

SharePlex® 9.2.9

Release Notes

Revision: 3/9/2021

About SharePlex	4
Join our community	4
New Features in this Release	5
SharePlex 9.2.9	5
SharePlex 9.2.8	5
SharePlex 9.2.7	5
SharePlex 9.2.6	5
SharePlex 9.2.5	5
SharePlex 9.2.4	5
SharePlex 9.2.3	6
SharePlex 9.2.1	6
Other New Features	6
Installation	6
SharePlex 9.2	6
New Features for Oracle Source	6
Oracle 12c R2 Support	7
Other New Features	7
Data Type Mapping	8
Other Changes in SharePlex	8
Resolved Issues and Enhancements	9
SharePlex 9.2.9	9
SharePlex 9.2.8	9
SharePlex 9.2.7	10
SharePlex 9.2.6	11
SharePlex 9.2.5	11
SharePlex 9.2.4	12

SharePlex 9.2.3	13
SharePlex 9.2.1	13
Basic system requirements	15
System	15
Communications Protocols	15
SSL/TLS	15
Internet Protocol	15
Interoperability between versions	16
System Requirements for Oracle Capture	18
Supported Operating Systems	18
Supported Oracle to Oracle Replication	18
Supported data types: Oracle to Oracle	19
Conditions of support	20
Supported Oracle to Kafka Open Target Replication	21
Supported Oracle to SQL Server Target Replication	22
Supported Oracle to Other Open Targets Replication	23
Supported data types: Oracle to Open Targets	25
Oracle to HANA supported data types	25
Oracle to MySQL supported data types	26
Conditions of support	27
Oracle to PostgreSQL supported data types	27
Oracle to SAP ASE supported data types	28
Oracle to SQL Server supported data types	28
Oracle to Teradata supported data types	29
Oracle to Tibero supported data types	30
Oracle to XML supported data types	30
Conditions of support	31
Supported objects and operations for DML replication	32
Tables	32
Sequences	33
Secured and compressed objects	33
Conditions of support	33
Supported operations and objects for DDL replication	34
Oracle-to-Oracle DDL support	34
Oracle to Open Target DDL support	39
Non-supported Oracle features	39
Supported / non-supported SharePlex features for Open Targets	40
Oracle to Kafka supported data format:	41
Known issues in this release	42
Third-party known issues	47

Licensing	49
Third Party Contributions in this release	50
About us	55
Contacting Quest	55
Technical support resources	55

About SharePlex

SharePlex provides high-speed replication from Oracle database to different target databases and messaging containers on major Unix, Linux and Windows operating systems— both on-premises and in the cloud.

SharePlex supports a wide variety of configurations to meet different and complex data availability needs.

SharePlex supports reliable Oracle high availability configurations where replication maintains a duplicate database in a different location that is ready for fast, seamless failover and failback in planned or unplanned mode.

You can also use SharePlex to replicate data from Oracle source to maintain a change history database in an Oracle target. Rather than updating or deleting target rows based on the source change, SharePlex inserts a new row on the target for every source change. The result is an archive that reflects the chronological history of every change made to the source database.

SharePlex also includes, at no extra charge, the compare and repair tools that you need to verify the accuracy of a target maintained by replication. These tools not only detect hidden out-of-sync conditions, but they also repair the target to restore parity of your source and target data.

SharePlex value and versatility continues to grow with the requirements and requests of our customers.

Although SharePlex is a reliable, relatively low-maintenance solution, our top-rated support team is ready around the clock to help with any trouble you may have. To get you started with your deployment, our professional services team is highly experienced and readily available.

Join our community

For expert advice and the latest news about SharePlex, join the SharePlex Community at <https://www.quest.com/community/products/shareplex>. Take advantage of our forums, blogs, videos, and more from our own experts, as well as input from our customers and partners.

This is a major release with new and enhanced functionality.

This is a minor release and includes new features and enhanced functionality.

New Features in this Release

SharePlex 9.2.9

SharePlex 9.2.9 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.8

SharePlex 9.2.8 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.7

SharePlex 9.2.7 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.6

SharePlex 9.2.6 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.5

SharePlex 9.2.5 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.4

Oracle Cloud Infrastructure as a Service (IaaS) Compute Virtual Machine is now supported as a target.

SharePlex 9.2.4 is a patch release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.3

SharePlex 9.2.3 is a minor release and includes resolved issues. See [Resolved Issues and Enhancements](#) for a complete list.

SharePlex 9.2.1

SharePlex 9.2.1 is a minor release and includes the following new features and enhanced functionality.

Other New Features

- **Oracle 18c.** This release includes support for capture from and replication to Oracle 18c.

NOTE: SharePlex does not support replication of DML operations on objects compressed using OLTP Compression in Oracle 18c. This limitation applies to objects in the source database.

- **Kafka 1.1.x.** This release includes support for replication to a Kafka 1.1.x target.

Operating System Support. This release includes support for SuSE SLES 15.

Installation

SharePlex installer packages for Linux/Unix. SharePlex installer packages for Linux/Unix are now database independent. You are no longer required to select an installer package based on the database for which SharePlex will be used (i.e., Oracle or Open Target). To install SharePlex for Oracle or Open Target, simply select the installer package for your operating system.

The SharePlex installer packages now have a slightly different naming convention:

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

For Oracle Solaris (Sun), the operating system version is included:

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

SharePlex 9.2

SharePlex 9.2 is a minor release and includes the following new features and enhanced functionality.

New Features for Oracle Source

Oracle UROWID data type. Support has been added for the Oracle UROWID data type. This support applies to Oracle-to-Oracle configurations only.

Support for SCN metadata for HANA target. This release of SharePlex supports posting the Oracle SCN to a column in a HANA target table.

Oracle replication to MySQL 5.7. SharePlex supports replication from an Oracle source to a MySQL 5.7 target on-premises.

Oracle 12c R2 Support

Support for 128-byte table and column names. In Oracle capture, SharePlex now supports table and column names that are up to 128 bytes in length. Please note the following limitations applicable to this release.

- UDT column names more than 30-bytes in length are not supported.
- Type names for UDTs and VARRAYS with names more than 30-bytes in length are not supported.
- IOT names more than 30-bytes in length are not supported.

Other New Features

Support for Windows Server 2016. Support for capture from and replication to databases on Microsoft Windows Server 2016.

Improved Performance in the Post Process.

The following enhancements were made to improve performance of the Post process.

- Implemented multi-threading for SQL Server and PostgreSQL targets: The Transaction Concurrency component of Post Enhanced Performance has been extended to support SQL Server and PostgreSQL targets. A new parameter, `SP_OPX_THREADS`, controls this feature. When set to a value of 2 or greater, Post runs with the specified number of threads (concurrent operations).
- Batch similar operations: To maximize its performance when applying SQL operations to the target, the Post process groups smaller replicated operations into one larger batched operation. Post groups replicated operations when the operations are identical and the SQL is similar. A new parameter, `SP_OPX_BATCH_ENABLE`, controls this feature and is enabled by default. Another new parameter, `SP_OPX_MAX_BATCH_MBYTES`, controls the maximum size of the batched DML operation that Post applies to the target. This supports databases, such as Teradata, that have a maximum transaction size and can be used for other purposes where batch size must be changed.

New jobs status database

- This release includes a new jobs status database. This database resides in the data sub-directory of the SharePlex variable-data directory. The parameter `SP_SYS_JOB_HISTORY_SIZE` allows you to control the size of this database. Use this parameter to specify the maximum size (in kB) allowed for the database.

Simplified SharePlex Installation Process on Windows

- When installing on Windows, you are no longer required to specify the Oracle database version or specify whether or not you are installing in a non-Oracle environment.
- You no longer need to manually change the default setting for Global Resources memory in the MKS Toolkit after you install SharePlex on a Windows system. The setting is now modified automatically during installation.

Data Type Mapping

This release of SharePlex includes a new **typemap** command, as well as changes to the default data type mappings. Review the following details.

- Use the **typemap show** command to display all default data type mappings. Use **typemap show source-target** to display the mapping for the specified source-target combination, for example oracle-sqlserver. See the *SharePlex 9.2 Reference Guide* for more information about using the typemap command.
- Use the **typemap** command instead of the **data type** option of the **target** command. (The **data type** option of the target command has been discontinued in this release.)
- For a list of supported data types, see [Supported data types: Oracle to Open Targets](#) or .

Other Changes in SharePlex

TLS 1.2 (or later) required for TLS connections. If you intend to use TLS connections in SharePlex, TLS 1.2 or later is required.

Resolved Issues and Enhancements

The following is a list of issues addressed and enhancements implemented in this release of SharePlex.

