Quest® SharePlex™ 8.6 (8.6.6)

Upgrade Guide

Contents

About this Guide

This document contains instructions for upgrading your SharePlex environment to the current version. It is intended for administrators, consultants, analysts, and any other IT professionals tasked with upgrading SharePlex for Oracle.

Other SharePlex documentation

For the complete SharePlex documentation set, go to:

http://documents.quest.com

- See the *SharePlex Administrator Guide* for instructions for:
    - Operating SharePlex
    - Planning your replication strategy
    - Preparing the environment for replication
    - Configuring replication
    - Starting replication
    - Monitoring, tuning, and troubleshooting replication
    - Failover/failback in a high-availability environment
    - Performing administrative operations on replication systems

- See the *SharePlex Reference Guide* for reference information that you will need from time to time. It includes detailed information about:
    - **sp_ctrl** commands that administer, monitor and control replication
    - SharePlex tuning parameters
    - SharePlex utilities
    - SharePlex error messages

- See the *SharePlex Preinstallation Checklist* for tasks that must be finished before installing or running SharePlex.

- See the *SharePlex Installation Guide* for instructions for installing SharePlex and performing initial setup.

- See the *SharePlex Release Notes* for information about new features, enhancements, bug fixes and known issues in this release.

Where to get SharePlex installers

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

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

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.

About the SharePlex installers

There are different installers for SharePlex based on the platform type and data store type. 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:

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

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

Example: SharePlex-8.0.0-b86-oracle110-aix-52-ppc.tpm

Note: If the operating system version that you have is not listed, choose the highest number that is *below* your version.

Open Target:

The SharePlex Open Target installer supports all Open Target targets on all supported Linux platforms.

```
SPX-release#-build#-rh-40-amd64-m64.tpm
```

IMPORTANT: If installing SharePlex for an Open Target and the source data is anything other than **Oracle Unicode** or **US7ASCII**, conversion must be performed before posting to the Open Target. In this case, you must use the **Oracle installer** rather than the Open Target installer and install an **Oracle client** on the target to perform the conversion. For more information, see the Open Target section of the Database checklist of the SharePlex Preinstallation Checklist.

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 Appendix A: Advanced SharePlex installer options.

Windows

On Windows, the SharePlex installer is named **sp_setup_version.exe.** It is a bundle that contains SharePlex binaries for all of the supported databases and versions.

The installer installs the following items:

- The SharePlex binaries and files
- The **SharePlex for *database*** program
- The **MKS Platform Components** program from Parametric Technology Corporation (default **C:\Program Files\MKS Toolkit**)
- Windows registry entries under \HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432node.
- One or more **SharePlex *port_number*** Windows services (depending on the installed configuration)

Do not remove or modify any of these components while SharePlex is in production, including **SharePlex Installer**. These components all support SharePlex operation or upgrade.

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 **defaults.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.

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.

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. See the SharePlex Reference Guide for more information about this command.

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. Download the *Oracle-based SharePlex installer*, rather than the Open Target installer, to install SharePlex on the target system. The Oracle-based installer includes functionality that directs Post to use the conversion functions from the Oracle client library to convert the data before posting to the target database.

4. Follow the instructions for upgrading SharePlex *for Oracle* (not the ones for installing on Open Target).

5. Make certain the SP_OPX_NLS_CONVERSION parameter is set to the default of 1.

To perform conversion with an Oracle client on Windows

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. In the SharePlex Registry key **\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\QuestSoftware\SharePlex***port_number*, set ORACLE_HOME to the Oracle client installation location, and set ORACLE_SID to an alias or a non-existing SID. No Oracle database is required. SharePlex only needs to use the client libraries.

3. Upgrade SharePlex using the Windows installer.

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 SharePlexversion.

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.

Check for deprecated parameters

Check 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.

Where to get the installer

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

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

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.

About the Open Target installer

There is one SharePlex installer for all Open Target targets on all supported Linux platforms. The naming convention is:

```
SPX-release#-build#-rh-40-amd64-m64.tpm
```

The Open Target installer does not install SharePlex with any functionality to perform conversion of character sets. See Requirements to support character set conversion to determine if you need to take special steps for character conversion.

2

Upgrade on Linux/Unix for Oracle Database

These instructions are for upgrading SharePlex from version 7.6.3 or higher when configured for an Oracle database running on a Linux or Unix system. See also Upgrade on Linux/Unix for Open Target Databases.

