties Window: General Tab*

This tab has several components.

### **Name**

Shows the name of the proxy table. You cannot change the name of the proxy table.

### **Owner**

Shows the name of the database user who owns the proxy table.

### **Remote location**

Shows the name of the remote server that contains the remote table, the remote database, the remote database user who owns the remote tables, and the name of the remote table the proxy table is based on. This only applies if the proxy table is for a remote server.

### **Directory access server**

Shows the name of the directory access server that the proxy table is based on. This only applies if the proxy table is for a directory access server.

### **Subdirectory**

Shows a subdirectory of the directory access server's root directory. When you execute a query against the proxy table, only files and directories within this subdirectory appear.

## **Related Information**

[Proxy Tables](#)

[CREATE EXISTING TABLE Statement](#)

## 1.10.102 *Proxy Table Properties Window: Columns Tab*

Lists all the columns in the proxy table, and their type.

## **Related Information**

[Proxy Tables](#)

## 1.10.103 *Proxy Table Properties Window: Miscellaneous Tab*

This tab has several components.

### **Number of rows**

Shows the approximate number of rows in the table.

**Calculate**

Determines an accurate row count for the table.

## Related Information

[Proxy Tables](#)

### 1.10.104 *Publication Properties* Window: *General* Tab

This tab has several components.

**Name**

Shows the name of the publication. You can change the publication's name in this field.

**Owner**

Shows the name of the database user who owns the publication.

**Synchronization type**

Shows the type of publication. The type can be one of the following:

**Log scan**

Standard publication that is compatible with MobiLink and SQL Remote.

**Scripted upload**

Publication that uses stored procedures to define the upload. This type of publication is compatible only with MobiLink.

**Download only**

Publication that only downloads data to remote databases, and never uploads data. Download-only publications do not use a transaction log on the client. This type of publication is compatible only with MobiLink.

## Related Information

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### 1.10.105 *Publication Properties* Window: *Tables* Tab

This tab has several components.

**Available Tables list**



Lists all the base tables in the database to which you are currently connected. To add a table to the *Selected Tables* list, select the table in the *Available Tables* list and then click *Add*.

#### **Selected Tables list**

Lists all the tables that are included in the publication for the client database. To remove a table from the *Selected Tables* list, select the table and then click *Remove*.

## **Related Information**

[Publications](#)

[Publishing Whole Tables in UltraLite](#)

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### **1.10.106 Publication Properties Window: Columns Tab**

The *Columns* tab lets you select columns from tables and add them to the list of articles that are included in the client database.

This tab has the following components:

#### **Available columns list**

Lists the tables and their columns selected on the *Tables* tab. Expand a table in the list to display its columns. To add columns to the *Selected Columns* list, select the columns in the *Available Columns* list and then click *Add*.

#### **Selected columns list**

Lists all the columns that are included in the publication. To remove columns from the *Selected Columns* list, select the columns and then click *Remove*.

## **Related Information**

[Publishing Only Some Columns in a Table](#)

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### **1.10.107 Publication Properties Window: WHERE Clauses Tab**

Articles defined for MobiLink and SQL Remote publications use a WHERE clause to define a subset of rows of a table to be included in an article.

This tab only applies and is only shown when the publication has a synchronization type of log scan.

The *WHERE Clauses* tab lets you supply a WHERE clause to restrict the rows that are included in the client database.

This tab has the following components:

#### Articles list

Select an article (a table) from the list of articles included in the publication.

#### The selected article has the following WHERE clause

In the text box, type the WHERE clause for the table to restrict the rows that are included in the article.

The following example creates a single-article publication that includes all sales order information for sales rep number 856.

```
CREATE PUBLICATION pub_orders_samuel_singer
( TABLE SalesOrders
  WHERE SalesRepresentative = 856 );
```

## Related Information

[The WHERE Clause: Specifying Rows](#)

[Publishing Only Some Rows Using a WHERE Clause \(SQL Central\)](#)

### 1.10.108 *Publication Properties* Window: *SUBSCRIBE BY Restrictions* Tab

The *SUBSCRIBE BY Restrictions* tab lets you define a subset of rows of a table for inclusion in the article.

This tab only applies to SQL Remote publications and is only shown if the publication has a synchronization type of log scan.

This tab has the following components:

#### Articles list

Select an article from the list of articles included in the publication.

#### This article has the following SUBSCRIBE BY restriction

You can choose one of the following options for the SUBSCRIBE BY restriction for the article:

##### None

Select this option if the article does not have a SUBSCRIBE BY restriction.

##### Column

Sets the article to partition rows from the table based on a column (SUBSCRIBE BY columns). Once you select this option, you must select a column from the dropdown list.

##### Expression

Sets the article to partition rows from the table based on an expression specified in the field below.

## Related Information

[Publishing Only Some Rows Using the SUBSCRIBE BY Clause \(SQL Central\)](#)

### 1.10.109 *Publication Properties* Window: *Upload Procedures* Tab

This tab only applies to scripted upload publications.

This tab has the following components:

#### Articles list

Select an article from the list of articles included in the publication.

#### Upload procedures lists

You can associate up to three procedures with one article: one for inserts, one for updates, and one for deletes. Click the *INSERT*, *UPDATE*, and *DELETE* tabs to specify these procedures for the selected article.

#### Upload rows using this procedure

Select this option and then select a procedure from the dropdown list to specify a procedure to use to upload the selected rows. The selected procedure appears in the text box below, where it can be edited. Clear this option if you do not want to define a procedure.

#### Create New Procedure Now

Click this icon to create a new procedure for upload scripts with the *Create Procedure Wizard*.

#### Save Procedure Now

Click this icon to save changes that you have made to the selected procedure.

#### Revert Procedure Now

Click this icon to abandon changes you have made to the selected procedure since it was last saved.

## Related Information

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

### 1.10.110 *Publication Properties* Window: *Connection* Tab

The settings you can specify on the *Connection* tab depend on the communication protocol you are using.

#### **i** Note

This tab only applies to MobiLink publications.

Any additional parameters, such as `buffer_size`, can be set in the *Advanced* field.

This tab has the following components:

### **Protocol**

Choose the communication protocol to use for synchronization. TCP/IP is used by default.

#### **TCP/IP**

Select this option to use the TCP/IP protocol for synchronization.

#### **TLS**

Select this option to use transport layer security (TLS) for synchronization.

#### **HTTP**

Select this option to use the HTTP protocol for synchronization.

#### **HTTPS**

Select this option to use the HTTPS protocol for synchronization.

### **Host**

The IP number or host name of the computer on which the MobiLink server is running. The default value is localhost. You can use specify **localhost** if the MobiLink server is running on the same computer as the client.

For Microsoft Windows Mobile, the default value is the value of ipaddr in the registry folder `Comm\Tcpip\Hosts\ppp_peer`. This allows a Microsoft Windows Mobile device to connect to a MobiLink server executing on the desktop computer where the Microsoft Windows Mobile device's cradle is connected.

### **Port**

The MobiLink server communicates over a specific port. The default port number is 2439 for TCP/IP, 80 for HTTP, and 443 for HTTPS. If you choose a different value, you must configure your MobiLink server to listen on the port you specify.

### **Proxy host**

Type the host name or IP address of the proxy server. The default value is localhost. This option is only available for HTTP and HTTPS synchronization.

#### **Proxy port**

Type the port number of the proxy server. The default value is 80 for HTTP and 443 for HTTPS. This option is only available for HTTP and HTTPS synchronization.

### **URL suffix**

Type the suffix to add to the URL on the first line of each HTTP request. The default value is MobiLink. This option is only available for HTTP and HTTPS synchronization.

When synchronizing through a proxy server, the suffix may be necessary to find the MobiLink server.

### **HTTP Version**

Type the value specifying the version of HTTP to use for synchronization. You have a choice of 1.0 or 1.1. The default value is 1.1.

### **Automatic connection**

The following options allow MobiLink clients running on Microsoft Windows or Microsoft Windows Mobile to connect through dial-up network connections.

When used with scheduling, your remote device can synchronize unattended. When used without scheduling, you can run dbmlsync without manually dialing a connection.

### **Network name**

Specify the network name so that you can use the MobiLink auto-dial feature. This allows you to connect from Microsoft Windows or Microsoft Windows Mobile without dialing manually. The name should be the network name that you specified in the dropdown list in [▶ Settings ▶ Connections ▶ Connections ▶](#) (Microsoft Windows Mobile) or [▶ Settings ▶ Connections ▶ Network Connections ▶](#) (Microsoft Windows).

### **Leave open**

When you supply a network name, you can optionally specify whether the connection should be left open (1) or closed (0) after synchronization finishes. By default, the connection is 0 (closed).

## **Security**

These options allow you to use an algorithm suite to encrypt all communication through this connection. You can provide information about the certificate used to authenticate the server in the fields below.

### **Cipher**

#### **Elliptic curves**

This option is only available for version 12 and earlier databases. Uses the elliptic-curve algorithm to encrypt connections. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

#### **RSA**

Uses the RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

#### **FIPS-certified**

Uses the FIPS-certified RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections. FIPS-certified encryption requires a separate license.

### **Trusted certificate**

Type the name of the certificate file the client uses to authenticate the server.

### **Certificate company**

Type the name of the certificate authority or organization that issued the certificate. The server's and the client's values must match.

### **Certificate unit**

Type the certificate unit. This is also called the organizational unit. The server's and the client's values must match.

### **Certificate name**

Type the certificate's common name. The server's and the client's values must match.

## **Advanced**

Type any additional connection parameters in this field, entering them in the form `parameter=value`, with multiple parameters separated by semicolons. For example, to set the maximum body size for a fixed

content length message and to instruct the client to attempt to use the same TCP/IP connection for all HTTP requests in a synchronization, you would specify the following in the *Advanced* field:

```
buffer_size=58000;persistent=TRUE
```

### **i** Note

If a field is blank on the *Connection* tab of the *MobiLink User Properties* window, the MobiLink user may be inheriting the connection parameter setting from the synchronization subscription. You should only supply connection parameters on the *Connection* tab of the *MobiLink User Properties* window to override the publication's settings.

## Related Information

[Synchronization Schedules](#)

[How dbmsync Resolves Conflicting Options](#)

[Transport Layer Security](#)

[CommunicationType \(ctp\) Extended Option](#)

[CREATE SYNCHRONIZATION USER Statement \[MobiLink\]](#)

[CREATE SYNCHRONIZATION USER Statement \[MobiLink\]](#)

[CREATE PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

[ALTER PUBLICATION Statement \[MobiLink\] \[SQL Remote\]](#)

[-x dbmsync Option](#)

[CommunicationAddress \(adr\) Extended Option](#)

## 1.10.111 *Publication Properties* Window: *Extended Options* Tab

This tab has several components.

### **i** Note

This tab only applies to MobiLink publications.

#### **This publication has the following MobiLink extended options**

Lists the extended options and values set for the publication. Click the *Value* field beside the option name to set the value for the publication.

## Related Information

[How dbmsync Resolves Conflicting Options](#)

[MobiLink SQL Anywhere Client Extended Options](#)

## 1.10.112 *Publisher Options* Window

This window has several components.

### **i** Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

#### **Publisher**

Shows the name of the publisher.

#### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list.

#### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for an individual user ID unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window:

#### **New**

This button is not enabled when you are setting publisher options. You must open the *Database Options* window to add new options.

#### **Remove Now**

This button is not enabled when you are setting publisher options. You must open the *Database Options* window to remove options.

#### **Set Permanent Now**

To change a setting for the publisher permanently, select an option from the *Options* list, type the setting in the *Value* field, then click *Set Permanent Now*.

Permanent values last between sessions until they are explicitly changed again.

## Related Information

[Alphabetical List of Database Options](#)

[Users](#)

[SET OPTION Statement](#)

## 1.10.113 *Publisher Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the publisher.

### **This publisher has a password**

Select this option to assign the publisher a password. A publisher cannot connect without an assigned password. However, the presence of a password does not guarantee that the publisher can connect. For example, the publisher account may be locked. Clearing this option removes the publisher's password and disables the *Password* and *Confirm password* fields.

Users are almost always allowed to connect.

### **Password**

Type the password for the publisher. Passwords are case sensitive.

### **Confirm password**

Confirm the password that you typed in the *Password* field by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

### **Password creation time**

Shows the date and time when the current password was created.

### **Require a new password to be specified at next login**

Select this option to require the publisher to create a new password at the next login.

### **Login policy**

Specifies a login policy for the publisher.

### **Last login time**

Shows the date and time when the publisher last logged in.

### **Failed login attempts**

Shows the number of failed login attempts by the publisher.

### **Locked**

Shows whether the publisher's account is locked. Shows *No* if the publisher is not locked from the database.

### **Unlock Now**

Click this button to unlock the publisher's account from the database. *Unlock Now* is disabled if the publisher's login policy has at least one of the following option settings:

- *locked*=On
- *password*=On
- *max\_connections*=0
- *max\_failed\_login\_attempts*=0

### **Distinguished Name**

Shows the user's Distinguished Name (DN) if the publisher was authenticated by an LDAP server.

### **Clear Now**



Clears the cached DN from the database for this user, causing the database server to refetch the DN when the publisher next authenticates to the LDAP server.

## Related Information

[User Privileges](#)

### 1.10.114 *Publisher Properties Window: Authorities Tab*

This tab applies to version 12.0.1 and earlier databases and has several components.

#### **DBA**

Select this option to grant DBA authority to the publisher; a user with DBA authority can fully administer the database.

#### **Resource**

Select this option to grant resource authority to the publisher; a user with resource authority can create database objects.

#### **Remote DBA**

Select this option to grant Remote DBA authority to the publisher. The MobiLink client utility (dbmlsync) requires Remote DBA authority. The SQL Remote Message Agent (dbremote) should also be run using a user ID with this type of authority to ensure that actions can be performed without creating security loopholes.

#### **Backup**

Select this option to grant backup authority to the publisher.

#### **Validate**

Select this option to grant validate authority to the publisher; a user with validate authority can perform the operations executed by the different VALIDATE statements, such as database, table, index, and checksum validation.

#### **Profile**

Grants profiling and database tracing capabilities to the user.

#### **Read file**

Grants the ability to use query files using the OPENSTRING clause of the SELECT statement.

#### **Read Client File**

Grants the ability to read a file on the client computer.

#### **Write Client File**

Grants the ability to write to a file on the client computer.

## 1.10.115 *Query Rewrite Optimization History* Window

This window has several components.

### **History**

Shows details about each type of rewrite optimization that was applied to the SQL statement, and the resulting changes to the SQL text.

## **Related Information**

[Advanced: Query Optimization](#)

## 1.10.116 *Refresh Data* Window

This window has several components.

### **Choose an isolation level to be used for the refresh operation**

Select one of the following isolation levels to specify the type of locking to use on the underlying base tables during the refresh. The type of locking determines how the materialized view is populated and how concurrency for transactions is affected.

#### **Read uncommitted (level 0)**

This option provides the maximum level of concurrency, but dirty reads, non-repeatable reads, and phantom rows may be observed in result sets.

#### **Read committed (level 1)**

This option provides less concurrency than level 0, but eliminates some of the inconsistencies in result sets at level 0. Non-repeatable rows and phantom rows may occur, but dirty reads are prevented.

#### **Repeatable read (level 2)**

This option allows phantom rows to occur. Dirty reads and non-repeatable rows are prevented.

#### **Serializable (level 3)**

This option provides the least concurrency, and is the strictest isolation level. Dirty reads, non-repeatable reads, and phantom rows are prevented.

#### **Snapshot**

This option uses a snapshot of committed data from the time when the first row is read, inserted, updated, or deleted by the transaction. Snapshot is the default if the view is a manual view and the database is using snapshot isolation.

#### **Share mode**

This option provides read access on underlying tables to other transactions while the refresh operation takes place. When this clause is specified, shared table locks are obtained on all underlying base tables before the refresh operation is performed and until the refresh operation completes the REFRESH MATERIALIZED VIEW statement.

Share mode is the default if the view is a manual view and the database is not using snapshot isolation. Share mode is also the default if the view is an immediate view, regardless of whether snapshot isolation is enabled.

#### **Exclusive mode**

This option places exclusive table locks on all underlying base tables. No other transaction can execute queries, updates, or any other action against the underlying table(s) until the refresh operation is complete. If exclusive table locks cannot be obtained, the refresh operation fails and an error is returned.

Choose this mode if you do not want to change the isolation level, but want to guarantee that the data is updated to be consistent with committed data in the underlying tables.

## **Related Information**

[Guidelines for Choosing Isolation Levels](#)  
[Isolation Levels and Consistency](#)  
[REFRESH MATERIALIZED VIEW Statement](#)

### **1.10.117 Remote Procedure Properties Window: General Tab**

This tab lists the remote procedure's properties including its dialect.

#### **Dialect**

The dialect is either *Watcom SQL* or *Transact-SQL*.

The value (*unknown*) is displayed if the object definition is too large (greater than 64 KB).

## **Related Information**

[Remote Servers and Remote Table Mappings](#)

### **1.10.118 Remote Procedure Properties Window: Parameters Tab**

This tab has several components.

#### **This remote procedure has the following parameters:**

Displays the name, ID, data type, parameter type, and mode of the remote procedure's parameters. The mode has one of the following values:

#### **In**

The parameter is an expression that provides a value to the procedure.

### Out

The parameter is a variable that could be given a value by the procedure.

### In/out

The parameter is a variable that provides a value to the procedure, and could be given a new value by the remote procedure.

## Related Information

[Stored Procedures, Triggers, Batches, and User-defined Functions](#)

[Parameter Declaration for Procedures](#)

[CREATE PROCEDURE Statement](#)

## 1.10.119 Remote Server Properties Window: General Tab

This tab has several components.

### Name

Shows the name of the remote server.

### Read-only

Shows whether the remote server is read-only.

### Server type

Shows the class or software platform of the database server. You can choose a different software platform from the dropdown list.

The server type that you choose restricts the types of connection you can choose from. For example, if you choose *Generic Server* from the *Server Type* dropdown list, you can only connect using ODBC.

### Connection type

Lets you choose between the ODBC and JDBC connection protocols.

#### Open database connectivity (ODBC)

Select this option to use the ODBC connection protocol. You can use ODBC with any of the database servers listed in the *Server Type* dropdown list.

#### Java database connectivity (JDBC)

Select this option to use the JDBC connection protocol. You can use JDBC with the following database server types: *SQL Anywhere*, *SAP Adaptive Server Enterprise* and *SAP IQ*.

### Connection information

Lets you specify startup connection parameters, such as the name and address of the database server.

For ODBC data sources, type the name of the data source. For JDBC access, type a computer name or IP address and a port number in the form `hostname:portnumber`.

### Test Connection

Click this button to test whether the information provided in the remote server definition results in a proper connection.

## Related Information

[JDBC Support](#)

[ODBC Support](#)

[Remote Servers and Remote Table Mappings](#)

[CREATE SERVER Statement](#)

### 1.10.120 *Remote User Options* Window

This window has several components.

#### **i** Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

#### **Remote User**

Displays the name of the selected remote user.

#### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list.

#### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for an individual user ID unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window:

#### **New**

This button is not enabled when you are setting remote user options. You must open the *Database Options* window to add new options.

#### **Remove Now**

This button is not enabled when you are setting remote user options. You must open the *Database Options* window to remove options.

#### **Set Permanent Now**

To change a setting for the remote user permanently, select an option from the *Options* list, type the setting in the *Value* field, then click *Set Permanent Now*.

Permanent values last between sessions until they are explicitly changed again.

## Related Information

[Alphabetical List of Database Options](#)

[Users](#)

[Changing Database Options \(SQL Central\)](#)

[SET OPTION Statement](#)

### 1.10.121 *Remote User Properties* Window: *General* Tab

This tab has several components.

#### **Name**

Shows the name of the remote user.

#### **This remote user has a password**

Select this option to assign the remote user a password. A user cannot connect unless they have a password assigned. However, the presence of a password does not guarantee that the user can connect. For example, the user account may be locked. Clearing this option removes the user's password and disables the *Password* and *Confirm password* fields.

#### **Password**

Type the password for the user. Passwords are case sensitive.

#### **Confirm password**

Confirm the password that you typed in the *Password* field by typing it again. The contents of the two fields must match exactly. Passwords are case sensitive.

#### **Password creation time**

Shows the date and time when the current password was created.

#### **Require a new password to be specified at next login**

Select this option to require the user to create a new password the next time they log in.

#### **Login policy**

Specifies the name of the login policy for the user.

#### **Last login time**

Shows the date and time when the user last logged in.

#### **Failed login attempts**

Shows the number of failed login attempts by the user.

#### **Locked**

Shows whether the user's account is locked. Shows *No* if the user is not locked from the database.

#### **Unlock Now**

Click this button to unlock the user's account from the database. *Unlock Now* is disabled if the user's login policy has at least one of the following option settings:

- *locked*=On

- `password=On`
- `max_connections=0`
- `max_failed_login_attempts=0`

#### **Distinguished Name**

Shows the user's Distinguished Name (DN) if the user was authenticated by an LDAP server.

#### **Clear Now**

Clears the cached DN from the database for this user, causing the database server to refetch the DN when the user next authenticates to the LDAP server.

## **Related Information**

[REMOTE Privilege](#)

[Password and User ID Restrictions and Considerations](#)

[Login Policies](#)

[User Privileges](#)

## **1.10.122 Remote User Properties Window: Authorities Tab**

This tab applies to version 12.0.1 and earlier databases and has several components.

#### **DBA**

Select this option to grant DBA authority to the remote user; a user with DBA authority can fully administer the database.

#### **Resource**

Select this option to grant resource authority to the remote user; a user with resource authority can create database objects.

#### **Remote DBA**

Select this option to grant Remote DBA authority to the remote user. The MobiLink client utility (dbmlsync) requires Remote DBA authority. The SQL Remote Message Agent (dbremote) should also be run using a user ID with this type of authority to ensure that actions can be performed without creating security loopholes.

#### **Backup**

Select this option to grant backup authority to the remote user.

#### **Validate**

Select this option to grant validate authority to the remote user; a user with validate authority can perform the operations executed by the different VALIDATE statements, such as database, table, index, and checksum validation.

#### **Profile**

Grants profiling and database tracing capabilities to the user.

#### **Read file**

Grants the ability to use query files using the OPENSTRING clause of the SELECT statement.

**Read client file**

Grants the ability to read a file on the client computer.

**Write client file**

Grants the ability to write to a file on the client computer.

## 1.10.123 *Remote User Properties* Window: *SQL Remote* Tab

This tab has several components.

**Message type**

Lets you select a message type for communicating with the publisher.

**Address**

Provides a place for you to type the remote address of the remote user. The address is a string, according to the specified message type, to which the replication messages should be sent for the user.

**Send Frequency**

Specifies how frequently messages should be sent.

**Send then close**

Sets the replication frequency so that the publisher's SQL Remote Message Agent utility (dbremote) runs once, sends all pending messages to the remote group, and then shuts down. The Remote Message Agent utility (dbremote) must be restarted each time the publisher wants to send messages.

In most replication setups, this option is not used for sending publications from the consolidated publisher to the remote group.

**Send every**

Sets the replication frequency so that the publisher's agent runs continuously, sending messages to the remotes at the specified periodic interval.

**Send daily at**

Sets the replication frequency so that the publisher's dbremote runs continuously, sending messages to the remotes each day at the specified time.

### Related Information

[SQL Remote Message Systems](#)

[User Privileges](#)

[CREATE SUBSCRIPTION Statement \[SQL Remote\]](#)



## 1.10.124 Role Options Window

This window has several components.

### **i** Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

#### **User-extended role**

Shows the name of the selected user-extended role.

#### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list.

#### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for a user-defined role unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window.

#### **New**

This button is only enabled when you are setting options for the PUBLIC role. You must open the *Options* window for the PUBLIC role to add new options.

#### **Remove Now**

This button is enabled for the PUBLIC role when an option is selected. This button is enabled for non-PUBLIC roles and users only when there is a value in the *Setting* column.

#### **Set Permanent Now**

To change a setting for a user-extended role permanently, select an option, type the setting in the *Value* field, and then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)

[Changing Database Options \(SQL Central\)](#)

[SET OPTION Statement](#)

## 1.10.125 *Role Properties* Window

This tab has several components.

### **Name**

Shows the name of the role.

### **Description**

Describes the role.

### **Comment**

Provides a place for you to type a text description of the role.

## Related Information

[Roles](#)

## 1.10.126 *Schedule Properties* Window: *General* Tab

This tab has several components.

### **Name**

Shows the name of the selected event schedule.

### **Event**

Shows the name of the event the schedule is for.

### **Start time**

Select one of the following options to specify when the event occurs. If the event is a non-recurring scheduled event, the start time must be in the future. An attempt to create a non-recurring scheduled event with a start time that has already passed generates an error.

#### **At**

Select this option to specify a specific scheduled time for each day the event is scheduled. If a *Start Date* is specified, the *Start Time* refers to that date. If you do not specify a *Start Date*, the *Start Time* is on the current day (unless that time has passed) and each subsequent day.

#### **Between**

A range of time during which the selected event is to occur. For example, the event may be scheduled to occur between 11 A.M. and 12 P.M. If you specify a *Start Date*, the scheduled times do not occur until that date.

#### **Start date**

The date on which the scheduled event starts occurring. The current date is the default. You can type the date in the text box or select the month, day, and year from the lists.

## Related Information

[Task Automation Using Schedules and Events](#)  
[CREATE EVENT Statement](#)

### 1.10.127 *Schedule Properties Window: Recurrence Tab*

All the settings on this tab are optional.

This tab has the following components:

#### **Repeat every**

Select the interval between successive scheduled events. Selecting this option adds a SCHEDULE EVERY clause to the event definition.

Scheduled event times are calculated when the schedules are created, and again when the event handler completes execution.

#### **Trigger on the following**

Select this option and then choose either the *Days of the Week* or the *Days of the Month* options. Selecting this option adds a SCHEDULE ON clause to the event definition.

#### **Days of the week**

Select the day(s) of the week on which the selected event occurs by selecting the checkbox(s) beside the day(s).

#### **Days of the month**

Select the day(s) of the month on which the selected event occurs by selecting the checkbox(s) beside the day(s).

## Related Information

[Schedule Definition](#)  
[Task Automation Using Schedules and Events](#)  
[CREATE EVENT Statement](#)

### 1.10.128 *Sequence Generator Properties Window: General Tab*

This tab has several components.

#### **Name**

Specifies the name of the sequence generator.

#### **Owner**

Specifies the database user who owns the sequence generator.

**Minimum value**

Specifies the sequence's minimum value. The minimum value can be as low as  $-(2^{63}-1)$ . The default is 1.

**Maximum value**

Specifies the sequence's maximum value. The maximum value can be as high as  $(2^{63}-1)$ . The default is  $(2^{63}-1)$ .

**Start value**

Specifies a value between the *Minimum Value* and the *Maximum Value* as the start value. The start value determines the first value generated.

**Restart Now**

Click this button to restart the sequence with the value specified in the *Start Value* field.

**Increment value**

Specifies the difference between the last value and the next value generated. Specify a negative value to create a sequence generator that generates descending values.

**Cycle values**

Specifies whether the sequence generator cycles back to the beginning and starts again when the values increase or decrease to the maximum or minimum value. Clear this option to have an error returned if a sequence exceeds its minimum or maximum value.

**Cache size**

Specifies the cache size. The cache size determines the number of preallocated sequence values that are kept in memory for faster access. When the cache is exhausted, it is repopulated and a corresponding entry is written to the transaction log.

Clear this option to ensure that no values will be skipped in the event that the server crashes.

## Related Information

[ALTER SEQUENCE Statement](#)

### 1.10.129 *Server Properties* Window: *General* Tab

This tab has several components.

**Name**

Shows the name of the database server.

**Product**

Shows the database server's product type; for example, the product could be SQL Anywhere or Adaptive Server Anywhere.

**Version**

Shows the version number of the database server.

**Computer**

Shows the name of the computer on which the database server is running.

**Operating system**

Shows the operating system that the database server is currently running on.

**Operating system version**

Shows the operating system version that the database server is currently running on.

## Related Information

[List of Database Server Properties](#)

### 1.10.130 *Server Properties Window: Extended Information Tab*

This window lists contains an extended list database server properties and their values. Click [Refresh](#) or press F5 to update the values.

## Related Information

[List of Database Server Properties](#)

### 1.10.131 *Server Properties Window: Options Tab*

The database server options on this tab correspond to options that can be reset while the database server is running.

This tab has the following components:

**Current time**

Displays the current time.

**Quitting time**

Lets you specify a time when the database server is to shut down. Use the same format as the current time, which is as follows:

```
YYYY-MM-DD HH:NN:SS
```

**Disable new connections**

Select this option to prevent other users from connecting to the database. The may be useful for some maintenance operations.

**Remember the last statement executed on each connection**

Select this option to remember the last statement executed on each connection.

## SQL Anywhere Cockpit

Use the buttons to start and stop SQL Anywhere Cockpit on a running database server.

Several URLs for the SQL Anywhere Cockpit can be listed if the computer that the database server is running on has an address on more than one sub-network. If a browser on another computer cannot reach all those sub-networks, some of the URLs will not work.

## Related Information

[SQL Anywhere Cockpit](#)  
[sa\\_server\\_option System Procedure](#)  
[List of Database Server Properties](#)

### 1.10.132 *Server Properties Window: Request Logging Tab*

This tab has several components.

#### Enable request logging

Select this option to record requests that the database server processes to the request log file. This option is primarily for troubleshooting purposes.

#### **i** Note

For SQL Anywhere 10 and later databases, the new database tracing feature provides a more complete log of database requests.

Selecting Enable Request Logging enables the options below.

#### **All connections to this server**

Records requests from all connections to the current database server to the request log file.

#### **All connections to the following database**

Records requests from all connections to the specified database to the request log file.

#### **The following connection**

Records only requests from the specified connection to the request log file.

#### **Log all requests**

Records all requests that the database server processes to the request log file.

#### **Log only the following requests**

Select this option to specify the types of requests you want logged:

#### **SQL**

Log SQL statement requests.

#### **Procedures and functions**

Log procedure and function calls.

#### **Query plans**

Log query execution plans.

#### **Include host variables**

Include host variables in the log.

#### **Triggers**

Log trigger calls.

#### **Connections blocked from proceeding**

Log any connections that are blocked from proceeding.

#### **Log file name**

When you select [Enable Request Logging](#), you must provide a request log file name.

#### **Overwrite the request log file if it already exists**

Select this option to overwrite an existing request log file.

#### **Maximum log file size**

The maximum size, in kilobytes, of the request log file.

#### **Maximum number of log files**

The maximum number of log files to retain. Each file has an extension with a number appended to it.

## **Related Information**

[Trace Session Data \(Deprecated\)](#)

[Request Logging](#)

[List of Database Server Properties](#)

[-zr Database Server Option](#)

[-zl Database Server Option](#)

## **1.10.133 Service Properties Window: General Tab**

This tab has several components.

#### **Name**

Shows the name of the service. A service runs a database server or other application with a set of options.

#### **Service type**

Shows the type of service.

Service Type	Description
<i>Network Database Server</i>	A network database server that supports client/server communications across a network.
<i>Personal Database Server</i>	A personal database server for single-user, same-computer use.
<i>SQL Remote Message Agent</i>	<p>The application that sends and receives replication messages between a consolidated database and remote databases.</p> <p>A consolidated database's agent typically runs continuously, receiving replication messages continuously and sending messages periodically, while a remote database's agent typically runs on demand, receiving and sending all pending messages.</p>
<i>Agent for Replication Server</i>	<p>This service type is only available for version 11 and earlier databases.</p> <p>Also called the Log Transfer Manager (LTM), this uses the SAP Open Server Gateway to enable SQL Anywhere databases to take part in SAP Replication Server installations.</p> <p>The Agent is required for SQL Anywhere databases acting as primary sites, but is not required for those acting as replicate sites.</p>
<i>Sample Application</i>	<p>A sample application that demonstrates how to program client applications as services.</p> <p>The application itself can be built from sample C code included with SQL Anywhere.</p>
<i>MobiLink Server</i>	The MobiLink server lets you synchronize remote databases or applications with an ODBC-compliant consolidated database.
<i>SQL Anywhere MobiLink Client</i>	The SQL Anywhere MobiLink client that uploads and downloads data between a MobiLink server and a SQL Anywhere database.
<i>MobiLink Listener Utility</i>	The utility that configures and starts the MobiLink Listener on Microsoft Windows devices, including Microsoft Windows Mobile.
<i>Broadcast Repeater Utility</i>	A utility that allows SQL Anywhere clients to find SQL Anywhere database servers running on other subnets and through firewalls where UDP broadcasts normally do not reach.
<i>SQL Anywhere Volume Shadow Copy Service</i>	SQL Anywhere is compatible with the Microsoft Volume Shadow Copy Service (VSS). You can use VSS to create point-in-time snapshots of entire disk volumes or volume sets and to make copies of files that are open for exclusive use by applications such as the SQL Anywhere database server.



Service Type	Description
<i>MobiLink Relay Server</i>	A set of web extensions that enable secure, load-balanced communication between mobile devices and Afaria, Mobile Office, MobiLink, SQL Anywhere, and SAP Mobile Server, and SAP Mobile Platform servers communicating through a web server.
<i>MobiLink Relay Server Outbound Enabler</i>	A utility that manages all communication between a back-end server and the Relay Server farm.

### Status

Shows whether service is started or stopped.

### Startup type

You can select one of the following startup options for the service. The startup option is applied the next time you start Microsoft Windows:

#### Automatic

Select this option to start the service automatically whenever the operating system starts.

#### Manual

Select this option to start the service manually. In Microsoft Windows, you must be an administrator to start the service.

#### Disabled

Select this option to disable the service so it does not start.

## Related Information

[SQL Anywhere Volume Shadow Copy Service \(VSS\)](#)

[Windows Services](#)

[Starting or Stopping a Windows Service \(SQL Central\)](#)

[CREATE SERVICE Statement \[HTTP Web Service\]](#)

[CREATE SERVICE Statement \[SOAP Web Service\]](#)

## 1.10.134 Service Properties Window: Configuration Tab

This tab has several components.

### File name

Provides a place for you to type the path of the executable file. For example, `C:\Program Files\SQL Anywhere 17\Bin32\dbremote.exe`.

### Parameters

Type additional parameters (file names and options) for the executable file in the text box. You can use the same options for a service that you use for the executable.

For example to start a SQL Remote Message Agent (dbremote) service, connecting to the SQL Anywhere sample database as user DBA, specify the following:

```
-c "UID=DBA;PWD=sql;DBN=demo"
```

## Related Information

[Service Utility \(dbsvc\) for Windows](#)  
[SQL Anywhere Database Server Executable \(dbsrv17, dbeng17\)](#)

### 1.10.135 *Service Properties* Window: *Account* Tab

This tab has several components.

#### Local system account

Select this option to run the service under your system's local account.

#### Allow service to interact with desktop

This option is only available when you select *Local System Account*. Select this option to display the database server messages window by clicking an icon on your desktop. This option is not available for Windows 7 or later.

#### Other account

Select this option to run the service under an account other than the local account. You can choose a user ID from the dropdown list or type a user ID. Selecting this option enables the *Password* and *Confirm Password* fields.

#### Password

When you select *Other Account*, you must supply the appropriate password for the user ID. You must confirm the password in the *Confirm Password* text box.

#### Confirm password

Confirm the password that you typed in the *Password* text box by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

## Related Information

[Service Utility \(dbsvc\) for Windows](#)

## 1.10.136 *Service Properties* Window: *Dependencies* Tab

This tab has several components.

### The service belongs to a service group

Select this option to assign the service to be a member of a service group.

#### Service group

Lets you specify the service group to which the service belongs. To change which service group the service belongs to, click [Change](#). The [Set Service Group](#) window appears, which lets you specify a service group for the service.

The [Agent for Replication Server](#) service group is only available for version 11 and earlier databases.

### Services list

Lists all the services and service groups that must be started before the service. The list also shows the type of service or service group.

To add services or service groups to this list, click [Add Services](#) or [Add Service Groups](#), respectively. To remove a service or service group from the Services list, select the service or service group, and then click [Remove](#). You can select multiple services or service groups by holding Shift while you click.

#### Add Services

Displays the [Add Service Dependencies](#) window, which lets you view all services and select the ones you want to add to the [Services](#) list.

#### Add Service Groups

Displays the [Add Service Group Dependencies](#) window, which lets you select the service groups that you want to add to the [Services](#) list.

#### Remove

Removes the service or service group from the [Services](#) list. The group or service is no longer required to start before the service.

## Related Information

[Managing Service Groups](#)

## 1.10.137 *Set Consolidated User* Window

You can only select one consolidated user for the database.

The name of the consolidated user appears on the [SQL Remote](#) tab of the [Database Properties](#) window.

### Choose the new consolidated user from the list of candidates

Lists the users from which you can select the consolidated user for the database. Select a user and then click [OK](#) to grant CONSOLIDATED permissions to the selected user. Double-clicking a user grants that user CONSOLIDATE privilege and closes the window.

## Related Information

[User Privileges](#)

[GRANT CONSOLIDATE Statement \[SQL Remote\]](#)

### 1.10.138 *Set Clustered Index* Window

Use this window to a clustered index.

This window has the following components:

#### **Specify an index on this table to be clustered**

Select this option to enable the list of indexes below where you specify which index is to be clustered.

#### **Indexes list**

Shows all the indexes for the table. Select an index from the list and then click *OK* to specify a clustered index. Only one index on a table can be a clustered index.

## Related Information

[Clustered Indexes](#)

[CREATE INDEX Statement](#)

### 1.10.139 *Set Publisher* Window

You can only select one publisher for the database.

#### **Choose the new publisher from the list of candidates**

Lists the users you can select the publisher from. Select a user and then click *OK* to grant PUBLISH permissions to the selected user. Double-clicking a user grants that user PUBLISH permissions and closes the window.

## Related Information

[User Privileges](#)

[GRANT PUBLISH Statement \[SQL Remote\]](#)

## 1.10.140 *Set Service Group* Window

This window has several components.

### **New service group**

Select this option to create a new service group to which the selected service is assigned.

#### **Service group name**

Type the name of the new service group when you select *New Service Group* above.

### **Existing service group**

Select this option to assign the selected service to be a member of an existing service group.

#### **Service groups list**

Lists all the existing service groups. The list is enabled when you select the *Existing Service Group* option. To assign the selected service to a service group, select an existing service group from the list and click *OK*. Double-clicking a service group assigns the service to that service group and closes the window.

