

SharePlex® 11.0

Upgrade Guide for Oracle Source



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SharePlex Upgrade Guide for Oracle Source

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Contents

| | |
|--|-----------|
| About this Guide | 5 |
| Revision History | 6 |
| Before you Upgrade | 7 |
| Gather the Required Information | 7 |
| Check interoperability | 7 |
| Who should perform the upgrade | 7 |
| Check for new and deprecated parameters | 7 |
| Upgrade on an Oracle source system | 7 |
| Requirements to support character set conversion | 8 |
| Verify inclusion of one-off builds | 8 |
| Download the SharePlex Installer | 9 |
| Linux and Unix | 9 |
| SharePlex Installer for PostgreSQL | 9 |
| Linux | 9 |
| Where to Get SharePlex Installers | 9 |
| Upgrade on Linux/Unix for Oracle Database | 11 |
| Upgrade on Linux/Unix for Open Target Databases | 16 |
| Verify Partition Schemes | 18 |
| SharePlex Utilities | 19 |
| Database Setup for HANA | 20 |
| Supported databases | 20 |
| Guidelines for use | 20 |
| Required privileges | 20 |
| Run database setup for HANA | 20 |
| Grant privileges to SharePlex | 23 |
| Database Setup for MySQL | 24 |
| Supported databases | 24 |
| Guidelines for use | 24 |
| Required privileges | 24 |

| | |
|--|-----------|
| Run database setup for MySQL | 25 |
| Configure SharePlex to support MySQL database on Azure platform | 27 |
| Database Setup for Oracle | 29 |
| Supported databases | 29 |
| When to run Oracle setup | 29 |
| Supported Oracle connections | 30 |
| Required run privileges | 30 |
| Privileges granted to SharePlex | 31 |
| Requirements | 32 |
| SharePlex schema storage requirements | 32 |
| Run database setup for Oracle | 34 |
| Run database setup for Oracle remote capture | 38 |
| Run database setup for Oracle in silent mode | 41 |
| Database Setup for PostgreSQL as a Target | 42 |
| Supported databases | 42 |
| Fujitsu Enterprise PostgreSQL Prerequisite | 42 |
| Guidelines for use | 42 |
| Required privileges | 43 |
| Run Database Setup for PostgreSQL | 44 |
| Configure SharePlex to support PostgreSQL database on Azure platform | 46 |
| Database Setup for SQL Server | 48 |
| Supported databases | 48 |
| Guidelines for use | 48 |
| Required privileges | 48 |
| Run database setup for SQL server | 49 |
| Configure Remote Posting from a Linux to a SQL Server Database | 50 |
| About us | 51 |
| Contacting Quest | 51 |
| Technical Support Resources | 51 |

About this Guide

This guide contains instructions for upgrading SharePlex environment. It is intended for administrators, consultants, analysts, and any other IT professionals tasked with upgrading SharePlex.

Other SharePlex documentation

For the complete SharePlex documentation set, go to <https://support.quest.com/shareplex/technical-documents>.

Revision History

| Document Version | Date | Change History |
|------------------|--------------------------------------|--|
| 2 | 28 th February 2024 | Updated the licensing related information in the Upgrade on Linux/Unix for Oracle and Upgrade on Linux/Unix for Open Target Databases section. |

1

Before you Upgrade

This section contains important information that you need to know before you select a SharePlex installer and begin the upgrade procedure.

Gather the Required Information

You will need the following information about the installation that you want to upgrade:

- Location of the SharePlex product directory
- Location of the SharePlex variable-data directory (or directories) in this instance of SharePlex.
- Name of the SharePlex administrator group (that contains the SharePlex administrator user).
- The ORACLE_SID and ORACLE_HOME (Oracle) or the database name (Open Target) associated with the installation you are upgrading. To determine this, look in the **default.yaml** file in the **data** sub-directory of the product directory.

Check interoperability

If you are upgrading some SharePlex installations in a configuration, but not others, view the SharePlex Release Notes for interoperability support between versions. Parameter settings may be required.

Who should perform the upgrade

Some steps in the upgrade procedures require the **Administrator** authorization level, which normally is only granted to the person or persons designated as the SharePlex Administrators. An upgrade can only be performed by a person who has this authorization and is familiar with SharePlex.

Check for new and deprecated parameters

- Review the release notes and [Deprecated Parameters](#) section of the [SharePlex Reference Guide](#) to determine if any of the parameters that you are using were deprecated in this release. SharePlex retains backward compatibility of your current parameter settings, including those that are newly deprecated, so that you do not need to stop processes to reconfigure settings. However, you should familiarize yourself with the new parameter or default functionality that replaces a deprecated parameter to determine whether any configuration changes are appropriate.
- Review the [New features in this release](#) and [Enhancements in this release](#) sections of the Release Notes for any new parameters that affect your current configuration. If any upgrade steps are required, they will be noted.

Upgrade on an Oracle source system

These requirements apply to SharePlex when it captures from an Oracle source database.

Requirements to support character set conversion

When replicating to an Open Target target (non-Oracle target), SharePlex supports replication from any Oracle Unicode character set and the US7ASCII character set. SharePlex posts data to Open Target in the Unicode character set, and therefore if the source data is Unicode or US7ASCII, no conversion on the target is required.

However, if the following are true, conversion is required on the target:

- If the character set of the source data is anything other than Oracle Unicode or US7ASCII, you must install an Oracle client on the target to perform the conversion to Unicode for posting to the target.
- If the data must be posted to the target database in any character set other than Unicode, you must install an Oracle client on the target to perform the conversion and use the **target** command to identify the target character set for Post to use.
- If you are replicating LOB data, conversion is required regardless of what the source character set is.

To perform conversion with an Oracle client on Linux:

1. Install an Oracle *Administrator* client on the target system. The client must be the Administrator installation type. The Instant Client and Runtime installation types are not supported.
2. Set ORACLE_HOME to the client installation. Set ORACLE_SID to an alias or a non-existing SID. SharePlex does not use them and a database does not have to be running.
3. Upgrade SharePlex using the Linux/Unix installer for your operating system.
4. Make certain the SP_OPX-NLS_CONVERSION parameter is set to the default of 1.

To apply Unicode and US7ASCII data without conversion:

If the source data is Unicode or US7ASCII and you are not replicating LOB data, no conversion or Oracle client is needed. Set the SP_OPX-NLS_CONVERSION parameter to 0 to disable conversion, and then restart Post if it is running.

Verify inclusion of one-off builds

If you have received one-off builds of SharePlex, confirm that those builds are included as fixes in the new release that you are installing. This applies to Linux/Unix only.

To verify one-offs:

1. Run the **sp-bininfo** utility from the **util** subdirectory of the product directory of your current SharePlex installation.

```
$ cd path_to_SharePlex_proddir/util
```

```
$ ./sp-bininfo
```
2. Compare the CRs of each one-off shown in the **sp-bininfo** output with the CRs in the Resolved Issues section of the Release Notes that are included with the new SharePlex version.
3. If any CRs of your one-offs are not shown in the Resolved Issues, the new version does not include that functionality, and you should not proceed with the upgrade. Contact SharePlex support to obtain the missing fixes.

2

Download the SharePlex Installer

There are different installers for SharePlex based on the type of operating system. This topic helps you understand the differences and the naming conventions used.

Linux and Unix

The SharePlex installer on Linux and Unix is a self-extracting installation file with the extension **.tpm**.

Oracle and Open Target:

There is a separate SharePlex installer build for each supported platform.

SharePlex-release#-build#-platform-chipset.tpm

For Oracle Solaris (Sun), there is a separate SharePlex installer build for each supported operating system version. If the operating system version that you have is not listed, choose the highest number that is *below* your version.

SharePlex-release#-build#-platform-version-chipset.tpm

The installer creates a temporary target directory, within the current directory, for extraction. This temporary target directory is removed upon installation completion. You can extract the files to a file system that is separate from the SharePlex installation location by using the **-t** option when running the **.tpm** file. For additional options, see [Advanced SharePlex installer options](#) on page 1.