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.

- Make certain you review Before you upgrade for any pre-installation items that apply to your SharePlex installation.

To run the upgrade

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. Run the SharePlex installation program.

7. Verify that the information shown on the first prompt corresponds to the Oracle version and platform that you are upgrading.

8. 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.
ORACLE_SID of the database	Enter the Oracle SID of the database for which you are upgrading SharePlex.
ORACLE_HOME	Enter the path to the Oracle HOME directory of the selected Oracle SID.
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.
License key	(If Y was selected) Enter the new license key that you received from Quest.
Customer name	If you added the license key, enter the SiteMessage text string provided by Quest with the license key.

9. Run **ora_setup** for each variable-data directory in the installation of SharePlex that you upgraded. See Oracle Setup (ora_setup) on page 25.

10. Start SharePlex using the following syntax with options as appropriate.

    $ **cd** /*productdir*/**bin**
    $ **./sp_cop** [-u*identifier*] **&**

    where:

    - **-u***identifier* 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.

11. (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**

Upgrade SharePlex and Oracle at the same time

Follow these instructions if you want to upgrade both SharePlex and Oracle at the same time, without reinstantiating the target data.

Recommended procedure - clean the replication environment then upgrade

These steps apply to UNIX.

1. Shut down **sp_cop**.

   ```
   sp_ctrl>   shutdown
   ```

2. Upgrade the Oracle database according to Oracle's instructions.

3. Run the SharePlex installer with the following options. Refer to Upgrade on Linux/Unix for Oracle Database for full installation instructions.

   To keep existing SharePlex product directory path:

   a. Tar up the existing product directory and move the tar file to different location.

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

   c. When prompted for the SharePlex product directory path, specify the existing product directory path.

   d. When prompted for the variable-directory path, specify a new temporary variable (SharePlex variable $SP_SYS_VARDIR) directory path.

   To install SharePlex in a new location:

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

   b. When prompted for the SharePlex product directory path, specify the existing product directory path.

   c. When prompted for the variable-directory path, specify a new temporary variable ($SP_SYS_ VARDIR) directory path.

   NOTE: A temporary $SP_SYS_VARDIR will be created during installation. Existing SP_SYS_ VARDIR (s) will be upgraded upon starting SharePlex.

4. Export the SP_SYS_VARDIR environment variable to the variable-data directory that you want to upgrade.

5. Run the Database Setup (**ora_setup**) utility using the existing SharePlex Oracle database user.

   For more information, see Oracle Setup (ora_setup) on page 25.

6. Start **sp_cop**.

   $ /*productdir*/**bin**/**sp_cop** [**-u***identifier*] [**-s**] **&**

   For more information, see *Run SharePlex on Unix and Linux* in the SharePlex Administration Guide.

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. See also Upgrade on Linux/Unix for Oracle Database.

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.

- Make certain you review Before you upgrade 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.
License key	(If Y was selected) Enter the new license key that you received from Quest.
Customer name	If you added the license key, enter the SiteMessage text string provided by Quest with the license key.

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

7. Run database setup to upgrade the SharePlex database account.

   - HANA Setup (hana_setup) on page 22
   - PostgreSQL Setup (pg_setup) on page 19
   - Teradata Setup (td_setup) on page 33

8. Repeat all of the installation procedures for all Unix and Linux machines that host an Open Target database.

Upgrade SharePlex on Windows

These instructions are for upgrading from a version of SharePlex that is 7.6.3 or higher.

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 Windows machines that host databases involved in SharePlex replication.

- *Do not* uninstall SharePlex or the MKS Toolkit® environment before upgrading. Install the upgrade over the existing version.

- On Windows, SharePlex must be installed on **all nodes** of a cluster, on the same port number, with identical path names. This is required to make the binaries and the required MKS Toolkit components available to all nodes, and to establish Registry entries.

- Make certain you review Before you upgrade for any pre-installation items that apply to your SharePlex installation.

To run the upgrade

1. Log into Windows as the SharePlex Administrator.

2. (If using **copy/append**) Stop **sp_sync_launcher** on the target systems before applying the SharePlex upgrade.

   `sp_ctrl>` **stop launcher**

3. (Source system only) In **sp_ctrl**, use the **set param** command to stop DDL replication (if active) by setting the SP_OCT_REPLICATE_ALL_DDL parameter to 0.

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

   IMPORTANT! Keep the setting at 0 until prompted otherwise.

