ODBC Client Driver Help

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ODBC Client Driver Help

Help version 1.032

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Overview

The ODBC Client Driver provides an easy and reliable way to connect ODBC data sources to OPC Client applications, including HMI, SCADA, Historian, MES, ERP and countless custom applications. It provides single-point access to multiple ODBC data sources via ODBC. Using the power and speed of OPC, the server is able to offer ODBC data to any OPC/DDE enabled client.

Driver Setup

Supported ODBC Data Sources

The following ODBC-compliant data sources are supported:

- Microsoft Access
- Microsoft SQL
- MySQL*
- Oracle
- Sybase

*If the project uses a MySQL data source, users must select **MySQL** from the Model drop-down list when creating a device. This will make the driver accommodate MySQL's data handling requirements. The PC that is running the OPC server must have the MyODBC driver installed, as well.

ODBC Client Driver Features

- Multiple connection sessions to multiple ODBC data sources.
- Read/Write to the SQL engine.
- Automatic tag generation based on tables, queries, and stored procedures from the ODBC data source.
- OPC DA.
- Drag and drop editing.
- CSV import and export for easy manipulation of tags.
- Data Scaling.
- System Tags for general error feedback to client applications.
- New tags that can be added to the application at any time (even at Runtime).
- The ability to run as a System Service.
- A built-in User Manager for complete control over individual users' functionality and privileges.

Communication Protocol

ODBC API

Requirements

Microsoft Data Access Components (MDAC), which consists of several core components that provide various database technologies (including ODBC and its drivers).

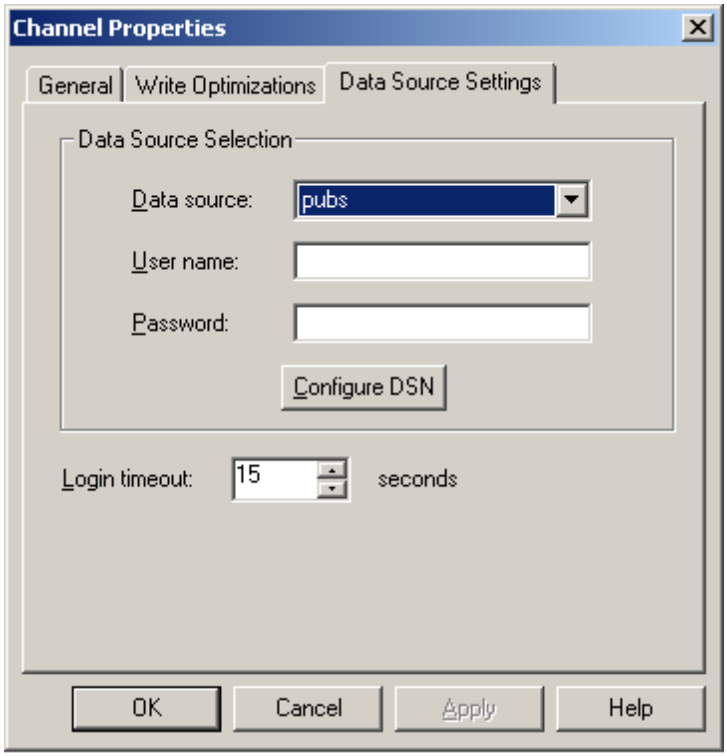
Maximum Channels and Devices

The maximum number of channels supported by this driver is 100. The maximum number of devices supported per channel is 4096.

Note: In this driver, the channel corresponds to the ODBC Driver and its particular ODBC data source.

Data Source Settings

The Data Source Settings tab is used to configure various data source settings.



Descriptions of the parameters are as follows:

- **Data Source:** This drop-down menu specifies the Data Source Name (DSN). A DSN must be created and configured for the data source before it will appear in the menu.
- **User Name:** This parameter specifies the user name. It is only needed if required by the data source (such as in SQL server authentication).
- **Password:** This parameter specifies the password. It it only needed if required by the data source (such as in SQL server authentication).
- **Configure DSN:** When clicked, this button will prompt the user to configure the DSN for access to a particular ODBC database.
- **Login Timeout:** This parameter specifies the number of seconds that the server will wait for a response before timing out when attempting to connect to the ODBC data source. The valid range is 1 to 99999 seconds. The default setting is 5 seconds.

Note: Some data sources can use Windows NT Authentication to gain access to the data source. If the data source is configured to use Windows NT Authentication, it will ignore the User Name and Password and will use the Network Login ID instead. For more information, refer to **Data Source Authentication**.

Configuring a DSN

The following example uses System DSNs, which are local to the computer but not user-dedicated. This means that they can be accessed by any user with privileges. User DSNs, which are also local to the computer, are only accessible by the current user. System DSNs must be used when the OPC server is configured to run as a System Service; otherwise, tags will neither be automatically generated nor be Good quality in projects in which they are already contained.

1. To start, click **Configure DSN** to invoke the **Microsoft® ODBC Data Source Administrator**.
2. Then, map an ODBC data source to a data source name.

   Note: Once a DSN has been created successfully, it will appear in the Data Source drop-down menu. For more information, refer to **Data Source Setup**.

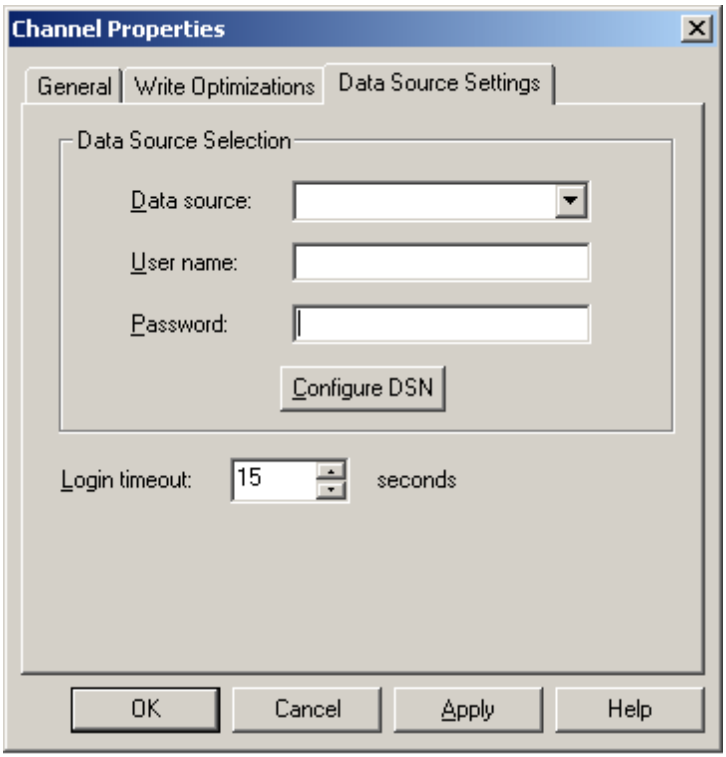
Data Source Setup

For information on using the ODBC Client Driver to configure a data source in the OPC server, refer to the instructions below.

Important: When configuring a DSN on a 64 bit operating system, the 64 bit version of the Microsoft® ODBC Data Source Administrator must be used (because the 64 bit version is used by this product's configuration utility).

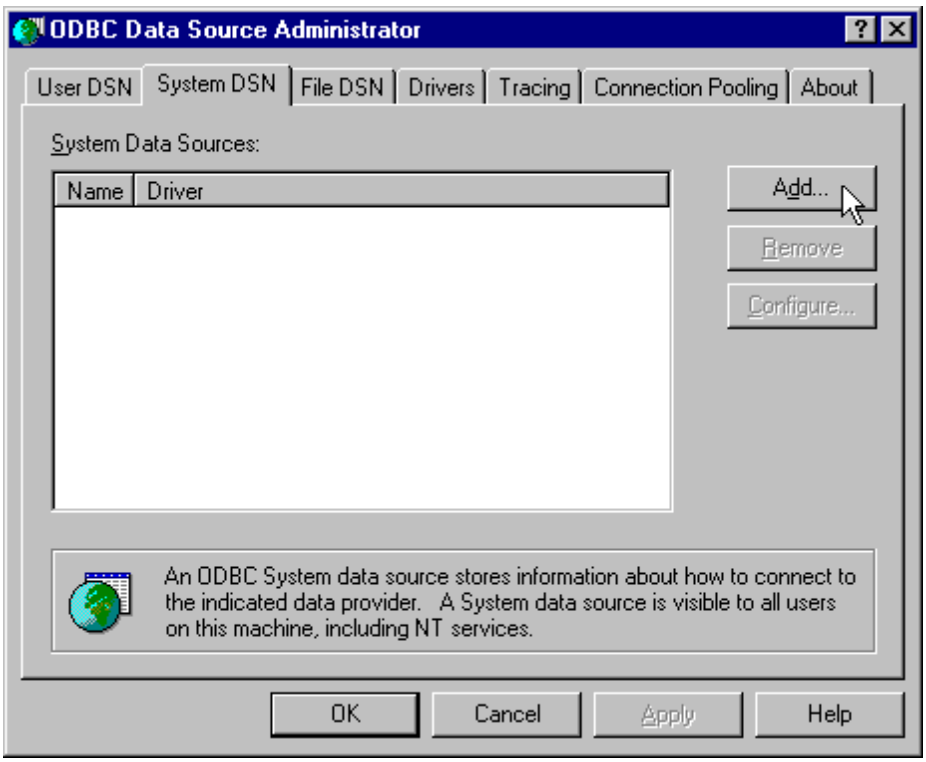
MySQL Users Note: If using MySQL, the ODBC Driver must be installed on the PC that is running the OPC server.

1. To start, open the OPC server and create a new channel.
2. Next, right-click on the channel name and then select **Properties** | **Data Source Settings**.
3. Then, click **Configure DSN**.

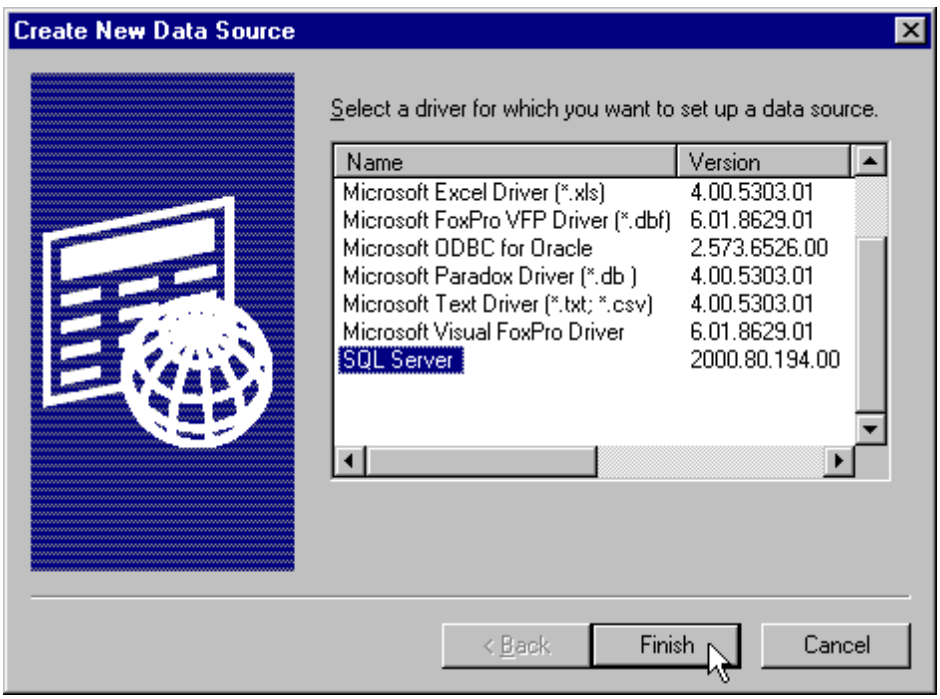


Note: This example uses System DSNs (which are local to the computer and can be accessed by any user with privileges). User DSNs (which are local to the computer but only accessible by the current user) can also be chosen.

