

# SharePlex<sup>®</sup> for Oracle



## Release Notes and Upgrade Instructions v. 6.0.0

December 2007

Welcome to SharePlex for Oracle v6.0.0. This document contains the most recent information about SharePlex, including information that might not be in the published documentation. Review all sections of this document before starting your installation.

This version of the SharePlex for Oracle v6.0.0 Release Notes supersedes all prior versions. Please check SupportLink at <http://www.quest.com/support> to ensure you have the most up-to-date version of this document.

### Contact Quest Support

Quest Support is available to customers who have a trial version of a Quest product or who have purchased a commercial version and have a valid maintenance contract. Quest Support provides around the clock coverage with SupportLink, our web self-service. Visit SupportLink at: <http://support.quest.com>

From SupportLink, you can do the following:

- Quickly find thousands of solutions (Knowledgebase articles/documents).
- Download patches and upgrades.
- Seek help from a Support engineer.
- Log and update your case, and check its status.

View the Global Support Guide for a detailed explanation of support programs, online services, contact information, and policy and procedures. The guide is available at: [http://support.quest.com/pdfs/Global Support Guide.pdf](http://support.quest.com/pdfs/Global%20Support%20Guide.pdf)

### New in SharePlex Version 6.0.0

- [Instant Activation](#)
- [Support for Index Organized Tables](#)
- [Expanded Support of Supplemental Level Logging](#)
- [New Non-root SharePlex Installer](#)
- [Support for Unattended Installation](#)
- [Support for ASM](#)
- [New Synchronization Command](#)
- [Support for XML Datatypes](#)

### Changes in SharePlex Version 6.0.0

- [The Single-threaded Poster has been deprecated.](#)
- [The verify config command has been deprecated.](#)
- [Basic Conflict Resolution has been deprecated.](#)



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**Note:** You can log on to Quest Support Link and download the latest version of the Release Notes at <http://www.quest.com/support>.

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## Supported Platforms

SharePlex for Oracle supports replication of the following Oracle versions on, and between, the following platforms:

Platform	Oracle 9.2.0.2+	Oracle 9.2.0.2+ RAC	Oracle 10g	Oracle 10g RAC
HP-UX 11.11 (11i)	X	X	X	X
HP-UX 11.23 v2 (Itanium)	X	X	X	X
HP-UX 11.23 v2 (PA-RISC)	X	X	X	X
AIX 5.2	X (64-bit Only)	X	X	X
AIX 5.3	X	X	X	X
Sun Solaris 8 and 9	X	X	X	X
Sun Solaris 10 (SPARC)	X	Not supported by Oracle	X	X
Sun Solaris 10 (x86 64 bit)	Not supported by Oracle	Not supported by Oracle	X	
RHEL 3.0 Update 2 (x86, x86-64, EM64T, Itanium2)	X (9.2.0.3+)	X	X	X
RHEL 4.0 (x86, x86-64, EM64T, Itanium2)	X (9.2.0.3+) x86-64, EM64T not supported by Oracle	X x86-64, EM64T not supported by Oracle	X	X
SuSE SLES9 (x86, x86-64, EM64T, Itanium2)	X (9.2.0.3+)	X	X	X
SuSE SLES10 (x86, x86-64, EM64T, Itanium2)			X	X



**Note:** Support for Windows 2003 for Oracle 9i and 10g will follow in a later release.

# System Requirements

## UNIX

- SQL\*Plus
- Per-process memory greater than or equal to 256 MB
- A recommended *hard limit* system file descriptors setting of a minimum of 1024 or higher, or as close to that as your system resources permit

See the UNIX Preinstallation Checklist for additional system requirements.

## Linux

- Minimum 1 GB of RAM
- System swap space equal to or greater than twice the amount of RAM.
- 400 MB of space in the /tmp directory.
- Pentium II processor 233 MHz, minimum.

## Oracle

- The minimal level (database level) of supplemental logging must be enabled.



**Important!** If you are implementing SharePlex for Oracle RAC with supplemental logging enabled you must enable it on all nodes in the cluster.

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# Preinstallation Instructions

## If You Are Running Red Hat Linux

Red Hat Linux must have the **ksh** shell installed before SharePlex is installed. A version of **ksh** called **pdksh** is included on the Red Hat Linux CDs. Refer to the Red Hat Linux documentation for more information. For more information on installing SharePlex, refer to the *SharePlex for Oracle Installation and Demonstration Guide*.

Note • Linux Enterprise Server 3.0 running kernel version 2.4.20 or lower, and users who have set the LD\_ASSUME\_KERNEL environment variable to kernel version 2.4.20 or lower, show SharePlex as a threaded application that exhibits multiple processes with the same name. This is normal behavior for these lower kernel versions, since standard LinuxThreads with floating stacks is the default implementation. Note that kernel versions 2.4.21 and higher do not exhibit this behavior because they are using the Native Posix Thread Library. If LD\_ASSUME\_KERNEL is employed we suggest a setting of 2.4.21.

## Replication Between Different Oracle Versions

Use caution when replicating from a newer Oracle version to an older one. New object types, datatypes, and other enhancements to RDBMS functionality can make data from the new Oracle version incompatible with the earlier one. To replicate from a newer Oracle version to an earlier one, make certain that the data to be replicated is common to both versions.

## Replication Between Oracle Versions on the Same System

SharePlex replication between two different versions of Oracle on the same server requires two installations of SharePlex, because there are different sets of binaries for different Oracle versions. This configuration also requires simulating two different hosts by using two virtual IP addresses on the same host. To establish replication in this configuration, contact Quest Technical Support.

## Downloading the 6.0.0 installer

To download the SharePlex for Oracle 6.0.0, follow these instructions.

- 1 Log onto [www.quest.com/support](http://www.quest.com/support) and click **Downloads & Updates** from the Quest SupportLink home page.
- 2 If this is the first time you are downloading something from this site, click **Downloading Instructions** from the navigational links on the left, and review the instructions.
- 3 From the navigational links, click **Downloads & Updates**, then enter **SharePlex for Oracle** into the **Product** box. Press the **Go** button.
- 4 From the **Products** list box, select the SharePlex for Oracle version that corresponds to the version being installed, then select the **Software** from the **Category** list box. Next, select the appropriate platform from the **Platform** list box. The available files are displayed in the **Downloads & Updates Results** box.
- 5 Review the patch-specific installation instructions beneath the file name, then click the file name to download the file(s) to your server.
- 6 You are ready to begin the installation process. Be sure to thoroughly read the version specific Release Notes *prior* to running the installer.

## .tpm Files and Installation

The **.tpm** file is a self-extracting installation file which uses the following naming convention:

```
SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm
```

### Example

```
SharePlex-6.0.0-b86-oracle100-aix-52-ppc.tpm
```

The **.tpm** patch installation file uses the following naming convention:

```
SharePlex-[Release #]-[Oracle Version #]-[Platform]-patch.tpm
```

### Example

```
SharePlex-6.0.1.42-Linux-x86-Oracle92-patch.tpm
```

When instructed to do so, execute the **.tpm** file using the following:

- 1 [FOR UPGRADES ONLY] Ensure that you are running as superuser (**root**).
- 2 Copy the appropriate **.tpm** file to a temporary directory where you have write permissions.
- 3 Execute the **.tpm** file in the temporary directory.



**Note:** The **.tpm** creates a temporary target directory, within the current directory, for extraction. This temporary target directory is removed upon installation completion.

