

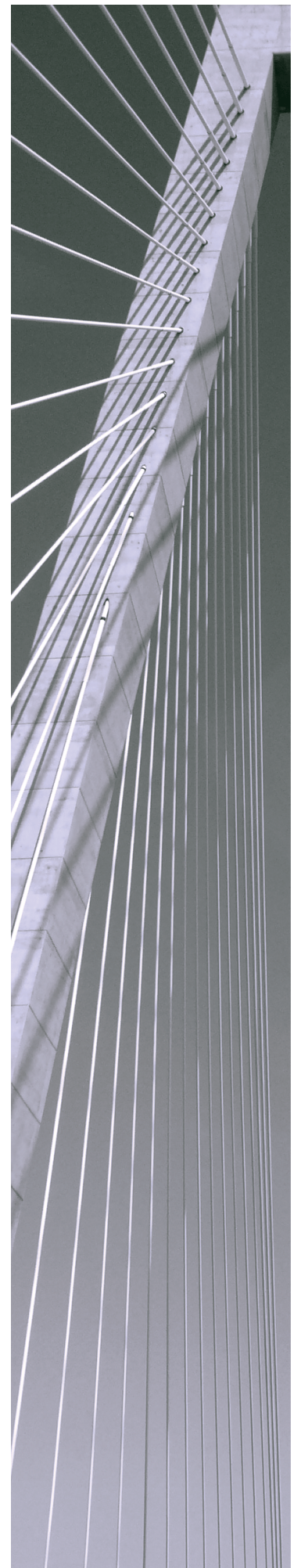


Simba Salesforce ODBC Driver with SQL Connector

Installation and Configuration Guide

Simba Technologies Inc.

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About This Guide

Purpose

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

Audience

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

Knowledge Prerequisites

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

- Familiarity with the platform on which you are using the Simba Salesforce ODBC Driver
- Ability to use the data source to which the Simba Salesforce 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 Salesforce ODBC Driver

The Simba Salesforce ODBC Driver enables Business Intelligence (BI), analytics, and reporting on data that is stored in Salesforce.com. The driver complies with the ODBC 3.80 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 Simba Salesforce ODBC Driver is available for Microsoft® Windows®, Linux, and macOS platforms.

The *Installation and Configuration Guide* is suitable for users who are looking to access data residing within Salesforce.com 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

The Simba Salesforce ODBC Driver is based on Salesforce API version 36.

The driver requires a Developer Edition, Professional Edition, Enterprise Edition, or Unlimited Edition Salesforce account. If you are an existing Salesforce customer and want to upgrade your account to one of these editions, please contact your Salesforce account representative.

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 2013 installed (with the same bitness as the driver that you are installing).
You can download the installation packages at <https://www.microsoft.com/en-ca/download/details.aspx?id=40784>.

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

Installing the Driver on Windows

On 64-bit Windows operating systems, you can execute both 32- and 64-bit applications. However, 64-bit applications must use 64-bit drivers, and 32-bit applications must use 32-bit drivers. Make sure that you use the version of the driver that matches the bitness of the client application:

- `SimbaSalesforceODBC32.msi` for 32-bit applications
- `SimbaSalesforceODBC64.msi` for 64-bit applications

You can install both versions of the driver on the same machine.

To install the Simba Salesforce ODBC Driver on Windows:

1. Depending on the bitness of your client application, double-click to run **SimbaSalesforceODBC32.msi** or **SimbaSalesforceODBC64.msi**.
2. Click **Next**.


3. Select the check box to accept the terms of the License Agreement if you agree, and then click **Next**.
4. To change the installation location, click **Change**, then browse to the desired folder, and then click **OK**. To accept the installation location, click **Next**.
5. Click **Install**.
6. When the installation completes, click **Finish**.
7. If you received a license file through email, then copy the license file into the `\lib` subfolder of the installation folder you selected above. You must have Administrator privileges when changing the contents of this folder.

Creating a Data Source Name on Windows

Typically, after installing the Simba Salesforce 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 Administrator:
 - If you are using Windows 7 or earlier, click **Start**  > **All Programs** > **Simba Salesforce ODBC Driver 2.0** > **ODBC Administrator**.
 - Or, if you are using Windows 8 or later, on the Start screen, type **ODBC administrator**, and then click the **ODBC Administrator** search result.

 **Note:**

Make sure to select the ODBC Data Source Administrator that has the same bitness as the client application that you are using to connect to Salesforce.

2. In the ODBC Data Source Administrator, click the **Drivers** tab, and then scroll down as needed to confirm that the Simba Salesforce ODBC Driver appears in the alphabetical list of ODBC drivers that are installed on your system.
3. 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 load the data using a different user account, and might not be able to detect User DSNs that are created under another user account.

4. Click **Add**.
5. In the Create New Data Source dialog box, select **Simba Salesforce ODBC Driver** and then click **Finish**. The Simba Salesforce ODBC Driver DSN Setup dialog box opens.
6. In the **Data Source Name** field, type a name for your DSN.
7. Optionally, in the **Description** field, type relevant details about the DSN.
8. In the **Username** field, type the user name for your Salesforce account.

 **Note:**

When you connect to your data, you will be prompted to provide your Salesforce account credentials. If your user name is saved in the DSN, then you will not need to type it again.

9. In the **Password** field, type the password corresponding to the user name you typed above.

 **Note:**

For security reasons, passwords are not saved in the DSN; when you connect to your data, you will be prompted to type your password again. Providing your password in the DSN allows you to test your connection.

10. If you are using a proxy server, then select the **Use Proxy Server** check box and then do the following:
 - a. In the **Proxy Host** field, type the host name or IP address of the proxy server.
 - b. In the **Proxy Port** field, type the number of the TCP port that the proxy server uses to listen for client connections.
 - c. In the **Proxy Username** field, type your user name for accessing the proxy server.
 - d. In the **Proxy Password** field, type the password corresponding to the user name you specified above.
11. Choose one:
 - To verify the server using the trusted CA certificates from a specific `.pem` file, specify the full path to the file in the **Trusted Certificates** field and leave the **Use System Trust Store** check box cleared.

- Or, to use the trusted CA certificates .pem file that is installed with the driver, leave the default value in the **Trusted Certificates** field, and leave the **Use System Trust Store** check box cleared.
- Or, to use the Windows Trust Store, select the **Use System Trust Store** check box and leave the **Trusted Certificates** field cleared.

! Important:

The Simba Salesforce ODBC Driver requires an SSL/TLS connection.