SharePlex Installer for PostgreSQL

There are different installers for SharePlex based on the type of operating system. This topic helps you understand the differences and the naming conventions used.

Linux

The SharePlex installer on Linux is a self-extracting installation file with the extension **.tpm**.

PostgreSQL:

There is a separate SharePlex installer build for each supported database and platform.

SharePlex-release#-build#-platform-version-chipset.tpm

The installer creates a temporary target directory, within the current directory, for extraction. This temporary target directory is removed upon installation completion. You can extract the files to a file system that is separate from the SharePlex installation location by using the **-t** option when running the **.tpm** file.

Where to Get SharePlex Installers

Download the SharePlex installation package that matches the operating system you are using.

Additionally, download any SharePlex patches, so that you can install them after you install the base software.

Perform the below steps to download the SharePlex patches:

1. Go to the Quest Software Support page: <http://support.quest.com/>
2. Click **Download Software**.
3. In the search box, type **SharePlex** and press **Go**.
4. Click the arrow in the **Download** column for the version you need. You can also click the file name for access to more information and to download the file(s).
5. Transfer the file to system where you are installing SharePlex.
6. You are ready to begin the installation process. Be sure to thoroughly read the version specific Release Notes *prior* to running the installer.

3

Upgrade on Linux/Unix for Oracle Database

These instructions are for upgrading SharePlex when configured for an Oracle database running on a Linux or Unix system.

IMPORTANT!:

- If you are upgrading some SharePlex installations in a configuration, but not others, view the SharePlex Release Notes for interoperability support between versions.
- Perform the upgrade on all Linux machines that host Oracle targets involved in SharePlex replication.
- See [Before you Upgrade](#) on page 7 for any pre-installation items that apply to your SharePlex installation.
- You can upgrade SharePlex in the product directory that is currently being used, or you can upgrade to a new product directory. Instructions are supplied for both scenarios.

To upgrade SharePlex in the current product directory:

1. Log in to the system as the SharePlex installation owner.
2. (If using **copy/append**) In **sp_ctrl** on the target systems, stop **sp_sync_launcher** before applying the SharePlex upgrade.

```
sp_ctrl> stop launcher
```

3. (If applicable) In **sp_ctrl** on the source system, use the **set param** command to stop DDL replication by setting the **SP_OCT_REPLICATE_ALL_DDL** parameter to 0.

```
sp_ctrl> set param SP_OCT_REPLICATE_ALL_DDL 0
```

4. Shut down the SharePlex instance that you are upgrading.

```
sp_ctrl> shutdown
```

5. Verify that all SharePlex processes in that SharePlex instance are stopped, and stop any that are still running.

```
# ps -ef | grep sp_
```

```
sp_ctl> stop process
```

6. (Optional) If you need to upgrade the Oracle database, do so now.
7. Tar up the existing SharePlex product directory and move the tar file to different location as a backup.

8. Run the SharePlex installation program.
 - a. Log in to the system as the user that will be named as the SharePlex Administrator during this installation. This user will own the installation files and binaries.
 - b. If **sp_cop** is running, shut it down.
`sp_ctrl> shutdown`
 - c. Copy the installation file to a temporary directory where you have write permissions.
 - d. Grant executable permissions to the file.
`#chmod 555installation_file`
 - e. Run the .tpm file. If installing SharePlex in a cluster, run the installer from the primary node (the one to which the shared disk is mounted)
`# .installation_file`
 - f. Verify that the information shown on the first screen corresponds to the Oracle version and platform you are upgrading.
9. Verify that the information shown on the first prompt corresponds to the Oracle version and platform that you are upgrading.
10. Follow the prompts to supply the following information:

| Prompt | Input |
|--|--|
| Installation type | Select the current product directory of the SharePlex installation you are upgrading. |
| SharePlex Admin group | Select the DBA-privileged group to which the SharePlex Administrator user belongs. |
| Proceed with upgrade? | Press Enter to confirm the SharePlex environment and proceed with the upgrade. |
| License key (do you want to upgrade?) | Press Enter to accept the default of N (no) to keep the existing license, or enter Y to specify a new license key if required for this upgrade. |
| Please specify platform for license key (select a number): | <p>Please select the appropriate number from the following list of platforms to install the license key:</p> <ul style="list-style-type: none"> 1) Oracle 2) File 3) JMS 4) Kafka 5) SQL Server 6) Postgres 7) MySQL 8) Snowflake 9) Event Hubs |

| Prompt | Input |
|-------------|--|
| | 10) All Platforms |
| | <div style="border: 1px solid black; padding: 5px;"> <p>NOTE: To install a trial version of SharePlex, users need to select the All Platforms option.</p> </div> |
| License key | (If Y was selected) Enter the new license key that you received from Quest. |

NOTE: The installer will upgrade the default variable-data directory that is listed in the **default.yaml** file, which is located in the **data** sub-directory of the product directory.

11. Run the **ora_setup** Database Setup utility for each variable-data directory in the installation of SharePlex that you upgraded. See [Database Setup for Oracle](#) on page 29.
12. Start SharePlex using the following syntax with options as appropriate.

```
$ cd /productdir/bin
$ ./sp_cop [-uidentifier] &
```

where:

- **-uidentifier** starts **sp_cop** with the unique identifier for the instance you are upgrading, and is only needed if there are multiple instances of **sp_cop** running on the system.

13. (If applicable) In **sp_ctrl** on the source system, set the the **SP_OCT_REPLICATE_ALL_DDL** parameter to 1.

```
sp_ctrl> set param SP_OCT_REPLICATE_ALL_DDL 1
```

To upgrade SharePlex to a new product directory:

1. Shut down **sp_cop**.

```
sp_ctrl> shutdown
```

2. (Optional) If you need to upgrade the Oracle database, do so now.
3. Tar up the existing SharePlex product directory and move the tar file to different location as a backup.

4. Run the SharePlex installer and, when prompted to specify the product directory location, select **New Installation**.

You are prompted for the following:

| Prompt | Input |
|-----------------------------------|--|
| Installation type | Select < New Installation >. |
| Product directory location (path) | <p>Enter the path to the SharePlex installation directory.</p> <p>If the specified directory does not exist, the installer creates it. If the directory exists, it must be empty. The installer quits if the directory contains prior SharePlex installations or other files.</p> <p>In a cluster, install on the shared disk. For more information, see Installation and setup for Oracle cluster in the <i>Installation and Setup Guide for an Oracle Source</i> document.</p> |
| Variable data directory location | <p>Specify an empty directory. The installer creates the specified directory if it does not exist. IMPORTANT! Do not install this directory into the SharePlex product directory.</p> <p>In a cluster, install the variable-data directory on the shared disk. For more information, see Installation and setup for Oracle cluster in the <i>Installation and Setup Guide for an Oracle Source</i> document.</p> |
| SharePlex Admin group | <p>Enter the DBA-privileged group to which the SharePlex Administrator user belongs, which will own the SharePlex binaries. If the default group of the SharePlex Administrator is oinstall, select any option, and make certain this user is listed under oinstall in the etc/group file. For more information, see Installer checklist in the <i>Installation and Setup Guide for an Oracle Source</i> document.</p> |
| TCP/IP port for SharePlex | <p>Enter the port number to use for SharePlex TCP/IP communications.</p> |
| License key (do you have?) | <p>Press Enter to accept the default of Y (yes). If you do not have a license, enter no.</p> <p>For licensing on a cluster, see Installation and setup for Oracle cluster in the <i>Installation and Setup Guide for an Oracle Source</i> document.</p> <p>At any point before you run SharePlex you can add the license key with the splex_add_key utility. For more</p> |

| Prompt | Input |
|--|--|
| | information, see SharePlex license utilities in the Installation and Setup Guide for an Oracle Source document. |
| Please specify platform for license key (select a number): | <p>Please select the appropriate number from the following list of platforms to install the license key:</p> <ul style="list-style-type: none"> 1) Oracle 2) File 3) JMS 4) Kafka 5) SQL Server 6) Postgres 7) MySQL 8) Snowflake 9) Event Hubs 10) All Platforms <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: To install a trial version of SharePlex, users need to select the All Platforms option.</p> </div> |
| License key | Enter the license key you received from Quest. |

5. Export the `SP_SYS_VARDIR` environment variable to the *existing* variable-data directory (*not* the temporary one) that you want to upgrade.
6. Run the `ora_setup` Database Setup utility using the existing SharePlex Oracle database user. See [Database Setup for Oracle](#) on page 29.
7. Start `sp_cop`.
`$ /productdir/bin/sp_cop [-uidentifier] [-s] &`

4

Upgrade on Linux/Unix for Open Target Databases

These instructions are for upgrading SharePlex when configured for an Open Target database running on a Linux or Unix system.