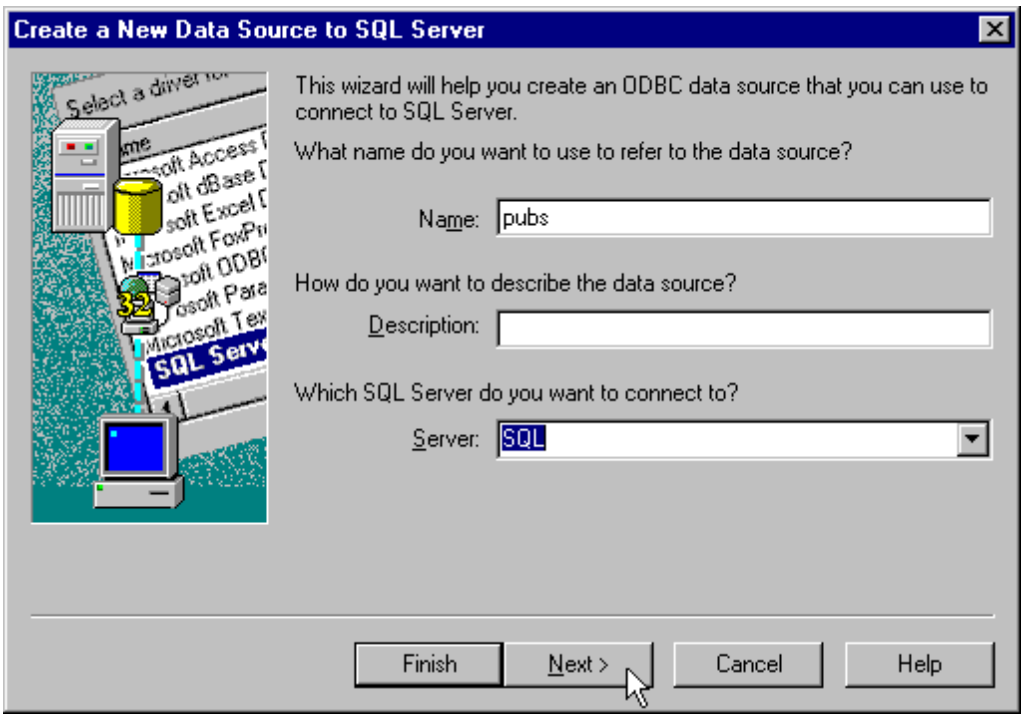
4. Next, click **Add**.



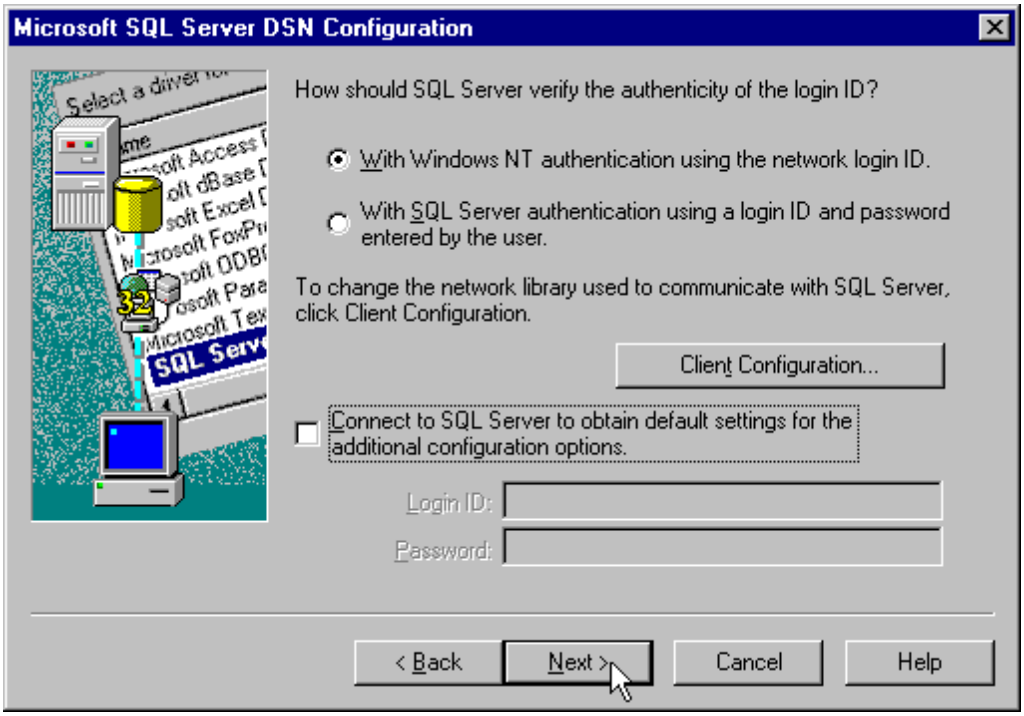
5. Then, select the desired data source. In this example, a SQL Server data source is used.



6. Name the ODBC data source, and select the SQL database to which it will connect. Then, click **Next**.

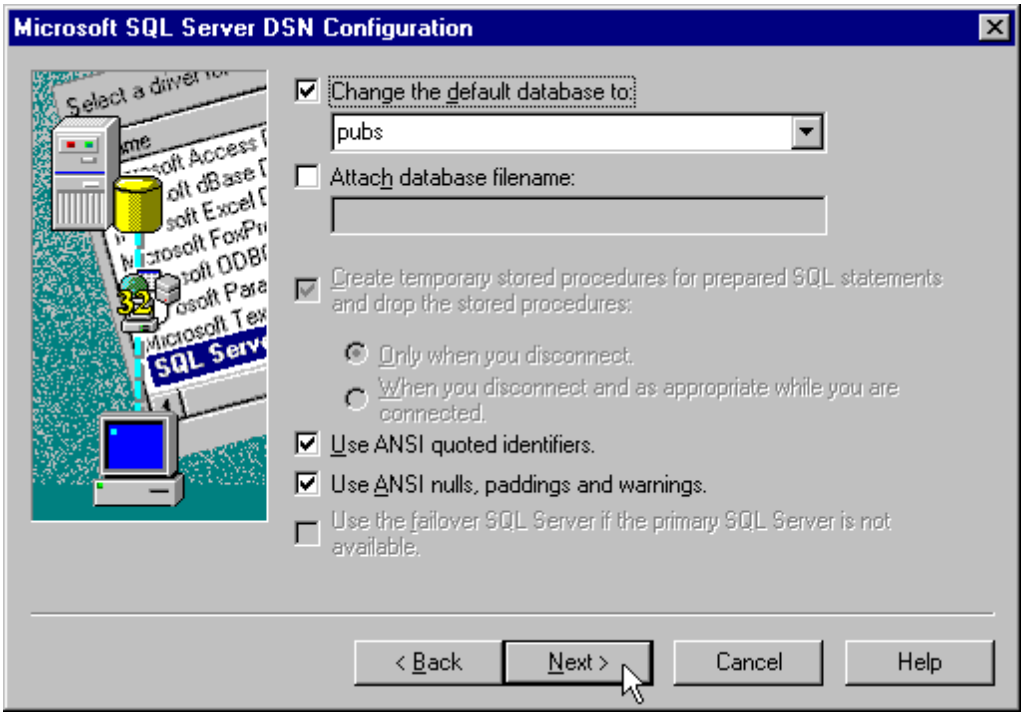


7. In **Microsoft SQL Server DSN Configuration**, **Windows NT Authentication** should be selected by default. If it is not, select it and then click **Next**.

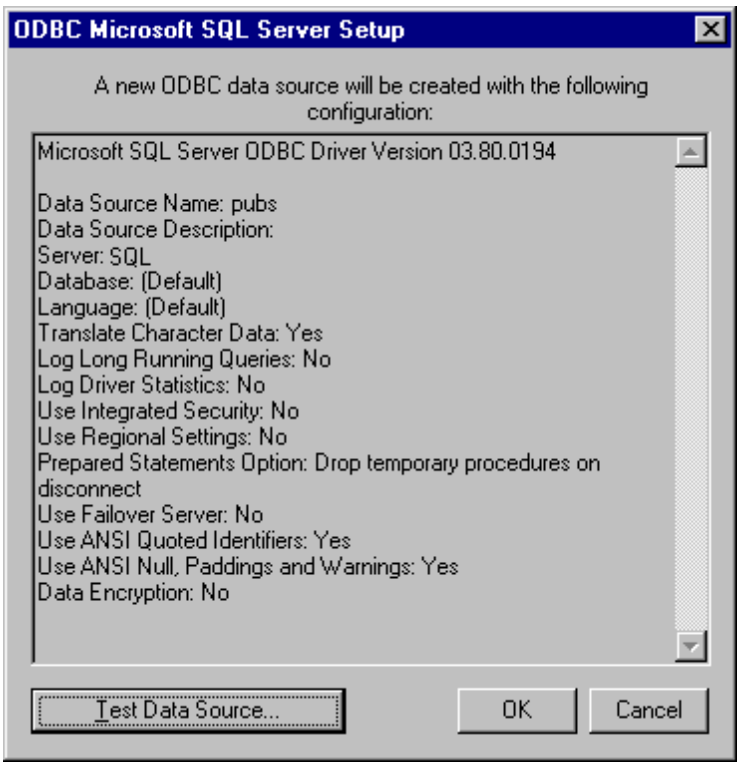


Note: If running the OPC server in System Service mode, refer to **Running as a System Service**.

8. Next, check **Change the default database to** and then select the desired database from the drop-down menu. Select the default database if the desired database is not available.



9. Continue through the wizard, keeping the remaining settings at their default values.
10. Upon completion, test the data source connection by clicking **Test Data Source**. If the connection is good, users will receive the message "Test Successful."



Automatic Tag Generation Options

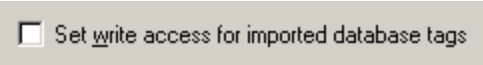
The Automatic Tag Generation Options can be used to control how tags are automatically generated in the server's tag database. Tags that are automatically generated will differ depending on the type of access method

selected.

Set Write Access

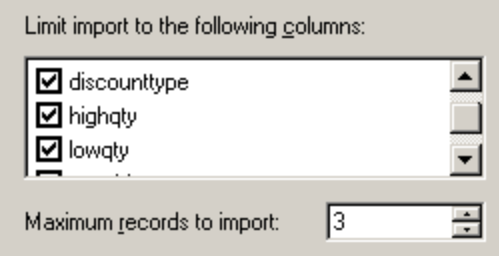
This parameter specifies the default Write privileges for all access methods (including Fixed Table, Dynamic Table, Query, and Stored Procedure) when automatically generating tags. It only sets the tag's access privileges to Read/Write in the server: it does not affect the field's access privileges in the database.