12. To configure advanced driver options, click **Advanced Options**. For more information, see [Configuring Advanced Options on Windows](#) on page 11.
13. To configure logging behavior for the driver, click **Logging Options**. For more information, see [Configuring Logging Options on Windows](#) on page 14.
14. To test the connection, click **Test**. Review the results as needed, and then click **OK**.

! Important:

If the connection fails, then you might need to provide a security token. To obtain a security token, follow the instructions in the Salesforce documentation located at https://help.salesforce.com/apex/HTViewHelpDoc?id=user_security_token.htm. Copy and paste the security token into the Security Token field, and then test the connection again. You can save the security token in the DSN by selecting the **Save Security Token** check box.

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

Configuring Advanced Options on Windows

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

To configure advanced options on Windows:

1. Open the ODBC Data Source Administrator where you created the DSN, then select the DSN, then click **Configure**, and then click **Advanced Options**.
2. To connect to a Salesforce sandbox, select the **Enable Connection To Sandbox URL** check box and then type the URL of the sandbox in the **Sandbox URL** field.
3. To specify the query language that the driver uses to parse queries, select the appropriate **Parse Method** setting.

4. To retrieve data using the Bulk API, select the **Enable Bulk API Queries** check box and then, in the **Bulk API Query At This Many Records** field, type the number of query results at which the driver starts to use the Bulk API.

 **Note:**

If data retrieval fails, then the driver falls back to using the REST API to retrieve the data.


5. If Bulk API queries are enabled, then you can configure the driver to use primary key chunking when retrieving data by doing the following:
 - a. Select the **Enable Primary Key Chunking** check box.
 - b. In the **Primary Key Chunking At This Many Records** field, type the number of query results at which the driver starts to use primary key chunking.
 - c. In the **Primary Key Chunk Size** field, type the number of query results to be included in each chunk.
6. To specify how the driver initiates polls when checking the status of a batch operation in Salesforce, configure the settings in the Bulk API Options area as follows:
 - To initiate polls at a specific time interval, clear the **Enable Backoff When Checking Status** check box and then, in the **Bulk Polling Interval** field, type the amount of time between polls in milliseconds.
 - Or, to initiate polls based on an exponential backoff policy, select the **Enable Backoff When Checking Status** check box and then do the following:
 - a. In the **Minimum Backoff Delay** field, type the minimum amount of time between polls in milliseconds.
 - b. In the **Maximum Backoff Delay** field, type the maximum amount of time between polls in milliseconds.
7. To infer metadata based on a small sampling of the data rather than all of the data, select the **Enable Report Metadata Optimization** check box.

! Important:

Enabling this option allows the driver to run faster, but the metadata might be less accurate.

8. To specify whether the driver uses field labels or names from Salesforce as the labels in the returned data, do one of the following:
 - To use the field labels from Salesforce as the labels in the returned data, select the **Use Salesforce Labels For Columns** check box.

- Or, to use the field names from Salesforce as the labels in the returned data, clear the **Use Salesforce Labels For Columns** check box.

 **Note:**

Some client applications require the names and labels in the returned data to match.

9. To return data as SQL_WVARCHAR data instead of SQL_VARCHAR data, select the **Use SQL_WVARCHAR Instead Of SQL_VARCHAR** check box.

 **Note:**

This option applies only to result set columns that the driver would normally return as SQL_VARCHAR columns. It does not convert all columns into SQL_WVARCHAR.

10. To return data as SQL_NUMERIC data instead of SQL_DOUBLE data, select the **Use SQL_NUMERIC For Result Set Columns Of Type SQL_DOUBLE** check box.

 **Note:**

This option only applies to result set columns that the driver would normally return as SQL_DOUBLE columns. It does not convert all columns into SQL_NUMERIC.

11. To execute reports using the Salesforce Reports and Dashboards REST API instead of using the report URL, select the **Use Analytic API For Executing Reports** check box.
12. To modify catalog names by removing all invalid SQL-92 identifier characters and replacing all spaces with underscores, select the **Sanitize Catalog Names** check box.
13. To remove catalog names from the results of SQLTables and SQLColumns function calls, select the **Strip Catalog Name From Filter Arguments** check box.
14. To prevent the driver from joining tables during passthrough queries, select the **Disable Join Passthrough** check box.
15. To save your settings and close the Advanced Options dialog box, click **OK**.

Exporting a Data Source Name on Windows

After you configure a DSN, you can export it to be used on other machines. When you export a DSN, all of its configuration settings are saved in a `.sdc` file. You can then distribute the `.sdc` file to other users so that they can import your DSN configuration and use it on their machines.

To export a Data Source Name on Windows:

1. Open the ODBC Data Source Administrator where you created the DSN, select the DSN, click **Configure**, and then click **Logging Options**.
2. Click **Export Configuration**, specify a name and location for the exported DSN, and then click **Save**.

Your DSN is saved as a `.sdc` file in the location that you specified.

Importing a Data Source Name on Windows

You can import a DSN configuration from a `.sdc` file and then use those settings to connect to your data source.

To import a Data Source Name on Windows:

1. Open the ODBC Data Source Administrator where you created the DSN, select the DSN, click **Configure**, and then click **Logging Options**.
2. Click **Import Configuration**, browse to select the `.sdc` file that you want to import the DSN configuration from, and then click **Open**.
3. Click **OK** to close the Logging Options dialog box.

The Simba Salesforce ODBC Driver DSN Setup dialog box loads the configuration settings from the selected `.sdc` file. You can now save this DSN and use it to connect to your data source.

Configuring Logging Options on Windows

To help troubleshoot issues, you can enable logging. In addition to functionality provided in the Simba Salesforce 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 Salesforce 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**.

- 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.

- In the **Log Path** field, specify the full path to the folder where you want to save log files. You can type the path into the field, or click **Browse** and then browse to select the folder.
- 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.

- 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.

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

The Simba Salesforce ODBC Driver produces a log file named `Salesforce_driver.log` at the location that you specify in the Log Path field.

If you enable the `UseLogPrefix` connection property, the driver prefixes the log file name with the user name associated with the connection and the process ID of the application through which the connection is made. For more information, see [UseLogPrefix](#) on page 61.


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 Salesforce 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 Administrator:
 - If you are using Windows 7 or earlier, click **Start**  > **All Programs** > **Simba Salesforce ODBC Driver 2.0** > **ODBC Administrator**.
 - Or, if you are using Windows 8 or later, on the Start screen, type **ODBC administrator**, and then click the **ODBC Administrator** search result.

Note:

Make sure to select the ODBC Data Source Administrator that has the same bitness as the client application that you are using to connect to Salesforce.

2. Click the **Drivers** tab and then find the Simba Salesforce 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 Salesforce ODBC Driver is based on Salesforce API version 36.