## .tpm Command Line Options

The **.tpm** command line options and their descriptions follow:

### USAGE

```
tpm [<options>] [ [<package> | <location>] ... ]
```

### OPTIONS

-v, --verbose	Turns verbose mode on
-h, -?, --help	Prints out this message
--debug	Starts the interactive debugger
--info	Print information about installed packages
--install	Perform product installation
--remove	Perform product deinstallation
--commit	Commit last installation
--revert	Revert last installation
-t, --tmp <directory>	Temporary directory location
-d, --directory <directory>	Working directory
-f, --force	Unconditionally update existing files
--no-cleanup	Do not perform cleanup on failure
--nocleanup	Same as --no-cleanup, for compatibility
--list	List the content of the archive
--extract	Extract the archive into the current directory
-r, --responses <yaml file>	Use the responses from a specified file
-D, --defaults	Accept default answers
-l, --log	Leave the installation log file

### DESCRIPTION

Provides package management facilities. Packages can be installed, removed, reverted or committed. The utility also figures out its role based on the

command name of its invocation path. For example, "tpm-install" is treated as "tpm --install", "tpm-remove" as "tpm --remove", etc.

It can also be invoked as part of a self extracting package invocation, in which case it is treated as "tpm --install".

:



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**Note:** All command line options for the `.tpm` file are preceded by two dashes.

---

## New Installations

If you are installing SharePlex for Oracle for the first time please refer to the installation instructions contained in the Installation and Demonstration Guide.

If you are installing SharePlex for Oracle on a system that contains a prior installation of SharePlex for Oracle the installer will treat this as an upgrade. The behavior varies significantly from an installation on a machine that has never seen SharePlex for Oracle. Please select the appropriate upgrade scenario from the options that follow this section and carefully follow the instructions, paying particular attention to the notes and warnings.

## Upgrade Instructions

This section contains instructions for upgrading to SharePlex Version 6.0.0 from Version 5.1.x or higher. If you need assistance with any of the procedures, contact Quest Technical Support.



**Note:** There is no direct upgrade path from SharePlex 4.5.x or 5.0.x to SharePlex 6.0.0. Users should upgrade to the latest 5.1.x or higher patch version before upgrading to SharePlex 6.0.0. Please consult the Release Notes and/or Patch Notes specific to the intermediate SharePlex version for upgrade instructions. After you have upgraded to the intermediate version you may proceed with upgrading to SharePlex 6.0.0.



**Note:** When upgrading to SharePlex 6.0.0 from 4.5.x or 5.0.x please note that after the *intermediate* upgrade to SharePlex 5.1.x or higher the **sp\_cop** process must be started for each **vardir** prior to beginning the 6.0.0 upgrade process.



**Note:** If you are using the parameter SP\_QUE\_DFILESIZE, you must contact Support for a special procedure before upgrading. Look into the **\$VARDIR/data/paramdb** to see if the SP\_QUE\_DFILESIZE parameter is set before beginning the upgrade procedure.

## Upgrading from Version 5.1.x or higher

There are two procedures for upgrading to SharePlex 6.0.0 from SharePlex 5.1.x or higher, depending on the version of Oracle you are running and whether you have supplemental logging enabled. Use the following matrix to determine which procedure you should use.

### EXISTING ACTIVATION WITH...

SUPPLEMENTAL LOGGING DISABLED/OFF	SUPPLEMENTAL LOGGING ENABLED
SharePlex 5.x with Oracle 9i	SharePlex 5.x with Oracle 9i
SharePlex 4.5 with Oracle 9i	SharePlex 5.2 and 5.3 with Oracle 10g



**Note:** To verify if activation was completed with supplemental logging enabled please refer to the event\_log file.



**Note:** When upgrading peer-to-peer replication configurations the source and target systems must be upgraded at the same time.

## Upgrading SharePlex and upgrading Oracle

If you are upgrading Oracle, follow the instructions as dictated by Oracle to upgrade Oracle before you upgrade SharePlex. When you are ready to upgrade Shareplex follow the instructions below.

Users upgrading SharePlex and Oracle must upgrade through the latest patch release of SharePlex 5.3.4.

### Upgrading when supplemental logging is ENABLED

- 1 Log onto the system as the SharePlex Administrator.

- 2 Shut down SharePlex on the system that you are upgrading.

```
sp_ctrl(sysA)> shutdown
```



---

**Note:** Before shutting down SharePlex, it is highly recommended that SharePlex is caught up. Verify this by issuing the command **show capture detail** on the source machine to insure that the Oracle current redo log is the same as the Capture current redo log. You also want to verify that the queues are empty by issuing the **qstatus** command to determine that the backlog is zero.

---



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**Note:** For peer to peer configurations you will need to **stop post** after verifying that Capture is caught-up and *before* shutting down SharePlex.

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- 3 [USERS WITH PRE-5.3.4 INSTALLATIONS]

- A Upgrade to the latest patch release of Shareplex for Oracle 5.3.4. Use the installation and instructions that correspond to your existing version of Oracle and not to the version of Oracle that you are upgrading to. When prompted during the upgrade, use your existing product and variable data directories.



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**Note:** Be sure to review the SharePlex for Oracle 5.3.4 Patch Notes.

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- B Run **ora\_setup** using the existing SPO Oracle User.

- C Start **sp\_cop**.

- D Shutdown **sp\_cop**.

- 4 Upgrade your database to Oracle 9i or Oracle 10g. This can be done manually or by using the Database Upgrade Assistant (DBUA). Refer to your Oracle documentation for instructions. Also, refer to the instructions in Chapter 10 of the *SharePlex Administrator's Guide*.
- 5 After you have upgraded Oracle, verify that the database supplemental logging is enabled. Issue the the following command using a SQL\*Plus session connected to your database:

```
SQL> select SUPPLEMENTAL_LOG_DATA_MIN from v$database;
```

- 6 Upgrade to the latest patch release of SharePlex for Oracle 5.3.4 using the installation and instructions that correspond to the upgraded version of Oracle.



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**Note:** Be sure to specify *new* product and variable data directories.

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- 7 Export the SP\_SYS\_VARDIR that corresponds to the one used in step 3A above.
- 8 Run **ora\_setup** using the existing SPO Oracle User.
- 9 Start the **sp\_cop** using the upgraded SharePlex for Oracle 5.3.4 binaries that correspond to the newly upgraded version of Oracle from step 8 above.
- 10 Shutdown the **sp\_cop**.
- 11 [UNIX ONLY] If you are running multiple versions of SharePlex and you are only planning to upgrade a single version at this time, export the IGNORE\_RUN environment variable. This directs the installation program to ignore other versions of **sp\_cop** that are currently running.

```
$ export IGNORE_RUN=y (ksh shell)
```

```
$ setenv IGNORE_RUN y (csh shell)
```

12 Either mount the SharePlex 6.0.0 CD or download SharePlex 6.0.0 from SupportLink and follow the installation script prompts. Refer to the *SharePlex Installation and Demonstration Guide* for more information.

13 To begin the upgrade process use the following:



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**Note: UNIX:** Install the upgrade into the existing SharePlex product and variable-data directories, which should appear as the defaults in the prompts.

---

**UNIX:** Perform the following procedure.

- a) Ensure that you are running as superuser (root).
- b) Copy the appropriate **.tpm** file to a temporary directory where you have write permissions.
- c) Change the permissions of the `SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm` file as follows:

```
# chmod 555 SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm
```

- d) Ensure that the `ORACLE_HOME` value is set to the value of `ORACLE_HOME` that you are using with this installation of SharePlex. You can verify the `ORACLE_HOME` setting by issuing the `env` command at the command prompt.

- e) If you need to set your `ORACLE_HOME` please use the following procedure:

**ksh shell:**

```
# export ORACLE_HOME=[value from oratab file]
```

**csh shell:**

```
# setenv ORACLE_HOME=[value from oratab file]
```

- f) Execute the **.tpm** file in that directory.

For specific instructions on upgrading SharePlex please review the section "[Upgrading SharePlex Only](#)" on page 13.

When the installation is complete switch the user to SharePlex Administrator.

```
# su [spadmin]
```

- g) Run **ora\_setup** using the directions in the *SharePlex Installation and Demonstration Guide*.



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**Note:** Existing users will note that the **bin** directory and the **util** directory now contain shell scripts and not actual binary files. The shell scripts should be employed in the same manner as the previous binary files. Users should never launch binaries from the **.app-modules** directory where the shell scripts point, as this will lead to errors.