NOTE: SharePlex has put bug fixes into a cumulative update rollup (denoted by third digit in the version number) — starting with the 9.2.3 release. Customers that require bug fixes which are already available in a patch update rollup will be required to apply that patch release to get the bug fix.

SharePlex 9.2.9

Issue ID	Description
SPO-20665	Fixed inconsistent processing of trailing NULL on chained row preventing it from properly replicating to Kafka.
SPO-20651	Replication of comments on DDL can be disabled by setting SP_OCT_REPLICATE_COMMENT to 0. DDL replication is enabled by setting SP_OCT_REPLICATE_DDL to 1, 2, or 3.
SPO-20562	Fixed cleanup of routing files to after activation is successful.
SPO-20524	Fixed CREATE TABLE AS SELECT DDL not replicating correctly when DDL user is different from schema owner.
SPO-20454	Fixed logic in Compare to work properly even when character set between endpoints are superset or subset of each other when SP_DEQ_CONV2UTF8 is enabled.

SharePlex 9.2.8

Issue ID	Description
SPO-20426	Fixed Capture DDL replication of grant on commit refresh
SPO-20139	Fixed Capture DDL processing of chained row in system table
SPO-20125	Fixed Post XML missing trailing null columns
SPO-20033	Fixed Windows issue with stopping SharePlex processes from Services
SPO-20024	Fixed Post memory leak due to rollbacks
SPO-19633	Fixed Compare/Repair issue where invalid duplicate checksums reports OOS
SPO-17868	Fixed Post conflict resolution existing win log message output for most and least recent
SPO-19872	Fixed performance issue with large partial rollbacks.

SharePlex 9.2.7

Issue ID	Description
SPO-19907	Fixed ignored DDL when source and target database endianness are different
SPO-19834	Fixed Post stopping when object cache missing from previous activation
SPO-19734	Fixed Chinese NCHAR & NVARCHAR2 characters not showing up correctly in Kafka
SPO-19722	Fixed Capture core when processing DLOAD from OLTP tables
SPO-19563	Fixed Capture core when issuing DDL alter table modify on XML type column
SPO-19494	Fixed Chinese NVARCHAR2 characters no showing up in Kafka
SPO-19468	Fixed commits not routing to Post due to bad bitmaps in Read
SPO-19458	Fixed compare ignoring nolocksource and nolocktarget parameters
SPO-19448	Fixed Reader redundant processing rollback updates when using horizontal partition
SPO-19070	Fixed VARRAY corrupting XML in Kafka
SPO-19003	Fixed extra data appearing in XML from bad VARRAY parsing in Kafka.NOTE: VARRAY element in XML is fixed to now correctly be a child element of the parent column. VARRAY will no longer appear as a sibling to the column.
SPO-18985	Fixed out-of-sync when operations are related using distributed transactions
SPO-18931	Fixed Post DDL error creating table using materialized views
SPO-18875	Fixed Post stopping when JMS not responding. Post will now retry automatically.
SPO-18800	Fixed Linux endianness posting to Kafka causing invalid characters
SPO-18405	Fixed posting bad records when using OLTP
SPO-18157	Fixed Capture to correctly skip filtered out DDL
SPO-18154	Fixed invalid numeric data by setting the value to zero when condition met in Capture
SPO-18146	Fixed Open Post stopping when DDL messages are only updating object cache
SPO-18138	Fixed CTAS issues when using non-qualified schema
SPO-17856	Fixed Post error ORA-29877 on update table containing SDO_GEOMETRY column but not part of the update
SPO-17693	Fixed upgrade issues from 9.2.1 when processing older DDL cache version
SPO-16944	Fixed Post to properly update LOBs when using CDC
SPO-15820	Fixed errors using Oracle Filter Driver with ASM disks in native mode
SPO-5032	Fixed Poster error ORA-1805 using time zone

SharePlex 9.2.6

Issue ID	Description
SPO-19151	Resolved capture performance issues when data not ready in log
SPO-18872	Fixed post issues with delete-n where some columns contains NULL
SPO-18866	Resolved corruption using alter table DDL on long name table
SPO-18850	Resolved offset calculation on SecureFiles CLOB with Japanese CharSet
SPO-18838	Resolved issue with alter table DDL using dbms_job package
SPO-18798	Fixed SP_OPX_REDUCED_KEY=2 using update containing keys and non-keys
SPO-18628	Fixed issue with create public synonym
SPO-18625	Fixed conversion issues with SJIS IIsymbol
SPO-18615	Fixed SQL Server ODBC driver issues using float
SPO-18501	Fixed post inserting CLOB with ORA-64204 error
SPO-18402	Fixed corruption issues in object cache on tables with UDT
SPO-18169	Compare now properly supports configurations that use compound routes
SPO-18029	Fixed issue with converting exponential number with some SQL Server ODBC drivers
SPO-17592	Fixed conversion issues with UTF16 Chinese
SPO-17318	Fixed installation issues as root on Red Hat
SPO-17005	Fixed issue replicating insert operation on compressed tables
SPO-10528	Resolved issue with parsing SecureFiles LOB where data object ID not extracted
SPO-10282	Fixed capture to better handle alter table shrink table
SPO-3828	Changed read update of SharePlex marker to once per second

SharePlex 9.2.5

Issue ID	Description
SPO-10592	Fixed post failure when executing 'alter index' with a fully-qualified index name for table replicating to a different schema on target.

Issue ID	Description
SPO-15132	Fixed messages not getting sent when using DML filtering.
SPO-16402	Fixed XML/JSON document types to format null & empty data as attributes.
SPO-17528	Fixed XML document emitting extra tags for CDC.
SPO-17863	Fixed network issue when using SSL.
SPO-17991	Fixed sp_utils not properly showing port numbers.
SPO-18202	Fixed post error recovery accessing row of a record after insert error.
SPO-18224	Fixed read error when using DML filtering
SPO-18259	Fixed better recovery handling after encountering SSL error.
SPO-18321	Fixed export using SP_SYS_HOSTNAME IP when set
SPO-18419	Enhanced capture performance.
SPO-18487	Fixed post shutdown due to ORA-01458 after upgrade and SQL cache is enabled.
SPO-18501	Fixed automatic detection of UTF16 CLOB data.
SPO-18527	Fixed internal routing data to better handle non-UTF8 characters.
SPO-18617	Fixed parsing of DLOAD record with OLTP.
SPO-18794/4506554	ON CASCADE DELETE constraints are now supported.

SharePlex 9.2.4

Issue ID	Description
SPO-16402	Corrected XML messages not properly tagging NULL or EMPTY columns
SPO-17528	Resolved XML messages including extraneous metadata
SPO-17991	Fix Windows 'SharePlex Utilities' not showing correct port number for associated processes
SPO-18321	Fix export not using SP_SYS_HOST_NAME parameter value
SPO-18419	Resolved capture performance issues
SPO-18487	Fix post stopping due to ORA-1458 after upgrading when SQL cache is enabled
SPO-18501	Fix post stopping due to ORA-600 or ORA-64204 when using CLOB caused by incorrect character set parsing

SharePlex 9.2.3

Issue ID	Description
SPO-17377	Corrected an issue that caused the Post process to stop with the following error: "ORA-01741: illegal zero-length identifier."
SPO-17384	Corrected an issue in which a DDL transaction (alter table to add partition) was not processed successfully after a database upgrade.
SPO-17507	Resolved an issue which caused the Repair process to fail because the SQLite marker table used in the Compare process was not successfully created.
SPO-17668	Resolved an issue that caused remote Capture to stall when reading online logs and disk_asynch_io was enabled on the remote database.
SPO-17681	Corrected an issue which caused the following error when replicating to JMS: "No such file or directory - bridge.ini."

SharePlex 9.2.1

Issue ID	Description
SPO-10567	Improved error-handling and advice for the following errors: SP-OCT01004 and SP-OCT01005.
SPO-10836	Corrected an issue in which having a schema/object DDL filter causes all DDL that has no schema/object name to be filtered.
SPO-11221	Oracle Poster core dumping in Breaklines
SPO-11443	Post Enhanced Performance (PEP) improvement.
SPO-11501	PEP (dependency checking) should skip objects that are disabled
SPO-13894	A description of the copy cache command is now included in the SharePlex 9.2 Reference Guide.
SPO-14638	Allow Comment on Table to pass through as non-recursive DDL
SPO-15088	Corrected an issue in which Capture generated the incorrect Update operation that updates a non-NULL column with NULL value.
SPO-15449	Corrected an issue in which detecting Kafka supported versions fails for SUSE Linux.
SPO-15452	Corrected an issue which caused a core dump when Capture processed autoadd on a table with complex/nested UDT columns.
SPO-15455	Corrected an issue that caused an error in SQL Server to SQL Server replication when the source database uses BIN or BIN2 binary collations.
SPO-15519	When DDL greater than 319K is encountered, discard it and log an error instead of dumping the core.
SPO-15523	Corrected an issue which caused a failure when posting the DDL for a interval-partitioned table created with an unnamed partitioned in create table statement.