## Related Information

[Managing Service Groups](#)

## 1.10.141 *Spatial Reference System Properties* Window: *General* Tab

This tab has several components.

### **Name**

Specifies the name of the spatial reference system.

### **Spatial reference system ID**

Specifies the spatial reference system ID; the integer that uniquely identifies the spatial reference system in your database.

### **Organization**

Specifies the name of the organization that created the spatial reference system or that created the spatial reference system that this spatial reference system is based on.

### **Organization coordinate reference system ID**

Specifies the numeric identifier that the organization uses to identify the spatial reference system.

## 1.10.142 *Spatial Reference System Properties* Window: *Settings* Tab

This tab has several components.

### **Spatial reference system type**

Specifies the type of spatial reference system, as defined by the SQL/MM standard. Values can be *Geographic*, *Projected*, or *Engineering* (internal use).

### **Line interpretation**

Specifies how the spatial reference system interprets lines between points. When the *Spatial Reference System Type* is *Geographic* you can select either *Round earth* or *Planar*. Otherwise, you can only select *Planar*.

#### **Round earth**

The earth is represented using an ellipsoid, providing a two-dimensional representation of a three-dimensional model of the Earth. Lines between points are interpreted as great elliptic arcs. Given two points on the surface of the Earth, a plane is selected that intersects the two points and the center of the Earth. This plane intersects the Earth, and the line between the two points is the shortest distance along this intersection. This line interpretation is only supported for geographic spatial reference systems.

#### **Planar**

The Earth (or a portion of the Earth) is represented on a flat, two-dimensional plane. X and Y are treated as Cartesian coordinates, and lines between points are interpreted as straight lines. For geographic spatial reference systems, the geometric data will be distorted. Depending on the location of an object on the Earth, distortions may affect its area, shape, distance, or direction. This line interpretation is supported for all spatial reference systems and is the only choice for non-geographic spatial reference systems.

### **Axis order**

Specifies how the database server interprets points with regards to latitude and longitude. When the *Spatial Reference System Type* is *Geographic*, the default axis order is *Long./Lat./Z/M*; *Lat./Long./Z/M* is also supported. When the *Spatial Reference System Type* is *Projected* or *Engineering*, the axis order is *X/Y/Z/M*.

### **Polygon format**

Specifies how the database should interpret polygons. Internally, SQL Anywhere formats its polygons counterclockwise; however other products can format their polygons differently.

The following is a list of polygon formats that are supported:

#### **Counterclockwise**

The inside of the polygon is on the left side while following ring orientation.

#### **Clockwise**

The inside of the polygon is on the right side while following ring orientation.

#### **EvenOdd**

The orientation of rings is ignored and the inside of the polygon is instead determined by looking at the nesting of the rings, with the exterior ring being the largest ring and interior rings being smaller rings

inside this ring. A ray is traced from a point within all rings, radiating outward. This is the default format.

### **Storage format**

Specifies the format that is used to store the spatial data.

Values include:

#### **Internal**

Only the normalized representation is stored. This is the default option when the *Line Interpretation* is *Planar*.

#### **Original**

Only the original representation is stored. The original input characteristics can be reproduced, but all operations on the stored values must repeat normalization steps, possibly slowing down the operations.

#### **Mixed**

Both the original and internal representations are stored, *if different*. The original representation characteristics can be reproduced and operations on stored values do not need to repeat normalization steps. This is the default option when the *Line Interpretation* is *Round Earth*.

### **Semi-major axis**

Specifies the distance from center of the earth to the equator.

### **Inverse flattening**

Specifies the inverse flattening ratio.

## **Related Information**

[SYSSPATIALREFERENCESYSTEM System View](#)

## **1.10.143 Spatial Reference System Properties Window: Coordinates Tab**

This tab has several components.

### **Latitude**

Specifies the bounds on the latitude dimensions. This option appears when the *Spatial Reference System Type* is *Geographic*.

#### **Bounded between North/South**

Specifies the north and south bounds.

#### **Unbounded**

Specifies to place no bounds on North/South.

### **Longitude**

Specifies the bounds on the longitude dimensions. This option appears when the *Spatial Reference System Type* is *Geographic*.

**Bounded between West/East**

Specifies the east and west bounds.

**Unbounded**

Specifies to place no bounds on West/East.

**X**

Specifies the bounds on the x-axis. This option appears when the *Spatial Reference System Type* is *Non-geographic*.

**Bounded between minimum/maximum**

Specifies the minimum and maximum bounds for the x-axis.

**Unbounded**

Specifies to place no bounds on x values.

**Y**

Specifies the bounds on the y-axis. This option appears when the *Spatial Reference System Type* is *Non-geographic*.

**Bounded between minimum/maximum**

Specifies the minimum and maximum bounds for the y-axis.

**Unbounded**

Specifies to place no bounds on y values.

**Z**

Specifies the bounds for the z values.

**Bounded between minimum/maximum**

Specifies the minimum and maximum bounds for z values.

**Unbounded**

Specifies to place no bounds on z values.

**M**

Specifies the bounds for the m values.

**Bounded between minimum/maximum**

Specifies the minimum and maximum bounds for m values.

**Unbounded**

Specifies to place no bounds on m values.

**Snap to grid**

Specifies the size of grid the database server uses when performing calculations. This option is disabled when the *Line Interpretation* is *Round Earth*.

By default, the database server automatically sets the grid size so that 12 significant digits can be stored for every point within the X and Y bounds. For example, if X is set to -180 and 180, and Y is set to -90 and 90, the database server sets the grid size to 0.000000001 (1E-9).



However, you can specify a custom *Snap To Grid*. If you specify a custom *Snap To Grid* value, the database server always uses the custom value instead, regardless of changes to the X and Y bounds.

#### **Tolerance**

Specifies the precision that the database server uses when comparing points. This option is disabled when the *Line Interpretation* is *Round Earth*.

If the distance between two points is less than what is specified, the two points are considered equal. Specifying a distance allows you to control the tolerance for imprecision in the input data or limited internal precision. By default, *Tolerance* is set to be equal to *Snap To Grid*.

#### **Linear unit of measure**

Specifies the linear unit of measure. The default is Metre.

For non-geographic spatial reference systems, when you change the *Linear Unit of Measure* the coordinate bounds are translated to the new unit of measure.

#### **Angular unit of measure**

Specifies the angular unit of measure. This option applies only to geographic spatial reference systems.

The default is *Degree* for geographic spatial reference systems and *Null* for non-geographic spatial reference systems.

For geographic spatial reference systems, when you change the *Angular Unit of Measure* the coordinate bounds on the *Settings* tab are translated to the new unit of measure.

## **1.10.144** *Spatial Reference System Properties Window: Transform Definition Tab*

This tab specifies the transform definition in use for the spatial reference system.

## **1.10.145** *SQL Remote Subscription Properties Window: General Tab*

This tab has several components.

#### **Name**

Shows the publication name with owner and the SQL remote user(s) who subscribed to the publication.

#### **Publication**

Shows the publication to which the SQL Remote user is subscribed.

#### **Subscriber**

Shows the SQL Remote user who is subscribed to the publication.

#### **Subscription value**

Shows the subscription value for the SQL Remote subscription. The subscription value is a string that is compared to the subscription expression of the publication. The subscriber receives all rows for which the subscription expression matches the subscription value.

## Related Information

[Subscriptions](#)

### 1.10.146 *SQL Remote Subscription Properties Window: Advanced Tab*

This tab has several components.

#### **Status**

Shows whether the subscription is started or stopped.

#### **Start subscription**

Click [Start Now](#) to manually start subscriptions. However, it is recommended that you let the Extraction utility (dbxtract) start subscriptions automatically.

#### **Stop subscription**

Click [Stop Now](#) to stop a subscription that has been started.

#### **Synchronize subscription**

Click [Synchronize Now](#) to synchronize subscriptions manually via a SYNCHRONIZE SUBSCRIPTION statement. However, it is recommended that you let the Extraction utility (dbxtract) synchronize subscriptions automatically.

## Related Information

[START SUBSCRIPTION Statement \[SQL Remote\]](#)

[STOP SUBSCRIPTION Statement \[SQL Remote\]](#)

[SYNCHRONIZE SUBSCRIPTION Statement \[SQL Remote\]](#)

[Extraction Utility \(dbxtract\)](#)

### 1.10.147 *SQL Statement Details Window*

The *SQL Statement Details* window has a *SQL Statement Details* pane and a *Query Information* pane.

The fields displayed vary with the SQL statement selected, so you may not see all the fields that are described below.

#### **SQL statement details**

The following information is provided for the SQL statement:

##### **Request ID**

Shows the request ID.

**SQL statement**

Shows the full text of the selected SQL statement. The text displayed for the statement may not match the original text. If this statement was captured after it was parsed by the database server (either because it is part of a compiled database object, such as a stored procedure or trigger, or because it was only selected for inclusion in the trace because it satisfied a sampling or cost condition), it may appear different than it was originally written. In particular, queries over views may appear drastically different since the view definitions are often flattened into the queries (expanded inline).

**Host/internal variables**

Shows host variables, internal variables, and their values for the selected SQL statement.

**Start time**

Shows the statement start time.

**Duration**

Shows the duration of the statement, which is the time the database server spent actually processing the request.

**Cursor close time**

Shows the cursor close time.

**Connection ID**

Shows the connection ID for the selected statement.

**User**

Shows the user ID for the selected statement.

**SQL error code**

Shows the numerical SQL error code associated with the error.

**Procedure/Trigger**

Shows the stored procedure or trigger related to the selected statement.

**Procedure/Trigger line number**

Shows the line number of the applicable procedure or trigger.

**Query information**

The following query information is provided for the SQL statement:

**Isolation level**

Shows the isolation level for the selected statement.

**Forward fetches**

Shows the number of forward fetches for the selected statement.

**Reverse fetches**

Shows the number of reverse fetches for the statement.

**Absolute fetches**

Shows the number of absolute fetches for the statement.

**First fetch time**

Shows the first fetch time for the selected database.

**Used optimizer bypass**

Shows whether the optimizer bypass was used.

#### **Actual text plan**

Shows the actual text plan.

#### **Plan at build time**

Shows the plan at build time. Click an object to display the details for that object. Click [Advanced Details](#) to display more details.

## **Related Information**

[Analysis of Diagnostic Tracing Information \(Deprecated\)](#)

[Advanced: Query Execution Plans](#)

## **1.10.148 Start Database Window**

This window has several components.

### **Server**

Shows the name of the selected database server on which the database starts.

### **Database file**

Type the full path and name of the database file on the server computer. For example: `C:\databases\mydatabase.db`.

### **Encryption key**

Specifies the encryption key to start the database. You must supply the encryption key to start a database that is strongly encrypted. This field only applies for strongly encrypted databases.

### **Database name**

Type a name for the database to which you are connecting. You can use a database name to provide a more meaningful name than the file name for users of client applications. Since more than one database can run on a database server at one time, supplying a database name lets you distinguish between databases running on the same database server. The name you supply identifies the database until it is stopped.

The database name is optional; but it is recommended. If you don't supply a database name, the default database name is the root of the database file name (the file name without the `.db` extension). For example, if you have a database called `sample.db`, the default database name is `sample`.

### **i Note**

Do not name your database `utility_db`. This name is reserved for the utility database.

### **Stop database after last disconnect**

Select this option to stop the database when the last connection to it closes. This option is different from the `-ga` server option, which automatically stops the database server.

## Related Information

[The Utility Database \(utility\\_db\)](#)  
[Database Encryption and Decryption](#)  
[Database Servers](#)  
[Database Connections](#)  
[Initialization Utility \(dbinit\)](#)

### 1.10.149 *Synchronize Using Synchronization Profile* Window

This tab has several components.

#### **Synchronization Profile**

Shows the name of the synchronization profile.

#### **Port**

Specifies the port that you want MobiLink to use. The default is 4433.

#### **Verbosity**

Select one of the following levels to specify the amount of information that is added to the synchronize\_results and synchronize\_parameters shared global temporary tables during synchronization:

##### **Low (Start and stop events, warnings and errors)**

Select to populate the synchronize\_results and synchronize\_parameters tables with start events, stop events, errors, and warnings.

##### **Normal (Low plus informational events)**

Select to populate the synchronize\_results and synchronize\_parameters tables with start events, stop events, errors, warnings, and informational events. This option is the default.

##### **High (Normal plus progress events)**

Select to populate the synchronize\_results and synchronize\_parameters tables with start events, stop events, errors, warnings, informational events, and progress events.

#### **Check For Messages Every**

Specifies how often to check for new messages.

### 1.10.150 *Synchronization Profile Properties* Window: *General*

This tab lists the properties of the synchronization profile.

## Related Information

[MobiLink Synchronization Profiles](#)

## 1.10.151 *Synchronization Profile Properties* Window: *Basic Dbmsync* Tab

This tab has several components.

### Subscriptions

Specifies the subscriptions to include in the synchronization profile for databases created with SQL Anywhere version 12.0.0 or later.

For databases created with an earlier version of SQL Anywhere, specifies the individual publications and the MobiLink users.

### Synchronization type

#### Bi-directional

Choose this option to perform bi-directional synchronizations.

#### Upload only

Choose this option to perform only upload synchronizations.

#### Download only

Choose this option to perform download-only synchronizations.

#### Continue download

Choose this option to restart previously failed downloads.

#### Create download file

Choose this option to create a download file. Specify the name of the download file. Use the file extension `.dlf` for download files.

You can optionally specify a path. If you do not specify a path, then the default location is the dbmsync current working directory, which is the directory where dbmsync was started.

#### Download file extra

Optionally, specify `-be filename` to specify a string that can be validated at the remote database.

Specify `-bg filename` to create a download file for remote databases that have not yet synchronized.

#### Update generation number

Specifies the generation number for the synchronization subscription.

Generation numbers provide a mechanism for forcing remote databases to upload data before applying any more download files. A separate generation number is automatically maintained for each synchronization subscription on the database.

#### Apply download file

Choose this option to apply the specified download file.

#### Ping

Choose this option to ping the MobiLink server. This option only confirms communications between the UltraLite client and the MobiLink server; it does not synchronize any data.

#### Transactional upload

Choose whether each transaction on the remote database should be uploaded as a separate transaction within one synchronization.

#### **Download read size**

For restartable downloads, specifies the maximum amount of data that may need to be re-sent after a communication failure.

**Keep partial download** Choose *OFF* or *ON*. If a download fails when this option is set to *ON*, then the MobiLink server saves the information necessary to restart the download later. This option is only available if the database is running on version 17, and you have selected one of the following options:

- *Bi-directional*
- *Download-only*
- *Create download file*

## **Related Information**

### [MobiLink Generation Numbers](#)

[-bc dbmlsync Option](#)

[-uo dbmlsync Option](#)

[-bc dbmlsync Option](#)

[-be dbmlsync Option](#)

[-bg dbmlsync Option](#)

[-ba dbmlsync Option](#)

[-pi dbmlsync Option](#)

[-tu dbmlsync Option](#)

[-ds dbmlsync Option](#)

[-drs dbmlsync Option](#)

## **1.10.152 Synchronization Profile Properties Window: Advanced Dbmlsync**

This tab has several components.

### **MobiLink Passwords**

#### **Password**

Type the password for the user. Passwords are case sensitive.

#### **New password**

Type the new password for the user. Passwords are case sensitive.

#### **Confirm new password**

Confirm the password that you typed in the *New Password* field by typing it again. The contents of the two fields must match exactly.

### **Verbosity**

Allows you to specify what information is logged to the dbmlsync message log file and is displayed in the dbmlsync messages window. A high level of verbosity may affect performance and should normally be used in the development phase only.

### **None**

Choose this option to turn off logging. This is the default.

### **Basic plus the following settings**

Choose this option to specify that a small amount of information should be logged. Select one or more of the following settings.

#### **Uploads**

Logs information about the upload stream.

#### **Downloads**

Logs information about the download stream.

#### **Row counts**

Logs the number of rows that are uploaded and downloaded.

#### **Row data**

Logs the values of rows that are uploaded and downloaded.

#### **Options**

Logs information about the command line options (including extended options) that you specified when starting dbmlsync.

#### **Hooks**

Logs messages related to hook scripts.

### **High**

Choose this option to turn on all logging options. A high level of verbosity may affect performance and should normally be used in the development phase only.

### **Connection strings**

Select this option to include the connection string in the dbmlsync message log.

### **MobiLink passwords**

Select this option to include the password in the dbmlsync message log.

### **Background synchronization**

Allows you to specify options to control the size of the cache dbmlsync uses when uploading and downloading data.

#### **Enable background synchronization**

Select this option to enable background synchronization.

#### **Number of retries for interrupted synchronizations**

- Select *Maximum* and specify an integer value. Dbmlsync retries the synchronization up to the number of times specified until it completes. After the specified number of attempts, if the synchronization has not completed, then it is run as a foreground synchronization so it can complete without interruption.  
If you specify 0, then dbmlsync does not retry the interrupted synchronization.



- Select *Unlimited*. to have dbmsync retry an interrupted synchronization until it completes, successfully or unsuccessfully, without being interrupted.

## Related Information

[Password and User ID Restrictions and Considerations](#)

[-v dbmsync Option](#)

[VerboseUpload \(vu\) Extended Option](#)

[VerboseRowCounts \(vn\) Extended Option](#)

[VerboseRowValues \(vr\) Extended Option](#)

[Verbose \(v\) Extended Option](#)

[VerboseHooks \(vs\) Extended Option](#)

[-v dbmsync Option](#)

[Background Synchronization Profile Option](#)

[BackgroundRetry Synchronization Profile Option](#)

### 1.10.153 *Synchronization Profile Properties Window:* *Miscellaneous Dbmsync*

This tab has several components.

#### **Authentication parameters**

Specifies the authentication parameters. Multiple values can be specified, separated by commas. The parameters are sent to the MobiLink server and passed to the `authenticate_parameters` script or other events on the consolidated database.

#### **Upload row count**

Specifies an estimate of the number of rows to be uploaded in a synchronization.

#### **Log rename size**

Specifies an estimate maximum size for the transaction log. After synchronization, if the transaction log is larger than the specified size then it is renamed and restarted. If you specify 0 then after synchronization, the database renames and restarts the transaction log.

#### **Ignore hook errors**

Specifies whether to ignore errors that occur in hook functions.

#### **Ignore scheduling**

Specifies whether to ignore scheduling instructions so that synchronization is immediate.

#### **Kill connections**

Specifies whether to drop conflicting locks to the remote database.

#### **On progress mismatch, use remote progress**

Choose the offsets to use when there is a disagreement between the remote and consolidated database offsets.

**Never**

Specifies that the remote offset should never be used to update the consolidated database. Instead, the values from the consolidated database should be used to update the offsets on the remote.

If there is any disagreement between the remote and consolidated database offsets, the default behavior is to update the offsets on the remote database with values from the consolidated database and then send a new upload based on those offsets.

**If less than consolidated progress**

Specifies that the remote offset should be used if it is less than the consolidated offset (such as when the remote database has been restored from backup). This is equivalent to the -rb option.

**If greater than consolidated progress**

Specifies that the remote offset should be used if it is greater than the consolidated offset. This option is provided only for very rare circumstances and may cause data loss. This is equivalent to the -ra option.

**Always**

Specifies that the remote offset should always be used.

## Related Information

### [Progress Offsets](#)

[-ap dbmlsync Option](#)

[-urc dbmlsync Option](#)

[-x dbmlsync Option](#)

[-eh dbmlsync Option](#)

[-is dbmlsync Option](#)

[-d dbmlsync Option](#)

[-r dbmlsync Option](#)

[-r dbmlsync Option](#)

## 1.10.154 *Synchronization Profile Properties* **Window: Connection**

This tab has several components.

### **Protocol**

Choose the communication protocol to use for synchronization. TCP/IP is used by default.

#### **TCP/IP**

Select this option to use the TCP/IP protocol for synchronization.

#### **TLS**

Select this option to use transport layer security (TLS) for synchronization.

#### **HTTP**

Select this option to use the HTTP protocol for synchronization.

#### **HTTPS**

Select this option to use the HTTPS protocol for synchronization.

### Host

Specifies the IP number or host name of the computer on which the MobiLink server is running. The default value is localhost. You can use localhost if the MobiLink server is running on the same computer as the client.

For Microsoft Windows Mobile, the default value is the value of ipaddr in the registry folder `Comm\Tcpip\Hosts\ppp_peer`. This allows a Microsoft Windows Mobile device to connect to a MobiLink server executing on the desktop computer where the Microsoft Windows Mobile device's cradle is connected.

### Port

Specifies the port number for the MobiLink server to communicate over. The default port number is 2439 for TCP/IP, 80 for HTTP, and 443 for HTTPS. If you choose a different value, you must configure your MobiLink server to listen on the port you specify.

### Proxy host

Specifies the host name or IP address of the proxy server. The default value is localhost. This option is only available for HTTP and HTTPS synchronization.

### Proxy port

Specifies the port number of the proxy server. The default value is 80 for HTTP and 443 for HTTPS. This option is only available for HTTP and HTTPS synchronization.

### URL suffix

Specifies the suffix to add to the URL on the first line of each HTTP request. The default value is *MobiLink*. When synchronizing through a proxy server, the suffix may be necessary to find the MobiLink server. This option is only available for HTTP and HTTPS synchronization.

### HTTP version

Specifies the value of HTTP to use for synchronization. You have a choice of 1.0 or 1.1. The default value is 1.1.

### Automatic connection

The following options allow MobiLink clients running on Microsoft Windows or Microsoft Windows Mobile to connect through dial-up network connections.

When used with scheduling, your remote device can synchronize unattended. When used without scheduling, you can run `dbmlsync` without manually dialing a connection.

### Network name

Specifies the network name so you can use the MobiLink auto-dial feature. This allows you to connect from Microsoft Windows or Microsoft Windows Mobile without dialing manually. The name should be the network name that you specified in the dropdown list [▶ Settings ▶ Connections ▶ Connections ▶](#) (Microsoft Windows Mobile) or [▶ Settings ▶ Connections ▶ Network Connections ▶](#) (Microsoft Windows).

### Leave open

When you supply a network name, you can optionally specify whether the connection should be left open (1) or closed (0) after synchronization finishes. By default, the connection is 0 (closed).

### Security

#### Cipher

### **Elliptic curves**

This option is only available for version 12 and earlier databases. Uses the elliptic-curve algorithm to encrypt connections. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

### **RSA**

Uses the RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

### **FIPS-certified**

Uses the FIPS-certified RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections. FIPS-certified encryption requires a separate license.

### **certificate\_company**

Type the name of the certificate authority or organization that issued the certificate. The server's and the client's values must match.

### **certificate\_unit**

Type the certificate unit. This is also called the organizational unit. The server's and the client's values must match.

### **certificate\_name**

Type the certificate's common name. The server's and the client's values must match.

### **trusted\_certificates**

Type the name of the certificate file the client uses to authenticate the server.

### **Advanced**

A semicolon-delimited list of `option=value` pairs.

## **Related Information**

[Synchronization Schedules](#)

[certificate\\_company](#) MobiLink Client Network Protocol Option

[certificate\\_unit](#) MobiLink Client Network Protocol Option

[certificate\\_name](#) MobiLink Client Network Protocol Option

[trusted\\_certificates](#) MobiLink Client Network Protocol Option

## **1.10.155 Synchronization Profile Properties Window: Extended Options**

This tab has several components.

Extended options that are set in the following list are stored in the database. Dbmlsync combines options stored in the database with those specified on the command line.

Option name	Description
<i>BufferDownload</i>	Specifies whether the entire download from the MobiLink server should be read into the cache before applying it to the remote database. The default is <i>True</i> .
<i>ConflictRetries</i>	Specifies the number of times dbmlsync retries the synchronization if the download fails because of conflicts.
<i>DisablePolling</i>	Disables automatic logscan polling.
<i>ErrorLogSendLimit</i>	Specifies how much of the remote message log file dbmlsync should send to the MobiLink server when a synchronization error occurs.
<i>FireTriggers</i>	Specifies that triggers should be fired on the remote database when the download is applied.
<i>HoverRescanThreshold</i>	When you are using scheduling, this option limits the amount of discarded memory that is allowed to accumulate before a rescan is performed.
<i>Increment</i>	Enables incremental uploads and controls the size of upload increments.
<i>LockTables</i>	Specifies that tables in the publications being synchronized should be locked before synchronizing.
<i>MirrorLogDirectory</i>	Specifies the location of old transaction log mirror files so that they can be deleted.
<i>NoSyncOnStartup</i>	Prevents dbmlsync from synchronizing on startup when a scheduling option would otherwise cause that to happen.
<i>OfflineDirectory</i>	Specifies the path containing offline transaction logs.
<i>PollingPeriod</i>	Specifies the logscan polling period.
<i>Schedule</i>	Sets a schedule for synchronization.
<i>ScriptVersion</i>	Specifies a script version.
<i>SendDownloadAck</i>	Specifies that a download acknowledgement should be sent from the client to the MobiLink server.
<i>SendTriggers</i>	Specifies that trigger actions should be sent on upload.
<i>TableOrder</i>	Sets the order of tables in the upload. Specify tables as a comma-separated list. You must specify all tables that are to be uploaded. If you include tables that are not included in the synchronization, they are ignored.

Option name	Description
<a href="#">TableOrderChecking</a>	Set this option to ON to make dbmlsync check that no table is uploaded before another table on which it has a foreign key. This option is only useful when the TableOrder extended option is specified.

## Related Information

[How dbmlsync Resolves Conflicting Options](#)

[MobiLink SQL Anywhere Client Extended Options](#)

## 1.10.156 *Synchronization Subscription Properties Window:* **General Tab**

This tab has several components.

### **Name**

Specifies the name of the synchronization subscription for databases created with SQL Anywhere version 12 and later. For databases created with an earlier version of SQL Anywhere, this field is disabled and it contains (*unnamed*).

### **Publication**

Shows the publication to which the MobiLink user is subscribed.

### **Script version**

Specifies the script version to use during synchronization. Typically, you must specify a new script version for each schema change you implement.

### **Subscriber**

Shows the MobiLink user who is subscribed to the publication.

### **Last download time**

Shows the time of the last download.

### **Last upload time**

Shows the time of the last upload.

### **Generation number**

Shows the generation number for the synchronization subscription.

Generation numbers provide a mechanism for forcing remote databases to upload data before applying any more download files. A separate generation number is automatically maintained for each synchronization subscription on the database.

## Related Information

[Script Versions](#)

[Subscriptions](#)

[MobiLink Generation Numbers](#)

[CREATE SYNCHRONIZATION SUBSCRIPTION Statement \[MobiLink\]](#)

### 1.10.157 *Synchronization Subscription Properties Window:* **Connection Tab**

The settings you can specify on the *Connection* tab depend on the communication protocol you are using.

Any additional parameters, such as `buffer_size`, can be set in the *Advanced* field.

This tab has the following components:

#### **Protocol**

Choose the communication protocol to use for synchronization. TCP/IP is used by default.

##### **TCP/IP**

Select this option to use the TCP/IP protocol for synchronization.

##### **TLS**

Select this option to use transport layer security (TLS) for synchronization.

##### **HTTP**

Select this option to use the HTTP protocol for synchronization.

##### **HTTPS**

Select this option to use the HTTPS protocol for synchronization.

#### **Host**

The IP number or host name of the computer on which the MobiLink server is running. The default value is `localhost`. You can specify `localhost` if the MobiLink server is running on the same computer as the client.

For Microsoft Windows Mobile, the default value is the value of `ipaddr` in the registry folder `Comm\Tcpip\Hosts\ppp_peer`. Specifying `ipaddr` allows a Microsoft Windows Mobile device to connect to a MobiLink server executing on the desktop computer where the Microsoft Windows Mobile device's cradle is connected.

#### **Port**

The MobiLink server communicates over a specific port. The default port number is 2439 for TCP/IP, 80 for HTTP, and 443 for HTTPS. If you choose a different value, you must configure your MobiLink server to listen on the port you specify.

#### **Proxy host**

Type the host name or IP address of the proxy server. The default value is `localhost`. This option is only available for HTTP and HTTPS synchronization.

#### **Proxy port**

Type the port number of the proxy server. The default value is 80 for HTTP and 443 for HTTPS. This option is only available for HTTP and HTTPS synchronization.

#### **URL suffix**

Type the suffix to add to the URL on the first line of each HTTP request. The default value is MobiLink. This option is only available for HTTP and HTTPS synchronization.

When synchronizing through a proxy server, the suffix may be necessary to find the MobiLink server.

#### **HTTP Version**

Select the value specifying the version of HTTP to use for synchronization. You have a choice of 1.0 or 1.1. The default value is 1.1.

#### **Automatic connection**

The following options allow MobiLink clients running on Microsoft Windows or Microsoft Windows Mobile to connect through dial-up network connections.

When used with scheduling, your remote device can synchronize unattended. When used without scheduling, you can run dbmlsync without manually dialing a connection.

#### **Network name**

Specifies the network name so that you can use the MobiLink auto-dial feature. This allows you to connect without dialing manually. The name should be the network name that you specified in the dropdown list in ► [Settings](#) ► [Connections](#) ► [Connections](#) ▾ (Microsoft Windows Mobile) or ► [Settings](#) ► [Connections](#) ► [Network Connections](#) ▾ (Microsoft Windows).

#### **Leave open**

When you supply a network name, you can optionally specify whether the connection should be left open (1) or closed (0) after synchronization finishes. By default, the connection is closed.

#### **Network connect timeout**

When you specify a network name, you can optionally specify a timeout after which the dial-up fails. This feature applies only to Microsoft Windows Mobile. (On Microsoft Windows, you can control this feature by configuring the connection profile.) The default is 120 seconds.

### **Security**

These options allow you to use an algorithm suite to encrypt all communication through this connection. You can provide information about the certificate used to authenticate the database server in the fields below for both the elliptic-curve and RSA algorithms.

#### **Cipher**

##### **Elliptic curves**

This option is only available for version 12 and earlier databases. Uses the elliptic-curve algorithm to encrypt connections. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

##### **RSA**

Uses the RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections.

##### **FIPS-certified**



Uses the FIPS-certified RSA algorithm to encrypt communications. You can use this algorithm to encrypt TLS over TCP/IP and HTTPS connections. FIPS-certified encryption requires a separate license.

#### **Trusted certificate**

- Select *File*, and type the name of the certificate file the client uses to authenticate the database server.
- Select *Name*, and choose a certificate from the dropdown list of certificates stored in the remote database

#### **Certificate company**

Type the name of the certificate authority or organization that issued the certificate. The server's and the client's values must match.

#### **Certificate unit**

Type the certificate unit. This is also called the organizational unit. The server's and the client's values must match.

#### **Certificate name**

Type the certificate's common name. The server's and the client's values must match.

#### **Advanced**

Type any additional connection parameters in this field, entering them in the form `parameter=value`, with multiple parameters separated by semicolons. For example, to set the maximum body size for a fixed content length message and to instruct the client to attempt to use the same TCP/IP connection for all HTTP requests in a synchronization, you would specify the following in the Advanced field:

```
buffer_size=58000;persistent=TRUE
```

## **Related Information**

[How dbmsync Resolves Conflicting Options](#)

[Synchronization Schedules](#)

[Transport Layer Security](#)

[CREATE SYNCHRONIZATION USER Statement \[MobiLink\]](#)

[-x dbmsync Option](#)

[CommunicationType \(ctp\) Extended Option](#)

[CommunicationAddress \(adr\) Extended Option](#)

## 1.10.158 *Synchronization Subscription Properties* **Window: Extended Options Tab**

This tab lists the extended options and the values set for the MobiLink user. Click the *Value* field beside the option name to set the value for the MobiLink user.

### Related Information

[How dbmlsync Resolves Conflicting Options](#)  
[MobiLink SQL Anywhere Client Extended Options](#)

## 1.10.159 *System Privilege Properties* **Window: General Tab**

This tab lists the properties for the system privilege.

### Related Information

[System Privileges](#)

## 1.10.160 *System Role Properties* **Window: General Tab**

This window has several components.

#### **Name**

Shows the name of the system role.

#### **Login policy**

Specifies the name of the login policy for the system role.

#### **Last login time**

Shows the date and time when the system role last logged in.

#### **Failed login attempts**

Shows the number of failed login attempts by the system role.

#### **Locked**

Shows whether the system role is locked. Shows *No* if the system role is not locked from the database.

#### **Unlock Now**

Click this button to unlock the system role from the database. [Unlock Now](#) is disabled if the system role's login policy has at least one of the following option settings:

- [locked=On](#)
- [password=On](#)
- [max\\_connections=0](#)
- [max\\_failed\\_login\\_attempts=0](#)

#### **Distinguished Name**

Shows the system role's Distinguished Name (DN) if the user was authenticated by an LDAP server.

#### **Clear Now**

Clears the cached DN from the database for this system role, causing the database server to refetch the DN when the system role next authenticates to the LDAP server.

## **Related Information**

[Roles](#)  
[System Roles](#)

### **1.10.161 System Role Options Window**

This window has several components.

#### **i Note**

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

#### **System Role**

Shows the name of the selected system role.

#### **Show**

Provides a list of option types. For example, if you choose [Database Options](#), only database-related options appear in the [Options](#) list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the [Show](#) list.

#### **Value**

Choose an option in the [Options](#) list, and then type or select the setting in the [Value](#) field. You can make the setting permanent by clicking [Set Permanent Now](#). An option value cannot be set for an individual role unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window:

#### **New**

This button is only enabled when you are setting options for the PUBLIC role.

### Remove Now

This button is enabled for the PUBLIC role when an option is selected. This button is enabled for non-PUBLIC roles and users only when there is a value in the *Setting* column.

### Set Permanent Now

To change a setting for a user permanently, select an option, type the setting in the *Value* field, and then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)

[Changing Database Options \(SQL Central\)](#)

[SET OPTION Statement](#)

## 1.10.162 *System Trigger Properties* Window: *General* Tab

This tab has several components.

### Name

Shows the name of the foreign key constraint to which the system trigger applies.

### Foreign table

Shows the table containing the foreign key.

### Primary table

Shows the table containing the primary key or unique constraint in the foreign key relationship.

### Event

Shows which kind of event, *Update Columns* or *Delete*, causes the system trigger to execute.

### Timing

Shows whether the trigger executes before or after the event.

### Action

Shows which of the available referential integrity actions is used for updates and deletes of the primary key:

#### Set values to null

Sets all foreign keys that reference the modified primary key to NULL.

#### Set values to default

Sets all foreign keys that reference the modified primary key to the default value for that column (as specified in the table definition).

#### Cascade values

When used with ON UPDATE, this action updates all foreign keys that reference the updated primary key to the new value. When used with ON DELETE, this action deletes all rows containing foreign keys that reference the deleted primary key.

## Related Information

[Referential Integrity Actions](#)

### 1.10.163 *Table Properties* Window: *General* Tab

This tab has several components.

#### **Name**

Shows the name of the table. You can change the name of the table in this field.

#### **Owner**

Shows the database user who owns the table.

#### **Dbpace**

Shows the database file (or dbspace) where the table is located. This field only applies to base tables.

#### **Commit action**

This field only appears when the table was created as a global temporary table. Shows whether the rows of the table are deleted or preserved when a COMMIT is executed. If there is no commit action, it shows None (non-transactional).

#### **Shared**

This field only appears when the table was created as a global temporary table. Shows whether the table is shared across all connections.

## Related Information

[Tables](#)

[CREATE TABLE Statement](#)

### 1.10.164 *Table Properties* Window: *Columns* Tab

Lists all the columns of the table, and their ID, data type, and comments.

Select a column from the list and click to display the [Column Details](#) window, which shows a summary of the properties for the column.

## Related Information

[Tables](#)

[Managing Primary Keys \(SQL Central\)](#)

## 1.10.165 *Table Properties* Window: *Miscellaneous* Tab

This tab has several components.

### **Number of rows**

Shows the approximate number of rows in the table. To update this value, click *Calculate*.

### **Calculate**

Calculates the number of rows in the table.

### **Free space**

Specifies the amount of free space you want to reserve for each table page. The free space is used if rows increase in size when the data is updated. If there is no free space in a table page, every increase in the size of a row on that page requires the row to be split across multiple table pages, causing row fragmentation and possible performance degradation.

### **Default**

Choose this option to reserve the default amount of free space in each page. By default, 200 bytes are reserved in each page. This option only applies to base tables.

### **Percentage**

Choose this option to specify an integer between 0 and 100. The former specifies that no free space is to be left on each page; each page is to be fully packed. A high value causes each row to be inserted into a page by itself.

### **Table data is encrypted**

Select this option to encrypt this table's data, when the database is created with table encryption scope. This option only applies to base tables.

## **Related Information**

[Tables](#)

[ALTER TABLE Statement](#)

## 1.10.166 *Change Owner* Window

Use this window to change the owner of a table.

## **Related Information**

[Table Alteration](#)

[Altering a Table](#)

[ALTER TABLE Statement](#)

## 1.10.167 *Text Configuration Object Properties Window: General Tab*

This tab lists the properties of the text configuration object including the collation that it uses.

### Related Information

[Text Configuration Object Concepts and Reference](#)

## 1.10.168 *Text Configuration Object Properties Window: Settings Tab*

This tab has several components.

#### Term breaker

Select one of the following algorithms to use for separating column values into terms:

##### Generic

The Generic algorithm treats as a term any string of one or more alphanumerics, separated by non-alphanumerics.

##### N-gram

The N-gram algorithm breaks the strings into n-grams. An n-gram is an n-character substring of a larger string. N-grams are useful for approximate matching or for documents that do not use a whitespace to separate terms.

#### Minimum term length

Specifies the minimum length, in characters, of terms allowed in the text index. Terms that are shorter than this setting are ignored when building or refreshing the text index.

#### Maximum term length

Specifies the maximum length, in characters, of terms allowed in the text index. Terms that are longer than this setting are ignored when building or refreshing the text index.

#### Use external term breaker

Select to specify an external library function to break the text into terms. This option appears when the *Term Breaker* is set to *Generic*.

##### Function & library

Specifies the external term breaker function and library.

The function and library must be specified in the form: `function-name@library-file-name`. To use different function and library names on Microsoft Windows and UNIX/Linux platforms, you can specify them in the form: `function-name@library-file-name.dll;UNIX:function-name@library-file-name.so`.

For example, `TermBreakFunct1@myTBlib.dll;UNIX:TermBreakFunct2@myTBlib` calls the `TermBreakFunct1` on Microsoft Windows, and the `TermBreakFunct2` on UNIX/Linux.

### Use external prefilter

Select to specify an external library function to perform document filtering before term breaker processing. An external prefilter is useful if the text you want to index contains formatting information and/or images. A prefilter allows you to convert the document to plain text by removing formatting information and images.