4. Stop the SharePlex service:

   a. Run **SpUtils** from the shortcut on the Windows desktop.

   b. Select the **SharePlex Services** tab**.**

   c. Select the correct port, and then stop the SharePlex service.

   d. Close the utility.

5. Run the sp_**setup** installation program and follow the prompts:

Prompt	Input
Destination Folder	Install the upgrade into the existing SharePlex product directory.
Installation options	Specify the Oracle database version for which you are upgrading SharePlex.
Port number	Select the port that this instance of SharePlex currently uses.
Variable Data directory	Specify the existing SharePlex variable-data directory.
Program Manager group	Specify the existing Programs menu location.
MKS Platform Components	Appears if this version of SharePlex contains a new version of MKS Toolkit®. Accept the default Program Files location. If prompted to restart your system, you can postpone the restart until after you finish this installation.
Confirm installation	Confirm the installation information.
SharePlex license	Accept the existing license shown or enter a new one if applicable.
Finish	If you were prompted to restart the system after you installed the MKS Toolkit files, you may do so after exiting the installer.

6. Re-run database setup:

   - **Oracle**: see Oracle Setup (ora_setup) on page 25

   - **SQL Server**: see SQL Server Setup (mss_setup) on page 31

7. From SpUtils, start the SharePlex service.

8. (Source only) To enable DDL replication again, set the the SP_OCT_REPLICATE_ALL_DDL parameter to 1.

Additional Upgrade for SAP ASE target

This section applies to upgrades from SharePlex version 8.5 to the current release.

Version 8.6 changed the way that SAP ASE is defined in the routing map in the configuration file and the way that connection settings are defined for Post.

- In the configuration file, the routing map now requires **r.**_database_name_, where _database_name_ is the actual name of the target database, not a DSN.
- The connection information for Post to connect to SAP ASE is now configured through the **connection** command, rather than in the target configuration created by the **target** command.

To complete the upgrade from version 8.5 to the current version of SharePlex for an SAP ASE target, while keeping the current configuration active so that replication can continue, use the following procedure.

> **NOTE:** This upgrade keeps the routing map as configured in version 8.5 and only changes the Post connection settings.

1. From the Unix command line of the operating system, run the following command, where _database_name_ is the actual name of the target database (not a DSN).

   export SP_TARGET_DATABASE=_database_name_

2. Start **sp_cop**.

   _/product_dir/_**bin/sp_cop**

3. In **sp_ctrl**, issue the **show post** command. The state should be "stopped-due to error." If Post did not stop, stop it with the **stop post** command.

   stop post [**for** _datasource-datadest_]

4. Issue the following commands, using the new **connection** command, but this time substitute the DSN of the database for _DSN_. Do not specify the actual database name in this case.

   connection r._DSN_**set user=**_name_of_Post_database_user_

   connection r._DSN_**set password=**_password_

5. Start Post.

   start post [**for** _datasource-datadest_]

SharePlex utilities

Contents

PostgreSQL Setup (pg_setup)

Overview

Run the **pg_setup** program on a PostgreSQL system 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

Guidelines for using pg_setup

- Run **pg_setup** on all target PostgreSQL instances in the SharePlex replication configuration.
- Within a server cluster, run **pg_setup** on the node to which the shared disk that contains the SharePlex variable-data directory is mounted.

- For consolidated replication, run **pg_setup** for each variable-data directory.

- You can provide a connection string or a DSN. Note the following:

Connection Type	What to do
Connection string	You **do not** need to provide a user, password, or default database in a connection string. These will be added when you run the setup program. The connection string must have the port, server and driver defined. This is an example: **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 to run pg_setup

Review the following requirements to ensure that the setup succeeds.

- The 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.

- (Symfoware only) If the person who is running the setup is not a Fujitsu Enterprise Postgres owner, set the environment variable LD_LIBRARY_PATH to include the path to the **lib** subdirectory in the Fujitsu Enterprise Postgres installation directory. The LD_LIBRARY_PATH is set in the **.bash_profile** file of the Fujitsu Enterprise Postgres 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, use the setup utility *only* to set up replication to the following: A new database, to be created by the setup utility, where the SharePlex user is also created by the setup utility.An existing database, where the SharePlex user is an existing user that is either the owner of the database or has access privileges to the database.