The driver requires a Developer Edition, Professional Edition, Enterprise Edition, or Unlimited Edition Salesforce account. If you are an existing Salesforce customer and want to upgrade your account to one of these editions, please contact your Salesforce account representative.

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
- 150 MB of available disk space
- iODBC 3.52.7 or later

Installing the Driver on macOS

The Simba Salesforce ODBC Driver is available for macOS as a `.dmg` file named `SimbaSalesforceODBC.dmg`. The driver supports both 32- and 64-bit client applications.

To install the Simba Salesforce ODBC Driver on macOS:

1. Double-click **SimbaSalesforceODBC.dmg** to mount the disk image.
2. Double-click **SimbaSalesforceODBC.pkg** to run the installer.
3. In the installer, click **Continue**.
4. On the Software License Agreement screen, click **Continue**, and when the prompt appears, click **Agree** if you agree to the terms of the License Agreement.
5. Optionally, to change the installation location, click **Change Install Location**, then select the desired location, and then click **Continue**.

 **Note:**

By default, the driver files are installed in the `/Library/simba/salesforceodbc` directory.

6. To accept the installation location and begin the installation, click **Install**.
7. When the installation completes, click **Close**.

8. If you received a license file through email, then copy the license file into the `/lib` subfolder in the driver installation directory. You must have root privileges when changing the contents of this folder.

For example, if you installed the driver to the default location, you would copy the license file into the `/Library/simba/salesforceodbc/lib` folder.

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 22.

Verifying the Driver Version Number on macOS

If you need to verify the version of the Simba Salesforce ODBC Driver that is installed on your macOS machine, you can query the version number through the Terminal.

To verify the driver version number on macOS:

- At the Terminal, run the following command:

```
pkgutil --info com.simba.salesforceodbc
```

The command returns information about the Simba Salesforce ODBC Driver that is installed on your machine, including the version number.

Linux Driver

The Linux driver is available as an RPM file and as a tarball package.

Linux System Requirements

The Simba Salesforce ODBC Driver is based on Salesforce API version 36.

The driver requires a Developer Edition, Professional Edition, Enterprise Edition, or Unlimited Edition Salesforce account. If you are an existing Salesforce customer and want to upgrade your account to one of these editions, please contact your Salesforce account representative.

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
 - Debian 7 or 8
 - Ubuntu 14.04 or 16.04
- 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 Using the RPM File

On 64-bit editions of Linux, you can execute both 32- and 64-bit applications. However, 64-bit applications must use 64-bit drivers, and 32-bit applications must use 32-bit drivers. Make sure to install and use the version of the driver that matches the bitness of the client application:

- `SimbaSalesforceODBC-32bit-[Version]-[Release].rpm` for the 32-bit driver
- `SimbaSalesforceODBC-[Version]-[Release].rpm` for the 64-bit driver

You can install both versions of the driver on the same machine.

The placeholders in the file names are defined as follows:

- *[Version]* is the version number of the driver.
- *[Release]* is the release number for this version of the driver.

To install the Simba Salesforce ODBC Driver using the RPM File:

1. Log in as the root user, and then navigate to the folder containing the RPM package for the driver.
2. Depending on the Linux distribution that you are using, run one of the following commands from the command line, where *[RPMFileName]* is the file name of the RPM package:

- If you are using Red Hat Enterprise Linux or CentOS, run the following command:

```
yum --nogpgcheck localinstall [RPMFileName]
```

- Or, if you are using SUSE Linux Enterprise Server, run the following command:

```
zypper install [RPMFileName]
```

The Simba Salesforce ODBC Driver files are installed in the `/opt/simba/salesforceodbc` directory.

3. If you received a license file through email, then copy the license file into the `/opt/simba/salesforceodbc/lib/32` or `/opt/simba/salesforceodbc/lib/64` folder, depending on the version of the driver that you installed. You must have root privileges when changing the contents of this folder.

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 22.

Installing the Driver Using the Tarball Package

The Simba Salesforce ODBC Driver is available as a tarball package named `SimbaSalesforceODBC-[Version].[Release]-Linux.tar.gz`, where *[Version]* is the version number of the driver and *[Release]* is the release number for this version of the driver. The package contains both the 32-bit and 64-bit versions of the driver.

On 64-bit editions of Linux, you can execute both 32- and 64-bit applications. However, 64-bit applications must use 64-bit drivers, and 32-bit applications must use 32-bit drivers. Make sure that you use 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 install the Simba Salesforce ODBC Driver using the tarball package:

1. Log in as the root user, and then navigate to the folder containing the tarball package.
2. Run the following command to extract the package and install the driver:

```
tar --directory=/opt -zxvf [TarballName]
```

Where `[TarballName]` is the name of the tarball package containing the driver.

The Simba Salesforce ODBC Driver files are installed in the `opt/simba/salesforceodbc` directory.

3. If you received a license file through email, then copy the license file into the `opt/simba/salesforceodbc/lib/32` or `opt/simba/salesforceodbc/lib/64` folder, depending on the version of the driver that you installed. You must have root privileges when changing the contents of this folder.

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 22.

Verifying the Driver Version Number on Linux

If you need to verify the version of the Simba Salesforce ODBC Driver that is installed on your Linux machine, you can query the version number through the command-line interface if the driver was installed using an RPM file.

To verify the driver version number on Linux:

- Depending on your package manager, at the command prompt, run one of the following commands:
 - `yum list | grep SimbaSalesforceODBC`
 - `rpm -qa | grep SimbaSalesforceODBC`

The command returns information about the Simba Salesforce ODBC Driver that is installed on your machine, including the version number.

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 Salesforce 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 22.
- 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 23.

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 25.

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.

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.salesforceodbc.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 `SIMBASALESFORCEODBCINI` to the full path and file name of the `simba.salesforceodbc.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 `ODBCSYSINI` to the full path of the directory that contains the `odbcinst.ini` file.
- Set `SIMBASALESFORCEODBCINI` to the full path and file name of the `simba.salesforceodbc.ini` file.