#### Function & library

Specifies the external prefilter function and library.

The function and library must be specified in the form: `function-name@library-file-name`. To use different function and library names on Microsoft Windows and UNIX/Linux platforms, you can specify them in the form: `function-name@library-file-name.dll;UNIX:function-name@library-file-name.so`.

For example, `PrefilterFunct1@myTBlib.dll;UNIX:PrefilterFunct2@myPreFilterlib` calls the `PrefilterFunct1` on Microsoft Windows, and the `PrefilterFunct2` on UNIX/Linux.

## Related Information

[What to Specify When Creating or Altering Text Configuration Objects](#)

[Text Configuration Object Concepts and Reference](#)

[ALTER TEXT CONFIGURATION Statement](#)

## 1.10.169 *Text Configuration Object Properties* **Window: Stolist Tab**

This tab has several components.

### **This text configuration object's stolist contains the following terms**

Shows the list of terms that are ignored when building the text index. If a term is listed in the stolist, the term should not be used in subsequent searches that use the text index since the term would not be found in the text index. You can create or replace any or all listed terms.

#### **Sort terms**

Click this button to alphabetically sort the terms in the list.



## Related Information

[Text Configuration Object Concepts and Reference](#)  
[ALTER TEXT CONFIGURATION Statement](#)

### 1.10.170 *Text Configuration Object Properties Window: Options*

This tab has several components.

**This text configuration object was created with the following option settings**

Lists the options that were set when the text configuration object was created.

**date\_format**

Sets the format for dates retrieved from the database. The default is YYYY-MM-DD.

**time\_format**

Sets the format for times retrieved from the database. The default is HH:NN:SS.sss.

**timestamp\_format**

Sets the format for timestamps that are retrieved from the database. The default is YYYY-MM-DD HH:NN:SS.SSS. For SAP Open Client and JDBC connections the default is set to YYYY-MM-DD HH:NN:SS.SSS.

**timestamp\_with\_time\_zone\_format**

Sets the format for TIMESTAMP WITH TIME ZONE values retrieved from the database.

**uuid\_has\_hyphens**

Sets the formatting of unique identifier values when they are converted to strings.

## Related Information

[What to Specify When Creating or Altering Text Configuration Objects](#)

[date\\_format Option](#)

[time\\_format Option](#)

[timestamp\\_format Option](#)

[timestamp\\_with\\_time\\_zone\\_format Option](#)

[uuid\\_has\\_hyphens Option](#)

### 1.10.171 *Text Index Properties Window: General Tab*

This tab specifies information about the selected text index.

**Name**

Shows the name of the text index.

### **Table or Materialized View**

Shows the name of the table or the materialized view that is indexed, with the name of the owner in parentheses.

### **DbSPACE**

Shows the database file (or dbSPACE) the text index is associated with.

### **Text configuration object**

Shows the name and owner of the text configuration object for the text index.

### **Initialized**

Shows whether the text index is initialized. You must initialize a text index to make it available for use by the database server. To initialize the text index, click [Refresh Now](#).

The following options appear when the text index applies to a table and the refresh type for the text index is manual or automatic:

#### **Refresh Now**

Click this button to refresh the text index; you are prompted to choose an isolation level to refresh the text index. Refreshing a text index also initializes it.

#### **Truncate Now**

Click this button to delete all the rows in the text index and to change the state to uninitialized.

### **Refresh type**

Shows the type of refresh rate specified for the index.

#### **Immediate**

The database server automatically refreshes this text index immediately after changes to underlying data affect data in the text index. This refresh type is the default, and it is the only refresh type for text indexes on materialized views.

Once a text index is created, you cannot change it to or from immediate refresh. If either of these changes is required, you must drop the text index and recreate it.

#### **Manual**

You must refresh this text index manually; for example, by clicking [Refresh Now](#). Data in manual text indexes can become stale because manual text indexes are not refreshed until a refresh is explicitly requested.

#### **Automatic**

The text index is automatically refreshed using a time interval that you specify. If some data staleness is acceptable, you can choose this refresh type and specify how frequently the database server refreshes the text index. A query on a stale index returns matching data as of the last refresh. Rows that have been inserted, deleted, or updated since the last refresh are not returned by the query.

### **Last refresh time**

Shows the date and time that the text index was last refreshed.

## **Related Information**

[Text Index Refresh Types](#)

[Text Index Concepts and Reference](#)  
[Isolation Levels and Consistency](#)  
[Guidelines for Choosing Isolation Levels](#)  
[REFRESH MATERIALIZED VIEW Statement](#)  
[TRUNCATE Statement](#)

## 1.10.172 *Text Index Properties Window: Columns Tab*

Lists all the columns of the table, and their ID, data type, and comments.

Select a column from the list and click to display the *Column Details* window, which shows a summary of the properties for the column.

### Related Information

[Text Index Concepts and Reference](#)

## 1.10.173 *Refresh Data (Text Index) Window*

Select one of the following isolation levels to specify the type of locking to use on the underlying base tables during the refresh.

The type of locking determines how the materialized view is populated and how concurrency for transactions is affected.

#### **Read uncommitted (level 0)**

This option provides the maximum level of concurrency, but dirty reads, non-repeatable reads, and phantom rows may be observed in result sets.

#### **Read committed (level 1)**

This option provides less concurrency than level 0, but eliminates some of the inconsistencies in result sets at level 0. Non-repeatable rows and phantom rows may occur, but dirty reads are prevented.

#### **Repeatable read (level 2)**

This option prevents dirty reads and non-repeatable rows. Phantom rows may occur.

#### **Serializable (level 3)**

This option provides the least concurrency, and is the strictest isolation level. Dirty reads, non-repeatable reads, and phantom rows are prevented.

#### **Snapshot**

This option uses a snapshot of committed data from the time when the first row is read, inserted, updated, or deleted by the transaction. Snapshot is the default if the view is a manual view and snapshot isolation in the database is in use.

#### **Share mode**

This option provides read access on underlying tables to other transactions while the refresh operation takes place. When this clause is specified, shared table locks are obtained on all underlying base tables before the refresh operation is performed and until the refresh operation completes.

Share mode is the default if the view is a manual view and snapshot isolation in the database is not in use. Share mode is also the default if the view is an immediate view, regardless of whether snapshot isolation is enabled.

#### **Exclusive mode**

This option places exclusive table locks on all underlying base tables. No other transaction can execute queries, updates, or any other action against the underlying table(s) until the refresh operation is complete. If exclusive table locks cannot be obtained, the refresh operation fails and an error is returned.

Choose this mode if you do not want to change the isolation level, but want to guarantee that the data is updated to be consistent with committed data in the underlying tables.

## **Related Information**

[Guidelines for Choosing Isolation Levels](#)  
[Isolation Levels and Consistency](#)  
[REFRESH TEXT INDEX Statement](#)

### **1.10.174** *Time Zone Properties* **Window: General Tab**

Use this tab to adjust your time zone settings.

## **Related Information**

[Time Zone Management](#)  
[ALTER TIME ZONE Statement](#)

### **1.10.175** *Time Zone Properties* **Window: Daylight Savings Time Tab**

Use this tab to adjust your daylight savings time settings.

## **Related Information**

[Time Zone Management](#)

## 1.10.176 *Trigger Event Window*

This window has several components.

### **Event**

Displays the name of the event.

### **Parameters**

Type any event parameters in this field in the form `name=value,name=value . . . .`

If the event does not require any parameters, click *OK* to trigger the event.

This window allows you to explicitly supply parameters to simulate a context for the event handler. You can use this window to test trigger conditions such as disk space restrictions (when a disk fills beyond a specified percentage) or other trigger conditions that are required to trigger an event handler.

For example, you can have an event that takes different actions depending which user ID is connected to the database: calling the event parameter ( `'User'` ) in the event handler does this. To simulate triggering this event for the user P\_Chin, type the following in the Parameters text box: `"User"='P_Chin'`.

The word User must be contained in double quotes because it is a reserved word in SQL.

## **Related Information**

[Task Automation Using Schedules and Events](#)

[Triggering an Event Handler](#)

[TRIGGER EVENT Statement](#)

[EVENT\\_CONDITION Function \[System\]](#)

## 1.10.177 *Trigger Properties Window: General Tab*

This window has several components.

### **Name**

Shows the name of the trigger.

### **Table**

Shows the table with which the trigger is associated.

### **View**

Shows the view with which the trigger is associated. This field is only shown if the Trigger is on a view.

### **Dialect**

Shows the SQL dialect in which the code was last saved, either Watcom SQL or Transact-SQL.

The value (*unknown*) is displayed if the object definition is too large (greater than 64 KB).

#### **Event**

Shows which kind of event, Insert, Delete, Update, or Update Columns, causes the trigger to execute.

#### **Timing**

Shows whether the trigger executes before, after, or instead of the event. Row-level triggers can also have SQL Remote conflict timing, which executes before UPDATE or UPDATE OF column-list events.

#### **Level**

Shows whether the trigger is a row-level trigger or a statement-level trigger.

#### **Order**

Shows a number that determines the order in which these triggers fire, for triggers in the table that execute for the same kind of event with the same timing. The order cannot be set for an INSTEAD OF trigger. If Timing is set to INSTEAD OF, this property does not appear.

## **Related Information**

[Stored Procedures, Triggers, Batches, and User-defined Functions](#)

[INSTEAD OF Triggers](#)

[Documenting a Database \(SQL Central\)](#)

[CREATE TRIGGER Statement](#)

## **1.10.178 *Unique Constraint Properties* Window: *General* Tab**

This tab has several components.

#### **Name**

Shows the name of the unique constraint. You can change the name of the unique constraint in this field.

#### **Table**

Shows the name and owner of the table to which the unique constraint applies.

#### **Index**

Shows the name of the index used to enforce the unique constraint.

## **Related Information**

[CREATE TABLE Statement](#)

## 1.10.179 *Unique Constraint Properties* Window: *Columns* Tab

Lists all the columns in the unique constraint, and their type and comments.

Click [Details](#) to display the *Column Details* window, which shows a summary of the properties for the selected column.

### Related Information

[CREATE TABLE Statement](#)

## 1.10.180 *Unit of Measure Properties* Window: *General* Tab

This tab has several components.

#### **Name**

Shows the name of the unit of measure.

#### **Unit type**

Specifies whether the unit of measure is used for angles or distances:

##### **Linear**

Specifies that the unit of measure is used for distances.

##### **Angular**

Specifies that the unit of measure is used for angles.

#### **Conversion factor**

Specifies the conversion factor for the spatial unit relative to the base unit.

#### **Comment**

Specifies a description of the unit of measure.

### Related Information

[Units of Measure](#)

[Creating a Unit of Measure](#)

## 1.10.181 *Unload Data* Window

This window has several components.

#### **Data files**

### **Save the data files on the server computer using UNLOAD statements**

Select this option to export data to files on the server computer. Selecting this option places an exclusive lock on the whole table while you are unloading it. UNLOAD statements provide better performance than OUTPUT statements. In the file, the data is exported with one row per line, values are separated by a comma delimiter, and strings are enclosed in single quotes. The [Browse](#) button is disabled if you select this option and the database is not running on the local computer.

### **Save the data files on the local computer using OUTPUT statements**

Select this option to export data files on the local computer. In the file, the data is exported with one row per line, values are separated by a comma delimiter, and strings are enclosed in single quotes.

### **Save the data files in the following directory**

Type the directory where you want the data saved. If you choose to save the data files on the server computer, relative file names specify files relative to the database server's starting directory.

### **Order data by primary key**

Select this option to order the exported data in order by primary key values to make reloading quicker.

## **Reload file**

### **Save the reload file to the following file on the local computer**

Type a name and location for the `reload.sql` file that is used to reload the data.

### **Use LOAD statements to reload the data from the server computer**

Select this option to use LOAD statements to reload the data. LOAD statements provide better performance than INPUT statements. Choose this option if the file names referenced in the `reload.sql` file are relative to the server computer.

### **Use INPUT statements to reload the data from the local computer**

Select this option to use INPUT statements to reload the data. Choose this option if the file names referenced in the `reload.sql` file are relative to the local computer.

## **Related Information**

[Data Import with the LOAD TABLE Statement](#)

[UNLOAD Statement](#)

[OUTPUT Statement \[Interactive SQL\]](#)

[LOAD TABLE Statement](#)

[INPUT Statement \[Interactive SQL\]](#)



## 1.10.182 *Update External Environment Object* Window

Specifies the location of the updated external object.

### Related Information

[External Environment Support](#)

## 1.10.183 *Update JAR File* Window

This window has several components.

#### **Where is the updated filename JAR file located?**

In the text box, type the path of the JAR file that you want to update. For example, `C:\my JAR files\Silver.jar`.

#### **Install all classes**

Select this option to install all the classes in this JAR file.

#### **Install selected classes**

Select this option to identify specific classes to install from the selected JAR file. Separate each class with a comma. You can click [Select](#) to view a list of classes in the selected JAR file.

### Related Information

[Tutorial: Using Java in the Database](#)

## 1.10.184 *Update Java Class* Window

This window has several components.

#### **Where is the updated filename Java Class file located?**

Type the complete path of the Java class that you want to update. For example: `C:\my classes\Utility.class`.

### Related Information

[Tutorial: Using Java in the Database](#)

## 1.10.185 *User Options* Window

This window has several components.

### **i** Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

#### **User**

Shows the name of the selected user.

#### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

#### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list.

#### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for an individual user ID unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window.

#### **New**

This button is only enabled when you are setting options for the PUBLIC role.

#### **Remove Now**

This button is enabled for the PUBLIC role when an option is selected. This button is enabled for non-PUBLIC roles and users only when there is a value in the *Setting* column.

#### **Set Permanent Now**

To change a setting for a user permanently, select an option, type the setting in the *Value* field, and then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)

[Users](#)

[Changing Database Options \(SQL Central\)](#)

[SET OPTION Statement](#)

## 1.10.186 *User Properties Window: General tab*

This tab has several components.

### **Name**

Shows the name of the user.

### **This user has a password**

Select this option to assign the user a password or clear this option to remove the user's password. A user cannot connect without an assigned password. However, the presence of a password does not guarantee that the user can connect. For example, the user account may be locked.

### **i Note**

You cannot change a user's password by using SQL Central if the user has the `change_password_dual_control` option enabled in their login policy.

### **Password**

Type the password for the user. Passwords are case sensitive.

### **Confirm password**

Confirm the password that you typed in the *Password* field by entering it again. The contents of the two fields must match exactly.

### **Password creation time**

Shows the date and time when the current password was created.

### **Require a new password to be specified at next login**

Select this option to require the user to create a new password at the next login.

### **Login policy**

Specifies the name of the login policy for the user.

### **Last login time**

Shows the date and time when the user last logged in.

### **Failed login attempts**

Shows the number of failed login attempts by the user.

### **Locked**

Shows whether the user's account is locked.

### **Unlock Now**

Click this button to unlock the user's account from the database. *Unlock Now* is disabled if the user's login policy has at least one of the following option settings:

- `locked=On`
- `max_connections=0`
- `max_failed_login_attempts=0`

### **Distinguished Name**

Shows the user's Distinguished Name (DN) if the user was authenticated by an LDAP server.

### **Clear Now**

Clears the cached DN from the database for this user, causing the database server to refetch the DN when the user next authenticates to the LDAP server.

## Related Information

[Dual Control Passwords](#)  
[Password and User ID Restrictions and Considerations](#)  
[Login Policies](#)  
[LDAP User Authentication](#)  
[GRANT Statement](#)

### 1.10.187 *User Properties Window: Authorities Tab*

This tab applies to version 12.0.1 and earlier databases and has several components.

#### **DBA**

Select this option to grant DBA authority to the user; a user with DBA authority can fully administer the database.

#### **Resource**

Select this option to grant resource authority to the user; a user with resource authority can create database objects.

#### **Remote DBA**

Select this option to grant Remote DBA authority to the user. The MobiLink client utility (dbmlsync) requires Remote DBA authority. The SQL Remote Message Agent (dbremote) should also be run using a user ID with this type of authority to ensure that actions can be performed without creating security loopholes.

#### **Backup**

Select this option to grant backup authority to the user.

#### **Validate**

Select this option to grant validate authority to the user; a user with validate authority can perform the operations executed by the different VALIDATE statements, such as database, table, index, and checksum validation.

#### **Profile**

Grants profiling and database tracing capabilities to the user.

#### **Read file**

Grants the ability to use query files using the OPENSTRING clause of the SELECT statement.

#### **Read Client File**

Grants the ability to read a file on the client computer.

#### **Write Client File**

Grants the ability to write to a file on the client computer.

## 1.10.188 *User-extended Role Properties* Window: *General* tab

A user-extended role is a user that has been extended to be a role, and is a type of user-defined role. Use this tab view the properties of the user-extended role and reset its password.

### **Name**

Shows the name of the user-extended role.

### **This user-extended role has a password**

Select this option to assign the user-extended role a password. A user cannot connect without an assigned password. However, the presence of a password does not guarantee that the user can connect. For example, the user account may be locked. Clearing this option removes the user's password and disables the *Password* and *Confirm password* fields.

### **i Note**

You cannot change a user's password by using SQL Central if they have the `change_password_dual_control` option enabled in their login policy.

### **Password**

Type the password for the user-extended role. Passwords are case sensitive.

### **Confirm password**

Confirm the password that you typed in the *Password* field by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

### **Password creation time**

Shows the date and time when the current password was created.

### **Require a new password to be specified at next login**

Select this option to require the user to create a new password at the next login.

### **Login policy**

Specifies the login policy for the user.

### **Last login time**

Shows the date and time when the user last logged in.

### **Failed login attempts**

Shows the number of failed login attempts by the user.

### **Locked**

Shows whether the user's account is locked. Shows *No* if the user is not locked from the database.

### **Unlock Now**

Click this button to unlock the user's account from the database. *Unlock Now* is disabled if the user's login policy has at least one of the following option settings:

- `locked=On`
- `max_connections=0`
- `max_failed_login_attempts=0`

### **Distinguished Name**

Shows the user's Distinguished Name (DN) if the user was authenticated by an LDAP server.

### Clear Now

Clears the cached DN from the database for this user, causing the database server to refetch the DN when the user next authenticates to the LDAP server.

## Related Information

[User-extended Roles](#)

[Dual Control Passwords](#)

[Password and User ID Restrictions and Considerations](#)

[GRANT Statement](#)

## 1.10.189 *User-extended Role Options* Window

This window has several components.

### **i** Note

When you change options settings, some of the settings take effect immediately, while for others to take effect you must restart the database.

### **User-extended role**

Shows the name of the selected user-extended role.

### **Show**

Provides a list of option types. For example, if you choose *Database Options*, only database-related options appear in the *Options* list.

### **Options list**

Shows the option settings and default values based on the type of options selected in the *Show* list.

### **Value**

Choose an option in the *Options* list, and then type or select the setting in the *Value* field. You can make the setting permanent by clicking *Set Permanent Now*. An option value cannot be set for a user-defined role unless there is already a PUBLIC role setting for that option.

Once you select an option, you can use the buttons at the side of the window.

### **New**

This button is only enabled when you are setting options for the PUBLIC role. You must open the *Options* window for the PUBLIC role to add new options.

### **Remove Now**

This button is enabled for the PUBLIC role when an option is selected. This button is enabled for non-PUBLIC roles and users only when there is a value in the *Setting* column.

### **Set Permanent Now**

To change a setting for a user-extended role permanently, select an option, type the setting in the *Value* field, and then click *Set Permanent Now*.

## Related Information

[Alphabetical List of Database Options](#)  
[Changing Database Options \(SQL Central\)](#)  
[SET OPTION Statement](#)

### 1.10.190 *View Properties Window: General Tab*

This tab has several components.

#### **Name**

Shows the name of the view.

#### **Owner**

Shows the database user who owns the object.

#### **Status**

Shows the status of the object.

If the status is *Valid*, the view is valid and is guaranteed to be consistent with its definition. The database server can make use of this view without any additional work.

If the status is *Invalid*, the view is invalid. A view can become invalid after a schema change to a referenced object where the change results in an unsuccessful attempt to enable the view. Views can also become invalid if a table or view that they reference is dropped. Each time an invalid view is referenced, for example by a query, the database server tries to recompile the view. If the compilation succeeds, the query proceeds. The view's status remains invalid until it is explicitly enabled. If the compilation fails, an error is returned.

If the status is *Disabled*, the view has been explicitly disabled by the user. Disabled views are not available for use by the database server for answering queries. Any query that attempts to use a disabled view returns an error.

#### **Recompile and Enable Now**

Click this button to recompile and enable the view, making it available for use by the database server.

Before you enable a view, you must re-enable any other views that it references (if they are disabled).

#### **Disable Now**

Click this button to disable the view. The database server keeps the definition of the view in the database, but makes the view unusable.

Disabling a view can affect queries that explicitly reference it, and other views that reference it, directly or indirectly.

## Related Information

[Statuses for Regular Views](#)

[Views](#)

[Disabling or Enabling a Regular View \(SQL Central\)](#)

[Documenting a Database \(SQL Central\)](#)

[Creating a Regular View](#)

[CREATE VIEW Statement](#)

### **1.10.191** *View Properties Window: Columns Tab*

This tab lists the columns included in the view.

Click *Details* to display the *Column Details* window for the selected column. The *Column Details* window shows the name, type, whether NULLs are allowed, and comment for the selected column.

#### **Related Information**

[Views](#)

### **1.10.192** *Variable Properties Window: General Tab*

This tab lists the properties of the variable.

#### **Related Information**

[SQL Variables](#)

[CREATE VARIABLE Statement](#)

### **1.10.193** *Variable Properties Window: Data Type Tab*

This tab lists the data type of the variable.

#### **Related Information**

[SQL Variables](#)

[CREATE VARIABLE Statement](#)

[SQL Data Types](#)



## 1.10.194 Variable Properties Window: Values Tab

Use this tab to view and edit the initial values for the variable.

### Related Information

[SQL Variables](#)

[CREATE VARIABLE Statement](#)

[SET Statement](#)

## 1.10.195 Web Service Properties Window: General Tab

This tab has several components.

### Name

Shows the name of the selected web service.

### Enabled

Select this option to enable the web service to listen for requests over HTTP or HTTPS. By default, database servers do not listen for web service requests, leaving no way for clients to access any services that may be defined in your database. If you clear this option, the database server keeps the definition of the web service in the database, but makes the web service unusable.

### Service type

Shows whether the selected web service is a RAW, XML, HTML, JSON, SOAP, or DISH web service. You can change the service type by choosing a different type from the dropdown list.

### URL path

Specifies whether URL paths are accepted, and if so, how they are processed.

#### Off

Select this option if the remainder of the URL path is not permitted. If the service name ends with a forward slash (/), select Off. For example, if Off is selected and you have the URL path `http://<host-name>/<service-name>/aaa/bbb/ccc`, only `http://<host-name>/<service-name>` is permitted. The remainder of the URL path, `/<aaa/bbb/ccc` is not permitted.

#### On

Select this option if the remainder of the URL path is permitted and is set as a single parameter. For example, in the URL path `http://<host-name>/<service-name>/aaa/bbb/ccc`, the remainder of the URL path is `/aaa/bbb/ccc`. It is treated as a single parameter.

#### Elements

Select this option if the remainder of the URL path is permitted and is set as multiple parameters. For example, in the URL path `http://<host-name>/<service-name>/aaa/bbb/ccc`, each element of the path is treated as a separate parameter. For example, `url1=aaa`, `url2=bbb`, `url3=ccc`, and so on.

### Format

This field applies only to SOAP and DISH services.

Generates output formats compatible with various types of SOAP clients, such as .NET or Java JAX-RPC. If a SOAP service's format is not specified, the format is inherited from the service's DISH service declaration. If the DISH service does not declare a format, it defaults to DNET, which is compatible with .NET clients. A SOAP service that does not declare a format can be used with different types of SOAP clients by defining multiple DISH services, each with a different format type.

#### **Expose an explicit response object**

This option only affects the WSDL document that is generated. Select this option to have the DISH service return an XML schema that explicitly describes the result set. It returns all the column names and their data types in the result set.

If you don't select this option, then the DISH service returns an XML schema (a WSDL document) that describes the generic SimpleDataset object. The SimpleDataset describes a rowset consisting of rows and columns; no column name or data type information is returned.

#### **Data type**

This field only applies to SOAP services. The possible values are:

##### **OFF**

No data typing of inputs and outputs. This is the default.

##### **ON**

Supports data typing of input parameters and result set responses.

##### **IN**

Supports data typing of input parameters only.

##### **OUT**

Provides data type information for result set responses of all SOAP service formats.

#### **Service name prefix**

This field applies only to DISH services. Only SOAP services whose names begin with this prefix are handled by the DISH service.

#### **Methods**

Select one or more of the following request methods: HEAD, GET, POST, PUT, or DELETE.

#### **Authorization required**

Indicates whether users must authenticate to use this web service.

Select this option to indicate that authorization is required. When authorization is required, all users connecting to this service must provide a user name and password. If a checkmark appears beside the *User* field, you must authenticate as the specified user to use this web service. However, if a checkmark does not appear beside the *User* field and authentication is required, then you can authenticate with any database user to use this web service.

If authorization is not required, you must choose a user from the dropdown list below. All requests are run using the account and permissions of the user specified in the *User* field.

#### **User**

Shows which user account is used to execute service requests. If the service does not require authorization, you must choose a user from the dropdown list.

#### **Security required**

Shows whether unsecured connections are accepted. Select this option to indicate that the web service requires security. If the web service requires security, then only secure (HTTPS) connections are accepted. If this option is cleared, then both HTTP and HTTPS connections are accepted.

## Related Information

[How to Start an HTTP Web Server](#)

[Web Client Application Development](#)

[SOAP Data Types](#)

[The Database Server as an HTTP Web Server](#)

[How to Browse a SQL Anywhere HTTP Web Server](#)

[CREATE SERVICE Statement \[HTTP Web Service\]](#)

[CREATE SERVICE Statement \[SOAP Web Service\]](#)

## 1.10.196 *Web Service Properties* Window: *SQL Statement* Tab

Shows the SQL statement for the web service (if one has been specified), or allows you to specify a SQL statement for the web service.

The statement is the command, usually a stored procedure, that is called when someone accesses the service. If you define a statement, this is the only statement that can be run through this service. Services without statements are a serious security risk as they permit web clients to execute arbitrary commands. When creating such services, you must enable authorization, which forces all clients to provide a valid user name and password. Even so, only services that define statements should be run in a production system.

The SQL statement is required for SOAP services. It is optional for RAW, XML, and HTML services, and is not applicable to DISH services.

## Related Information

[What Are Web Services](#)

[CREATE SERVICE Statement \[HTTP Web Service\]](#)

[CREATE SERVICE Statement \[SOAP Web Service\]](#)

## 1.10.197 *Microsoft Windows Mobile Message Types for SQL* Remote Window

This window has several components.

**Your Windows Mobile device has the following message types**

This window lists the available message types for your Microsoft Windows Mobile device. To select a message type for SQL Remote replication, select a message type from the list and click *OK*. The supported message types are FILE, FTP, and SMTP.

**The selected message type has the following parameters**

**Name**

Lists the parameter names for the selected message type.

**Value**

Shows the value for the parameter for the selected message type. You can change the value by clicking the field and typing a different value.

The following tables list the parameters for each supported SQL Remote message type.

**FILE message control parameters**

Name	Values	Default	Description
Directory	String	' '	Set to the directory under which the messages are stored. The setting is an alternative to the SQLREMOTE environment variable.
Debug	YES, NO	NO	When set to YES, all file system calls made by the FILE link are displayed.
Unlink_Delay	Integer	Pause for 1 second after first failed attempt, 2 seconds after second failed attempt, and so on.	Set to the number of seconds to wait before attempting to delete a file if the previous attempt to delete the file failed.

**FTP message control parameters**

Name	Values	Default	Description
Host	String	' '	The host name or IP address of the computer where the messages are stored.
User	String	' '	The user name for accessing the FTP host.
Password	String	' '	The password for accessing the FTP host.

Name	Values	Default	Description
Root_Directory	String	' '	The root directory within the FTP host site under which the messages are stored.
Port	String	' '	The IP port number used for the FTP connection. This is usually not required.
Debug	YES, NO	NO	This parameter controls whether debugging output appears.
Active_Mode	YES, NO	NO	<p>This parameter controls whether the client or the database server initiates all data transfer connections.</p> <p>When this parameter is set to NO, (Passive mode) the client initiates all data transfer connections, in this case the message link.</p> <p>When this parameter is set to YES (Active mode) the database server initiates all data connections.</p> <p>If your FTP server is sitting behind an incorrectly configured firewall you may not be able to use the default passive transfer mode.</p>

## SMTP message control parameters

Name	Values	Default	Description
Local_Host	String	' '	The name of the local computer. The local host name is required to initiate a session with any SMTP server. In most network environments, the local host name can be determined automatically and you do not need to supply this value.

Name	Values	Default	Description
TOP_Supported	YES, NO	YES	<p>SQL Remote uses a POP3 command called TOP when enumerating incoming messages. The TOP command may not be supported by all POP servers.</p> <p>Set this value to NO to use the RETR command, which is less efficient but works with all POP servers.</p>
Smtplib_Host	String	' '	The name of the computer on which the SMTP server is running. It corresponds to the SMTP host field in the SMTP/POP3 login window.
Pop3_Host	String	' '	The name of the computer on which the POP host is running. It corresponds to the POP3 host field in the SMTP/POP3 login window.
Pop3_Userid	String	' '	The POP user ID corresponds to the user ID field in the SMTP/POP3 login window.
Pop3_password	String	' '	The POP password corresponds to the password field in the SMTP/POP3 login window.
Debug	YES, NO	NO	This parameter controls whether debugging information appears. When set to YES, SMTP and POP3 commands and responses appear.

## Related Information

[The FILE Message System](#)  
[The FTP Message System](#)  
[The SMTP Message System](#)  
[Message System Setup](#)  
[SQL Remote Message Systems](#)  
[SQLREMOTE Environment Variable](#)  
[Troubleshooting FTP Problems](#)

## 1.10.198 Debugger Help

There are several ways to receive debugger help.

### In this section:

[Debugger Add Watch Window \[page 209\]](#)

Enter a SQL expression (for stored procedures) or Java expression (for Java classes) to watch.

[Debugger Breakpoints Window \[page 209\]](#)

This window has several components.

[Debugger Edit or New Breakpoint Window \[page 210\]](#)

This window has several components.

[Debugger Java Source Path Window \[page 211\]](#)

This window has several components.

### 1.10.198.1 *Debugger Add Watch Window*

Enter a SQL expression (for stored procedures) or Java expression (for Java classes) to watch.

The expression appears in the *Watch* window when SQL Central is running a Debug task.

For example, to track the SQLSTATE value when debugging stored procedures, just enter SQLSTATE.

### Related Information

[Expressions in SQL Statements](#)

### 1.10.198.2 *Debugger Breakpoints Window*

This window has several components.

#### All breakpoints

A list of all breakpoints in the current database. The following is a description of the columns:

#### Procedure

The stored procedure to which the breakpoint applies.

#### Context

The line of source code that contains the breakpoint.

#### Condition

The condition that must be true for the breakpoint to interrupt execution.

#### Count

The number of times the breakpoint is skipped before it interrupts execution. A value of 0 means that the breakpoint always stops execution.

**Database**

The database to which the breakpoint applies.

**Server**

The database server to which the breakpoint applies.

**Close**

Closes the *Breakpoints* window.

**Edit**

Edits the currently selected breakpoint. For example, you can set or modify a condition that must be satisfied before the breakpoint interrupts execution.

**View Code**

Closes the *Breakpoints* window and shows code for the selected breakpoint.

**Enable**

Enables the selected breakpoint, so that it interrupts execution. The breakpoint is shown as a red circle in the code window.

**Disable**

Disables the selected breakpoint, so that it does not interrupt execution. The breakpoint is shown as a gray circle in the code window.

**Remove**

Deletes the selected breakpoint from the list.

**New**

Creates a new breakpoint.

## Related Information

[Breakpoints](#)

[Changing the Status of a Breakpoint](#)

### 1.10.198.3 *Debugger Edit or New Breakpoint* Window

This window has several components.

**Server**

The database server to which the breakpoint applies.

**Database**

The database to which the breakpoint applies.

**Procedure**

For SQL procedures, the stored procedure to which the breakpoint applies.



### Condition

A condition that must evaluate to true for the breakpoint to interrupt execution.

The condition does not have to depend only on variables within the procedure. For example, you can set a breakpoint to apply to a connection made by a specified user by entering the following condition:

```
CURRENT USER = 'user-name'
```

### Count

The number of times the breakpoint is skipped before it interrupts execution. A value of 0 means that the breakpoint always stops execution.

### Enable this breakpoint

Select this option for the breakpoint to interrupt execution.

## Related Information

[Setting a Breakpoint Condition](#)

[Changing the Status of a Breakpoint](#)

[Search Conditions](#)

## 1.10.198.4 *Debugger Java Source Path* Window

This window has several components.

### List of folders

A list of folders or individual files where the debugger looks for Java source.

### Browse Folder

Locate a folder to add to the list.

### Browse File

Locate an individual file to add to the list.

## Related Information

[Class File Creation](#)

## 1.10.199 Index Consultant

The Index Consultant guides you in the proper selection of indexes for your database.

It guides you through the process of selecting indexes for a single query or for a set of database requests (called a **workload**). It creates many different sets of virtual indexes. For each set, the Index Consultant optimizes queries and other requests as if those virtual indexes were present. The Index Consultant then gathers the results of these explorations into a set of recommendations.

### Related Information

[Optimize Indexes to Improve Performance](#)

## 1.10.200 UltraLite Projects

In version 9.0.2 and earlier, you can assign SQL statements in a reference database to an UltraLite project.

By grouping them this way, you can develop multiple static UltraLite applications using the same reference database.

When the UltraLite generator runs against a reference database to generate the database source code files, it takes a project name as an argument and generates the code for the SQL statements in that project. If you are using Embedded SQL, the SQL preprocessor defines the UltraLite project for you and you do not need to create it explicitly.

## 1.10.201 UltraLite Statements

In version 9.0.2 and earlier, you define the data access requests available to an UltraLite application by adding a set of SQL statements to the UltraLite project for that application in your reference database.

The UltraLite generator then creates the code for a database engine that can execute the set of SQL statements.

In the Static C++ API, you can also use publications to define data access methods. If you are using Embedded SQL, the SQL preprocessor adds the SQL statements in your Embedded SQL source files to the reference database for you.

## 1.10.202 Publications

A publication is a database object that identifies the data that is to be synchronized.

A publication consists of articles, which are subsets of a table's columns, rows, or both. Each publication can contain one or more entire tables, or partial tables consisting of selected rows and columns. In a single publication, no table can be included in more than one article.

In MobiLink, publications exist only on the clients. A publication consists of articles. MobiLink users can synchronize a publication by creating a synchronization subscription to it. SQL Remote users can receive a publication by subscribing to it.

### Related Information

[Publications](#)

[Publications and Articles](#)

[Publishing Data in UltraLite](#)

## 1.10.203 Articles

In MobiLink or SQL Remote, an article represents a whole table, or a subset of the columns and rows in a table.

Articles are grouped together in a publication.

### Related Information

[Publications and Articles](#)

[Modifying the Properties of Existing Publications or Articles](#)

[Publishing Data in UltraLite](#)

## 1.10.204 Subscriptions

In MobiLink, a **synchronization subscription** links a particular MobiLink user with a publication.

It can also contain other information needed for synchronization. For example, you can specify the address of the MobiLink server and any options for a synchronization subscription. Values for a specific synchronization subscription override those set for MobiLink users. Synchronization subscriptions are required only in MobiLink SQL Anywhere remote databases. Server logic is implemented through synchronization scripts, stored in the MobiLink system tables in the consolidated database.

In SQL Remote, data is organized into publications for replication. To receive SQL Remote messages, a **subscription** must be created for a user ID with REMOTE permissions. Publications and subscriptions are two-

way relationships in SQL Remote. If you create a subscription for a remote user to a publication on a consolidated database, you should also create a subscription for the consolidated database on the remote database. The Extraction utility (dbxtract) carries this out automatically.

## Related Information

[Synchronization Subscription Creation Subscriptions](#)

### 1.10.205 Indexes Folder

The Indexes folder provides a way for you to view all the indexes in a database.

Once you are connected to a database, click the [Indexes](#) folder to display all the indexes.

The following information is displayed for each entry, and can be used to sort the list:

**Name**

Shows the name of the index.

**Object name**

Shows the name of the object with which the index is associated.

**Object owner**

Shows the name of the owner of the object with which the index is associated.

**Index type**

Shows the type of index. The type can be foreign key index, primary key index, unique constraint index, or index.

**Unique**

Shows whether values in the index must be unique. The unique value is set when you create a new index.

**Columns**

Shows all the columns in the index.

## Related Information

[Creating an Index](#)  
[Index Properties Window: General Tab \[page 101\]](#)

## 1.10.206 Table Edit Undo

When editing tables in SQL Central, you can undo your changes on a row by row basis.

Rows that have been edited are marked with a pencil icon to the left of the row. To undo the changes to any row that has been edited, click to select the row you want to undo, and choose **► Edit ► Undo ◀**. The changes to the selected row are undone and the pencil icon is removed. You can continue to undo changes to any other rows that are marked with the pencil icon.

### Related Information

[SQL Central](#)

[Table Properties Window: General Tab \[page 183\]](#)

## 1.10.207 QAnywhere

Support for QAnywhere has been deprecated and removed. To administer QAnywhere, you must use the QAnywhere plug-in in an earlier version of SQL Central.

## 1.11 MobiLink Plug-in Help

The MobiLink 17 plug-in for SQL Central allows you to use a graphical interface to perform tasks that might otherwise be done programmatically, or with system procedures or SQL statements. SQL Central provides properties windows that let you configure object properties and wizards that walk you through common administrative tasks.

### In this section:

[MobiLink Properties Windows \[page 216\]](#)

The MobiLink plug-in provides several properties windows that let you configure object properties. When you are connected to MobiLink, each properties window becomes available in the SQL Central *File* menu when you select an object, or when you right-click an object.

[MobiLink Server Log File Viewer Window \[page 246\]](#)

The *MobiLink Server Log File Viewer* reads a MobiLink server log file and displays the messages grouped by synchronization.

[MobiLink Synchronization Model Wizards \[page 251\]](#)

The wizards related to synchronization models walk you through the steps for creating a synchronization model, updating a schema, and deploying a synchronization model, making these complicated tasks easier to perform.