Note: Some data sources (such as Excel) do not support Writes.



Limit Import to the Following Columns

This option specifies the data source's table columns that will be imported into the tag database. This option only applies to Fixed Table.

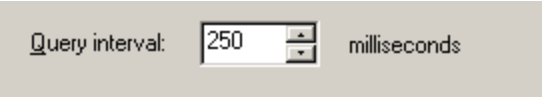


Maximum Records to Import

This parameter specifies the maximum number of records to import. The default setting will automatically generate tags for all records in the table, but users can limit the number is desired. This parameter only applies to Fixed Table.

Timing

For better performance, the ODBC Client Driver can query the data source for updates at an interval that is independent of tag update rates.



Description of the parameter is as follows:

- **Query Interval:** This parameter specifies the frequency that the driver will query the data source for the latest data values. The valid range is 100 to 99999999 milliseconds. The default setting is 250 milliseconds.

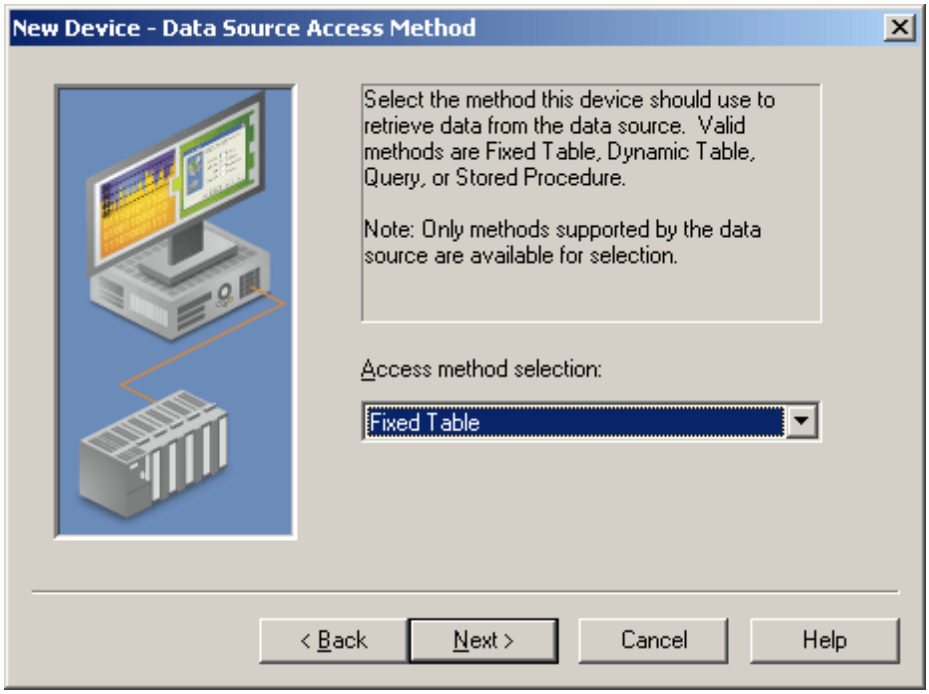
Data Source Access Methods

Access Method Selection

Before live data can be accessed with this driver, a method must be chosen that defines how it will be accessed. Options include Fixed Table, Dynamic Table, Query, and Stored Procedure. For more information, select a link from the list below.

Tables
Query
Stored Procedure

Once a channel with a defined ODBC data source is created, users must create a device that corresponds to a certain access method to the ODBC data source. This can only be selected during device creation.



Note: Users may receive a message that states the driver was unable to retrieve a data source component. It is important to verify in the ODBC administrator that the path to the data source is correct for the DSN. For more information, refer to **Data Source Setup** and **ODBC Client Driver Specific Messages**.

Tables

Data can be retrieved from an ODBC data source table through the Fixed Table or Dynamic Table access methods.

Fixed Table

The Fixed Table access method allows access to each item in the ODBC data source table. After creating a device through the specified Fixed Table method, the driver will create tags in the server's tag database that correspond to each item in the ODBC data source table.

Dynamic Table

The Dynamic Table access method allows access to a single record set in an ODBC data source table via record tags. The record tags correspond to their respective columns in the data source table, and are dynamically controlled via internal control tags (which are accessible from a client application). This allows users to work with a particular record set in the table. The table below displays a list of the internal control tags that can be used to access the data.

Dynamic Table Control Tags	Access	Description
Move	Read/Write	Move a specified number of records forward (positive value) or backward (negative value) in a table.
MovePrev	Read/Write	Move to the previous record (on write complete).
MoveNext	Read/Write	Move to the next record (on write complete).
MoveLast	Read/Write	Move to the last record in the table (on write complete).
MoveFirst	Read/Write	Move to the first record in the table (on write complete).
CurrentRecord	Read Only	The index of the record that is currently being accessed.
RecordCount	Read Only	Number of records are in the table.

Note: The driver must have access to the database via ODBC for the table query to execute properly.

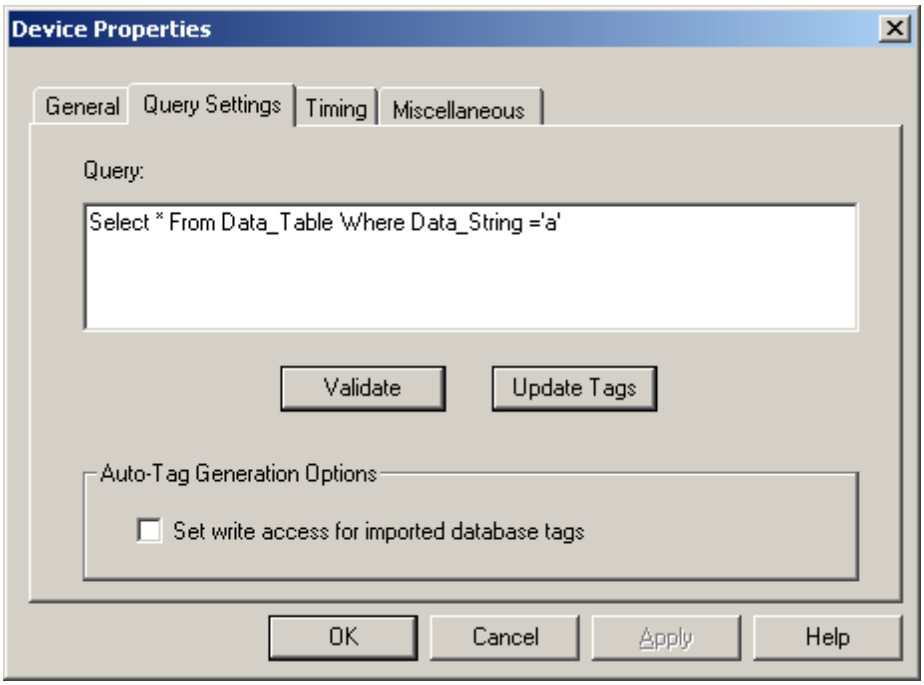
Selecting Tables

Once an access method has been selected, users can select a table from which data will be accessed. All table names in the ODBC Data Source are available for selection. Once a table name is selected, the driver can be con-

figured to automatically generate tags to represent the data in the table. For more information, refer to **Automatic Tag Generation Options**.

Query

The ODBC Client Driver supports SELECT queries in which a tag database can be created and defined according to specific needs. Users can retrieve tags from whole tables and specific records.



Descriptions of the parameters are as follows:

- **Query:** This field is used to enter a query.
- **Validate:** When pressed, this button determines whether a query is valid or invalid.
- **Update Tags:** When pressed, this button updates the tag list with the tag database created from the query.
- **Set write access for imported database tags:** When checked, this button will set write access for the imported database tags. The default setting is unchecked. For more information, refer to **Automatic Tag Generation Options**.

Using the Query Access Method

For information on retrieving tags based on a query, refer to the instructions below.

Note: The driver must have access to the database via ODBC in order for the query to execute properly.

1. In **Query**, type a SELECT query.

   Note: Some ODBC data sources do not allow queries. For more information, refer to the data source's help documentation.

2. Next, click **Validate**. If no error message is received, the query is valid. If an error message is received, the query is invalid.

3. If the query is valid, click **Apply**. A tag database will then be created based on the query. If the query is invalid, users must fix the query or data source connection and then re-attempt validation.

4. Next, click **Update Tags** to update the tag list. This must be done for any change made to the selected stored procedure.

Important: In order for tags to generate, the query must result in at least one returned record. A null return will neither generate tags nor post error messages (since it is not considered to be an error).

Using the Data Source Query Format

For information on creating a query to retrieve specific data rows from a table, refer to the instructions below.

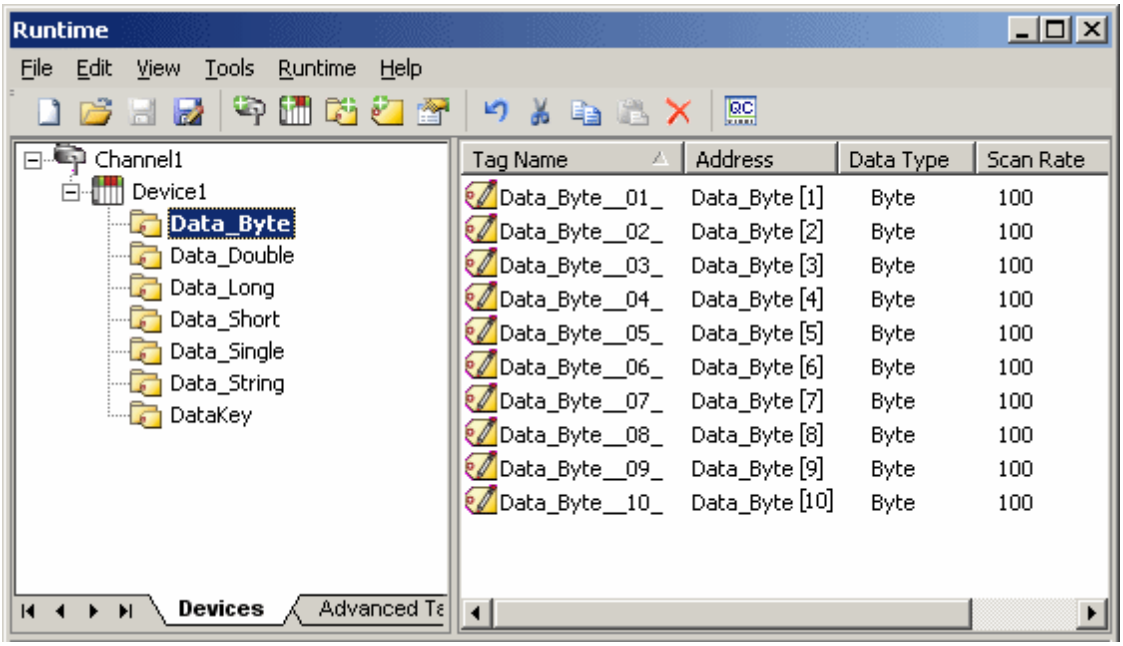
1. In **Query**, add a search condition to the query using the following format:

   SELECT [*column1, column2, ...*] FROM [*table*] WHERE [*search condition*];

2. The general format of a search condition is as follows:

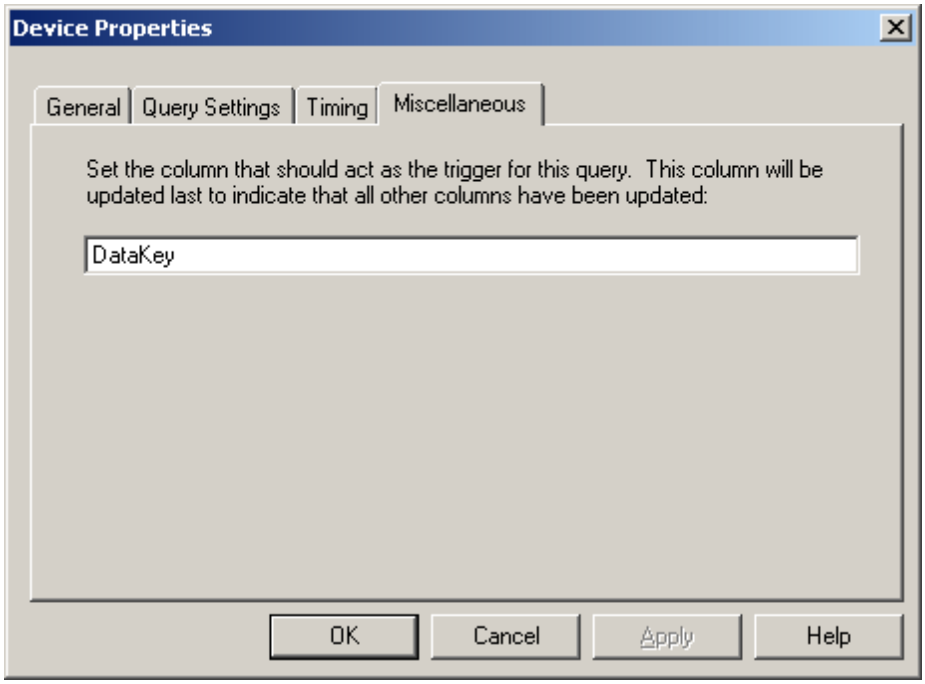
   WHERE [*expression*] [*comparison operator*] [*expression*]

   Note: When using specific strings in the expression, single quotes may be needed. For example, "Select job_desc WHERE jobname = 'manager'".



Miscellaneous

The Miscellaneous property dialog is only available to the Query access method.



Description of the parameter is as follows:

- **Trigger Column:** This parameter specifies the field or column in the database that should be updated last. It is typically used as a trigger to indicate to the connected client that all other fields have been updated and can be processed. An example of the syntax is "Select job_desc WHERE jobname = 'manager'".

Note: When the Trigger column name is set to "job_id" the data in that field will be updated last.

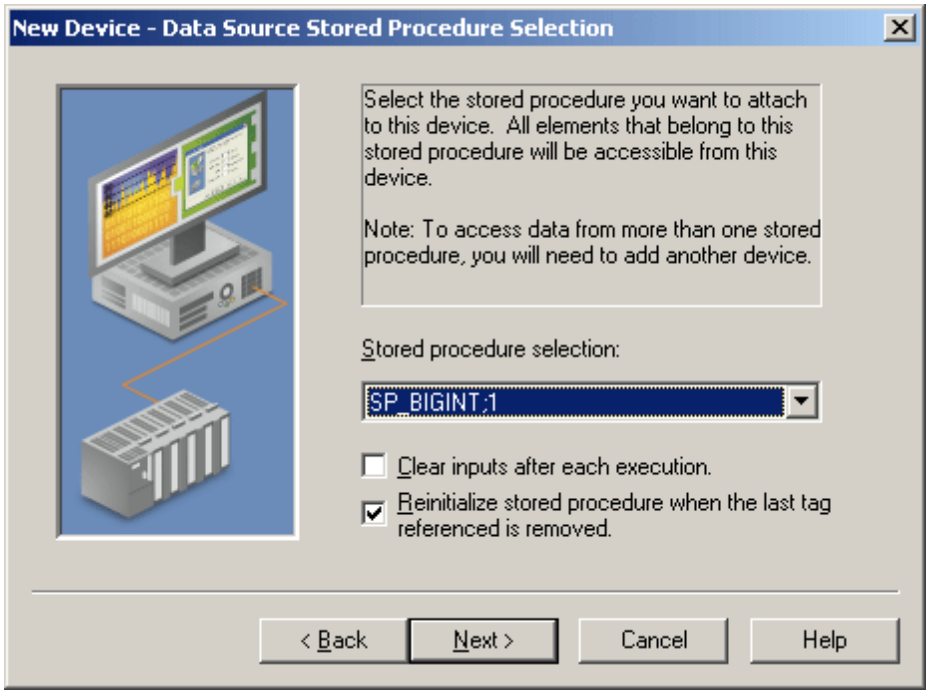
Stored Procedure

The ODBC Client Driver supports access to stored procedures. Guidelines for accessing stored procedures on the ODBC data source are as follows:

- The data source must support stored procedures.
- At least one custom stored procedure must be contained and tested by the data source before users can attempt to create and connect to the tag database via the ODBC Client Driver.
- The current account must have permission to access the stored procedure.
- The driver must have access to the data source via ODBC so that it can access and execute the stored procedure properly.

Note for MySQL Users: The ODBC Client Driver uses MyODBC to communicate with MySQL. At the time of release, MyODBC did not support stored procedures; as such, the ODBC Client Driver's support of MySQL does not include stored procedures.

Data Source Stored Procedure Selection



Descriptions of the parameters are as follows:

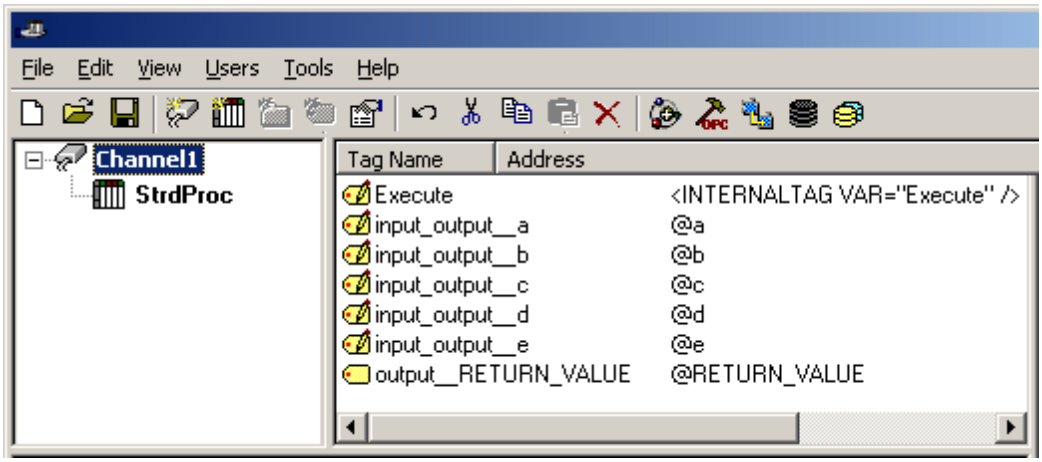
- **Stored procedure selection:** This parameter specifies the stored procedure from which tags will be retrieved.
- **Clear inputs after each execution:** When checked, the OPC server will clear the input values after the stored procedure is executed, thus returning it to the appropriate value for its data type. The default setting is unchecked.
- **Reinitialize stored procedure when the last tag referenced is removed:** When checked, the OPC server will reset the input values after the last active client is disconnected from the server. When unchecked, the input parameters will retain their last known values when the client is reconnected. The default setting is checked.

Creating the Tag Database

Once the stored procedure has been selected, users can continue through and finish the Device Wizard. The tag database will then be created based on the selected stored procedure. An internal control tag will also be created in the database to allow the procedure to execute. After all input values have been set to the stored procedure, users can write a value to this control tag to execute the stored procedure (if applicable).

Stored Procedure Tags	Access	Description
Execute	Read/Write	Execute stored procedure (on write complete).

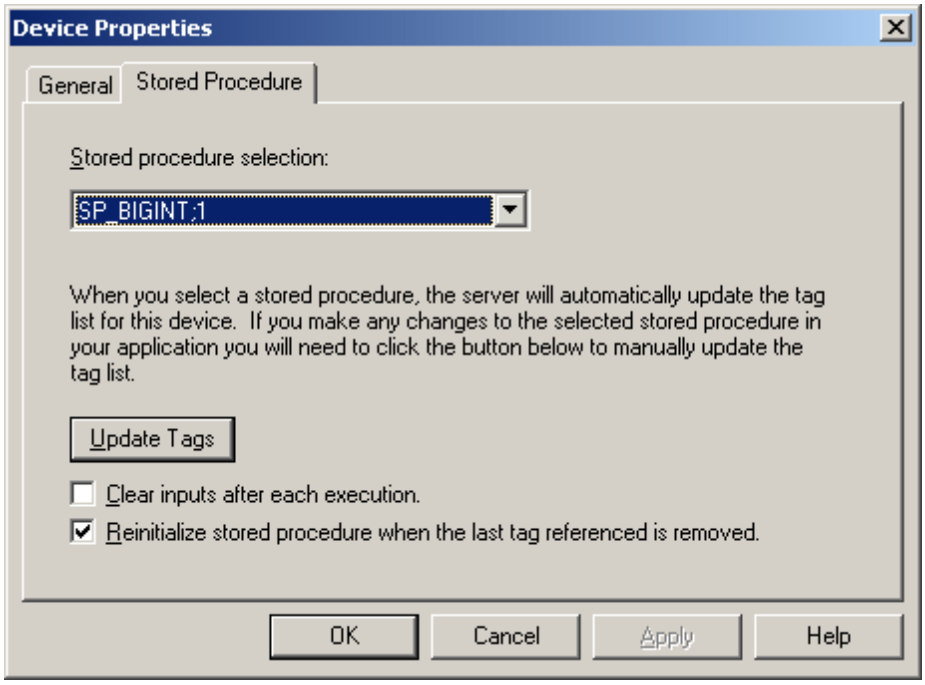
The example below displays a tag database that was created from a successful stored procedure.



Selecting a New Stored Procedure

Once a device has been defined with a stored procedure, a new stored procedure may be selected. Alternatively, the tags in the selected. To do so, open **Device Properties** | **Stored Procedure**. Then, select a new stored procedure: the server will automatically update the tag list for the device.

Note: To manually update the tag list, click **Update Tags**.



Running as a System Service

Unlike OPC servers that only support Stand Alone program operation, this server can continue to supply OPC data across user login or logout sessions by running as a System Service. This is crucial for applications in which the server must provide data to OPC clients via DCOM. For these applications, the loss of a DCOM connection cannot be tolerated.

Connecting Remotely in System Service Mode

This ODBC communications application supports running as a service under supported Microsoft Windows operating systems. For operating system requirements, refer to the OPC server's help documentation.