For example, if your `odbc.ini` and `odbcinst.ini` files are located in `/usr/local/odbc` and your `simba.salesforceodbc.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 SIMBASALESFORCEODBCINI=/etc/simba.salesforceodbc.ini
```

For unixODBC:

```
export ODBCINI=/usr/local/odbc/odbc.ini
export ODBCSYSINI=/usr/local/odbc
```

```
export SIMBASALESFORCEODBCINI=/etc/simba.salesforceodbc.ini
```

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

1. If the `SIMBASALESFORCEODBCINI` 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.salesforceodbc.ini`.
3. The driver searches the current working directory of the application for a file named `simba.salesforceodbc.ini`.
4. The driver searches the home directory for a hidden file named `.simba.salesforceodbc.ini` (prefixed with a period).
5. The driver searches the `/etc` directory for a file named `simba.salesforceodbc.ini`.

Configuring ODBC Connections on a Non-Windows Machine

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

- [Creating a Data Source Name on a Non-Windows Machine](#) on page 25
- [Configuring a DSN-less Connection on a Non-Windows Machine](#) on page 27
- [Configuring Logging Options on a Non-Windows Machine](#) on page 29
- [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. For information about configuring a DSN-less connection instead, see [Configuring a DSN-less Connection on a Non-Windows Machine](#) on page 27.

If your machine is already configured to use an existing `odbc.ini` file, then update that file by adding the settings described below. Otherwise, copy the `odbc.ini` file from the `Setup` subfolder in the driver installation directory to the home directory, and then update the file as described below.

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

1. In a text editor, open the `odbc.ini` configuration file.

 **Note:**

If you are using a hidden copy of the `odbc.ini` file, you can remove the period (.) from the start of the file name to make the file visible while you are editing it.

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=Simba Salesforce ODBC Driver
```

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

```
[ODBC Data Sources]
Sample DSN=Simba Salesforce 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/simba/salesforceodbc/lib/libsfodbc_
sbu.dylib
```

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

```
Driver=/opt/simba/salesforceodbc/lib/32/libsfodbc_
sb32.so
```

- b. To configure authentication, set the `UID` property to an appropriate user name for accessing the Salesforce server, and set the `PWD` property to the password corresponding to the user name you provided.

For example:

```
UID=simba
PWD=simba123
```

! Important:

If the connection fails when you test it, then you might need to provide a security token for authentication. To obtain a security token, follow the instructions in the Salesforce documentation located at

https://help.salesforce.com/apex/HTViewHelpDoc?id=user_security_token.htm.

In the `odbc.ini` file, in the section corresponding to your DSN, set the `SecurityToken` property to the security token that you obtained.

- c. Optionally, set additional key-value pairs as needed to specify other optional connection settings. For detailed information about all the configuration options supported by the Simba Salesforce ODBC Driver, see [Driver Configuration Options](#) on page 41.
4. Save the `odbc.ini` configuration file.

 **Note:**

If you are storing this file in its default location in the home directory, then prefix the file name with a period (.) so that the file becomes hidden. If you are storing this file in another location, then save it as a non-hidden file (without the prefix), and make sure that the ODBCINI environment variable specifies the location. For more information, see [Specifying the Locations of the Driver Configuration Files](#) on page 23.

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

```
[ODBC Data Sources]
Sample DSN=Simba Salesforce ODBC Driver
[Sample DSN]
Driver=/Library/simba/salesforceodbc/lib/libsfodbc_sbu.dylib
UID=simba
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 Salesforce:

```
[ODBC Data Sources]
Sample DSN=Simba Salesforce ODBC Driver 32-bit
[Sample DSN]
Driver=/opt/simba/salesforceodbc/lib/32/libsfodbc_sb32.so
UID=simba
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.

If your machine is already configured to use an existing `odbcinst.ini` file, then update that file by adding the settings described below. Otherwise, copy the `odbcinst.ini` file from the `Setup` subfolder in the driver installation directory to the home directory, and then update the file as described below.

To define a driver on a non-Windows machine:

1. In a text editor, open the `odbcinst.ini` configuration file.

 **Note:**

If you are using a hidden copy of the `odbcinst.ini` file, you can remove the period (.) from the start of the file name to make the file visible while you are editing it.

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:

```
[ODBC Drivers]
Simba Salesforce ODBC Driver=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/simba/salesforceodbc/lib/libsfodbc_
sbu.dylib
```

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

```
Driver=/opt/simba/salesforceodbc/lib/32/libsfodbc_
sb32.so
```

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

For example:

```
Description=Simba Salesforce ODBC Driver
```

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

 **Note:**

If you are storing this file in its default location in the home directory, then prefix the file name with a period (.) so that the file becomes hidden. If you are storing this file in another location, then save it as a non-hidden file (without the prefix), and make sure that the ODBCINSTINI or ODBCYSINI environment variable specifies the location. For more information, see [Specifying the Locations of the Driver Configuration Files](#) on page 23.

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

```
[ODBC Drivers]
Simba Salesforce ODBC Driver=Installed
[Simba Salesforce ODBC Driver]
Description=Simba Salesforce ODBC Driver
Driver=/Library/simba/salesforceodbc/lib/libsfodbc_sbu.dylib
```

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

```
[ODBC Drivers]
Simba Salesforce ODBC Driver 32-bit=Installed
Simba Salesforce ODBC Driver 64-bit=Installed
[Simba Salesforce ODBC Driver 32-bit]
Description=Simba Salesforce ODBC Driver (32-bit)
Driver=/opt/simba/salesforceodbc/lib/32/libsfodbc_sb32.so
[Simba Salesforce ODBC Driver 64-bit]
Description=Simba Salesforce ODBC Driver (64-bit)
Driver=/opt/simba/salesforceodbc/lib/64/libsfodbc_sb64.so
```

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 41.

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.salesforceodbc.ini` file, which apply to all connections that use the driver.

To enable logging on a non-Windows machine:

1. Open the `simba.salesforceodbc.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.
6	Logs all driver activity.

3. Set the `LogPath` key to the full path to the folder where you want to save log files.
4. 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.

5. 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.

6. Optionally, to prefix the log file name with the user name and process ID associated with the connection, set the `UseLogPrefix` property to 1.
7. Save the `simba.salesforceodbc.ini` configuration file.
8. Restart your ODBC application to make sure that the new settings take effect.

The Simba Salesforce ODBC Driver produces a log file named `Salesforce_driver.log` at the location you specify using the `LogPath` key.

If you set the `UseLogPrefix` property to 1, then each file name is prefixed with `[UserName]_[ProcessID]_`, where `[UserName]` is the user name associated with the connection and `[ProcessID]` is the process ID of the application through which the connection is made.

To disable logging on a non-Windows machine:

1. Open the `simba.salesforceodbc.ini` configuration file in a text editor.
2. Set the `LogLevel` key to 0.
3. Save the `simba.salesforceodbc.ini` configuration file.
4. 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.

If the connection fails, then you might need to provide a security token. For information about how to provide a security token in your DSN, see [Creating a Data Source Name on a Non-Windows Machine](#) on page 25.

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] [UserID] [Password]`
- `iusql [DataSourceName] [UserID] [Password]`

`[DataSourceName]` is the DSN that you are using for the connection.
`[UserID]` and `[Password]` are your credentials for accessing the Salesforce data source.