[Create New Table Mappings Window \[page 266\]](#)

The *Create New Table Mappings* window allows you to create new table mappings for a remote schema by selecting from unsynchronized tables in the consolidated schema.

#### [Mappings Tab \[page 266\]](#)

The *Mappings* tab contains two panes: the *Table Mappings* pane and the *Details* pane.

#### [Events Tab \[page 275\]](#)

The *Events* tab allows you to view and modify the scripts that were generated by the *Create Project Wizard*. It also allows you to create new scripts.

#### [Notification Tab \[page 277\]](#)

The *Notification* tab shows the following information for the synchronization model:

## Related Information

[MobiLink Server System Procedures](#)

[MobiLink Properties Windows \[page 216\]](#)

[Consolidated Schema Owners \[page 222\]](#)

[MobiLink SQL Statements](#)

### 1.11.1 *MobiLink Properties Windows*

The MobiLink plug-in provides several properties windows that let you configure object properties. When you are connected to MobiLink, each properties window becomes available in the SQL Central *File* menu when you select an object, or when you right-click an object.

#### In this section:

##### [Agent Properties Window \[page 219\]](#)

This tab has the following components:

##### [Authentication Policy Properties window: General tab \[page 220\]](#)

This tab lists the properties of the authentication policy.

##### [Carrier Properties window: General tab \[page 220\]](#)

This tab lists basic information about the carrier, including the carrier name, object type, and whether the carrier is enabled. You can define and use multiple carrier mappings. When you change the properties on this tab, you must shut down and restart the MobiLink server for them to take effect.

##### [Carrier Properties window: Miscellaneous tab \[page 221\]](#)

This tab has the following components:

##### [Column Properties window: General tab \[page 221\]](#)

Lists basic information about the columns that belong to a table, including the column name, the object type, the name of the table the column belongs to and that table's owner, the column's data type, whether nulls are allowed, and the default column value.

##### [Connection Script Properties window: General tab \[page 221\]](#)

The *Connection Script Properties* window allows you to view information about the selected connection script. Connection scripts control high-level events that are not associated with a particular table. Use these events to perform global tasks that are required during every synchronization.

#### [Consolidated Schema Owners \[page 222\]](#)

This window has the following components:

#### [Custom Upload Value Window \[page 223\]](#)

Specify a custom SQL expression which you want to be evaluated and uploaded to the consolidated column.

#### [Database Properties window: General tab \[page 223\]](#)

Lists basic information about the database including the object type, the product name (SQL Anywhere, for example), the version number of the selected database, and the name of the MobiLink user.

#### [Gateway Properties window: General tab \[page 223\]](#)

Lists basic information about the gateway including the gateway name, the object type, and whether the gateway is enabled.

#### [Gateway Properties window: Gateways \(device tracker\) tab \[page 223\]](#)

This tab has the following components:

#### [Gateway Properties window: Server \(SMTP\) tab \[page 224\]](#)

This tab has the following components:

#### [Gateway Properties window: Ports \(UDP\) tab \[page 224\]](#)

This tab has the following components:

#### [Gateway Properties window: Delivery \(device tracker\) tab \[page 225\]](#)

This tab has the following components:

#### [Gateway Properties window: Delivery \(SMTP\) tab \[page 226\]](#)

This tab has the following components:

#### [Gateway Properties window: Delivery \(SYNC\) tab \[page 226\]](#)

This tab has the following components:

#### [Gateway Properties window: Delivery \(UDP\) tab \[page 227\]](#)

This tab has the following components:

#### [Global Notification Properties window: General tab \[page 228\]](#)

When you change the following properties, you must shut down and restart the MobiLink server for them to take effect.

#### [Group Properties window: General tab \[page 228\]](#)

Lists basic information about the group, including group name, object type, and a description.

#### [Group Properties: Members tab \[page 229\]](#)

This tab lists the names of the users that belong to the group. Click *Edit* to add and remove users.

#### [LDAP Server Properties window: General tab \[page 229\]](#)

This tab lists the properties of the LDAP server.

#### [MobiLink Project Properties window: General tab \[page 230\]](#)

Lists basic information about the MobiLink project including the project name, the object type, the directory where the MobiLink project resides, and the type of remote database used in the project.

#### [MobiLink Server Command Line Properties Window: General Tab \[page 230\]](#)

This tab has the following components:

#### [MobiLink Server Command Line Properties Window: Advanced Tab \[page 231\]](#)

The *Advanced* tab of the *MobiLink Server Command Line Properties* window enables you to select MobiLink server options (mlsrv17) to add to the command line.

[Notifier Properties window: General tab \[page 232\]](#)

When you change the following properties, you must shut down and restart the MobiLink server for them to take effect.

[Notifier Properties window: Connection tab \[page 232\]](#)

Properties are read at startup. When you change properties, you must shut down and restart the MobiLink server for them to take effect.

[Notifier Properties window: Polling tab \[page 233\]](#)

Properties are read at startup. When you change properties, you must shut down and restart the MobiLink server for them to take effect.

[Notifier Properties window: Events tab \[page 233\]](#)

This tab has the following components:

[Passthrough Script Properties window: General tab \[page 234\]](#)

This tab has the following components:

[Passthrough Download Properties window: General tab \[page 235\]](#)

This tab has the following components:

[Plug-in Preferences Window: General Tab \[page 235\]](#)

This tab has the following components:

[Plug-in Preferences Window: Table Data Tab \[page 236\]](#)

This tab has the following components:

[Plug-in Preferences Window: Automatic Refresh Tab \[page 237\]](#)

This tab has the following components:

[Remote Database Properties window: General tab \[page 237\]](#)

This tab has the following components:

[Remote Schema Name Properties: General tab \[page 238\]](#)

Lists basic information about the remote schema name.

[Remote Task Properties: General tab \[page 238\]](#)

This tab has the following components:

[Remote Task Properties: Execution Tab \[page 239\]](#)

This tab has the following components:

[Remote Task Properties: Start Time tab \[page 241\]](#)

This tab has the following components:

[Remote Task Properties: Repetition tab \[page 241\]](#)

This tab has the following components:

[Remote Task Properties: Conditions tab \[page 242\]](#)

Specifies the conditions that must be true on the remote database for the task to run.

[Select Remote Column Window \[page 243\]](#)

Provides a list of unmapped remote columns that can be mapped to the selected consolidated column.

[Select Remote Table Window \[page 243\]](#)

Provides a list of unmapped remote tables that can be mapped to the selected consolidated table.

[Synchronization Model Properties Window: General Tab \[page 243\]](#)



Lists basic information about the synchronization model including the name and location of the synchronization model file, the object type, the name of the publication, and the name of the script version used for synchronization.

[Synchronized Table Properties window: General tab \[page 243\]](#)

This tab lists the name of the synchronized table, the object type, and the table ID, which is an integer that uniquely identifies the synchronized table.

[Subscription Properties window: General tab \[page 244\]](#)

Lists basic information about the subscription including the name of the publication with the name of the subscription's owner in parentheses, and the type of object.

[Table Properties window: General tab \[page 244\]](#)

Lists basic information about the table including the table name, the type of object, and the table owner.

[Table Script Properties window: General tab \[page 245\]](#)

This tab has the following components:

[User Properties window: General tab \[page 245\]](#)

This tab has the following components:

[Version Properties window: General tab \[page 246\]](#)

The Version properties window allows you to view information about the selected script version. Script versions allow you to organize your scripts into sets, which are run under different circumstances.

### 1.11.1.1 *Agent Properties* Window

This tab has the following components:

**Synchronization interval**

Specifies the maximum interval, in seconds, minutes, hours or days, that the Agent goes without synchronizing.

**Administration polling interval**

Specifies the maximum interval, in seconds, minutes, hours or days, that the Agent should go before polling the server for administration requests.

**Last upload time**

Shows the time that the Agent last uploaded data to the consolidated database.

**Last download time**

Shows the time that data was last downloaded from the consolidated database to the Agent.

**MobiLink client network protocol options**

Specifies the connection string used to connect the Agent to the MobiLink server.

**Agent database remote ID**

The remote ID for the agent database on the remote device.

## Related Information

[MobiLink Agents](#)  
[MobiLink Agents in SQL Central](#)  
[MobiLink Agent on the Client Device](#)  
[MobiLink Client Network Protocol Options](#)

### 1.11.1.2 *Authentication Policy Properties* window: *General* tab

This tab lists the properties of the authentication policy.

#### **Primary LDAP server**

Shows the primary LDAP server currently selected. The primary LDAP server is the one normally used for authentication. To change the primary server, choose a different server from the dropdown list.

#### **Secondary LDAP server**

Shows the secondary LDAP server currently selected. The secondary LDAP server is used for authentication if the primary LDAP server is unavailable. To change the secondary server, choose a different server from the dropdown list. Choose the blank value to specify no secondary LDAP server.

#### **Call authentication scripts**

Select this option to call MobiLink authentication scripts for LDAP authentication. You can choose *Never*, *If LDAP server unavailable* or *Always*.

#### **Failback period**

Shows the failback period, in seconds. The failback period is the amount of time the MobiLink server waits after an unsuccessful connection attempt before trying to reconnect to the LDAP server.

## Related Information

[authenticate\\_user Connection Event](#)

### 1.11.1.3 *Carrier Properties* window: *General* tab

This tab lists basic information about the carrier, including the carrier name, object type, and whether the carrier is enabled. You can define and use multiple carrier mappings. When you change the properties on this tab, you must shut down and restart the MobiLink server for them to take effect.

## Related Information

[Carriers and Carrier Configuration](#)

#### **1.11.1.4** *Carrier Properties* window: *Miscellaneous* tab

This tab has the following components:

##### **Identification**

Specify identification information for the carrier.

##### **Network provider ID**

Shows the ID of the selected network provider.

##### **SMTP**

Specify additional SMTP information.

##### **User prefix**

Type a user prefix.

##### **Domain**

Type the domain name of the carrier.

### **Related Information**

[Carriers and Carrier Configuration](#)  
[Carrier Properties](#)

#### **1.11.1.5** *Column Properties* window: *General* tab

Lists basic information about the columns that belong to a table, including the column name, the object type, the name of the table the column belongs to and that table's owner, the column's data type, whether nulls are allowed, and the default column value.

#### **1.11.1.6** *Connection Script Properties* window: *General* tab

The *Connection Script Properties* window allows you to view information about the selected connection script. Connection scripts control high-level events that are not associated with a particular table. Use these events to perform global tasks that are required during every synchronization.

This tab has the following components:

##### **Name**

Shows the name of the selected script version. A script version name is a string.

**Type**

Shows the type of the selected object. In this case, the object type is a Connection Script.

**Script ID**

Shows an integer that uniquely identifies the selected connection script.

**Version**

Shows a string that identifies the version name.

**Version ID**

Shows an integer that uniquely identifies the selected version.

**Language**

Shows the script language.

**Deployed**

Shows whether the script has been deployed.

**Shared versions**

Shows any shared versions.

## Related Information

[Connection Scripts](#)

[Script Versions](#)

### 1.11.1.7 Consolidated Schema Owners

This window has the following components:

**Load the database schema for all owners**

Select this option to load the consolidated database schema for all the owners.

**Only load the database schema for selected owners**

Select this option to load the consolidated database schema for a subset of the owners. When you select this option, the [Select the owners whose schema you want to load list](#) is available.

**Select the owners whose schema you want to load list**

Select the owners in the list to load the schema for.

You must select:

- The owners of all the tables that are to be synchronized.
- The owners of all the tables that are used by the synchronization scripts. For example, you must include the owners of tables that are joined by a `download_cursor` script.

### 1.11.1.8 *Custom Upload Value* Window

Specify a custom SQL expression which you want to be evaluated and uploaded to the consolidated column.

#### SQL Expression

Type a custom SQL expression which you want to be evaluated and uploaded to the consolidated column. The text field is initialized with whichever value the consolidated column was previously mapped to.

### 1.11.1.9 *Database Properties* window: *General* tab

Lists basic information about the database including the object type, the product name (SQL Anywhere, for example), the version number of the selected database, and the name of the MobiLink user.

### 1.11.1.10 *Gateway Properties* window: *General* tab

Lists basic information about the gateway including the gateway name, the object type, and whether the gateway is enabled.

## Related Information

[Gateway Properties](#)

### 1.11.1.11 *Gateway Properties* window: *Gateways* (device tracker) tab

This tab has the following components:

#### This device tracker gateway uses the following gateways

Select one of the following options to specify the gateways that are used for device tracking:

##### SYNC gateway

Select *SYNC gateway*, and then choose the gateway used by the device tracker from the dropdown list. The default is *Default-SYNC*.

##### UDP gateway

Select *UDP gateway*, and then choose the gateway used by the device tracker from the dropdown list. The default is *Default-UDP*.

##### SMTP gateway

Select *SMTP gateway*, and then choose the gateway used by the device tracker from the dropdown list. The default is *Default-SMTP*.

## Related Information

[Device tracking Gateway Properties](#)

### 1.11.1.12 *Gateway Properties* window: *Server (SMTP)* tab

This tab has the following components:

#### Server

Specify the following server information for the gateway:

##### Host

Type the name of the computer on which the SMTP server is running.

##### This server requires authentication

Select this option if the selected server requires authentication. Selecting this option activates the *User* and *Password* options.

##### User

Type the user ID used for SMTP authentication.

##### Password

Type the password used for SMTP authentication.

#### Headers

Specify the following header information:

##### From

This is the sender address of the emails (SMTP requests). The default is *anonymous*.

## Related Information

[SMTP Gateway Properties](#)

### 1.11.1.13 *Gateway Properties* window: *Ports (UDP)* tab

This tab has the following components:

#### Destination port

Specify the destination (listener) port on the remote device.

**Use the default port (5001)**

Select this to use the default port.

**Use this port**

Select this and specify the port to be used.

**Origin port**

Specify the origin (sender) port.

**Use a system-assigned port**

Select this to have the system assign a port that the packet is sent from.

**Use this port**

Select this and specify the port to use to send out the packet.

**Network address**

Specify the network address of the sender.

**Use the default network address**

Select this to use the default network address.

**Use this network address**

Select this and specify the IP address of the sender.

## Related Information

[UDP Gateway Properties](#)

### 1.11.1.14 *Gateway Properties* window: *Delivery* (device tracker) tab

This tab has the following components:

**Confirm message delivery**

Select this option if you want the MobiLink Listener to initiate synchronization when it receives a message to confirm with the consolidated database that the message was received. The MobiLink Listener must be started with the -x option to provide connection information. This option is turned on by default.

## Related Information

[Device tracking Gateway Properties](#)

### 1.11.1.15 *Gateway Properties* window: *Delivery (SMTP)* tab

This tab has the following components:

#### **Client version**

You can provide information about the version of the client using this gateway.

#### **This gateway only supports 9.0.1 and later clients**

Select this option if all Listeners are SQL Anywhere version 9.0.1 or later clients. This is the default setting.

#### **Confirm message delivery**

Select this option to confirm message delivery. This setting has an effect only when sending directly through this gateway.

#### **This gateway only supports 9.0.0 clients**

Select this option if all Listeners are SQL Anywhere version 9.0.0 clients.

#### **Confirmation timeout**

You must provide the amount of time before a confirmation should time out. The default confirmation timeout is 10 minutes.

#### **Timeout after**

Select a timeout interval for confirmations from the dropdown list.

#### **Use the following timeout interval**

Specify a timeout interval for confirmation in minutes and seconds.

## **Related Information**

[SMTP Gateway Properties](#)

### 1.11.1.16 *Gateway Properties* window: *Delivery (SYNC)* tab

This tab has the following components:

#### **Confirm message delivery**

Select this option to confirm message delivery. This setting has an effect only when sending directly through this gateway.

#### **Confirm action**

Select this option to flag the MobiLink Listener to reply with a confirmation after the action is performed on the remote device.

#### **Confirmation timeout**

You must provide the amount of time before a confirmation should time out. The default confirmation timeout is 1 minute.



### **Timeout after**

Select a timeout interval for confirmations from the dropdown list.

#### **Use the following timeout interval**

Specify a timeout interval for confirmation in minutes and seconds.

## **Related Information**

[SYNC Gateway Properties](#)

### **1.11.1.17 Gateway Properties window: *Delivery* (UDP) tab**

This tab has the following components:

#### **Client version**

You can provide information about the version of the client using this gateway.

##### **This gateway only supports 9.0.1 and later clients**

Select this option if all Listeners are SQL Anywhere version 9.0.1 or later clients. This is the default setting.

##### **Confirm message delivery**

Select this option to confirm message delivery. This setting has an effect only when sending directly through this gateway.

##### **This gateway only supports 9.0.0 clients**

Select this option if all Listeners are SQL Anywhere version 9.0.0 clients.

#### **Confirmation timeout**

You must provide the amount of time before a confirmation should time out. The default confirmation timeout is 1 minute.

### **Timeout after**

Select a timeout interval for confirmations from the dropdown list.

#### **Use the following timeout interval**

Specify a timeout interval for confirmation in minutes and seconds.

## **Related Information**

[UDP Gateway Properties](#)

### 1.11.1.18 *Global Notification Properties* window: *General* tab

When you change the following properties, you must shut down and restart the MobiLink server for them to take effect.

This tab has the following components:

#### **Verbosity level**

Specify the level of verbosity for all Notifiers, gateways, and carriers. You must choose one of the following levels:

##### **No tracing (level 0)**

Do not use tracing. This is the default setting.

##### **Startup and shutdown tracing (level 1)**

Use a startup, shutdown, and property trace.

##### **Notifications tracing (level 2)**

Display notification messages.

##### **Full tracing (level 3)**

Use a full-level trace.

## **Related Information**

[Common Properties](#)

### 1.11.1.19 *Group Properties* window: *General* tab

Lists basic information about the group, including group name, object type, and a description.

## **Related Information**

[Groups](#)

## 1.11.1.20 *Group Properties: Members* tab

This tab lists the names of the users that belong to the group. Click [Edit](#) to add and remove users.

## Related Information

[Groups](#)

## 1.11.1.21 *LDAP Server Properties window: General* tab

This tab lists the properties of the LDAP server.

### Search URL

Shows the URL used for the lookup of the LDAP Distinguished Name (DN) for a given MobiLink user. The URL contains the host (by name or IP address), port number, and search to be performed. The format of the search URL must comply with the LDAP URL standard.

The maximum size of this string is 1024 bytes.

### Distinguished Name

Shows the DN used by the MobiLink server to connect to the LDAP server. This is not a MobiLink user, but a user created in the LDAP server specifically for logging in to the LDAP server.

The user specified by the DN must have permissions within the LDAP server to search for DNs by user ID in the locations specified in the SEARCH DN URL clause.

The maximum size for this string is 1024 bytes.

### Password

When selected, contains the password associated with the DN.

### Authentication URL

Shows the URL used to authenticate a Distinguished Name and password. The URL identifies the host (by name or IP address), and the port number of the LDAP server to use to authenticate a user.

The DN of the user obtained using the search URL and the user password are used to bind a new connection to the authentication URL. A successful connection to the LDAP server is considered proof of the identity of the connecting user.

### Use TLS

Select this checkbox to use TLS for connections to the LDAP server for DN searches and authentication.

### Connection timeout

Specify the connection timeout from the MobiLink server to the LDAP server for DN searches and authentication.

### Connection retries

Choose the number of times you want the MobiLink server to try to connect to the LDAP server for DN searches and authentication.

### Trusted certificates file

Specify a trusted certificates file to be used for TLS communications between the MobiLink server and the LDAP server.

The same trusted certificates file is used by all defined LDAP servers so changing this setting affects all defined LDAP servers.

## Related Information

[The LDAP Standard Specification](#) ➔

### 1.11.1.22 *MobiLink Project Properties* window: *General* tab

Lists basic information about the MobiLink project including the project name, the object type, the directory where the MobiLink project resides, and the type of remote database used in the project.

## Related Information

[MobiLink Plug-in for SQL Central](#)  
[Central Administration Concepts](#)

### 1.11.1.23 *MobiLink Server Command Line Properties* Window: *General* Tab

This tab has the following components:

#### Consolidated database

Shows the consolidated database to connect to using the command line. To change the consolidated database, choose another one from the list.

#### Network options

Shows the selected network options. Choose *Add* to specify additional network options, *Edit* to change an existing option, or *Delete* to remove a network option.

#### Verbosity

Choose from the following verbosity options:

##### None

Choose this option if you do not want any information recorded in the MobiLink server message log file.

##### Low

Choose this option to have the MobiLink server to provide a minimal amount of information about each synchronization.

**High**

Choose this option to turn on all lowercase verbosity options.

**High without row values**

Choose this option to turn on all lowercase verbosity options except **r**. The column values of each row uploaded or downloaded are not displayed.

**Custom**

Choose this option to select the desired verbosity options.

**Command line**

Shows the MobiLink server command line, including the selected network and verbosity options.

## Related Information

[Connection Parameters and Connection Strings](#)

### 1.11.1.24 *MobiLink Server Command Line Properties* Window: *Advanced Tab*

The *Advanced* tab of the *MobiLink Server Command Line Properties* window enables you to select MobiLink server options (mlsrv17) to add to the command line.

This tab has the following components:

**Search**

Type a string in the *Search* field to limit the options shown to those that contain the given string in either the option or description fields.

**Option**

Shows the name of the mlsrv17 option.

**Value**

Shows the value of the mlsrv17 option. You can enter a new value in this field.

**Other options**

Type any additional MobiLink server options.

**Command line**

Shows the MobiLink server command line, including the selected network and verbosity options.

## Related Information

[Connection Parameters and Connection Strings](#)

### 1.11.1.25 *Notifier Properties* window: *General* tab

When you change the following properties, you must shut down and restart the MobiLink server for them to take effect.

This tab has the following components:

#### **Enabled**

Select this option to enable the Notifier.

#### **Display control window when running**

Select this option if you want the *Notifier* window to be open on the computer where the Notifier is running. This user interface allows users to temporarily change the polling interval, or poll immediately. It can also be used to shut down the Notifier without shutting down the MobiLink server. (Once stopped, the Notifier can only be restarted by shutting down and restarting the MobiLink server.) This option is selected by default.

#### **Share the database connection with other notifiers**

Select this option if you want the database connection to be shared with other notifiers.

## Related Information

[Notifier Properties](#)

### 1.11.1.26 *Notifier Properties* window: *Connection* tab

Properties are read at startup. When you change properties, you must shut down and restart the MobiLink server for them to take effect.

This tab has the following components:

#### **Isolation Level**

Specify an isolation level for the connection. The default isolation level is *Read Committed (Level 1)*. You must choose one of the following:

- *Read uncommitted (level 0)*
- *Read committed (level 1)*
- *Repeatable read (level 2)*
- *Serializable (level 3)*

#### **Connection String**

Specify a JDBC connection string to override the default connection behavior. This is an optional value.

By default, the Notifier uses `com.sap.ml.script.ServerContext` to connect to the consolidated database. It uses the connection string that was specified in the current `mlsrv17` session's command line.

You can specify a connection string to connect to any database, including the consolidated database. It may be useful to connect to another database when you want notification logic and data to be separate from your synchronization data.

## Related Information

[Isolation Levels and Consistency](#)  
[Notifier Properties](#)

### 1.11.1.27 *Notifier Properties* window: *Polling* tab

Properties are read at startup. When you change properties, you must shut down and restart the MobiLink server for them to take effect.

This tab has the following components:

#### **Poll every**

Select a polling interval from the dropdown list. The default is 30 seconds.

#### **Use the following polling interval**

Specify a polling interval for the Notifier.

## Related Information

[Notifier Properties](#)

### 1.11.1.28 *Notifier Properties* window: *Events* tab

This tab has the following components:

#### **Events**

Shows the name and SQL statement associated with each notifier event. Select an event to display the SQL statement in the pane below.

#### **When selected event is fired, the following SQL statement is executed**

Shows the selected SQL statement. Make any necessary changes to the SQL statement and then click [Apply](#) to save the changes.

## Related Information

[Notifier Events](#)

### 1.11.1.29 *Passthrough Script Properties* window: *General* tab

This tab has the following components:

#### **i** Note

SQL passthrough functionality has been deprecated. Changing SQL passthrough information will only affect version 11.x clients.

#### **Name**

Shows the name of the passthrough script.

#### **Flags**

Shows the flags that are set. A flag is an instruction that tells clients how to run the script. This value can be NULL or contain a combination of the following keywords:

##### **Manual**

This flag indicates that the script can only be run in manual execution mode. By default, scripts are run in automatic execution mode.

##### **Exclusive**

This flag indicates that the script can only be automatically executed at the end of a synchronization where exclusive locks were obtained on all tables being synchronized. This flag is ignored if the passthrough script does not list any affected publications. This flag is only meaningful for SQL Anywhere remote databases.

##### **Schema diff**

This flag indicates that the script should be run in schema-diffing mode. In this mode, the database schema is altered to match the schema described in the script. For example, a CREATE TABLE statement for an existing table is treated as an ALTER TABLE statement. This flag only applies to UltraLite remote databases.

##### **Affected publications**

Lists the publications that must be fully synchronized before the script is run. An empty publication indicates that no synchronization is required.

## Related Information

[MobiLink Server System Procedures](#)

[ml\\_add\\_passthrough\\_script System Procedure](#)

[ml\\_delete\\_passthrough\\_script System Procedure \(Deprecated\)](#)



### 1.11.1.30 *Passthrough Download Properties* window: **General** tab

This tab has the following components:

#### **i** Note

SQL passthrough functionality has been deprecated. Changing SQL passthrough information will only affect version 11.x clients.

#### **Run order**

Shows the order number in which this script is applied to the remote database. Scripts are always applied in order. This value must be a non-negative integer.

#### **Last modified time**

Shows the date the passthrough download was last modified.

#### **Remote run time**

Shows the time when the remote database ran.

#### **Status**

Shows the status of the script.

#### **Error code**

The SQL code generated by the script on the remote database.

#### **Error text**

TEXT. The error text generated by the script on the remote database.

### 1.11.1.31 *Plug-in Preferences* Window: **General** Tab

This tab has the following components:

#### **Settings**

Specify one or more of the following preferences to configure the settings for the MobiLink plug-in.

##### **Show Create Synchronization Model Wizard Primary Key Requirements page**

Select this preference if you want the *Create Synchronization Model Wizard Primary Key Requirements* page to appear when you open the wizard.

##### **Automatically close message dialogs after operations complete**

Select this preference if you want message windows to close automatically when an operation completes.

##### **Warn when overwriting a script that was deployed as part of a synchronization model**

Select this preference when you want to be warned that a script that was deployed as part of a synchronization model is going to be overwritten.

##### **Warn when excluding a remote column from synchronization**

Select this preference when you want to be warned when a remote column is excluded from synchronization.

**Warn when ignoring an overridden script**

Select this preference to be warned when you choose to ignore an overridden MobiLink script.

**Warn when setting a primary key to an upload value**

Select this preference to be warned when you set a primary key to an upload value.

**Warn when adding a large column (such as BLOB or CLOB) to a delete shadow table**

Select this preference to be warned when adding a large column to a delete shadow table.

**Warn when setting an IQ consolidated table mapping to upload or bidirectional**

Select this preference to be warned when an SAP IQ consolidated table mapping is set to upload or bidirectional.

**Warn when deploying remote tasks if no agents have been defined**

Select this preference to be warned when you deploy a remote task for which there are no agents defined.

**Warn when using the test window that testing will modify the consolidated database**

Select this preference to be warned that testing a connection modifies the consolidated database.

**Warn when setting download subset to be by remote ID**

Select this preference to be warned when you choose to set the download subset by remote ID.

**Confirm deletions when editing table data**

Select this preference to be asked to confirm deletions when you are editing table data.

**Confirm updates when editing table data**

Select this preference to be asked to confirm updates when you are editing table data.

**Confirm implicit updates when editing table data**

Select this preference to be asked to confirm implicit updates when you are editing table data.

**Confirm cancellations when editing table data**

Select this preference to be asked to confirm cancellations when you are editing table data.

**Restore Defaults**

Click [Restore Defaults](#) to return the preferences on this tab to their default values (selected or cleared). By default, all preferences on this tab except [Automatically close message dialogs after operations complete](#) are selected.

## Related Information

[MobiLink Plug-in for SQL Central](#)

### 1.11.1.32 *Plug-in Preferences* Window: *Table Data* Tab

This tab has the following components:

**Which font do you want to use to show table data**

Select one of the following options to specify the font that is used for table data on the *Data* tab when viewing table data in SQL Central:

#### **System**

Select this option to use the computer's normal text font. This is the default setting.

#### **Editor**

Select this option to use the same font as the Code Editor.

#### **Custom**

Select this option to specify the font, font style, and point size you want to use. Click *Browse* to select the settings in the *Font* window.

## **Related Information**

[MobiLink Plug-in for SQL Central](#)  
[MobiLink Server System Tables](#)  
[Code Editor](#)

### **1.11.1.33 *Plug-in Preferences Window: Automatic Refresh Tab***

This tab has the following components:

#### **Enable automatic refreshing**

Select to have the plug-in regularly refresh the status of each Windows service. By default, this option is selected.

#### **Refresh Every X Seconds**

Specifies how often Windows services are refreshed. The refresh time you set is in effect for subsequent sessions until you change it explicitly. The default interval is 10 seconds.

## **Related Information**

[MobiLink Plug-in for SQL Central](#)

### **1.11.1.34 *Remote Database Properties window: General tab***

This tab has the following components:

#### **Managing agent**

Shows the Agent that is assigned to manage the remote database.

**Connection string**

Shows the connection string used to connect to the remote database.

**Script last download time**

Shows the timestamp obtained from the consolidated database during the last successful synchronization immediately before the download phase. If the current MobiLink user has never synchronized, or has never synchronized successfully, this value is set to never.

**Synchronization key**

Shows the synchronization key.

**Related Information**

[Remote IDs](#)

[Using a SQL Anywhere Database as a Remote Database](#)

### 1.11.1.35 *Remote Schema Name Properties: General* **tab**

Lists basic information about the remote schema name.

**Related Information**

[Central Administration Concepts](#)

[Adding a Remote Schema Name](#)

[Importing Remote Schema Names](#)

### 1.11.1.36 *Remote Task Properties: General* **tab**

This tab has the following components:

**Task requires or creates a remote database**

Select if the task either requires a remote database, or creates a remote database.

**Remote Schema Name**

Specifies the remote schema name. A remote schema name identifies remote databases that share the same schema.

**Task updates the schema of the remote database**

Select if the remote task updates the schema of the remote database.

**New Remote Schema name**

Specifies the remote schema name to use after the remote database has been updated.

## Related Information

[Remote Tasks](#)  
[Remote Task Logic](#)  
[Creating a Remote Task](#)  
[Editing a Remote Task](#)

### 1.11.1.37 Remote Task Properties: Execution Tab

This tab has the following components:

#### **Task runs on a schedule**

Specifies that the remote task is triggered by a schedule. Not valid for *High priority* tasks.

#### **Task runs on receipt**

Specifies that the remote task is triggered when it is received by an Agent.

#### **High priority**

Specifies that other remote tasks should not run in parallel with this remote task. High priority tasks cannot be run on a schedule. If a task modifies the schema of the remote database, the task is automatically designated as *High priority* and you cannot change the *Task runs on a schedule*, *Task runs on receipt*, or *High priority* options.

Status for *High priority* tasks is always reported as soon as the task completes.

#### **Limit running time**

Select to limit the amount of time a task can run.

#### **Maximum running time**

Specifies the maximum amount of time, in seconds, minutes, hours or days, that the task can run before it is terminated.

#### **Limit number of retries**

Specifies that if the remote task fails, the remote database should attempt to rerun task for the specified number of times.

#### **Maximum number of retries**

Specifies the maximum number of times the remote database can attempt to rerun the remote task.

#### **Delay between retries**

Specifies the amount of time, in seconds, minutes, hours or days, that the remote task should wait between retries.

## Results and Status

The following settings control how and when task results and status are sent from the Agent to the consolidated database. Status information includes the following:

- Whether the task succeeded or failed.
- How many times the task has run successfully, how many times it has failed, and how many times it was attempted.

### **If task succeeds**

Specifies the action the Agent should take when the remote task runs successfully.

#### **Send results and status immediately**

Specifies that when the task runs successfully, the Agent should immediately send the task results and status to the consolidated database.

#### **Send results and status later**

Specifies that when the task runs successfully, the Agent should send the task results and status to the consolidated database at a later time.

#### **Send only status later**

Specifies that when the task runs successfully, the Agent should send just the status to the consolidated database at a later time.

### **If task fails**

Specifies the action the Agent should take when the remote task fails.

#### **Send results and status immediately**

Specifies that when the task fails, the Agent should immediately send the task results and status to the consolidated database.

#### **Send results and status later**

Specifies that when the task fails, the Agent should send the task results and status to the consolidated database at a later time.

#### **Send only status later**

Specifies that when the task fails, the Agent should send just the status to the consolidated database at a later time.

## Related Information

[Remote Tasks](#)

[Remote Task Logic](#)

### 1.11.1.38 Remote Task *Properties: Start Time* tab

This tab has the following components:

#### **Start task at**

Specifies the time when the remote task starts.

#### **Run task between**

Specifies a time frame for when the remote task should be run.

#### **Start task on a specific date**

Specifies the date when the remote task starts.

#### **Add random delay to start time**

Specifies the maximum amount of time that a task should wait before being executed. The execution of the task is delayed by a random number of seconds that does not exceed the specified value.

If the task is a scheduled task, the random delay is chosen once at the first execution and used to offset all of the scheduled times of the task execution.

## Related Information

[Remote Tasks](#)

[Remote Task Logic](#)

[Editing a Remote Task](#)

### 1.11.1.39 Remote Task *Properties: Repetition* tab

This tab has the following components:

#### **Repeat every**

Specifies how often the remote task repeats.

#### **Run the task on the following days**

Specifies that the remote task should run on specific days.

##### **Days of the week**

Select the day(s) of the week on which the remote task occurs by selecting the checkbox(s) beside the day(s).

##### **Days of the Month**

Select the day(s) of the month on which the remote task occurs by selecting the checkbox(s) beside the day(s).

#### **End task on a specific date**

Specifies the date when the remote task should end. Click [Calendar](#) to browse for the date.

## Related Information

[Remote Tasks](#)

[Remote Task Logic](#)

### 1.11.1.40 Remote Task *Properties: Conditions* tab

Specifies the conditions that must be true on the remote database for the task to run.

This tab has the following components:

#### **Computer is running on AC power**

Specifies that the computer must be running on AC power for the remote task to run.

#### **Battery level**

Specifies the amount of battery power that must exist on the remote device for the task to run.

##### **Condition**

Choose the amount of battery power from the dropdown list.

#### **Computer is online**

Specifies that the remote computer must be connected to the same network as the MobiLink server for the task to run.

#### **A specific network is required**

Only available if *Computer is online* is selected. Select this option to name a specific network that the computer must be connected to.

##### **Network name**

Enter the name of the network to which the remote computer must be connected for the task to execute.

#### **Rows awaiting upload (UltraLite only)**

This option applies only to UltraLite remote databases.

##### **Rows**

Specifies the number of rows that must be awaiting upload before the remote task runs.

#### **SQL Condition**

Specifies a SQL condition that must be met before the task runs.

##### **Variables**

Click the Variables button to add variables to the SQL conditions.

## Related Information

[Remote Tasks](#)



### **1.11.1.41** *Select Remote Column Window*

Provides a list of unmapped remote columns that can be mapped to the selected consolidated column.  
Click the column you want to map and click *OK*.

### **1.11.1.42** *Select Remote Table Window*

Provides a list of unmapped remote tables that can be mapped to the selected consolidated table.  
Click the table you want to map and click *OK*.

### **1.11.1.43** *Synchronization Model Properties Window: General Tab*

Lists basic information about the synchronization model including the name and location of the synchronization model file, the object type, the name of the publication, and the name of the script version used for synchronization.

## **Related Information**

[The Synchronization Process](#)

### **1.11.1.44** *Synchronized Table Properties window: General tab*

This tab lists the name of the synchronized table, the object type, and the table ID, which is an integer that uniquely identifies the synchronized table.

## **Related Information**

[Create Synchronization Model Wizard: Table Synchronization Mapping Page \[page 257\]](#)

### 1.11.1.45 *Subscription Properties* window: *General* tab

Lists basic information about the subscription including the name of the publication with the name of the subscription's owner in parentheses, and the type of object.

#### **Remote ID**

Shows the remote ID that uniquely identifies a database. This column references the rid column of the ml\_database table.

#### **User**

Shows the name of the MobiLink user associated with the remote database.

#### **Subscription ID**

Shows the subscription\_id column value from the ml\_subscription table. This value, together with the remote database ID, makes up the primary key for the ml\_subscription table.

#### **Progress**

Shows the point to which all operations for the subscription have been uploaded and acknowledged.

#### **Last upload time**

Shows the time at the consolidated database when the last successful upload was committed on the remote database.

#### **Last download time**

Shows the TIMESTAMP value indicating when the MobiLink user last downloaded data.

## **Related Information**

[Synchronization Subscription Creation](#)

[Remote IDs](#)

[Automatic Validation](#)

[Progress Offsets](#)

### 1.11.1.46 *Table Properties* window: *General* tab

Lists basic information about the table including the table name, the type of object, and the table owner.

## **Related Information**

[MobiLink Consolidated Databases](#)

### 1.11.1.47 *Table Script Properties* window: *General* tab

This tab has the following components:

#### **Script ID**

Show an integer that uniquely identifies the selected table script.

#### **Version**

Shows the name of the version that the table script belongs to.

#### **Version ID**

Shows an integer that uniquely identifies the version that the table script belongs to.

#### **Synchronized table**

Shows the name of the synchronized table that the table script belongs to.

#### **Language**

Shows the language that the table script is written in.

#### **Deployed**

Shows whether the script has been deployed.

#### **Shared versions**

Shows any shared versions.

## Related Information

[Script Additions and Deletions](#)

### 1.11.1.48 *User Properties* window: *General* tab

This tab has the following components:

#### **ID**

Shows an integer that uniquely identifies the user.

#### **User Authentication Policy**

Choose a user authentication policy from the dropdown list.

#### **This user has a password**

Select this option to set a password for the user. Clearing this option disables the *Password* and *Confirm Password* options.

#### **Password**

Type the password for the user. Passwords are case sensitive.

#### **Confirm password**

Confirm the password that you typed in the *Password* text box by entering it again. The contents of the two fields must match exactly. Passwords are case sensitive.