Data Source Authentication

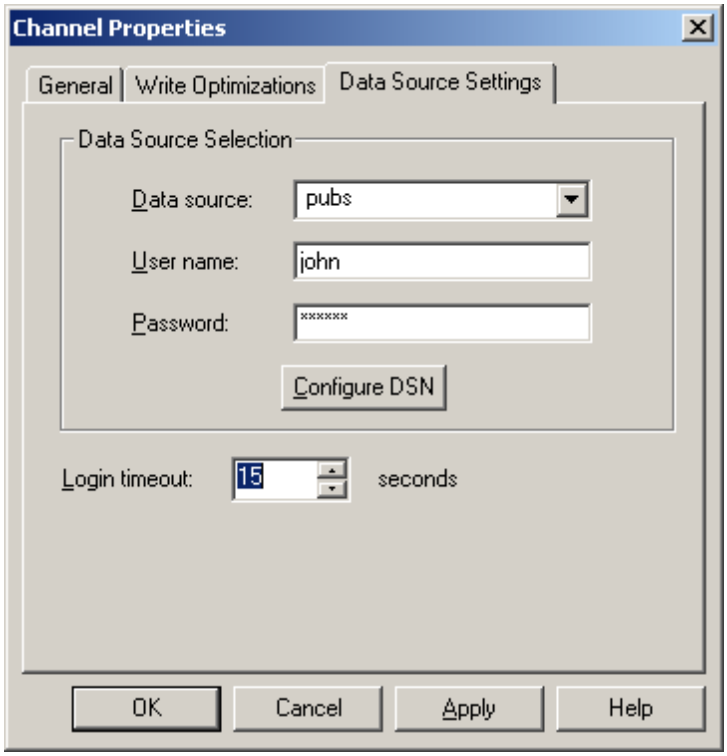
Windows NT Authentication

Some data sources may be configured to use authentication for security. The SQL Server can authenticate with Windows NT authentication by default using the Network Login ID. This makes the SQL server logon transparent, and eliminates the need for a user name and password in the channel's Data Source Settings tab.

SQL Server Authentication

The SQL server also has its own authentication method. To connect the OPC server to the SQL server using SQL authentication, users must set the authentication method in the SQL server to allow SQL authentication. Users must also specify the Login ID and Password. After these parameters are defined, the user name and password may then be entered in the OPC server in the channel's Data Source Settings tab. For more information, refer to **Setting up SQL Authentication**.

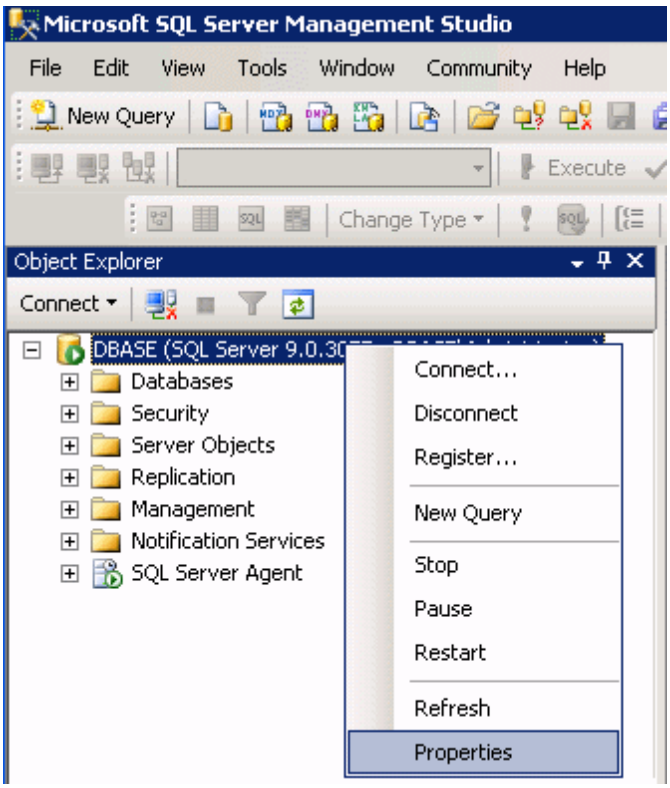
See Also: **Running as a System Service**



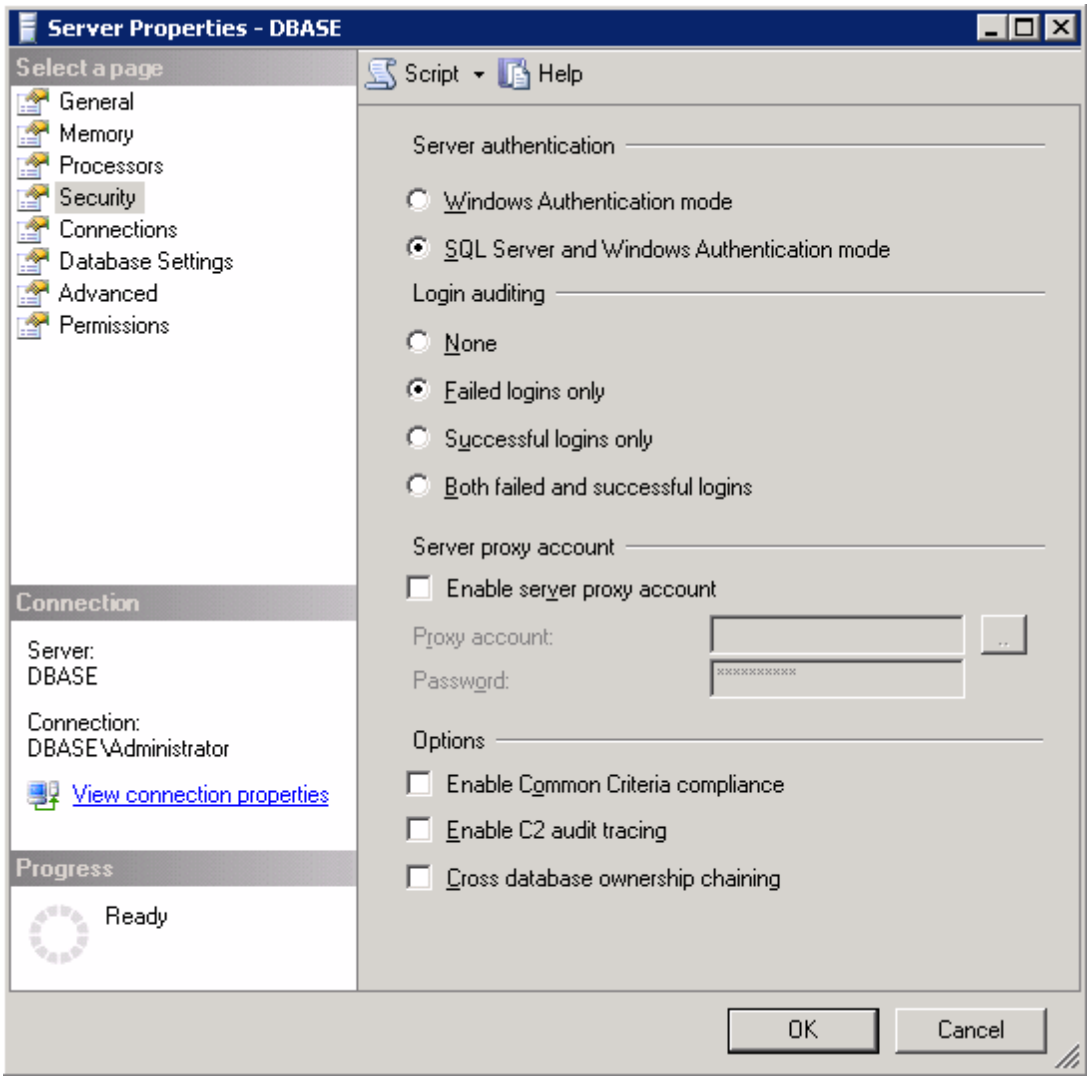
Setting up SQL Authentication

For information on setting up SQL authentication, refer to the instructions below. These steps usually only need to be completed when running as a System Service and attempting to connect remotely to an SQL server.

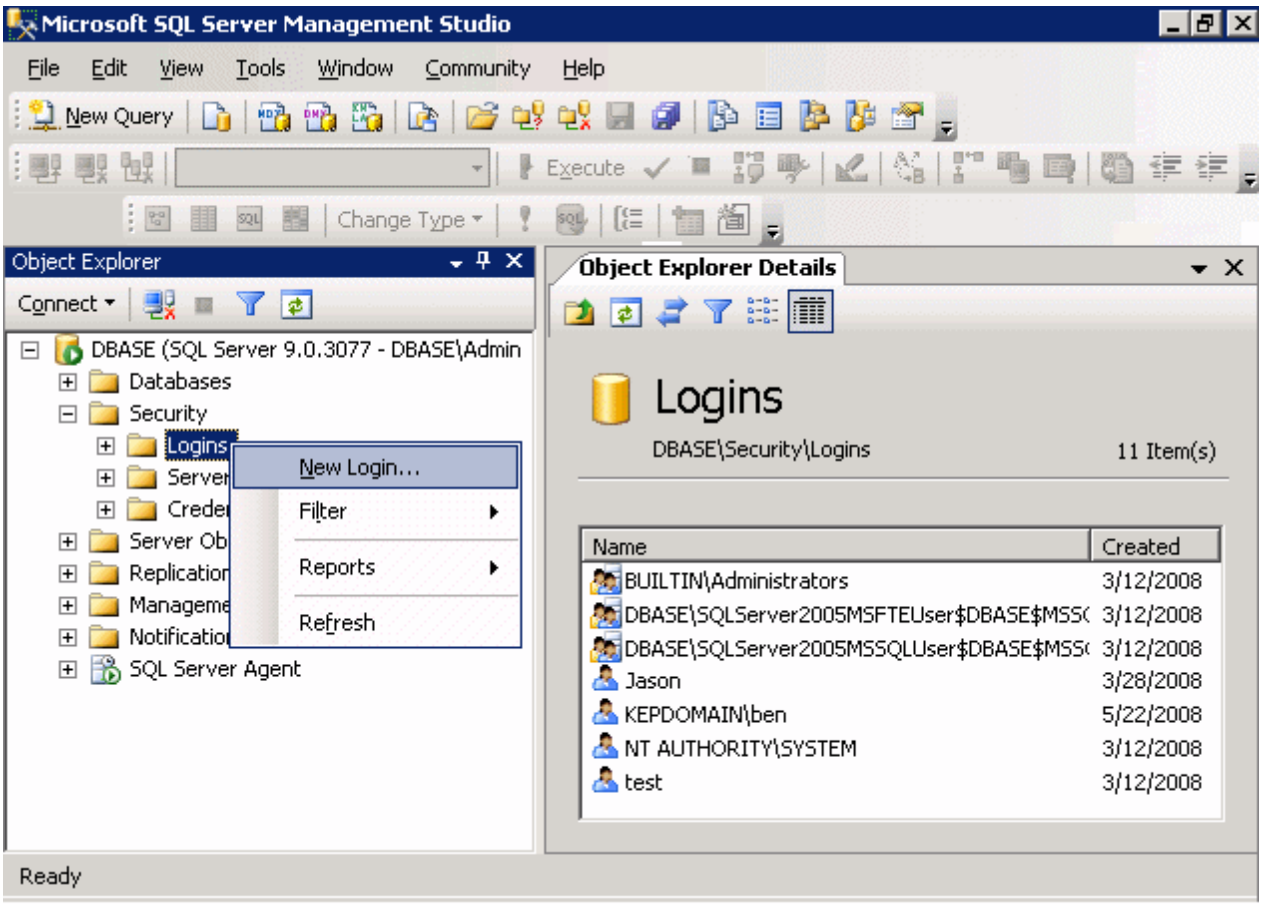
1. To start, open the **SQL Server Management Studio**. Then, right-click on the SQL server icon in the tree hierarchy and select **Properties**.