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

If the connection fails, then you might need to provide a security token. For information about how to provide a security token in your DSN, see [Creating a Data Source Name on a Non-Windows Machine](#) on page 25.

**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 41.

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:

- *[PortNumber]* is the number of the TCP port that the proxy server uses to listen for client connections.
- *[Server]* is the IP address or host name of the proxy server to which you are connecting.
- *[Token]* is the security token that you obtain from Salesforce.com for authorizing access to Salesforce.
- *[YourPassword]* is the password corresponding to your Salesforce user name.
- *[YourUserName]* is the user name for your Salesforce account.

Connecting to Salesforce.com Directly

The following is the format of a DSN-less connection string for a standard connection to Salesforce.com:

```
Driver=Simba Salesforce ODBC Driver;UID=[YourUserName];  
PWD=[YourPassword];
```

For example:

```
Driver=Simba Salesforce ODBC Driver;UID=simba;  
PWD=simba;
```

Some Salesforce connections require you to provide a security token. The following is an example of a DSN-less connection string for a standard connection with a security token:

```
Driver=Simba Salesforce ODBC Driver;UID=simba;  
PWD=simba;SecurityToken=abc123;
```

Note:

To obtain a security token, follow the instructions in the Salesforce documentation located at https://help.salesforce.com/apex/HTViewHelpDoc?id=user_security_token.htm

Connecting to Salesforce.com through a Proxy Server

The following is the format of a DSN-less connection string for connecting to Salesforce.com through a proxy server:

```
Driver=Simba Salesforce ODBC Driver;UID=[YourUserName];  
PWD=[YourPassword];ProxyHost=[Server];ProxyPort=  
[PortNumber];
```

For example:

```
Driver=Simba Salesforce ODBC Driver;UID=simba;  
PWD=simba;ProxyHost=192.168.222.160;ProxyPort=8000;
```

Some Salesforce connections require you to provide a security token. The following is the format of a DSN-less connection string for a proxy server connection with a security token:

```
Driver=Simba Salesforce ODBC Driver;UID=simba;  
PWD=simba;SecurityToken=abc123;
```

```
ProxyHost=192.168.222.160;ProxyPort=8000;
```

 **Note:**

To obtain a security token, follow the instructions in the Salesforce documentation located at https://help.salesforce.com/apex/HTViewHelpDoc?id=user_security_token.htm.

Features

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

- [SQL Connector](#) on page 37
- [Data Types](#) on page 37
- [Write-back](#) on page 39
- [Retrieving Reports](#) on page 40
- [Security and Authentication](#) on page 40

SQL Connector



The SQL Connector feature of the driver allows applications to use normal SQL queries against Salesforce.com, translating standard SQL-92 queries into equivalent Salesforce API calls. This translation allows standard queries that BI tools execute to run against your Salesforce data source.


Data Types

The Simba Salesforce ODBC Driver supports many common data formats, converting between Salesforce data types and SQL data types.

The following table lists the supported data type mappings. Depending on how the driver is configured, some Salesforce data types can be mapped to SQL_VARCHAR or SQL_WVARCHAR, and some data types can be mapped to SQL_NUMERIC or SQL_DOUBLE. For more information, see [Use SQL_NUMERIC for Result Set Columns of Type SQL_DOUBLE](#) on page 55 and [Use SQL_WVARCHAR instead of SQL_VARCHAR](#) on page 56.

Salesforce Type	SQL Type
AnyType	SQL_VARCHAR or SQL_WVARCHAR
Base64	SQL_LONGVARBINARY
Boolean	SQL_BIT
Combobox	SQL_VARCHAR or SQL_WVARCHAR

Salesforce Type	SQL Type
Currency	SQL_NUMERIC or SQL_DOUBLE
DataCategoryGroupReference	SQL_VARCHAR or SQL_WVARCHAR
Date	SQL_TYPE_DATE <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • In CSV reports, Date data is returned as a preformatted string. • In versions of the ODBC API earlier than 3.0, this data type is called SQL_DATE. </div>
DateTime	SQL_TYPE_TIMESTAMP <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • In CSV reports, DateTime data is returned as a preformatted string. • In versions of the ODBC API earlier than 3.0, this data type is called SQL_TIMESTAMP. </div>
Double	SQL_NUMERIC or SQL_DOUBLE
Email	SQL_VARCHAR or SQL_WVARCHAR
Id	SQL_VARCHAR or SQL_WVARCHAR
Int	SQL_INTEGER
JunctionIdListNames	SQL_VARCHAR or SQL_WVARCHAR
MultiPicklist	SQL_VARCHAR or SQL_WVARCHAR
Percent	SQL_NUMERIC or SQL_DOUBLE
Phone	SQL_VARCHAR or SQL_WVARCHAR

Salesforce Type	SQL Type
Picklist	SQL_VARCHAR or SQL_WVARCHAR
Reference	SQL_VARCHAR or SQL_WVARCHAR
String	SQL_VARCHAR or SQL_WVARCHAR
TextArea	SQL_VARCHAR or SQL_WVARCHAR
Time	SQL_TYPE_TIME <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p> Note:</p> <ul style="list-style-type: none"> • In CSV reports, Time data is returned as a preformatted string. • In versions of the ODBC API earlier than 3.0, this data type is called SQL_TIME. </div>
URL	SQL_VARCHAR or SQL_WVARCHAR

 **Note:**

The Byte, Calculated, and MasterRecordId data types are not supported.

Write-back

The Simba Salesforce ODBC Driver supports Data Manipulation Language (DML) statements such as INSERT, UPDATE, and DELETE. Write-back operations use the Salesforce Bulk API for loading and deleting data.

Binary data types are not supported for INSERT, UPDATE, and DELETE statements because the Salesforce Bulk API currently does not support binary data types.

 **Note:**

Data Definition Language (DDL) statements such as CREATE, ALTER, and DROP are not supported by the driver.

Retrieving Reports

The Simba Salesforce ODBC Driver supports Salesforce reports by treating them as stored procedures. When you call the SQLProcedures ODBC function without setting any parameters, the driver returns a list of reports from Salesforce.com.

You can retrieve a report by calling the report name using the same syntax as you would for stored procedures. For example, to retrieve a Salesforce report named "Activity Report", you would execute the following statement:

```
{call "Activity Report"}
```

You can then work with the data in the report as you would with any other Salesforce.com data.

! Important:

Reports that are designed to display in HTML might not display properly when retrieved through the driver.

Security and Authentication

To protect data from unauthorized access, Salesforce requires all connections to be authenticated with user credentials and encrypted using TLS 1.1 or later with one-way authentication.