## Related Information

[MobiLink Users in a Synchronization System](#)  
[MobiLink User Creation and Registration](#)  
[Providing an Initial MobiLink Password for a User \(SQL Central\)](#)

### 1.11.1.49 *Version Properties* window: *General* tab

The Version properties window allows you to view information about the selected script version. Script versions allow you to organize your scripts into sets, which are run under different circumstances.

By specifying a particular version, MobiLink clients can select which set of synchronization scripts are used to process the upload stream and prepare the download stream.

This tab has the following components:

#### **Name**

Shows the name of the selected script version. A script version name is a string. You can edit this field.

#### **Type**

Shows the type of the selected object. In this case, the object type is a Version.

#### **ID**

Shows an integer that uniquely identifies the selected version.

## Related Information

[Script Versions](#)

### 1.11.2 *MobiLink Server Log File Viewer* Window

The *MobiLink Server Log File Viewer* reads a MobiLink server log file and displays the messages grouped by synchronization.

**In this section:**

[MobiLink Server Log File Viewer: Messages Tab \[page 247\]](#)

This tab has the following components:

[MobiLink Server Log File Viewer: Summaries Tab \[page 248\]](#)

The *Summaries* tab of the *MobiLink Server Log File Viewer* window shows summarized information about the entire log file, regardless of the filters applied on the other tabs.

[MobiLink Server Log File Viewer: Synchronizations Tab \[page 249\]](#)

The *Synchronizations* tab of the *MobiLink Server Log File Viewer* reads a MobiLink server log file and displays the messages grouped by synchronization.

## 1.11.2.1 MobiLink Server Log File Viewer: Messages Tab

This tab has the following components:

### Filter

Specify one or more of the following options to filter the messages in the *Messages* pane below. For example, to restrict the list of messages to synchronizations that involve a particular remote ID, select the *Remote ID* option, enter a valid remote ID, and then click *Apply*.

Click *Apply* to refresh the Messages tab.

### Show errors

Select this option to show synchronization error messages in the *Messages* pane.

### Show warnings

Select this option to show synchronization warning messages in the *Messages* pane.

### Show information

Select this option to show synchronization information messages in the *Messages* pane.

### Start at

Select and specify a date and time. Use the following format to specify the date and time:

```
YYYY-MM-DD HH:NN:SS
```

This option displays only messages at or after the specified time.

If you select both *Start At* and *End At* times, then messages that were timestamped between the two times appear.

### End at

Select and specify a date and time. Use the following format to specify the date and time:

```
MM-DD HH:NN:SS
```

This option includes only those messages at or before the specified time.

If you select both *Start At* and *End At* times, then synchronizations that contain messages that were timestamped between the two times appear.

### Containing

You can limit the results to those that include a given string by entering it in this field. The filtering is case-sensitive and no wild cards are supported.

### Remote ID

Filters the messages by the specified remote ID.

### User name

Filters the messages by the specified user name.

### Apply

Click to apply the specified message filters.

### Messages

Shows the filtered messages. The table shows the following message information:

**Flag column**

This column has no title. Shows icons for messages that contain warnings or errors.

**Timestamp column**

Shows the date and time the synchronization started.

**ID column**

Shows the remote user ID.

**Message column**

Shows the messages.

## Related Information

[MobiLink Server Logging](#)

### 1.11.2.2 *MobiLink Server Log File Viewer: Summaries Tab*

The *Summaries* tab of the *MobiLink Server Log File Viewer* window shows summarized information about the entire log file, regardless of the filters applied on the other tabs.

For example, this tab shows the number of synchronizations, the average synchronization times, and the numbers of errors for each user.

This tab has the following components:

#### Files table

**Name**

Shows the name of the MobiLink server log file(s).

**Date**

Shows the date the MobiLink server log file was last modified.

#### Summaries table

**Statistic**

Shows summarized statistics, such as the number of synchronizations, number of users, and the maximum number of simultaneous synchronizations.

**Value**

Shows the number of instances for each statistic.

## User Statistics table

The User Statistics table summarizes the synchronization information by user. The table contains the following columns:

### User Name

Shows the name of the user(s).

### Syncs

Shows the number of synchronizations attempted.

### Avg Sync Time

Shows the average synchronization time in seconds.

### Errors

Shows the number of synchronizations that contain errors.

### %Errors

Shows the percentage of synchronizations that contain errors.

## Related Information

[MobiLink Server Logging](#)

[MobiLink Server Log Viewing](#)

### 1.11.2.3 *MobiLink Server Log File Viewer: Synchronizations* Tab

The *Synchronizations* tab of the MobiLink Server Log File Viewer reads a MobiLink server log file and displays the messages grouped by synchronization.

This tab has the following components:

#### Filter

Specify one or more of the following options to filter the synchronization information that appears in the *Synchronizations* and *Details* panes. For example, you can restrict the list of synchronizations to those that involve a particular remote ID or user name, or to those that contain error messages.

Click *Apply* to refresh the *Synchronizations* and *Details* panes.

#### Show errors

Select this option to show synchronizations that contain error messages.

#### Show warnings

Select this option to show synchronizations that contain warning messages.

### Show information

Select this option to show the information messages associated with the synchronizations.

### Start at

Select and specify a date and time. Use the following format to specify the date and time:

```
YYYY-MM-DD HH:NN:SS
```

This option displays only those synchronizations that have messages at or after the specified time.

If you select both *Start At* and *End At* times, then synchronizations that contain messages that were timestamped between the two times appear.

### End at

Select and specify a date and time. Use the following format to specify the date and time:

```
YYYY-MM-DD HH:NN:SS
```

This option includes only those synchronizations that have messages at or before the specified time.

If you select both *Start At* and *End At* times, then synchronizations that contain messages that were timestamped between the two times appear.

### Containing

You can limit the results to those that include a given string by entering it in this field. The filtering is case-sensitive and no wild cards are supported.

### Remote ID

Filters the messages by the specified remote ID.

### User name

Filters the messages by the specified user.

### Apply

Click to apply the specified message filters.

## Synchronizations pane

Shows the filtered synchronizations.

## Details pane

Shows details about the selected synchronization.

## Related Information

[MobiLink Server Logging](#)



## 1.11.3 MobiLink Synchronization Model Wizards

The wizards related to synchronization models walk you through the steps for creating a synchronization model, updating a schema, and deploying a synchronization model, making these complicated tasks easier to perform.

### In this section:

#### [Create Synchronization Model Wizard: Welcome Page \[page 252\]](#)

Access this wizard by right-clicking *Synchronization Models* and choosing *New>Synchronization Model*. This page has the following components:

#### [Create Synchronization Model Wizard: Primary Key Requirements Page \[page 253\]](#)

In a synchronization system, the primary key is the only way to identify the same row in different databases (remote and consolidated) and the only way to detect conflicts.

#### [Create Synchronization Model Wizard: Consolidated Database Schema Page \[page 254\]](#)

You must connect to the consolidated database that has the schema you want to use for the synchronization model's consolidated database schema. This enables the wizard to obtain the updated schema information.

#### [Create Synchronization Model Wizard: Remote Database Schema Page \[page 254\]](#)

The *Remote Database Schema* page of the *Create Synchronization Model Wizard* lets you specify the remote database schema. You can either connect to an existing remote database to obtain the remote schema or you can create a new remote database schema based on the consolidated database schema.

#### [Create Synchronization Model Wizard: New Remote Database Schema Page \[page 255\]](#)

This page allows you to choose the consolidated database tables that are used to create the remote database schema. Selected tables and columns from the consolidated database are created in the remote database, and synchronization is set up between the matching consolidated and remote tables.

#### [Create Synchronization Model Wizard: Existing Remote Database Page \[page 256\]](#)

The *Existing Remote Database* page of the *Create Synchronization Model Wizard* allows you to choose the remote database tables and columns that you want to synchronize. You can view and modify these options after the *Create Synchronization Model Wizard* finishes.

#### [Create Synchronization Model Wizard: Table Synchronization Mapping Page \[page 257\]](#)

This page allows you to specify the table mappings between the chosen consolidated and remote tables in the model. This page applies when the remote database schema in the synchronization model is based on an existing remote database.

#### [Create Synchronization Model Wizard: Completing the Create Synchronization Model Wizard Page \[page 257\]](#)

This page provides a summary of the name and location of the new synchronization model, based on the information you specified. It also indicates whether you must make further changes before deploying the model.

#### [Deploy Synchronization Model Wizard: Welcome Page \[page 258\]](#)

This page has the following components:

[Deploy Synchronization Model Wizard: Consolidated Database and MobiLink Server Command Line Page \[page 258\]](#)

This page allows you to select the consolidated database to which you want to deploy the synchronization model. It also lets you choose a MobiLink command line to be used to start the MobiLink server.

[Deploy Synchronization Model Wizard: Client Network Options Page \[page 259\]](#)

This page allows you to choose network options that clients use to connect to the MobiLink server.

[Deploy Synchronization Model Wizard: MobiLink User and Password Page \[page 260\]](#)

This page allows you to specify a MobiLink user name and password to be used by the MobiLink client when connecting to the MobiLink server. The user name and password do not need to match any database account.

[Deploy Synchronization Model Wizard: Synchronization Profile Page \[page 261\]](#)

This page allows you to define a synchronization profile that contains the options used by the clients when they synchronize.

[Deploy Synchronization Model Wizard: Choose How to Prepare Databases for Synchronization Page \[page 261\]](#)

This page enables you to enter information about how the SQL scripts generated by the wizard are applied to databases.

[Deploy Synchronization Model Wizard: Review Your Choices Page \[page 262\]](#)

This page allows you to review the options chosen for the synchronization model deployment. You can also review the generated SQL scripts for both the consolidated database and the remote database.

[Update Schema Wizard: Welcome Page \[page 263\]](#)

This page allows you to update the consolidated and remote database schemas in your synchronization model by comparing the schema(s) in the model with the schemas of the database(s).

[Update Schema Wizard: Consolidated Database Schema Page \[page 263\]](#)

You must connect to the database that will be the consolidated database in your MobiLink application so the wizard can obtain schema information for it.

[Update Schema Wizard: Remote Database Schema Page \[page 264\]](#)

This page allows you to choose the location used to obtain the remote database schema.

[Update Schema Wizard: New Remote Database Schema Page \[page 265\]](#)

This page allows you to choose the consolidated database tables that are used to update the remote database schema. After this wizard finishes, use the *Mappings* tab to set up synchronization between the matching consolidated and remote tables.

[Update Schema Wizard: Completing the Update Schema Wizard Page \[page 265\]](#)

This page provides a summary of the detected schema changes.

### 1.11.3.1 Create Synchronization Model Wizard: Welcome Page

Access this wizard by right-clicking *Synchronization Models* and choosing *New>Synchronization Model*. This page has the following components:

#### What do you want to name the new synchronization model

Type the name you want to use to identify the synchronization model. The specified name must be unique. This name is used for the model file and as the default name for deployment files and directories.

## Related Information

[Synchronization Models](#)

[Parts of a MobiLink Application](#)

[Setting up a MobiLink Application with the Create Synchronization Model Wizard](#)

### 1.11.3.2 *Create Synchronization Model Wizard: Primary Key Requirements* Page

In a synchronization system, the primary key is the only way to identify the same row in different databases (remote and consolidated) and the only way to detect conflicts.

MobiLink applications must adhere to the following rules:

- Every remote table that is to be synchronized must have a primary key.
- Never update the values of primary keys.
- Primary keys must be unique across all synchronized databases.

The *Primary Key Requirements* page of the *Create Synchronization Model Wizard* reminds you that your applications and databases must meet the primary key requirements for MobiLink synchronization. You cannot continue to the next page of the *Create Synchronization Model Wizard* unless the three primary key conditions are selected.

This page has the following components:

#### **All my tables have primary keys**

Select this condition to confirm that all of your remote tables have primary keys.

#### **My applications do not update primary keys**

Select this condition to confirm that your applications do not update primary keys.

#### **I have ensured that new rows have unique primary keys**

Select this condition to confirm that you ensured that new rows have unique primary keys.

#### **Do not show this Primary Key Requirements page again**

Select this option if you do not want this *Primary Key Requirements* page to appear again. This option can also be changed from the *Plug-in Preferences* page of the MobiLink plug-in for SQL Central.

## Related Information

[Synchronization Techniques](#)

[Unique Primary Keys](#)

### 1.11.3.3 *Create Synchronization Model Wizard: Consolidated Database Schema Page*

You must connect to the consolidated database that has the schema you want to use for the synchronization model's consolidated database schema. This enables the wizard to obtain the updated schema information.

This page has the following components:

#### **Which database do you want to use to obtain the schema for your consolidated database**

Click to select the consolidated database you want to provide the schema information for the synchronization model. When you click *Next*, a connection is made to the specified consolidated database using the connection information specified in the MobiLink project.

## Related Information

[MobiLink Consolidated Databases](#)

### 1.11.3.4 *Create Synchronization Model Wizard: Remote Database Schema Page*

The *Remote Database Schema* page of the *Create Synchronization Model Wizard* lets you specify the remote database schema. You can either connect to an existing remote database to obtain the remote schema or you can create a new remote database schema based on the consolidated database schema.

This page has the following components:

#### **Do you have an existing remote database**

Specifies whether you have an existing remote database to use:

##### **No, create a new remote database schema**

Choose this option to base the schema of the remote database on the consolidated database. If you select this option, you must later pick tables from the consolidated database to use to create the remote database schema.

##### **Yes, use an existing remote database**

Choose this option to connect to an existing SQL Anywhere or UltraLite remote database to obtain a remote database schema for the model.

For example, choose Yes:

- If you already have a remote database, especially if its schema is not a subset of the consolidated database schema.
- If your consolidated and remote columns need different types. For example, if you must map an NCHAR column on the consolidated database to a CHAR column on an UltraLite remote.
- If your remote tables need different owners from the tables on the consolidated database. For a new SQL Anywhere remote database, the owner of the remote tables is the same as the owner of

the corresponding consolidated database tables. If you want a different owner, use an existing SQL Anywhere remote database with that table ownership. (UltraLite databases do not have owners.)

### **i** Note

If you must change the schema of an existing remote database, make the changes to the database outside the model, and then run the *Update Schema Wizard* to update the model.

#### **Choose a remote database**

Click this button to choose the existing remote database you want to provide the schema information for the remote database.

The *Connect* window appears. Specify the connection information for the remote database.

Once you have selected a remote database, the following information is displayed:

#### **Name**

Shows the name of the remote database.

#### **User**

Shows the user name used to connect to the remote database.

#### **Product**

Shows the name of the product, for example, SQL Anywhere.

#### **Version**

Shows the version number of the selected database.

## **Related Information**

[Remote Schemas](#)  
[SQL Anywhere Clients](#)  
[UltraLite Clients](#)

### **1.11.3.5 Create Synchronization Model Wizard: New Remote Database Schema Page**

This page allows you to choose the consolidated database tables that are used to create the remote database schema. Selected tables and columns from the consolidated database are created in the remote database, and synchronization is set up between the matching consolidated and remote tables.

You can modify the table and column mappings after the wizard completes.

This page has the following components:

#### **Which consolidated database tables and columns do you want to have in your remote database**

Lists all the tables and columns, grouped by table owner, in the consolidated database that you are currently connected to. Clear a table to exclude it from the table mapping. Clear a column to exclude it from the column mapping. System tables and MobiLink system tables are excluded from the list.

### **Hide tables named like synchronization model shadow tables**

By default, tables that are named like synchronization model shadow tables are hidden because they should not be synchronized. Clear this option to show tables that are named like synchronization model shadow tables.

## **Related Information**

[How Remote Tables Relate to Consolidated Tables](#)  
[Changing Table Mappings](#)

### **1.11.3.6 *Create Synchronization Model Wizard: Existing Remote Database Page***

The *Existing Remote Database* page of the *Create Synchronization Model Wizard* allows you to choose the remote database tables and columns that you want to synchronize. You can view and modify these options after the *Create Synchronization Model Wizard* finishes.

This page has the following components:

#### **Which consolidated database tables do you want to synchronize**

Lists all the tables and columns, grouped by table owner, in the consolidated database that you are currently connected to. Clear a table to exclude it from the table mapping. Clear a column to exclude it from the column mapping. System tables and MobiLink system tables are excluded from the list.

#### **Hide tables named like synchronization model shadow tables**

By default, tables that are named like synchronization model shadow tables are hidden because they should not be synchronized. Clear this option to show tables that are named like synchronization model shadow tables.

## **Related Information**

[How Remote Tables Relate to Consolidated Tables](#)  
[MobiLink Data Mappings Between Remote and Consolidated Databases](#)  
[Changing Table Mappings](#)

### 1.11.3.7 *Create Synchronization Model Wizard: Table Synchronization Mapping Page*

This page allows you to specify the table mappings between the chosen consolidated and remote tables in the model. This page applies when the remote database schema in the synchronization model is based on an existing remote database.

This page shows the mappings between the consolidated tables and the available tables in the remote database. The *Mapping Direction* column shows whether the mapping should be *Bi-directional*, *Download to remote only*, or *Upload to consolidated only*.

The page has the following components:

#### **Consolidated Table column**

Shows the consolidated database tables that the wizard is trying to map to the tables in the *Remote Table* column.

#### **i Note**

Default table mappings are made on a best effort basis. Mappings may not be found for all tables, and of the tables that are mapped, the mappings may not be what you intended, so verify all tables mappings before proceeding.

You cannot proceed until all tables are mapped.

#### **Mapping Direction column**

Shows the direction of synchronization between the consolidated table and the chosen remote table. The direction can be *Bi-Directional*, *Download to remote only*, or *Upload to consolidated only*. The default is *Bi-Directional*. To change the direction, choose a new direction from the dropdown list.

#### **Remote Table column**

Lists the chosen remote database tables.

### 1.11.3.8 *Create Synchronization Model Wizard: Completing the Create Synchronization Model Wizard Page*

This page provides a summary of the name and location of the new synchronization model, based on the information you specified. It also indicates whether you must make further changes before deploying the model.

To complete the wizard and create the new synchronization model, review the information and then click *Finish*.

When you click *Finish*, the model you just created opens. You are now working offline and you can make changes to the model. No changes are made outside the model until you deploy the model: the consolidated database does not change and the remote database is not created or changed until that time.

To make changes before creating the synchronization model, click *Back*.

## Related Information

[Synchronization Model Deployment](#)

### 1.11.3.9 *Deploy Synchronization Model Wizard: Welcome Page*

This page has the following components:

#### **Select the folder to contain files generated by the wizard**

Specify the location where the generated files are stored. If an existing directory is specified, all files in that directory are overwritten when you click *Next* and move to the next page of this wizard.

#### **Deploy again using the same options as the last deploy of this synchronization model**

Select this option to run the *Deploy Synchronization Model Wizard* initialized with the last deployment settings used for this model. This option is only available if you have previously deployed this synchronization model.

## Related Information

[Synchronization Model Deployment](#)

### 1.11.3.10 *Deploy Synchronization Model Wizard: Consolidated Database and MobiLink Server Command Line Page*

This page allows you to select the consolidated database to which you want to deploy the synchronization model. It also lets you choose a MobiLink command line to be used to start the MobiLink server.

This page has the following components:

#### **Pick the consolidated database and the MobiLink server command line**

Choose from the following options:

##### **Consolidated database**

Choose the consolidated database that you want the synchronization model deployed to from the dropdown list. When you click *Next*, a connection is made to the specified consolidated database.

##### **MobiLink server command line**

Choose the MobiLink server command line that you want to use for the deployment from the dropdown list. Only MobiLink command lines appropriate for the chosen consolidated database are shown.

##### **MobiLink server options**

Displays the MobiLink server options for the selected consolidated database and MobiLink server command line.



## i Note

If your deployment creates shadow tables, you must connect to the consolidated database as either the owner of the base tables for which shadow tables will be created, or as an administrator.

## Related Information

[Synchronization Model Deployment](#)  
[-x mlsrv17 Option](#)

### 1.11.3.11 *Deploy Synchronization Model Wizard: Client Network Options Page*

This page allows you to choose network options that clients use to connect to the MobiLink server.

#### **Choose how remote synchronization clients will connect to the MobiLink server**

Choose from the following options:

##### **Protocol**

Choose one of the following options:

##### **TCP/IP**

Select this option and specify a port to use TCP/IP for communications between the MobiLink client and server. This is the default, and is recommended for the best performance.

##### **TLS**

Select this option and specify a port to use TCP/IP with transport layer security for communications between the MobiLink client and server.

##### **HTTP**

Select this option and specify a port to use the standard web protocol for communications between the MobiLink client and server.

##### **HTTPS**

Select this option and specify a port to use HTTPS with transport layer security for communications between the MobiLink client and server.

When you select a protocol that is specified on the MobiLink command line, the wizard fills in the host, port and other options fields with the appropriate default values. You may need to change these values. In particular, when the TLS or HTTPS protocols are chosen, you must fill in additional communication settings.

##### **Host**

Type the host name or IP address of the MobiLink server computer.

##### **Port**

Type the socket port number on which the MobiLink server should listen. The default port is 2439 for TCP/IP and TLS, 80 for HTTP and 443 for HTTPS.

#### **Other options**

Specify additional MobiLink client network protocol options separated by semicolons, in the form ( option=value;... ).

#### **Current network options**

Shows the client network options currently selected.

## **Related Information**

[Synchronization Model Deployment](#)  
[MobiLink Client Network Protocol Options](#)

### **1.11.3.12 *Deploy Synchronization Model Wizard: MobiLink User and Password* Page**

This page allows you to specify a MobiLink user name and password to be used by the MobiLink client when connecting to the MobiLink server. The user name and password do not need to match any database account.

This page has the following components:

#### **What MobiLink user and password do you want to use**

Choose from the following options:

##### **Use these**

Choose this option to specify a MobiLink user and password to be used by the MobiLink client when connecting to the MobiLink server.

##### **MobiLink user**

Specify the MobiLink user name you want to use to connect the MobiLink client to the MobiLink server.

##### **MobiLink password**

Type the password for the user name you specified.

##### **Register this user in the consolidated database**

Select this option if you want the specified MobiLink user to be registered for the MobiLink server at the consolidated database.

##### **Use macro values appropriate for remote tasks**

Select this option if you are deploying the synchronization model to create SQL files for remote tasks. The macros are replaced with the appropriate MobiLink user and password being used by the MobiLink Agent when the SQL is executed on the remote device.

## Related Information

[MobiLink Users in a Synchronization System](#)  
[Synchronization Model Deployment](#)  
[Variables in Parameters](#)  
[MobiLink User Authentication Utility \(mluser\)](#)

### 1.11.3.13 *Deploy Synchronization Model Wizard: Synchronization Profile Page*

This page allows you to define a synchronization profile that contains the options used by the clients when they synchronize.

#### **Synchronization profile name**

Type a name for the synchronization profile.

#### **Additional client synchronization options**

Specify any additional options for the synchronization client. The available options vary depending on whether the project has a SQL Anywhere or UltraLite remote database.

#### **Current options**

Shows the synchronization options currently selected.

## Related Information

[Synchronization Model Deployment](#)

### 1.11.3.14 *Deploy Synchronization Model Wizard: Choose How to Prepare Databases for Synchronization Page*

This page enables you to enter information about how the SQL scripts generated by the wizard are applied to databases.

#### **What do you want to do with the SQL script created to prepare the consolidated database for synchronization**

Choose one of the following options:

##### **Do not execute**

Choose this option if you do not want to execute the SQL script to deploy the synchronization model. The SQL script is saved to use later.

##### **Execute against consolidated database**

Choose this option to deploy the synchronization model to the consolidated database.

If *Use macro values appropriate for remote tasks* was selected on the *MobiLink User and Password* page then *Do not execute* is the only option available.

### **What do you want to do with the SQL script created to prepare the remote database for synchronization**

Choose one of the following options:

#### **Do not execute**

Choose this option if you do not want to execute the SQL script to deploy the synchronization model to the remote database. The SQL script is saved to use later.

#### **Execute against a new remote database**

Choose this option to create a new database using the remote schema from the synchronization model.

#### **Execute against an existing remote database**

Choose this option to deploy the synchronization model to an existing remote database. When this option is chosen, additional options appear that let you specify the options required to connect to the remote database.

## **Related Information**

[Deployed Synchronization Models](#)  
[Synchronization Model Deployment](#)

### **1.11.3.15 *Deploy Synchronization Model Wizard: Review Your Choices* Page**

This page allows you to review the options chosen for the synchronization model deployment. You can also review the generated SQL scripts for both the consolidated database and the remote database.

#### **Summary**

The Summary pane shows all the choices you made in the *Deploy Synchronization Model Wizard*.

#### **Remote SQL script**

Shows the name and location of the SQL script generated for the remote database. If you chose *Execute against a new remote database* or *Execute against an existing remote database* on the *Choose How To Prepare Databases For Synchronization* page, this is the script that is executed when you complete this wizard. Click *View* to review the SQL script.

#### **Consolidated SQL script**

Shows the name and location of the SQL script generated for the consolidated database. If you chose *Execute against consolidated database* on the *Choose How To Prepare Databases For Synchronization* page, this is the script that is executed when you complete this wizard. Click *View* to review the SQL script.

## Related Information

[Deployed Synchronization Models](#)  
[Synchronization Model Deployment](#)

### 1.11.3.16 *Update Schema Wizard: Welcome* Page

This page allows you to update the consolidated and remote database schemas in your synchronization model by comparing the schema(s) in the model with the schemas of the database(s).

#### **Which schema do you want to update**

Choose one of the following to update your schema:

##### **The consolidated database schema**

Choose this option to update the consolidated database schema in the model with the schema from consolidated database.

##### **The remote database schema**

Choose this option to update the remote database schema in the model with the schema from the existing remote database.

##### **Both the consolidated and remote database schemas**

Choose this option to update both the consolidated database and the remote database schemas in the model with the schemas from the consolidated and existing remote databases.

## Related Information

[MobiLink Data Mappings Between Remote and Consolidated Databases](#)

### 1.11.3.17 *Update Schema Wizard: Consolidated Database Schema* Page

You must connect to the database that will be the consolidated database in your MobiLink application so the wizard can obtain schema information for it.

#### **Which database do you want to use to update the consolidated database schema for your synchronization model**

Click to choose a consolidated database to provide the schema information for the consolidated database in the synchronization model.

The *Connect* window appears. Specify the connection information for the consolidated database.

## i Note

If the specified database is not set up as a MobiLink consolidated database, you are prompted to install MobiLink system setup.

- Click [Yes](#) to immediately install the MobiLink system setup scripts to the consolidated database. For example, click [Yes](#) if you intend to deploy the synchronization model to the specified consolidated database.
- Click [No](#) to not install the MobiLink setup scripts to the specified consolidated database. For example, click [No](#):
  - If you only intend to use the specified consolidated database to obtain a schema and you have no intention of deploying to it.
  - If you intend to deploy the synchronization model to the specified consolidated database, but prefer to do so with the [Deploy Synchronization Model Wizard](#).
  - If you prefer to run the setup scripts after you deploy.

With the exception of the installation of the MobiLink system setup, no other changes are made to the consolidated database until you deploy your model.

## Related Information

[Consolidated Database Setup](#)

### 1.11.3.18 [Update Schema Wizard: Remote Database Schema Page](#)

This page allows you to choose the location used to obtain the remote database schema.

#### **How do you want to update the remote schema in your synchronization model**

Choose one of the following to specify how to update the remote schema:

##### **From the consolidated database schema**

Select this option to choose tables from the consolidated database to use to update the remote database schema.

##### **From an existing remote database**

Select this option to connect to an existing SQL Anywhere or UltraLite remote database to update the remote schema.

##### **Choose a remote database**

Click this button to choose a remote database to provide the schema information for the synchronization model. The [Connect](#) window appears. Specify the connection information for the remote database.

The following fields are blank until you specify a remote database, and then they are updated to show the information for the specified remote database.

##### **Name**

Shows the name of the remote database.

**User**

Shows the user ID of the user connected to the remote database.

**Product**

Shows the name of product the remote database is from. For example, SQL Anywhere.

**Version**

Shows the version of the product being used.

### 1.11.3.19 *Update Schema Wizard: New Remote Database Schema Page*

This page allows you to choose the consolidated database tables that are used to update the remote database schema. After this wizard finishes, use the *Mappings* tab to set up synchronization between the matching consolidated and remote tables.

**Which consolidated database tables and columns do you want to have in your remote database**

Lists all the tables, grouped by table owner, in the consolidated database that you are currently connected to. Clear a table to remove it from the table mapping.

Expand a table to see its column information. Clear a column to exclude it from the column mapping.

**Hide tables named like synchronization model shadow tables**

By default, tables that are named like synchronization model shadow tables are hidden since they should not be copied. Clear this option to show tables that are named like synchronization model shadow tables.

## Related Information

[MobiLink Data Mappings Between Remote and Consolidated Databases](#)

[How Remote Tables Relate to Consolidated Tables](#)

### 1.11.3.20 *Update Schema Wizard: Completing the Update Schema Wizard Page*

This page provides a summary of the detected schema changes.

The *Update Schema Wizard* compares the schema(s) currently in the synchronization model with the specified database(s) and changes the synchronization model to match the schema of the specified database(s).

To complete the wizard and update the synchronization model schema, review the information under *Detected schema changes* (if there are any changes to the schema) and then click *Finish*.

Unlike the *Create New Remote Tables* window, which adds remote tables to the model, the *Update Schema Wizard* does not map the tables. You must create table mappings using the *Mappings* tab.

## 1.11.4 Create New Table Mappings Window

The *Create New Table Mappings* window allows you to create new table mappings for a remote schema by selecting from unsynchronized tables in the consolidated schema.

### Choose the additional consolidated database tables to synchronize

The window shows a tree view of all of the tables in the consolidated database, grouped by owner. Select one or more of these tables to add them to the remote schema. The new remote tables have the same names and the same sets of columns as the corresponding consolidated tables, and the mappings between the remote and consolidated tables are created automatically.

### Add the chosen tables to the remote schema if they don't already exist

Select this option to create copies of the selected tables in the remote database.

### Let me choose the columns for the new remote tables

Select this option to choose the columns for the remote tables. Once this option is selected, you can expand the view of the tables in the window to show the columns. If a table is selected, then by default all the columns in that table are selected. Remove the checkmarks from columns that you do not want to include.

### Hide tables named like synchronization model shadow tables

By default, tables that are named like synchronization model shadow tables are hidden. Clear this option to show tables that are named like synchronization model shadow tables.

## 1.11.5 Mappings Tab

The *Mappings* tab contains two panes: the *Table Mappings* pane and the *Details* pane.

When you select a table mapping row in the *Table Mappings* pane, information about it appears in the *Details* pane. It is found under *Synchronization Models*.

### In this section:

[Mappings: Table Mappings \[page 266\]](#)

The *Table Mappings* pane contains one row for each table mapping between a table in the consolidated database and a table in the remote database. You can modify, add or delete table mappings.

[Mappings: Details \[page 267\]](#)

When you select a table mapping row in the *Table Mappings* pane, information about the table appears in the *Details* pane. The *Details* pane has the following tabs:

### 1.11.5.1 Mappings: Table Mappings

The *Table Mappings* pane contains one row for each table mapping between a table in the consolidated database and a table in the remote database. You can modify, add or delete table mappings.

You can modify the displayed values on a table-by-table basis by editing this table.



The *Table Mappings* pane contains the following columns.

#### **Ordinal**

This column has no title. It numbers the rows in the table. If you change the sorting of the tables (by clicking column headings), the grid numbers do not change with the reorder. Icons appear in this column if a remote table has been added, marked for delete, or modified.

#### **Status**

This column notifies you if there is an error, warning, or informational message for the table mapping. If an icon appears in this column, select the table mapping, and then open the *Status* tab in the *Details* pane to see the content of the message.

#### **Consolidated Table**

This is the table that you are synchronizing in the consolidated database. The name of the table owner is included in parentheses. Only synchronized consolidated tables are displayed. If you no longer want a consolidated table to be synchronized, remove its table mapping by either right-clicking the row in the *Table Mappings* pane and choosing *Delete*, or by changing the *Mapping Direction* to *Not Synchronized*, and then saving the model.

Look at the *Column Mappings* tab in the *Details* pane to check how the consolidated columns are mapped to the remote columns for the selected table mapping.

#### **Mapping Direction**

The direction of synchronization. The direction can be *Not Synchronized*, *Bi-directional*, *Download to Remote Only*, or *Upload to Consolidated Only*. Table mappings marked as *Not Synchronized* are deleted the next time the Synchronization model is saved.

#### **Remote Table**

This is the remote table to synchronize with the corresponding consolidated table. You can change the remote table by clicking the column, clicking the ellipsis (three dots) button and choosing a different table from the list of remote tables.

If no remote table is selected, the table mapping is invalid.

## **1.11.5.2 Mappings: Details**

When you select a table mapping row in the *Table Mappings* pane, information about the table appears in the *Details* pane. The *Details* pane has the following tabs:

#### **In this section:**

##### [Column Mappings Tab \[page 268\]](#)

The *Column Mappings* tab lets you see and change the mappings between columns in the consolidated table and the remote table.

##### [Download Strategy Tab \[page 269\]](#)

The *Download Strategy* tab lets you decide how the rows downloaded to the remote database are chosen. The tab shows the following information for the selected table:

##### [Download Deletes Tab \[page 270\]](#)

The *Download Deletes* tab applies if the download type chosen on the *Download Strategy* tab is not *Custom*.

#### [Download Subset Tab \[page 271\]](#)

On the *Download Subset* tab, you can specify whether downloads contain the same rows for all remote databases or if different remote databases receive different subsets of the rows. This tab does not apply if you chose *Custom* for the download type on the *Download Strategy* tab.

#### [Download Delete Subset Tab \[page 273\]](#)

The *Download Delete Subset* tab lets you define the subset of deletes that occur on the consolidated database that are sent to each remote database.

#### [Conflict Handling Tab \[page 274\]](#)

The *Conflict Handling* tab lets you define what happens when a row is modified both in the consolidated database and on a remote database.

#### [Status Tab \[page 275\]](#)

The *Status* tab shows any informational, warning, or error messages for the table mapping that is selected in the *Table Mappings* pane.

## 1.11.5.2.1 *Column Mappings* Tab

The *Column Mappings* tab lets you see and change the mappings between columns in the consolidated table and the remote table.

You can mark a column mapping for deletion by selecting a row in the *Column Mappings* tab, right-clicking the column and choosing *None*. The column mapping is deleted when you save the model.

The *Column Mappings* tab shows the following information for each column in the consolidated table:

#### **Consolidated Column Name**

This is the column that you are synchronizing in the consolidated database.

#### **Consolidated Column Number**

This column indicates the order in which columns are returned by a `SELECT * FROM tablename` statement executed on the consolidated database.

#### **Consolidated Column Data Type**

The data type of the consolidated column.

#### **Mapping Direction**

The mapping direction of the column.

For consolidated columns that are mapped to remote columns, the mapping direction is either the same as the mapping direction for the table or *Not Synchronized*. For example, if the table has a bi-directional table mapping, the table's columns can either be *Bi-Directional* or *Not Synchronized*. For consolidated columns mapped to expressions, the mapping direction is always upload-only.

If the column mapping direction is *Not Synchronized*, the column is part of the remote database schema. When the model is deployed, the column is created on the remote, but no information is synchronized to it.

#### **Remote Column Name**

Shows the remote column or expression to which the consolidated column is mapped. The column is empty if the consolidated column is not synchronized.

Columns can be mapped to expressions by right clicking the column and selecting *MobiLink User Name*, *Remote ID* or *Custom*. Selecting *Custom* opens a window where you can enter a SQL expression that can

include MobilLink named parameters. Columns in tables whose mapping direction is download-only cannot be mapped to an expression.

Column mappings that involve expressions are always upload-only. Columns involved in these mappings exist in the remote database but are not synchronized. If you map a consolidated primary key column to an expression, you must apply appropriate download subsets and download delete subsets to ensure the uniqueness of primary keys on download.

#### **i Note**

If your remote database existed before you created your synchronization model, the information in the *Remote Column Name* column represents a best guess that should be checked.

#### **Remote Column Number**

This column indicates the order in which columns are returned by a `SELECT * FROM tablename` statement executed on the remote database.

#### **Remote Column Data Type**

The data type of the remote column.

### **1.11.5.2.2 Download Strategy Tab**

The *Download Strategy* tab lets you decide how the rows downloaded to the remote database are chosen. The tab shows the following information for the selected table:

#### **Strategy**

Choose one of the following download strategies from the dropdown list.

##### **Timestamp**

Data is downloaded only if it changed since the last download. When using timestamp-based downloads, the consolidated table must have a `TIMESTAMP` column to track when changes are made to rows. This can be done by adding a column to the consolidated database table or by creating a shadow table.

Shadow tables are created with the same owner as the base table. A shadow table is a separate table that contains the primary key columns of the table being synchronized along with a timestamp that indicates the last time the row was changed.

When you choose *Timestamp*, the necessary objects are generated for you when you deploy the model.

##### **Snapshot**

All data in the consolidated table is downloaded in every synchronization, even if it has already been downloaded.

##### **Custom**

Write your own download logic to select the rows to be downloaded. If you choose this option, you must write the `download_cursor` and `download_delete_cursor` scripts. You can do this on the *Events* tab.

The following options are only available if *Timestamp* is chosen for the download type.

### Timestamp column name

Specify the name of the column to be used to track the last time each row was changed.

### Store timestamp column in consolidated table name

Select this option to add a `TIMESTAMP` column to the consolidated table if the `TIMESTAMP` column does not already exist.

#### Default column values

Select this option to use default column values.

When column defaults are available, they provide better performance than using triggers.

#### Trigger

Select this option to use a column default instead of a trigger to update the value in the timestamp column.

Using triggers makes it more difficult to accidentally update the timestamp column.

### Store timestamp column in a shadow table

Select this option to create a shadow table for the synchronized consolidated database table. The shadow table contains the `TIMESTAMP` column used to keep track of when each row was last modified. Shadow tables are created with the same owner as the base table.

## Related Information

[Snapshot Synchronization](#)

[download\\_cursor Scripts](#)

[download\\_delete\\_cursor Scripts](#)

[Implementing Timestamp-based Downloads](#)

[Modifying the Download Strategy](#)

### 1.11.5.2.3 *Download Deletes* Tab

The *Download Deletes* tab applies if the download type chosen on the *Download Strategy* tab is not *Custom*.

This tab allows you to control whether deletions on the consolidated database are downloaded to remotes and how the information about those deletes is stored in the consolidated database. The *Download Deletes* tab shows the following information for the selected table:

#### When rows are deleted in the consolidated database, delete them from the remote databases

When this checkbox is selected, data that is deleted on the consolidated database is deleted on the remote databases.

