



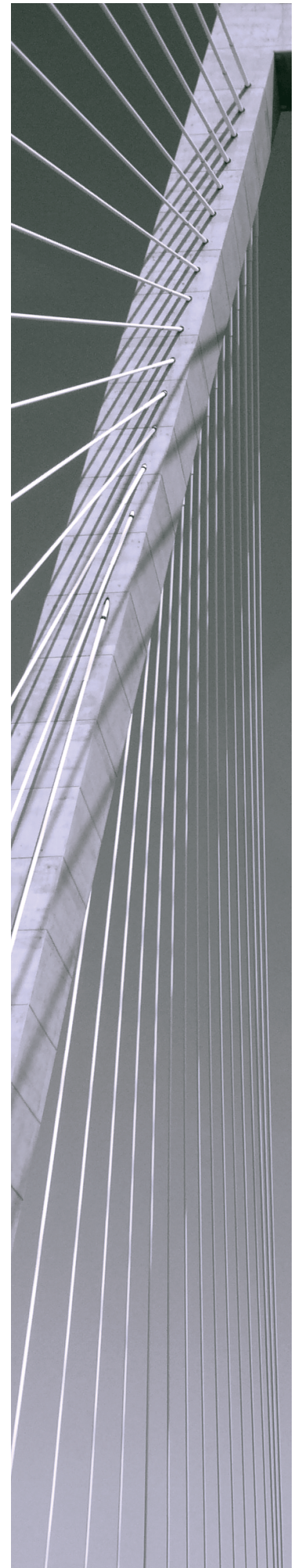
Simba Teradata ODBC Driver with SQL Connector

Installation and Configuration Guide

Simba Technologies Inc.

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About This Guide

Purpose

The *Simba Teradata ODBC Driver with SQL Connector Installation and Configuration Guide* explains how to install and configure the Simba Teradata ODBC Driver with SQL Connector. The guide also provides details related to features of the driver.

This guide supports the following releases:

- Teradata Database 16.20.00
- Simba Teradata ODBC Driver with SQL Connector 16.20.00

Audience

The guide is intended for end users of the Simba Teradata ODBC Driver, as well as administrators and developers integrating the driver.

Knowledge Prerequisites

To use the Simba Teradata ODBC Driver, the following knowledge is helpful:


- Familiarity with the platform on which you are using the Simba Teradata ODBC Driver
- Ability to use the data source to which the Simba Teradata ODBC Driver is connecting
- An understanding of the role of ODBC technologies and driver managers in connecting to a data source
- Experience creating and configuring ODBC connections
- Exposure to SQL

Document Conventions

Italics are used when referring to book and document titles.

Bold is used in procedures for graphical user interface elements that a user clicks and text that a user types.

Monospace font indicates commands, source code, or contents of text files.

 **Note:**

A text box with a pencil icon indicates a short note appended to a paragraph.

! Important:

A text box with an exclamation mark indicates an important comment related to the preceding paragraph.

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About the Simba Teradata ODBC Driver

The Simba Teradata ODBC Driver enables Business Intelligence (BI), analytics, and reporting on data that is stored in Teradata Database. The driver complies with the ODBC data standard and adds important functionality such as Unicode, as well as 32- and 64-bit support for high-performance computing environments on all platforms.

ODBC is one of the most established and widely supported APIs for connecting to and working with databases. At the heart of the technology is the ODBC driver, which connects an application to the database. For more information about ODBC, see the *Data Access Standards Glossary*: <http://www.simba.com/resources/data-access-standards-library>. For complete information about the ODBC specification, see the *ODBC API Reference*: [http://msdn.microsoft.com/en-us/library/windows/desktop/ms714562\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/ms714562(v=vs.85).aspx).

The *Installation and Configuration Guide* is suitable for users who are looking to access data residing within Teradata from their desktop environment. Application developers might also find the information helpful. Refer to your application for details on connecting via ODBC.

 **Note:**

For information about how to use the driver in various BI tools, see the *Simba ODBC Drivers Quick Start Guide for Windows*: http://cdn.simba.com/docs/ODBC_QuickstartGuide/content/quick_start/intro.htm.

Windows Driver

Windows System Requirements

Install the driver on client machines where the application is installed. Each machine that you install the driver on must meet the following minimum system requirements:

- One of the following operating systems:
 - Windows 7, 8.1, or 10
 - Windows Server 2008 or later
- 150 MB of available disk space
- Visual C++ Redistributable for Visual Studio 2010 installed.
Download and install the version that matches the bitness of the driver:
 - The 32-bit installation package is available at <https://www.microsoft.com/en-ca/download/details.aspx?id=5555>.
 - The 64-bit installation package is available at <https://www.microsoft.com/en-ca/download/details.aspx?id=14632>.
- Visual C++ Redistributable for Visual Studio 2012 Update 4 installed.
Download and install the version that matches the bitness of the driver. You can download the installation packages at <https://www.microsoft.com/en-us/download/details.aspx?id=30679>.

To install the driver, you must have Administrator privileges on the machine.

Installing the Driver on Windows

The Windows version of the Simba Teradata ODBC Driver is delivered in a ZIP archive named `SimbaTeradataODBC_[Version]_Windows.zip`, where *[Version]* is the version number of the driver. In addition to driver setup files and documentation, this ZIP archive contains a `SimbaTeradataODBC32_[Version].zip` archive and a `SimbaTeradataODBC64_[Version].zip` archive, each of which contain the files for the 32-bit and 64-bit drivers, respectively.

To install the Simba Teradata ODBC Driver on a Windows machine, do the following:

1. Create the installation directory by extracting the driver files from the ZIP archives and copying them to the appropriate location, depending on the bitnesses of the driver and your machine. For more information, see [Creating the Installation Directory on Windows](#) on page 9.

2. Configure the Windows Registry to recognize the driver and point to the necessary driver files. For more information, see [Configuring the Windows Registry](#) on page 10.

Make sure to install the version of the driver matching the bitness of the client application that you are using to access data in Teradata Database. For example, if you are using a 64-bit application to access Teradata Database, make sure to install the 64-bit driver.

Creating the Installation Directory on Windows

Create the installation directory for the Simba Teradata ODBC Driver on your Windows machine by extracting the driver files from the ZIP archive and copying them to the appropriate location.

On 64-bit Windows operating systems, you can execute 32- and 64-bit applications transparently. However, 64-bit applications must use 64-bit drivers, and 32-bit applications must use 32-bit drivers. Make sure that you install the version of the driver that matches the bitness of the client application. You can install both versions of the driver on the same machine.

To create the installation directory on Windows:

1. Create the driver's installation directory by doing one of the following:
 - If you are installing the 32-bit driver on a 64-bit machine, create the directory `C:\Program Files (x86)\Simba Teradata ODBC Driver\16.10`.
 - Otherwise, create the directory `C:\Program Files\Simba Teradata ODBC Driver\16.10`.

Note:

- If necessary, you can create an installation directory with different folder structure and naming. However, the root level folder must be named `16.10`.
- This documentation uses the variable `[InstallDir]` to refer to this path.

2. In `[InstallDir]`, create a subfolder named `bin`.
3. Extract the `SimbaTeradataODBC_[Version]_Windows.zip` archive into a convenient temporary location.
4. Depending on whether you are installing the 32-bit or 64-bit driver, do one of the following:
 - To install the 32-bit driver, extract the `SimbaTeradataODBC32_[Version].zip` archive into a convenient temporary location.

- Or, to install the 64-bit driver, extract the `SimbaTeradataODBC64_[Version].zip` archive into a convenient temporary location.
5. Copy the contents extracted from the `SimbaTeradataODBC[Bitness]_[Version]` folder as follows:
 - a. Copy the `ErrorMessages` and `ODBC Driver for Teradata` subfolders to `[InstallDir]`.
 - b. From the `lib` subfolder, copy all the files to `[InstallDir]\bin`.
 6. From the `SimbaTeradataODBC_[Version]_Windows` folder, copy the `TeradataODBC.did` file to the `[InstallDir]\bin` folder.

You should now have the following subfolders in `[InstallDir]`:

- `bin`
- `ErrorMessages`
- `ODBC Driver for Teradata`

The `bin` subfolder should contain the following files:

- `libcrypto-1_1.dll` (for 32-bit) or `libcrypto-1_1-x64.dll` (for 64-bit)
- `sbicudt53_[Bitness].dll`
- `sbicuin53_[Bitness].dll`
- `sbicuuc53_[Bitness].dll`
- `tdataodbc_sb[Bitness].dll`
- `tdclientdir`
- `TeradataODBC.did`
- `terasso.dll`

Next, you must configure the Windows Registry. For more information, see [Configuring the Windows Registry](#) on page 10.

Configuring the Windows Registry

To complete the installation process, you need to create registry keys to do the following:

- Define the driver, specifying its location and indicating that it is installed.
- Specify driver-wide configuration settings (settings that apply to all connections that use the Simba Teradata ODBC Driver).

You can create the necessary registry keys by editing and then running the appropriate `.reg` file from the `setup` folder in the driver package.

To configure the Windows Registry:

1. In the directory where you extracted the `SimbaTeradataODBC_[Version]_Windows.zip` archive, browse to the `setup` folder.
2. Using a text editor, open the `.reg` file that matches the bitness of the driver and your machine:
 - If you are installing the 32-bit driver on a 32-bit machine, open the `Setup-32bitDriverOn32Windows.reg` file.
 - If you are installing the 32-bit driver on a 64-bit machine, open the `Setup-32bitDriverOn64Windows.reg` file.
 - If you are installing the 64-bit driver on a 64-bit machine, open the `Setup-64bitDriverOn64Windows.reg` file.
3. Change all instances of `<INSTALLDIR>` to the installation directory of the driver, and then save your changes.

Make sure to escape backslashes (`\`) by typing them twice. For example, if you installed the driver to the `C:\Program Files (x86)\Simba Teradata ODBC Driver` directory, then replace all instances of `<INSTALLDIR>` with `C:\\Program Files (x86)\\Simba Teradata ODBC Driver`.