Run pg_setup

1. Shut down any running SharePlex processes and **sp_cop** on the target system.

2. Run the pg_setup utility 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 1: Setup prompts and responses

Prompt	Response
Enter the PostgreSQL DSN name or connection string [] :	Enter a connection string or a data source name (DSN) that connects to the PostgreSQL target.
Enter the PostgreSQL Administrator name :	Enter the name of the PostgreSQL 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 replication target database name:	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.
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 program 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.
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: splex

Database name: ndb5

Target specification in SharePlex configuration: r.ndb5
```

HANA Setup (hana_setup)

Overview

Run the HANA Setup program (**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 using HANA Setup

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

Required privileges to run HANA Setup

HANA Setup 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 HANA Setup

1. Shut down any running SharePlex processes and **sp_cop** on the target system.
2. Run the **hana_setup** utility 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 2: HANA Setup Prompts and Responses

Prompt	Response
`Enter the 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:

Prompt	Response
	- SERVERNODE: The name of the target HANA server, then a colon, then the HANA port number. - DRIVER: The path to the HANA ODBC driver. - CHAR_AS_UTF8: This must be passed as **CHAR_AS_UTF8=1**. Example: **SERVERNODE=server1.dept.abc.corp:30015;DRIVER=/usr/sap/hdbclient/libodbcHDB.so;CHAR_AS_UTF8=1** You do not have to supply a user, password, and default database, because **hana_setup** prompts for those.
`Enter the HANA Administrat or name :`	Enter the name of the HANA Administrator. This user will perform the work on the SharePlex account.
`Enter the password for the Administrat or 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` *`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 **hana_setup** 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:`	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 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: splex

Database name: ndb5

Target specification in SharePlex configuration: r.ndb5
```

Grant the required 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*;

Oracle Setup (ora_setup)

Overview

Use the Oracle Setup utility (**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 indexes 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 on supported platforms

When to run Oracle Setup

Whether or not to run Oracle Setup at the time of SharePlex installation depends on whether this is a source, intermediary, or target system 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 Oracle Setup 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: ○ If you intend to use transportable tablespaces or a cold copy (such as export/import, store/restore from tape, FTP), run Oracle Setup during SharePlex installation. ○ If you intend to use a hot backup to establish the target data, do not run Oracle Setup. You will run it when you perform the initial synchronization procedure. **NOTE:** If you run Oracle Setup 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

Oracle Setup 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.

Requirements for using Oracle Setup

- 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 Oracle Setup for all source and target Oracle instances in the SharePlex replication configuration.

- Within a cluster, run Oracle Setup on all nodes of the cluster. This ensures that the SharePlex settings in the Windows Registry include the correct ORACLE_SID.

- For a consolidated replication topography, or other topology with multiple variable-data directories, run Oracle Setup 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. Review Run Oracle Setup to familiarize yourself with the prompts before you actually run Oracle Setup.

- If the Oracle database is a multitenant container database, run Oracle Setup for each pluggable database involved in a replication scenario. A SharePlex user and schema objects must exist in each PDB.

- If you run Oracle Setup when there is an active configuration, the DDL that Oracle 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 Oracle Setup, then return it to its previous setting after Oracle Setup is complete. This parameter takes effect immediately.

SharePlex schema storage requirements

Oracle Setup 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	The 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. The SHAREPLEX_LOBMAP table contains entries for LOBs stored out-of-row. It is created with a

Storage	Description
	1 MB INITIAL extent, 1 MB NEXT extent, and PCTINCREASE of 10. The MAXEXTENTS is 120, allowing the table to grow to 120 MB.

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.

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.

NOTE: A new installation of SharePlex does not change storage parameters from a previous installation. |
| SharePlex temporary tablespace | The 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. |
| SharePlex index tablespace | The 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.

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. |

Privileges granted to the SharePlex database user

Oracle Setup grants to the SharePlex database user the following:

- 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. If the default has been changed, assign SharePlex a DBA profile with unlimited resource privileges.
- The following grants:
  - To access the data dictionary (outside the DBA roles) if O7_DICTIONARY_ACCESSIBILITY is set to FALSE:

    grant select any dictionary to *SharePlexUser*;
  - To replicate DDL:

    grant select any table to *SharePlexUser* **with admin option;**

    grant create any view to *SharePlexUser* **with admin option;**

Required privileges to run Oracle Setup

The user who runs Oracle Setup must have the following privileges:

Non-multitenant (standard) database

The user who runs the setup utility must have DBA privileges, but if support for TDE is required, then this user must have SYSDBA 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;
```

If TDE support is required for the CDB, then the following *additional* priviledge is required:

```
grant select on sys.enc$ to c##sp_admin with grant option container=ALL;
```

Run Oracle Setup

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

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 **ora_setup** program from the command prompt of the operating system, using the full path from the SharePlex **bin** subdirectory.

   > **IMPORTANT!** On Windows, if you installed SharePlex 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>`**ora_setup -p9400**

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, either local using BEQUEATH or remote using a TNS alias.

Table 3: Database setup prompts and response

Prompt	Response
`Will SharePlex install be using a BEQUEATH connection? (Entering 'n' implies a SQL*net connection):`	Press **Enter** to use a local BEQUEATH connection, or type **N** to use a TNS alias connection. **NOTE**: You must type **N** to use a tns_alias if the database is a multitenant database or if using SharePlex in a cluster (such as Oracle RAC).

(If BEQUEATH= Y)
`Enter the Oracle SID for which SharePlex should be installed:`
 	
(If BEQUEATH = N)
`Enter the TNS alias 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 the global alias that you created in Configure SharePlex in a cluster.
	
	Multitenant database: Specify the tns_alias of the PDB.

`Enter a DBA user for SID`	**Non-multitenant database**: Type the name of a database user that has DBA privileges. **Multitenant database**: Type the name of a common user who has the required privileges to install the account and objects.
`Enter password for the DBA account, which will not echo:`	**Non-multitenant database**: Type the password of the DBA user. **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.
`Current SharePlex user is user.` `Would you like to create a new SharePlex user?`	Enter **N** to update an existing SharePlex account or **Y** to create a new SharePlex account. Enter the credentials when prompted. You are allowed five attempts to enter a valid password for an existing SharePlex user. Passwords are obfuscated. **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.**
`Do you want to enable replication of tables with TDE?`	**NOTE:** If this is an upgrade and you already have TDE enabled, the following prompt appears before this prompt: `Formerly, SharePlex required a Shared Secret key. Now, the pathname of the TDE wallet is required.` Enter **Y** to be prompted for the path name of the TDE wallet file. Supply the fully qualified path for the TDE

Prompt	Response
	wallet file, including the wallet file name.
	Or...
	Press **Enter** if not replicating TDE tables.
`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:` *SID* `be used as a source (including cases as source for failover or master-master setups)?`	Press **Enter** if this is a source system or type **N** if this is a target system. **IMPORTANT:** All systems in a master-master configuration (peer-to-peer) and in a high-availability configuration are considered to be source systems due to the bidirectional nature of the replication.
NOTE: The rest of the prompts configure an ASM connection. If ASM is not detected, the database setup is complete at this point.	
`ASM detected. Do you wish to connect to ASM using BEQUEATH connection?`	Press **Enter** for SharePlex to use a BEQUEATH connection to connect to the ASM instance, or press **N** to use a TNS alias.
	IMPORTANT! If the database uses ASM *and* 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.
`Do you wish to keep connecting using the same user/password?`	If you selected BEQUEATH, this prompt is displayed. Enter **Y** to use the same user and password as the login user, or enter **N** to be prompted for a different user and password.
NOTE: If you selected to use a BEQUEATH connection, the database setup is complete. See Note about the tns_alias file:	
If you selected **N**, 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.

Prompt	Response
	NOTE: If SharePlex will be reading online redo logs on a remote system, make certain to set the SP_OCT_ASM_USE_OCI parameter to a value of 1: After you start **sp_cop**, and before activating a configuration file, run this command in **sp_ctrl**: `sp_ctrl>`**set param SP_OCT_ASM_USE_OCI 1** If this is an upgrade and you disabled DDL replication, you can enable it again with the following command in sp_ctrl: `sp_ctrl>` set param SP_OCT_REPLICATE_ALL_DDL 1

Note about the tns_alias 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 tns_alias 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 tns_names file on that node.

SQL Server Setup (mss_setup)

Overview

Run the SQL Server Setup program (**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 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

Microsoft SQL Server on Windows

Guidelines for using SQL Server Setup

- A DSN (data source name) must exist for the SQL Server database. SharePlex Post uses the DSN to connect to the database through ODBC.

- Run SQL Server Setup on all SQL Server instances in the SharePlex replication configuration.

- Within a cluster, run SQL Server Setup on the node to which the shared disk that contains the variable-data directory is mounted.

- For consolidated replication, run SQL Server Setup for each variable-data directory.

Required privileges to run SQL Server Setup

Review the following requirements to ensure that the setup succeeds.

- SQL Server Setup 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.

- (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, use the setup utility *only* to set up replication to the following: A new database, to be created by the setup utility, where the SharePlex user is also created by the setup utility.An existing database, where the SharePlex user is an existing user that is either the owner of the database or has access privileges to the database.

Run SQL Server Setup

1. Shut down any running SharePlex processes and **sp_cop** on the SQL Server system.

2. Run the mss_setup utility 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 4: Setup prompts and responses

Prompt	Response
`Enter the DSN name or connection string [] :`	Enter a connection string or a data source name (DSN) that connects to SQL Server.
`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 name of the database :`	Enter the name of the database where you want to install the SharePlex objects.

Prompt	Response
`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:` `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.
`Enter the password of 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 Microsoft SQL Server database configuration

SharePlex User name: splex

Database name: db1

Target specification in SharePlex configuration: r.db1
```