IMPORTANT!

- If you are upgrading some SharePlex installations in a configuration, but not others, view the SharePlex Release Notes for interoperability support between versions.
- Perform the upgrade on all Linux machines that host Open Target targets involved in SharePlex replication.
- See [Before you Upgrade](#) on page 7 for any pre-installation items that apply to your SharePlex installation.

To run the upgrade:

1. Log in to the system as the user that will be named as the SharePlex Administrator during this installation. This user will own the installation files and binaries.
2. (Reinstallations) If **sp_cop** is running, shut it down.
3. Copy the installation file to a temporary directory where you have write permissions.
4. Grant executable permissions to the file.

```
# chmod 555 installation_file
```
5. Run the .tpm file. If installing SharePlex in a cluster, run the installer from the primary node (the one to which the shared disk is mounted)

```
# .installation_file
```

6. You are prompted for the following:

| Prompt for: | Input |
|--|--|
| Installation type | Select < New Installation >. |
| Product directory location (path) | Enter the path to the existing SharePlex installation directory. |
| Variable data directory location | Enter the name of the existing variable-data directory. |
| SharePlex Admin group | Enter the DBA-privileged group to which the SharePlex Administrator user belongs, which owns the SharePlex binaries. |
| TCP/IP port for SharePlex | Enter the port number of the SharePlex instance you are upgrading. |
| License key (do you want to upgrade?) | Press Enter to accept the default of N (no) to keep the existing license, or enter Y to specify a new license key if required for this upgrade. |
| Please specify platform for license key (select a number): | <p>Please select the appropriate number from the following list of platforms to install the license key:</p> <ul style="list-style-type: none"> 1) Oracle 2) File 3) JMS 4) Kafka 5) SQL Server 6) Postgres 7) MySQL 8) Snowflake 9) Event Hubs 10) All Platforms <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: To install a trial version of SharePlex, users need to select the All Platforms option.</p> </div> |
| License key | (If Y was selected) Enter the new license key that you received from Quest. |

The installer displays the location of the install log file and then quits.

7. Run the appropriate Database Setup utility for your database to upgrade the SharePlex database account. See [SharePlex Utilities](#) on page 19.
8. Repeat all of the installation procedures for all Unix and Linux machines that host an Open Target database.

5

Verify Partition Schemes

If you are upgrading from a SharePlex version earlier than 9.0, the method of creating and storing partition schemes and row partitions for horizontal partitioning has changed. This information no longer is stored in the database.

When you run database setup during an upgrade, it converts the data from the SHAREPLEX_PARTITION table to the new internal storage format. After the conversion, you can view the partitions with the **view partitions** command in **sp_ctrl** to ensure that the partitions converted properly.

NOTE: For more information about the **view partitions** command, see the [SharePlex Reference Guide](#).

To view row partitions:

1. Run `sp_ctrl` on the source system.
2. Issue the following command with either option, depending on whether you want to view all partitions or just those for a particular partition scheme.

```
sp_ctrl> view partitions for {scheme_name | all}
```

The following is an example of converted partition schemes. Note that the conversion program populates the **Name** field with the name of the queue from the **Route** column.

| Scheme | Name | Route | Hash | Condition |
|---------|------------|---------------------------|------|--------------|
| HASH4 | hash | sys02:hash #@o.ora112 | 4 | ROWID |
| TEST_CT | highvalues | sys02:highvalues@o.ora112 | | sales>=10000 |
| TEST_CT | lowvalues | sys02:lowvalues@o.ora112 | | sales<10000 |

6

SharePlex Utilities

Contents

- Database Setup for HANA
- Database Setup for MySQL
- Database Setup for Oracle
- Database Setup for PostgreSQL as a Target
- Database Setup for SQL Server

Database Setup for HANA

Overview

Run the Database Setup utility for HANA (**hana_setup**) on a target HANA system to establish a user account, schema, and tables for use by SharePlex.

Supported databases

HANA on supported platforms

Guidelines for use

- Run the setup utility on all target HANA instances in the SharePlex replication configuration.
- Within a server cluster, run the setup utility on the node that has the mount point to the shared disk that contains the SharePlex variable-data directory.
- For consolidated replication, run the setup utility for each variable-data directory.
- The only supported connection method to HANA is by connect string. Connection through a DSN is not supported.
- Make certain that you assign the required permissions that are shown in this setup process.

Required privileges

The setup utility must be run as a HANA Administrator in order to grant SharePlex the required privileges to operate on the database and to create the SharePlex database account.

Run database setup for HANA

1. Shut down any running SharePlex processes and **sp_cop** on the target system.
2. Run the **hana_setup** program from the **bin** subdirectory of the SharePlex product directory.

IMPORTANT! If you installed the SharePlex instance on any port other than the default of 2100, use the **-p** option to specify the port number. For example, in the following command the port number is 9400.
\$ /users/splex/bin> hana_setup -p9400

Table 1: Setup Prompts and Responses

| Prompt | Response |
|---------------------------------------|--|
| Enter the HANA connection string [] : | Enter a connection string that connects to the HANA database system. The required components of a connection string for SharePlex to connect to HANA are: <ul style="list-style-type: none">• SERVERNODE: The name of the target HANA server, then a colon, then the HANA port number.• DRIVER: The path to the HANA ODBC driver. |

| Prompt | Response |
|---|---|
| | <ul style="list-style-type: none"> CHAR_AS_UTF8: This must be passed as CHAR_AS_UTF8=1. <p>Example:</p> <p>SERVERNODE=server1.dept.abc.corp:30015;DRIVER=/usr/sap/hdbclient/libodbcHDB.so;CHAR_AS_UTF8=1</p> <p>You do not have to supply a user, password, and default database, because the setup utility prompts for those.</p> |
| Enter the HANA Administrator name : | Enter the name of the HANA Administrator. This user will perform the work on the SharePlex account. |
| Enter the password for the Administrator account : | Enter the password of the Administrator. |
| Enter the name of the database : | Enter the name of the database that you want to contain the tables and other objects for use by SharePlex. You can enter the name of a new or existing database. |
| Database name <i>database</i> does not exist. Would you like to create it? [y] : | If this prompt is displayed, the specified database does not exist. Press Enter to have the setup utility create it for you. |
| Would you like to create a new SharePlex user [y]: | Press Enter to accept the default to create a new SharePlex database user account and schema of the same name in the specified database, or enter n to use an existing SharePlex account. |
| Enter the name of the new SharePlex user: Enter the name of the existing SharePlex user: | One of these prompts is displayed depending on whether you elected to create a new user or use an existing user. Enter the name of the SharePlex user. |

| Prompt | Response |
|--|--|
| Enter the password of the SharePlex user : | Enter the password of the SharePlex user account. |
| Re-enter the password for the SharePlex user : | This prompt is only shown if you created a new user. Enter the SharePlex password again. |