The Simba Salesforce ODBC Driver automatically applies one-way TLS authentication to all connections, and provides a mechanism that enables you to authenticate your connection using your Salesforce user credentials. For detailed configuration instructions, see [Creating a Data Source Name on Windows](#) on page 9 or [Creating a Data Source Name on a Non-Windows Machine](#) on page 25.

Driver Configuration Options

Driver Configuration Options lists the configuration options available in the Simba Salesforce 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:

- Simba Salesforce Configuration
- Advanced Options
- Logging Options

When using a connection string or configuring a connection from a Linux or macOS machine, 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 Salesforce ODBC Driver, or via the key name when using a connection string or configuring a connection from a Linux/macOS machine:

- [Bulk API Query At This Many Records](#) on page 42
- [Bulk Polling Interval](#) on page 42
- [Disable Join Passdown](#) on page 43
- [Enable Backoff When Checking Status](#) on page 43
- [Enable Bulk API Queries](#) on page 44
- [Enable Connection to Sandbox URL](#) on page 44
- [Enable Primary Key Chunking](#) on page 45
- [Enable Report Metadata Optimization](#) on page 45
- [Log Level](#) on page 46
- [Proxy Host](#) on page 51
- [Proxy Password](#) on page 51
- [Proxy Port](#) on page 52
- [Proxy Username](#) on page 52
- [User](#) on page 57
- [Sandbox URL](#) on page 52
- [Sanitize Catalog Names](#) on page 52
- [Security Token](#) on page 53
- [Strip Catalog Name from Filter Arguments](#) on page 53
- [Trusted Certificates](#) on page 54
- [Use Analytic API for Executing Reports](#) on page 54
- [Use Proxy Server](#) on page 55

- [Log Path](#) on page 47
- [Max File Size](#) on page 47
- [Max Number Files](#) on page 48
- [Maximum Backoff Delay](#) on page 48
- [Minimum Backoff Delay](#) on page 49
- [Parse Method](#) on page 49
- [Password](#) on page 50
- [Primary Key Chunk Size](#) on page 50
- [Primary Key Chunking At This Many Records](#) on page 50
- [Use Salesforce Labels for Columns](#) on page 55
- [Use SQL_NUMERIC for Result Set Columns of Type SQL_DOUBLE](#) on page 55
- [Use SQL_WVARCHAR instead of SQL_VARCHAR](#) on page 56
- [Use System Trust Store](#) on page 56

Bulk API Query At This Many Records

Key Name	Default Value	Required
BulkQueryThreshold	30000	No

Description

If the number of results returned by a query is greater than or equal to this value, and the Enable Bulk API Queries option (the `EnableBulkQuery` property) is enabled, then the driver attempts to use the Bulk API for data retrieval. If data retrieval fails, then the driver falls back to using the REST API to retrieve the data.

Bulk Polling Interval

Key Name	Default Value	Required
BulkPollInterval	1000	No

Description

The time in milliseconds that the driver waits between polls when checking the status of a batch operation in Salesforce. The value must be an integer between 1 and 600,000 (inclusive).

For information about configuring the driver to use an exponential backoff policy instead of initiating polls at a specific time interval, see [Enable Backoff When Checking Status](#) on page 43. If the Enable Backoff When Checking Status (`EnableBulkBackoff`) option is enabled, it takes precedence over the Bulk Polling Interval (`BulkPollInterval`) setting.

Disable Join Passthrough

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

Description

This option specifies whether to join tables during a query passthrough.

The driver issues SOQL queries to Salesforce for data retrieval. In SOQL, a given table can be joined at most once. However, a user can specify a SQL query that joins a table with itself any number of times. This may result in that table being passed down repeatedly every time it is joined, which can cause performance issues with large tables.

- Enabled (1): The driver does not join tables during a query passthrough. Instead, the driver retrieves the entire table that is to be joined, and reuses that table during the query.
- Disabled (0): The driver generates SOQL queries that capture any necessary joins during a query passthrough.. This may result in redundant fetches being executed if the same table is joined repeatedly.

Enable Backoff When Checking Status

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

Description

When this option is enabled (1), the driver uses an exponential backoff policy when polling the status of a batch operation in Salesforce.

You can specify the minimum and maximum time intervals between poll times by setting the following properties:

- [Maximum Backoff Delay](#) on page 48
- [Minimum Backoff Delay](#) on page 49

For information about configuring the driver to initiate polls at a specific time interval instead of using an exponential backoff policy, see [Bulk Polling Interval](#) on page 42. If the Enable Backoff When Checking Status (`EnableBulkBackoff`) option is enabled, it takes precedence over the Bulk Polling Interval (`BulkPollInterval`) setting.

Enable Bulk API Queries

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

Description

When this option is enabled (1), the driver attempts to use the Bulk API to retrieve data. The query must be executable through the Bulk API, and the number of results returned must be equal to or greater than the value set for the Bulk API Query At This Many Records (`BulkQueryThreshold`) option. If data retrieval fails, then the driver falls back to using the REST API to retrieve the data.

Note:

This option is only available when the driver parses queries as SQL statements. For more information see [Parse Method](#) on page 49.

Enable Connection to Sandbox URL

Key Name	Default Value	Required
N/A	Clear (0)	No

Description

When this option is enabled (1), the driver connects to the Salesforce sandbox specified in the Sandbox URL field.

When this option is disabled, the driver does not connect to the sandbox.

Enable Primary Key Chunking

Key Name	Default Value	Required
EnablePKChunking	Selected (1)	No

Description

When this option is enabled (1), the driver attempts to use the Bulk API with primary key chunking enabled when retrieving data. If data retrieval fails, then the driver falls back to using the REST API to retrieve the data.

The driver uses primary key chunking only when all of the following requirements are met:

- The query can be executed with primary key chunking.
- The Enable Bulk API Queries (`EnableBulkQuery`) option must be enabled. See [Enable Bulk API Queries](#) on page 44 for more details.
- The Enable Primary Key Chunking (`EnablePKChunking`) option is enabled.
- The number of results is greater than or equal to the value specified for the Bulk API Query At This Many Records (`BulkQueryThreshold`) option. See [Bulk API Query At This Many Records](#) on page 42 for more details.
- The number of results is greater than or equal to the value specified for the Primary Key Chunking At This Many Records (`PKChunkThreshold`) option. See [Primary Key Chunking At This Many Records](#) on page 50 for more details.

The chunk size used is dependent on the Primary Key Chunk Size (`PKChunkSize`) setting. See [Primary Key Chunk Size](#) on page 50 for more details.

Note:

This option is only available when the driver parses queries as SQL statements. For more information see [Parse Method](#) on page 49.