If you are using snapshot downloads and this option is selected, all existing rows in the remote database are deleted before the downloaded rows are added.

If you are using timestamp-based synchronization and this option is selected, the deletions on the consolidated database must be recorded. There are two ways of doing this: using shadow tables (the default), or using logical deletes.

This option cannot be selected if the download type is *Custom*. In that case, you must write your own `download_delete_cursor` script. You can do this on the *Events* tab.

#### Copying deleted rows to a shadow table

Select this option to use shadow tables to track deletes in the consolidated database.

A shadow table is a separate table that contains the primary key columns of the table being synchronized along with a timestamp that indicates the time when the row was deleted. When a row is deleted from the consolidated table, a corresponding row is added to the shadow table to record the deletion so that it can be downloaded to remote databases. Shadow tables are created with the same owner as the consolidated table.

##### Timestamp column name

Specifies the name of the `TIMESTAMP` column. The default *Timestamp column name* is *last\_modified*.

#### Leaving deleted rows in table name and using a special column to make them as deleted

Select this option to use logical deletes in the consolidated database to track deletions in the consolidated database. *Logical deletes* use a status column to keep track of whether rows are valid. The following options specify how the status column tracks deletes:

##### Column name

Specifies the name of the column that is used to indicate if a row has been deleted. This column is added if it is not already present. The default name is *deleted*.

##### Column value for deleted rows

Specifies the value that is generated when a row is deleted. The default is *Y*.

##### Column value for other rows

Specifies the value that is generated when a row is not deleted. The default is *N*.

## Related Information

[Deletes](#)

[download\\_delete\\_cursor Scripts](#)

[Modifying How Deletes Are Recorded](#)

### 1.11.5.2.4 Download Subset Tab

On the *Download Subset* tab, you can specify whether downloads contain the same rows for all remote databases or if different remote databases receive different subsets of the rows. This tab does not apply if you chose *Custom* for the download type on the *Download Strategy* tab.

#### Subsetting strategy

Choose one of the following options from the dropdown list to subset data:

##### None

Download the same data to each remote database.

## User

The rows in the download are determined based on the synchronization user (also known as a MobiLink user) that is synchronizing.

## Remote

The rows in the download are determined based on the remote ID of the remote database synchronizing. It is usually better to partition by user or by authentication parameter than by remote ID, because the remote ID can change if the remote computer is reset or replaced.

## Custom

The rows in the download are determined by a SQL WHERE clause that you write. This option is useful when you need multiple joins or particular business logic in your download cursor WHERE clause.

For subset by user, the *Download Subset* tab shows the following information for the selected table mapping:

### Table table name

Select this option if the table contains a column that holds the MobiLink user name that should receive the row. Rows are included in the download if the value of the column matches the name of the MobiLink user that is synchronizing.

#### Column name

Specify the name of the column that holds the MobiLink user name.

### Another table that can be joined with table table name

Select this option if the table can be joined to another table, and that other table contains a column, such as ID, that identifies the MobiLink user that should receive the row. Rows are included in the download if there exists a row in T1 join T2 where ID matches the name of the remote ID of the client that is synchronizing.

You can specify:

#### Other table

Select the table to join to.

#### Column containing MobiLink user

Select the column from the joined table (specified in the *Table to join* field) that contains the remote ID.

#### Join condition

Create a join condition by choosing a column from the table chosen in the *Table Mappings* pane and choosing a column from the table specified in the *Table to Join* field above.

For subset by remote ID, the *Download Subset* tab shows the following information for the selected table mapping:

### Table table name

Select this option if the table contains a column that holds the MobiLink user name that should receive the row. Rows are included in the download if the value of the column matches the name of the MobiLink user that is synchronizing.

#### Column name

Specify the name of the column that holds the MobiLink user name.

### Another table that can be joined with table table name

Select this option if the table can be joined to another table, and that other table contains a column, such as ID, that identifies the MobiLink user that should receive the row. Rows are included in the download if there exists a row T1 join T2 where ID matches the name of the ML user that is synchronizing.

You can specify:

#### **Other table**

Select the table to join to.

#### **Column containing remote ID**

Select the column from the joined table (specified in the [Table to join](#) field) that contains the MobiLink remote ID.

#### **Join condition**

Create a join condition by choosing a column from the table chosen in the [Table Mappings](#) pane and choosing a column from the table specified in the [Table to Join](#) field above.

### **Custom**

For a custom download subset, the [Download Subset](#) tab shows the following.

#### **SQL Expression to use in the download cursor's WHERE clause**

Type the SQL expression. You may use MobiLink named parameters in your expression. For example, `coll = {ml s.username}`.

By default the same expression and joined tables are used for the download delete subset. If you are using a shadow table for deletes and want to use the same expression, avoid using the base table name in the expression. If that is not possible, use a custom download delete subset.

#### **Additional tables**

Type the table name(s) if your `download_cursor` requires a join to other tables. If the join requires multiple tables, separate them with commas.

## **Related Information**

[Named Script Parameters](#)

[Remote IDs](#)

[MobiLink Users in a Synchronization System](#)

[download\\_cursor Scripts](#)

[Modifying the Download Subset](#)

### **1.11.5.2.5 Download Delete Subset Tab**

The [Download Delete Subset](#) tab lets you define the subset of deletes that occur on the consolidated database that are sent to each remote database.

The [Download Delete Subset](#) tab applies if the download type on the [Download Strategy](#) tab is set to *Timestamp* and *When rows are deleted in the consolidated database, delete them from the remote databases* is checked on the [Download Deletes](#) tab and *Download subset* is not set to *None* on the [Download Subset](#) tab.

The [Download Delete Subset](#) tab shows the following information for the selected table mapping:

#### **Download delete subsetting strategy**

Choose one of the following options from the dropdown list:

##### **All**

Download all deletes to all remote databases.

##### **Download**

Use the same logic for determining the download delete subset that is defined on the [Download Subset](#) tab.

##### **Custom**

Write a SQL WHERE clause that determines the subset of deletes that each remote receives.

When [Custom](#) is chosen, the following additional fields are available.

#### **SQL expression**

Type a SQL expression to be added to the generated download delete cursor WHERE clause. You may use MobiLink named parameters in your expression.

Do not write a complete `download_delete_cursor`. You only need to add extra information to identify the join and other restrictions on the download delete subset. If the download delete subset is set to [Same](#), this shows the download subset SQL expression and is not editable.

#### **Additional tables**

Type the table name(s) if your `download_delete_cursor` requires a join to other tables. If the join requires multiple tables, separate them with commas. If the download delete subset is set to [Same](#), this shows the download subset tables and is not editable.

#### **Delete shadow table columns**

This is displayed if you are using a shadow table to track deletes. Choose any extra columns needed by the SQL expression that should be placed in the delete shadow table when a row is deleted.

## **Related Information**

[Named Script Parameters](#)

[download\\_cursor Scripts](#)

### **1.11.5.2.6 [Conflict Handling Tab](#)**

The [Conflict Handling](#) tab lets you define what happens when a row is modified both in the consolidated database and on a remote database.

#### **Choose a strategy for detecting conflicts**

This option determines when a conflict is detected. The conflict resolution mechanism is only activated when a conflict is detected.

Choose one of the following options from the dropdown list.



### Row-based

A conflict is detected if the row has been updated on both the remote and the consolidated database since the last synchronization.

### Column-based

A conflict is detected only if the same column has been updated for the row in both the remote and consolidated databases. Otherwise, only the uploaded column updates are applied. If a table has BLOB columns, row-based conflict detection is used instead.

### Choose a strategy for resolving conflicts when they are detected

Choose one of the following options for conflict resolution from the dropdown list:

#### First in wins

Uploaded updates are rejected if they conflict.

#### Last in wins

Uploaded updates are always applied.

#### Timestamp

The newer change wins, using a `TIMESTAMP` column that you maintain. This `TIMESTAMP` column records the last time that the row was changed. It should exist in both the remote and consolidated tables and be included in the synchronization. To work, your remote and consolidated databases must use the same time zone (preferably UTC) and their clocks must be synchronized.

#### Timestamp column

Enter the `TIMESTAMP` column here.

#### Custom

Write your own `resolve_conflict` scripts instead of having them generated automatically. You can do this on the [Events](#) tab.

## 1.11.5.2.7 Status Tab

The [Status](#) tab shows any informational, warning, or error messages for the table mapping that is selected in the [Table Mappings](#) pane.

## 1.11.6 Events Tab

The [Events](#) tab allows you to view and modify the scripts that were generated by the [Create Project Wizard](#). It also allows you to create new scripts.

The [Events](#) tab shows all the event scripts for the synchronization model. It is found under [Synchronization Models](#). Use the following options to navigate the events listing:

### Group

Shows the name of the group associated with the displayed events. Choose a group from the dropdown list to scroll the editor to that group's events. The dropdown list contains one event group for all connection events, and one event group for each remote table's events.

## Event

Shows the event name. Choose an event name from the dropdown list to scroll the editor to the specified event. Bolding indicates that the event has a script associated with it. If you select an event that is not bolded, then a new script is added to the editor.

## Type

Shows whether the script is generated, overridden, or user-defined.

### Generated scripts

Generated scripts are automatically created and maintained as a result of the selections you make in the *Create Synchronization Model Wizard*.

You can edit and even delete the contents of a generated script. When you make changes to a generated script, its type changes to *Overridden*.

### Overridden scripts

Overridden scripts are scripts that have been manually changed.

When you change a generated script, the script is fully under your control; it is not changed automatically when something is changed in *Model* mode. For example, if you change the `download_delete_cursor` script for a table and then clear *Download Deletes* in *Model* mode, your customized `download_delete_cursor` script is not affected. However, its type is changed to *User-Defined*.

You can restore an overridden script back to its generated-script state by placing the cursor anywhere within the script and choosing **File > Restore Scriptname Script**. You can restore multiple overridden scripts at once by selecting the scripts in the editor and choosing **File > Restore Selected Scripts**.

### Ignored scripts

Ignored scripts are scripts that have been manually set to be ignored.

You can set a script to be ignored by placing the cursor anywhere within the script and choosing **File > Ignore Scriptname Script**. You can ignore multiple ignored scripts at once by selecting the scripts in the editor and choosing **File > Ignore Selected Scripts**.

You can restore an ignored script back to its generated-script state by placing the cursor anywhere within the script and choosing **File > Restore Scriptname Script**. You can restore multiple ignored scripts at once by selecting the scripts in the editor and choosing **File > Restore Selected Scripts**.

### User-defined scripts

User-defined scripts are scripts that you create for events for which there are no generated script.

User-defined scripts are not changed automatically when something is changed in *Model* mode. For example, if you create a `download_delete_cursor` script for a table and then select *Download Deletes* in *Model* mode, your customized `download_delete_cursor` script is not affected. However, its type changes to *Overridden*.

You can remove a user-defined script by placing the cursor in the script and choosing **File > Remove Scriptname Script**. You can restore user-defined scripts by selecting event names and choosing **File > Restore Selected Scripts**.

## Language

Shows the language the event script is written in. Languages supported are [SQL](#), [JAVA](#), and [.NET](#); all generated scripts are SQL scripts.

## Related Information

[Ignored Scripts](#)

[Script Modification in a Synchronization Model](#)

### 1.11.7 *Notification* Tab

The *Notification* tab shows the following information for the synchronization model:

#### **Enable server-initiated synchronization**

Select this option to initiate synchronization by polling the consolidated database based on the download-cursor for a table.

#### **Download cursor**

Select the table.

#### **Polling interval**

Specify how often you want to poll the server.

##### **Poll every**

Select a predefined polling interval. The default is 30 seconds.

##### **Use the following polling interval**

Specify the polling interval.

#### **Isolation level**

Select one of the following isolation levels (The default is *Read Committed*):

- *Read uncommitted* (level 0)
- *Read committed* (level 1)
- *Repeatable read* (level 2)
- *Serializable* (level 3)

#### **In this section:**

[Test Window Configuration Window \[page 278\]](#)

This window has the following components:

## Related Information

[Notifiers](#)

[Server-initiated Synchronization Setup](#)

## 1.11.7.1 Test Window Configuration Window

This window has the following components:

### **MobiLink User**

Type the MobiLink user name you want the MobiLink client to use when connecting to the MobiLink server.

### **MobiLink Password**

Type the password for the MobiLink user name you specified.

### **Authentication Parameters**

Type the authentication parameters, using a comma-separated list. For example, [p1,p2,p3](#). These values are sent from the MobiLink client to the MobiLink server and can be accessed by the server-side synchronization scripts.

### **MobiLink Server Command Line**

Choose a MobiLink server command line to use when starting the MobiLink server for testing. To review the options specified on the MobiLink server command line, click [View](#). The [MobiLink Server Command Line Properties](#) window appears.

### **Client Network Protocol**

Choose the network communication protocol for the MobiLink client to use when connecting to the MobiLink server. Only protocols defined by the MobiLink server command line can be chosen.

### **Client Network Options**

Choose network protocol options for the MobiLink client to use when connecting to the MobiLink server. Edit the options directly or click [Edit](#) to edit the options from the [Client Network Options](#) page.

When you select a client network protocol, default options are generated in this field based on the MobiLink server command line. Always review the default options to ensure that they are adequate for synchronization.

### **Synchronization Type**

Choose one of the following synchronization types from the dropdown list.

#### **Bidirectional**

Database operations are synchronized from the remote database to the consolidated database, and vice versa.

#### **Download only**

Changes are synchronized from the consolidated database to the remote database only.

#### **Upload only**

Changes are synchronized from the remote database to the consolidated database only.

### **Always use these settings when testing this synchronization model with this consolidated database**

Check this option to use this configuration every time you test this synchronization model. The specified options are used until the settings are changed.

## Related Information

[MobiLink Users in a Synchronization System](#)  
[Authentication Parameters](#)  
[Authentication Process](#)  
[Upload-only and Download-only Synchronizations](#)  
[Testing a Synchronization Model Before Deployment](#)  
[Creating a MobiLink Server Command Line](#)  
[MobiLink Client Network Protocol Options](#)

## 1.12 UltraLite Plug-in Properties Windows

The UltraLite plug-in provides several windows that let you configure object properties.

You can find most of the configurable settings in the UltraLite plug-in windows, which can be accessed either through the *File* menu or the *Tools* menu. The different SQL Central plug-ins may provide different menu items.

The *File* menu contains commands related to the objects that appear in the main SQL Central window. These menu items change depending on which object you select. For example, if you select a table, the *File* menu shows commands and options related to tables. Likewise, if you select a column, the *File* menu changes to show column options. You can also access all these menu items when you right-click an object.

The *Tools* menu contains commands related to connecting, disconnecting, plug-ins, and SQL Central options. These menu items always remain visible, regardless of the objects you select in the main window.

You can also configure settings in UltraLite using properties windows. The properties windows appear in the *File* menu, or when you right-click an object with configurable properties.

### In this section:

#### [Article Properties Window: General Tab \[page 281\]](#)

The *Article Properties* window displays information about the article.

#### [Article Properties Window: Where Clause Tab \[page 281\]](#)

UltraLite applications can use row subsets by supplying a WHERE clause.

#### [Column Properties Window: General Tab \[page 281\]](#)

The *Column Properties* window displays information about columns that belong to a table and allows you to change the name of the columns.

#### [Column Properties Window: Data Type Tab \[page 282\]](#)

This tab has the several components.

#### [Column Properties Window: Value Tab \[page 282\]](#)

This tab has the several components.

#### [Database Options Window \[page 283\]](#)

This tab has the several components.

#### [Database Properties Window: General Tab \[page 284\]](#)

The *General* tab displays information about the database and how you are connected to the database.

#### [Database Properties Window: Synchronization Information Tab \(UltraLite\) \[page 284\]](#)

The *Synchronization Information* tab has a component that shows the most recent synchronization information for the UltraLite database.

[Foreign Key Properties Window: General Tab \[page 285\]](#)

This tab has the several components.

[Foreign Key Properties Window: Columns Tab \[page 286\]](#)

This tab lists columns in the foreign and primary tables and provides a summary of column properties.

[Index Properties Window: General Tab \[page 287\]](#)

This tab has the several components.

[Index Properties Window: Columns Tab \[page 287\]](#)

This tab lists the details about selected columns, such as the name and type.

[Plug-in Preferences Window: General Tab \[page 287\]](#)

This tab has the several components.

[Plug-in Preferences Window: Utilities Tab \[page 288\]](#)

This tab has the several components.

[Plug-in Preferences Window: Table Data Tab \[page 289\]](#)

This tab has the several components.

[Primary Key or Unique Constraint Properties Window: General Tab \[page 289\]](#)

This tab has the several components.

[Primary Key Properties Window: Columns tab or Unique Constraint Properties Window: Columns Tab \[page 290\]](#)

This tab has the several components.

[Publication Properties Window: General Tab \[page 291\]](#)

This tab lists the information about publications.

[Publication Properties Window: Articles Tab \[page 291\]](#)

This tab has the several components.

[Synchronization Profile Properties Window: General Tab \[page 292\]](#)

This tab has the several components.

[Synchronization Profile Properties Window: Connection Tab \[page 294\]](#)

This tab has the several components.

[Table Properties Window: General Tab \[page 297\]](#)

This tab has the several components.

[Table Properties Window: Columns Tab \[page 298\]](#)

This tab lists the details about selected columns, such as the name and type.

[User Properties Window: General Tab \[page 298\]](#)

This tab lists the components such as *Name*, *Type*, *Password*, and *Confirm password*.

## 1.12.1 *Article Properties* Window: *General* Tab

The *Article Properties* window displays information about the article.

### Related Information

[UltraLite Publications](#)

## 1.12.2 *Article Properties* Window: *Where Clause* Tab

UltraLite applications can use row subsets by supplying a WHERE clause.

This tab has the following component:

#### **This article has the following WHERE clause**

You can edit the WHERE clause in the text box to restrict the table rows that are included in the article. You do not need to include the keyword WHERE.

For example, to include only the rows that contain a salary of more than \$50000, type:

```
Salary > 50000
```

### Related Information

[UltraLite Publications](#)

## 1.12.3 *Column Properties* Window: *General* Tab

The *Column Properties* window displays information about columns that belong to a table and allows you to change the name of the columns.

### Related Information

[UltraLite Tables and Columns](#)  
[Adding a Column to an UltraLite Table](#)

## 1.12.4 *Column Properties* Window: *Data Type* Tab

This tab has the several components.

### **Built-in type**

This option, which is always selected, enables you to choose a predefined data type for the column from the dropdown list. Integers, character strings, and dates are examples of predefined data types. For some of these types, you can specify size and/or scale.

In UltraLite, the built-in type VARCHAR is the equivalent of both CHAR and VARCHAR in SQL Anywhere.

### **Size**

Specifies the length of string columns, or the total number of digits to the left and right of the decimal point in the result of any decimal arithmetic for numeric columns. For numeric columns, the size is also called the precision value.

### **Scale**

Specifies the minimum number of digits after the decimal point when an arithmetic result is truncated to the maximum precision value.

## Related Information

[SQL Data Types](#)

[UltraLite Tables and Columns](#)

[Adding a Column to an UltraLite Table](#)

[UltraLite Precision Creation Option](#)

## 1.12.5 *Column Properties* Window: *Value* Tab

This tab has the several components.

### **No default value**

Select this option if the column does not require a default value.

### **Default value**

Select this option if the column requires a default value. Selecting this option enables the *User-defined* and *System-defined* options.

### **User-defined**

Type a custom value (string, number, or other expression) for the default value.

### **Literal string**

Specify whether the default value for the column should be treated as a literal string. This option is selected by default for character columns and domains with a character base type. When you select this option, the default text does not need to be enclosed in single quotes, and you do not need to escape embedded single quotes or backslashes in the string.



When you clear this option, the automatic quoting and escaping behavior is turned off and the specified default value text is passed as is.

### **System-defined**

Lets you choose a predefined value (for example, autoincrement) for the default value. You must choose a value from the dropdown list. If you based the column on a domain, you can retain the domain's default value (if any) or override it for the column.

### **Partition size**

When you select global autoincrement for the system-defined value, you can also supply a partition size.

Global autoincrement assigns each new row a value of one greater than the previous highest value in the column. The partition size restricts the maximum value that global autoincrement can use. You can enter any positive integer for the partition size. Generally, you select a value so that the supply of numbers is rarely, if ever, exhausted.

## **Related Information**

[UltraLite Tables and Columns](#)  
[GLOBAL AUTOINCREMENT Columns in UltraLite](#)  
[Adding a Column to an UltraLite Table](#)

## **1.12.6 Database Options Window**

This tab has the several components.

### **Database**

Shows the name of the selected database.

### **Options list**

Shows the option settings for the database. Once you select an option, you can use the buttons at the side of the window.

### **Set Now**

To change an option setting for the database, select an option from the *Options* list, type a setting in the *Value* field, then click *Set Now*.

### **Reset Now**

To reset any value you changed, select an option from the *Options* list and click *Reset Now*. The value is reset to its default value.

### **Refresh**

Click to refresh the list.

### **Value**

Select an option in the *Options* list and type the setting in the *Value* field.

## Related Information

[UltraLite Database Options](#)  
[UltraLite UID Connection Parameter](#)  
[UltraLite PWD Connection Parameter](#)

### 1.12.7 Database Properties Window: General Tab

The *General* tab displays information about the database and how you are connected to the database.

#### Note

Database properties listed on this tab cannot be changed without recreating the database.

## Related Information

[UltraLite Database Creation Approaches](#)  
[UltraLite Database Properties](#)  
[UltraLite Options](#)

### 1.12.8 Database Properties Window: Synchronization Information Tab (UltraLite)

The *Synchronization Information* tab has a component that shows the most recent synchronization information for the UltraLite database.

Information can include the following:

Property	Description
<i>Last error code</i>	Displays the most recent error code returned by the last synchronization. A value of zero indicates no error.
<i>Last synchronization</i>	Displays the time and date of the last synchronization.
<i>Ignored rows</i>	This field is set by a synchronization to indicate that rows were ignored by the MobiLink server during synchronization because of absent scripts.
<i>Authentication</i>	This field is set by a synchronization to report the status of MobiLink user authentication.
<i>Authentication value</i>	Shows the value returned by the custom authentication scripts in MobiLink.

Property	Description
<i>Partial download retained</i>	This field is set by a synchronization to indicate whether UltraLite applied those changes that were downloaded rather than rolling back the changes when a download failed due to a communications error during synchronization.
<i>Bytes sent</i>	The number of bytes that have been uploaded so far.
<i>Inserts sent</i>	The number of inserted rows that have been uploaded so far.
<i>Updates sent</i>	The number of updated rows that were sent to MobiLink in the last synchronization.
<i>Deletes sent</i>	The number of deleted rows that have been uploaded so far.
<i>Bytes received</i>	The number of bytes that have been downloaded so far.
<i>Inserts received</i>	The number of inserted rows that have been downloaded so far.
<i>Updates received</i>	The number of updated rows that have been downloaded so far.
<i>Deletes received</i>	The number of deleted rows that have been downloaded so far.
<i>All sync tables</i>	Returns the number of tables being synchronized.
<i>No sync tables</i>	Returns the number of tables not being synchronized.

## Related Information

[Custom User Authentication](#)  
[UltraLite Synchronize-All Tables](#)  
[UltraLite Non-synchronizing Tables](#)  
[Ignored Rows Synchronization Parameter](#)  
[Authentication Status Synchronization Parameter](#)  
[Partial Download Retained Synchronization Parameter](#)

### 1.12.9 Foreign Key Properties Window: General Tab

This tab has the several components.

#### **Name**

Shows the name of the foreign key. You can edit this field.

#### **Type**

Shows the type of object.

#### **Foreign table**

Shows the name of the table to which the foreign key applies.

#### **Primary constraint**

Shows the name of the primary key or unique constraint that the foreign key references.

**Primary constraint type**

Show the type of constraint the foreign key references. This can only be a primary key or a unique constraint.

**Primary table**

Shows the table containing the primary key or unique constraint in this foreign key relationship.

**Allows null**

Determines whether the foreign key columns allow NULL values. To use this option, the foreign key columns must all have Allow Nulls set to Yes.

**Check on commit**

Forces the database to wait for a COMMIT before checking the integrity of the foreign key, overriding the setting of the wait\_for\_commit database option.

**Maximum hash size**

Shows an integer value for the maximum hash size in the range [0,32]. The default maximum hash size is the value of the database property maximum hash size when the database was created, which has a default of 4.

## Related Information

[UltraLite Indexes](#)

[UltraLite Tables and Columns](#)

[Avoiding Synchronization Issues with Foreign Key Cycles](#)

[sysindex System Table](#)

[sysixcol System Table](#)

[UltraLite max\\_hash\\_size Creation Option](#)

### 1.12.10 *Foreign Key Properties* Window: **Columns Tab**

This tab lists columns in the foreign and primary tables and provides a summary of column properties.

## Related Information

[UltraLite Indexes](#)

[UltraLite Tables and Columns](#)

## 1.12.11 *Index Properties* Window: *General* Tab

This tab has the several components.

### **Name**

Shows the name of the index. You can edit this field.

### **Type**

Shows the type of object. The object type can be foreign key index, primary key index, unique constraint index, or index.

### **Unique**

Shows whether values in the index must be unique. The unique value is set when you create a new index.

### **Table**

Shows the name and owner of the table with which the index is associated. This is only displayed if the index is on a table.

### **Maximum hash size**

Shows an integer value for the maximum hash size in the range [0,32]. The default maximum hash size is the value of the database property maximum hash size when the database was created, which has a default of 4.

## **Related Information**

[UltraLite Indexes](#)

[Adding an UltraLite Index](#)

[UltraLite max\\_hash\\_size Creation Option](#)

## 1.12.12 *Index Properties* Window: *Columns* Tab

This tab lists the details about selected columns, such as the name and type.

## **Related Information**

[UltraLite Indexes](#)

## 1.12.13 *Plug-in Preferences* Window: *General* Tab

This tab has the several components.

### **Settings**

The preferences on the [General](#) tab govern how UltraLite responds when you perform specific tasks in SQL Central. Choose one or more of the following settings:

**Confirm deletions when editing table data**

Select this preference if you want UltraLite to prompt you before table data is deleted on the [Data](#) tab in SQL Central.

**Confirm updates when editing table data**

Select this preference if you want UltraLite to prompt you before table data is updated on the [Data](#) tab in SQL Central.

**Confirm implicit updates when editing table data**

Select this preference if you want UltraLite to prompt you before implicit updates are made in SQL Central. Implicit updates are made when you are editing a row on the [Data](#) tab and then click anywhere in SQL Central outside the row you are currently editing.

**Confirm cancellations when editing table data**

Select this preference if you want SQL Central to prompt you when you cancel changes to table data on the [Data](#) tab in SQL Central.

**Restore Defaults**

Click [Restore Defaults](#) to return the preferences on this tab to their default values (selected or cleared). By default, all the preferences on this tab are selected.

## 1.12.14 *Plug-in Preferences Window: Utilities Tab*

This tab has the several components.

**Settings**

The preferences on the [Utilities](#) tab govern whether wizard introduction pages appear and whether wizard message windows close when the wizard is finished. Choose one or more of the following settings:

**Show Create Database Wizard introduction page**

Select this preference if you want the [Create Database Wizard](#) introduction page to appear when you open the wizard.

**Show Erase Database Wizard introduction page**

Select this preference if you want the [Erase Database Wizard](#) introduction page to appear when you open the wizard.

**Show Extract Database Wizard introduction page**

Select this preference if you want the [Extract Database Wizard](#) introduction page to appear when you open the wizard.

**Show Load Database Wizard introduction page**

Select this preference if you want the [Load Database Wizard](#) introduction page to appear when you open the wizard.

**Show Synchronize Database Wizard introduction page**

Select this preference if you want the [Synchronize Database Wizard](#) introduction page to appear when you open the wizard.

#### **Show Unload Database Wizard introduction page**

Select this preference if you want the *Unload Database Wizard* introduction page to appear when you open the wizard.

#### **Show Validate Database Wizard introduction page**

Select this preference if you want the *Validate Database Wizard* introduction page to appear when you open the wizard.

#### **Close Wizard messages window when completed**

Select this preference if you want the wizard messages window to close after it is finished. By default, this preference is not selected.

#### **Restore Defaults**

Click *Restore Defaults* to return the preferences on this tab to their default values (selected or cleared). By default, all preferences on this tab except *Close Wizard Messages Window When Completed* are selected.

## **1.12.15 Plug-in Preferences Window: Table Data Tab**

This tab has the several components.

#### **Which font do you want to use to show table data?**

Select one of the following options to specify the font that is used for table data on the *Data* tab when viewing table data in SQL Central:

##### **System**

Select this option to use the computer's normal text font. This is the default setting.

##### **Editor**

Select this option to use the same font as the Code Editor.

##### **Custom**

Select this option to specify the font, font style, and point size you want to use. Click *Browse* to select the settings in the *Font* window.

## **Related Information**

[Code Editor](#)

## **1.12.16 Primary Key or Unique Constraint Properties Window: General Tab**

This tab has the several components.

#### **Name**

Shows the name of the primary key or unique constraint. You can edit the name of the unique constraint (but not the primary key) in this field.

#### **Type**

Shows the type of object.

#### **Unique**

Indicates whether the primary key is unique or not.

#### **Table**

Shows the name of the table to which the primary key or unique constraint applies.

#### **Maximum hash size**

Shows an integer value for the maximum hash size in the range [0,32]. The default maximum hash size is the value of the database property maximum hash size when the database was created, which has a default of 4.

## **Related Information**

[UltraLite Indexes](#)

[CREATE TABLE Statement \[UltraLite\]](#)

[CREATE INDEX Statement \[UltraLite\]](#)

[UltraLite max\\_hash\\_size Creation Option](#)

### **1.12.17 Primary Key Properties Window: Columns tab or Unique Constraint Properties Window: Columns Tab**

This tab has the several components.

#### **Columns list**

Shows all the columns in the primary key or unique constraint, and their data type, sequence and order (either ascending or descending). You set the order when you create a new index.

The columns are sorted by their sequence, which is a unique number starting at 0. The order of the numbers determines the relative position of the columns in the index.

#### **Details**

Displays the *Column Details* window, which shows a summary of the properties of the selected column.

## **Related Information**

[UltraLite Indexes](#)

[CREATE TABLE Statement \[UltraLite\]](#)



## 1.12.18 *Publication Properties* Window: *General* Tab

This tab lists the information about publications.

### Related Information

[UltraLite Publications](#)

[CREATE PUBLICATION Statement \[UltraLite\]](#)

[ALTER PUBLICATION Statement \[UltraLite\]](#)

[DROP PUBLICATION Statement \[UltraLite\]](#)

## 1.12.19 *Publication Properties* Window: *Articles* Tab

This tab has the several components.

### Tables tab

The *Tables* tab lets you select tables to synchronize.

### WHERE Clauses tab

The *WHERE Clauses* tab lets you type a WHERE clause to restrict the rows included in the selected table.

Each tab is described in detail below.

### *Tables* Tab

The *Tables* tab lets you select tables and add them to the list of articles that are included in the client database.

#### Available tables list

Lists all the user tables in the database you are currently connected to.

#### Selected tables list

Lists all the tables that are included in the publication synchronization.

#### Add

Adds the selected table in the *Available Tables* list to the *Selected Tables* list so the table is included in the publication.

#### Remove

Removes the selected table from the *Selected Tables* list so the table is not included in the publication.

## *WHERE Clauses* **Tab**

UltraLite applications can use row subsets by supplying a WHERE clause.

The *WHERE Clauses* tab lets you supply a WHERE clause to restrict the rows that are included in the client database.

### **Articles list**

Select a table from the list of tables included in the publication.

### **The selected article has the following WHERE clause**

In the text box, type the WHERE clause for the table to restrict the rows that are included in the article.

## **Related Information**

[UltraLite Publications](#)

[Publishing Only Some Rows Using a WHERE Clause \(SQL Central\)](#)

[CREATE PUBLICATION Statement \[UltraLite\]](#)

[ALTER PUBLICATION Statement \[UltraLite\]](#)

[DROP PUBLICATION Statement \[UltraLite\]](#)

## **1.12.20** *Synchronization Profile Properties* **Window: General Tab**

This tab has the several components.

### **Name**

Shows the name of the synchronization profile.

### **Type**

Shows the type of object.

### **Table**

Shows the following synchronization settings:

#### **MobiLinkUid**

Specifies the user name for MobiLink authentication. This option is required.

#### **MobiLinkPwd**

Specifies the password for MobiLink authentication.

#### **ScriptVersion**

Specifies the version of scripts to use on the MobiLink server. Type the script version string. This option is required.

#### **Publications**

Specifies the publications to synchronize (a comma-separated string of publications to include in the synchronization).

### **SendDownloadACK**

Specifies that a download acknowledgement should be sent from the UltraLite client to the MobiLink server.

### **Ping**

Pings the MobiLink server. This option only confirms communications between the UltraLite client and the MobiLink server; it does not synchronize any data. This option cannot be used with the *UploadOnly* or *DownloadOnly* options.

### **DownloadOnly**

Performs a download-only synchronization. Choose this option to receive only changes from the MobiLink server; this option does not send local changes. This option cannot be used with *Ping* or *UploadOnly* options.

### **UploadOnly**

Performs an upload-only synchronization. Choose this option to only send local changes to the MobiLink server; this option does not request nor receive changes from the MobiLink server. This option cannot be used with *Ping* or *DownloadOnly*.

### **NewMobiLinkPwd**

Supplies a new password for the MobiLink user being synchronized. Type a new password; the MobiLink user must use this new password at the next synchronization.

### **AuthParms**

Supplies parameters to authentication parameters in MobiLink events.

### **KeepPartialDownload**

Controls whether UltraLite holds on to the partial download rather than rolling back the changes, when a download fails due to a communications error during synchronization.

### **ContinueDownload**

Specifies that the MobiLink server restarts a previously failed download at the next synchronization.

### **Other**

A semicolon-delimited list of option=value pairs for options not appearing in this list.

## **Related Information**

[UltraLite Network Protocol Options](#)  
[UltraLite Synchronization Parameters](#)  
[User Name Synchronization Parameter](#)  
[Password Synchronization Parameter](#)  
[Version Synchronization Parameter](#)  
[Publications Synchronization Parameter](#)  
[Send Download Acknowledgement Synchronization Parameter](#)  
[Ping Synchronization Parameter](#)  
[Download Only Synchronization Parameter](#)  
[Upload Only Synchronization Parameter](#)  
[New Password Synchronization Parameter](#)  
[Authentication Parameters Synchronization Parameter](#)

[Keep Partial Download Synchronization Parameter](#)  
[Resume Partial Download Synchronization Parameter](#)

## 1.12.21 Synchronization Profile Properties **Window: Connection Tab**

This tab has the several components.

### Stream

Select a network protocol from the dropdown list. Specify the protocol options in the table below.

### Table

Set the protocol options for the specified connection protocol:

#### TCPIP

If you specify TCPIP, you can optionally specify the following protocol options:

- `client_port= nnnnn[-mmmmmm]`
- `compression={zlib|none}`
- `e2ee_public_key= file`
- `host= hostname`
- `network_adapter_name= name`
- `network_leave_open={off|on}`
- `network_name= name`
- `port= portnumber`
- `timeout= seconds`
- `zlib_download_window_size= window-bits`
- `zlib_upload_window_size= window-bits`

#### HTTP

If you specify HTTP, you can optionally specify the following protocol options:

- `buffer_size= number`
- `client_port= nnnnn[- mmmmmm]`
- `compression={zlib|none}`
- `custom_header= header`
- `e2ee_public_key= file`
- `http_buffer_responses={on|off}`
- `http_password= password`
- `http_proxy_password= password`
- `http_proxy_userid= userid`
- `http_userid= userid`
- `host= hostname`
- `network_adapter_name= name`

- `network_leave_open={off|on}`
- `network_name= name`
- `persistent={off|on}`
- `port= portnumber`
- `proxy_host= proxy-hostname-or-ip`
- `proxy_port= proxy-portnumber`
- `set_cookie= cookie-name = cookie-value`
- `timeout= seconds`
- `url_suffix= suffix`
- `version= HTTP-version-number`
- `zlib_download_window_size= window-bits`
- `zlib_upload_window_size= window-bits`

## TLS

If you specify TLS, which is TCP/IP with TLS security, you can optionally specify the following protocol options:

- `certificate_company= company_name`
- `certificate_name= name`
- `certificate_unit= company_unit`
- `client_port= nnnnn[-mmmmmm]`
- `compression={zlib|none}`
- `e2ee_public_key= file`
- `fips={y|n}`
- `host= hostname`
- `identity= filename`
- `identity_name= name`
- `identity_password= password`
- `network_adapter_name= name`
- `network_leave_open={off|on}`
- `network_name= name`
- `port= portnumber`
- `timeout= seconds`
- `trusted_certificates= filename`
- `trusted_certificate_name= name`
- `zlib_download_window_size= window-bits`
- `zlib_upload_window_size= window-bits`

## HTTPS

If you specify HTTPS, which is HTTP with RSA encryption, you can optionally specify the following protocol options:

- `buffer_size= number`
- `certificate_company= company_name`

- `certificate_name= name`
- `certificate_unit= company_unit`
- `client_port= nnnnn[- mmmmm]`
- `compression={zlib|none}`
- `custom_header= header`
- `e2ee_public_key= file`
- `fips={y|n}`
- `host= hostname`
- `http_buffer_responses{off |on }`
- `http_password= password`
- `http_proxy_password= password`
- `http_proxy_userid= userid`
- `http_userid= userid`
- `identity= filename`
- `identity_name= name`
- `identity_password= password`
- `network_adapter_name= name`
- `network_leave_open={off|on}`
- `network_name= name`
- `persistent={off|on}`
- `port= portnumber`
- `proxy_host= proxy-hostname-or-ip`
- `proxy_port= proxy-portnumber`
- `set_cookie= cookie-name = cookie-value`
- `timeout= seconds`
- `trusted_certificates= filename`
- `trusted_certificate_name= name`
- `url_suffix= suffix`
- `version= HTTP-version-number`
- `zlib_download_window_size= window-size`
- `zlib_upload_window_size= window-bits`

## Related Information

[MobiLink Client Network Protocol Options](#)

## 1.12.22 *Table Properties* Window: *General* Tab

This tab has the several components.

### **Name**

Shows the name of the table. You can change the table's name in the text box.

### **Type**

Shows the type of object.