Issue ID	Description
SPO-15553	Corrected an issue in which upgrading Oracle from 11.2 to 12.2 caused Capture to erratically drop the replicated tables.
SPO-15685	Corrected an issue in which issuing a non-replicated create sequence with SP_OCT_AUTOADD_SEQ=1 and SP_OCT_REPLICATE_ALL_DDL=0 (default) caused a defunct entry in 9iDDLcache file.
SPO-15856	Improved Processing of CLOBs.
SPO-15937	Corrected an issue involving OCI calls being called on non-ASM RAC is setup without enabling OCI parameter.
SPO-15952	Corrected an issue that caused Poster core dumping in keycache.
SPO-15959	Corrected an issue in which compare SQL statement missing user-provided Oracle partition for the SP hz partition table.
SPO-16076	Corrected an issue that caused an activation error upon reactivating the same configuration after a rename.
SPO-16114	Certain redo-record with compressed data caused Capture to core.
SPO-16161	Capture failed to parse certain redo-records generated from Oracle 12cR2.
SPO-16257	When changing the SharePlex User password using the ora_chpwd utility, the "alter user" privilege is required instead of the DBA role.
SPO-16264	During SharePlex installation on Windows, if the MKS installation fails, the SharePlex installation does not proceed.
SPO-16474	Renaming sets of tables on peer-to-peer setting could cause ODR message to loopback causing failure in Post process.
SPO-16486	Open Target logs invalid WHERE clause column_name = null in sqlerror.log
SPO-16700	Removed the limitation of 8192 bytes for SQL text. The limitation caused a "SQL too large" error message during Capture.

Basic system requirements

This chapter contains the basic system requirements for SharePlex. See also:

[System Requirements for Oracle Capture](#)

System

Before installing SharePlex, ensure that your system meets the minimum hardware and software requirements.

- SharePlex processes are all 64-bit and can exceed 4 GB.
- Per process memory of greater than or equal to 256 MB is required. Depending on how you configure SharePlex, there can be one or more of the following processes on a system:
 - Capture
 - Read
 - Export
 - Import
 - Post
- See the Preinstallation Checklist in the SharePlex Installation Guide for additional system and/or database requirements.

Communications Protocols

SSL/TLS

For TLS connections, SharePlex supports TLS 1.2 (or later) only.

Internet Protocol

SharePlex supports IPv4 and IPv6 internet protocols. The following table shows the operating systems for which SharePlex was tested with IPv6.

NOTE: If the `SP_SYS_HOST_NAME` environment variable is set to an IPV6 address on the source system, SharePlex on the target system must be version 9.0 or later.

Operating System	Source	Target	SharePlex Source and Target versions	On-premises/Cloud
Linux RHEL	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
Linux RHEL	Link-Local IPV6	Link-Local IPV6	8.6.5 - 9.0	On-premises
Linux RHEL	Link-Local IPV6	Link-Local IPV6	9.0 - 8.6	On-premises
Linux Suse	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
Windows	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
Windows	Link-Local IPV6	Link-Local IPV6	9.0 - 8.6.4	On-premises
HP UA	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
HP IA	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
SUN Sparc	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
SUN Solaris	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
AIX	Link-Local IPV6	Link-Local IPV6	9.0 - 9.0	On-premises
Linux RHEL	Public IPV6	Public IPV6	9.0 - 9.0	Cloud
Windows	Public IPV6	Public IPV6	9.0 - 9.0	Cloud

Interoperability between versions

Refer to the following guidelines if the system where you are installing SharePlex is in a configuration where one or more other systems will continue to use an older version of SharePlex. An example is when installing or upgrading SharePlex on a target, but the source will continue to use SharePlex 8.6.x.

Versions with full interoperability

The following SharePlex versions are fully interoperable, including the Compare/Repair feature:

8.6.x
9.0.x
9.1.x
9.2.x
9.4.x

To support replication from a higher to a lower version, set the SP_SYS_TARGET_COMPATIBILITY parameter on the **source** system to the *lower* SharePlex version. If Capture is running, restart it.

IMPORTANT: Downgrading from a higher to a lower version of SharePlex is not supported.

NOTES:

- The older version of the SP_SYS_TARGET_COMPATIBILITY parameter, SP_OCT_TARGET_COMPATIBILITY, was deprecated in version 9.0. If your source SharePlex is currently replicating to a lower SharePlex version on the target and you have SP_OCT_TARGET_COMPATIBILITY set to the lower version, SharePlex will continue to use that value after you upgrade to the current version.
- If you upgrade the target to the current release at a future time, issue a reset for SP_OCT_TARGET_COMPATIBILITY on the source system to remove it from the SharePlex environment. Going forward, SharePlex will use the setting of the new SP_SYS_TARGET_COMPATIBILITY parameter, which defaults to the current version.

To reset SP_OCT_TARGET_COMPATIBILITY

1. Stop Capture.

```
sp_ctrl> stop capture
```

2. In **sp_ctrl** on the source system, issue the following command:

```
sp_ctrl> reset param SP_OCT_TARGET_COMPATIBILITY
```

3. Restart Capture.

```
sp_ctrl> start capture
```

System Requirements for Oracle Capture

This chapter contains the requirements when capturing from an Oracle source database and replicating to a supported target database.

Prerequisites

- At least the minimum level of supplemental logging must be enabled. Some SharePlex features may require PK/UK supplemental logging to be enabled. conditional text purpose only,

Supported Operating Systems

The following operating systems are supported for capture from a supported Oracle database and replication to a supported target database. For a list of supported source and target databases for Oracle capture, see [Supported Oracle to Oracle Replication](#).

SharePlex supports only the 64-bit version of the listed operating systems.

NOTE: SharePlex supports the following operating systems and only where the version matches the Oracle certified platforms. For example, Oracle 19c supports Linux 7 and later, therefore installation of SharePlex on a system with Oracle 19c is supported only on Linux 7 and later.

- AIX 7.1 and 7.2
- CentOS Linux 5.x, 6.x, and 7.x, and 8.x
- HP-UX 11.31 Itanium
- Oracle Linux (RHCK and UEK) 5.x, 6.x, and 7.x, and 8.x
- RHEL Linux 5.x, 6.x, and 7.x, and 8.x
- SuSE SLES 11.x, 12.x, and 15.x
- Oracle Solaris (SPARC and x86) 10, 11, and 11.4
- Windows Server 2008, 2008 R2, 2012, 2012 R2, and 2016, and 2019

Supported Oracle to Oracle Replication

When capturing from an Oracle database and replicating to an Oracle database the following database types and versions are supported for source and target.

NOTES:

- Unless specified, Oracle, RAC, and ASM are supported for the same version.
- SharePlex supports only the 64-bit version of Oracle Database.

Supported Oracle Sources

Supported Oracle Targets

Supported versions

- Oracle 11gR2, 12cR1, 12cR2, 18c
NOTE: These Oracle versions are also supported when running on Oracle Exadata.

Supported versions for a cloud-based source:

- Amazon RDS for Oracle 11gR2 (supported 11gR2 versions are 11.2.0.4.v11 or later), 12cR1 (supported 12cR1 versions are 12.1.0.2.v7 or later), 19c (19.0.0.0.ru-2020-01.rur-2020-01.r1 Enterprise, 19.0.0.0.ru-2020-04.rur-2020-04.r1 Enterprise, 19.0.0.0.ru-2020-04.rur-2020-04.r1 Standard Edition 2)
NOTE: Support for Oracle features on Amazon RDS is limited to the default option groups: default:oracle-ee-11-2, default:oracle-ee-12-1, default:oracle-ee-19 & default:oracle-se2-19.
- Oracle 11gR2, 12cR1, 12cR2, 18c on an Amazon EC2 virtual machine or Microsoft Azure IaaS

Supported database types and versions

- Oracle 11gR2, 12cR1, 12cR2, 18c
NOTE: These Oracle versions are also supported when running on Oracle Exadata.
- Databases listed above are also supported when they are deployed on an Amazon EC2 virtual machine, Microsoft Azure IaaS, or Oracle Cloud Infrastructure as a Service (IaaS) Compute Virtual Machine
- Oracle 11gR2, 12cR1, 12cR2, 18c, 19c are also supported on Amazon RDS for Oracle

Supported data types: Oracle to Oracle

SharePlex supports the following Oracle data types for replication to Oracle targets. See the [Conditions of support](#) for additional information.