Enable Report Metadata Optimization

Key Name	Default Value	Required
MetadataLevel	Clear (0 or FULL)	No

Description

When this option is enabled (the key is set to 1 or `LIGHT`), the driver infers metadata based on a small sampling of data rather than all of the data.

! Important:

Enabling this option allows the driver to run faster, but the metadata might be less accurate.

When this option is disabled (the key is set to 0 or `FULL`), the driver infers metadata based on all of the data.

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.salesforceodbc.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.

When logging is enabled, the driver produces a log file named `Salesforce_driver.log` in the location specified in the Log Path (`LogPath`) property.

If you enable the `UseLogPrefix` connection property, the driver prefixes the log file name with the user name associated with the connection and the process ID of the application through which the connection is made. For more information, see [UseLogPrefix](#) on page 61.

Log Path

Key Name	Default Value	Required
<code>LogPath</code>	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.salesforceodbc.ini` file.

Max File Size

Key Name	Default Value	Required
<code>LogFileSize</code>	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.salesforceodbc.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.salesforceodbc.ini` file.

Maximum Backoff Delay

Key Name	Default Value	Required
BulkBackoffMaxDelay	60000	No

Description

The maximum amount of time in milliseconds that the driver waits between polls, when the driver is configured to use an exponential backoff policy to poll the status of a batch operation in Salesforce. This option is applicable only when the Enable Backoff When Checking Status (`EnableBulkBackoff`) option is enabled.

The value must be an integer between 2 and 600,001 (inclusive), and it must be higher than the value set for the Minimum Backoff Delay (`BulkBackoffMinDelay`) option.

Minimum Backoff Delay

Key Name	Default Value	Required
BulkBackoffMinDelay	1000	No

Description

The minimum amount of time in milliseconds that the driver waits between polls, when the driver is configured to use an exponential backoff policy to poll the status of a batch operation in Salesforce. This option is applicable only when the Enable Backoff When Checking Status (`EnableBulkBackoff`) option is enabled.

The value must be an integer between 1 and 600,000 (inclusive), and it must be lower than the value set for the Maximum Backoff Delay (`BulkBackoffMaxDelay`) option.

Parse Method

Key Name	Default Value	Required
ParseMethod	Attempt To Parse Queries As SOQL First, Then SQL (2 or <code>SOQL_FIRST</code>)	No

Description

The query language that the driver uses to parse queries.

Select one of the following settings, or set the key to one of the values in the parentheses:

- Attempt To Parse Queries As SOQL Only (0 or `SOQL_ONLY`)
- Attempt To Parse Queries As SQL Only (1 or `SQL_ONLY`)
- Attempt To Parse Queries As SOQL First, Then SQL (2 or `SOQL_FIRST`)
- Attempt To Parse Queries In SQL First, Then SOQL (3 or `SQL_FIRST`)

Password

Key Name	Default Value	Required
PWD	None	Yes

Description

The password corresponding to the user name that you provided in the Username field (the UID key).

Note:

For security reasons, passwords are not saved in the DSN. When you connect to your data, you will be prompted to type your password again. Providing your password in the DSN allows you to test your connection in the Simba Salesforce ODBC Driver DSN Setup dialog box.

Primary Key Chunk Size

Key Name	Default Value	Required
PKChunkSize	100000	No

Description

The number of results to include in each chunk, when query results are retrieved using primary key chunking. The maximum value is 250000.

Primary Key Chunking At This Many Records

Key Name	Default Value	Required
PKChunkThreshold	100000	No

Description

The number of query results at which the driver starts to use the Bulk API with primary key chunking for data retrieval.

The driver uses primary key chunking only when all of the following requirements are met:

- The query can be executed with primary key chunking.
- The Enable Bulk API Queries (`EnableBulkQuery`) option must be enabled. See [Enable Bulk API Queries](#) on page 44 for more details.
- The Enable Primary Key Chunking (`EnablePKChunking`) option is enabled. See [Enable Primary Key Chunking](#) on page 45 for more details.
- The number of results is greater than or equal to the value specified for the Bulk API Query At This Many Records (`BulkQueryThreshold`) option. See [Bulk API Query At This Many Records](#) on page 42 for more details.
- The number of results is greater than or equal to the value specified for the Primary Key Chunking At This Many Records (`PKChunkThreshold`) option.

If data retrieval fails, then the driver falls back to using the REST API to retrieve the data.

Proxy Host

Key Name	Default Value	Required
<code>ProxyHost</code>	None	Yes, if connecting through a proxy server.

Description

The host name or IP address of a proxy server that you want to connect through.

Proxy Password

Key Name	Default Value	Required
<code>ProxyPassword</code>	None	Yes, if connecting to a proxy server that requires authentication.

Description

The password that you use to access the proxy server.

Proxy Port

Key Name	Default Value	Required
ProxyPort	None	Yes, if connecting through a proxy server.

Description

The number of the port that the proxy server uses to listen for client connections.

Proxy Username

Key Name	Default Value	Required
ProxyUsername	None	Yes, if connecting to a proxy server that requires authentication.

Description

The user name that you use to access the proxy server.

Sandbox URL

Key Name	Default Value	Required
URL	None	No

Description

The URL for connecting to a Salesforce sandbox.

Sanitize Catalog Names

Key Name	Default Value	Required
SanitizeCatalogName	Clear (0)	No

Description

When this option is enabled (1), the driver modifies catalog names by removing all invalid SQL-92 identifier characters and replacing all spaces with underscores.

When this option is disabled (0), the driver does not modify catalog names.

Security Token

Key Name	Default Value	Required
SecurityToken	None	No

Description

Your security token for accessing Salesforce.com. To obtain a security token, follow the instructions in the Salesforce documentation located at https://help.salesforce.com/apex/HTViewHelpDoc?id=user_security_token.htm.

! Important:

Some connections require a security token, while others do not. Only provide a security token if your connection fails without it.

Strip Catalog Name from Filter Arguments

Key Name	Default Value	Required
StripCatalogName	None	No

Description

When this option is enabled (1), the driver removes catalog names from the results of SQLTables and SQLColumns ODBC API function calls.

When this option is disabled (0), the driver does not remove the catalog names.

Note:

Some applications include catalog names in the TableName parameter, and the catalog names might need to be removed.

Trusted Certificates

Key Name	Default Value	Required
CertsPath	The <code>cacerts.pem</code> file in the <code>\lib</code> subfolder within the driver's installation directory. The exact file path varies depending on the version of the driver that is installed. For example, the path for the Windows driver is different from the path for the macOS driver.	No

Description

The full path of the `.pem` file containing trusted CA certificates, for verifying the server.

If this option is not set, then the driver defaults to using the trusted CA certificates `.pem` file installed by the driver.