---

14 Start SharePlex.

15 Reactivate the configuration.

## Upgrading when supplemental logging is DISABLED or OFF

- 1 Log onto the system as the SharePlex Administrator.
- 2 Insure that the Capture process is caught up.



**Note:** To verify that the Capture process is caught-up issue the command **show capture detail** on the source machine to insure that the Oracle current redo log is the same as the Capture current redo log. You also want to verify that the queues are empty by issuing the **qstatus** command to determine that the backlog is zero.

---

3 Perform the following:

- A Enable supplemental logging.
- B Issue the ALTER SYTEM SWITCH LOGFILE command.
- C Verify again that the Capture process is caught-up.

4 Shut down SharePlex on the system that you are upgrading.

```
sp_ctrl(sysA)> shutdown
```



**Note:** For peer to peer configurations you will need to **stop post** after verifying that Capture is caught-up and *before* shutting down SharePlex.

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**Note:** Before shutting down Oracle to upgrade to 9i or 10g, enable supplemental logging! The **only** exception occurs when you are upgrading from Oracle 8i. In that case, you need to upgrade Oracle first and then enable supplemental logging.

---

5 [USERS WITH PRE-5.3.4 INSTALLATIONS]

- A Upgrade to the latest patch release of Shareplex for Oracle 5.3.4. Use the installation and instructions that corresponds to your existing version of Oracle and not to the version of Oracle that you are upgrading to. When prompted during the upgrade, use your existing product and variable data directories.



**Note:** Be sure to review the SharePlex for Oracle 5.3.4 Patch Notes.

---

- B Run **ora\_setup** using the existing SPO Oracle User.
- C Start **sp\_cop**.
- D Shutdown **sp\_cop**.

6 Upgrade your database to either Oracle 9i or Oracle 10g. This can be done manually or by using the Database Upgrade Assistant (DBUA). Refer to your Oracle documentation for instructions. Note that the DBUA restarts your Oracle database.

7 After you have upgraded Oracle, ensure that the database supplemental logging is enabled. Issue the following query:

```
SQL> select SUPPLEMENTAL_LOG_DATA_MIN from v$database;
```

If the response to the query is “**yes**”, supplemental logging is enabled. However, if the response is “**no**”, you need to enable, or turn on, supplemental logging. Enable it as follows:

```
ALTER DATABASE ADD SUPPLEMENTAL LOG DATA;  
ALTER SYSTEM SWITCH LOGFILE;
```

8 Upgrade to the latest patch release of SharePlex for Oracle 5.3.4 using the installation and instructions that correspond to the upgraded version of Oracle.



**Note:** Be sure to specify *new* product and variable data directories.

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- 9 Export the `SP_SYS_VARDIR` that corresponds to the one used in step 5A above.
- 10 Run `ora_setup` using the existing SPO Oracle User.
- 11 Start the `sp_cop` using the upgraded SharePlex for Oracle 5.3.4 binaries that correspond to the newly upgraded version of Oracle from step 8 above.
- 12 Shutdown the `sp_cop`.
- 13 [UNIX only] If you are running multiple versions of SharePlex and you are only planning to upgrade a single version at this time, export the `IGNORE_RUN` environment variable. This directs the installation program to ignore other versions of `sp_cop` that are currently running.

```
$ export IGNORE_RUN=y (ksh shell)
```

```
$ setenv IGNORE_RUN y (csh shell)
```

- 14 Either mount the SharePlex 6.0.0 CD or download SharePlex 6.0.0 from SupportLink and follow the installation script prompts. Refer to the *SharePlex Installation and Demonstration Guide* for more information.

- 15 To begin the upgrade process use the following:



---

**Note: UNIX:** Install the upgrade into the existing SharePlex product and variable-data directories, which should appear as the defaults in the prompts.

---

**UNIX:** Perform the following procedure.

- a) Ensure that you are running as superuser (root).
- b) Copy the appropriate `.tpm` file to a temporary directory where you have write permissions.
- c) Change the permissions of the `SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm` file as follows:

```
# chmod 555 SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm
```

- d) Ensure that the `ORACLE_HOME` value is set to the value of `ORACLE_HOME` that you are using with this installation of SharePlex. You can verify the `ORACLE_HOME` setting by issuing the `env` command at the command prompt.

- e) If you need to set your `ORACLE_HOME` please use the following procedure:

**ksh shell:**

```
# export ORACLE_HOME=[value from oratab file]
```

**csh shell:**

```
# setenv ORACLE_HOME=[value from oratab file]
```

- f) Execute the `.tpm` file in that directory.

For specific instructions on upgrading SharePlex please review the section "[Upgrading SharePlex Only](#)" on page 13.

- g) When the installation is complete switch the user to SharePlex Administrator.

```
# su [spadmin]
```

- h) Run `ora_setup` using the directions in the *SharePlex Installation and Demonstration Guide*.



---

**Note:** Existing users will note that the `bin` directory and the `util` directory now contain shell scripts and not actual binary files. The shell scripts should be employed in the same manner as the previous binary

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files. Users should never launch binaries from the **.app-modules** directory where the shell scripts point, as this will lead to errors.

---

16 Start SharePlex.

17 Reactivate the configuration.

18 To verify that activation was done with supplemental logging enabled, issue the **show config** command.

```
sp_ctrl(sysA)> show config
```

## Upgrading SharePlex Only

If you are not upgrading your Oracle database you may begin the SharePlex upgrade process using the following information.

You will need the following information to perform the upgrade:

- SharePlex Admin user name
- Location of the installation directories, e.g. the product directory and the variable-data directory
- SharePlex Admin group name
- ORACLE\_SID that corresponds to the system under upgrade
- ORACLE\_HOME that corresponds to the system under upgrade
- Oracle DBA group name
- SharePlex communications port number
- SharePlex licensing information

**UNIX:** Perform the following procedure.

1 To begin the upgrade process proceed with the following:

- Ensure that you are running as superuser (root).
- Copy the appropriate **.tpm** file to a temporary directory where you have write permissions.
- Change the permissions of the `SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm` file as follows:

```
# chmod 555 SharePlex-[Release #]-[Oracle Version #]-[Platform].tpm
```

2 Insure that the Capture process is caught up.



---

**Note:** To verify that the Capture process is caught-up issue the command **show capture detail** on the source machine to insure that the Oracle current redo log is the same as the Capture current redo log. You also want to verify that the queues are empty by issuing the **qstatus** command to determine that the backlog is zero.

---

3 [SUPPLEMENTAL LOGGING DISABLED ONLY]

- A* Enable supplemental logging.
- B* Issue the `ALTER SYTEM SWITCH LOGFILE` command.
- C* Verify again that the Capture process is caught-up.

4 As the SharePlex Admin user, shut down SharePlex on the system that you are upgrading.



**Note:** For peer to peer configurations you will need to **stop post** after verifying that Capture is caught-up and *before* shutting down SharePlex.

---



**Note:** Before shutting down Oracle to upgrade to 9i or 10g, enable supplemental logging! The **only** exception occurs when you are upgrading from Oracle 8i. In that case, you need to upgrade Oracle first and then enable supplemental logging.

---

- 5 As root, run the **.tpm** file to start the SharePlex upgrade script.

The install process will begin by displaying install package version information. Please verify the information displayed corresponds to the Oracle version and platform you are upgrading.

- 6 Follow the prompts that guide you through the upgrade process.



**Note:** During the upgrade process you may opt to change the SharePlex Admin user. If the user provided at this prompt does not exist there will be additional prompts, not displayed in these instructions, to confirm the creation of the new user. Please follow the instruction given with each prompt.

---



**Important!** If you have SharePlex 5.x installed on your system, and you wish to retain the binaries and libraries for that version, select the appropriate option to perform a new installation of SharePlex 6.0.0. Otherwise, the 5.x binaries will be overwritten.