- ANYDATA ¹
- B-FILE
- BINARY DOUBLE ⁷
- BINARY FLOAT ⁷
- BLOB ²
- CHAR
- CLOB ²
- DATE
- INTERVAL
- LONG RAW²
- LONG ²
- NCHAR
- NCLOB ³

- NUMBER
- NVARCHAR2
- RAW
- ROWID
- SDO_GEOMETRY
- TIMESTAMP
- TIMESTAMP WITH LOCAL TIME ZONE
- TIMESTAMP WITH TIME ZONE
- UDT (User Defined Type)⁵
- UROWID
- VARCHAR
- VARCHAR2
- VARRAY collectors
- XMLTYPE ⁴

Conditions of support

1. Conditions of support - ANYDATA

- Replication of ANYDATA is supported, except when it contains a UDT or the storage is defined as SecureFile LOB with compression. SecureFile LOB without compression is supported. Only the following data types within ANYDATA are supported by SharePlex:
 - CHAR
 - DATE
 - NUMBER
 - RAW
 - VARCHAR
 - VARCHAR2
 - TIMESTAMP
- A data type within an ANYDATA type must be in-row (inside the column data). Oracle encapsulates the ANYDATA type as an in-row securefile LOB. If the encapsulated data is longer than the length allowed for an in-row LOB, that data appears as out-of-row LOB data. SharePlex assumes that the encapsulated data always appears as in-row LOB.

2. Conditions of support - LONG and LOB (BLOB, CLOB)

- Any table that contains a LOB or LONG should have a primary key or unique key defined on it. If a table does not have a key, SharePlex builds its own key from all of the columns except LONGs or LOBs. If a LOB or LONG is the only difference between two rows that otherwise satisfy the Post WHERE clause, SharePlex cannot guarantee that the correct row will be updated.

- SharePlex supports SecureFiles LOBs as follows:
 - Logging must be enabled.
 - SharePlex supports uncompressed SecureFiles LOBS and SecureFiles LOBS with high or medium compression
 - SecureFiles LOBS are not supported when the storage specification includes encryption and/or deduplication.
- SharePlex does not support LONG and LONG_RAW data types in a configuration where transformation or conflict resolution are performed.

3. Conditions of support - NCLOB

NCLOBs are not supported by Compare/Repair if the source and target have different character sets.

4. Conditions of support - XMLTYPE

SharePlex supports the replication of XMLTYPE stored as CLOB and BINARY. SharePlex does not support XMLTYPE stored as OBJECT RELATIONAL. Additionally, the following applies:

- XMLTYPE stored as BINARY is not supported when the storage is defined as SecureFile LOB with compression. SecureFile LOB without compression is supported.
- Binary XMLTypes are not supported by Compare/Repair when the source and target character sets are different and require character set conversion.
- Compare/Repair does not support comparison of XMLTYPE when the source and target have different storage clauses. Compare/Repair only supports compare/repair when source and target are both stored as BINARY or both are stored as CLOB.

5. User-defined types

SharePlex does not support abstract data types and VARRAYs in a configuration where the SharePlex conflict resolution feature is performed.

6. Conditions of support - general

If the precision or size of the target data type is not large enough for the data being replicated, the data may be truncated or rounded by the database when applied.

7. BINARY DOUBLE and the BINARY FLOAT

The BINARY DOUBLE and the BINARY FLOAT data types are not supported for the **copy** command.

Supported Oracle to Kafka Open Target Replication

NOTES:

- Unless specified, Oracle, RAC, and ASM are supported for the same version.
- SharePlex supports only the 64-bit version of Oracle Database.

Supported Oracle Sources

Supported Open Targets

Supported Oracle Sources

- Oracle 11gR2, 12cR1, 12cR2, 18c, 19c EE & SE2

i NOTE: These Oracle versions are also supported when running on Oracle Exadata.

Supported versions for a cloud-based source:

- Amazon RDS for Oracle 11gR2 (supported 11gR2 versions are 11.2.0.4.v11 or later), 12cR1 (supported 12cR1 versions are 12.1.0.2.v7 or later), 19c (19.0.0.0.ru-2020-01.rur-2020-01.r1 Enterprise, 19.0.0.0.ru-2020-04.rur-2020-04.r1 Enterprise, 19.0.0.0.ru-2020-04.rur-2020-04.r1 Stand Edition 2)

NOTE: Support for Oracle features on Amazon RDS is limited to the default option groups: default:oracle-ee-11-2, default:oracle-ee-12-1, default:oracle-ee-19 & default:oracle-se2-19.

- Oracle 11gR2, 12cR1, 12cR2, 18c, 19c on an Amazon EC2 virtual machine or Microsoft Azure IaaS

Supported message queues:

- Apache Kafka 0.8.x, 0.9.x, 0.10.x, 0.11.x, 1.0.x, 1.1.x, 2.0.x, 2.1.0, and 2.5.0

Supported file types:

- XML and JSON files

Supported Oracle to SQL Server Target Replication

NOTES:

- Unless specified, Oracle, RAC, and ASM are supported for the same version.
- SharePlex supports only the 64-bit version of Oracle Database.

Supported Oracle Sources

Supported Open Targets

Supported Oracle Sources

- Oracle 11gR2, 12cR1, 12cR2, 18c

i NOTE: These Oracle versions are also supported when running on Oracle Exadata.

Supported versions for a cloud-based source:

- Amazon RDS for Oracle 11gR2 (supported 11gR2 versions are 11.2.0.4.v11 or later), 12cR1 (supported 12cR1 versions are 12.1.0.2.v7 or later)
NOTE: Support for Oracle features on Amazon RDS is limited to the default option groups: default:oracle-ee-11-2 & default:oracle-ee-12-1
- Oracle 11gR2, 12cR1, 12cR2, 18c on an Amazon EC2 virtual machine or Microsoft Azure IaaS

Supported database types and versions:

- SQL Server 2008, 2008 R2, 2012, 2014, 2016, and 2017.
The Microsoft SQL Server ODBC Driver is required.
NOTE: The SQL Server database is supported only on the Windows Server operating system.
- Databases listed above are also supported when they are deployed on an Amazon EC2 virtual machine, Microsoft Azure (IaaS or SQL Server on Azure Virtual Machines)

Supported Oracle to Other Open Targets Replication

Non Oracle targets not mentioned above are only supported for customers who have previously licensed the non Oracle technology and are currently on support maintenance. There are no new license sales or deployments. If you have questions please contact support.

NOTES:

- Unless specified, Oracle, RAC, and ASM are supported for the same version.
- SharePlex supports only the 64-bit version of Oracle Database.

Supported Oracle Sources

Supported Open Targets

Supported Oracle Sources

- Oracle 11gR2, 12cR1, 12cR2, 18c

i NOTE: These Oracle versions are also supported when running on Oracle Exadata.

Supported versions for a cloud-based source:

- Amazon RDS for Oracle 11gR2 (supported 11gR2 versions are 11.2.0.4.v11 or later), 12cR1 (supported 12cR1 versions are 12.1.0.2.v7 or later)
NOTE: Support for Oracle features on Amazon RDS is limited to the default option groups: default:oracle-ee-11-2 and default:oracle-ee-12-1.
- Oracle 11gR2, 12cR1, 12cR2, 18c on an Amazon EC2 virtual machine or Microsoft Azure IaaS

Supported database types and versions:

- MySQL 5.5, 5.6, 5.7
- PostgreSQL 9.4, 9.5, 9.6, and 10
- EDB Postgres Advanced Server 9.4, 9.5, 9.6, and 10¹
- Fujitsu Enterprise Postgres 9.5
- SAP Adaptive Server Enterprise (ASE) 15.7
- SAP HANA 1.0 SPS 11
- Teradata 15.00, 15.10
- Tiberio 6.0

Supported message queues:

- JMS - Apache ActiveMQ 5.8
- JMS - IBM MQ version 8

Supported file types:

- XML, SQL, and JSON files

Supported database types and versions for a cloud-based target:

- Amazon Aurora PostgreSQL-Compatible Edition
- Amazon Aurora MySQL-Compatible Edition
- MySQL, and PostgreSQL. ² For supported versions, see **Supported database types and versions** above
- Databases listed in **Supported database types and versions** above are also supported when they are deployed on an Amazon EC2 virtual machine, Microsoft Azure IaaS, or Microsoft Azure PaaS²

TABLE NOTES:

1. SharePlex does not support CESU-8 data replication to EDB Postgres Advanced Server 10.
2. In Microsoft Azure PaaS SharePlex cannot be installed because there is no access to the underlying operating system. You must install SharePlex on a different server. You then configure SharePlex to interact with the target database through a remote connection. Because the connection originates locally, use the target database ODBC driver that matches the local server.