### **Synchronization type**

The following options are supported:

#### **Normal**

Select this option to use normal synchronization. Only changed rows are synchronized.

#### **Always**

Select this option if you want synchronization to run continuously. All rows are synchronized. Alternatively, you can name the table with the **allsync** suffix added, which indicates that all rows are updated with a sync.

#### **Download only**

Select this option if you want the synchronization to be download only. Changes made to the local tables are not uploaded to the consolidated database. Alternatively, you can name the table with the **download\_only** suffix added, which indicates that no rows are uploaded with a sync.

#### **Never**

Select this option if you do not want synchronization to run at all. Alternatively, you can name the table with the **nosync** suffix added, which indicates that no rows are updated with a sync.

### **Primary Key**

This pane has the following components:

#### **Name**

Shows the name of the primary key for the selected table.

#### **Set Primary Key Now**

Opens the *Primary Key Wizard* where you can specify or change the primary key for the selected table.

#### **Columns**

Shows the primary key columns for the table.

## **Related Information**

[UltraLite Tables and Columns](#)

[Creating UltraLite Tables](#)

## 1.12.23 *Table Properties Window: Columns Tab*

This tab lists the details about selected columns, such as the name and type.

### Related Information

[UltraLite Tables and Columns](#)

## 1.12.24 *User Properties Window: General Tab*

This tab lists the components such as *Name*, *Type*, *Password*, and *Confirm password*.

### Related Information

[UltraLite Users](#)

[Creating an UltraLite User with SQL Central](#)

## 1.13 MobiLink Profiler Help

The MobiLink Profiler is a MobiLink administration tool that provides you with detailed information about the performance of your synchronizations, enabling you to analyze bottlenecks and maximize performance.

### In this section:

[Connect to MobiLink Server Window \[page 300\]](#)

This window lets you start a profiling session by connecting to a running MobiLink server. A MobiLink Profiler connection is like a synchronization connection to the MobiLink server in that most of the parameters are the same. You must use parameters that are compatible with the MobiLink server settings.

[Edit Watch Window \[page 302\]](#)

This window has the following components:

[Go To Window \[page 303\]](#)

This window has the following components:

[New Watch Window \[page 304\]](#)

This window has the following components:

[Open MobiLink Profiler Session Window \[page 305\]](#)



The *Open MobiLink Profiler Session* window displays a list of previous MobiLink Profiler sessions in the profiling database. Choose a session and click *OK* to open it, or click *Delete* to delete the session from the profiling database.

#### [Options Window: General Tab \[page 305\]](#)

This tab has the following components:

#### [Options Window: Table Tab \[page 306\]](#)

This tab lets you configure the columns that appear in the *Details Table* pane. The settings on this tab persist between MobiLink Profiler invocations.

#### [Options Window: Graph Tab \[page 306\]](#)

The *Utilization Graph* pane provides a graphical representation of the number of synchronizations in each phase.

#### [Options Window: Chart Layout Tab \[page 307\]](#)

This tab has the following components:

#### [Options Window: Chart Colors Tab \[page 308\]](#)

This tab lets you specify the colors used for synchronization phases and other chart components in the *Chart* pane.

#### [Options Window: Overview Tab \[page 309\]](#)

This tab has the following components:

#### [Sample Properties Window: General Tab \[page 310\]](#)

The *General* tab of the *Sample Properties* window provides an overview of what the synchronizations were doing at the sample time, using high level categories. This can help identify whether the network, consolidated database, or remote database is causing performance issues.

#### [Sample Properties Window: Phases Tab \[page 311\]](#)

The *Phases* tab of the *Sample Properties* window shows information about which phases your synchronizations were in at the time the sample was taken.

#### [Sample Properties Window: Events Tab \[page 312\]](#)

The *Events* tab of the *Sample Properties* window provides information about event scripts being run at the time of the sample.

#### [Sample Range Properties Window: General Tab \[page 312\]](#)

The *General* tab of the *Sample Range Properties* window provides an overview of what the synchronizations were doing over the selected sample range, using high-level categories.

#### [Sample Range Properties Window: Phases Tab \[page 313\]](#)

The *Phases* tab of the *Sample Range Properties* window provides information about which phases your synchronizations were in for the selected sample range.

#### [Sample Range Properties Window: Events Tab \[page 314\]](#)

The *Events* tab of the *Sample Range Properties* window provides information about event scripts being run at the times of the selected samples.

#### [Session properties Window: General Tab \[page 314\]](#)

This tab has the following components:

#### [Synchronization Properties Window: General Tab \[page 315\]](#)

This tab has the following components:

#### [Synchronization Properties Window: Upload Tab \[page 316\]](#)

This tab has the following components:

[Synchronization Properties Window: Download Tab \[page 317\]](#)

This tab has the following components:

[Synchronization Properties Window: Synchronization Tab \[page 318\]](#)

This tab has the following components:

[Synchronization Properties Window: Events Tab \[page 319\]](#)

The *Events* tab provides information about scripts that were defined for synchronization. It has the following components:

[Synchronization Properties Window: Blocked Tab \[page 319\]](#)

This tab is only available if blocking was detected. It has the following components:

[Watch Manager Window \[page 320\]](#)

The Watch Manager allows you to visibly distinguish synchronizations that meet criteria you specify, such as synchronizations that receive warnings or take a long time.

## 1.13.1 *Connect to MobiLink Server* Window

This window lets you start a profiling session by connecting to a running MobiLink server. A MobiLink Profiler connection is like a synchronization connection to the MobiLink server in that most of the parameters are the same. You must use parameters that are compatible with the MobiLink server settings.

For all MobiLink Profiler sessions, the script version is set to *for\_ML\_Monitor\_only*.

This window has the following components:

### **User**

Type the name of the MobiLink user for the connection. A name must be supplied, but if you started the MobiLink server with *-zu+*, then it does not matter which MobiLink user you supply because unrecognized MobiLink user names are added automatically to the *ml\_user* table upon synchronization.

### **Password**

Type a password for the connection. This must be the correct password for the MobiLink user you specify. Leave this field blank if the MobiLink user does not have a password.

### **Host**

The network name or IP address of the computer on which the MobiLink server is running. By default, it is the computer where the MobiLink Profiler is running. You can use *localhost* if the MobiLink server is running on the same computer as the MobiLink Profiler.

### **Protocol**

Select the communications stream protocol to be used for the connection. This protocol and port should be set to the same protocol and port as the MobiLink server is using for synchronization requests.

#### **HTTP**

Select this option to connect via HTTP.

#### **Port**

The MobiLink server communicates over a specific port. By default, the port number is 80 for HTTP. If you choose a value other than this, you must configure your MobiLink server to listen on the port you specify.

## HTTPS

Select this option to connect via HTTPS.

### Port

The MobiLink server communicates over a specific port. By default, the port number is 443 for HTTPS. If you choose a value other than this, you must configure your MobiLink server to listen on the port you specify.

### Encryption

Choose the same type of encryption that the MobiLink server is using. By default, the HTTPS communication stream uses RSA security.

The following options are supported for encryption:

#### RSA

RSA encryption is provided free with SQL Anywhere.

#### RSA (FIPS 140-2 certified)

Federal Information Processing Standard (FIPS) 140-2 specifies requirements for security algorithms. The FIPS 140-2 certification program is a joint effort between the American National Institute of Standards and Technology (NIST) and the Canadian Communications Security Establishment (CSE). The Federal agencies of both Canada and the United States accept products that are certified as FIPS 104-2 compliant. FIPS-certified encryption requires a separate license.

To use HTTPS or TLS, you must have MobiLink client-side data stream encryption installed on the computer running the MobiLink Profiler.

### Trusted Certificate File

Type the name of the trusted certificate file to be used for a secure connection to the MobiLink server. For Windows platforms, the trusted certificate store is used if a trusted certificate file is not specified. Non-Windows platforms require a trusted certificate file for a secure connection.

## TCP/IP

Select this option to connect via TCP/IP.

### Port

The MobiLink server communicates over a specific port. By default, the port number is 2439 for TCP/IP. If you choose a value other than this, you must configure your MobiLink server to listen on the port you specify.

### TLS (TCP/IP with transport layer security)

Select this option to connect via TCP/IP with transport layer security.

### Port

The MobiLink server communicates over a specific port. By default, the port number is 2439 for TLS (TCP/IP with transport layer security). If you choose a value other than this, you must configure your MobiLink server to listen on the port you specify.

### Encryption

Choose the same type of encryption that the MobiLink server is using.

The following options are supported for encryption:

#### **RSA**

RSA encryption is provided free with SQL Anywhere.

#### **RSA (FIPS 140-2 certified)**

Federal Information Processing Standard (FIPS) 140-2 specifies requirements for security algorithms. The FIPS 140-2 certification program is a joint effort between the American National Institute of Standards and Technology (NIST) and the Canadian Communications Security Establishment (CSE). The Federal agencies of both Canada and the United States accept products that are certified as FIPS 104-2 compliant. FIPS-certified encryption requires a separate license.

To use TLS, you must have MobiLink client-side data stream encryption installed on the computer running the MobiLink Profiler.

#### **Trusted Certificate File**

Type the name of the trusted certificate file to be used for a secure connection to the MobiLink server. For Windows platforms, the trusted certificate store is used if a trusted certificate file is not specified. Non-Windows platforms require a trusted certificate file be specified for a secure connection.

#### **Additional protocol options**

Specify optional network parameters in this field. The allowed values depend on the connection stream type. Multiple parameters should be separated by a semicolon.

All valid MobiLink client network protocol options are supported, except for those already set in this window, such as host, port and trusted certificate.

## **Related Information**

[MobiLink Client/Server Communications Encryption](#)  
[Starting the MobiLink Profiler \(Administration Tools\)](#)  
[MobiLink Client Network Protocol Options](#)

### **1.13.2 *Edit Watch* Window**

This window has the following components:

#### **Name**

The name of the watch. You cannot change the name of a predefined watch (Active, Blocked, Completed, or Failed).

#### **Conditions list**

You must specify a property, comparison operator, and value to identify synchronizations that the MobiLink Profiler should track. You can specify as many conditions as you require. Once you select a property, an operator, and a value, click [Add](#) to add the condition to the watch.

You cannot edit the values that appear in the [Conditions](#) list. To change a watch condition, select the condition from the [Conditions](#) list and click [Remove](#). Then, add a new condition.

**Property**

Select the property you want the MobiLink Profiler to track from the dropdown list.

**Operator**

Select a comparison operator. The list of available operators depends on the property you select.

**Value**

Enter the value to which the property is compared.

**Add**

Click to add the selected conditions, as set in the Property, Operator, and Value fields, to the watch. This is disabled for System watches.

**Remove**

Click to remove the selected condition from the watch. This is disabled for System watches.

**Synchronization display**

These options let you specify a pattern and color to identify synchronizations matching the watch in the [Chart](#) and [Overview](#) panes.

**Chart pattern**

Select a pattern for synchronizations matching the watch in the [Chart](#) pane.

**Overview color**

Select a color for synchronizations matching the watch in the [Overview](#) pane.

## Related Information

[MobiLink Synchronization Statistical Properties](#)

### 1.13.3 *Go To* Window

This window has the following components:

**Start date & time**

The *Go To* window takes you to the specified date and time in the [Chart](#) pane and [Utilization Graph](#) pane of the MobiLink Profiler. Type the start date and time of the data that you want to view. If you change this setting, you must specify the year, month, and day.

**Chart range**

Lets you specify the duration of time that appears in the [Chart](#) pane and [Utilization Graph](#) pane. The chart range can be specified in milliseconds, seconds, minutes, hours, or days by choosing one of the options from the dropdown list. The chart range determines the granularity of the data: a smaller length of time means that more detail is visible.

## Related Information

[Chart Pane](#)  
[Utilization Graph Pane](#)

### 1.13.4 *New Watch* Window

This window has the following components:

#### **Name**

Type a name for the watch.

#### **Conditions**

You must specify a property, comparison operator, and value to identify synchronizations the MobiLink Profiler should track. You can specify as many conditions as you require. Once you select a property, an operator, and a value, click [Add](#) to add the condition to the new watch.

You cannot edit the values that appear in the [Conditions](#) list. To change a watch condition, select the condition from the [Conditions](#) list and click [Remove](#). Then, add a new condition.

#### **Property**

Select the property you want the MobiLink Profiler to track from the dropdown list.

#### **Operator**

Select a comparison operator. The list of available operators depends on the property you select.

#### **Value**

Enter a value to which the property is compared.

#### **Add**

Click to add the selected conditions, as set in the Property, Operator, and Value fields, to the watch.

#### **Remove**

Click to remove the selected condition from the watch.

#### **Synchronization display**

These options let you select a pattern and color to identify synchronizations matching the watch in the [Chart](#) and [Overview](#) panes.

#### **Chart pattern**

Select a pattern for synchronizations matching the watch in the [Chart](#) pane.

#### **Overview color**

Select a color for synchronizations matching the watch in the [Overview](#) pane.

## Related Information

[MobiLink Synchronization Statistical Properties](#)

## 1.13.5 Open MobiLink Profiler Session Window

The *Open MobiLink Profiler Session* window displays a list of previous MobiLink Profiler sessions in the profiling database. Choose a session and click *OK* to open it, or click *Delete* to delete the session from the profiling database.

This window has the following components:

### Session

The profiling session number.

### Server

Identifies the MobiLink server that was used in the session. If the server was not named, then `host:port` is shown.

### Start time

Shows the time the session started.

### End time

Shows the time the session ended.

### Sync count

Shows the number of synchronizations that occurred during the session.

### Connection

Shows the connection parameters used to connect to the MobiLink server.

## 1.13.6 Options Window: General Tab

This tab has the following components:

### Prompt to start new profiling session on startup

This option controls whether the *Connect to MobiLink Server* window appears when the MobiLink Profiler is started. By default, this option is not selected. If it is selected, then when the MobiLink Profiler is started without any command line options, the *Connect to MobiLink Server* window appears. If you do not want the *Connect to MobiLink Server* window to appear when you start the MobiLink Profiler without command line options, clear this option.

### Database file for profiling session data

To use a database other than the default profiling database, enter the location of the database file where you want to save profiling session data.

### Re-create profiling database

Select this option to recreate the schema of the profiling database. This only takes effect the next time you run the MobiLink Profiler. Recreating the profiling database removes all previous profiling sessions. The default profiling database file is called `mlprofiler.db` and is located in a folder called `MLProfiler17` in your `Documents` folder.

## 1.13.7 Options Window: *Table* Tab

This tab lets you configure the columns that appear in the *Details Table* pane. The settings on this tab persist between MobiLink Profiler invocations.

This tab has the following components:

### Visible Columns list

Lists all the columns that currently appear in the *Details Table* pane. To remove a column from the *Visible Columns* list so that it no longer appears in the *Details Table* pane, either select the column and then click the Left Arrow, drag the column, or double-click the column. Columns that are added to the *Visible Columns* list are added to the end of the list.

The order of the columns in the *Visible Columns* list determines the order of the columns in the *Details Table* pane. To move a column up the list, select the column and then click the Up Arrow. To move a column further down the list, select the column and then click the Down Arrow. You can also drag in the *Visible Columns* list to change the order.

### i Note

You can also change the order of the columns by dragging the column headings in the *Details Table* pane, but the changes do not persist between MobiLink Profiler invocations.

### Hidden Columns list

Lists all the columns that can appear in the *Details Table* pane that are not currently visible. To display a column in the *Details Table* pane, either select the column or columns in the *Hidden Columns* list and then click the Right Arrow or double-click the column. The selected column or columns appear at the end of the *Visible Columns* list.

### Reset

Click *Reset* to restore the list of columns that appear in the *Details Table* pane to the default list.

## Related Information

[Details Table Pane](#)

## 1.13.8 Options Window: *Graph* Tab

The *Utilization Graph* pane provides a graphical representation of the number of synchronizations in each phase.

This tab has the following components:

### Phase counters list

Select or clear the phases listed to specify which phase counters appear in the utilization graph.

### Show



Select this option to show the phase counter in the utilization graph. Phases without a checkmark do not appear.

#### **Property**

Shows the available phase counters that you can choose to appear in the utilization graph. Only phase counters with a checkmark appear in the graph.

Each property shows the number of synchronizations currently in that phase.

#### **Color**

For each phase counter, click [Color](#) and select a color from the dropdown list that is used to represent the selected phase counter in the utilization graph. The default colors are the same as for the [Chart Colors](#) tab.

#### **Selection border**

Select a color from the dropdown list for the border of the utilization graph. By default, the border is Black.

#### **Grid lines**

Select a color from the dropdown list for the grid lines. By default, the grid lines are Light Gray.

#### **Graph background**

Select a color from the dropdown list for the graph background. By default, the graph background is White.

#### **Use antialiasing to smooth graph**

Antialiasing is a technique used to make graphics look smoother. Selecting this option makes the graph look better, but it may be slower to draw.

## **Related Information**

[Utilization Graph Pane](#)

### **1.13.9 Options Window: Chart Layout Tab**

This tab has the following components:

#### **Minimum synchronization bar height**

Specifies the minimum display height for synchronization bars in pixels. Together with the [Vertical Gap Between Synchronization Bars](#) option, this determines the threshold for the [Chart](#) pane to have a vertical scroll bar.

The default minimum height of synchronization bars in the [Chart](#) pane is 5 pixels.

#### **Vertical gap between synchronization bars**

Specifies how much relative vertical space should appear between synchronization bars in the [Chart](#) pane.

The default gap size between synchronization bars in the [Chart](#) pane is 150%.

#### **Show horizontal chart ruler**

Select this option to see the chart ruler showing the synchronization time. This option is selected by default.

### Show vertical chart ruler

Select this option to see the vertical chart ruler. This option is selected by default.

### Scroll chart automatically when connected

Select this option if you want the chart to scroll automatically when you are connected to a MobiLink server. This option is selected by default.

## 1.13.10 Options Window: Chart Colors Tab

This tab lets you specify the colors used for synchronization phases and other chart components in the *Chart* pane.

The default color scheme for the Chart pane uses green for upload phases, red for download phases, blue for begin and end sync phases, and purple for waiting for a database worker thread and connecting to db phases. A darker shade indicates an earlier phase.

This tab has the following components:

#### Sync request

By default, the sync request phase is *Dark Green*.

#### Receive upload

By default, the receive upload phase is *Sea Green*.

#### Get DB worker

By default, the get DB worker phase is *Lavender*.

#### Connect

By default, the connect phase is *Periwinkle*.

#### Authenticate user

By default, the authenticate user phase is *Gold*.

#### Begin synchronization

By default, the begin synchronization phase is *Ocean Blue*.

#### Apply upload

By default, the apply upload phase is *Green*.

#### Prepare for download

By default, the prepare for download phase is *Dark Red*.

#### Fetch download

By default, the fetch download phase is *Red*.

#### End synchronization

By default, the end synchronization phase is *Pale Blue*.

#### Send download

By default, the send download phase is *Coral*.

#### Wait for download ack

By default, the wait for download ack phase is *Plum*.

#### **Get DB worker for download ack**

By default, the get DB worker for download ack phase is *Lavender*.

#### **Connect for download ack**

By default, the connect for download ack phase is *Periwinkle*.

#### **Non-blocking download ack**

By default, the non-blocking download ack phase is *Magenta*.

#### **Selected sync outline**

By default, the outline for a selected synchronization is *Black*.

#### **Sync outline**

By default, synchronizations are outlined in *Gray*.

#### **Chart background**

By default, the background of the *Chart* pane is *White*.

## **1.13.11 Options Window: Overview Tab**

This tab has the following components:

#### **Keep overview window attached to main window**

Clear this option if you want the *Overview* pane to be detached from the *Chart* pane. This option is selected by default.

#### **Vertical gap between synchronization bars**

Specifies the relative size of the vertical gap that appears between synchronization bars in the *Overview* pane. The default size is *25%*.

#### **Colors for built-in watches**

Use the dropdown lists to choose the colors used to identify the components of predefined watches.

##### **Active synchronizations**

Select a color to identify synchronizations that are still active. By default, active synchronizations are *Light Gray*. You can also set the color for active synchronizations in the *Edit Watch* window.

##### **Blocked synchronizations**

Select a color to identify synchronizations for which blocking was detected. By default, blocked synchronizations are *Magenta*. You can also set the color for blocked synchronizations in the *Edit Watch* window.

##### **Completed synchronizations**

Select a color to identify synchronizations that are completed. By default, completed synchronizations are *Light Gray*. You can also set the color for completed synchronizations in the *Edit Watch* window.

##### **Failed synchronizations**

Select a color to identify failed synchronizations. By default, failed synchronizations are *Red*. You can also set the color for failed synchronizations in the *Edit Watch* window.

#### **Marquee**

Select a color for the outline of the Marquee tool. By default, the outline is *Black*. The Marquee tool is the small box that appears in the *Overview* pane. You can use the Marquee tool to select the data that appears in the *Chart* and *Utilization Graph* panes.

#### **Overview background**

Select a background color for the *Overview* pane. By default, the background is *White*.

## **Related Information**

[Marquee Tool](#)

### **1.13.12 *Sample Properties* Window: *General* Tab**

The *General* tab of the *Sample Properties* window provides an overview of what the synchronizations were doing at the sample time, using high level categories. This can help identify whether the network, consolidated database, or remote database is causing performance issues.

This tab has the following components:

#### **Sample**

The number of the sample. Use the spinner to change which sample is displayed.

#### **Time**

Shows the time that the selected sample was taken.

#### **Index**

The index is a number assigned to each category.

#### **Category**

Shows the category name, which is based on the resource being used and the action being performed. The categories are as follows:

##### **network-uploading**

Synchronizations in sync\_request or receive\_upload phases.

##### **network-downloading**

Synchronizations in sending\_download phase.

##### **idle-queued\_for\_database**

Synchronizations in get\_db\_worker or get\_db\_worker\_for\_download\_ack phases.

##### **database-running\_event\_scripts**

Synchronizations in phases where event scripts are running in the consolidated database.

##### **remote-waiting\_for\_ack**

Synchronizations in wait\_for\_download\_ack phase.

#### **Count**

Shows how many synchronizations were in each category at the time that the sample was taken.

## Percent

The percentage of synchronizations in each category at the time that the sample was taken.

## Related Information

[Sample Properties Window: Phases Tab \[page 311\]](#)

[Sample Properties Window: Events Tab \[page 312\]](#)

### 1.13.13 *Sample Properties Window: Phases Tab*

The *Phases* tab of the *Sample Properties* window shows information about which phases your synchronizations were in at the time the sample was taken.

This tab has the following components:

#### Sample

The number of the sample. Use the spinner to change which sample is displayed.

#### Time

Shows the time that the selected sample was taken.

#### Index

The index is a number assigned to each phase, corresponding to the order in a synchronization.

#### Color

Shows the color assigned to each phase. You can change the assigned colors from the *Graph* tab of the *Options* window.

#### Phase

Shows the phase name.

#### Count

Shows how many synchronizations were in each phase at the time that the sample was taken.

#### Percent

The percentage of synchronizations in each phase at the time that the sample was taken.

## Related Information

[Sample Properties Window: Events Tab \[page 312\]](#)

## 1.13.14 *Sample Properties* Window: *Events* Tab

The *Events* tab of the *Sample Properties* window provides information about event scripts being run at the time of the sample.

This tab has the following components:

### **Sample**

The number of the sample. Use the spinner to change which sample is displayed.

### **Time**

Shows the time that the selected sample was taken.

### **Script version**

The name of the script version of the event script.

### **Event name**

The name of the synchronization event (also the event script name).

### **Table**

For table events, shows the name of the table.

### **Count**

Shows how many synchronizations were in each event at the time the sample was taken.

## Related Information

[Sample Properties Window: General Tab \[page 310\]](#)

[Sample Properties Window: Phases Tab \[page 311\]](#)

## 1.13.15 *Sample Range Properties* Window: *General* Tab

The *General* tab of the *Sample Range Properties* window provides an overview of what the synchronizations were doing over the selected sample range, using high-level categories.

This tab has the following components:

### **Samples**

Shows the range of the samples selected, by sample number.

### **Start time**

Shows the time of the first sample in the range.

### **End time**

Shows the time of the last sample in the range.

### **Index**

The index is a number assigned to each category.

## Property

Shows the category name, which is based on the resource being used, and the action being performed. The categories are as follows:

### **network-uploading**

Synchronizations in sync\_request or receive\_upload phases.

### **network-downloading**

Synchronizations in sending\_download phase.

### **idle-queued\_for\_database**

Synchronizations in get\_db\_worker or get\_db\_worker\_for\_download\_ack phases.

### **database-running\_event\_scripts**

Synchronizations in phases where event scripts are running in the consolidated database.

### **remote-waiting\_for\_ack**

Synchronizations in wait\_for\_download\_ack phase.

## **Average**

Shows the average number of synchronizations in each category during the selected range.

## **Percent**

Shows the percent of synchronizations in each category during the selected sample range.

## **Maximum**

Shows the maximum number of synchronizations in each category during the selected sample range.

## **1.13.16 Sample Range Properties Window: Phases Tab**

The *Phases* tab of the *Sample Range Properties* window provides information about which phases your synchronizations were in for the selected sample range.

This tab has the following components:

### **Samples**

Shows the range of the samples selected, by sample number.

### **Start time**

Shows the time of the first sample in the range.

### **End time**

Shows the time of the last sample in the range.

### **Index**

The index is a number assigned to each phase, corresponding to the order in a synchronization.

### **Color**

Shows the color assigned to each phase. You can change the assigned colors from the *Graph* tab of the *Options* window.

### **Phase**

Shows the phase name.

**Average**

Shows the average number of synchronizations in each phase during the selected range.

**Percent**

Shows the percent of synchronizations in each phase during the selected sample range.

**Maximum**

Shows the maximum number of synchronizations in each phase during the selected sample range.

## 1.13.17 *Sample Range Properties* Window: *Events* Tab

The *Events* tab of the *Sample Range Properties* window provides information about event scripts being run at the times of the selected samples.

This tab has the following components:

**Samples**

Shows the range of the samples selected, by sample number.

**Start time**

Shows the time of the first sample in the range.

**End time**

Shows the time the last sample in the range.

**Script version**

The name of the script version of the event script.

**Event name**

The name of the synchronization event (also the event script name).

**Table**

For table events, shows the name of the table.

**Average**

Shows the average number of synchronizations running in each event during the selected sample range.

**Maximum**

Shows the maximum number of synchronizations in each event during the selected sample range.

## 1.13.18 *Session properties* Window: *General* Tab

This tab has the following components:

**Session**

The profiling session number. A unique number assigned to each profiling session in the profiling database.

**Server**

The name of the MobiLink server if one was specified, otherwise, the name of the host and port.



**Server version**

The MobiLink server version.

**Server language**

The language of the server.

**Number of synchronizations**

The total number of synchronizations in the session.

**Profiler session started**

The date and time when the MobiLink Profiler session started.

**Profiler session ended**

The date and time when the session ended.

**Profiler session duration**

The total length of the MobiLink Profiler session.

## 1.13.19 *Synchronization Properties* Window: *General* Tab

This tab has the following components:

**Overall Synchronization Statistics**

These statistics provide general information about the selected synchronization.

**Sync**

A unique number assigned to each synchronization within a session by the MobiLink server. It is the same number shown in warnings, error messages, and verbose server logs.

**Client**

The type of client synchronizing and the version number of that client.

**Remote ID**

The MobiLink remote ID that uniquely identifies the remote database.

**User**

The name of the MobiLink user.

**Version**

The name of the script version.

**Start time**

The date and time that the server received a connection request from the client. This time may be slightly later than when the synchronization was requested by the client.

**End time**

The date and time that the synchronization ended in the MobiLink server.

**Duration**

Shows the synchronization duration in milliseconds.

**Active**

Yes if the synchronization is in progress, otherwise no.

**Has blocked**

Indicates whether the MobiLink server detected blocking for the synchronization.

**Download ack**

The download acknowledgement type. The values are *None* or *Non blocking*.

**Completed**

Yes if the synchronization completed successfully, otherwise no.

**Connection ID**

The database connection ID used by the consolidated database for the synchronization.

**Download ack connection ID**

The database connection ID used by the consolidated database for download ack.

**In progress**

Shows whether or not the synchronization was in progress when the profiling session started. If yes, some information may be unavailable for the synchronization.

**Synchronization Phase Statistics**

These statistics provide information about each synchronization phase. See the documentation for the *Details Table* pane for more information about the synchronization phases.

## Related Information

[Details Table Pane](#)

[Download Acknowledgement](#)

[MobiLink Synchronization Statistical Properties](#)

[ml\\_add\\_property System Procedure](#)

### 1.13.20 Synchronization Properties Window: Upload Tab

This tab has the following components:

**Statistics for**

You can choose to view upload statistics for all the tables that were synchronized or for individual tables.

**Number of warnings**

Total number of warnings that occurred for the upload.

**Number of errors**

Total number of errors that occurred for the upload.

**Inserted rows**

Number of row insertions that were uploaded from the synchronization client.

**Deleted rows**

Number of row deletions that were uploaded from the synchronization client.

**Updated rows**

Number of row updates that were uploaded from the synchronization client.

**Conflicted updates**

Number of uploaded updates for which conflicts were detected.

**Ignored inserts**

Number of uploaded inserts that were ignored.

**Ignored deletes**

Number of uploaded deletes that were ignored.

**Ignored updates**

Number of uploaded updates that were ignored.

**Total bytes**

Total number of bytes uploaded from the synchronization client.

**Deadlocks**

Number of deadlocks in the consolidated database that were detected during the upload.

**Total rows**

Total number of rows uploaded from the synchronization client.

## Related Information

[MobiLink Synchronization Statistical Properties](#)

### 1.13.21 *Synchronization Properties* Window: *Download Tab*

This tab has the following components:

**Statistics for**

You can choose to view download statistics for all the tables that were synchronized or for individual tables.

**Number of warnings**

Number of warnings that occurred during the download.

**Number of errors**

Number of errors that occurred during the download.

**Rows fetched**

Number of rows fetched from the consolidated database by the MobiLink server (using `download_cursor` scripts).

**Rows for delete**

Number of row deletions fetched from the consolidated database by the MobiLink server (using `download_delete_cursor` scripts).

**Filtered rows**

Number of fetched rows that were not downloaded to the MobiLink client because they matched rows that the client uploaded.

**Total bytes**

Bytes downloaded to the synchronization client.

**Total rows**

Total number of rows downloaded to the synchronization client.

## Related Information

[MobiLink Synchronization Statistical Properties](#)

### 1.13.22 *Synchronization Properties* Window: *Synchronization Tab*

This tab has the following components:

**Statistics for**

You can choose to view synchronization statistics for all the tables that were synchronized or for individual tables.

**Number of warnings**

Total number of warnings that occurred for the synchronization scripts.

**Number of errors**

Total number of errors that occurred for the synchronization scripts.

**Deadlocks**

Total number of deadlocks that occurred for the synchronization scripts.

**Number of tables**

Number of client tables that were involved in the synchronization.

**Connection retries**

Number of times the MobiLink server retried the connection to the consolidated database.

**Warnings and Errors**

Lists any synchronization warning or error messages.

## Related Information

[MobiLink Synchronization Statistical Properties](#)

### 1.13.23 *Synchronization Properties* Window: *Events* Tab

The *Events* tab provides information about scripts that were defined for synchronization. It has the following components:

#### **Events for**

You can choose to view events for all the tables that were synchronized or for individual tables. Connection events are only shown with all tables.

#### **Event name**

Shows the name of the synchronization event.

#### **Table**

For table events, shows the name of the table.

#### **Duration**

Shows the duration of the event in milliseconds.

#### **Invocations**

Shows the number of times the event script was invoked. A count of 0 indicates a script was defined but not invoked.

#### **Rows/s**

For data processing events, shows the number of rows processed per second.

### 1.13.24 *Synchronization Properties* Window: *Blocked* Tab

This tab is only available if blocking was detected. It has the following components:

#### **Blocked time**

Shows the date and time that the MobiLink server detected blocking.

#### **Seconds**

Shows the duration of the blocking before it was detected, in seconds.

#### **On what**

Shows what type of database object was blocked.

#### **Info**

Shows information about the blocking.

#### **Blocked event**

Shows the synchronization event that was blocked.

#### **Blocked event table**

For blocked table events, shows the name of blocked event table.

#### **Blocking connection ID**

Shows the connection ID that is causing the blocking.

#### **Blocking synchronization**

If displayed, this shows the synchronization number, as it appears in the MobiLink server log, that is causing the blocking or if the blocking was caused by a concurrent synchronization using the same

MobiLink server. Click the synchronization number to display the properties for the blocking synchronization.

## Related Information

[ml\\_add\\_property System Procedure](#)

### 1.13.25 *Watch Manager* Window

The Watch Manager allows you to visibly distinguish synchronizations that meet criteria you specify, such as synchronizations that receive warnings or take a long time.

This tab has the following components:

#### Available watches list

This pane lists all available watches. There are four predefined watches: *Active*, *Blocked*, *Completed*, and *Failed*. When you create a new watch, it is added to this list of watches.

##### New

Opens the *New Watch* window where you can create a new watch.

##### Edit

Opens the *Edit Watch* window where you can add or remove watch conditions and configure the synchronization display of the selected watch. You can edit any watch in the *Available Watches* list. For the predefined watches (*Active*, *Blocked*, *Completed*, and *Failed*), you can only change the *Chart pattern* and *Overview color*.

##### Delete

Deletes the selected watch from the *Available Watches* pane. You cannot delete predefined watches.

#### Current watches list

Lists the watches that are active in order of their precedence. These watches can be edited to change the way they appear, and you can deactivate them by removing them from the *Current Watches* pane.

The order of watches in the *Current Watches* pane is important. Watches that are closer to the top of the list are processed first. You can use the *Move Up* and *Move Down* buttons to organize the order of the watches in the *Current Watches* pane.

##### Move Up

Moves the selected watch up one position in the list in the *Current Watches* pane.

##### Move Down

Moves the selected watch down one position in the list in the *Current Watches* pane.

##### Add

Adds the watch selected in the *Available Watches* pane to the list of *Current Watches*.

##### Remove

Removes the selected watch from the list of *Current Watches*.

### Add All

Adds all the available watches to the *Current Watches* pane.

### Remove All

Removes all the watches from the *Current Watches* pane.

## Related Information

[Statistic Customization](#)

## 1.14 Interactive SQL Help

Interactive SQL is a tool that lets you execute SQL statements and run SQL script files.

### In this section:

[Lookup Procedure Name Window \[page 322\]](#)

The *Lookup Procedure Name* window allows you to look up the names of procedures stored in the database. Once you find the procedure you are looking for, you can insert it into the *SQL Statements* pane at your current cursor position.

[Lookup Table Name Window \[page 323\]](#)

The *Lookup Table Name* window allows you to look up the names of tables and columns stored in the database that you are currently connected to.

[Options Window: General Tab \[page 324\]](#)

This tab has the following components:

[Options Window: History Tab \[page 326\]](#)

This tab has the following components:

[Options Window: Import/Export Tab \[page 327\]](#)

This tab has the following components:

[Options Window: Messages Tab \[page 328\]](#)

This tab has the following components:

[Options Window: Source Control Tab \[page 328\]](#)

This tab has the following components:

[Options Window: Toolbar Tab \[page 329\]](#)

This tab has the following components:

[Options Window: Compatibility Tab \[page 329\]](#)

This tab has the following components:

[Options Window: Editor Tab \[page 329\]](#)

This tab allows you to configure the appearance of text typed in the *SQL Statements* pane. Any settings you specify on this tab also apply to the *SQL Statements* pane when it is used in SQL Central.

[Options Window: Database Tab \[page 333\]](#)

This window allows you to configure the appearance of the graphical plans in the Plan Viewer window.

#### [Options Window: Support Tab \[page 337\]](#)

Configure whether the software should check for software updates and how often it should do so.

#### [Add to Favorites Window \[page 338\]](#)

Favorites can be added for the current database connection and for the currently open SQL file.

#### [Organize Favorites Window \[page 339\]](#)

Use this window to arrange and organize your favorites list.

#### [Edit SQL Statements Window \[page 339\]](#)

Edit the SQL statement and then click **Save** to save the revised statements to the favorites.

#### [Move Favorite Window \[page 339\]](#)

Click the folder that you want to move the specified favorite to and then click **OK**.

#### [Folder 'foldername' Already Exists/Favorite 'favoritename' Already Exists Window \[page 339\]](#)

This window has the following components:

#### [Plan Viewer Window \[page 340\]](#)

The Plan Viewer window is divided into panes.

#### [Spatial Viewer Window \[page 341\]](#)

The Spatial Viewer window is divided into panes.

## 1.14.1 *Lookup Procedure Name* Window

The *Lookup Procedure Name* window allows you to look up the names of procedures stored in the database. Once you find the procedure you are looking for, you can insert it into the *SQL Statements* pane at your current cursor position.

### Type the first few characters of the procedure you are looking for

Type the first few characters of the procedure name in the text box to restrict the list of procedures to only those that start with the text you enter.

### Click the procedure you want, then click OK

Select the procedure from the list. Click **OK** to insert the procedure name into the *SQL Statements* pane at your current cursor position.

### Show owner names

Select this option to prefix each procedure name in the list with the name of the database user who owns the procedure.

### Show system objects

Select this option if you want the system-supplied stored procedures to appear in the list.

#### → Tip

You can use the SQL wildcard characters % (percent sign) and \_ (underscore) to help narrow your search. % matches any string of zero or more characters, while \_ matches any one character.

For example, to list all the procedures that contain the word profile, type *%profile%*.

To search for a percent sign or underscore within a procedure name, you must prefix the percent sign or underscore with a ~ (tilde).



## Related Information

[Procedures](#)

[Looking up Tables, Columns, and Procedures \(Interactive SQL\)](#)

### 1.14.2 *Lookup Table Name* Window

The *Lookup Table Name* window allows you to look up the names of tables and columns stored in the database that you are currently connected to.

Once you find the table or column name you are looking for, you can insert it into the *SQL Statements* pane at your current cursor position.

This window has the following components:

#### **Type the first few characters of the table you're looking for**

Type the first few characters of the table name in the text box to restrict the list of tables to only those that start with the text you enter.

#### **Click the table you want, then click OK or Show Columns**

Select the table from the list and then click *OK* to insert the table name into the *SQL Statements* pane.

You can use the following options to restrict the tables that appear in the list. If you know what type of table you are looking for, select only that type to restrict the list. You can select any or all of the table types listed below, and you can also choose to show the names of the table owner in the list.

#### **Show tables**

All permanent, non-system tables owned by any owner. Temporary tables do not appear in the list of tables.