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**Note:** During the upgrade process all of the valid vardirs contained in the vardirs.log file will be upgraded regardless of which vardir location is provided.

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**Note:** Please note that the default port number is 2100 and that Oracle may already be using this port number.

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- 7 When the upgrade is complete the installer will exit after displaying the location of the install log file.

Installation log saved to: /home/splex/.shareplex/INSTALL-SharePlex-6.0.0-0704251334.log  
SharePlex for Oracle v. 6.0.0 installation successful.

- 8 When the upgrade is complete switch the user to SharePlex Administrator.

```
# su [spadmin]
```

- 9 Run **ora\_setup** using the instructions in the *Installation and Demonstration Guide*. You can find the instructions in the following section, "[Establishing SharePlex as an Oracle user](#)" on page 52.



**Note:** Existing users will note that the **bin** directory and the **util** directory now contain shell scripts and not actual binary files. The shell scripts should be employed in the same manner as the previous binary files. Users should never launch binaries from the **.app-modules** directory where the shell scripts point, as this will lead to errors.

---

- 10 Start SharePlex for Oracle.

## Replicating Between SharePlex Versions

SharePlex 6.0.0 is *not* architecturally compatible with previous releases. A source system running SharePlex 6.0.0 *can not* replicate to a lower target version of SharePlex.

For information about restrictions when replicating between SharePlex versions, refer to those listed under "Interoperability" in the Known Issues section in this document.

### INTEROPERABILITY MATRIX

Source System	Target System		
6.0	6.0		
5.3	5.0 5.1	5.2 5.3	6.0
5.2	5.0 5.1	5.2 5.3	6.0
5.1	5.0 5.1	5.2 5.3	6.0
5.0	5.0 5.1	5.2 5.3	6.0



**Note:** In cases when a 5.x.x Shareplex version is configured to replicate to SharePlex 6.0.0, **the replication is subject to limitations of the lower source version.**



**Note:** It is recommended that the **on host** command option not be employed when issuing commands from a lower version of SharePlex to a higher version of Shareplex because of **sp\_ctrl** compatibility issues between versions.

# New in Version 6.0.0

## Instant Activation

Instant activation takes advantage of the Oracle 9i+ supplemental log data in order to minimize the need for maintaining the internal SharePlex LOBMAP table. Because the LOBMAP is no longer built during activation the result is a no down time activation for configurations that contain LOBs.

## Support for Index Organized Tables

SharePlex now support replication of index organized tables. See the [Supported and Non-supported Operations](#) section for more details on the types of IOTs that are supported.

## Expanded Support of Supplemental Level Logging

SharePlex now requires at least the minimal level of supplemental logging be enabled.

Support has been added for Primary Key, Unique Index, and Table Level Supplemental Logging. Support for these additional levels of supplement logging will improve the performance of activation and replication. For more information on SharePlex and Supplemental Logging please see “Configuring your database for replication” in the SharePlex Administrator Guide.

## New Non-root SharePlex Installer

SharePlex for Oracle may now be installed by non-root users. Any user in the SharePlex Admin group can now run the SharePlex for Oracle application. Additionally, users are now able to specify a alternate default SharePlex Admin group name.

## Support for Unattended Installation

SharePlex is able to be installed in an unattended mode when the installer is provided with a text file containing install parameters. For more information on this option refer to the SharePlex Installation and Demonstration Guide.

## Support for ASM

SharePlex now provides support for ASM Oracle instances. Users on supported platforms will be prompted during `ora_setup` to enable this support. For a list of ASM supported platforms please refer to the [Supported and Non-supported Operations](#) section of these notes. Support for ASM on additional platforms will be announced as each platform is certified.

## New Synchronization Command

For more information on the sync family of commands see `copy/append` in the Reference Guide. The sync process tuning parameters can be found in the Reference Guide, as well.

## Support for XML Datatypes

SharePlex now provides support for XML datatypes. In addition to limitations specific to XML the XML datatype is subject to the same limitations as the LOB datatype. For more information please refer to the [Supported and Non-supported Operations](#) section of these notes.

## Changes in Version 6.0.0

- The Single-threaded Poster has been deprecated.
- The **verify config** command has been deprecated.
- Basic Conflict Resolution has been deprecated.



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**Important!** If you are currently employing Basic Conflict Resolution in your peer-to-peer replication please re-evaluate your conflict resolution routines in consultation with the Generic Conflict Resolution section of the SharePlex Administrator Guide. If you need help re-evaluating your conflict resolution please contact Quest.

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**Note:** To confirm that Basic Conflict Resolution is employed determine if the conflict resolution file, **conflict\_resolution.SID**, in the **data** sub-directory in the SharePlex variable-data directory is empty. If the file is empty you are *not* employing any form of conflict resolution. If the file is not empty confirm that the SP\_OPO\_GENERIC\_CR parameter is set to "0". If the parameter is set to "0" (and your **conflict\_resolution.SID** is not empty) you are employing Basic Conflict Resolution.

---

- The **monitor** command has been deprecated.
- Support for Windows 2000 and Red Hat Linux Advanced Server 2.1 has been deprecated.

## Enhancements in Version 6.0.0

- This version of SharePlex contains modifications to improve LOB replication.
- This version of SharePlex includes a new **qview** command, **trimall**, that can be used to perform the **trim** command on all the Post queues. Please refer to the "Using the trimall command to clear datafiles from all queues" section of the Administrator's Guide for more information on using this new command.
- Users will now see a header echo to the terminal when starting **sp\_cop**. This header will contain SharePlex version, vardir location, and port number information similar to the following:

```
*****  
* SharePlex for Oracle Startup  
* Version: 6.0.0.58  
* VarDir: /splex/SPO6.0.0/vardir/  
* Port : 5555  
*****
```

# Known Issues in Version 6.0.0

## Linux Issues

- Linux Enterprise Server 3.0 running kernel version 2.4.20 or lower, and users who have set the LD\_ASSUME\_KERNEL environment variable to kernel version 2.4.20 or lower, show SharePlex as a threaded application that exhibits multiple processes with the same name. This is normal behavior for these lower kernel versions, since standard LinuxThreads with floating stacks is the default implementation. Note that kernel versions 2.4.21 and higher do not exhibit this behavior because they are using the Native Posix Thread Library. [CR124541]
- On RedHat 4.0 on the IA64 platform control characters, such as \n and \c, are not handled correctly. The control characters will appear as part of the text instead of modifying the text appearance. This is evidenced during installation. This is a Red Hat issue. [CR163651]

## ASM

- *For Supported Platforms Only:* If the redo\_log or archive\_log that SharePlex is currently reading is involved in “rebalancing” due to the removal of a disc group, the Capture process will pause until the rebalance procedure for that file is complete.
- *For Non-supported Platforms Only:* With Oracle 10g, ASM-managed online redo and archive log files are stored in a filesystem managed by Oracle. SharePlex cannot read ASM-managed files and, therefore, these log files must be stored in a location that is not ASM-managed, multiplexed to an operating system or clustered file system (CFS) location. In addition, after multiplexing the files, enable the parameter SP\_OCT\_LOG\_MEMBER. Refer to the *SharePlex Reference Manual* for more information about this parameter. [CR143207] For a list of ASM supported platforms please refer to the [Supported and Non-supported Operations](#) section of these notes.