Supported data types: Oracle to Open Targets

Non Oracle targets other than SQL Server and Kafka are only supported for customers who have previously licensed the on Oracle technology and are currently on support maintenance. There will be no new license sales or deployments. If you have any questions please contact Support.

This section contains a grid that can be read vertically and horizontally to understand how SharePlex supports replication between an Oracle source and the various Open Target targets (non-Oracle targets) that SharePlex supports.

- **Column 1:** Shows the Oracle data types that SharePlex can replicate to an Open Target target type (non-Oracle target).
- **Column 2:** Shows the native data types that SharePlex supports for each target type.
- **Rows spanning Column 1 and Column 2:** Shows the default data type mapping (native Oracle data type to native target data type) that SharePlex uses when replicating Oracle ALTER TABLE...ADD COLUMN DDL operations. Post uses the specified native target data type in the column definition of the command on the target. The default mapping is what was tested and is supported.

Notes about Open Target data type support:

- Replication of SecureFile LOBS to non-Oracle databases is supported except if the storage specification includes any level of compression, encryption, and/or deduplication.
- Replication of LOB operations generated by `dbms_lob` are not supported when replicating to non-Oracle targets.
- SharePlex applies replicated Oracle data to the target according to the data type of the target column, rather than mapping to a default data type. Corresponding source and target columns must contain compatible datatypes to ensure successful DML operations.
- If the precision or size of the target datatype is not large enough for the data being replicated, the target database may truncate or round the data when SharePlex applies it.

Oracle to HANA supported data types

Oracle	HANA
BINARY_DOUBLE	DOUBLE
BINARY_FLOAT	DOUBLE
BLOB	BLOB
CHAR (n)	CHAR (n)
CLOB	CLOB
DATE	TIMESTAMP

Oracle	HANA
LONG	CLOB
LONGRAW	BLOB
NCHAR (n)	NCHAR (n)
NCLOB	NCLOB
NUMBER	DECIMAL
NUMBER (p,0:)	DECIMAL (p,s)
NUMBER (p,s)	DECIMAL
NVARCHAR2 (n)	NVARCHAR (n)
RAW (n)	VARBINARY (n)
TIMESTAMP (p)	TIMESTAMP
VARCHAR2 (n)	VARCHAR (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to MySQL supported data types

See "Conditions of support" following this table for additional information.

Oracle	MySQL
BINARY_DOUBLE ¹	DOUBLE
BINARY_FLOAT	DOUBLE
BLOB	LONGBLOB
CHAR (n)	CHAR (n)
CLOB	LONGTEXT
DATE	DATETIME (0)
LONG	LONGTEXT
LONGRAW	LONGBLOB
NUMBER	DOUBLE
NUMBER (p,0:)	NUMERIC (p,s)
NUMBER (p,s)	DOUBLE
RAW (n)	VARBINARY (n)
TIMESTAMP (7:9) ²	DATETIME (6)
TIMESTAMP (p) ²	DATETIME (p)
VARCHAR2 (n)	VARCHAR (n)

Conditions of support

1. Because Oracle and MySQL handle this data type differently, there may be a very small difference in precision between the value of the source and the value of the target row. You may see the difference when viewing the data from SQL *Plus or other utility, but SharePlex will not report this difference as an out-of-sync condition.
2. If the MySQL target database is earlier than version 5.6.4, the fractional seconds will be truncated. Earlier versions did not support fractional seconds.
3. See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to PostgreSQL supported data types

Oracle	PostgreSQL
BINARY_DOUBLE	DOUBLE PRECISION
BINARY_FLOAT	REAL
CHAR (n)	CHAR (n)
CHAR (n CHAR)	CHAR (n)
CLOB	TEXT
DATE	DATE
LONG	TEXT
NCHAR (n)	CHAR (n)
NCLOB	TEXT
NUMBER	NUMERIC
NUMBER (p,0:)	NUMERIC (p,s)
NUMBER (p,s)	NUMERIC
NVARCHAR2 (n)	VARCHAR (n)
TIMESTAMP (7:9)	TIMESTAMP (6)
TIMESTAMP (p)	TIMESTAMP (p)
TIMESTAMP (7:9) WITH TIME ZONE	TIMESTAMP (6) WITH TIME ZONE
TIMESTAMP (p) WITH TIME ZONE	TIMESTAMP (p) WITH TIME ZONE
TIMESTAMP (7:9) WITH LOCAL TIME ZONE	TIMESTAMP (6)
TIMESTAMP (p) WITH LOCAL TIME ZONE	TIMESTAMP (p)
VARCHAR2 (n)	VARCHAR (n)
VARCHAR2 (n CHAR)	VARCHAR (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to SAP ASE supported data types

Oracle	SAP ASE
BINARY_DOUBLE	FLOAT
BINARY_FLOAT	FLOAT
BLOB	IMAGE
CHAR (n)	CHAR (n)
CLOB	TEXT
DATE	DATETIME (p)
LONG	TEXT
LONGRAW	IMAGE
NUMBER	NUMERIC
NUMBER (p,0:)	NUMERIC (p,s)
NUMBER (p,s)	NUMERIC
RAW (n)	VARBINARY (n)
VARCHAR2 (n)	VARCHAR (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to SQL Server supported data types

Oracle	SQL Server
ANYDATA	VARIANT
BINARY_DOUBLE	FLOAT (53)
BINARY_FLOAT	FLOAT (24)
BLOB	VARBINARY (MAX)
CHAR (n)	CHAR (n)
CHAR (n CHAR)	CHAR (n)
CLOB	VARCHAR (MAX)
DATE	DATETIME2 (7)

Oracle	SQL Server
LONG	VARCHAR (MAX)
LONGRAW	VARBINARY (MAX)
NCHAR (n)	NCHAR (n)
NCLOB	NVARCHAR (MAX)
NUMBER	FLOAT (53)
NUMBER (p,0:)	NUMERIC (p,s)
NUMBER (p,s)	FLOAT (53)
NVARCHAR2 (n)	NVARCHAR (n)
RAW (n)	VARBINARY (n)
TIMESTAMP (8:9)	DATETIME2 (7)
TIMESTAMP (p)	DATETIME2 (p)
TIMESTAMP (8:9) WITH TIME ZONE	DATETIMEOFFSET (7)
TIMESTAMP (p) WITH TIME ZONE	DATETIMEOFFSET (p)
VARCHAR2 (n)	VARCHAR (n)
VARCHAR2 (n CHAR)	VARCHAR (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to Teradata supported data types

Oracle	Teradata
CHAR (n)	CHAR (n)
DATE	TIMESTAMP (0)
NUMBER	NUMBER
NUMBER (p, 0:)	NUMBER (p, s)
NUMBER (p, s)	NUMBER
VARCHAR2 (n)	VARCHAR (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to Tibero supported data types

Oracle	Tibero
BINARY_DOUBLE	BINARY_DOUBLE
BINARY_FLOAT	BINARY_FLOAT
BLOB	BLOB
CHAR (n)	CHAR (n)
CLOB	CLOB
DATE	DATE
INTERVAL DAY TO SECOND	INTERVAL DAY TO SECOND
INTERVAL YEAR TO MONTH	INTERVAL YEAR TO MONTH
LONG	LONG
LONGRAW	LONG RAW
NCHAR (n)	NCHAR (n)
NCLOB	NCLOB
NUMBER	NUMBER
NUMBER (p,s)	NUMBER (p,s)
NVARCHAR2 (n)	NVARCHAR (n)
RAW (n)	RAW (n)
ROWID	ROWID
TIMESTAMP (p)	TIMESTAMP (p)
TIMESTAMP (p) WITH LOCAL TIME ZONE	TIMESTAMP (p) WITH LOCAL TIME ZONE
TIMESTAMP (p) WITH TIME ZONE	TIMESTAMP (p) WITH TIME ZONE
VARCHAR2 (n)	VARCHAR2 (n)

Conditions of support

See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Oracle to XML supported data types

This mapping applies to all targets that receive messages as XML:

- File in XML format
- JMS
- Kafka

See "Conditions of support" following this table for additional information.