4. Double-click the `.reg` file to run it.

The system returns a message indicating whether the registry keys were created successfully. If the keys were created successfully, you can now configure a connection and use the driver to access your Teradata data.

Creating a Data Source Name on Windows

Typically, after installing the Simba Teradata ODBC Driver, you need to create a Data Source Name (DSN).

Alternatively, for information about DSN-less connections, see [Using a Connection String](#) on page 34.

To create a Data Source Name on Windows:

1. Open the ODBC Data Source Administrator corresponding to the bitness of the driver that you installed.
2. Choose one:
 - To create a DSN that only the user currently logged into Windows can use, click the **User DSN** tab.
 - Or, to create a DSN that all users who log into Windows can use, click the **System DSN** tab.

 **Note:**

It is recommended that you create a System DSN instead of a User DSN. Some applications, such as Sisense, load the data using a different user account, and might not be able to detect User DSNs that are created under another user account.


3. Click **Add**.
4. In the Create New Data Source dialog box, select **Simba Teradata ODBC Driver** and then click **Finish**. The Simba Teradata ODBC Driver DSN Setup dialog box opens.
5. In the **Data Source Name** field, type a name for your DSN.
6. Optionally, in the **Description** field, type relevant details about the DSN.
7. In the **Name or IP Address** field, type the IP address or host name of the Teradata Database instance.
8. Configure authentication through Conventional Sign-On (CSO) by doing one of the following:
 - a. From the **Mechanism** drop-down list, select an authentication mechanism. By default, the driver uses the mechanism specified by the TeraGSS program, which is typically TD2. For more information, see [Mechanism](#) on page 52.
 - b. In the **Username** field, type your user name for authenticating through the selected mechanism. For example, if you are using the TD2 mechanism, type your Teradata Database user name.
 - c. Provide your password by doing one of the following:
 - Select **Password** and then type your password in the field.
 - Or, select **Teradata Wallet String** and then type your Teradata Wallet reference string in the field.

 **Note:**

The Teradata Wallet utility must be installed and configured before you can connect using a reference string. For more information, see [Teradata Wallet](#) on page 40.

9. Optionally, in the **Default Database** field, type the name of the database to access by default.
10. Optionally, in the **Account String** field, type your account string for accessing the database.
11. From the **Session Character Set** drop-down list, select the character set to use for the session.

12. To configure additional driver options, click **Options**. For more information, see [Configuring Additional Driver Options on Windows](#) on page 13.
13. To configure logging behavior for the driver, click **Logging Options**. For more information, see [Configuring Logging Options on Windows](#) on page 16.
14. To test the connection, click **Test**. Review the results as needed, and then click **OK**.

 **Note:**

If the connection fails, then confirm that the settings in the Simba Teradata ODBC Driver DSN Setup dialog box are correct. Contact your Teradata Database server administrator as needed.


15. To save your settings and close the Simba Teradata ODBC Driver DSN Setup dialog box, click **OK**.
16. To close the ODBC Data Source Administrator, click **OK**.

Configuring Additional Driver Options on Windows

You can configure additional options to modify the behavior of the driver.

To configure additional driver options on Windows:

1. To access additional options, open the ODBC Data Source Administrator where you created the DSN, then select the DSN, then click **Configure**, and then click **Options**.
2. To return column names instead of column titles when retrieving data, select the **Use Column Names** check box.
3. To use X views so that the driver can only access objects that the specified user owns or controls, select the **Use X View** check box.
4. To disable the HELP database, select the **No HELP DATABASE** check box.
5. To treat the underscore (`_`) and percent sign (`%`) characters as normal characters instead of search wildcards, select the **Ignore Search Patterns** check box.
6. To disable the driver SQL parser and pass SQL statements through to the database unchanged, select the **Disable Parsing** check box.
7. To log error events in the Event Viewer of the Teradata server, select the **Log Error Events** check box.
8. To display decimal symbols based on regional settings, select the **Use Regional Settings for Decimal Symbol** check box.
9. To encrypt all communication between the driver and the database, select the **Enable Data Encryption** check box.

10. To use extended statement information and enable support for the SQLDescribeParam ODBC API function, select the **Enable Extended Statement Information** check box.
 11. To specify the session mode that the driver uses during sessions on the database, from the **Session Mode** drop-down list, select the appropriate mode.
 12. To specify the format that the driver uses for DATE values when communicating with the database, from the **Date Time Format** drop-down list, select **AAA** for ANSI format or **IAA** for Integer format.
 13. To specify how auto-generated keys are returned for requests that insert data into identity columns, from the **Return Generated Keys** drop-down list, select one of the following methods:
 - **Whole Row**: The entire row is returned.
 - **Identity Column**: Only data from the identity column is returned.
 - **No**: Auto-generated keys are not returned.
 14. To specify whether the driver supports Unicode Pass Through (UPT) for Pass Through Characters (PTCs), from the **UPT Mode** drop-down list, select one of the following settings:
 - **Not Set**: The driver does not do anything to change UPT support.
 - **UPT ON**: The driver sends a query to the database to enable UPT support.
 - **UPT OFF**: The driver sends a query to the database to disable UPT support.
-  **Note:**

For more information about UPT, see "Unicode Pass Through" in the Teradata Database documentation: http://info.teradata.com/htmlpubs/DB_TTU_16_00/index.html#page/General_Reference/B035-1098-160K/ifk1472240714022.html.
15. To configure advanced driver options, click **Advanced**. For more information, see [Configuring Advanced Options on Windows](#) on page 14.
 16. To save your settings and close the Simba Teradata ODBC Driver Options dialog box, click **OK**.

Configuring Advanced Options on Windows

You can configure advanced options to modify the behavior of the driver.

! Important:

Do not change these options unless your system administrator instructs you to do so.

To configure advanced options on Windows:

1. To access advanced options, open the ODBC Data Source Administrator where you created the DSN, then select the DSN, then click **Configure**, then click **Options**, then click **Advanced**.
2. In the **Maximum Response Buffer** field, specify the maximum size of the response buffer for SQL requests, in kilobytes.
3. In the **TDMST Port Number** field, specify the number of the port used to access Teradata Database.
4. In the **Login Timeout** field, specify the number of seconds to wait for a response when logging in to the database.
5. To enable the print option when creating stored procedures, from the **Procedure With Print Stmt** drop-down list, select **P**.
6. To enable the SPL option when creating stored procedures, from the **Procedure With SPL Source** drop-down list, select **Y**.
7. In the **Data Source DNS Entries** field, specify how the driver determines which DNS entry to use by doing one of the following:
 - To resolve DNS entries dynamically, leave the field empty.
 - Or, to use DNS lookup, type **0**.
 - Or, to specify a number of DNS entries to use in a round-robin fashion, type the number of entries.
8. To use the TCP_NODELAY setting, select the **Use TCP_NODELAY** check box.
9. To specify NULL for the Catalog Name parameter in all Catalog API functions, select the **Use NULL For Catalog Name** check box.
10. To have the driver request the next response message while it is processing the current response message, select the **Enable Read Ahead** check box.
11. To retry socket system calls at the driver level instead of the application level, select the **Retry System Calls (EINTR)** check box.
12. To optimize retrieval for Large Object (LOB) data that meets specified size requirements, enable Smart LOB (SLOB) Mode by doing the following. For detailed information about the supported LOB retrieval modes, see [LOB Retrieval Modes](#) on page 41.
 - a. In the **Max Single LOB Bytes** field, type the maximum size of the LOBs (in bytes) that the driver can retrieve using SLOB Mode. LOBs that exceed this size are retrieved using Deferred Mode instead.
 - b. In the **Max Total LOB Bytes Per Row** field, type the maximum size of LOB data per row (in bytes) that the driver can retrieve using SLOB Mode. If the total amount of LOB data being retrieved from a row exceeds this size, then after using SLOB Mode to retrieve LOBs up to this size limit, the driver uses Deferred Mode to retrieve the remaining LOBs from that row.
 - c. If you are retrieving LOB data from columns in sequential order, select the **Use Sequential Retrieval Only** check box.

! Important:

If you enable this option but then retrieve LOB data from columns in a non-sequential order, driver performance may decrease. In this scenario, the driver discards the LOBs that are returned through SLOB Mode and must then retrieve them all again using Deferred Mode.

13. To enable compatibility with applications that use Microsoft Access Jet databases by using DATE data in TIMESTAMP parameters, select the **Use DATE Data For TIMESTAMP Parameters** check box.
14. To provide backwards compatibility for ODBC 2.x applications that use noncompliant search patterns, select the **Enable Custom Catalog Mode For 2.x Applications** check box.
15. To return an empty string in the CREATE_PARAMS column when you call SQLGetTypeInfo for SQL_TIMESTAMP data, select the **Return Empty String In CREATE_PARAMS Column For SQL_TIMESTAMP** check box.
16. To return a hard-coded value as the maximum length of SQL_CHAR and SQL_VARCHAR columns, select the **Return Max CHAR/VARCHAR Length As 32K** check box.

 **Note:**

- Enabling this option prevents the returned column size from causing numeric overflows in Microsoft Access.
- The hard-coded value is either 32000 or 64000, depending on the setting specified for the Session Character Set driver option.

17. To save your settings and close the Advanced Options dialog box, click **OK**.

Configuring Logging Options on Windows

To help troubleshoot issues, you can enable logging. In addition to functionality provided in the Simba Teradata ODBC Driver, the ODBC Data Source Administrator provides tracing functionality.

! Important:

Only enable logging or tracing long enough to capture an issue. Logging or tracing decreases performance and can consume a large quantity of disk space.

The settings for logging apply to every connection that uses the Simba Teradata ODBC Driver, so make sure to disable the feature after you are done using it.

To enable driver logging on Windows:

1. To access logging options, open the ODBC Data Source Administrator where you created the DSN, then select the DSN, then click **Configure**, and then click **Logging Options**.
2. From the **Log Level** drop-down list, select the logging level corresponding to the amount of information that you want to include in log files:

Logging Level	Description
OFF	Disables all logging.
FATAL	Logs severe error events that lead the driver to abort.
ERROR	Logs error events that might allow the driver to continue running.
WARNING	Logs events that might result in an error if action is not taken.
INFO	Logs general information that describes the progress of the driver.
DEBUG	Logs detailed information that is useful for debugging the driver.
TRACE	Logs all driver activity.