## Startup

- If you have SharePlex configured to start from a startup script and it returns an error similar to "System call error: sp\_cnc (connecting from cdrpx.mcit.med.umich.edu) Bad file number Can't dup2 stderr," try adding **nohup** to your script. The **nohup** command directs a command (in this case the startup of SharePlex) to continue in the background after the current user (the script) logs out. The syntax is:

```
# cd /product_directory/bin
# nohup ./sp_cop &
```

## Upgrading Oracle

- There is an issue when a database is upgraded to 9.2.0.5 from an earlier version; specifically, when a **select count** procedure is performed against a table initially created in the earlier Oracle version, the number returned is one less than the actual number of rows in the table. However, when a **compare table** command is run, the rows return correctly. The work around is to drop and re-create the primary key index or disable/enable the primary key constraint. [CR90523]

## Character Sets

- Replication of NCHAR data from a fixed-width Unicode character set, such as AL16UTF16, to a variable-width Unicode character set, such as UTF8, causes column-sizing issues and, therefore, is not supported. [CR91415]
- The SP\_DEQ\_NCHAR\_CHARACTERSET parameter must be set to the same value on both the source and target, or the Compare/Repair operation will fail. [CR90862]
- Avoid replicating NCHAR datatypes using different character sets such as AL16UTF16 on the source machine and UTF8 on the target due to byte size limitations. [CR89930]

Oracle stores NCHAR data with a maximum limit of 2000 bytes. A fixed length NCHAR character set such as AL16UTF16 has a different maximum number of characters than a variable length NCHAR character set such as UTF8. For the fixed length AL16UTF16 character set, each character is stored as 2 bytes; thus, the maximum number of characters is 1000 for NCHAR data. For the variable length UTF8 character set, the maximum number of characters a column can accommodate depends on how many bytes each character requires.

If you replicate 1000 3-byte characters from a source machine using the AL16UTF16 character set to a target machine set to UTF8, you will get the following Oracle error message on the target, since it needs 3000 bytes:

```
ORA-01461 can bind a LONG value only for insert into a LONG column
```

- CLOB data is doubled when you are using different character sets on the source and target. If you are replicating LOB data between databases with different character sets, you must follow the steps below to avoid an out-of-sync condition: [CR92523, CR83943]
  - 1 Disable the user access.
  - 2 Flush the queues.
  - 3 Reactivate the configuration file after the upgrade is complete.

## Capture

- If the combined sizes of each column in a table produce a record in the redo log with a data size greater than 320K, Capture disregards the message. If the following message appears in the Event Log on the source system, a redo record that is larger than 320K is the cause: `Internal error: sp_ocap (for o.ora8 queue o.ora8) 10407 - data too large for queue buffer`. This is a rare occurrence, but if it happens, the source and target tables will be out of synchronization.

## Read

- Messages are stuck in the capture queue after the Read process encounters `oracle error=1466`, which is caused by a TRUNCATE. To work around this issue, restart the Read process. [CR89936/35153]
- An out-of-sync condition occurs after an INSERT operation on the source is replicated to the target, followed by a separate DELETE operation that, when Post tries to replicate, results in a rows-processed-count of 0. Examining the target reveals that there was nothing to delete because the row didn't exist on the target. This series of events occurred because the Read process failed to supply the pertinent keys for a DELETE operation, thus rendering that DELETE operation inappropriate for Post's key-caching algorithm. [CR89931]

## Post

- Post sometimes generates the following Oracle error message: ORA-00904 error: Invalid column name. This is a known Oracle bug. See Oracle bug reports 1326581 and 2012036.
- The Post process may encounter the following error: Unexpected Oracle error: ORA-01882: timezone region not found. When replicating TZR make sure that the timezone data version is the same for both the source and the target databases. This is a known Oracle issue in versions 9.2.0.6 and 9.2.0.7. See Oracle Bug 5515669 and Oracle Note 414590.1. [CR25230]

## Compare/Repair

- Compare/Repair on cross endian platforms with different byte orders may produce a false out-of-sync for N-type data. [CR89217]
- Shareplex cannot compare repair a table that has a unique functional index without getting out-of-sync. As a work around, use the **compare orderby** option (see documentation in the *SharePlex Reference Guide*). [CR93993]
- To allow compare repair to work across different character sets, the following parameters must be set on the source machine. In a future version, Shareplex will automatically detect this and handle it. [CR96055, CR96056]
  - SP\_DEQ\_CHARACTERSET: [value from target NLS\_CHARACTERSET]
  - SP\_DEQ\_NCHAR\_CHARACTERSET: [value from target NLS\_NCHAR\_CHARACTERSET]
  - SP\_DEQ-NLS\_LANG\_SELECTOR: 2
- Occasionally on HP platforms, after completing a successful Compare/Repair operation, the Compare Client is killed while exiting due to a SIGSEGV error. [CR125640]
- When the command **remove log compare** is issued, those logs filed after a compare 'unknown' status (result of a **show compare**) are not removed. The work around is to manually remove the logs. [CR112757/125637]
- The SP\_DEQ-NLS\_LANG param only supports the use of the NLS\_LANGUAGE argument. There is currently no support for the NLS\_TERRITORY and NLS\_CHARACTERSET arguments. [CR158841]

## Copy/Append

- If you need to **copy** a materialized view to a table you should drop the target table before copying. Please be aware of that the new target table created by **copy** will have an additional column named M\_ROW\$\$ which does not exist on the source. **Append** of a materialized view to a table is not supported. [CR41679]

## Conflict Resolution

- The **!ControlExtendedCharSet** prepared conflict resolution routine and the **!DEFAULT** parameter currently cannot be used for generic conflict resolution.
- Conflict resolution does not support abstract datatypes and VARRAYs.
- A known issue in PL/SQL prevents the SharePlex conflict resolution logic from compiling the PL/SQL for tables whose names are the same as their owners. Oracle has stated that the issue will not be fixed.

See Oracle TAR 2577886.996 for more information. This issue does not affect replication; SharePlex supports tables with identical owner and table names.

## Transformation

- A known issue in PL/SQL prevents the SharePlex transformation logic from calling a transformation routine for tables whose names are the same as their owners. Oracle has stated that the issue will not be fixed. See Oracle TAR 2577886.996 for more information. This issue does not affect replication; SharePlex supports tables with identical owner and table names.

## Queues

- A known issue causes Capture to core dump and then restart, displaying the following error messages: [CR64165]

```
Internal error: 10743 - capture time limit(300 sec) exceeded [sp_ocap/728794]
Error: process sp_ocap killed due to SIGSEGV [sp_cop/239744]
```

- Users running configurations in which there are a large number of concurrent transactions open at any given time might see the following error in the event\_log file after the Import process has crashed:

```
Error: failed to add a subqueue header: que_NOFREE_SQUE: No more free subques [sp_mport(que)/16346]
Notice: Error que_SQUE_CRE: Could not create subqueue que_write(irvqasul3+P+o.o920v32a-o.o920v64a) [sp_mport(rim)/16346]
```

This error is caused by insufficient buffer space in the message queues. To work around this problem:

--Lower the value of SP\_QUE\_SHMDBUF to 8 KB or 16 KB from the default value of 32 KB.

--Raise the value of SP\_QUE\_POST\_SHMSIZE to 64MB or 128MB.

## Port Number

- In Oracle version 9.2.x, port 2100 is being used by an Oracle XML daemon and cannot be used by SharePlex. However, SharePlex still uses port 2100 as the default. To specify an alternative port number for SharePlex, see Chapter 5 of the *SharePlex Administrator's Guide*.

## Partitioned Replication

- A 30-character partition name in the PARTITION\_SCHEME column of the SHAREPLEX\_PARTITION table causes the **activate config** command to fail, even though the column definition allows 30 characters.
- When using a compound routing map in a placeholder route in the configuration file, do not use spaces between each routing component. For example, **sysb@o.orab+sysc@o.orac** is correct because there are no spaces before or after the + symbol.
- Compound routing maps are not supported inside the ROUTE column of the SHAREPLEX\_PARTITION table. The work around is to create separate records in the table for each route, using the same column condition.

## Vertical and Horizontal Partitioning

- The ALTER TABLE operation to add a column if vertically-partitioned replication is in use for the table is not supported.