#### **Show system tables**

All system tables.

#### **Show views**

All views.

#### **Show owner names**

Select this option to include table owners in the list.

#### **Show Columns**

Select a table from the list, and then click *Show Columns* to see a list of all the columns in the selected table. In the *Select Column* window, click *OK* to insert the selected column name into the *SQL Statements* pane.

#### **→ Tip**

You can use the SQL wildcard characters % (percent sign) and \_ (underscore) to help narrow your search. % matches any string of zero or more characters, while \_ matches any one character.

For example, to list all the procedures that contain the word profile, type *%profile%*.

To search for a percent sign or underscore within a procedure name, you must prefix the percent sign or underscore with a ~ (tilde).

## Related Information

Tables

[Looking up Tables, Columns, and Procedures \(Interactive SQL\)](#)

### 1.14.3 Options Window: General Tab

This tab has the following components:

#### SQL script files

The following options control Interactive SQL behavior when running SQL script files.

##### When an error occurs

Select one of the following options (that correspond to the settings of the `on_error` option) to control how Interactive SQL responds when it encounters an error while executing statements:

##### Continue

The error is ignored and Interactive SQL continues executing statements.

##### Exit

Interactive SQL shuts down.

##### Notify and Continue

The error is reported, and the user is prompted to press Enter or click *OK* to continue.

##### Notify and Exit

The error is reported and the user is prompted to press Enter or click *OK* to shut down Interactive SQL.

##### Notify and Stop

The error is reported and the user is prompted to press Enter or click *OK* to stop executing statements.

##### Prompt

Interactive SQL prompts the user to see if they want to continue. This is the default.

##### Stop

Interactive SQL stops executing statements.

#### **i** Note

When you are executing a `.sql` file, the values Stop and Exit are equivalent. If you specify either of these values, Interactive SQL shuts down.

#### Echo SQL script files to log

Select this option to have Interactive SQL log executed SQL statements to the SQL statements log file. This option is most useful when you use the READ statement to execute an Interactive SQL script file or when you run a script file in Interactive SQL by choosing **File > Run Script**. Logging must be turned on for this option to take effect.

By default, SQL script files are copied to the log.

## Folders

Select one of the following options to specify which directory Interactive SQL uses first when browsing for files.

### Last folder used

If you select this option, the initial browser directory is the one where you last used the file browser. This is the default.

### Current folder

If you select this option, the initial directory used by the browser is the current folder, as defined by the operating system.

## File Association

On Windows, you can make Interactive SQL the default editor for `.sql` files.

### Make Interactive SQL the default editor for .SQL and plan files

Select this option to make Interactive SQL the default editor for `.sql` and graphical plan files on Windows. SQL Anywhere graphical plan files have the extension `.saplan`.

If you select this option, Windows uses Interactive SQL to automatically open the file when you double-click it. Interactive SQL does not run the file automatically.

## Tabs

### Auto-hide the tab bar

Select this option to hide the tab bar when only one tab is open.

## Related Information

[on\\_error Option \[Interactive SQL\]](#)

[echo Option \[Interactive SQL\]](#)

[SET OPTION Statement \[Interactive SQL\]](#)

## 1.14.4 Options Window: History Tab

This tab has the following components:

### History Size

#### Maximum number of statements to keep

The maximum number of SQL Statements that are displayed on the *History* tab.

Interactive SQL maintains a record of up to 50 statements by default, displaying the most recent statements at the bottom of the list. However, this setting can be changed to display up to 1000 statements. The history persists between Interactive SQL sessions.

#### Weeks to keep statements

The number of weeks to keep statements executed on a given database. The default number is 2. There is no maximum.

#### Current history file size

The amount of space being used by the history file.

#### Delete

Select this option to delete the stored history.

### Display Options

#### Maximum SQL lines to display

The maximum number of SQL lines to display for each statement on the History tab. The default number is 2. There is no maximum.

#### Double-click action

Choose the action that is carried out when you double-click a message:

**Insert SQL** Inserts the statement in the editor.

**Go to SQL** Highlights the statement if it is already open in the editor.

### History From Selected Tab Only

#### Recall history from the selected tab only

Select this option to only view SQL statements from the current session on the selected tab. This option is the default.

## Related Information

[Viewing Interactive SQL History](#)

### 1.14.5 *Options Window: Import/Export Tab*

This tab has the following components:

#### **Default export format**

To choose a format for exporting files, select a file format from the dropdown list. The default export format is text. This format is used only if you do not specify a FORMAT clause in an OUTPUT statement.

#### **Export NULL values as**

Controls the way NULL values are exported. Every time a NULL value is found in the result set, the string from this option is exported.

#### **Default import format**

To choose a format for importing files, select a file format from the dropdown list. The default import format is TEXT. This format is used only if you do not specify a FORMAT clause in an INPUT statement.

#### **Text Options**

Specify the default symbols used for the field separator, quote string, and escape character when you import or export data in text format.

#### **Default field separator**

The symbol used to separate values in text files. The default value is a comma (,).

#### **Default quote string**

The symbol used to enclose strings in text files. The default value is a single quote (').

#### **Default escape character**

The symbol used in place of unprintable characters in text files. The escape character must be one, single-byte character. The default value is a backslash (\).

#### **Default encoding**

The encoding used when importing and exporting files. If you change this value, it is only changed for the current Interactive SQL session. When you start a new Interactive SQL session, it is restored to its default value. The default value is *(Default)*. If you select *(Default)*, the encoding is determined as follows:

- the code page specified in the ENCODING clause of the INPUT, OUTPUT, or READ statement.
- the default code page for the computer Interactive SQL is running on.

## Related Information

[Data Import and Export  
OUTPUT Statement \[Interactive SQL\]](#)

[INPUT Statement \[Interactive SQL\]](#)  
[SET OPTION Statement \[Interactive SQL\]](#)

## 1.14.6 *Options Window: Messages Tab*

This tab has the following components:

### **Optional Messages**

Lists the optional messages that you can suppress.

## **Related Information**

[isql\\_command\\_timing Option \[Interactive SQL\]](#)  
[START LOGGING Statement \[Interactive SQL\]](#)  
[SET OPTION Statement \[Interactive SQL\]](#)

## 1.14.7 *Options Window: Source Control Tab*

This tab has the following components:

### **Enable source control integration**

Select this option if you want Interactive SQL to integrate with the source control system on your computer when you work with files.

#### **Your current source control system**

Select this option to use your current source control system. This option is only available on Windows platforms and only if you have an SCC-compliant source control program installed.

#### **Custom source control system**

Select this option to use command line programs for source control. Click [Configure](#) to see and edit the command line actions.

#### **Configure**

Displays the [Custom Source Control Options](#) window where you can view and edit command line actions.

#### **Automatically check out files when editor contents are modified**

Select this option if you want source files to be automatically checked out of the source control program when editor contents are modified.

## Related Information

[Additional Source Control Actions](#)  
[Source Control Integration \(Interactive SQL\)](#)

### 1.14.8 Options Window: *Toolbar* Tab

This tab has the following components:

Select one of the following options to set the behavior of the *Execute* toolbar button:

#### **Execute**

Executes all statements, ignoring selection, in the *SQL Statements* pane. This is the default.

You can also perform this operation by pressing F5 or choosing **SQL > Execute**.

#### **Execute selection**

Executes only the statements that are selected in the *SQL Statements* pane. If no text is selected, all the statements are executed.

You can also perform this operation by pressing F9 or choosing **SQL > Execute Selection**.

## Related Information

[Executing SQL Statements \(Interactive SQL\)](#)

### 1.14.9 Options Window: *Compatibility* Tab

This tab has the following components:

#### **Pressing the Esc key clears SQL Statements and closes result sets**

When this option is selected, pressing the Esc key clears the *SQL Statements* pane and closes any opened result sets in the *Results* pane. Otherwise, pressing the Esc key has no effect.

### 1.14.10 Options Window: *Editor* Tab

This tab allows you to configure the appearance of text typed in the *SQL Statements* pane. Any settings you specify on this tab also apply to the *SQL Statements* pane when it is used in SQL Central.

**In this section:**

[Editor Tab: Tabs Tab \[page 330\]](#)

This tab has the following components:

[Editor Tab: Format Tab \[page 331\]](#)

This tab has the following components:

[Editor Tab: Print Tab \[page 331\]](#)

This tab has the following components:

[Editor Tab: Text Completion Tab \[page 332\]](#)

This tab has the following components:

## 1.14.10.1 *Editor* Tab: *Tabs* Tab

This tab has the following components:

### Tab and Indent Stops

#### Columns between indent stops

Lets you set the size of indent stops (in number of columns).

#### Columns between tab stops

Lets you set the size of tab stops (in number of columns).

### Tab Policy

#### Spaces only

Inserts *n* spaces when you press the Tab key. The value for *n* is between one and the number of indent size columns, depending on how many spaces are required to move the cursor forward to the next indent stop.

#### Tabs if the indent stop is also a tab stop; spaces otherwise

Inserts a tab character when you press the Tab key. If the distance to the next tab stop is less than the size of a tab character, *n* spaces are added. The value for *n* is between one and the number of tab size columns, depending on how many spaces are required to move the cursor forward to the next tab stop.

### Automatic Indentation

Lets you set the auto indent feature. You have the following options:

#### None

Disables the feature.

#### Indent within blocks

Indents code within blocks, as displayed.

#### Indent entire blocks

Indents entire blocks of code, as displayed.

## Related Information

[Keyboard Shortcuts \(Interactive SQL\)](#)



## 1.14.10.2 *Editor Tab: Format Tab*

This tab has the following components:

### **Language element**

Lets you specify the color and style of different types of text in the main editing window. Choose a type of text and then set the foreground, background, and style for that text type.

#### **Foreground**

Foreground refers to the color of the text.

#### **Background**

Background refers to the color of the screen behind the text.

#### **Style**

Lets you specify the appearance of a text type.

### **Font**

Lets you specify the font that appears in the *SQL Statements* pane.

#### **Font size**

Lets you specify the font point size of the text that appears in the *SQL Statements* pane.

#### **Caret color**

Lets you specify the color of the blinking on-screen cursor indicator.

#### **Sample**

Shows an updated sample of the text with the newly configured settings.

#### **Reset All**

Returns all settings to their default values.

## **Related Information**

[Troubleshooting Unexpected Symbols When Viewing Data](#)

## 1.14.10.3 *Editor Tab: Print Tab*

This tab has the following components:

### **Header**

Lets you specify what information appears in the header, and how it is formatted, when you print the contents of the *SQL Statements* pane. The header text is left aligned by default. *Click* the > button for a list of available options.

### **Footer**

Lets you specify what information appears in the footer, and how it is formatted, when you print the contents of the *SQL Statements* pane. The footer text is left aligned by default. *Click* the > button for a list of available options.

#### > button

Clicking the > button lets you choose from the following options for the header or footer:

- *File Name*
- *File Time*
- *File Date*
- *Page Number*
- *Page Count*
- *Current Time*
- *Current Date*
- *Left Align*
- *Center*
- *Right Align*

The items that you select can have different alignment. For example, you can choose to left align the file name and right align the date in the header. By default, all text in both the header and the footer is left aligned. You must specify the alignment before the type of text. For example, if you want the file name to be centered in the header, type **&C&F** in the *Header* field, or click the > button and select the *Center* option and then click the > button again and select the *File Name* option.

In addition to specifying these options, you can type text that you want to appear in the header and footer. For example, if you type **Page &P of &p** in the *Footer* field, Page 1 of 1 appears in the footer of the printed document.

#### Font size

Lets you select the font point size for the printed text.

## 1.14.10.4 Editor Tab: Text Completion Tab

This tab has the following components:

#### Open Automatically

Select this option if you want the text completion window to open automatically as you type. If you turn off this option, you can still open the text completion window by pressing Ctrl+Space.

#### Complete Automatically

Select this option if you want the text completer to automatically complete the text if there is only one matching item. This option only has an effect when you open the text completion window by pressing Ctrl+Space.

#### Other Options

##### Show system objects

Select this option if you want system tables and views to appear in the text completion window. When this option is not selected, system tables and views appear only if they are allowed based on the syntax.

### Show owner names

This option controls whether an object's owner appears along with the object name in the text completion window. It does not control whether the owner name appears in the completed text.

### Show tool tips

Select this option to have tool tips appear in the text completion window. Tool tips show the parameter list for procedures, functions, and spatial methods while you type. To close the parameter list, press Esc.

### Quote identifiers

Select this option if you want identifiers to be enclosed in double quotes. Identifiers must be enclosed in double quotes if any of the following conditions are true:

- The identifier contains spaces.
- The first character of the identifier is not an alphabetic character.
- The identifier contains a reserved word.
- The identifier contains non-alphanumeric characters.

### The Enter key completes text

When this option is selected, pressing Enter completes the text with the item selected in the text completion window. When this option is cleared, pressing Enter inserts a new line into the text editor, but does not complete any text.

### Add closing brackets and quotation marks

When this option is selected, typing an opening parenthesis, square bracket, brace, apostrophe, or quotation mark results in the automatic insertion of the closing punctuation mark.

## Related Information

[Text Completion \(Interactive SQL and SQL Central\)](#)

[Text Completion Keyboard Shortcuts](#)

[Identifiers](#)

## 1.14.11 Options Window: Database Tab

This window allows you to configure the appearance of the graphical plans in the Plan Viewer window.

### In this section:

[Results Tab \[page 334\]](#)

This tab has the following components:

[Execution Tab \[page 336\]](#)

The following options let you select when to commit changes to the database. You can also commit changes manually by entering an explicit COMMIT statement whenever appropriate.

[Query Editor Tab \[page 336\]](#)

This tab applies to only the SQL Anywhere plug-in and the SAP IQ plug-in.

## 1.14.11.1 Results Tab

This tab has the following components:

### Display

#### Display null values as

Specifies how you want NULL values to appear in table columns. You can use any string for this value. The default value is (*NULL*). If this field is blank, NULL values appear as an empty string.

#### Maximum number of rows to display

Specifies the maximum number of rows that can appear in the *Results* pane. The default is 500.

#### Truncation length

Specifies the number of characters that can appear in each column in the *Results* pane. If you specify a value of 0, the columns are not truncated. The default value is 256.

#### Format dates and times

This option only applies to SQL Anywhere databases.

Select how dates and times are formatted:

##### Locally

Dates and times are formatted according to the current locale of the operating system. This is the default option.

##### On database server

Dates and times are formatted according to the `date_format`, `time_format`, and `timestamp_format` options.

### Style

#### Scrollable table

Select this option to display the result set in a scrollable table. You can edit the result set in this format. This option is the default. You can also choose to display the results as a scrollable table by choosing

► [Data](#) ► [Show Results As Scrollable Table](#) ▾.

The following options are enabled when you select *Scrollable table*.

##### Automatically refetch results

Select this option to automatically regenerate the result set after you execute an INSERT, UPDATE, or DELETE statement. This option is selected by default.

##### Show row number

Select this option to display row numbers beside your result set in the *Results* pane. This option is selected by default.

### Disable editing

Select this option to make result sets read-only. This option applies to result sets of queries that you execute after selecting this option.

### Automatically release database locks

Select this option to have Interactive SQL attempt to release the locks it creates during your transaction.

When this option is selected, after you execute a statement that returns a result set, Interactive SQL checks if your connection has any uncommitted changes in the database. Interactive SQL only releases your schema locks if there are no uncommitted changes to the database.

### Font

Select one of the following options to specify the font to use for the table data in the *Results* pane:

#### System font

Select this option to use the computer's normal text font. This is the default.

#### Editor font

Select this option to use the same font as the *SQL Statements* pane.

#### Custom font

Select this option to specify the font, font style, and point size.

### Text

Select this option to display the result set as text using a monospaced font. The result set is not editable in this format.

You can also choose to display the results as text by choosing **Data** > *Show Results As Text*.

### ⚠ Caution

Interactive SQL can run out of memory when the *Maximum Number of Rows to Display* option is set to *All Rows*.

When this happens, Interactive SQL reports the problem but does not display the result set.

## Related Information

[nulls Option \[Interactive SQL\]](#)

[isql\\_maximum\\_displayed\\_rows Option \[Interactive SQL\]](#)

[truncation\\_length Option \[Interactive SQL\]](#)

[auto\\_refetch Option \[Interactive SQL\]](#)

## 1.14.11.2 *Execution Tab*

The following options let you select when to commit changes to the database. You can also commit changes manually by entering an explicit COMMIT statement whenever appropriate.

### **Commit after every statement**

Select this option to commit changes to the database after each SQL statement is executed.

### **Commit on exit or disconnect**

Select this option to commit changes to the database when you exit your Interactive SQL session. This is the default.

### **Show progress messages**

This option only applies to SQL Anywhere and SAP HANA databases and it is set by default. Select this option to display database progress messages on the *History* tab. Selecting this option is the same as setting the SQL Anywhere progress\_messages database option to Formatted. When this option is not selected, it is the same as setting the progress\_messages database option to Off.

## **Related Information**

[auto\\_commit Option \[Interactive SQL\]](#)

[progress\\_messages Option](#)

## 1.14.11.3 *Query Editor Tab*

This tab applies to only the SQL Anywhere plug-in and the SAP IQ plug-in.

### **Fully qualify table and column names**

Select this option if you want table and column names to be fully qualified with their owner names when constructing queries in the Query Editor.

### **Quote names**

Select this option if you want the names of identifiers to be enclosed in double quotes when constructing queries in the Query Editor.

### **Get list of tables on startup**

Select this option if you want the Query Editor to populate its list of tables when it opens. This is the default. If you are connected to a database with a large number of tables or have a slow communications link, turning this option off allows the Query Editor to open more quickly.

## **Related Information**

[SQL Queries](#)

[Identifiers](#)

## 1.14.12 Options Window: Support Tab

Configure whether the software should check for software updates and how often it should do so.

Check for updates any time by choosing **Start > Programs > SQL Anywhere 17 > Check For Updates**.

This page has the following components:

### Software Updates and Notices

#### Check for software updates and notices

When selected, the software searches for updates and notices.

##### Frequency

Specify how often the software should check for updates.

##### Daily

Select this option to have the software check for updates daily. This is the default.

##### Weekly

Select this option to have the software check for updates once a week.

##### Monthly

Select this option to have the software check for updates once a month.

##### On application startup

Select this option to have the software check for updates each time it is started.

#### Check for

Choose any combination of the following options to specify what types of updates the software should check for. By default, all the options are selected:

##### Bug Fixes

Select this option if you want the software to check for express bug fixes.

An express bug fix is a subset of the software with one or more bug fixes.

##### Minor Releases

Select this option if you want the software to check for minor releases of the software.

A minor release is a complete set of software that upgrades installed software from an older version with the same major version number (version number format is `major.minor.build`).

##### Other Information (may include product or other news)

Select this option to check for other information, such as new product releases or upcoming events.

## Performance data

### Send performance data

Select this option to automatically send performance data to the software development team. This option is equivalent to the Support utility (dbsupport) -cc autosubmit option.

## Related Information

[Software Updates](#)

[Support Utility \(dbsupport\)](#)

### 1.14.13 *Add to Favorites* Window

Favorites can be added for the current database connection and for the currently open SQL file.

This window changes slightly depending upon whether you are connected to a database and/or you have a SQL file open.

#### Add The Current Connection

Choose this option to add a favorite that contains the connection information of the currently connected database.

##### Save the connection password

Choose this option to include the password in the favorite. Otherwise, when you run this favorite, you are prompted to enter the password.

#### Add the open file filename.sql

Choose this option to add a favorite that contains the contents of the currently open SQL file. This option appears only if a SQL file is currently opened in Interactive SQL.

#### Add SQL statements

Choose this option to add a favorite that contains the contents of the [SQL Statements](#) pane. The contents cannot exceed 16384 characters.

#### Name

Type a name.

#### Create In

Choose an existing directory or click [New Folder](#) to create a new directory to save the favorite in.

Favorites are specific to a given user on a given computer; they cannot be shared.



## 1.14.14 *Organize Favorites* Window

Use this window to arrange and organize your favorites list.

This window has the following components:

### **Favorites**

Choose a favorite from the list to organize.

### **Edit**

Click this button to edit the specified favorite.

### **Delete**

Click this button to delete the specified favorite.

### **Rename**

Click this button to rename the specified favorite.

### **Move Up**

Click this button to move the specified favorite up the list.

### **Move Down**

Click this button to move the specified favorite down the list.

### **New Folder**

Click this button to create a new directory in which to store your favorites.

## 1.14.15 *Edit SQL Statements* Window

Edit the SQL statement and then click [Save](#) to save the revised statements to the favorites.

## 1.14.16 *Move Favorite* Window

Click the folder that you want to move the specified favorite to and then click [OK](#).

## 1.14.17 *Folder 'foldername' Already Exists/Favorite 'favoritename' Already Exists* Window

This window has the following components:

### **Merge contents of 'foldername' with currently existing folder**

This option appears when you attempt to import a favorite folder that has the same name as an existing favorite folder. Select this option to merge the contents of the existing folder with the contents of the folder you are trying to import.

### **Rename the imported item**

Select this option and type a new name for the favorite.

### **Replace currently existing item**

Select this option to replace the current favorite with the favorite that you are importing.

### **Do not import**

Select this option to abandon importing the favorite.

## **Related Information**

[Managing the Favorites List](#)

## **1.14.18 *Plan Viewer* Window**

The Plan Viewer window is divided into panes.

### **SQL pane**

This pane provides a place for you to type SQL statements that you want to generate plans for. To control the *SQL* pane is hidden, click the *Hide/Show SQL* button.

### **Results pane**

This pane shows a graphical diagram of the plan and only appears once you have clicked the *Get Plan* button. To obtain context-sensitive help for each node in the graphical plan, right-click the node and choose *Help*. The *Results* pane is only for SQL Anywhere databases.

### **Details pane**

This pane provides text details about the generated plan for SQL Anywhere databases. Clicking alternate nodes in the *Results* pane determines what text appears in the *Details* pane.

### **Advanced Details**

The information displayed in the *Advanced Details* pane is dependent on the specific operator. For root nodes, the *Advanced Details* pane contains the settings that were in effect for the connection options when the query was optimized. For other node types, the *Advanced Details* pane might contain information about which indexes or materialized views were considered for the processing of the particular node.

You can customize the output in the *Results* pane using the following options:

### **Statistics level**

Specifies the type of query execution statistics the database server monitors when the query is executed.

### **Cursor type**

Specifies the type of cursor used in the plan. The type of cursor you choose affects optimizer performance.

### **Update status**

Specifies how the optimizer should treat the given cursor.

## Related Information

[Advanced: Query Execution Plans](#)

[Cursor Sensitivity](#)

[Detailed Graphical Plan Node Information](#)

### 1.14.19 *Spatial Viewer* Window

The Spatial Viewer window is divided into panes.

#### **SQL pane**

This pane provides a place for you to type SQL statements that you want to view images for. You can hide the SQL pane by clicking the [Hide SQL](#) button. This button is located beneath the image, near the controls for saving, zooming and panning.

#### **Results pane**

This pane combines all geometries in the results of a query into one image.

The image displayed in the [Results](#) area includes all of the geometries in the result set. Shapes in the image are drawn in the same order as the rows in the query are processed. Therefore later drawn shapes can obscure earlier drawn shapes.

By default, polygons are filled with a randomly generated color in the output. The sequence of colors used does not follow a well-defined sequence, and typically changes each time the SVG output is generated.

You can use the [Draw Outlined Polygons](#) button to remove the coloring from the polygons to reveal the outline of all shapes. This button is located beneath the image, near the controls for saving, zooming, and panning.

You can customize the output in the [Results](#) pane using the following options:

#### **Column**

Specifies the column being used to display the spatial data.

#### **Projection**

Specifies the projection being used to display the spatial data.

#### **Show Grid**

Specifies whether to show the grid that is in use for the spatial data.

#### **Approximate**

Specifies whether to produce a simplified version of the image to display. Choosing Approximate may cause the quality of the image to lose some fine detail, but it can significantly improve rendering time for complex images.

#### **Execute**

Click [Execute](#) to execute the SQL query and redraw the image.

## Related Information

[Viewing Spatial Data as Images \(Interactive SQL\)](#)

### 1.15 Query Editor Help

The Query Editor is a tool in Interactive SQL that helps you build SELECT statements. You can create SQL queries in the Query Editor, or you can import queries and edit them.

#### In this section:

[Tables Tab \[page 342\]](#)

Use the *Tables* tab to select the tables, derived tables, and views you want to include in your query.

[Joins Tab \[page 344\]](#)

Use this tab if you have more than one table in your query.

[Columns Tab \[page 346\]](#)

Use this tab to restrict the columns that appear in your result set. You can specify columns, column aliases, computed columns, or subqueries. Specify subqueries using the Expression Editor.

[INTO Tab \[page 347\]](#)

Use this tab to assign results to variables.

[WHERE Tab \[page 348\]](#)

Use this tab to restrict the rows in your result set.

[GROUP BY Tab \[page 348\]](#)

Use this tab to group rows in the result set.

[HAVING Tab \[page 350\]](#)

Use this tab to restrict the rows in your result set based on group values.

[ORDER BY Tab \[page 351\]](#)

Use this tab to sort the rows in your result set.

#### 1.15.1 *Tables* Tab

Use the *Tables* tab to select the tables, derived tables, and views you want to include in your query.

Create derived tables using the *Create a Derived Table* button. You cannot create views in the Query Editor, but you can create them in Interactive SQL and reference them in the Query Editor.

Include tables that you want to get data from, and tables that you want to include in joins. If you include more than one table or view in your query, use the *Joins* tab to specify how the tables are to be joined.

#### Caution

If you are including more than one table in your query, and the tables are large, define a join strategy on the *Joins* tab after adding each table. The processing can become very slow if you do not change the join

strategy because the Query Editor sometimes has to default to a cross product and the Query Editor processes your query as you work.

## Components

### Table Pattern

To restrict the tables in the *Matching Tables* box, type the name or partial name of tables.

### Owner Pattern

To restrict the tables in the *Matching Tables* box, type the name or partial name of an owner.

### Table Type

To restrict the tables in the *Matching Tables* box, choose a type of table from the dropdown list. For example, you can choose to view only system tables.

### Matching Tables

This lists all the tables in the database that match the criteria above. The default is all tables.

### Selected Tables

To add a table to your query, select a table in the *Matching Tables* box and click the Right Arrow. The table appears in the *Selected Tables* box. To create a derived table for your query, click the middle icon (between the two Arrows). If you add more than one table, use the *Joins* tab to specify a join strategy. When you add tables to your query by specifying them in the *Selected Tables* box, they are joined by default as cross products.

### Results

Click *Results* at the bottom of the window to see the results of your query, or an error message if the query contains errors.

### SQL

Click *SQL* at the bottom of the window to see the fully formed SQL statements for your query. This SQL looks slightly different from the SQL you normally write.

## About views and derived tables

You can add views and derived tables to your query and tables.

A view is a SELECT statement that is stored in the database as an object. You cannot create views in the Query Editor, but you can create them in Interactive SQL and enter them as tables in the Query Editor.

You can create derived tables in the Query Editor. Derived tables allow you to nest queries within a FROM clause. With derived tables, you can perform grouping of groups, or you can construct a join with a group without having to create a view.

## Related Information

[Query Editor \(Interactive SQL\)](#)  
[The FROM Clause: Specifying Tables](#)  
[Use of Subqueries](#)  
[FROM Clause](#)  
[Subqueries in Search Conditions](#)

### 1.15.2 Joins Tab

Use this tab if you have more than one table in your query.

When you include more than one table in a query, the tables must be joined somehow. This tab allows you to define your joins.

#### Default joins

When you specify tables in the [Tables](#) tab, the Query Editor tries to generate a default join condition. It does this for two reasons. First, the Query Editor processes the query as you create it. If there is no default join, the tables create a cross product, and this can result in slow processing. Usually, cross products are not desirable. Secondly, the Query Editor suggests a join strategy that might work for you.

If you add tables in the [Tables](#) tab, the Query Editor checks to see if a foreign key relationship has been created between the tables. If there is one foreign key, it uses it to generate an ON condition. If there is more than one foreign key relationship, it uses the first one it finds. If there are no foreign keys, it does not generate an ON clause and the tables become a cross product.

You can always review your query by clicking the [SQL](#) tab, which is located at the bottom of the Query Editor window. You can edit your join strategy directly on the [SQL](#) tab, or you can use the [Joins](#) tab user interface to change it.

#### → Tip

All the fields in the [Joins](#) tab are resizable. You can also expand the Query Editor by pulling on its edges. You may need to resize the fields and window to read your table names.

## Components

#### Left Table Expression

Select a table from the dropdown list. Only tables that have been entered in the [Tables](#) tab are available. Placing a table on the right or left is significant for outer joins.

#### Join Type

Select a join type from the dropdown list.

### Right Table Expression

Select a table from the dropdown list. Only tables that have been entered in the [Tables](#) tab are available. Placing a table on the right or left is significant for outer joins.

### Condition

Double-click to create an ON condition. The Query Editor inserts the keyword ON. For key joins and natural joins, the ON condition is generated by SQL Anywhere.

### Add

Use to add lines. Click the gray circle to the left of the line to select the line.

### Delete

Use to delete lines. Click the gray circle to the left of the line to select the line.

You must delete blank lines. This does not affect the tables in your query: to add or delete a table, use the [Tables](#) tab.

### Results

This pane displays the results of your query, or an error message if the query contains errors.

### SQL

Click [SQL](#) at the bottom of the window to see the SQL statements for your query.

## Troubleshooting

If you receive an error message indicating that your join is not correct, click the [SQL](#) tab at the bottom of the window to review the SQL statements. It may happen that empty quotation marks or extra commas have been inserted in your code, particularly if you have added and deleted lines on the [Join](#) tab. For example, the following query produces an error message. Delete the empty quotes that appear after `SalesOrders`:

```
FROM ("Customers"  
      JOIN "SalesOrders") ""  
      JOIN "SalesOrderItems"
```

## Related Information

[Joins: Retrieving Data from Several Tables](#)

[Joined Tables](#)

[Explicit Join Conditions \(the ON Clause\)](#)

[Query Editor \(Interactive SQL\)](#)

[Joins: Retrieving Data from Several Tables](#)

## 1.15.3 Columns Tab

Use this tab to restrict the columns that appear in your result set. You can specify columns, column aliases, computed columns, or subqueries. Specify subqueries using the Expression Editor.

### Components

#### Available Columns

This box lists all the tables you chose for your query, and the columns in each table.

#### Selected Columns

By default, all columns are selected for your query. To delete a column, select it in the *Selected Columns* box and click the Left Arrow. To display a column in your result set, select a column or set of columns in the *Available Columns* box and click the Right Arrow. Use the Up and Down Arrows to reorder the columns in the *Selected Columns* box.

If you select the same column more than once, an alias is applied. You can edit the alias name.

#### DISTINCT

Select *DISTINCT* to eliminate duplicate rows from your result set.

#### i Note

Many statements take significantly longer to execute when *DISTINCT* is specified, so reserve *DISTINCT* for cases where it is necessary. In addition, *DISTINCT* treats nulls as duplicates, so when you select *DISTINCT*, only one *NULL* value is returned in the results.

#### Limit Rows Retrieved To The

If you select *Limit Rows Retrieved To The* you have the option of choosing either *FIRST Row* to retrieve only the first row of the result set, or *TOP*, which allows you to specify the number of rows that you want retrieved. No matter what you choose, the maximum number of rows that appear in the Query Editor is 25.

#### Results

Click *Results* at the bottom of the window to see the results of your query, or an error message if the query contains errors.

#### SQL

Click *SQL* at the bottom of the window to see the SQL statements for your query.

### Adding a subquery

To add a subquery in the Query Editor, click the *Add A Computed Column* button, which is located between the *Available Columns* box and the *Selected Columns* box. The Expression Editor appears. In the Expression Editor, click the *Edit A Subquery And Insert The Results Into The Editor* button, which is located beside the *Not* button.



## Related Information

[Query Editor \(Interactive SQL\)](#)  
[The SELECT List: Specifying Columns](#)  
[Expression Editor \(Interactive SQL\)](#)

### 1.15.4 INTO Tab

Use this tab to assign results to variables.

## Components

### Include INTO Variables

Select this option to edit the variable names in the *INTO Variables* column.

### Selected Columns

This box lists all the columns you chose for your query.

### INTO Variables

This is a list of variables that receive the value of each SELECT list item. You can type the variable names directly into the fields.

### Results

Click [Results](#) at the bottom of the window to see the results of your query, or an error message if the query contains errors.

### SQL

Click [SQL](#) at the bottom of the window to see the SQL statements for your query.

## About INTO

INTO is used in procedures and triggers only. It specifies where the result set goes. There must be one variable for each column.

## Related Information

[Query Editor \(Interactive SQL\)](#)

## 1.15.5 *WHERE* Tab

Use this tab to restrict the rows in your result set.

### Components

#### Criteria

Use the *Criteria* pane to enter your WHERE conditions. You can type directly into this pane, or use the Expression Editor. To edit existing expressions, highlight the expression before you open the Expression Editor. Otherwise, what you create in the Expression Editor is appended to previously existing expressions.

#### Build WHERE expression

Click the *Build WHERE Expression* button, located in the bottom right of the *Criteria* pane, to open the *Expression Editor* and build your WHERE condition.

#### Results

Click *Results* at the bottom of the window to see the results of your query, or an error message if the query contains errors.

#### SQL

Click *SQL* at the bottom of the window to see the SQL statements for your query.

### Related Information

[Query Editor \(Interactive SQL\)](#)  
[The WHERE Clause: Specifying Rows](#)  
[Search Conditions](#)

## 1.15.6 *GROUP BY* Tab

Use this tab to group rows in the result set.

### Components

#### Available Columns

This box lists all the tables you chose for your query and the columns in each table.

#### GROUP BY Columns

To group by a column, select a column or set of columns in the *Available Columns* box and click the Right Arrow button. To delete a column, select it in the *GROUP BY Columns* box and click the Left Arrow button. Use the Up and Down Arrows to scroll through the columns in the *GROUP BY Columns* box.

#### **Add A Computed Column**

Click the *Add A Computed Column* button, located between the Right and Left Arrows, to open the Expression Editor and build your GROUP BY condition.

#### **CUBE button**

Click this button to create a CUBE operation query. CUBE adds subtotal rows into result sets of queries with GROUP BY clauses, providing all possible combinations of the variables specified in the query.

#### **ROLLUP button**

Click this button to create a ROLLUP operation query. ROLLUP adds subtotal rows into result sets of queries with GROUP BY clauses.

#### **Set button**

Click this button to create a concatenated grouping sets operation query. Like ROLLUP and CUBE, this operation adds subtotal rows into result sets of queries with GROUP BY clauses.

#### **GROUPING SETS**

Select this option to add GROUPING SETS to a query.

#### **Results**

Click the *Results* tab at the bottom of the window to see the results of your query, or an error message if the query contains errors.

#### **SQL**

Click the *SQL* tab at the bottom of the window to see the SQL statements for your query.

## **About GROUP BY conditions**

You can group by columns, alias names, or functions. The result of the query contains one row for each distinct set of values in the named columns, aliases, or functions. All null-containing rows are treated as a single set. The resulting rows are often referred to as groups since there is one row in the result for each group of rows from the table list. Aggregate functions can then be applied to these groups to get meaningful results.

When GROUP BY is used, the *Columns* tab, *HAVING* tab, and *ORDER BY* tab must not reference any identifier that is not named in the *GROUP BY* tab. The exception is that the *Columns* tab and *HAVING* tab may contain aggregate functions.

## **Related Information**

[Query Editor \(Interactive SQL\)](#)

[How Aggregate Functions Are Used to Grouped Data](#)

[The GROUP BY Clause: Organizing Query Results into Groups](#)

[The ROLLUP Clause](#)

[The CUBE Clause](#)

## 1.15.7 *HAVING* Tab

Use this tab to restrict the rows in your result set based on group values.

### Components

#### Criteria

Use the *Criteria* pane to enter your *HAVING* conditions. You can type directly into this pane, or use the Expression Editor. To edit existing expressions, highlight the expression before you open the Expression Editor. Otherwise, what you create in the Expression Editor is appended to previously existing expressions.

#### Build *HAVING* Expression

Click the *Build *HAVING* Expression* button, located in the bottom right of the *Criteria* pane, to open the Expression Editor and build your *HAVING* condition.

#### Results

Click *Results* at the bottom of the window to see the results of your query, or an error message if the query contains errors.

#### SQL

Click *SQL* at the bottom of the window to see the SQL statements for your query.

### About *HAVING* conditions

*HAVING* conditions can only be used if either the statement has a *GROUP BY* clause or the selected columns in the *Columns* tab include only aggregate functions. Any column names referenced in the *HAVING* clause must either be in the *GROUP BY* clause or be used as a parameter to an aggregate function in the *HAVING* clause.

### Related Information

[Query Editor \(Interactive SQL\)](#)

[How Aggregate Functions Are Used to Grouped Data](#)

[The \*HAVING\* Clause: Selecting Groups of Data](#)

## 1.15.8 ORDER BY Tab

Use this tab to sort the rows in your result set.

### Components

#### Available Columns

This box lists all the tables you chose for your query, and the columns in each table. It also lists any computed columns that you defined in the [Columns](#) tab.

#### ORDER BY Columns

This box stores the columns you chose to sort on. To sort on a column, select a column or set of columns in the [Available Columns](#) box and click the Right Arrow. To delete a column, select it in the [ORDER BY Columns](#) box and click the Left Arrow. Use the Up and Down Arrows to specify the order of column evaluation. You can sort on column aliases.

#### Add A Computed Column

Click the [Add A Computed Column](#) icon, located between the Right and Left Arrows, to open the Expression Editor and build your ORDER BY condition.

#### Results

Click [Results](#) at the bottom of the window to see the results of your query, or an error message if the query contains errors.

#### SQL

Click [SQL](#) at the bottom of the window to see the SQL statements for your query.

### About ORDER BY conditions

Each item in the [ORDER BY Columns](#) box can be labeled as an Up Arrow for ascending order (the default) or a Down Arrow for descending order. To change the order from ascending to descending, click the Arrow button to the left of the item.

The only way to ensure that rows are returned in a particular order is to use ORDER BY. In the absence of an ORDER BY clause, SQL Anywhere returns rows in whatever order is most efficient. The appearance of result sets may vary depending on when you last accessed the row and other factors.

### Related Information

[Query Editor \(Interactive SQL\)](#)

[The ORDER BY Clause: Ordering Results](#)



[The ORDER BY Clause: Sorting Query Results](#)

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