3. In the **Log Path** field, specify the full path to the folder where you want to save log files.
4. In the **Max Number Files** field, type the maximum number of log files to keep.

 **Note:**

After the maximum number of log files is reached, each time an additional file is created, the driver deletes the oldest log file.

5. In the **Max File Size** field, type the maximum size of each log file in megabytes (MB).

 **Note:**

After the maximum file size is reached, the driver creates a new file and continues logging.

6. Click **OK**.
7. Restart your ODBC application to make sure that the new settings take effect.

The Simba Teradata ODBC Driver produces two log files at the location you specify using the `LogPath` key, where `[DriverName]` is the name of the driver:

- A `[DriverName]_driver.log` file that logs driver activity that is not specific to a connection.
- A `[DriverName]_connection_[Number].log` for each connection made to the database, where `[Number]` is a number that identifies each log file. This file logs driver activity that is specific to the connection.

To disable driver logging on Windows:

1. Open the ODBC Data Source Administrator where you created the DSN, then select the DSN, then click **Configure**, and then click **Logging Options**.
2. From the **Log Level** drop-down list, select **LOG_OFF**.
3. Click **OK**.
4. Restart your ODBC application to make sure that the new settings take effect.

Verifying the Driver Version Number on Windows

If you need to verify the version of the Simba Teradata ODBC Driver that is installed on your Windows machine, you can find the version number in the ODBC Data Source Administrator.

To verify the driver version number on Windows:

1. Open the ODBC Data Source Administrator corresponding to the bitness of the driver that you installed.
2. Click the **Drivers** tab and then find the Simba Teradata ODBC Driver in the list of ODBC drivers that are installed on your system. The version number is displayed in the **Version** column.

macOS Driver

macOS System Requirements

The Simba Teradata ODBC Driver supports both 32- and 64-bit client applications.

Install the driver on client machines where the application is installed. Each machine that you install the driver on must meet the following minimum system requirements:

- macOS version 10.9, 10.10, or 10.11
- 100 MB of available disk space
- iODBC 3.52.7 or later

Installing the Driver on macOS

The macOS version of the Simba Teradata ODBC Driver is delivered in a tarball named `SimbaTeradataODBC_[Version]-OSX.tar.gz`, where *[Version]* is the version number of the driver.

To install the Simba Teradata ODBC Driver on a macOS machine, create the installation directory by extracting the driver files from the tarball and copying them to the appropriate locations. Then, configure the environment variables on your machine to make sure that the ODBC driver manager can work with the driver.

To install the driver on macOS:

1. Create the following directory: `/Library/Application Support/Simba Teradata ODBC Driver/16.10`

 **Note:**

- If necessary, you can create an installation directory with different folder structure and naming. However, the root level folder must be named `16.10`.
- This documentation uses the variable *[InstallDir]* to refer to this path.

2. Extract the `SimbaTeradataODBC-[Version]-OSX.tar.gz` file into a convenient temporary location.
3. From the `SimbaTeradataODBC-[Version]-OSX` subfolder, extract the `SimbaTeradataODBC-[Version].tar.gz` file.
4. From the `SimbaTeradataODBC-[Version]` folder, copy the following files and folders to *[InstallDir]*:

- The `ErrorMessages` subfolder.
 - The `lib` subfolder.
5. From the `SimbaTeradataODBC-[Version]-OSX` folder, copy the following files and folders to the `[InstallDir]/lib` directory:
- The `TeradataODBC.did` file.
 - The `odbc.ini`, `odbcinst.ini`, and `simba.teradataodbc.ini` files from the `setup` subfolder.

You should now have the following file and subfolders in `[InstallDir]`:

- `ErrorMessages`
- `lib`

The `lib` subfolder should contain the following files:

- `libtdsso.dylib`
- `tdataodbc_sbu.dll`
- `tdclientdir`
- `TeradataODBC.did`
- `odbc.ini`
- `odbcinst.ini`
- `simba.teradataodbc.ini`

Next, configure the environment variables on your machine to make sure that the ODBC driver manager can work with the driver. For more information, see [Configuring the ODBC Driver Manager on Non-Windows Machines](#) on page 23.

Linux Driver

Linux System Requirements

Install the driver on client machines where the application is installed. Each machine that you install the driver on must meet the following minimum system requirements:

- One of the following distributions:
 - Red Hat® Enterprise Linux® (RHEL) 6 or 7
 - CentOS 6 or 7
 - SUSE Linux Enterprise Server (SLES) 11 or 12
- 150 MB of available disk space
- One of the following ODBC driver managers installed:
 - iODBC 3.52.7 or later
 - unixODBC 2.3.0 or later

To install the driver, you must have root access on the machine.

Installing the Driver on Linux

The Linux version of the Simba Teradata ODBC Driver is delivered through a tarball file named `TeradataODBC_[Version]-Linux.tar.gz`, where `[Version]` is the version number of the driver.

To install the Simba Teradata ODBC Driver on a Linux machine, create the installation directory by extracting the files from the tarball and copying them to the appropriate locations. Then, configure the environment variables on your machine to make sure that the ODBC driver manager can work with the driver.

To install the driver on Linux:

1. Create the following directory: `/opt/teradata/client/16.10/`.

Note:

- If necessary, you can create an installation directory with different folder structure and naming. However, the root level folder must be named `16.10`.
- This documentation uses the variable `[InstallDir]` to refer to this path.

2. In `[InstallDir]`, create one of the following subfolders:
 - If you are installing the 32-bit driver, create a subfolder named `lib`.
 - Or, if you are installing the 64-bit driver, create a subfoldre named `lib64`.
3. Extract the `TeradataODBC_[Version]-Linux.tar.gz` file into a convenient temporary location.
4. From the `TeradataODBC_[Version]-Linux` folder, copy the following files into the `[InstallDir]/lib` directory (for the 32-bit driver) or the `[InstallDir]/lib64` directory (for the 64-bit driver):
 - `TeradataODBC.did`
 - The files inside the `setup` folder (`odbc.ini`, `odbcinst.ini`, and `simba.teradataodbcodbc.ini`).
5. Depending on whether you are installing the 32-bit or 64-bit driver, do one of the following:
 - To install the 32-bit driver, extract the `SimbaTeradataODBC32_[Version].tar.gz` file into a convenient temporary location.
 - To install the 64-bit driver, extract the `SimbaTeradataODBC64_[Version].tar.gz` file into a convenient temporary location.
6. Copy the contents of the `SimbaTeradataODBC[Bitness]_[Version]` folder as follows:
 - a. Copy the `ErrorMessages` folder to `[InstallDir]`.
 - b. Copy all the files from the `lib` subfolder to `[InstallDir]/lib` (for the 32-bit driver) or `[InstallDir]/lib64` (for the 64-bit driver).

You should now have the following file and folder structure in the `[InstallDir]`:

- `/ErrorMessages`
- `/lib` (for the 32-bit driver) or `lib64` (for the 64-bit driver)
 - `libtdsso.so`
 - `odbc.ini`
 - `odbcinst.ini`
 - `simba.teradataodbc.ini`
 - `tdataodbc_sb[Bitness].dylib`
 - `tdclientdir`
 - `TeradataODBC.did`

Next, configure the environment variables on your machine to make sure that the ODBC driver manager can work with the driver. For more information, see [Configuring the ODBC Driver Manager on Non-Windows Machines](#) on page 23.

Configuring the ODBC Driver Manager on Non-Windows Machines

To make sure that the ODBC driver manager on your machine is configured to work with the Simba Teradata ODBC Driver, do the following:

- Set the library path environment variable to make sure that your machine uses the correct ODBC driver manager. For more information, see [Specifying ODBC Driver Managers on Non-Windows Machines](#) on page 23.
- If the driver configuration files are not stored in the default locations expected by the ODBC driver manager, then set environment variables to make sure that the driver manager locates and uses those files. For more information, see [Specifying the Locations of the Driver Configuration Files](#) on page 24.

After configuring the ODBC driver manager, you can configure a connection and access your data store through the driver. For more information, see [Configuring ODBC Connections on a Non-Windows Machine](#) on page 26.

Specifying ODBC Driver Managers on Non-Windows Machines

You need to make sure that your machine uses the correct ODBC driver manager to load the driver. To do this, set the library path environment variable.

macOS

If you are using a macOS machine, then set the `DYLD_LIBRARY_PATH` environment variable to include the paths to the ODBC driver manager libraries. For example, if the libraries are installed in `/usr/local/lib`, then run the following command to set `DYLD_LIBRARY_PATH` for the current user session:

```
export DYLD_LIBRARY_PATH=$DYLD_LIBRARY_PATH:/usr/local/lib
```

For information about setting an environment variable permanently, refer to the macOS shell documentation.