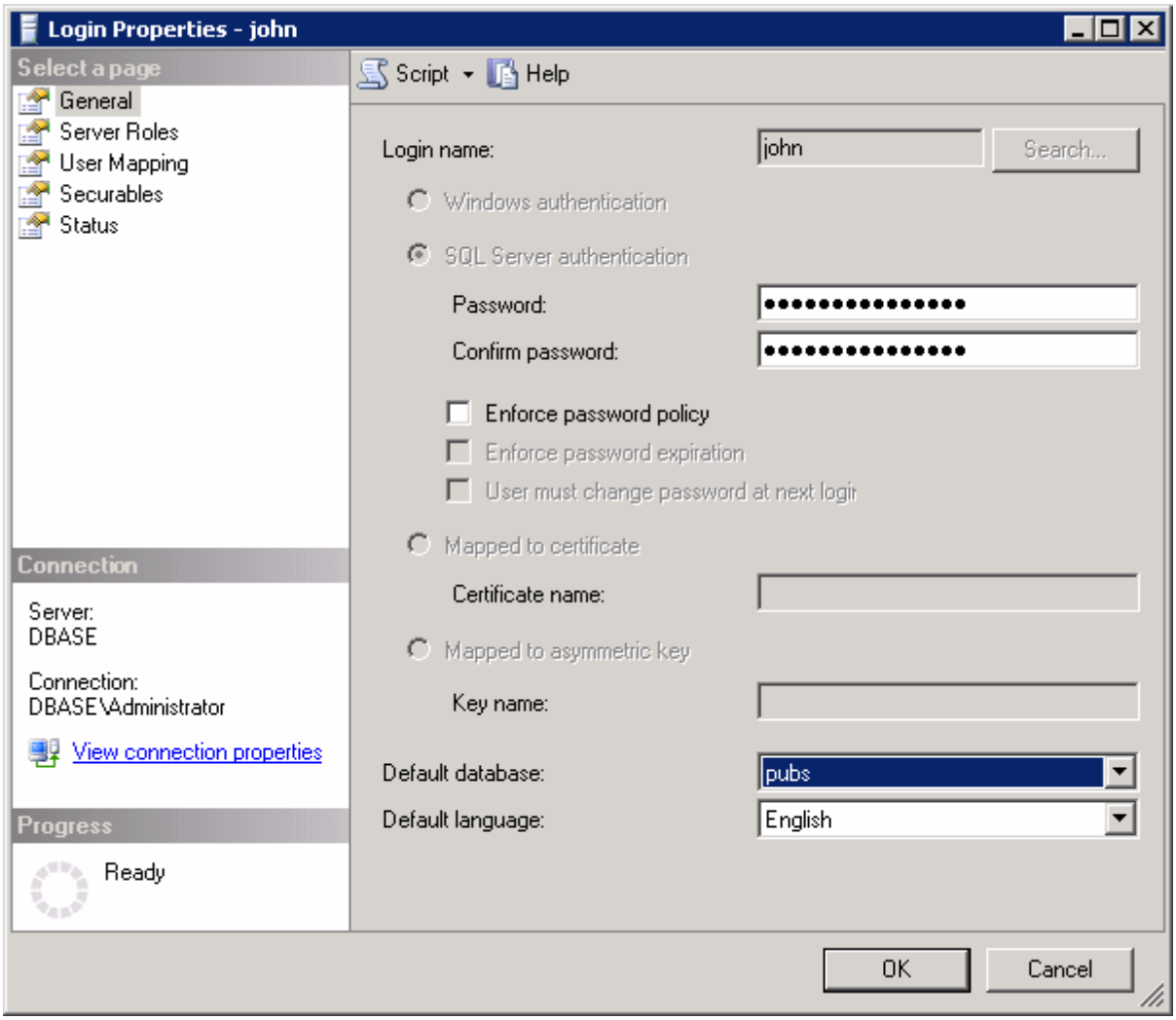
2. Open the **Security** page, and then choose **SQL Server and Windows Authentication Mode**. Then, click **OK**.



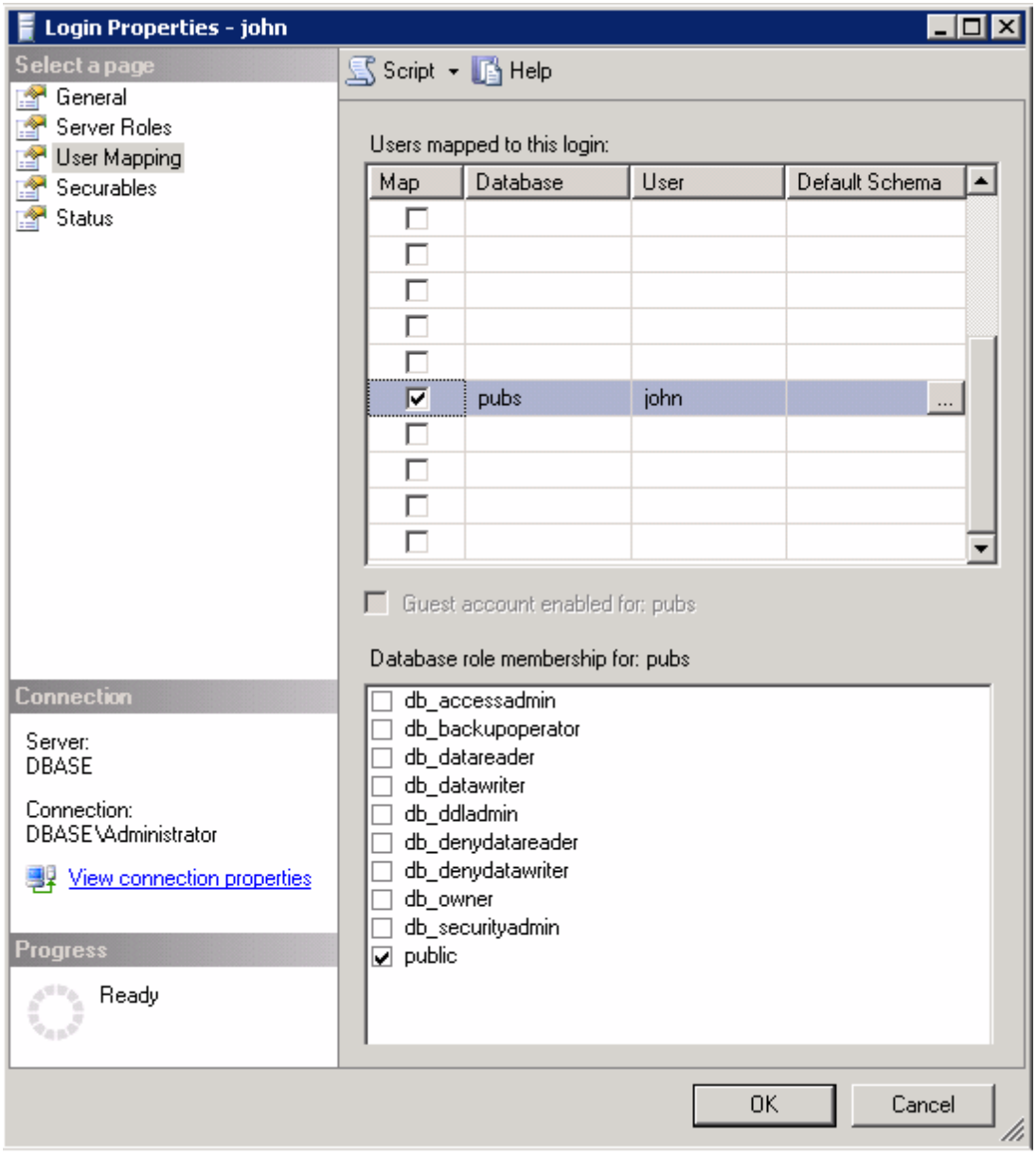
3. In the tree hierarchy, expand **Security**. Then, right-click on **Logins** and select **New Login**.



4. Create a new user and define its privileges. Open the **General** page, and then define a user name and password.



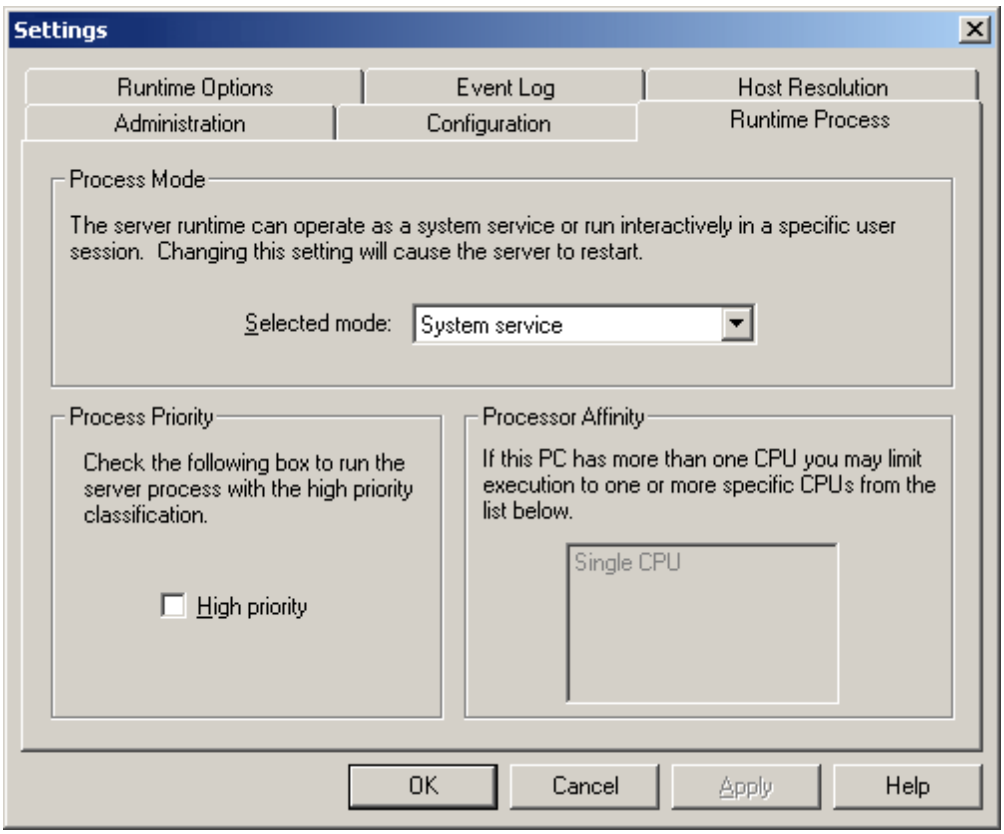
5. Next, open **User Mapping** and select the database to which the user will connect. Then, select a role for the database that has been selected. In this example, **Public** is used.