Oracle	XML
BINARY_DOUBLE	decimal
BINARY_FLOAT	decimal
BLOB	base64Binary
CHAR	string
CLOB	string
DATE	dateTime
INTERVAL DAY TO SECOND	dayTimeDuration
INTERVAL YEAR TO MONTH	yearMonthDuration
LONG	string
NCHAR	string
NCLOB	string
NUMBER	decimal
NVARCHAR2	string
RAW	base64Binary
ROWID	string
TIMESTAMP	dateTime
TIMESTAMP WITH LOCAL TIME ZONE	dateTimeStamp
TIMESTAMP WITH TIME ZONE	dateTimeStamp
VARCHAR2	string
VARRAY ¹	Post maps the data types in the source VARRAY to the appropriate XML data types. Only certain data types in a VARRAY are supported. See the conditions of support.

Conditions of support

1. Only the following data types in a VARRAY are supported by SharePlex when replicating to XML output:
 - BINARY_FLOAT
 - VARCHAR2
 - BINARY_DOUBLE
 - NUMBER
 - TIMESTAMP (This is converted to a DATE data type without microseconds in XML output)
 - DATE
 - UDT (only if it contains one of the data types in this list)

2. See [Supported data types: Oracle to Oracle](#) for additional conditions of support for Oracle source data types.

Supported objects and operations for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to an Oracle target or an Open Target target.

NOTE: Replication to targets with a different character set is supported, with limitations. When posting to Open Target databases, XML files and JMS, SharePlex supports only UNICODE and US7ASCII on the target, but conversion can be performed by an Oracle client installed on the target system. For full details, see the Preinstallation Checklist in the SharePlex [Installation and Setup Guide for an Oracle Source](#).

Tables

SharePlex supports the following DML operations on tables:

- INSERT, UPDATE, DELETE, COMMIT, ROLLBACK
- Direct-path loads (SQL*Loader) (INSERT AND FULL ROLLBACK).

NOTE: Replication of partial rollbacks of DLOADs is **not** supported.

The target table must support the column types that are being replicated from the source Oracle table.

SharePlex supports the following table types for DML operations:

Supported table type*	Conditions of Support
Regular Oracle tables	None
Index-organized tables	SharePlex does not support: <ul style="list-style-type: none"> • Replication to/from index-organized tables that contain LOB or VARRAY columns • Replication from a non-index-organized table to an index-organized table • SharePlex hash-based horizontal partitioning of index-organized tables
Partitioned tables	None
Views	None
Materialized views	SharePlex does not support replication from a materialized view to a materialized view. SharePlex can replicate the underlying table of a materialized view to a regular target table.

SharePlex does not support the following table types:

- Replication to/from nested tables
- Replication to/from clustered tables

***SharePlex does not support the following for any table type:**

- Replication to/from Identity columns.
- Replication of rows changed by 'UPDATE WITH CASE' syntax.
- Replication of rows in which data exceeds 319 KB in size, excluding LOB and LONG columns
- Replication of external tables or tables with external partitions

Sequences

- Transactional changes to Oracle sequences can be replicated only from Oracle to Oracle.
- To replicate transactional changes to sequences, the supplemental logging of primary and unique keys must be enabled at the database level, or you must enable supplemental logging for primary keys on the **sys.seq\$** table.

Secured and compressed objects

SharePlex supports DML operations on secured or compressed objects as described in the following table. See "Conditions of support" following this table for additional information.

Secured/Compressed Object	Can be replicated to:
DML on tables encrypted by Oracle Obfuscation Toolkit	All target types
DML on tables with Transparent Data Encryption (TDE) ¹	All target types
DML on Oracle Label Security (OLS) ²	All target types
DML on compressed objects: Basic, Advanced Row (OLTP) Compression, HCC ³	All target types
Direct Load (DLOAD) on compressed objects: Basic, Advanced Row (OLTP) Compression, HCC ³	All target types

Conditions of support

1. Conditions of support - TDE

SharePlex supports Tablespace Encryption and Column Encryption, both source and target.

The SharePlex **copy/append** command does not support TDE.

TDE is not supported for sources on RDS.

SharePlex only supports the AES and DES encryption algorithms.

2. Conditions of support - OLS

By default, SharePlex cannot process rows that are protected by OLS (Oracle Label Security) because users granted DBA privileges (like SharePlex) do not have enough privileges to access those rows. However, if privilege is granted from the OLSSYS user, SharePlex can support OLS. SharePlex was tested under the following OLS configuration:

- The SharePlex user was granted full privilege to the objects in replication.
- Test tables with OLS security were created.
- Data was replicated using INSERT, UPDATE, DELETE, ROLLBACK, and TRUNCATE operations, and ALTER TABLE to add and drop columns.

NOTE: If the OLS policy data label column is defined as hidden, the data in that column cannot be replicated by SharePlex.

3. Conditions of support - compression

For HCC compression: SharePlex does not support query low compression. Supported types of compression are query high, archive low and archive high.

For Advanced Row (OLTP) Compression: Under certain conditions, Oracle does not provide enough information in the redo log for SharePlex to replicate a DML operation on a OLTP compressed object. Testing of OLTP compressed objects is advised.

Supported operations and objects for DDL replication

SharePlex provides default and optional DDL support.

NOTE: Support for DDL on compressed Oracle objects is limited to the following:

- SharePlex supports DDL on compressed objects only for Oracle 11gR2 and later source Oracle databases.
- ALTER TABLE to ADD COLUMN and ALTER TABLE to DROP COLUMN are supported on Basic, Advanced Row (OLTP) Compression, and HCC compressed Oracle objects for replication to all Oracle and Open Target targets.

SharePlex does not support:

- ANALYZE TABLE and ANALYZE INDEX
- DDL to ALTER TABLE ADD OVERFLOW to an IOT in replication
- DDL operations issued by the SharePlex database user
- DDL to ALTER INDEX to an IOT in replication

Oracle-to-Oracle DDL support

This section outlines both default and optional DDL support.

DDL on objects listed in the active configuration file

SharePlex supplies default and optional DDL replication for objects whose **names are listed in the configuration file explicitly or by wildcard**. See "Conditions of support" following this table for additional information.

For details about the controlling parameter, see the SharePlex [Reference Guide](#).

Supported object	Supported DDL Operation	Enabled by default?	Controlling parameter
Table and IOT (when they exist in the source at the time of configuration activation)	Truncate Alter to add, drop, modify columns Alter to add, modify, drop, split, coalesce, move, truncate, exchange partition or subpartition ¹ Drop Table	Yes	SP_OCT_REPLICATE_DDL=3
Table and IOT (when they are added to the source after configuration activation)	Create Create as Select ²	Yes	SP_OCT_AUTOADD_ENABLE=1
Index	Create Alter Drop	Yes	SP_OCT_AUTOADD_ENABLE=1
Materialized View ³	Create Drop	No	SP_OCT_AUTOADD_ENABLE=1 and SP_OCT_AUTOADD_MV=1 and SP_SYS_TARGET_COMPATIBILITY=8.6.2 or higher
Sequences ⁴	Create, Drop	No	SP_OCT_AUTOADD_ENABLE=1 and SP_OCT_AUTOADD_SEQ=1 and SP_SYS_TARGET_COMPATIBILITY=8.6.3 or higher
Trigger	Create, Drop	No	SP_OCT_REPLICATE_TRIGGER=1
Synonym	Create, Drop	No	SP_OCT_REPLICATE_SYNONYM=1

Supported object	Supported DDL Operation	Enabled by default?	Controlling parameter
Grant ⁵	Create, Drop	No	SP_OCT_REPLICATE_GRANT=1

Conditions of support

- ALTER TABLE has the following conditions of support:
 - ALTER TABLE DDL that involves multiple tables, such as EXCHANGE PARTITION between tables, requires all tables involved to be in replication.
 - Default DDL support for ALTER TABLE on partitions/subpartitions applies to user-named interval partitions/subpartitions. For system-named (system generated) interval partitions/subpartitions, SharePlex supports only ALTER TABLE to DROP and TRUNCATE the system-named partitions. To enable support for DROP and TRUNCATE of system-named partitions, set the SP_OCT_TRUNC_PARTITION_BY_ID parameter to 1, and ensure that both source and target are updated to SharePlex version 8.6.4 or later. **NOTE:** This requirement has changed from previous SharePlex releases in that the parameter must now be set regardless of the Oracle version, including for Oracle 12.2 and later.
 - SharePlex does not support TRUNCATE of a system-generated sub-partition if the sub-partition is empty. In such cases, Post stops with error SP-OPO01002. To configure Post to ignore this error, stop Post, set the SP_OPO_CONT_ON_ERR parameter to 1, and add error number SP-OPO01002 to the top of the **oramsglist** file. See the SharePlex [Reference Guide](#) for more information about this parameter.
- For CREATE TABLE AS SELECT, SharePlex supports the following datatypes: LONG, DATE, RAW, LONG RAW, ROWID, LONG VARCHAR, CHAR, CLOB, BLOB, CFILE, BFILE, TIMESTAMP, INTERVAL YEAR TO MONTH, INTERVAL DAY TO SECOND and ANYDATA.
- For CREATE MATERIALIZED VIEW the following applies:
 - SharePlex supports the following datatypes for CREATE MATERIALIZED VIEW: LONG, DATE, RAW, LONG RAW, ROWID, UROWID, LONG VARCHAR, CHAR, CLOB, BLOB, CFILE, BFILE, TIMESTAMP, INTERVAL YEAR TO MONTH, INTERVAL DAY TO SECOND and ANYDATA. SharePlex does not support ALTER MATERIALIZED VIEW.
 - SharePlex converts a CREATE MATERIALIZED VIEW to a CREATE TABLE, applies the CREATE TABLE to the target, and then replicates the DML that populates the view. SharePlex does not replicate materialized views to materialized views.
- To replicate sequences, the supplemental logging of primary and unique keys must be enabled at the database level, or you must enable supplemental logging for primary keys on the **sys.seq\$** table.
- Amazon RDS restricts DBA users from issuing the GRANT command. Because SharePlex runs as the DBA user, SharePlex cannot replicate GRANT to or from an RDS database.