- When performing rollbacks on a horizontally-partitioned table with supplemental logging turned on, the following error displays:

```
Warning: Mismatch() partial rollback - messages counts mismatch(433:503) in session 10(0:9)
```

This error only happens on rollbacks of ARRAY INSERTS in horizontally-partitioned tables and results in an out-of-sync. There is no known work around. [CR63442, CR54218, CR63095]

- You cannot replicate rollbacks on INSERTS into partitioned tables that select data from another table and also use the APPEND hint, because the INSERTS show up in the redo log as a direct load. This occurs because the partition ID is not mapped to the table object ID for direct loads on partitioned tables, which causes the Capture process to ignore the direct load since Capture thinks the object is not in replication. [CR69331]
- When employing horizontal partitioning on a table with a LONG column, if the SP\_ORD\_HP\_IN\_SYNC parameter is enabled the Read process will attempt to use all the columns in the table as the key. The end result is significant Read process performance issues. Users should not employ horizontal partitioning with the SP\_ORD\_HP\_IN\_SYNC parameter enabled. [CR41945]

## LOBs, VARRAYs, and XML

- Using ALTER TABLE to add or redefine a LOB (or XML) column is not supported for tables in replication (in the active config state). [CR61279]
- A bug with Capture causes VARRAY messages to stay in the post subqueue (5000+) after a DML rollback that contains a LOB. The workaround is to wait until the open transaction is completed, and read-release the subqueue that has data. [CR90207, CR90304]
- There might be an issue when replicating VARRAYs with FLOAT(n) type to a target machine running SharePlex 5.2 and Oracle 10g, due to the way that Oracle handles Float(n) types. Float is not an Oracle type; it is a SQL-92 type and Oracle is not consistent in the way that it handles the float type. This is a known Oracle bug. See Oracle bug report 4266304. [CR125639]
- Current LOB implementation does not support LOBs (or XML) greater than 4GB (either byte length or char length). To support LOBs greater than 4GB the appropriate OCILob functions must be used. [CR127888]

OCILobWrite() Less than 4GB

OCILobWrite2() Greater than 4GB

- When memory can't be allocated for the VARRAY data being buffered or if the allocated memory cannot accommodate the cumulative size of all VARRAY pieces then all previously buffered VARRAY data is sent to the target, as well as the current and subsequent VARRAY data pieces, before the associated DML is processed. The work around for this issue as provided by development is as follows: [CR142905]

Set SP\_OCT\_LOB\_BUFFER\_SIZE to a value which is N times larger then the largest VARRAY column where N is the 32K/block\_size of the LOB segment. For example, if the block\_size of the LOB segment is 8K then N = 4. If the target VARRAY column is 10MB then the LOB\_BUFFER\_SIZE should be 40MB. The user may wish to add 10% to this and set the LOB\_BUFFER\_SIZE to 44MB.

- The `dbms_lob.erase()` function is not unsupported for LOB data > block\_size when it is erased to a specified length of zero(length=0). [CR46407]

## CLOBs and NCLOBs

- Compare/Repair supports NCLOBs, but not between different character sets, nor on little endian machines.

## DDL Replication

- When replicating DDL using the SP\_OCT\_REPLICATE\_ALL\_DDL option, ensure that database compatibility is set to 9.2.0 or higher. Setting compatibility lower than 9.2.0 can cause DDL replication to fail. [CR96978]
- When replicating with SP\_OCT\_REPLICATE\_ALL\_DDL the only ALTER TABLE operations, for tables in replication, supported are:
  - add a column
  - drop a column
  - redefine a column (datatype, column size, default value)
  - modify storage and other parameters
  - modify degree of parallelism
  - set columns unused
  - drop unused columns

All other ALTER TABLE options are not replicated. For tables outside of replication, all ALTER TABLE options are replicated. This issue will be addressed in a later release.

- When the SP\_OCT\_REPLICATE\_ALL\_DDL parameter is set to **1** (ON), all DDL including ALTER TABLE RENAME columns are replicated. If the table is in an active configuration, the target column is renamed without updating the object cache, which causes all succeeding DML on that column to fail. [CR124180]
- SharePlex does not support replication of DDL greater than 319K in text size.
- For cascading replications, ALTER TABLE commands are replicated when SP\_OCT\_REPLICATE\_DDL is enabled. TRUNCATES do not get replicated. To stop replication of DDL in cascading replication, disable the SP\_OCT\_REPLICATE\_DDL and SP\_OCT\_REPLICATE\_ALL\_DDL parameters. [CR92251, CR91818]
- Following a DDL operation, such as alter table drop column, Capture may report the following warning in the event\_log file: Warning: 10658 - null hrid in transop. As there is no impact to the data or to replication in this situation; the error message can be ignored. [CR158163]
- Replicating CREATE ROLE (set param SP\_OCT\_REPLICATE\_ALL\_DDL 1) is changing the grantee name on the target to the name of the SharePlex Administrator. [CR2242]
- When the Post process stops due to a fatal DDL error and is restarted the previous DDL is skipped and the Post process will continue until the next FATAL DDL error. The **.ddl** log file in the **state** directory is created when the DDL is started so that only one que will process the message. The issue is this file is created at the start of the transaction, so if the DDL fails and the Post process is restarted, it thinks that this was already applied and goes on to the next one. The implementation is that DDL is never applied more than one time, but this also allows that the DDL is never applied when there is a fatal DDL error. When this situation is encountered and the change does not exist on the target, remove the **.ddl** log file and restart the Post process. [CR1740]

## ALTER TABLE Command

- SharePlex does not support ALTER TABLE commands that change the size of fixed-length columns — such as from char (2) to char (5) — when there is data in the column. In such circumstances, Oracle first issues an UPDATE on each row that adds spaces to the column to make sure there is sufficient space to complete the ALTER TABLE command — for example, UPDATE tableA set value (col1 = 'ro ') where col1 = 'ro' ...; SharePlex replicates the UPDATE. Next, Oracle issues the ALTER TABLE command to

change the column size, and SharePlex replicates it. When Post receives the UPDATE message, it has not yet received the ALTER TABLE message. Therefore, the target column is not sized correctly to accommodate the added spaces from the UPDATE. This causes Post to stop posting and print an error to the Event Log: (ORA-01401: inserted value too large for column).

- SharePlex replicates all of the storage parameters for a source object, even though only some of them were changed with the ALTER TABLE command. If the source and target objects were not created with the same storage parameters, one of two things can happen: Either the target table will assume the source table's parameters or, if the DDL is not supported by Oracle, an Oracle error will be generated.

For example, consider a source table with MAXEXTENTS 525 and MINEXTENTS 20, and a target table with MAXEXTENTS 505 and MINEXTENTS 4. If the MAXEXTENTS of the source object is changed to **unlimited**, SharePlex will replicate *both* the MAXEXTENTS change and the non-changed MINEXTENTS of 20. This causes Oracle error 01570, because MINEXTENTS cannot be larger than the extents currently allocated. Alternatively, if the MINEXTENTS is changed to 1 on the source, but MAXEXTENTS is not changed, SharePlex replicates both, which results in target parameters of MAXEXTENTS 525 and MINEXTENTS 1.

- When performing an ALTER TABLE to set a default value for a column when the table has data in it, SharePlex sends one message for each record in the table to the target machine. For a very large table, this can cause replication to fall significantly behind Oracle as a result of the large number of UPDATES that Oracle places into the redo logs as part of the DDL transaction.
- When altering a table to add a partition (not a replicated function), you must reactivate the configuration using default multi-threaded activation. The procedure for adding a partition to a replicating table is in the *SharePlex Administrator's Guide*.
- The ALTER TABLE operations to add, drop, or modify a VARRAY column or UDT column are not supported. [CR72847]

## TRUNCATE Command

- The TRUNCATE command cannot be issued by a SharePlex Oracle user since the command will not be replicated. The user must have the authorization level of "Administrator" to issue the TRUNCATE command.