Linux

If you are using a Linux machine, then set the `LD_LIBRARY_PATH` environment variable to include the paths to the ODBC driver manager libraries. For example, if the libraries are installed in `/usr/local/lib`, then run the following command to set `LD_LIBRARY_PATH` for the current user session:

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/lib
```

For information about setting an environment variable permanently, refer to the Linux shell documentation.

Troubleshooting

When you attempt to connect through the driver on a Linux machine, you may encounter the following error message:

```
SQLDriverConnect = [Simba][ODBC] (11560) Unable to locate  
SQLGetPrivateProfileString function. (11560)
```

This issue may occur when the name of the library file for the driver manager is different from the default. To resolve this issue, do the following:

1. Confirm the name of the library file that is used by your driver manager.
2. In a text editor, open the `simba.teradataodbc.ini` file (located in `[InstallDir]/lib` by default).
3. Add the following line to the end of the file, where `[DMLibFile]` is the name of the library file:

```
ODBCInstLib=[DMLibFile]
```

4. Save the `simba.teradataodbc.ini` file.

Specifying the Locations of the Driver Configuration Files

By default, ODBC driver managers are configured to use hidden versions of the `odbc.ini` and `odbcinst.ini` configuration files (named `.odbc.ini` and `.odbcinst.ini`) located in the home directory, as well as the `simba.teradataodbc.ini` file in the `lib` subfolder of the driver installation directory. If you store these configuration files elsewhere, then you must set the environment variables described below so that the driver manager can locate the files.

If you are using iODBC, do the following:

- Set `ODBCINI` to the full path and file name of the `odbc.ini` file.
- Set `ODBCINSTINI` to the full path and file name of the `odbcinst.ini` file.
- Set `SIMBAODBCINI` to the full path and file name of the `simba.teradataodbc.ini` file.

If you are using unixODBC, do the following:

- Set ODBCINI to the full path and file name of the `odbc.ini` file.
- Set ODBCYSINI to the full path of the directory that contains the `odbcinst.ini` file.
- Set SIMBAODBCINI to the full path and file name of the `simba.teradataodbc.ini` file.

For example, if your `odbc.ini` and `odbcinst.ini` files are located in `/usr/local/odbc` and your `simba.teradataodbc.ini` file is located in `/etc`, then set the environment variables as follows:

For iODBC:

```
export ODBCINI=/usr/local/odbc/odbc.ini
export ODBCINSTINI=/usr/local/odbc/odbcinst.ini
export SIMBAODBCINI=/etc/simba.teradataodbc.ini
```

For unixODBC:

```
export ODBCINI=/usr/local/odbc/odbc.ini
export ODBCYSINI=/usr/local/odbc
export SIMBAODBCINI=/etc/simba.teradataodbc.ini
```

To locate the `simba.teradataodbc.ini` file, the driver uses the following search order:

1. If the SIMBAODBCINI environment variable is defined, then the driver searches for the file specified by the environment variable.
2. The driver searches the directory that contains the driver library files for a file named `simba.teradataodbc.ini`.
3. The driver searches the current working directory of the application for a file named `simba.teradataodbc.ini`.
4. The driver searches the home directory for a hidden file named `.simba.teradataodbc.ini` (prefixed with a period).
5. The driver searches the `/etc` directory for a file named `simba.teradataodbc.ini`.

Configuring ODBC Connections on a Non-Windows Machine

The following sections describe how to configure ODBC connections when using the Simba Teradata ODBC Driver on non-Windows platforms:

- [Creating a Data Source Name on a Non-Windows Machine](#) on page 26
- [Configuring a DSN-less Connection on a Non-Windows Machine](#) on page 28
- [Configuring Logging Options on a Non-Windows Machine](#) on page 30
- [Testing the Connection on a Non-Windows Machine](#) on page 31

Creating a Data Source Name on a Non-Windows Machine

When connecting to your data store using a DSN, you only need to configure the `odbc.ini` file. Set the properties in the `odbc.ini` file to create a DSN that specifies the connection information for your data store.

To create a Data Source Name on a non-Windows machine:

1. In a text editor, open the `odbc.ini` configuration file.
2. In the `[ODBC Data Sources]` section, add a new entry by typing a name for the DSN, an equal sign (=), and then the name of the driver.

For example, on a macOS machine:

```
[ODBC Data Sources]
Sample DSN=Teradata ODBC Driver
```

As another example, for a 32-bit driver on a Linux machine:

```
[ODBC Data Sources]
Sample DSN=Teradata ODBC Driver 32-bit
```

3. Create a section that has the same name as your DSN, and then specify configuration options as key-value pairs in the section:
 - a. Set the `Driver` property to the full path of the driver library file that matches the bitness of the application.

For example, on a macOS machine:

```
Driver=/Library/Application Support/Simba Teradata
```

```
ODBC Driver/16.10/lib/tdataodbc_sbu.dylib
```

As another example, for a 32-bit driver on a Linux machine:

```
Driver=/opt/teradata/client/16.10/lib/tdataodbc_sb32.so
```

- b. Set the `DBCName` property to the IP address or host name of the Teradata Database instance.

For example:

```
DBCName=192.168.222.160
```

- c. To configure authentication, do the following:
 - i. Set the `MechanismName` property to the authentication mechanism that you want to use. By default, the driver uses the mechanism specified by the TeraGSS program, which is typically TD2. For more information, see [Mechanism](#) on page 52.
 - ii. Set the `UID` property to your user name for authenticating through the selected mechanism. For example, if you are using the TD2 mechanism, type your Teradata Database user name.
 - iii. Set the `PWD` property to the password corresponding to the user name you provided.

For example:

```
MechanismName=TD2  
UID=jsmith  
PWD=simba123
```

- d. Optionally, set additional key-value pairs as needed to specify other connection settings. For detailed information about each connection property, see [Configuration Options Appearing in the User Interface](#) on page 43.

4. Save the `odbc.ini` configuration file.

For example, the following is an `odbc.ini` configuration file for macOS containing a DSN that connects to Teradata:

```
[ODBC Data Sources]  
Sample DSN=Teradata ODBC Driver  
[Sample DSN]  
Driver=/Library/Application Support/Simba Teradata ODBC  
Driver/16.10/lib/tdataodbc_sbu.dylib  
DBCName=192.168.222.160
```

```
MechanismName=TD2
UID=jsmith
PWD=simba123
```

As another example, the following is an `odbc.ini` configuration file for a 32-bit driver on a Linux machine, containing a DSN that connects to Teradata:

```
[ODBC Data Sources]
Sample DSN=Teradata ODBC Driver 32-bit
[Sample DSN]
Driver=/opt/teradata/client/16.10/lib/tdataodbc_sb32.so
DBCName=192.168.222.160
MechanismName=TD2
UID=jsmith
PWD=simba123
```

You can now use the DSN in an application to connect to the data store.

Configuring a DSN-less Connection on a Non-Windows Machine

To connect to your data store through a DSN-less connection, you need to define the driver in the `odbcinst.ini` file and then provide a DSN-less connection string in your application.

To define a driver on a non-Windows machine:

1. In a text editor, open the `odbcinst.ini` configuration file.
2. In the `[ODBC Drivers]` section, add a new entry by typing a name for the driver, an equal sign (=), and then `Installed`.

For example, on a macOS machine:

```
[ODBC Drivers]
Teradata ODBC Driver=Installed
```

As another example, for a 32-bit driver on a Linux machine:

```
[ODBC Drivers]
Teradata ODBC Driver 32-bit=Installed
```

3. Create a section that has the same name as the driver (as specified in the previous step), and then specify the following configuration options as key-value pairs in the section:

- a. Set the `Driver` property to the full path of the driver library file that matches the bitness of the application.

For example, on a macOS machine:

```
Driver=/Library/Application Support/Simba Teradata  
ODBC Driver/16.10/lib/tdataodbc_sbu.dylib
```

As another example, for a 32-bit driver on a Linux machine:

```
Driver=/opt/teradata/client/16.10/lib/tdataodbc_  
sb32.so
```

- b. Optionally, set the `Description` property to a description of the driver.

For example:

```
Description=Teradata ODBC Driver
```

4. Save the `odbcinst.ini` configuration file.

For example, the following is an `odbcinst.ini` configuration file for macOS:

```
[ODBC Drivers]  
Teradata ODBC Driver=Installed  
[Teradata ODBC Driver]  
Driver=/Library/Application Support/Simba Teradata ODBC  
Driver/16.10/lib/tdataodbc_sbu.dylib  
Description=Teradata ODBC Driver
```

For example, the following is an `odbcinst.ini` configuration file for both the 32- and 64-bit drivers on Linux:

```
[ODBC Drivers]  
Teradata ODBC Driver 32-bit=Installed  
Teradata ODBC Driver 64-bit=Installed  
[Teradata ODBC Driver 32-bit]  
Driver=/opt/teradata/client/16.10/lib/tdataodbc_sb32.so  
Description=Teradata ODBC Driver (32-bit)  
[Teradata ODBC Driver 64-bit]  
Driver=/opt/teradata/client/16.10/lib64/tdataodbc_sb64.so  
Description=Teradata ODBC Driver (64-bit)
```

You can now connect to your data store by providing your application with a connection string where the `Driver` property is set to the driver name specified in the `odbcinst.ini` file, and all the other necessary connection properties are also set.

For more information, see "DSN-less Connection String Examples" in [Using a Connection String](#) on page 34.

For detailed information about all the connection properties that the driver supports, see [Driver Configuration Options](#) on page 43.

Configuring Logging Options on a Non-Windows Machine

To help troubleshoot issues, you can enable logging in the driver.

! Important:

Only enable logging long enough to capture an issue. Logging decreases performance and can consume a large quantity of disk space.

Logging is configured through driver-wide settings in the `simba.teradataodbc.ini` file, which apply to all connections that use the driver.


To enable logging on a non-Windows machine:

1. Open the `simba.teradataodbc.ini` configuration file in a text editor.
2. To specify the level of information to include in log files, set the `LogLevel` property to one of the following numbers:

LogLevel Value	Description
0	Disables all logging.
1	Logs severe error events that lead the driver to abort.
2	Logs error events that might allow the driver to continue running.
3	Logs events that might result in an error if action is not taken.
4	Logs general information that describes the progress of the driver.
5	Logs detailed information that is useful for debugging the driver.


LogLevel Value	Description
6	Logs all driver activity.

- Set the `LogPath` key to the full path to the folder where you want to save log files.
- Set the `LogFileCount` key to the maximum number of log files to keep.

 **Note:**

After the maximum number of log files is reached, each time an additional file is created, the driver deletes the oldest log file.

- Set the `LogFileSize` key to the maximum size of each log file in megabytes (MB).

 **Note:**

After the maximum file size is reached, the driver creates a new file and continues logging.

- Save the `simba.teradataodbc.ini` configuration file.
- Restart your ODBC application to make sure that the new settings take effect.

The Simba Teradata ODBC Driver produces two log files at the location you specify using the `LogPath` key, where `[DriverName]` is the name of the driver:

- A `[DriverName]_driver.log` file that logs driver activity that is not specific to a connection.
- A `[DriverName]_connection_[Number].log` for each connection made to the database, where `[Number]` is a number that identifies each log file. This file logs driver activity that is specific to the connection.

To disable logging on a non-Windows machine:

- Open the `simba.teradataodbc.ini` configuration file in a text editor.
- Set the `LogLevel` key to 0.
- Save the `simba.teradataodbc.ini` configuration file.
- Restart your ODBC application to make sure that the new settings take effect.

Testing the Connection on a Non-Windows Machine

To test the connection, you can use an ODBC-enabled client application. For a basic connection test, you can also use the test utilities that are packaged with your driver

manager installation. For example, the iODBC driver manager includes simple utilities called `iodbctest` and `iodbctestw`. Similarly, the unixODBC driver manager includes simple utilities called `isql` and `iusql`.

Using the iODBC Driver Manager

You can use the `iodbctest` and `iodbctestw` utilities to establish a test connection with your driver. Use `iodbctest` to test how your driver works with an ANSI application, or use `iodbctestw` to test how your driver works with a Unicode application.

Note:

There are 32-bit and 64-bit installations of the iODBC driver manager available. If you have only one or the other installed, then the appropriate version of `iodbctest` (or `iodbctestw`) is available. However, if you have both 32- and 64-bit versions installed, then you need to make sure that you are running the version from the correct installation directory.

For more information about using the iODBC driver manager, see <http://www.iodbc.org>.

To test your connection using the iODBC driver manager:

1. Run **`iodbctest`** or **`iodbctestw`**.
2. Optionally, if you do not remember the DSN, then type a question mark (?) to see a list of available DSNs.
3. Type the connection string for connecting to your data store, and then press ENTER. For more information, see [Using a Connection String](#) on page 34.

If the connection is successful, then the `SQL>` prompt appears.

Using the unixODBC Driver Manager

You can use the `isql` and `iusql` utilities to establish a test connection with your driver and your DSN. `isql` and `iusql` can only be used to test connections that use a DSN. Use `isql` to test how your driver works with an ANSI application, or use `iusql` to test how your driver works with a Unicode application.

Note:

There are 32-bit and 64-bit installations of the unixODBC driver manager available. If you have only one or the other installed, then the appropriate version of `isql` (or `iusql`) is available. However, if you have both 32- and 64-bit versions installed, then you need to make sure that you are running the version from the correct installation directory.

For more information about using the unixODBC driver manager, see <http://www.unixodbc.org>.

To test your connection using the unixODBC driver manager:

➤ Run `isql` or `iusql` by using the corresponding syntax:

- `isql [DataSourceName]`
- `iusql [DataSourceName]`

`[DataSourceName]` is the DSN that you are using for the connection.

If the connection is successful, then the `SQL>` prompt appears.



Note:

For information about the available options, run `isql` or `iusql` without providing a DSN.

Using a Connection String

For some applications, you might need to use a connection string to connect to your data source. For detailed information about how to use a connection string in an ODBC application, refer to the documentation for the application that you are using.

The connection strings in the following sections are examples showing the minimum set of connection attributes that you must specify to successfully connect to the data source. Depending on the configuration of the data source and the type of connection you are working with, you might need to specify additional connection attributes. For detailed information about all the attributes that you can use in the connection string, see [Driver Configuration Options](#) on page 43.

DSN Connection String Example

The following is an example of a connection string for a connection that uses a DSN:

```
DSN= [DataSourceName]
```

[DataSourceName] is the DSN that you are using for the connection.

You can set additional configuration options by appending key-value pairs to the connection string. Configuration options that are passed in using a connection string take precedence over configuration options that are set in the DSN.

DSN-less Connection String Examples

Some applications provide support for connecting to a data source using a driver without a DSN. To connect to a data source without using a DSN, use a connection string instead.

The placeholders in the examples are defined as follows, in alphabetical order:

- *[Server]* is the IP address or host name of the Teradata Database instance to which you are connecting.
- *[YourUserName]* is the user name that you use to access the database.
- *[YourPassword]* is the password corresponding to your user name.

Connecting to a Teradata Database Instance Using Conventional Sign-On

The following is the format of a DSN-less connection string that connects to the database using Conventional Sign-On (CSO):

```
Driver=Simba Teradata ODBC Driver;DBCName=[Server];
UID=[YourUserName];PWD=[YourPassword];
```

For example, to connect using a Teradata Database user name and password:

```
Driver=Simba Teradata ODBC Driver;DBCName=192.168.222.160;
UID=jsmith;PWD=simba123;
```

Alternatively, you can provide a Teradata Wallet reference string instead of a password. For example:

```
Driver=Simba Teradata ODBC Driver;DBCName=192.168.222.160;
UID=jsmith;PWD=$tdwallet(jsmith_wallet_string);
```

 **Note:**

The Teradata Wallet utility must be installed and configured before you can connect using a reference string. For more information, see [Teradata Wallet](#) on page 40.

Connecting to a Teradata Database Instance Using Single Sign-On

The following is the format of a DSN-less connection string that connects to the database using Single Sign-On (SSO):

```
Driver=Simba Teradata ODBC Driver;DBCName=[Server];
UseIntegratedSecurity=1;
```

For example:

```
Driver=Simba Teradata ODBC Driver;DBCName=192.168.222.160;
UseIntegratedSecurity=1;
```

Features

For more information on the features of the Simba Teradata ODBC Driver, see the following:

- [Data Types](#) on page 36
- [Authentication and Encryption](#) on page 39
- [Teradata Wallet](#) on page 40
- [LOB Retrieval Modes](#) on page 41

Data Types

The Simba Teradata ODBC Driver supports two-way mapping between Teradata SQL types and many common ODBC SQL data types.

The tables below list the supported data types and their mappings. The first table lists Teradata SQL types that are mapped to standard ODBC SQL data types, while the second table lists those that are mapped to custom SQL types.

 **Note:**

As indicated below, some Teradata SQL types may return differently depending on the character set that is specified in the Session Character Set option (the `CharacterSet` key). For more information, see [Session Character Set](#) on page 57.

Teradata SQL Type	ODBC SQL Type
BIGINT	SQL_BIGINT
BLOB	SQL_LONGVARBINARY
BYTE	SQL_BINARY
BYTEINT	SQL_TINYINT
CHARACTER	SQL_CHAR when using a non-Unicode character set. SQL_WCHAR when using a Unicode character set.

Teradata SQL Type	ODBC SQL Type
CLOB	SQL_LONGVARCHAR when using a non-Unicode character set. SQL_WLONGVARCHAR when using a Unicode character set.
DATE	SQL_TYPE_DATE
DECIMAL_1	SQL_NUMERIC
DECIMAL_2	SQL_DECIMAL
DECIMAL_4	
DECIMAL_8	
DECIMAL_16	
FIXED_NUMBER	
FLOAT	SQL_DOUBLE
FLOATING_NUMBER	
INTEGER	SQL_INTEGER
INTERVAL_DAY	SQL_INTERVAL_DAY
INTERVAL_HOUR	SQL_INTERVAL_HOUR
INTERVAL_MINUTE	SQL_INTERVAL_MINUTE
INTERVAL_MONTH	SQL_INTERVAL_MONTH
INTERVAL_SECOND	SQL_INTERVAL_SECOND
INTERVAL_YEAR	SQL_INTERVAL_YEAR
INTERVAL_DAY_TO_HOUR	SQL_INTERVAL_DAY_TO_HOUR
INTERVAL_DAY_TO_MINUTE	SQL_INTERVAL_DAY_TO_MINUTE

Teradata SQL Type	ODBC SQL Type
INTERVAL_DAY_TO_SECOND	SQL_INTERVAL_DAY_TO_SECOND
INTERVAL_HOUR_TO_MINUTE	SQL_INTERVAL_HOUR_TO_MINUTE
INTERVAL_HOUR_TO_SECOND	SQL_INTERVAL_HOUR_TO_SECOND
INTERVAL_MINUTE_TO_SECOND	SQL_INTERVAL_MINUTE_TO_SECOND
INTERVAL_YEAR_TO_MONTH	SQL_INTERVAL_YEAR_TO_MONTH
SMALLINT	SQL_SMALLINT
TIME TIME_WTZ	SQL_TYPE_TIME
TIMESTAMP TIMESTAMP_WTZ	SQL_TYPE_TIMESTAMP
VARCHAR	SQL_VARCHAR when using a non-Unicode character set. SQL_WVARCHAR when using a Unicode character set.
VARBYTE	SQL_VARBINARY
FLOAT	SQL_FLOAT SQL_REAL

The following table lists Teradata SQL types that are mapped to custom SQL types.

Teradata SQL Type	Custom SQL Types
AVRO	SQL_TD_DATASET_AVRO (18006)
CSV	SQL_TD_DATASET_CSV (18007) when using a non-Unicode character set. SQL_TD_DATASET_WCSV (18008) when using a Unicode character set.
JSON	SQL_TD_JSON (18004) when using a non-Unicode character set. SQL_TD_WJSON (18005) when using a Unicode character set.
PERIOD_DATE	SQL_PERIOD_DATE (-1049)
PERIOD_TIME	SQL_PERIOD_TIME (-1048)
PERIOD_TIME_TZ	SQL_PERIOD_TIME_WITH_TIME_ZONE (-1047)
PERIOD_TIMESTAMP	SQL_PERIOD_TIMESTAMP (-1046)
PERIOD_TIMESTAMP_TZ	SQL_PERIOD_TIMESTAMP_WITH_TIME_ZONE (-1045)
FIXED_NUMBER	SQL_TD_FIXED_NUMBER (18001) == SQL_DECIMAL
FLOATING_NUMBER	SQL_TD_FLOATING_NUMBER (18002) == SQL_DOUBLE
XML	SQL_TD_XML (18003)

Authentication and Encryption

Teradata Database secures data by requiring authentication for access. To access your data, you must configure the driver to pass in your credentials and authenticate the connection. The Simba Teradata ODBC Driver supports a number of methods for authenticating connections:

- TD2, using Teradata Database user credentials.
- Kerberos, including Kerberos authentication through SPNEGO (Simple and Protected GSSAPI Negotiation).
- LDAP
- Single Sign-On (SSO), including SSO through TDNEGO (Teradata Negotiating).

Configure authentication for your connection by selecting an authentication mechanism and then specifying the appropriate user name and password in the DSN or connection string. If Teradata Wallet has been configured for your credentials, you can specify your Teradata Wallet reference string instead of your password.

In addition to authentication for database access, the driver also supports encryption for any data that is passed between the driver and the database. You can configure the Enable Data Encryption option (the `UseDataEncryption` key) to specify whether the driver encrypts all communication with the database or authentication information only.

Teradata Wallet

Teradata Wallet is a software package that secures Teradata Database passwords on client machines. It maps your password to a reference string, which you can use instead of your password during authentication. Providing your reference string instead of your password lets you obscure your password.

Teradata Wallet is installed and configured separately from the driver. To download the software package, go to <http://downloads.teradata.com> and click the Teradata Wallet link for the platform that you are using. For information about configuring Teradata Wallet, see "Introducing Teradata Wallet" on the Teradata Developer Exchange: <http://developer.teradata.com/tools/articles/introducing-teradata-wallet>.

After Teradata Wallet is set up, you connect to the database using your reference string instead of your password. When specifying your connection information through the Simba Teradata ODBC Driver DSN Setup dialog box on a Windows machine, you can enter your Teradata Wallet reference string directly in the Teradata Wallet String field. Otherwise, to pass in a reference string to the driver, you must use the following syntax in place of a password value, where `[WalletString]` is your reference string:

```
$tdwallet([WalletString])
```

For example, the following is a connection string that authenticates the connection using a reference string:

```
Driver=Simba Teradata ODBC Driver;DBCName=192.168.222.160;  
UID=jsmith;PWD=$tdwallet(jsmith_wallet_string);
```


LOB Retrieval Modes

Some Teradata Database instances contain Large Object (LOB) data types, such as BLOB (Binary Large Object) and CLOB (Character Large Object). The Simba Teradata ODBC Driver supports two ways of retrieving LOBs: Deferred Mode and Smart LOB (SLOB) Mode. You can optimize driver performance by configuring the appropriate retrieval mode.

- In Deferred Mode, the driver sends an additional query to retrieve each LOB. By default, the driver uses Deferred Mode.
- In SLOB Mode, the driver retrieves LOBs without sending any additional queries, but may need to cache some LOBs in memory.

To optimize driver performance, use Deferred Mode when retrieving large LOBs that you do not want to cache into memory, and use SLOB Mode when you need to retrieve many small LOBs and want to avoid sending a large number of queries. For example, SLOB Mode can improve driver performance when retrieving geospatial data.

! Important:

If SLOB Mode is not configured properly, it can decrease driver performance instead of improving it.

SLOB Mode Usage Guidelines

SLOB Mode is applicable only when certain size restrictions are met:

- The LOB to be retrieved must be smaller than the size specified by the `Max Single LOB Bytes` (or `MaxSingleLOBBytes`) setting. The driver falls back to using Deferred Mode when retrieving LOBs that exceed this size.
- If the total amount of LOB data being retrieved from a row exceeds the size specified by the `Max Total LOB Bytes Per Row` (or `MaxTotalLOBBytesPerRow`) setting, then, after using SLOB Mode to retrieve LOBs up to this size limit, the driver uses Deferred Mode to retrieve the remaining LOBs from that row.

Before enabling SLOB Mode, be aware of the following:

- Do not enable the `Use Sequential Retrieval Only` option (or the `UseSequentialRetrievalOnly` property) if there is any possibility that you might retrieve LOBs from columns in a non-sequential order. For instance, do not enable this option and then execute a query that retrieves LOBs from the third column in a table, then from the first column, and then from the fifth column. If you enable this option and then retrieve LOBs non-sequentially, the driver discards the LOBs that are returned through SLOB Mode and must then retrieve them all

again using Deferred Mode.

- When the Use Sequential Retrieval Only option (or the `UseSequentialRetrievalOnly` property) is disabled, the driver caches the other LOBs that it reads while looking for the one to be retrieved. Caching large amounts of data in memory can decrease performance. To prevent this problem, set the size limits so that the driver does not apply SLOB mode to large LOBs. LOB values that do not meet the requirements for SLOB Mode are retrieved using Deferred Mode instead, and therefore do not get cached.

Controlling the Scope of SLOB Mode Settings

You can configure the settings for SLOB Mode on the connection level or on the statement level. Because the optimal settings vary depending on the size of the specific LOBs that you are retrieving, it may be useful to adjust the settings for each statement as you work with your data.

To configure settings for SLOB Mode on the connection level, specify the relevant driver options in a DSN or connection string. These settings apply to all queries and operations that are executed within the connection. For detailed information about the driver options related to SLOB Mode, see the following:

- [Max Single LOB Bytes](#) on page 51
- [Max Total LOB Bytes Per Row](#) on page 51
- [Use Sequential Retrieval Only](#) on page 61

You can override connection-level settings by using statement attributes. To configure settings for SLOB Mode on the statement level, set the following statement attributes:

- **SQL_ATTR_MAX_SINGLE_LOB_BYTES:** Use this attribute to specify the maximum size of the LOBs (in bytes) that the driver can retrieve using SLOB Mode. LOBs that exceed this size are retrieved using Deferred Mode instead. This attribute corresponds to the Max Single LOB Bytes (or `MaxSingleLOBBytes`) driver option.
- **SQL_ATTR_MAX_LOB_BYTES_PER_ROW:** Use this attribute to specify the maximum size of LOB data per row (in bytes) that the driver can retrieve using SLOB Mode. If the total amount of LOB data contained in a row exceeds this size, then the driver retrieves the LOBs from that row using Deferred Mode instead. This attribute corresponds to the Max Total LOB Bytes Per Row (or `MaxTotalLOBBytesPerRow`) driver option.
- **SQL_ATTR_USE_SEQUENTIAL_RETRIEVAL_ONLY:** Use this attribute to indicate whether you are retrieving LOB data from columns in sequential order. This attribute corresponds to the Use Sequential Retrieval Only (or the `UseSequentialRetrievalOnly`) driver option.

Driver Configuration Options

Driver Configuration Options lists the configuration options available in the Simba Teradata ODBC Driver alphabetically by field or button label. Options having only key names, that is, not appearing in the user interface of the driver, are listed alphabetically by key name.

When creating or configuring a connection from a Windows machine, the fields and buttons described below are available in the following dialog boxes:

- Teradata ODBC Driver DSN Setup
- Simba Teradata ODBC Driver Options
- Advanced Options
- Logging Options

When using a connection string, use the key names provided below.

Configuration Options Appearing in the User Interface

The following configuration options are accessible via the Windows user interface for the Simba Teradata ODBC Driver, or via the key name when using a connection string or configuring a connection from a non-Windows machine:

- [Account String](#) on page 44
- [Data Source DNS Entries](#) on page 44
- [Date Time Format](#) on page 45
- [Default Database](#) on page 45
- [Disable Parsing](#) on page 46
- [Enable Custom Catalog Mode For 2.x Applications](#) on page 46
- [Enable Data Encryption](#) on page 46
- [Enable Extended Statement Info](#) on page 47
- [Enable Read Ahead](#) on page 47
- [Ignore Search Patterns](#) on page 48
- [Procedure With Print Stmt](#) on page 54
- [Procedure With SPL Source](#) on page 55
- [Retry System Calls \(EINTR\)](#) on page 55
- [Return Empty String In CREATE_PARAMS Column For SQL_TIMESTAMP](#) on page 55
- [Return Generated Keys](#) on page 56
- [Return Max CHAR/VARCHAR Length As 32k](#) on page 56
- [Session Character Set](#) on page 57
- [Session Mode](#) on page 58

- [Log Error Events](#) on page 48
- [Log Level](#) on page 49
- [Log Path](#) on page 49
- [Login Timeout](#) on page 50
- [Max File Size](#) on page 50
- [Max Number Files](#) on page 50
- [Max Single LOB Bytes](#) on page 51
- [Max Total LOB Bytes Per Row](#) on page 51
- [Maximum Response Buffer](#) on page 52
- [Mechanism](#) on page 52
- [Name or IP Address](#) on page 53
- [No HELP DATABASE](#) on page 53
- [Password or Teradata Wallet String](#) on page 54
- [TDMST Port Number](#) on page 58
- [UPT Mode](#) on page 59
- [Use Column Names](#) on page 59
- [Use DATE Data for TIMESTAMP Parameters](#) on page 60
- [Use NULL For Catalog Name](#) on page 60
- [Use Regional Settings for Decimal Symbol](#) on page 60
- [Use Sequential Retrieval Only](#) on page 61
- [Use TCP_NODELAY](#) on page 62
- [Use X Views](#) on page 62
- [Username](#) on page 63

Account String

Key Name	Default Value	Required
AccountString	The account string that is associated with the specified user name.	No

Description

The account string to use when logging in to the database.

Data Source DNS Entries

Key Name	Default Value	Required
DataSourceDNSEntries	None	No

Description

This option specifies how the driver determines which DNS entry to connect to.

- If this option is not set, the driver resolves DNS entries dynamically.
- If this option is set to 0, the driver uses DNS lookup.
- If this option is set to a non-zero value, then the driver uses that number of DNS entries in a round-robin fashion.

Date Time Format

Key Name	Default Value	Required
DateTimeFormat	AAA	No

Description

This option specifies the format that the driver uses for DATE values when communicating with the database.

- AAA: The driver uses ANSI format for DATE values.
- IAA: The driver uses Integer format for DATE values.

Default Database

Key Name	Default Value	Required
DefaultDatabase	The default database that is associated with the specified user name.	No

Description

The name of the database to access by default.

If this option is not set, then the driver uses the default database assigned to the specified user name.

If a table owner is not specified, then all catalog functions are associated with the default database.

Disable Parsing

Key Name	Default Value	Required
NoScan	Clear (0)	No

Description

This option specifies whether the driver parses SQL statements or passes the statements through to the database without making any modifications.

- Enabled (1): SQL statements are passed through to the Teradata Database without any modifications.
- Disabled (0): SQL statements are parsed by the driver.

Enable Custom Catalog Mode For 2.x Applications

Key Name	Default Value	Required
Use2xAppCustomCatalogMode	Clear (0)	No

Description

This option provides backwards compatibility for ODBC 2.x applications that use noncompliant search patterns.