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for HANA database configuration
SharePlex User name: splx
Database name: ndb5
Target specification in SharePlex configuration: r.ndb5
```

Grant privileges to SharePlex

Before you start SharePlex replication to a HANA target, grant the following privileges to the SharePlex database user in that target (where *SP_USER* is the name of the SharePlex database user):

- GRANT USER ADMIN TO *sp_user*;
- GRANT TABLE ADMIN TO *sp_user*;
- GRANT CATALOG READ TO *sp_user*;
- GRANT DATA ADMIN TO *sp_user* WITH ADMIN OPTION;
- GRANT ROLE ADMIN TO *sp_user* WITH ADMIN OPTION;

Additionally, log in as the owner of each schema that contains objects that you want to replicate, then make the following grants on the schema:

- GRANT CREATE ANY ON SCHEMA *schema_name* TO *sp_user*;
- GRANT DEBUG ON SCHEMA *schema_name* TO *sp_user*;
- GRANT DELETE, DROP, EXECUTE, INDEX, INSERT, SELECT, UPDATE ON SCHEMA *schema_name* TO *sp_user*;

Database Setup for MySQL

Overview

Run the Database Setup utility for MySQL (**mysql_setup**) on a MySQL system to establish SharePlex as a MySQL database user.

This utility creates the following:

- A SharePlex user account with full DBA privileges
- Tables and indexes for use by SharePlex and owned by the SharePlex user in a database of your choosing
- A default database connection.

Supported databases

MySQL on Linux. For supported Linux platforms and versions, see the SharePlex Release Notes.

Guidelines for use

- Run the setup utility on all MySQL instances in the SharePlex replication configuration.
- Within a cluster, run the setup utility on the node to which the shared disk that contains the SharePlex variable-data directory is mounted.
- For consolidated replication, run the setup utility for each variable-data directory.

Required privileges

Review the following requirements to ensure that the setup succeeds:

- The setup utility must be run as a MySQL Administrator that retains all of that user's default privileges. Both local and cloud MySQL Administrators should have the required privileges by default. The Administrator user is able to grant SharePlex the required privileges to operate on the database and to create the SharePlex database account and objects.
- (Cloud installations) Common restrictions on privileges in cloud-hosted database services make it difficult for the setup utility to succeed in every possible type of scenario. To ensure that the database setup succeeds, *only* use the setup utility for the following purposes: To do a *first-time* database setup with a *new* SharePlex user, or, to *modify* an existing SharePlex user that either owns the database or has access to it.

Run database setup for MySQL

Perform the following steps to to run database setup for MySQL:

1. Shut down any running SharePlex processes and **sp_cop** on the MySQL system.
2. Run the **mysql_setup** program from the **bin** subdirectory of the SharePlex product directory.

IMPORTANT! If you installed the SharePlex instance on any port other than the default of 2100, use the **-p** option to specify the port number. For example, in the following command the port number is 9400.

```
C:\users\splex\bin> mysql_setup -p9400
```

Table 2: Setup prompts and responses

| Prompt | Response |
|--|---|
| Enter the MySQL connection string [] : : | Enter a connection string that connects to the MySQL database. Do not use a DSN. If you are replicating data larger than 500 MB to MySQL Aurora on Amazon RDS, include the MySQL parameter max_allowed_packet in the connection string and set its value to the maximum size of the data. See the example. Example connection string DRIVER=/usr/lib64/libmyodbc5.so;socket=/var/lib/mysql/mysql.sock;character-set-server=utf8;collation-server=utf8_general_ci;max_allowed_packet=2G;wait_timeout= 6000;Server=servername.amazonaws.com |
| Enter the MySQL Administrator name : : | Enter the name of the MySQL Administrator. This user will perform the setup work on the SharePlex account and schema. |
| Enter the password for the Administrator account : : | Enter the password of the Administrator. |
| Enter the replication target database name : : | Enter the name of the MySQL database where you want to install the SharePlex objects. |
| Database name database does not exist. Would you like to create it? [y] : : | If this prompt is displayed, the specified database does not exist. Press Enter to have the setup utility create it for you. |
| Would you like to create a new SharePlex user [y]: : | Press Enter to accept the default to create a new SharePlex database user account, or enter n to use an existing account as the SharePlex database user. |
| Enter the name of the new SharePlex user: : | One of these prompts is displayed depending on whether you elected to create a new user or use an existing user. Enter the name of the SharePlex user. |

| Prompt | Response |
|--|---|
| Enter the name of the existing SharePlex user: | |
| Enter the password for the SharePlex user : | Enter the password of the SharePlex user account. |
| Re-enter the password for the SharePlex user : | Enter the SharePlex password again. |

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for MySQL database configuration
SharePlex User name: mysql29
Database name: mysql29
Target specification in SharePlex configuration: r.mysql29
```

Configure SharePlex to support MySQL database on Azure platform

You can configure SharePlex to support the MySQL database on the Azure platform using the below steps:

1. Add the DSN entry along with Socket path (SOCKET=) in the Odbc.ini file at /etc/odbc.ini and the .../var/odbc directory.
2. Copy the /etc/odbcinst.ini file to the .../var/odbc directory.
3. Run the MySQL setup utility.

This process creates the SharePlex tables, login and user accounts needed to run SharePlex replication.

Table 3: Setup Prompts and Responses

| Prompt | Response |
|--|---|
| Enter the MySQL DSN name or connection string [] : | Enter the MySQL DSN name or a connection string that connects to the MySQL database system. Example: pslazpgdb02 |
| Is DB hosted over Azure ? : | Y |
| Enter the Database hostname : | Enter the Azure database host name. NOTE: MySQL Administrator name should be in the <username> format (Do not mention the hostname) Example: pslazpgdb02.mysql.database.azure.com If a user already exists for SharePlex then it should be entered in the <username@hostname> format. If a new user needs to be created for SharePlex then is should be entered in the <username> format. |
| Enter the MySQL Administrator name : | Enter the name of the MySQL Administrator. This user will perform the setup work on the SharePlex account and schema. Example: mysql |
| Enter the password for the Administrator account: | Enter the password of the Administrator. NOTE: User 'mysql@pslazpgdb02.mysql.database.azure.com' got the superuser role. |
| Enter the replication target database name : | Enter the target database name on which replication needs to be performed. |

| Prompt | Response |
|--|--|
| | Example: sp_mk |
| Would you like to create a new SharePlex user? | N (If you want to create a user, enter "y") |
| Enter the name of the existing SharePlex user: | Enter the name of the SharePlex user. |
| Enter the password of the SharePlex user : | Enter the password of the SharePlex user account. |
| Re-enter the password for the SharePlex user : | This prompt is only shown if you created a new user. Enter the SharePlex password again. |

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for MySQL database configuration
SharePlex User name: mysql@pslazpgdb02.mysql.database.azure.com
Database name: sp_mk
The data source identifier in the SharePlex configuration is 'r.sp_mk' -
```

Database Setup for Oracle

Overview

Use the Database Setup utility for Oracle (**ora_setup**) to establish SharePlex as an Oracle user and create the required SharePlex database objects.

This setup utility creates the following:

- A SharePlex account
- Tables and other objects for use by SharePlex and owned by the SharePlex account
- Default connection for the SharePlex user

It is recommended that you review all of the content in this topic before running the setup utility.

Supported databases

Oracle source or target on supported platforms

When to run Oracle setup

Whether or not to run this utility at the time of SharePlex installation depends on whether the database is a source, intermediary, or target database, and on how you intend to synchronize the data. To view the initial synchronization procedures, see the [SharePlex Administration Guide](#).

| System Type | When to run Oracle Setup |
|---------------------|--|
| Source system | During installation of SharePlex |
| Intermediary system | An intermediary system is used in a cascading configuration, where SharePlex replicates data to a remote system (or systems) and then sends that data from the intermediary system to the final target. If you intend to configure SharePlex to post data to a database on an intermediary system, and you intend to use a hot backup to establish the data on that system and the target, do not run the Database Setup utility on the intermediary or target systems. You will run it when you perform the initial synchronization procedure. |
| Target system | Depends on the method that you will use to synchronize the source and target data when you are ready to activate replication: <ul style="list-style-type: none">◦ If you intend to use transportable tablespaces or a cold copy (such as export/import, store/restore from tape, FTP), run the Database Setup utility during SharePlex installation.◦ If you intend to use a hot backup to establish the target data, <i>do not</i> run the Database Setup utility. You will run it when you perform the initial synchronization procedure. |

NOTE: If you run the Database Setup utility before the backup and recovery, the setup gets overwritten, and you will need to re-run it again after the backup and recovery.

Supported Oracle connections

The setup utility can configure any of the following connections for the SharePlex user to use when connecting to the database.

| Database type | Connection |
|------------------------------|---|
| Database with or without ASM | Bequeath |
| Database with or without ASM | TNS alias (A TNS login is specified for both the database and the ASM instance.) |
| PDB with ASM | TNS alias for the PDB and either TNS or bequeath for the ASM instance. |
| Amazon RDS | TNS alias |

Required run privileges

The user who runs the Database Setup utility must have the following privileges:

Amazon RDS source or target

The user who runs the setup utility must be the primary user that was created when the Oracle RDS instance was created. You are prompted for this user during the setup.

Non-multitenant (standard) database:

The user who runs the setup utility must have DBA privileges.

Multitenant database:

The user who runs the setup utility should have SYSDBA privileges (recommended), but at minimum the user should be a DBA user with privileges for **sys.users\$** and **sys.enc\$**.

The minimum following grants are required for the SharePlex user:

```
create user c##sp_admin identified by sp_admin;
grant dba to c##sp_admin container=ALL;
grant select on sys.user$ to c##sp_admin with grant option container=ALL;
```

Privileges granted to SharePlex

The Database Setup utility grants to the SharePlex database user the following privileges.

| Privilege granted | Description |
|------------------------|--|
| DBA role | The Database Setup utility grants DBA role and unlimited resource privileges, tablespace privileges, and read privileges to the redo logs. |
| Default Oracle profile | By default this profile has the unlimited resource privileges originally assigned by Oracle. |
| Grants | <p>The following grants are issued to SharePlex:</p> <ul style="list-style-type: none">To access the data dictionary (outside the DBA roles) if O7_DICTIONARY_ACCESSIBILITY is set to FALSE: grant select any dictionary toSharePlexUser;To replicate DDL: grant select any table toSharePlexUserwith admin option; grant create any view toSharePlexUserwith admin option; |

Requirements

- Install the database client on the system where you are running Oracle Setup. Consult the Oracle documentation for the appropriate client version to use with the database.
- Run the Database Setup utility for all source and target Oracle instances in the SharePlex replication configuration.
- For a consolidated replication topography, or other topology with multiple variable-data directories, run the Database Setup utility for each variable-data directory.
- SharePlex supports local BEQUEATH connections or remote connections using a TNS alias. Be prepared to supply Oracle Setup the needed connection values for whichever connection you want to use. If using TNS, the **tnsnames.ora** file must be configured prior to running setup.
- If the Oracle database is a multitenant container database, run the Database Setup utility for each pluggable database involved in a replication scenario. A SharePlex user and schema objects must exist in each PDB.
- If you run the Database Setup utility when there is an active configuration, the DDL that the setup performs to install or update the SharePlex internal tables will be replicated to the target. To work around this issue, set the **SP_OCT_REPLICATE_ALL_DDL** parameter to **0** before running the utility, then return the parameter to its previous setting after the setup is complete. This parameter takes effect immediately.

SharePlex schema storage requirements

The Database Setup utility for Oracle installs some database objects for use by SharePlex. The storage requirements for these objects should be satisfied before running Oracle Setup. See the following table.

| Storage | Description |
|------------------------------|--|
| SharePlex objects tablespace | <p>The Database Setup utility installs some tables into a tablespace of your choosing. All but the SHAREPLEX_LOBMAP table use the default storage settings of the tablespace.</p> <p>The SHAREPLEX_LOBMAP table contains entries for LOBs stored out-of-row. It is created with a 1 MB INITIAL extent, 1 MB NEXT extent, and PCTINCREASE of 10. The MAXEXTENTS is 120, allowing the table to grow to 120 MB.</p> <p>Preferred action: If you enable supplemental logging for primary and unique keys, you can set the SP_OCT_ENABLE_LOBMAP parameter to 0, and nothing will be stored in the SHAREPLEX_LOBMAP table. In this case, you do not have to consider its size growth. It is recommended that you enable supplemental logging for primary and unique keys to maximize the performance of the Read process.</p> <p>Alternate action: The default storage usually is sufficient for SHAREPLEX_LOBMAP, permitting more than 4 million LOB entries. If the Oracle tables to be replicated have numerous LOB columns that are inserted or updated frequently, consider increasing the size the SharePlex tablespace accordingly. Take into account that this table shares the tablespace with other SharePlex tables.</p> <p>If the database uses the cost-based optimizer (CBO) and the tables that SharePlex processes include numerous LOBs, incorporate the SHAREPLEX_LOBMAP table into the analysis schedule.</p> |

NOTE: A new installation of SharePlex does not change storage parameters from a previous

| Storage | Description |
|--------------------------------|---|
| SharePlex temporary tablespace | <div data-bbox="365 262 1394 324" style="border: 1px solid black; padding: 2px;">installation.</div> <p>The Database Setup utility prompts for a temporary tablespace for SharePlex to use for sorts and other operations, including sorts performed by the compare commands. The default temporary tablespace is the one where the SharePlex objects are installed. If you plan to use the compare commands to compare large tables, especially those without a primary or unique key, specify a dedicated temporary tablespace for SharePlex.</p> |
| SharePlex index tablespace | <p>The Database Setup utility prompts for a tablespace to store the indexes for the SharePlex tables. The default index tablespace is the one where the SharePlex objects are installed. To minimize I/O contention, specify a different index tablespace from the one where the tables are installed.</p> <div data-bbox="365 654 1394 775" style="border: 1px solid black; padding: 2px;"> <p>NOTE: If indexes from a previous version of SharePlex are installed in the SharePlex objects tablespace, you can move them to a different tablespace and then specify that tablespace when you run the setup utility.</p> </div> |

Run database setup for Oracle

IMPORTANT! The Oracle instance must be open before this procedure is performed.

Perform the following steps to run database setup for Oracle:

1. (Unix and Linux only) If you are using multiple variable-data directories, export the environment variable that points to the variable-data directory for the SharePlex instance for which you are running Database Setup.

ksh shell:

```
export SP_SYS_VARDIR=/full_path_of_variable-data_directory
```

csh shell:

```
setenv SP_SYS_VARDIR=/full_path_of_variable-data_directory
```

2. Shut down any SharePlex processes that are running, including **sp_cop**.
3. Run the Database Setup program from the command prompt of the operating system, using the full path from the SharePlex **bin** subdirectory.
4. Specify whether the system is a source system, a target system, or both a source and target system in the SharePlex configuration.

NOTE: This prompt only appears the first time that you run setup for this database.

5. For connection type, select **Oracle**.
6. Refer to the following table for the prompts and responses to configure SharePlex correctly for the desired connection type.

Table 4: Setup prompts and response

| Prompt | Response |
|---|---|
| Will SharePlex install be using a BEQUEATH connection? (Entering 'n' implies a SQL*net connection): | Press Y to use a local BEQUEATH connection, or press N to use a TNS alias connection. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: Press N to use a TNS alias if:</p> <ul style="list-style-type: none"> • the database is a multitenant database • SharePlex is capturing from, or posting to, a remote database, such as one on Amazon RDS. • the database is in a cluster (such as Oracle RAC) </div> |
| Are you configuring SharePlex for an AWS RDS database? | Press N if you are not configuring SharePlex for an Oracle database on RDS. Press Y if you are configuring SharePlex for an |

| Prompt | Response |
|---|---|
| | Amazon AWS RDS database. |
| <p>One of the following prompts is shown:</p> <ul style="list-style-type: none"> If you selected BEQUEATH= Y: Enter the Oracle SID for which SharePlex should be installed: If you selected BEQUEATH = N: Enter the TNS alias for which SharePlex should be installed: | <p>Non-multitenant database: Accept the default or type the correct SID or TNS alias.</p> <p>On RAC, the TNS alias must be a global alias.</p> <p>Multitenant database: Type the TNS alias of the PDB.</p> <p>Amazon RDS: Type the TNS alias of the RDS database.</p> |
| <p>One of the following prompts is shown:</p> <ul style="list-style-type: none"> If the database is not on RDS: Enter a DBA user for <i>SID</i>: If the database is on RDS: In order to create the SharePlex tables and user account, we must connect to the RDS database using the RDS primary user. | <p>Non-multitenant database: Type the name of a database user that has DBA privileges.</p> <p>Multitenant database: Type the name of a common user who has the required privileges to install the account and objects.</p> <p>Amazon RDS database: Type the name of the RDS primary user.</p> |
| <p>One of the following prompts is shown:</p> <ul style="list-style-type: none"> If the database is not on RDS: Enter password for the DBA account, which will not echo: If the database is on RDS: Enter the password for the RDS primary user, which will not echo. | <p>Non-multitenant database: Type the password of the DBA user.</p> <p>Multitenant database: Type the password of the common user. Omit the @ and the rest of the connect string. SharePlex constructs the connect string in the proper format.</p> <p>Amazon RDS database: Type the password of the RDS primary user.</p> |
| <p>Current SharePlex user is <i>user</i>. Would you like to create a new SharePlex user?</p> | <p>Press N to update an existing SharePlex account or Y to create a new SharePlex account. Type the credentials when prompted.</p> <p>You are allowed five attempts to type a valid password for an existing SharePlex user. Passwords are obfuscated.</p> |

| Prompt | Response |
|--|---|
| Do you want to enable replication of tables with TDE? | <div style="border: 1px solid black; padding: 5px;"> <p>IMPORTANT! If there is an active configuration and you changed the schema, copy the objects from the old schema to the new one to preserve the replication environment.</p> </div> <p>Press N since TDE is not supported for RDS.</p> |
| Enter the default tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Enter the temporary tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Enter the index tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Will the current setup for sid: <i>SID</i> be used as a source (including cases as source for failover or primary-primary setups)? | <p>Press Y if this is a source system or press N if this is a target system.</p> <div style="border: 1px solid black; padding: 5px;"> <p>IMPORTANT: All systems in a primary-primary configuration (peer-to-peer) and in a high-availability configuration are considered to be source systems due to the bidirectional nature of the replication.</p> </div> |
| <div style="border: 1px solid black; padding: 5px;"> <p>NOTES:</p> <ul style="list-style-type: none"> • The following prompts are only shown if the database is a source on ASM. • If this is an Oracle target, the setup is now complete. </div> | |
| ASM detected. Do you wish to connect to ASM using BEQUEATH connection? | <p>Press Y for SharePlex to use a BEQUEATH connection to connect to the ASM instance, or press N to use a TNS alias.</p> <div style="border: 1px solid black; padding: 5px;"> <p>IMPORTANT! If the database uses ASM <i>and</i> the database TNS alias is configured with a SCAN IP, then you must specify connection through an ASM TNS alias in order for SharePlex to connect to the ASM instance.</p> </div> |
| <p>The following prompt is displayed if you did not select a BEQUEATH connection:</p> <p>Do you wish to keep connecting using the same user/password?</p> | <p>Press Y to use the same user and password as the login user, or press N to be prompted for a different user and password.</p> <p>Normally the user running SharePlex must be a</p> |

Prompt**Response**

member of the OSASM group. This does not apply if SP_OCT_OLOG_USE_OCI is set to the non-default value of 1.

Also if you are using a BEQUEATH connection, the user running SharePlex must be a member of the OSDBA group.

NOTE: If you selected to use a BEQUEATH connection to connect to ASM, the database setup is complete. Continue to [Database Setup for Oracle](#).

If you selected **N**, you need to supply a TNS alias, and the prompts continue.

Enter the ASM tns alias to be used by SharePlex:

Type the name of the TNS alias.

Enter an ASM admin (has both sysdba and sysasm privilege) username for *alias*:

Type the name of a user with sysasm and sysdba privileges to the ASM instance.

Enter user password for *user*:

Type the password of the user.

SharePlex installs internal objects that include a package to support the SDO_GEOMETRY data type of the Oracle Spatial and Graph option. If this option is not installed in the database, the following prompt is shown:

Press **Y** to continue the database setup without support for SDO_GEOMETRY, or press **N** to terminate **ora_setup**.

The SharePlex object that supports replication of SDO_GEOMETRY cannot be installed because the Oracle Spatial and Graph feature is not installed. Do you want to continue with the setup without support for SDO_GEOMETRY? [n]:

7. After completion of the Oracle setup, the ora_setup.config file will be generated inside <Installation_directory>/var/data.

Note about the tnsnames file

When you set up SharePlex for database connection through a TNS alias and ASM connection locally through a BEQUEATH connection (through OS authentication), it is important to set up the **tnsnames.ora** file correctly on each node. Assuming a SharePlex database account exists on the primary node, SharePlex will always connect to the primary ASM_SID automatically because it was provided when SharePlex was installed. However, upon failover, SharePlex must query the local **v\$asm_client** view to get the correct ASM_SID of the failover instance. Therefore, ensure that the IP address of a given node is always listed first in the local **tnsnames.ora** file on that node.

Run database setup for Oracle remote capture

IMPORTANT! The Oracle instance must be open before this procedure is performed.

Perform the following steps to run database setup for Oracle remote capture:

1. (Unix and Linux only) If you are using multiple variable-data directories, export the environment variable that points to the variable-data directory for the SharePlex instance for which you are running Database Setup.

ksh shell:

```
export SP_SYS_VARDIR=full_path_of_variable-data_directory
```

csh shell:

```
setenv SP_SYS_VARDIR=full_path_of_variable-data_directory
```

2. Set the SP_OCT_OLOG_USE_OCI parameter to 1 and restart the Capture process.
3. Shut down any SharePlex processes that are running, including **sp_cop**.
4. Run the Database Setup program from the command prompt of the operating system, using the full path from the SharePlex **bin** subdirectory.
5. Specify whether the system is a source system, a target system, or both a source and target system in the SharePlex configuration.

NOTE: This prompt only appears the first time that you run setup for this database.

6. For connection type, select **Oracle**.
7. Refer to the following table for the prompts and responses to configure SharePlex correctly for the desired connection type.

Table 5: Setup prompts and response

| Prompt | Response |
|--|---|
| Will SharePlex install be using a BEQUEATH connection? (Entering 'n' implies a SQL*net connection): | Press N to use a TNS alias connection. |
| Are you configuring SharePlex for an AWS RDS database? | Press N if you are not configuring SharePlex for an Oracle database on RDS. |
| One of the following prompts is shown: <ul style="list-style-type: none">• If you selected BEQUEATH= Y: Enter the Oracle SID for which SharePlex should be installed: | Non-multitenant database: Accept the default or type the correct SID or TNS alias. On RAC, the TNS alias must be a global alias. Multitenant database: Type the TNS alias of the PDB. Amazon RDS: Type the TNS alias of the RDS database. |

| Prompt | Response |
|--|--|
| <ul style="list-style-type: none"> If you selected BEQUEATH = N: Enter the TNS alias for which SharePlex should be installed: | |
| <p>One of the following prompts is shown:</p> <ul style="list-style-type: none"> If the database is not on RDS: Enter a DBA user for <i>SID</i>: If the database is on RDS: In order to create the SharePlex tables and user account, we must connect to the RDS database using the RDS primary user. | <p>Non-multitenant database: Type the name of a database user that has DBA privileges.</p> <p>Multitenant database: Type the name of a common user who has the required privileges to install the account and objects.</p> <p>Amazon RDS database: Type the name of the RDS primary user.</p> |
| <p>One of the following prompts is shown:</p> <ul style="list-style-type: none"> If the database is not on RDS: Enter password for the DBA account, which will not echo: If the database is on RDS: Enter the password for the RDS primary user, which will not echo. | <p>Non-multitenant database: Type the password of the DBA user.</p> <p>Multitenant database: Type the password of the common user. Omit the @ and the rest of the connect string. SharePlex constructs the connect string in the proper format.</p> <p>Amazon RDS database: Type the password of the RDS primary user.</p> |
| Enter the Local Oracle Client Library directory: | Enter the Oracle Client Home directory path. Example: /u01/app/oracle/product/19.0.0/clienthome_1 |
| Enter the TNS alias for which SharePlex should be installed (Blank to abort) : | Enter the name of the TNS alias |
| Current SharePlex user is user. Would you like to create a new SharePlex user? | <p>Press N to update an existing SharePlex account or Y to create a new SharePlex account. Type the credentials when prompted.</p> <p>You are allowed five attempts to type a valid password for an existing SharePlex user. Passwords are obfuscated.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>IMPORTANT! If there is an active configuration and you changed the SharePlex schema, copy the SharePlex objects from the old schema to the new one to preserve the replication environment.</p> </div> |

| Prompt | Response |
|---|--|
| Do you want to enable replication of tables with TDE? | Press N since TDE is not supported for RDS. |
| Enter the default tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Enter the temporary tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Enter the index tablespace for use by SharePlex: | Press Enter to accept the default or type the name of a different tablespace. |
| Will the current setup for sid: <i>SID</i> be used as a source (including cases as source for failover or primary-primary setups)? | Press Y if this is a source system or press N if this is a target system. IMPORTANT: All systems in a primary-primary configuration (peer-to-peer) and in a high-availability configuration are considered to be source systems due to the bidirectional nature of the replication. |
| The following prompt is displayed if you did not select a BEQUEATH connection: Do you wish to keep connecting using the same user/password? | Press Y to use the same user and password as the login user, or press N to be prompted for a different user and password. Normally the user running SharePlex must be a member of the OSASM group. This does not apply if SP_OCT_OLOG_USE_OCI is set to the non-default value of 1. Also if you are using a BEQUEATH connection, the user running SharePlex must be a member of the OSDBA group. |
| SharePlex installs internal objects that include a package to support the SDO_GEOMETRY data type of the Oracle Spatial and Graph option. If this option is not installed in the database, the following prompt is shown: The SharePlex object that supports replication of SDO_GEOMETRY cannot be installed because the Oracle Spatial and Graph feature is not installed. Do you want to continue with the setup without support for SDO_GEOMETRY? [n]: | Press Y to continue the database setup without support for SDO_GEOMETRY, or press N to terminate ora_setup . |
| NOTE: While running the ora_cleansp utility, enter the TNS alias provided while performing ora_setup . | |

Run database setup for Oracle in silent mode

IMPORTANT! The Oracle instance must be open before this procedure is performed.

Perform the following steps to run database setup for Oracle in silent mode:

1. (Linux only) If you are using multiple variable-data directories, export the environment variable that points to the variable-data directory for the SharePlex instance for which you are running Database Setup.

ksh shell:

```
export SP_SYS_VARDIR=/full_path_of_variable-data_directory
```

cs shell:

```
setenv SP_SYS_VARDIR=/full_path_of_variable-data_directory
```

2. Shut down any SharePlex processes that are running, including **sp_cop**.
3. Use the following command to run Ora_setup in the background in silent mode:-

```
nohup ./ora_setup -f <Full_file_path_of_ora_setup.config> > SilentOra.out 2>&1
```
4. For more details on how to configure the Ora_setup.config file, refer to the ora_setup.config file at the below location:

```
/<product_directory>/install/ora_setup.config
```

NOTE: After the setup is completed successfully, all of the password fields will be automatically removed from the config file for security reasons.

Database Setup for PostgreSQL as a Target

Overview

Run the Database Setup utility for PostgreSQL (**pg_setup**) to establish a user account, schema, and tables for use by SharePlex.

Supported databases

All implementations of the PostgreSQL open-source database on supported platforms

Fujitsu Enterprise PostgreSQL Prerequisite

Fujitsu PostgreSQL contains a customized ODBC driver designed to run with the shared libraries supplied by Fujitsu PostgreSQL. In order to ensure the proper configuration, you must create a symbolic link to ensure that the correct libraries are found at runtime.

Issue Description:

If you attempt to run the `pg_setup` program prior to creating the symbolic link, `pg_setup` will fail with the following error message:

```
Error: [unixODBC]invalid connection option "target_server"
```

To create a symbolic link

To ensure that the proper library gets loaded, first locate the path to the directory where the Fujitsu PostgreSQL libraries are installed (for example `/opt/fsepv95server64/lib`). Then create a symbolic link in the SharePlex `OPTDIR/lib/hooks` directory pointing to the **libpq.so.5** library in the Fujitsu PostgreSQL library directory. For example:

```
cd /opt/splex/lib/hooks
ln -s /opt/fsepv95server64/lib/libpq.so.5
```

Guidelines for use

- Run the Database Setup utility on all target PostgreSQL instances in the SharePlex replication configuration.
- Within a server cluster, run the Database Setup utility on the node to which the shared disk that contains the SharePlex variable-data directory is mounted.
- For consolidated replication, run the Database Setup utility for each variable-data directory.

- On **Linux**, you can provide a connection string or a DSN (data source name). Note the following when deciding on the connection method on Linux:

| Connection Type on Linux | What to do |
|--------------------------|---|
| Connection string | You do not need to provide a user, password, or default database in a connection string. The connection string must have the port, server and driver defined. This is an example from EDB PostgreSQL Plus Advanced Server; your connection string will probably be different based on your own database setup: Port=5444;server=localhost;driver=/u01/PostgresPlus/connectors/odbc/lib/edb-odbc.so;database=edb; |
| DSN | If you have a DSN defined, and you want to use it for the SharePlex connection, copy or link the ODBC files in which that DSN is defined (odbc.ini and odbcinst.ini) to the odbc subdirectory of the SharePlex variable-data directory. This prevents connection errors when the SharePlex processes connect to the database. If you do not have a DSN defined but want to use one, you can create it in the template files provided in the odbc subdirectory. |

Required privileges

Review the following requirements to ensure that the setup succeeds.

- The Database Setup utility must be run as a PostgreSQL Administrator in order to grant SharePlex the required privileges to operate on the database and to create the SharePlex database account.
- (Symfaware only) If the person who is running the setup utility is not a Fujitsu Enterprise PostgreSQL owner, set the environment variable LD_LIBRARY_PATH to include the path to the **lib** subdirectory in the Fujitsu Enterprise PostgreSQL installation directory. The LD_LIBRARY_PATH is set in the **.bash_profile** file of the Fujitsu Enterprise PostgreSQL owner.

Example:

```
export LD_LIBRARY_PATH= /opt/symfoserver64/lib:$LD_LIBRARY_PATH
```

If you do not set this path, the following error occurs:

```
symbol lookup error: /opt/fsepv95client64/odbc/lib/psqlodbca.so: undefined
symbol: PQconnectdbParams
```

- Cloud installations:
 - Common restrictions on privileges in cloud-hosted database services make it difficult for the setup utility to succeed in every possible type of scenario. To ensure that the database setup succeeds, only use the setup utility for the following purposes: To do a first-time database setup with a new SharePlex user, or, to modify an existing SharePlex user that either owns the database or has access to it.
 - On Amazon RDS, you might need to grant usage/privileges on the target schema and tables to the SharePlex user, as shown in the following example:

Log in as the schema owner, then issue the following commands:

```
grant usage on schema schema_name to user_name;
```

```
grant all privileges on all tables in schema schema_name to user_name;
```

Run Database Setup for PostgreSQL

1. Shut down any running SharePlex processes and **sp_cop** on the target system.
2. Run the **pg_setup** program from the **bin** subdirectory of the SharePlex product directory.

IMPORTANT! If you installed the SharePlex instance on any port other than the default of 2100, use the **-p** option to specify the port number. For example, in the following command the port number is 9400.