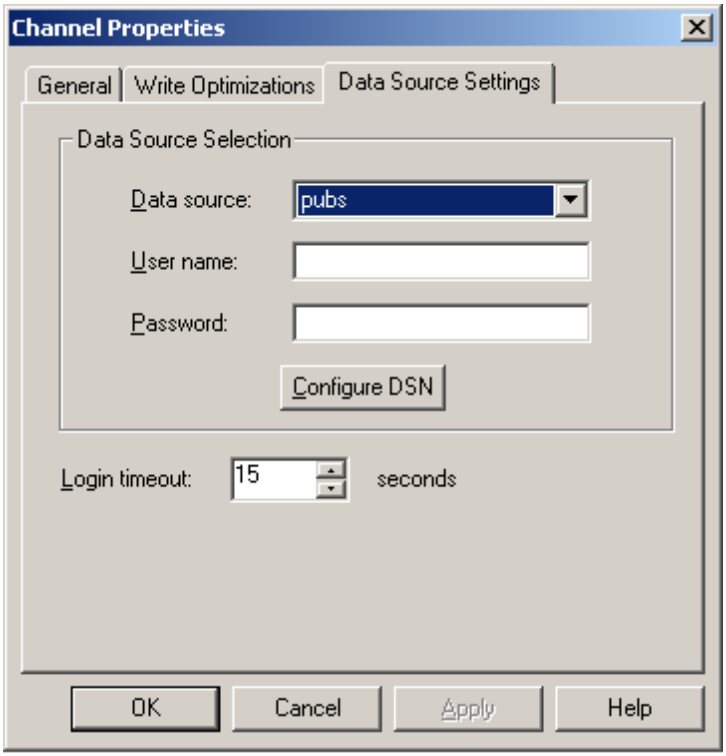
Note: The data source name (DSN) should have been configured before the OPC server was put in System Service Mode. If this has not yet been done, proceed to **ODBC Data Source Setup** before continuing with the instructions below.

6. In the OPC server, select **Tools** | **Options**. Then, open the **Runtime Process** tab.

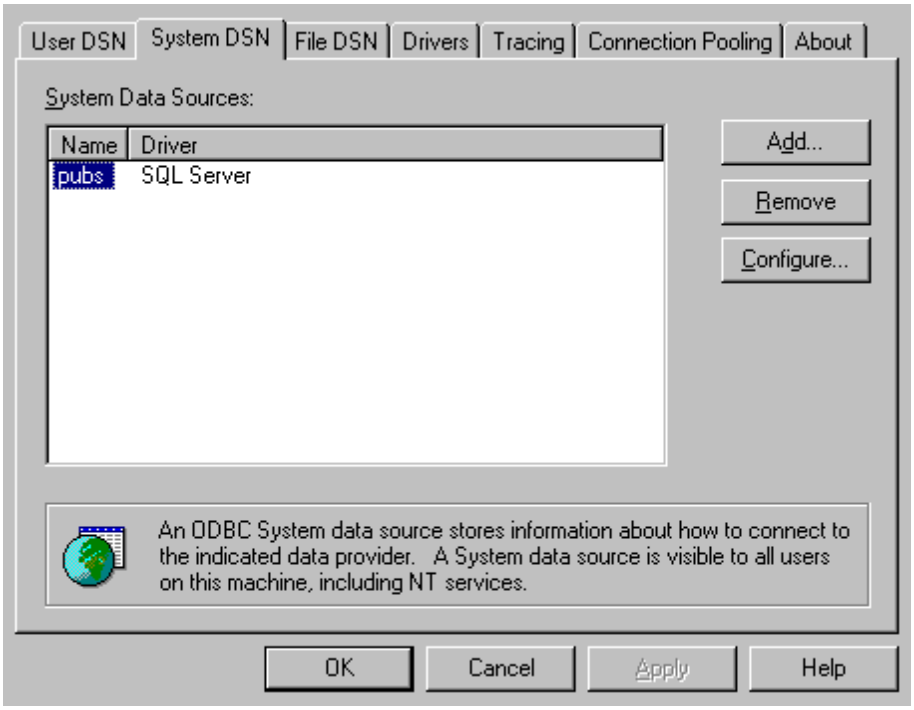
7. In the **Selected Mode** drop-down menu, select **System Service**. Then, click **OK**.



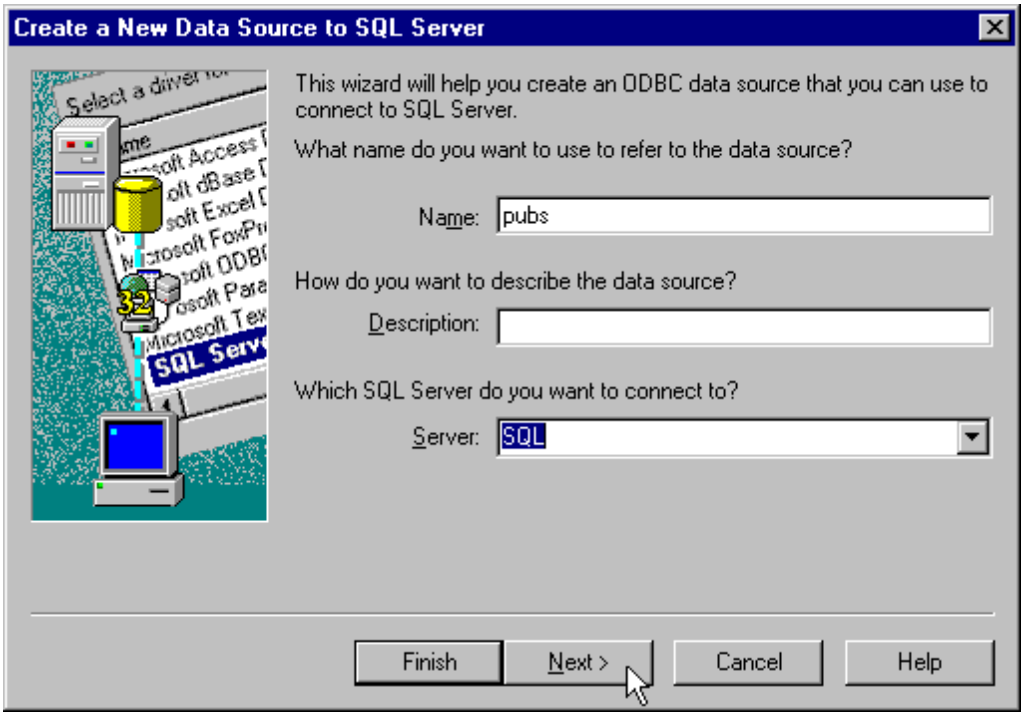
8. Next, right-click on the channel and select **Properties**. Open the **Data Source Setting** tab, and then click **Configure DSN**.



9. Select the newly created DSN, and then click **Configure**.

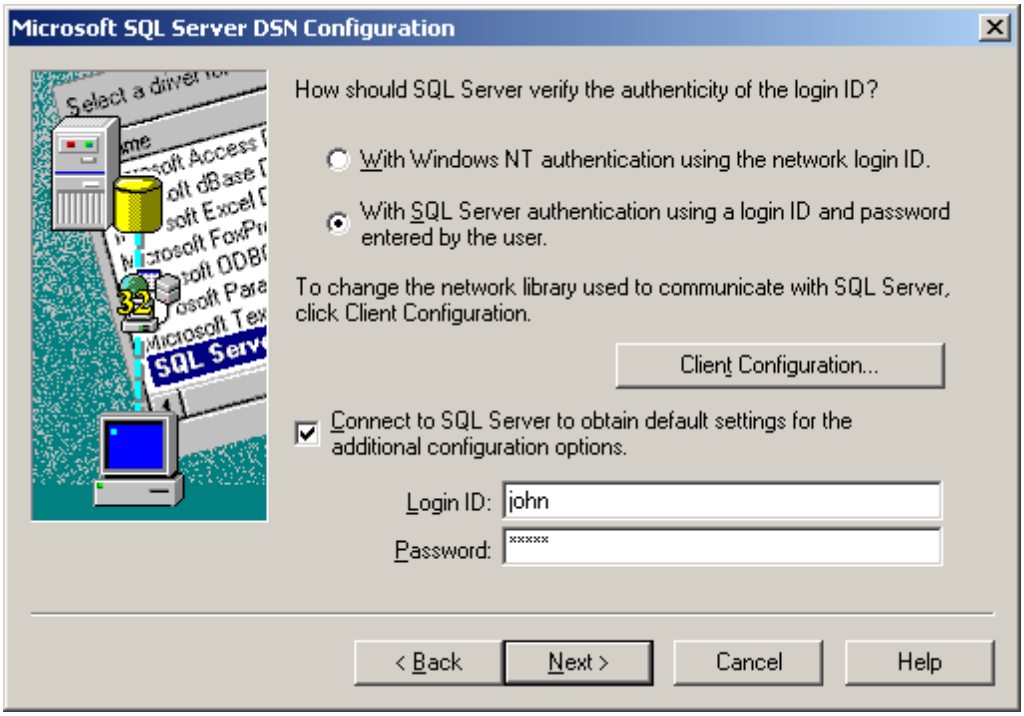


10. Confirm the data source name and the server name. Then, click **Next**.



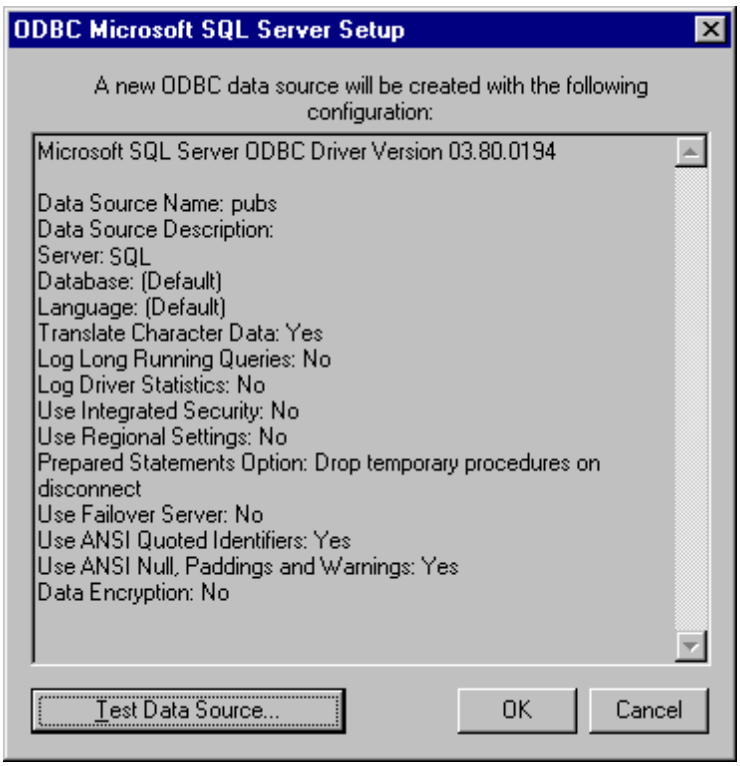
11. Next, select the **SQL Server Authentication** radio button.