## ora\_setup

- When running ora\_setup with an active configuration DDL performed on the SharePlex internal tables is replicated to the target. To work around this issue set the SP\_OCT\_REPLICATE\_ALL\_DDL parameter to "0" prior to running ora\_setup. This parameter change takes effect immediately. After ora\_setup is complete reset this parameter to its previous setting. [CR16047]

## Ora\_cleansp

- On HP-Itanium systems, you might see the following warning when running **ora\_cleansp**:

```
Warning: Ignoring setuid/setgid bit on "./ora_cleansp" as the system tunable
"secure_sid_scripts" is set.
```

This occurs when ora\_cleansp is run by a UNIX user who is not the owner of ora\_cleansp and when secure\_sid\_scripts, a system tunable parameter, is set. This condition is harmless to ora\_cleansp and you should ignore the warning.

## WHERE Clauses

- SharePlex currently does not support replication of tables that result in WHERE clauses larger than 32K (excluding LOB and LONG columns).

## SQL Cache

- If you receive the error "ORA-01458: invalid length inside variable character string," turn off the SQL Cache feature. The cause of the error is unknown at this time.

## Documentation Changes

- The Preinstallation instructions for Solaris 10 have been updated in the Installation and Demonstration Guide.
- The Pre-installation Checklist in the Installation & Demonstration Guide has been reorganized and updated.
- There are new install procedures in the Installations & Demonstration Guide to coincide with the new installer and support for the unattended installs.
- Documentation has been added in support of the new features:
  - new synchronization commands **copy/append** (see **copy/append** in the Reference Guide)
  - new support for redo and archive logs on ASM supported platforms (see "ASM support" in the Administrator's Guide)
- The Supported Operations section of these Notes has been updated to reflect new supported datatypes, objecttypes, etc.
- New Solaris 10 specific preinstall procedures have been added to the Installation & Demonstration Guide.
- The following parameters' default values have been changed and documented in the Reference Guide:
  - SP\_IMP\_WCMT\_MSGCNT
  - SP\_OCT\_LOG\_READ\_SIZE
  - SP\_OCT\_OLOG\_DIRECT
  - SP\_OCT\_OLOG\_QUEUE\_SIZE
  - SP\_OCT\_OPS\_QUEUE\_SIZE
  - SP\_OPO\_IDLE\_LOGOUT
  - SP\_OPO\_MAX\_OEXN\_TIME
  - SP\_OPO\_READRELEASE\_INTERVAL
  - SP\_ORD\_MSGS\_CK\_FREQ
  - SP\_ORD\_RCM\_SKIP\_RATIO
- The following parameters have been added to the Reference Guide in support of new features and functionality:
  - SP\_OCT\_STATISTICS
  - SP\_SYS\_JOB\_HISTORY\_RETENTION
  - SP\_OSY\_LOCK\_ALL
  - SP\_OSY\_LOCK\_TIMEOUT
  - SP\_OSY\_PORT
  - SP\_OSY\_POST\_TIMEOUT
  - SP\_OSY\_TCP\_TIMEOUT
  - SP\_OSY\_THREADS
  - SP\_OCT\_ASM\_SID
  - SP\_OCT\_ASM\_SUPPORT
- The following parameters have been deprecated and removed from the Reference Guide:
  - SP\_OCF\_REPLICATE\_LOB
  - SP\_OCT\_ROM\_DEBUG
  - SP\_OPO\_TYPE
  - SP\_ROM\_DEBUG

## Supported and Non-supported Operations

Review this section to decide which objects to include in your replication configuration and which ones to exclude because they are not supported by SharePlex replication.

### What SharePlex Replicates

In general, SharePlex replicates changes to objects listed in the configuration file. The changes can be made with any Oracle application. SharePlex replicates the following

#### Supported DML Operations

Supported	Oracle 9i	Oracle 10g
DML (INSERTS, UPDATES, DELETES, COMMITS, ROLLBACKS) on tables, partitioned tables, and subpartitioned tables	X	X
Replication from materialized views to regular tables	X	X
Direct-path loads (SQL*Loader)	X	X

#### Supported DDL Operations

Supported Objects	Supported Operations	SP_OCT_REPLICATE_DDL set to 3 or SP_OCT_REPLICATE_ALL_DDL set to 0		SP_OCT_REPLICATE_ALL_DDL set to 1*	
		Oracle 9i	Oracle 10g	Oracle 9i	Oracle 10g
<b>Table</b>					
	create table			X	X
	drop table			X	X
	truncate	X	X	X	X
	comment on table			X	X
	comment on column			X	X
	associate statistics with column			X	X
	dissociate statistics with column			X	X
	alter table to: • add column • drop column • redefine column • modify storage & other parameters • modify degree of parallelism • set columns unused • drop unused columns	X	X	X	X
	alter table, all other options			X	X
<b>Sequence</b>					

**Supported DDL Operations**

Supported Objects	Supported Operations	SP_OCT_REPLICATE_DDL set to 3 or SP_OCT_REPLICATE_ALL_DDL set to 0		SP_OCT_REPLICATE_ALL_DDL set to 1*	
		Oracle 9i	Oracle 10g	Oracle 9i	Oracle 10g
	create			X	X
	alter	X	X	X	X
<b>Index</b>					
	create			X	X
	alter			X	X
	drop			X	X
<b>View</b>					
	create			X	X
	alter			X	X
	drop			X	X
	comment on view			X	X
<b>Synonym</b>					
	create			X	X
	drop			X	X
<b>Directory</b>					
	create			X	X
	drop			X	X
<b>User-defined type</b>					
	create type body			X	X
	alter type			X	X
	drop type			X	X
	drop type body			X	X
<b>Stored procedure</b>					
	create			X	X
	alter			X	X
	drop			X	X
<b>Stored function</b>					
	create			X	X
	alter			X	X
	drop			X	X
<b>Package</b>					
	create package			X	X
	create package body			X	X
	alter package			X	X

**Supported DDL Operations**

Supported Objects	Supported Operations	SP_OCT_REPLICATE_DDL set to 3 or SP_OCT_REPLICATE_ALL_DDL set to 0			
		SP_OCT_REPLICATE_ALL_DDL set to 1*		Oracle 9i	Oracle 10g
		Oracle 9i	Oracle 10g	Oracle 9i	Oracle 10g
	drop package			X	X
	drop package body			X	X
<b>User</b>					
	create user			X	X
	alter user			X	X
	drop user			X	X
	grant			X	X
	revoke			X	X
<b>Role</b>					
	create role			X	X
	alter			X	X
	drop			X	X
	grant			X	X
	revoke			X	X

**Supported Datatypes and Objects**

Supported	Oracle 9i	Oracle 10g
Datatypes of the following kinds: <ul style="list-style-type: none"> <li>• CHAR</li> <li>• DATE</li> <li>• NUMBER</li> <li>• VARCHAR</li> <li>• VARCHAR2</li> <li>• LONG and LONG RAW up to the maximum size allowed by the operating system</li> <li>• ROWID</li> <li>• FLOAT</li> <li>• RAW</li> <li>• B-FILE</li> <li>• XML</li> </ul>	X	X
NCHAR and NVARCHAR2	X	X
Object types of the following kinds: <ul style="list-style-type: none"> <li>• abstract datatypes (also known as user-defined type, or UDT)</li> <li>• varying array (VARRAY) collectors</li> <li>• large objects (LOBs)</li> <li>• binary large objects (BLOBs)</li> <li>• character large objects (CLOBs)</li> </ul>	X	X
National Language Character Large Objects (NCLOBs)	X	X
TIMESTAMP	X	X
TIMESTAMP WITH TIME ZONE	X	X

**Supported Datatypes and Objects**

<b>Supported</b>	<b>Oracle 9i</b>	<b>Oracle 10g</b>
TIMESTAMP WITH LOCAL TIME ZONE	X	X

**Supported Oracle Index Organized Table Operations**

\*Oracle 10g databases with compatibility set to Oracle 9i are bound by Oracle 9i limitations

<b>Supported</b>	<b>Oracle 9i</b>	<b>Oracle 10g</b>
Index-Organized Tables with Row Overflow Area		X
Index-Organized Tables with Mapping Table with Oracle Partitioning (Oracle Limitations)		X
Index-Organized Tables with Mapping Table without Oracle Partitioning (Oracle Limitations)	X	X
Vertically Partitioned Index-Organized Tables		

**Supported Oracle Data Encryption**

<b>Supported</b>	<b>Oracle 9i</b>	<b>Oracle 10g</b>
Oracle obfuscation toolkits	X	X

**Supported ASM Platforms**

<b>Supported Platforms</b>	<b>Oracle 10g</b>
Red Hat Enterprise Linux AS Release 4.0 x86	X

**What SharePlex does not replicate**

This is a list of commonly used Oracle components that SharePlex does not replicate. Since both Oracle and SharePlex continually change and improve, this list of exclusions cannot be considered complete. Unless a component is listed in "What SharePlex replicates" in these Release Notes, you should assume that SharePlex does not replicate it.