Teradata Setup (td_setup)

Overview

Run the Teradata Setup program (**td_setup**) on a Teradata system to establish a user account and database for use by SharePlex.

Supported databases

Teradata on supported platforms

Requirements for using Teradata Setup

- An ODBC Data Source Name (DSN) must exist for SharePlex to use. You will be prompted for this name during setup. See the Teradata ODBC documentation for instructions.
- Run Teradata Setup on all target Teradata instances in the SharePlex replication configuration.

- Within a server cluster, run Teradata Setup on the node to which the shared disk that contains the SharePlex variable-data directory is mounted.

- For consolidated replication, run Teradata Setup for each variable-data directory on the Teradata target.

Required privileges to run Teradata Setup

Teradata Setup must be run as a Teradata Administrator in order to grant SharePlex the required privileges to operate on the database and to create the SharePlex database account.

Run Teradata Setup

1. Shut down any running SharePlex processes and **sp_cop** on the target system.

2. Run the **td_setup** utility 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> td_setup -p9400

Table 5: Teradata Setup Prompts and Responses

Prompt	Response
Please enter the full directory path of the Teradata ODBC driver:	Enter the full path to the Teradata ODBC driver library. This step initializes the driver location within the Teradata Setup utility so that the rest of the setup can take place. It requires a second running of Teradata Setup to complete the setup steps.
Please run td_setup again to create the tables, login and user accounts needed to run SharePlex replication.	Run Teradata Setup again, including the port number if you installed SharePlex on any port other than 2100: $/users/splex/bin> td_setup -p9400
Enter the DSN name or connection string []:	Enter a connection string or a data source name (DSN) that connects to Teradata.
Enter the Teradata Administrator name:	Enter the name of the Teradata Administrator. This user will perform the work on the SharePlex account.
Enter the password for the Administrator account:	Enter the password of the Administrator.
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 SharePlex account.
Enter the name of the new SharePlex user: (or...) Enter the name of the existing SharePlex user:	Enter the name of the new or existing SharePlex user, depending on which option you chose in the previous step.

Prompt	Response

`Enter the password for new SharePlex user:`
 	
`(or...)`
 	
`Enter the password for existing SharePlex user:`
	Enter the password of the new or existing SharePlex user account.

`Re-enter the password for new SharePlex user:`	This prompt is only shown if you created a new user. Enter the SharePlex password again.
`Enter the name of the database:`	Accept the default or enter a different name for the database.
`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 Teradata Setup create it for you.

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

```
Completed SharePlex for Teradata database configuration

SharePlex User name: splex

Database name: splex

Target specification in SharePlex configuration: r.splex
```

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We are more than just a name

We are on a quest to make your information technology work harder for you. That is why we build community-driven software solutions that help you spend less time on IT administration and more time on business innovation. We help you modernize your data center, get you to the cloud quicker and provide the expertise, security and accessibility you need to grow your data-driven business. Combined with Quest's invitation to the global community to be a part of its innovation, and our firm commitment to ensuring customer satisfaction, we continue to deliver solutions that have a real impact on our customers today and leave a legacy we are proud of. We are challenging the status quo by transforming into a new software company. And as your partner, we work tirelessly to make sure your information technology is designed for you and by you. This is our mission, and we are in this together. Welcome to a new Quest. You are invited to Join the Innovation.

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