12. Check the box next to **Connect to SQL Server to obtain default settings...** and then enter the user name and password for the user that was defined in the SQL Server.



13. Continue through the wizard, keeping the default settings.

14. Upon completion, test the data source connection by clicking **Test Data Source**. If the connection is good, users will receive the message "Test Successful".



Data Types Description

Data Type	Description
Boolean	Single bit
Byte	Unsigned 8 bit value bit 0 is the low bit bit 7 is the high bit
Char	Signed 8 bit value bit 0 is the low bit bit 6 is the high bit bit 7 is the sign bit
Word	Unsigned 16 bit value bit 0 is the low bit bit 15 is the high bit
Short	Signed 16 bit value bit 0 is the low bit bit 14 is the high bit bit 15 is the sign bit
DWord	Unsigned 32 bit value bit 0 is the low bit bit 31 is the high bit
Long	Signed 32 bit value bit 0 is the low bit bit 30 is the high bit bit 31 is the sign bit
Float	32 bit floating point value. The driver interprets two consecutive 16 bit registers as a floating point value by making the second register the high word and the first register the low word.
Double	64 bit floating point value
String	Zero terminated character array. This driver limits string lengths to 256 characters.

Note: The default data type is String.

Address Descriptions

Tag validation will only occur when a tag is requested by a client application. If a link to the ODBC data source cannot be made by the driver, the tag's data quality will be set to Bad. This will also occur if the address that the tag references cannot be resolved by the driver; such as, if the address cannot be mapped to the data set in the ODBC data source. When this occurs, an appropriate error message will be placed in the OPC server's Event Log.

See Also: **Error Descriptions**

Error Descriptions

The following error/warning messages may be generated. Click on the link for a description of the message.

Address Validation

Missing address
Device address '<address>' contains a syntax error
Data Type '<type>' is not valid for device address '<address>'
Device address '<address>' is Read Only
Array support is not available for the specified address: '<address>'

Device Status Messages

Write request rejected on Read Only item reference '<channel name><device name><address>

ODBC Client Driver Specific Messages

Configuration

Unable to retrieve table names (Reason: ODBC Specific Error)
Unable to retrieve table column names (Reason: ODBC Specific Error)
Unable to retrieve table row count (Reason: ODBC Specific Error)
Unable to retrieve stored procedure names (Reason: ODBC Specific Error)
Unable to retrieve supported access methods (Reason: ODBC Specific Error)
Query validation failed due to the following: (Reason: ODBC Specific Error)

Runtime

Unable to connect to data source on channel '<channel name>' (Reason: ODBC Specific Error)
Unable to open recordset on device '<device name>' (Reason: ODBC Specific Error)
Unable to query recordset on device '<device name>' (Reason: ODBC Specific Error)
Unable to retrieve database value for tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to write database value '<value>' for tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to read internal tag <tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to write to internal tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to read parameter tag '<tag address>'. (Reason: ODBC Specific Error)
Unable to write to parameter tag '<tag address>' (Reason: ODBC Specific Error)
Unable to execute stored procedure ''<stored procedure name>' on device '<device name>'. (Reason: ODBC Specific Error)
Call to execute stored procedure '<stored procedure name>' on device '<device name>' failed (Reason: ODBC Specific Error)
Data source '<data source name>' is configured as Read Only (all writes will be rejected). Please refer to the database configuration
Unable to write to item '<tag address>' (Reason: ODBC Specific Error)

Address Validation

The following error/warning messages may be generated. Click on the link for a description of the message.

Address Validation

Missing address
Device address '<address>' contains a syntax error
Data Type '<type>' is not valid for device address '<address>'
Device address '<address>' is Read Only
Array support is not available for the specified address: '<address>'

Missing address

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically has no length.

Solution:
Re-enter the address in the client application.

Device address '<address>' contains a syntax error

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically contains one or more invalid characters.

Solution:
1. If the address is dynamic, re-enter it in the client application.
2. If the address is static, re-enter it in the server application.

Data Type '<type>' is not valid for device address '<address>'

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically has been assigned an invalid data type.

Solution:
Modify the requested data type in the client or server application.

Device address '<address>' is Read Only

Error Type:
Warning

Possible Cause:
A tag address accessed by that client has requested an access mode that is not compatible with what the data source supports for that address.

Solution:
Change the access mode in the client application, under device properties or under the actual tag in the server's tag data base.

Note:
Although some data sources do not support write access, others may support it just to certain items.

Array support is not available for the specified address: '<address>'

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically contains an array reference for an address type that doesn't support arrays.

Solution:
Re-enter the address in the client application to remove the array reference or correct the address type.

Device Status Messages

The following error/warning messages may be generated. Click on the link for a description of the message.

Device Status Messages
Write request rejected on Read Only item reference '<channel name><device name><address>

Write request rejected on Read Only item reference '<channel name><device name><address> '

Error Type:

Serious

Possible Cause:
1. The network connection between the data source and the host PC is broken (if data source is remote).
2. The data source path for the DSN is configured incorrectly or is nonexistent in the Microsoft® ODBC Data Source Administrator.
3. The defined data source does not exist in the location specified in the Microsoft® ODBC Data Source Administrator.

Solution:
1. Verify that the network connection between the PC with the ODBC Client Driver and the PC with the data source (if data source is remote) is good.
2. Verify that the data source path for the DSN is correct.
3. Verify that the data source exists.

ODBC Client Driver Specific Messages

The following error/warning messages may be generated. Click on the link for a description of the message.

ODBC Client Driver Specific Messages

Configuration

Unable to retrieve table names (Reason: ODBC Specific Error)
Unable to retrieve table column names (Reason: ODBC Specific Error)
Unable to retrieve table row count (Reason: ODBC Specific Error)
Unable to retrieve stored procedure names (Reason: ODBC Specific Error)
Unable to retrieve supported access methods (Reason: ODBC Specific Error)
Query validation failed due to the following: (Reason: ODBC Specific Error)

Runtime

Unable to connect to data source on channel '<channel name>' (Reason: ODBC Specific Error)
Unable to open recordset on device '<device name>' (Reason: ODBC Specific Error)
Unable to query recordset on device '<device name>' (Reason: ODBC Specific Error)
Unable to retrieve database value for tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to write database value '<value>' for tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to read internal tag <tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to write to internal tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)
Unable to read parameter tag '<tag address>'. (Reason: ODBC Specific Error)
Unable to write to parameter tag '<tag address>' (Reason: ODBC Specific Error)
Unable to execute stored procedure ''<stored procedure name>' on device '<device name>'. (Reason: ODBC Specific Error)
Call to execute stored procedure '<stored procedure name>' on device '<device name>' failed (Reason: ODBC Specific Error)
Data source '<data source name>' is configured as Read Only (all writes will be rejected). Please refer to the database configuration
Unable to write to item '<tag address>' (Reason: ODBC Specific Error)

Unable to retrieve table names (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source does not contain any tables.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the ODBC data source contains at least one table.

Note:

The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to retrieve table column names (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source table does not contain any columns.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the ODBC data source table contains at least one column.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to retrieve table row count (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source table does not contain any records.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the ODBC data source table contains at least one record.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to retrieve stored procedure names. (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source table does not contain any stored procedures.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the ODBC data source contains at least one stored procedure.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to retrieve supported access methods (Reason: ODBC Specific Error)

Error Type:
Warning

Possible Cause:
The ODBC data source is not available.

Solution:

Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Query validation failed due to the following: (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source can not satisfy the requirements of the query statement.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the query statement is valid for the ODBC data source.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to connect to data source on channel '<channel name>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source is not accessible based on user name and password.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the authentication settings are properly configured in the data source (if applicable).

'Login failed for user 'NT AUTHORITY\ANONYMOUS LOGON'

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

See Also:
Data Source Authentication

Unable to open recordset on device '<device name>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source is not accessible based on user name and password.
3. The table or query specified by the device no longer exists.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that the table or query is supported by the data source.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to query recordset on device '<device name>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
The ODBC data source is no longer available.

Solution:
Verify that the ODBC data source is accessible by the user or from a remote machine.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to retrieve database value for tag '<tag address>' on device '<device name>'

Error Type:
Serious

Possible Cause:
1. The ODBC data source is no longer available.
2. The tag represents an address that can not be resolved into a value available from the data source.

Solution:
1. Verify that the ODBC data source is accessible by the user or from a remote machine.
2. Verify that the tag represents an address that is supported by the data source and/or access method.

Unable to write database value '<value>' for tag '<tag address>' on device '<device name>'

Error Type:
Serious

Possible Cause:
1. The ODBC data source is no longer available.
2. The tag represents an address that can not be resolved into a value available from the data source.
3. The ODBC data source does not allow write access to this value.

Solution:
1. Verify the ODBC data source is accessible by the user or from a remote machine.
2. Verify that the tag represents an address that is supported by the data source and/or access method.
3. Verify that the value is write-able in the ODBC data source configuration.

Unable to read internal tag <tag address>' on device '<device name>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
The internal tag depends on a successful response from the ODBC data source which is no longer available.

Solution:
Verify that the ODBC data source is still accessible by the user or from a remote machine.

Note:

The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to write to internal tag '<tag address>' on device '<device name>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
The internal tag depends on a successful response from the ODBC data source which is no longer available.

Solution:
Verify the ODBC data source is still accessible by the user or from a remote machine.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to read parameter tag '<tag address>'. (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
The parameter tag for a stored procedure is no longer available or requires a data type not supported by the driver.

Solution:
Verify that the parameter tag for the stored procedure is valid and the data type is supported by the driver.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to write to parameter tag '<tag address>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
The parameter tag for a stored procedure is no longer available or requires a data type not supported by the driver.

Solution:
Verify that the parameter tag for the stored procedure is valid and the data type is supported by the driver.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Unable to execute stored procedure "<stored procedure name>' on device '<device name>'. (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
An operation that is required to be performed prior to calling the stored procedure has failed.

Solution:
Verify that the ODBC data source is configured properly for this stored procedure.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Call to execute stored procedure '<stored procedure name>' on device '<device name>' failed (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The ODBC data source is not available.
2. The ODBC data source is not accessible based on user name and password.
3. The input parameters are not valid.

Solution:
1. Verify that the ODBC data source is configured properly and that it is accessible by the user or from a remote machine.
2. Verify that input parameters are set properly before executing the stored procedure.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

Data source '<data source name>' is configured as Read Only (all writes will be rejected)

Error Type:
Serious

Possible Cause:
The ODBC data source is configured such that writes are not allowed.

Solution:
If writes are required, ensure that the data source is configured to allow write access.

Unable to write to item '<tag address>' (Reason: ODBC Specific Error)

Error Type:
Serious

Possible Cause:
1. The tag is no longer available or requires a data type not supported by the driver.
2. The OPC Server is unable to communicate with the data source.
3. The database is read only.
4. If the data source is on another PC (other than the OPC server), communications to that PC might be lost.

Solution:
1. Verify that the tag is valid and the data type is supported by the driver.
2. Verify that the data source configuration is correct.
3. Verify that the data source has write permissions.
4. Check physical connections between the OPC server PC and the data source PC.

Note:
The ODBC Specific Error returned by the ODBC data source driver contains specific information on the cause of the problem.

See Also:
Data Source Setup

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