```
$ /users/splex/bin> pg_setup -p9400
```

Table 6: Setup prompts and responses

| Prompt | Response |
|--|--|
| <p>(Linux)</p> <p>Enter the PostgreSQL DSN name or connection string [] :</p> | Enter a DSN or a connection string if the system is Linux. |
| <p>Enter the PostgreSQL Administrator name :</p> | Enter the name of the PostgreSQL Administrator. This user will perform the work on the SharePlex account. |
| <p>Enter the password for the Administrator account :</p> | Enter the password of the Administrator. |
| <p>Enter the replication target database name:</p> | Enter the name of the database that you want to contain the SharePlex tables and other objects for use by SharePlex. You can enter the name of a new or existing database. |
| <p>Database name <i>database</i> does not exist. Would you like to create it? [y] :</p> | If this prompt is displayed, the specified database does not exist. Press Enter to have the setup utility create it for you. |
| <p>Would you like to create a new SharePlex user [y]:</p> | Press Enter to accept the default to create a new SharePlex database user account and schema of the same name in the specified database, or |

| Prompt | Response |
|--|--|
| | enter n to use an existing SharePlex account. |
| Enter the name of the new SharePlex user: | One of these prompts is displayed depending on whether you elected to create a new user or use an existing user. Enter the name of the SharePlex user. |
| Enter the name of the existing SharePlex user: | |
| | NOTE: Enter the user name in lowercase letters only. |
| Enter the password of the SharePlex user : | Enter the password of the SharePlex user account. |
| Re-enter the password for the SharePlex user : | This prompt is only shown if you created a new user. Enter the SharePlex password again. |

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for PostgreSQL database configuration
SharePlex User name: splx
Database name: ndb5
Target specification in SharePlex configuration: r.ndb5
```

Configure SharePlex to support PostgreSQL database on Azure platform

You can configure SharePlex to support the PostgreSQL database on the Azure platform using the below steps:

1. Add the DSN entry in the Odbc.ini file at /etc/odbc.ini and the .../var/odbc directory.
2. Copy the /etc/odbcinst.ini file to the .../var/odbc directory.
3. Run the PostgreSQL setup utility.

This process creates the SharePlex tables, login and user accounts needed to run SharePlex replication.

NOTE: While performing DML operations in bulk for PostgreSQL PaaS (Azure), a performance slowness issue is observed.

Table 7: Setup Prompts and Responses

| Prompt | Response |
|---|---|
| Enter the PostgreSQL DSN name or connection string [] : | Enter the PostgreSQL DSN name or a connection string that connects to the PostgreSQL database system. Example: pslazpgdb02 |
| Is DB hosted over Azure ? : | Y |
| Enter the Database hostname : | Enter the Azure database host name. <div style="border: 1px solid black; padding: 5px;">NOTE: PGsetup Administrator name should be in the <username> format (Don't mention hostname)</div> Example: pslazpgdb02.postgres.database.azure.com If a user already exists for SharePlex then it should be entered in the <username@hostname> format. If a new user needs to be created for SharePlex then is should be entered in the <username> format. |
| Enter the PostgreSQL Administrator name : | Enter the name of the PostgreSQL Administrator. This user will perform the setup work on the SharePlex account and schema. Example: PostgreSQL |
| Enter the password for the Administrator account: | Enter the password of the Administrator. <div style="border: 1px solid black; padding: 5px;">NOTE: User 'postgres@pslazpgdb02.postgres.database.azure.com' got the superuser role.</div> |

| Prompt | Response |
|--|--|
| Enter the replication target database name : | Enter the target database name on which replication needs to be performed. Example: sp_mk |
| Would you like to create a new SharePlex user? | N (If you want to create a user, enter "y") |
| Enter the name of the existing SharePlex user: | Enter the name of the SharePlex user. |
| Enter the password of the SharePlex user : | Enter the password of the SharePlex user account. |
| Re-enter the password for the SharePlex user : | This prompt is only shown if you created a new user. Enter the SharePlex password again. |

A successful setup terminates with a message similar to the following:

Completed SharePlex for PostgreSQL database configuration

SharePlex User name: postgres@pslazpgdb02.postgres.database.azure.com

Database name: sp_mk

The data source identifier in the SharePlex configuration is 'r.sp_mk' -

Database Setup for SQL Server

Overview

Run the Database Setup utility for SQL Server (**mss_setup**) on a Microsoft SQL Server system to establish SharePlex as a SQL Server database user.

This utility creates the following:

- A SharePlex user account with the db_owner role
- Tables and indexes for use by SharePlex and owned by the SharePlex user in a database of your choosing
- A default database connection.

Supported databases

For supported SQL Server platforms and versions, see the [SharePlex Release Notes](#).

Guidelines for use

- A *system* DSN (data source name) must exist for the SQL Server database. SharePlex Post uses the DSN to connect to the database through ODBC.
- Run the Database Setup utility on all SQL Server instances in the SharePlex replication configuration.
- Within a cluster, run the Database Setup utility on the node to which the shared disk that contains the variable-data directory is mounted.
- For consolidated replication, run the Database Setup utility for each variable-data directory.

Required privileges

Review the following requirements to ensure that the setup succeeds.

- The Database Setup utility must be run as a SQL Server System Administrator in order to grant SharePlex the required privileges to operate on the database and to create the SharePlex database account and objects.
- The sysadmin role is required to run **mss_setup**, but it is not required by the SharePlex database account used to run SharePlex replication (the SharePlex User). The db_owner role is required by the SharePlex User account and it is granted by **mss_setup** (for source and target).
- (Cloud installations) Common restrictions on privileges in cloud-hosted database services make it difficult for the setup utility to succeed in every possible type of scenario. To ensure that the database setup succeeds, *only* use the setup utility for the following purposes: To do a *first-time* database setup with a *new* SharePlex user, or, to *modify* an existing SharePlex user that either owns the database or has access to it. (Cloud installation is not supported while replicating data from PostgreSQL to SQL Server)

Run database setup for SQL server

Perform the following steps to run database setup for SQL server:

1. Shut down any running SharePlex processes and `sp_cop` on the SQL Server system.
2. Run the `mss_setup` program from the `bin` subdirectory of the SharePlex product directory.

IMPORTANT! If you installed the SharePlex instance on any port other than the default of 2100, use the `-p` option to specify the port number. For example, in the following command the port number is 9400.

```
C:\users\splex\bin>mss_setup-p9400
```

Table 8: Setup prompts and responses

| Prompt | Response |
|---|--|
| Enter the Microsoft SQL Server DSN name [] : : | Enter the data source name (DSN) that connects to SQL Server. Make certain the DSN is a system DSN, not a user DSN. |
| Enter the Microsoft SQL Server Administrator name : : | Enter the name of the SQL Server Administrator. This user will perform the setup work on the SharePlex account and schema. |
| Enter the password for the Administrator account : : | Enter the password of the Administrator. |
| Enter the database name: : | Enter the name of the database where you want to install the SharePlex objects. |
| Database name <i>database</i> does not exist. Would you like to create it? [y] : : | If this prompt is displayed, the specified database does not exist. Press Enter to have the setup utility create it for you. |
| Would you like to create a new SharePlex login [y]: : | Press Enter to accept the default to create a new SharePlex database user account, or enter n to use an existing account as the SharePlex database user. |
| Enter the name of the existing SharePlex login: : | One of these prompts is displayed depending on whether you elected to create a new user or use an existing user. Enter the name of the SharePlex user. |
| Enter the name of the new SharePlex login: : | |
| Enter the password for <i>login</i> : : | Enter the password of the SharePlex user account. |
| Re-enter the password for <i>login</i> : : | Enter the SharePlex password again. |

| Prompt | Response |
|---|--|
| Will this database be used as a source? | Accept the default of n if the database will only be a target. Enter y if this database will be a source database for SharePlex. A response of y prompts the setup to prepare the database for data capture and installs the SharePlex account and objects. |

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for Microsoft SQL Server database configuration
SharePlex User name: splex
Database name: db1
Target specification in SharePlex configuration: r.db1
```

Configure Remote Posting from a Linux to a SQL Server Database

To replicate data from a Linux server to a SQL server database, follow the steps below:

1. Install the latest **SQL Server ODBC** drivers on Linux.
By default, the ODBC drivers will be installed at `/opt/microsoft/msodbcsql18/lib64`.
2. Modify the `odbcinst.ini` and `odbc.ini` files in the `<var_dir>/odbc` directory.
3. Run the `mss_setup` program from the `bin` subdirectory of the SharePlex product directory.
4. Provide other details when it prompts you, like the database name, username, password, etc. For more information, see [Run Database Setup for SQL Server](#).

A successful setup terminates with a message similar to the following:

```
Completed SharePlex for Microsoft SQL Server database configuration
SharePlex User name: splex
Database name: db1
Target specification in SharePlex configuration: r.db1
```

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