Earlier versions of the driver allowed users to create search patterns other than the % search pattern stated in the ODBC Programmer's Reference specification. On noncompliant systems, if a NULL value is passed to the SQLTables API for the SchemaName argument, the result is a search for tables by userid, DBC, and default database schema names, rather than the % search pattern.

- Enabled (1): The driver allows searches by userid, DBC, and default database schema names.
- Disabled (0): The driver uses the % search pattern.

Enable Data Encryption

Key Name	Default Value	Required
UseDataEncryption	Clear (0)	No

Description

This option specifies whether the driver encrypts all communication with the database or authentication information only.

- Enabled (1): The driver encrypts all data that is passed between the driver and the database.
- Disabled (0): The driver encrypts authentication information only.

Enable Extended Statement Info

Key Name	Default Value	Required
EnableExtendedStmtInfo	Selected (1)	No

Description

This option specifies whether extended statement information is used when it is available from the database (Teradata Database versions V2R6.2 and later).

- Enabled (1): Extended statement information is requested and used, and the ODBC API function SQLDescribeParam is supported.
- Disabled (0): Extended statement information is not used, and the ODBC API function SQLDescribeParam is not supported.

Enable Read Ahead

Key Name	Default Value	Required
EnableReadAhead	Selected (1)	No

Description

This option specifies whether to request the next response message while the current message is being processed.

- Enabled (1): The driver requests the next response message while the current message is being processed.
- Disabled (0): The driver does not request the next response message until the current message has been processed.

Ignore Search Patterns

Key Name	Default Value	Required
IgnoreODBCSearchPattern	Clear (0)	No

Description

This option specifies whether the underscore (`_`) and percent sign (`%`) characters are parsed as normal characters or as search wildcards.

- Enabled (1): The underscore (`_`) and percent sign (`%`) characters are parsed as normal characters.
- Disabled (0): The underscore (`_`) and percent sign (`%`) characters are parsed as ODBC search wildcards.

Log Error Events

Key Name	Default Value	Required
LogErrorEvents	Clear (0)	No

Description

This option specifies whether the driver logs information to the Event Viewer of the Teradata server.

- Enabled (1): Error events are logged to the Event Viewer.
- Disabled (0): Error events are not logged to the Event Viewer.

Note:

- This option is available only in the Windows driver.
- This option is a driver-wide configuration option, so its setting applies to all connections that use the Simba Teradata ODBC Driver, and it cannot be set as a connection string property.

Log Level

Key Name	Default Value	Required
LogLevel	OFF (0)	No

Description

Use this property to enable or disable logging in the driver and to specify the amount of detail included in log files.

! Important:

- Only enable logging long enough to capture an issue. Logging decreases performance and can consume a large quantity of disk space.
- This option is not supported in connection strings. To configure logging for the Windows driver, you must use the Logging Options dialog box. To configure logging for a non-Windows driver, you must use the `simba.teradataodbc.ini` file.

Set the property to one of the following values:

- OFF (0): Disable all logging.
- FATAL (1): Logs severe error events that lead the driver to abort.
- ERROR (2): Logs error events that might allow the driver to continue running.
- WARNING (3): Logs events that might result in an error if action is not taken.
- INFO (4): Logs general information that describes the progress of the driver.
- DEBUG (5): Logs detailed information that is useful for debugging the driver.
- TRACE (6): Logs all driver activity.

Log Path

Key Name	Default Value	Required
LogPath	None	Yes, if logging is enabled.

Description

The full path to the folder where the driver saves log files when logging is enabled.

! Important:

This option is not supported in connection strings. To configure logging for the Windows driver, you must use the Logging Options dialog box. To configure logging for a non-Windows driver, you must use the `simba.teradataodbc.ini` file.

Login Timeout

Key Name	Default Value	Required
LoginTimeout	20	No

Description

The number of seconds that the driver waits for a response when logging in to the database.

Max File Size

Key Name	Default Value	Required
LogFileSize	20	No

Description

The maximum size of each log file in megabytes (MB). After the maximum file size is reached, the driver creates a new file and continues logging.

! Important:

This option is not supported in connection strings. To configure logging for the Windows driver, you must use the Logging Options dialog box. To configure logging for a non-Windows driver, you must use the `simba.teradataodbc.ini` file.

Max Number Files

Key Name	Default Value	Required
LogFileCount	50	No

Description

The maximum number of log files to keep. After the maximum number of log files is reached, each time an additional file is created, the driver deletes the oldest log file.

! Important:

This option is not supported in connection strings. To configure logging for the Windows driver, you must use the Logging Options dialog box. To configure logging for a non-Windows driver, you must use the `simba.teradataodbc.ini` file.

Max Single LOB Bytes

Key Name	Default Value	Required
MaxSingleLOBBytes	0	No

Description

The maximum size of the LOBs (in bytes) that the driver can retrieve using Smart LOB (SLOB) Mode. LOBs that exceed this size are retrieved using Deferred Mode instead.

If this option is set to 0, SLOB Mode is disabled, and the driver retrieves all LOB data using Deferred Mode. For more information, see [LOB Retrieval Modes](#) on page 41.

✎ Note:

As an alternative to using this option, you can specify this setting on the statement level rather than the connection level by using the `SQL_ATTR_MAX_SINGLE_LOB_BYTES` statement attribute.

Max Total LOB Bytes Per Row

Key Name	Default Value	Required
MaxTotalLOBBytesPerRow	0	No

Description

The maximum size of LOB data per row (in bytes) that the driver can retrieve using Smart LOB (SLOB) Mode. If the total amount of LOB data contained in a row exceeds

this size, then the driver retrieves the LOBs from that row using Deferred Mode instead.

If this option is set to 0, SLOB Mode is disabled, and the driver retrieves all LOB data using Deferred Mode. For more information, see [LOB Retrieval Modes](#) on page 41.



Note:

As an alternative to using this option, you can specify this setting on the statement level rather than the connection level by using the `SQL_ATTR_MAX_LOB_BYTES_PER_ROW` statement attribute.

Maximum Response Buffer

Key Name	Default Value	Required
MaxRespSize	65536	No

Description

The maximum size of the response buffer for SQL requests, in kilobytes.

When you are connected to a database instance that is running Teradata Database 16.00 or later, the maximum value is 7361536. For connections that use earlier versions of Teradata Database, the maximum value is 1048576.

Mechanism

Key Name	Default Value	Required
MechanismName	None	No

Description

The mechanism that the driver uses to authenticate the connection to the database.

Select one of the following settings, or set the key to the name of the authentication mechanism:

- **KRB5:** The driver uses the Kerberos protocol. The application provides the user name and password.
- **LDAP:** The driver uses the LDAP protocol. The application provides the user name and password.

- **SPNEGO**: The driver uses the mechanism that is selected automatically through Simple and Protected GSSAPI Negotiation.
- **TD2**: The driver uses the Teradata 2 mechanism, which requires a Teradata Database user name and password.
- **TDNEGO**: The driver uses the mechanism that is selected automatically through Teradata Negotiating, which can include single sign-on.

**Note:**

- If this option is not set, then the driver uses the authentication mechanism that the TeraGSS program specifies in the `tdgssconfigure.xml`.
- The Kerberos authentication mechanism is not supported on macOS machines.

Name or IP Address

Key Name	Default Value	Required
DBCName	None	Yes

Description

The fully qualified domain name or IP address of the Teradata Database instance.

No HELP DATABASE

Key Name	Default Value	Required
NoHelpDatabase	Clear (0)	No

Description

This option specifies whether the Help Database is used.

- Enabled (1): SQLTables uses a SELECT statement when no wildcard characters are used in SQLTables.
- Disabled (0): The driver uses the HELP DATABASE command.

Note:

If this option is enabled, then SQLTables uses either `dbc.tables` or `dbc.tablesX`, depending on whether X Views are enabled. For more information about X Views, see [Use X Views](#) on page 62.

Password or Teradata Wallet String

Key Name	Default Value	Required
Password	None	No

Description

The password that you use to access the database.

Alternatively, if the Teradata Wallet utility is set up on your machine, you can specify a Teradata Wallet reference string in place of a password. When providing the reference string in the Simba Teradata ODBC Driver DSN Setup dialog box, type the string normally. When providing the reference string in a connection string, you must include the `$tdwallet()` token. For example:

```
Password=$tdwallet([WalletString]);
```

Procedure With Print Stmt

Key Name	Default Value	Required
PrintOption	N	No

Description

This option specifies whether to enable the print option for stored procedures.

- **P:** The SPL PRINT statements specified in the stored procedure body are saved in the compiled stored procedure.
- **N:** The SPL PRINT statements are not saved. If the Procedure With SPL Source option (the `Sp1Option` property) is enabled, then the driver preserves the SPL PRINT statements in the SPL source text.

Procedure With SPL Source

Key Name	Default Value	Required
SplOption	Y	No

Description

This option specifies whether to use stored procedure language (SPL) when creating stored procedures.

- Y: SPL is enabled, and the source text must be stored in Teradata Database.
- N: SPL is disabled, and the source text is not stored in the server.

Retry System Calls (EINTR)

Key Name	Default Value	Required
RetryOnEINTR	Selected (1)	No

Description

This option specifies whether the driver retries the socket system calls or returns a SQL_ERROR when an EINTR error occurs.

- Enabled (1): The driver retries the socket system calls.
- Disabled (0): The driver returns a SQL_ERROR, and the ODBC application becomes responsible for recovering from the interrupted socket system calls.

Return Empty String In CREATE_PARAMS Column For SQL_TIMESTAMP

Key Name	Default Value	Required
UseEmptyCreateParamsColumnForTimestamp	Clear (0)	No

Description

This option specifies whether the driver returns an empty string or the given value for the CREATE_PARAMS column when you call SQLGetTypeInfo for SQL_TIMESTAMP data.

- Enabled (1): The driver returns an empty string, and prohibits Microsoft Access from using any TIMESTAMP precision values when creating tables.
- Disabled (0): The driver returns the given value.



Note:

This option is applicable only for Windows and macOS.

Return Generated Keys

Key Name	Default Value	Required
ReturnGeneratedKeys	N	No

Description

This option determines the result from requests that insert data into identity columns. These requests can optionally return a result set containing identity column values, also known as auto-generated keys, for the inserted rows.

- C: The driver retrieves the identity columns only.
- R: The driver retrieves the entire row.
- N: The driver does not retrieve auto-generated keys.

Return Max CHAR/VARCHAR Length As 32k

Key Name	Default Value	Required
Use32kMaxCharColumnSize	Clear (0)	No

Description

This option specifies whether the driver returns a hard-coded value for the COLUMN_SIZE column when you call SQLGetTypeInfo for SQL_CHAR and SQL_VARCHAR data. Enabling this option prevents the returned column size from causing numeric overflows in Microsoft Access.

- **Enabled (1):** The driver returns a hard-coded value for the maximum size of SQL_CHAR and SQL_VARCHAR columns.
- **Disabled (0):** The driver returns the actual maximum size of the column. In some cases, Microsoft Access might experience numeric overflow when processing the column size returned by the driver.

Depending on the Session Character Set (or `CharacterSet`) setting, the hard-coded value is 32000 or 64000. For more information, see [Session Character Set](#) on page 57.

 **Note:**

This option is applicable only for Windows and macOS.

Session Character Set


Key Name	Default Value	Required
<code>CharacterSet</code>	ASCII	No

Description

The character set to use for the session. This value can be a user-defined character set, or one of the following pre-defined character sets:

- ASCII
- UTF8
- UTF16
- LATIN1252_0A
- LATIN9_0A
- LATIN1_0A
- Shift-JIS (Windows, DOS compatible, KANJISJIS_0S)
- EUC (Unix compatible, KANJIEC_0U)
- IBM Mainframe (KANJIIEBCDIC5035_0I)
- KANJI932_1S0
- BIG5 (TCHBIG5_1R0)
- GB (SCHGB2312_1T0)
- SCHINESE936_6R0
- TCHINESE950_8R0
- NetworkKorean (HANGULKSC5601_2R4)
- HANGUL949_7R0

- ARABIC1256_6A0
- CYRILLIC1251_2A0
- HEBREW1255_5A0
- LATIN1250_1A0
- LATIN1254_7A0
- LATIN1258_8A0
- THAI874_4A0

 **Note:**

The specified character set must be installed on Teradata Database.

Session Mode

Key Name	Default Value	Required
SessionMode	System Default	No

Description

This option specifies the session mode that the driver uses during sessions on the database.

- ANSI: The driver uses ANSI mode.
- System Default: The driver uses the default session mode of the system that you are using the driver on.
- Teradata: The driver uses Teradata mode.

TDMST Port Number

Key Name	Default Value	Required
TdmstPortNumber	1025	No

Description

The number of the port used to access Teradata Database.

! Important:

Do not change this value unless instructed to do so by Technical Support.

UPT Mode

Key Name	Default Value	Required
UPTMode	Not Set (NOTSET)	No

Description

This option specifies whether the driver supports Unicode Pass Through (UPT) for Pass Through Characters (PTCs). For more information about UPT, see "Unicode Pass Through" in the Teradata Database documentation:

http://info.teradata.com/htmlpubs/DB_TTU_16_00/index.html#page/General_Reference/B035-1098-160K/ifk1472240714022.html.

- Not Set (NOTSET): The driver does not do anything to change UPT support.
- UPT ON (UPTON): The driver sends a query to the database to enable UPT support. When UPT support is enabled, the driver allows PTCs to be passed through to the database.
- UPT OFF (UPTOFF): The driver sends a query to the database to disable UPT support. When UPT support is disabled, the driver does not allow PTCs to be passed through to the database.

Use Column Names

Key Name	Default Value	Required
DontUseTitles	Selected (1)	No

Description

This option specifies whether column names or column titles are returned.

- Enabled (1): The driver returns column names.
- Disabled (0): The driver returns column titles if they are defined. Otherwise, the driver returns column names.



Note:

Column titles for SQLColumns are shown in the LABEL column.

Use DATE Data for TIMESTAMP Parameters

Key Name	Default Value	Required
UseDateForTimestamp	Clear (0)	No

Description

This option specifies whether the driver sends DATE data for parameters that are bound as SQL_TIMESTAMP or SQL_C_TIMESTAMP.

! Important:

This option should only be enabled for applications that use Microsoft Access Jet databases, as it can result in truncating SQL_C_TIMESTAMP data.

- Enabled (1): The driver sends DATE data for SQL_TIMESTAMP and SQL_C_TIMESTAMP parameters.
- Disabled (0): The driver sends standard data for these parameters.

Use NULL For Catalog Name

Key Name	Default Value	Required
TABLEQUALIFIER	Clear (0)	No

Description

This option specifies whether the driver sets any Catalog Name parameters to NULL.

- Enabled (1): Catalog Name parameters are set to NULL for all Catalog API functions, even if the application passes a value.
- Disabled (0): Catalog Name parameter values are passed in. In this case the driver returns an error, because Teradata Database does not support catalogs.

Use Regional Settings for Decimal Symbol

Key Name	Default Value	Required
UseRegionalSettings	Selected (1)	No

Description

This option specifies whether the driver uses the regional settings for decimal symbols, or uses a period (.) regardless of the regional settings.

- Enabled (1): The driver uses the regional settings for decimal symbols.
- Disabled (0): The driver uses a period (.) for decimal symbols regardless of the regional settings.

Note:

This option is applicable only for Windows and macOS.

Use Sequential Retrieval Only

Key Name	Default Value	Required
UseSequentialRetrievalOnly	Clear (0)	No

Description

This option indicates to the driver whether you are retrieving LOB data from columns in sequential order or non-sequential order. When working in Smart LOB (SLOB) Mode, the driver reads and caches LOB data differently depending on this setting. For more information about SLOB Mode, see [LOB Retrieval Modes](#) on page 41.

- Enabled (1): When working in SLOB Mode, the driver does not cache the other LOBs that it reads while looking for the one to be retrieved. Because the driver can retrieve LOBs in a single pass if they are queried sequentially, the driver does not need to cache them.
- Disabled (0): When working in SLOB Mode, the driver caches the other LOBs that it reads while looking for the one to be retrieved. This caching allows the driver to successfully retrieve SLOBs in any order.

! Important:

- Do not enable this option if there is any possibility that you might retrieve LOBs from columns in a non-sequential order. For instance, do not enable this option and then execute a query that retrieves LOBs from the third column in a table, then from the first column, and then from the fifth column. If you enable this option and then retrieve LOBs non-sequentially, the driver discards the LOBs that are returned through SLOB Mode and must then retrieve them all again using Deferred Mode.
- As an alternative to using this option, you can specify this setting on the statement level rather than the connection level by using the `SQL_ATTR_USE_SEQUENTIAL_RETRIEVAL_ONLY` statement attribute.

Use TCP_NODELAY

Key Name	Default Value	Required
<code>TcpNoDelay</code>	Selected (1)	No

Description

This option specifies whether TCP immediately sends small packets or waits to gather packets into a single, larger packet.

- Enabled (1): TCP immediately sends small packets. This option can avoid transmission delays but might increase network traffic.
- Disabled (0): TCP gathers small packets into a single larger packet. This option can reduce network traffic but might cause transmission delays.

Use X Views

Key Name	Default Value	Required
<code>UseXViews</code>	Clear (0)	No

Description

This option specifies whether to use X views. X views restrict access to the data so that the driver can only access objects that the specified user owns or controls.

- Enabled (1): The driver uses the following views:
 - SQLTables() and SQLProcedures() use `dbc.tablesVX` and `dbc.databasesVX`
 - SQLColumns() and SQLProcedureColumns() use `dbc.columnsVX`
 - SqlStatistics() uses `dbc.tablesizeVX`
- Disabled (0): The driver uses the following views:
 - SQLTables() and SQLProcedures() use `dbc.tablesV` and `dbc.databasesV`
 - SQLColumns() and SQLProcedureColumns() use `dbc.columnsV`
 - SqlStatistics() uses `dbc.tablesizeV`

Username

Key Name	Default Value	Required
Username	None	Yes

Description

Your user name for authenticating the connection to Teradata Database through the specified authentication mechanism. For example, if you set the **Mechanism** option to **TD2** (set the `MechanismName` key to `TD2`), then you must provide your Teradata Database user name.

Configuration Options Having Only Key Names

The following configuration options do not appear in the Windows user interface for the Simba Teradata ODBC Driver. They are accessible only when you use a connection string or configure a connection on macOS or Linux.

Driver

Key Name	Default Value	Required
Driver	Simba Teradata ODBC Driver when installed on Windows, or the absolute path of the driver shared object file when installed on a non-Windows machine.	Yes

Description

On Windows, the name of the installed driver (Simba Teradata ODBC Driver).

On other platforms, the name of the installed driver as specified in `odbcinst.ini`, or the absolute path of the driver shared object file.

IANAAppCodePage

Key Name	Default Value	Required
IANAAppCodePage	None	No

Description

The ODBC application code page that the driver uses when converting characters between ANSI and Unicode.

For a list of supported values, see "ODBC Application Code Page Values" in Teradata's *ODBC Driver for Teradata User Guide*.

Note:

- This property is applicable only for macOS and Linux.
- This setting takes precedence over the `CharacterSet` setting. For information about the `CharacterSet` setting, see [Session Character Set](#) on page 57.

Locale

Key Name	Default Value	Required
Locale	en-US	No

Description

The locale to use for error messages.

Set this property to one of the following values:

- en-US: The driver returns error messages in English.
- ja-JP: The driver returns error messages in Japanese.

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