DDL on objects not listed in the active configuration file

SharePlex provides expanded DDL support for Oracle objects that are not listed in the configuration file. SharePlex replicates the DDL statements for these objects, but does not maintain synchronization of the objects through DML replication. Expanded DDL replication is optional and is enabled with the following parameter setting:

SP_OCT_REPLICATE_ALL_DDL=1

NOTE: Expanded DDL replication supports not only tables and sequences but also a wide range of other objects such as procedures, functions, users, and views, which are not part of replication. Some of these objects may have underlying objects that *are in replication*. In those cases, Expanded DDL replication applies to the underlying objects in replication, as well as to the object that is not in replication.

See "Table Notes" following this table for additional information.

Supported object	Supported Operation
Table and IOT	Create table
	Create table as select
	Alter table add column
	Alter table drop column
	Drop table
	Truncate
	Comment on table
	Comment on columns
	Associate Statistics
	Disassociate Statistics
	Cluster
Crop cluster	
Sequence	Create
	Drop
	Alter
Partition/ Subpartition	Add
	Split
	Merge
	Drop
	Modify
	Coalesce
	Exchange
	Move
	Truncate
	Rename
Set	

Supported object	Supported Operation
Index	Create
	Alter
	Drop
View	Create
	Alter
	Drop
	Comment on view
Synonym	Create
	Drop
Directory ¹	Create
	Drop
User-defined type	Create type
	Alter type
	Drop type
	Create type body
	Drop type body
Stored procedure	Create
	Alter
	Drop
Stored function	Create
	Alter
	Drop
Package	Create package
	Create package body
	Alter package
	Alter package body
	Drop package
	Drop package body
User	Create user
	Alter user
	Drop user
	Grant ¹
	Revoke

Supported object	Supported Operation
Role	Create role
	Alter role
	Drop role
	Grant ¹
	Revoke

TABLE NOTES:

1. Amazon RDS restricts DBA users from issuing certain commands on an Amazon RDS database instance. Because SharePlex runs as the DBA user, SharePlex cannot replicate the following commands to or from an RDS database:
 - CREATE or DROP DIRECTORY
 - GRANT

Oracle to Open Target DDL support

SharePlex provides limited DDL support for replication from Oracle to Open Target. The involved objects must be listed in the active configuration file explicitly or with a wildcard. There is no optional DDL support for replication from Oracle to Open Target.

The default Oracle to Open Target configuration is represented by the following parameter setting:

SP_OCT_REPLICATE_DDL=3

See "Table Notes" following this table for additional information.

Supported object	Supported Operation
Table and IOT	Truncate ¹
	Alter table add column ²
	Alter table drop column

TABLE NOTES:

1. TRUNCATE TABLE is not supported from Oracle compressed objects to Open Target targets.
2. The default mappings of Oracle data types to their Open Target counterpart for replicated ALTER TABLE ADD COLUMN DDL is shown in [Supported data types: Oracle to Open Targets](#). When SharePlex adds the column, it defines it with the default data type. This mapping applies to the entire configuration (not per table).

Non-supported Oracle features

This is a list of commonly used Oracle features which SharePlex does not replicate and are not listed elsewhere in this document. Since both Oracle and SharePlex continually change and improve, this list of exclusions

cannot be considered complete. Unless an item is stated here as being supported, assume that SharePlex does not replicate it.

Object/operation/feature	Not supported
Oracle operations	Operations that do not appear in the redo logs. This includes any DML or DDL not in the redo logs, and also PL/SQL packages which do not write results to the redo logs, for example, dbms_shared_pool.keep and related packages.
dbms_scheduler.create_job	This object is not supported.
Flashback	<p>SharePlex does not support the Oracle Flashback Table feature. If the SP_REPLICATE_ALL_DDL parameter is enabled (value of 1), SharePlex may try to replicate the flashback DDL, which will return an error. To perform Flashback Table on a table that is in replication, use the following procedures in the SharePlex Administrator Guide to work around this issue:</p> <ol style="list-style-type: none"> 1. Remove source objects from replication 2. Perform the flashback 3. Add or change objects in an active configuration

Supported / non-supported SharePlex features for Open Targets

The following table shows whether specific SharePlex features are supported for replication from Oracle to Open Target targets.

SharePlex feature	Supported for Open Target	Not Supported for Open Target
reconcile command (target instantiation)	X	
compare/compare using and repair/repair using commands		X
copy/copy using and append/append using commands		X
Hash horizontally partitioned replication		X
Column-based horizontally partitioned replication	X (except Teradata)	
Vertically partitioned replication	X	
Column mapping	X	
Key definition	X	
Build configuration with scripts		X
Named queues	X	
Commit Reduction (feature of Post Enhanced Performance)	X	

SharePlex feature	Supported for Open Target	Not Supported for Open Target
Dependency Checking (feature of Post Enhanced Performance)		X
Transformation		X
Conflict resolution		X
Peer-to-peer replication (bi-directional)		X
Consolidated replication (many to one)	X	
Broadcast replication (one to many)	X	
High availability replication (active/passive bi-directional)		X
Change tracking target (CDC)		X
Data encryption	X	
Data compression	X	
SSH	X	
auth_hosts file	X	
Monitoring scripts	X	
SNMP monitoring	X	
Continue posting on error (SP_OPX_CONT_ON_ERR)	X	
Suspend on out of sync errors (SP_OPX_OUT_OF_SYNC_SUSPEND)	X	
Reduced key (SP_OPX_REDUCED_KEY)	X	
Logical Transaction Rollback on out-of-sync transactions		X

Oracle to Kafka supported data format:

- Kafka replicates the varray column data only in the XML format.
- Currently, Kafka does not replicate the varray column data in the JSON format.

Known issues in this release

The following is a list of issues, including those attributed to third-party products, known to exist at the time of release.

General known issues

Known Issue	Issue ID
The reported core file was not generated on systems running Oracle 11g on the SunOS, and Linux operating systems.	66306
If the customer issues an "ALTER TABLE ... MOVE COMPRESS" DDL command against a table in replication, SharePlex will replicate the DDL to the target by default. After post issues the DDL, if the target table had indexes, they are now unusable and post will subsequently fail trying to apply changes to the table. If post gets an error on the table such as "ORA-01502: index XXX or partition of such index is in unusable state" , the user must rebuild any indexes the table may have before restarting post in order to rectify the situation.	N/A
SharePlex copy is not supported for tables created with "MAPPING TABLE" clause.	SPO-19626
SpClient does not connect to Sp_NT_Mon when sp_security SSL is enabled.	SPO-16136

Windows known issues

Known Issue	Issue ID
On Windows systems, the uninstaller does not prompt for the version of SharePlex to be removed from a system. When there are multiple versions of SharePlex installed on a system, it removes only the first installation.	N/A
In the Windows environment, always run sp_ctrl from the same drive on which you have installed SharePlex. If you run sp_ctrl from another drive, you will be prompted for a login ID and password. After you provide the login ID and password, sp_ctrl will run normally.	N/A
If the user wants to change the installation directory for a given port, the user must first uninstall from the previous location. Note that if the user wants to keep the previous VARDIR it should be copied to the new location prior to the uninstall.	62620
Installing on Windows 2019 as Windows Administrator user will cause sp_wallet and qview to fail. Workaround: Set NUT_TREAT_ADMINS_AS_ROOT environment variable to 1 for the Windows Administrator user before starting any SharePlex utilities or applications.	SPO-20785
During installation when upgrading from 9.2.x it is possible to get a file not found error in the PTC NuTCRACKER Platform Components. Workaround: Rename or remove the mks_oe directory under the SharePlex installation directory before upgrading.	SPO-20910