**Non-Supported Operations, Objects and Datatypes**

<b>Not Supported</b>	<b>Exclusions and Restrictions</b>
ALTER TABLE EXCHANGE PARTITION is not supported	
ALTER TABLE to add or drop a LOB column when the table is being replicated. Note that this is an Oracle issue.	
ALTER TABLE to define a primary or unique key constraint where there previously wasn't one.	Except where the SharePlex configuration can be reactivated. The SharePlex key is only redefined upon reactivation.
ALTER TABLE when issued for Oracle partitioned and Oracle sub-partitioned tables	
ANALYZE TABLE and ANALYZE INDEX	

**Non-Supported Operations, Objects and Datatypes** *(continued)*

<b>Not Supported</b>	<b>Exclusions and Restrictions</b>
Any DDL operation performed by a SharePlex Oracle user, if SP_OCT_REPLICATE_ALL_DDL is set to <b>1</b>	
INSTEAD OF triggers on the target machine.	
LONG and LONG_RAW datatypes in a transformation or conflict resolution scenario.	
Operations that do not appear in the redo logs.	
Oracle Parallel Recovery	
Replication of rows in which data or DDL exceeds 319 KB in size, excluding LOB and LONG columns.	
Replication from materialized views to materialized views	
Replication of nested tables	
Replication of clustered tables	
Replication of partitioned tables that employ the COMPRESS option.	
Replication on Oracle 9i systems with compatibility set to 8i	
Setting the Oracle 9i LOG_PARALLELISM database parameter to a value greater than <b>1</b> .	If the LOG_PARALLELISM parameter is set to a value greater than <b>1</b> , SharePlex cannot parse the redo logs correctly and thus the Capture process skips record.

**Non-Supported LOBs, VARRAYs and XML**

<b>Not Supported</b>	<b>Exclusions and Restrictions</b>
ADD or DROP on XML columns	
Tables of XML type	
VARRAYs stored as LOBs where the LOB chunk size is greater than the DB block size or the tablespace block size.	

**Non-Supported Oracle Index Organized Table Operations**

<b>Not Supported</b>	<b>Exclusions and Restrictions</b>
Index-Organized Tables with the COMPRESS option	
Index-Organized Tables with LOB columns	
Index-Organized Tables with VARRAY columns	
Horizontally Partitioned Index-Organized Tables	
ALTER TABLE ADD OVERFLOW	
Replication from a Non-IOT to an IOT table	
Direct Load insert using SQL Loader with APPEND	

**Non-Supported Oracle Data Encryption**

<b>Not Supported</b>	<b>Exclusions and Restrictions</b>
Transparent Data Encryption	

## Global Operations

This product can be used in non-English, non-ASCII configurations with certain restrictions.

### Tested Configurations and Settings

#### Automated Testing

Settings	French Environment		Japanese Environment	
	Source	Target	Source	Target
OS/Version	HP 11.23	Linux AS 3.0	Linux AS 3.0	Linux AS 3.0
Oracle Version	10gR2	9.2.0.7	10gR2	10gR2
OS Language	fr_FR.utf8	fr_FR.UTF-8	ja_JP	ja_JP
DB Language	FRENCH	AMERICAN	JAPANESE	JAPANESE
DB Territory	FRANCE	AMERICA	JAPAN	JAPAN
DB Characterset	AL32UTF8	AL32UTF8	JA16EUC	JA16EUC
Instance Language	FRENCH	FRENCH	JAPANESE	JAPANESE
Instance Territory	FRANCE	FRANCE	JAPAN	JAPAN
Client Language	FRENCH	FRENCH	Not exported	Not exported
Client Territory	FRANCE	FRANCE	Not exported	Not exported
Client Characterset	UTF8	UTF8	Not exported	Not exported
SPO Language	AMERICAN	AMERICAN	Not Set	Not Set
SPO Territory	AMERICA	AMERICA	Not Set	Not Set
SPO Characterset	UTF8	UTF8	Not Set	Not Set

#### Select Manual Testing

Settings	Source	Target
OS/Version	HP 11.23	Linux AS 3.0
Oracle Version	10gR1	10gR1
OS Language	fr_FR.iso88591	fr_FR.UTF-8
DB Language	FRENCH	AMERICAN
DB Territory	FRANCE	AMERICA
DB Characterset	WE8ISO8859P1	WE8ISO8859P1



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This product has not been tested for globalization on Windows. This is planned for a future release. This product should be used with caution, in the context of global operations, on the Windows platform.

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## Character sets

- SharePlex reliably replicates all characters within the character set you are using if you are replicating between identical character sets.

The following character sets were tested and are supported for SharePlex:

- - US7ASCII
- - UTF8
- - WE8ISO8859P1
- - AL16UTF16
- - AL32UTF8
- - KO16KSC5601
- - JA16EUC

If you are replicating between non-identical character sets, then some character set conversion might be required. You must choose how you want to perform this conversion and then set the required parameters to specify the correct SharePlex behavior.

- SharePlex does not perform character set conversion; instead Oracle performs the conversion. As SharePlex posts data, Oracle is notified about the character set encoding of the data. If the data is encoded in a different character set than the character set of the target database, Oracle will perform character set conversion. Please see Ch.3 of the SharePlex Administrators Guide for more information on how to setup character set conversion.
- When replicating from a single-byte character set database to a multi-byte character set database using Oracle 8i or Oracle 9i the Post may record the following error in the event\_log: Error: Unexpected Oracle error: ORA-01461: can bind a LONG value only for insert into a LONG column. This is a known Oracle Bug, #1400539. Please see Oracle Note #241358.1 for the Oracle work around. - Review w/ Julia to get specifics
- When replicating non-7 bit ASCII data the NLS\_LANG environment variable must be set, even though the database NLS settings are the same as the OS LANG settings in language, territory and encoding. This is because, internally, Oracle's default NLS\_LANG setting is american\_america.us7ascii, and any characters above the 0-127 code point are converted as if they were US7ASCII if NLS\_LANG is not set.
- When replicating between different language, territory or character set settings and SP\_DEQ\_NLS\_LANG\_SELECTOR is set to the default value of zero (0) Compare/Repair will report false out-of-syncs due to the lack of data/format conversion information. To avoid this please set the SP\_DEQ\_NLS\_LANG\_SELECTOR to reflect your replication configuration. Please refer to the 5.3.0 Reference Guide for more information on this parameter.

## Non-ASCII Character Limitations

- The current SharePlex key generator requires that the Customer Name be supplied in ASCII characters.

- SharePlex currently supports only ASCII characters for all database object names. This includes the object owner name, object name, column name, partitions and subpartitions names, and applies to all objects to be replicated.

## SharePlex Naming Restrictions

- SharePlex currently supports only ASCII characters in the SharePlex user names.
- SharePlex currently supports only ASCII characters in the configuration file names.
- SharePlex currently supports only ASCII characters in queue names.

## Miscellaneous

- Replicating key column values that utilize a comma and not a period for the decimal point with a non-American\_america locale is not supported.
- There is currently an issue in replicating some French data. The Post stop due to error and record the following error in the event\_log: Error: Unexpected Oracle error: ORA-01740: missing double quote in identifier.

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