! Important:

The Simba Salesforce ODBC Driver requires an SSL/TLS connection.

Use Analytic API for Executing Reports

Key Name	Default Value	Required
UseAnalyticAPI	Selected (1)	No

Description

When this option is enabled (1), the driver executes reports using the Analytics API.

When this option is disabled (0), the driver executes reports via URL.

Use Proxy Server

Key Name	Default Value	Required
N/A	Clear (0)	No

Description

This option specifies whether the driver uses a proxy server to connect to the data store.

- Enabled (1): The driver connects to a proxy server based on the information provided in the Proxy Host, Proxy Port, Proxy Username, and Proxy Password fields or the `ProxyHost`, `ProxyPort`, `ProxyUID`, and `ProxyPWD` keys.
- Disabled (0): The driver connects to the main Salesforce.com server.

Use Salesforce Labels for Columns

Key Name	Default Value	Required
UseLabel	Clear (0)	No

Description

When this option is enabled (1), the driver uses the field names and labels from Salesforce as the names and labels in the returned data, respectively.

When this option is disabled (0), the driver uses the field names from Salesforce as both the names and the labels in the returned data.



Note:

Some client applications require the name and label in the returned data to match.

Use SQL_NUMERIC for Result Set Columns of Type SQL_DOUBLE

Key Name	Default Value	Required
UseNumeric	Clear (0)	No

Description

When this option is enabled (1), the driver returns data as SQL_NUMERIC data instead of SQL_DOUBLE data.

When this option is disabled (0), the driver returns data as SQL_DOUBLE data.

Note:

This option applies only to result set columns that the driver would normally return as SQL_DOUBLE columns. It does not convert all columns into SQL_NUMERIC.

Use SQL_WVARCHAR instead of SQL_VARCHAR

Key Name	Default Value	Required
UseWVarChar	Clear (0)	No

Description

This option specifies how data types are mapped to SQL.

- Enabled (1): The driver returns data as SQL_WVARCHAR data instead of SQL_VARCHAR data.
- Disabled (0): The driver returns data as SQL_VARCHAR data.

Note:

This option applies only to result set columns that the driver would normally return as SQL_VARCHAR columns. It does not convert all columns into SQL_WVARCHAR.


Use System Trust Store

Key Name	Default Value	Required
UseSystemTrustStore	Clear (0)	No

Description

This option specifies whether to use a CA certificate from the system trust store, or from a specified PEM file.

- Enabled (1): The driver verifies the connection using a certificate in the system trust store.
- Disabled (0): The driver verifies the connection using a specified PEM file.

 **Note:**

This option is only available on Windows.

User

Key Name	Default Value	Required
UID	None	Yes

Description

The user name for your Salesforce account.

Configuration Options Having Only Key Names

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

- [AutoLogout](#) on page 57
- [BulkBatchSize](#) on page 58
- [Driver](#) on page 58
- [EnableTransactions](#) on page 59
- [Locale](#) on page 59
- [QueryAll](#) on page 60
- [SimulateTransactions](#) on page 60
- [UIDDomain](#) on page 61
- [UseLogPrefix](#) on page 61

AutoLogout

Key Name	Default Value	Required
AutoLogout	1	No

Description

When this option is enabled (1), the Salesforce connection is logged out when the driver closes the connection.

When this option is disabled (0), the Salesforce connection is not logged out when the driver closes the connection.

! Important:

To enable support for multithreading, you must disable this option.

BulkBatchSize

Key Name	Default Value	Required
BulkBatchSize	5000	No

Description

The maximum number of rows contained in a single Bulk API call when executing DML. The maximum value is 10000.

Driver

Key Name	Default Value	Required
Driver	Simba Salesforce 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 Salesforce 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.

EnableTransactions

Key Name	Default Value	Required
EnableTransactions	0	No

Description

When this option is enabled (1), the driver simulates transactions for all connections, ensuring compatibility with applications that require transaction support. Simulated transactions are not executed.

This property applies to all connections that use the driver, so it is configured differently compared to properties that are set on a per-connection basis. You cannot set `EnableTransactions` in connection strings.

On Windows machines, you must set this property in one of the following registry keys:

- For a 32-bit driver installed on a 64-bit machine: `HKEY_LOCAL_MACHINE\SOFTWARE\Simba\Simba Salesforce ODBC Driver\Driver`
- Otherwise: `HKEY_LOCAL_MACHINE\SOFTWAREWow6432Node\Simba\Simba Salesforce ODBC Driver\Driver`

On non-Windows machines, you must set this property in the `simba.salesforceodbc.ini` file instead of the `odbc.ini` file.



Note:

For information about configuring the driver to only simulate transactions for specific connections, see [SimulateTransactions](#) on page 60. If the `SimulateTransactions` key is set, it takes precedence over the `EnableTransactions` setting.

Locale

Key Name	Default Value	Required
Locale	en-US	No

Description

The locale to use for error messages.

PKChunkMaxMem

Key Name	Default Value	Required
PKChunkMaxMem	0	No

Description

The maximum size, in bytes, of a Primary Key Chunk batch.

QueryAll

Key Name	Default Value	Required
QueryAll	0	No

Description

When this option is enabled (1), Salesforce users will be able to conduct searches for deleted records by including the parameter `isDeleted=true`.

When this option is disabled (0), users will not be able to search for deleted records.

SimulateTransactions

Key Name	Default Value	Required
SimulateTransactions	0	No

Description

When this option is enabled (1), the driver simulates transactions for the connection, ensuring compatibility with applications that require transaction support. Simulated transactions are not executed.

This setting only applies to the current connection. For information about configuring the driver to simulate transactions for every connection, see [EnableTransactions](#) on page 59. If the `SimulateTransactions` property is set, it takes precedence over the `EnableTransactions` setting.

UIDDomain

Key Name	Default Value	Required
UIDDomain	None	No

Description

The domain in your Salesforce user name.

For example, if your Salesforce user name is `myuser@myorganization.com`, then you would set the `UID` key to `myuser` and set the `UIDDomain` key to `myorganization.com`.

Use this configuration option if your ODBC application does not allow the at sign (@) to be part of the user name.

UseLogPrefix

Key Name	Default Value	Required
UseLogPrefix	0	No

Description

This option specifies whether the driver includes a prefix in the names of log files so that the files can be distinguished by user and application.

- 1: The driver prefixes log file names with the user name and process ID associated with the connection that is being logged.

For example, if you are connecting as a user named "jdoe" and using the driver in an application with process ID 7836, the generated log file would be named `jdoe_7836_Salesforce_driver.log`.

- 0: The driver does not include the prefix in log file names.

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