ASM known issues

Known Issue	Issue ID
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.	N/A
On raw device ASM systems, the sp_desvr may get stuck and the process can not be killed even when kill -9 is issued; users must reboot the system to recover from it.	61713

Startup known issues

Known Issue	Issue ID
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: <pre>cd /product_directory/bin nohup ./sp_cop &</pre>	N/A

Character Sets known issues

Known Issue	Issue ID
Avoid replicating NCHAR data types using different character sets such as AL16UTF16 on the source machine and UTF8 on the target due to byte size limitations. 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: <pre>ORA-01461 can bind a LONG value only for insert into a LONG column</pre>	35198

compare known issues

Known Issue	Issue ID
If the compare command specifies a WHERE clause that includes a column name containing one or more spaces, the spaces are removed in the WHERE clause in the query used in the comparison causing the comparison to fail.	N/A
A compare of a partition can't be done if the partition is an Oracle hash partition. The compare can still be done on the whole table or with a specified where clause.	SPO-20141
Compare/Repair using [schema].[table] may not work on AIX7.2 with Oracle19c due to establishing a network connection.	SPO-20451
Compare will hang and the compare server will exit comparing table that has VARRAY containing UDT type.	SPO-20733

copy/append known issues

Known Issue	Issue ID
If you need to copy a materialized view to a table, you should drop the target table before copying. Please be aware that the new target table created by copy will have an additional column named M_ROW\$\$ which does not exist on the source. The use of append on a materialized view to a table is not supported.	41679
The BINARY_FLOAT and BINARY_DOUBLE data types are not supported for the copy command.	SPO-16453
Copy job status shows 'Locked' even when completed.	SPO-20843

Conflict Resolution known issues

Known Issue	Issue ID
The !ControlExtendedCharSet prepared conflict resolution routine and the !DEFAULT parameter currently cannot be used for generic conflict resolution.	N/A

Partitioned Replication known issues

Known Issue	Issue ID
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.	N/A
Post will fail with ORA-14400 performing DML on partitioned table with VARAY residing in an OLTP compressed tablespace.	SPO-20841

Vertical and Horizontal Partitioning known issues

Known Issue	Issue ID
When using horizontal partition replication with DATE data type in the column condition, the DATE needs to follow the SP date string format, 'MMDDSYYYYYHH24MISS'. Otherwise, the Read and Compare processes are not able to process it.	55268

LOBs, VARRAYs, and XML known issues

Known Issue	Issue ID
Users may encounter an out-of-sync condition when an UPDATE occurs on a table that contains a UDT with a VARRAY column, and there is no KEY on the table. This issue is specific to Solaris x86 operating systems.	29650
On Oracle 19c processing large n-items can lead to OOS and/or missing commits.	SPO-20842

DDL Replication known issues

Known Issue	Issue ID
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.	2242
If the Capture process is behind in reading the Oracle redo or archive logs when the SP_OCT_REPLICATE_ALL_DDL parameter is enabled it will replicate DDLs whose time stamps precede this event.	56957
In replication from an Oracle source to a non-Oracle target, SharePlex does not support ALTER TABLE to add a number column in which the scale is larger than the precision.	SPO-14372
In replication from an Oracle source to a non-Oracle target, SharePlex does not support ALTER TABLE...ADD COLUMN DDL operations when the column name is more than 30-bytes in length.	SPO-15585

Partition DDL known issues

Known Issue	Issue ID
If separate SQL statements for partition DDL and index rebuild are run on the source, SharePlex only replicates the partition DDL and leaves target global index unusable. This is because ALTER INDEX is not supported by SharePlex. The recommended work around is that all partition DDLs which mark global indexes as unusable should be run with an appending clause UPDATE GLOBAL INDEXES to the ALTER TABLE SQL statements. The alternative is to manually rebuild the global indexes on target.	57939

Function based index known issues

Known Issue	Issue ID
If there is more than one function defined in the index, SharePlex will choose the first. SharePlex cannot support multiple functions.	92931

Post to JMS known issues

Known Issue	Issue ID
Replication of batch operations to ActiveMQ may cause a hang. The workaround is to set the SP_ORD_BATCH_ENABLE parameter to 0.	SPO-11335
If the post process that is writing to JMS is not on the same machine as the source database, and if the two machines are of different endianness, NCHAR data will not be written to JMS correctly.	107471

Post to non-Oracle targets known issues

Known Issue	Issue ID
Replication of tables with varray columns from an Oracle source to a non-Oracle target can get out of sync because Oracle doesn't include key information on updates.	SPO-19048

Oracle Compression known issues

Known Issue	Issue ID
Hybrid Columnar Compression. Activation will not fail if a table with "COMPRESS FOR QUERY LOW" compression is activated. Capture will log a message indicating that "COMPRESS FOR QUERY LOW" is not supported.	107487
Oracle 18c OLTP Compression. SharePlex does not support replication of DML operations on objects compressed using OLTP Compression in Oracle 18c.	SPO-16449

Third-party known issues

Third-party known issues: Linux

Known Issue	Issue ID
RHEL with 11g may encounter issues when producing core files. To work around this issue users will need to change the parameter "core_pattern" in the /proc/sys/kernel/core_pattern file. The following command enables core files: <code>sysctl -w kernel.core_pattern=core</code> . The original setting is: /corefiles/core. In this state, the system looks for a directory named /corefiles, which does not exist, therefore a core file could not be created.	54799

Third-party known issues: Oracle

Known Issue	Issue ID
Oracle may allow an invalid date, such as year 0000, to be inserted as the key value of a table without generating an error. This causes SharePlex to return an "Invalid DATE format detected in record with rowid" error when trying to insert the record to the target.	SPO-1368
Users wishing to employ IOTs with overflow need to be running Oracle 11g or higher. This is a known Oracle issue addressed under Oracle Bug 4627859.	44626
On Windows systems, the Post process May exit when it encounters an "ORA-07445: exception encountered: core dump" error. Please refer to Oracle Bug 6658912 for more information and the Oracle provided work around.	67441
Oracle 11gR2 - During a SYNC job, the copy of a new table (without data) failed at " EXP-00011: table does not exist" . The table that failed is a new table without any data. The EXP-00011 is caused by 11gR2 new feature "Deferred Segment Creation" that is controlled by the initialization parameter DEFERRED_SEGMENT_CREATION. The default is ON. To avoid this error, disable the parameter. A tar has been opened with Oracle and Oracle created a note 960216.1 Original Export Raises EXP-11 Table Does Not Exist.	75179
OLTP compression with supplemental logging enabled may corrupt the Oracle Undo block, so Oracle suggests disabling supplemental logging when running OLTP compression. However, SharePlex requires supplemental logging to be enabled, so you may encounter this bug. This affects Oracle versions 11.2.0.2, 11.2.0.1 and 11.1.0.7. See Metalink ID 1191474.1.	92152
Sometimes the Post process will hang updating a SecureFile LOB. For more information please refer to Oracle tar SR 3-2898230851: OCILobWrite hangs at the OCI_LAST_PIECE for securefile LOB.	N/A
There is an Oracle bug that can cause the database to crash when supplemental logging is enabled and transactions involving tables in a compressed tablespace are rolled back. Please refer to Oracle bug 8331063 for more information.	N/A
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.	N/A

Third Party Known Issues: Misc

Known Issue	Issue ID
When replicating data from Oracle to SQL Server, the Microsoft SQL Server ODBC driver supports Owner names of up to 127 bytes only.	SPO-14331
A known issue in EDB Postgres ODBC driver prevents support for emoji UTF-8 character set with EDB Postgres target.	SPO-15251

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./splex_add_key

SharePlex License Utility
1) Read license key from file
2) Enter license key manually
3) Add license key for alternate host
q) Quit License Utility
Enter option:
2. Enter option 2.
3. Enter the key provided in the email from Quest Licensing.
4. For the customer name, enter: Trial Version.

To activate a purchased commercial license

1. Run the SharePlex command:
./splex_add_key

SharePlex License Utility
1) Read license key from file
2) Enter license key manually
3) Add license key for alternate host
q) Quit License Utility
Enter option:
2. Enter option 2.
3. Enter the key provided in the email from Quest Licensing.
4. Enter the customer name provided in that email.

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Julian Seward, jseward@bzip.org

bzip2/libbzip2 version 1.0.6 of 6 September 2010

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`libaio 0.3.109`

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SharePlex Release Notes

Updated - 3/9/2021

Version - 9.2.9