Quest®

SharePlex® 10.2.1

Release Notes

Revision: 10/27/2023

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.

About this release

This release supports only Windows Server 2022.

New Features in this Release

Operating System Support

This release includes support for Windows server 2022.

Resolved Issues and Enhancements

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

Issue ID	Description	Source and target
SPO-24752	SharePlex Poster process stops with the 'ORA-04016' error when users set the `SP_OPO_DEPENDENCY_CHECK` parameter to 1 while executing DDL on the target.	Oracle to Oracle
SPO-24746	SharePlex Poster stops with the 'ORA-01458: invalid length inside variable character string' error when users add a column with a LONG RAW data type to replication after activating a configuration.	Oracle to Oracle
SPO-24744	SharePlex Poster stops with the 'basic_string::_M_create' exception while replicating data from Oracle to Oracle.	Oracle to Oracle
SPO-24742	The import and export process is restarting frequently when SharePlex is upgraded from 10.0 to the latest version or 11.0.	Oracle to Oracle
SPO-24730	When the SP_OPO_DEPENDENCY_CHECK parameter is set to 1 during DML operations, SharePlex is displaying tables in an out-of-sync manner.	Oracle to Oracle
SPO-24727	When users execute a drop partition query using a PL/SQL script, some part of a query is not getting replicated to the target. This issue is observed when the SP_OCT_ALLOW_DP_DDL and SP_OCT_TRUNC_PARTITION_BY_ID parameters are set to 1.	Oracle to Oracle
SPO-24707	The conflict resolution routine is failing with the 'ORA-06550 and ORA-00911: invalid character' error while demonstrating the trusted source priority.	Oracle to Oracle
SPO-24706	The CDC table is not capturing the bulk data from the source environment.	Oracle to Oracle
SPO-24694	When running ora_setup with Oracle client binaries, it fails with the 'unable to check oracle file' error message while connecting to ASM.	Oracle to Oracle
SPO-24690	Some characters from the replicated data column of the table are missing when replicating data from Oracle Database to flat files.	Oracle Database to flat files
SPO-24689	In Oracle to SQL file replication, when users insert 0 (zero) into a number datatype column in the source table, the SQL file is missing a comma and starting single quotes.	Oracle to SQL file
SPO-24683	The SharePlex Poster process stops due to the DDL error ORA-01418, causing it to go out of sync with the source.	Oracle to Oracle
SPO-24651	When sp_ctrl receives input from a file with more than 510 bytes of memory, SharePlex displays an error when run in interactive mode, and it enters an infinite loop, exhausting system memory.	Oracle to Oracle
SPO-24543	Users have found the non-ASCII characters in the event logs/ sp_	Oracle to

Issue ID	Description	Source and target
	eventmon due to the issue with SSL connection between export and import.	Oracle
SPO-24512	The sp_cop process gets stuck when it doesn't receive a response from the client socket during replication.	Oracle to Oracle
SPO-24500	Repair parallelism is not working when the character sets of the source and target databases are different, and users see only one active session.	Oracle to Oracle
SPO-24498	When users execute the drop table statement using the dbms_scheduler package the capture is getting core dump.	Oracle to Oracle
SPO-24331	SharePlex is displaying the 'StmtExecute failed with ORA 1455' error when activating the configuration.	Oracle to Oracle
SPO-24316	The SharePlex Capture process stops with SP-OCT01007 even when the database is not using TDE, encrypted tablespaces, or columns during the ora_setup.	Oracle to Oracle
SPO-24248	SharePlex is not replicating a table with a materialized view from the source to the target, even when the SP_OCT_AUTOADD_MVIEW parameter is set to 1.	Oracle to Oracle
SPO-24157	The Capture process displays the 'Capture: 15006 OCIStmtExecute failed with ORA-1403' error when replicating XML data.	Oracle to Oracle
SPO-24084	Users observed the 'Reader missed a marker' issue in the reader logs, causing the Capture queue to grow large.	Oracle to Oracle
SPO-24080	SharePlex is unable to scan the event, capture, read, or post logs using the 'show log' command, even with the correct input. It displays the 'File xxx does not exist' message.	Oracle to Oracle
SPO-24068	The Compare/Repair process fails with the 'unable to get object id, rc=1455' error when executed on a partitioned table.	Oracle to Oracle
SPO-23964	The SharePlex Capture process is not replicating XML data with the namespace tag, considering it as invalid.	Oracle to Oracle
SPO-23947	The SharePlex Capture process is failing due to an sp_wallet issue and displaying the 'Capture: Unknown error code 1' error.	Oracle to Oracle
SPO-22520	After displaying the 'ORA-00060: deadlock' error, the Poster queue does not start automatically again; it requires manual intervention.	Oracle to Oracle
SPO-22429	SharePlex Poster is displaying the 'invalid byte sequence for encoding' error when replicating extended ASCII symbols from an Oracle database to a PostgreSQL database.	Oracle to Oracle
SPO-22302	Poster displays the 'ORA-40441: JSON syntax error' error when replicating the JSON data to the target.	Oracle to Oracle

Basic System Requirements

This chapter contains the basic system requirements for SharePlex. See also: Source and Target System Requirements and Data Types

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
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
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 9.2.x.

Versions with full interoperability

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

- 9.2.x
- 9.4.x
- 10.0.x
- 10.1.x
- 10.2.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**

Source and Target System Requirements and Data Types

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

> **PREREQUISITE:** At least the minimum level of supplemental logging must be enabled. Some SharePlex features may require PK/UK supplemental logging to be enabled.

Oracle Source and Target

SharePlex supports replication from Oracle to Oracle, according to the details below.

Supported Operating Systems for Oracle

The following operating systems are supported for capture from a supported Oracle database and replication to an Oracle target database. For a list of supported source and target databases for Oracle capture, see Supported Oracle Source and Target Versions.

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

- Windows Server 2022

- IaaS (Infrastructure as a Service) support - Azure and AWS

Supported Cloud Platforms for Oracle

Oracle Cloud Infrastructure

Oracle Compute (IaaS) Virtual Machines and Bare Metal

Amazon Web Services

- Amazon RDS for Oracle [1]

- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

Azure Virtual Machine (IaaS)

Condition of support

1 Amazon RDS for Oracle: Please see Supported Oracle Source and Target Versions for additional clarification on version compatibility.

Supported Oracle Source and Target Versions

SharePlex supports the Standard and Enterprise Editions of Oracle 12cR1, 12cR2, 18c, and 19c.

NOTES:
- Unless specified, Oracle, RAC, and ASM are supported for the same versions.   - SharePlex supports only the 64-bit version of Oracle Database   - 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), and 19c. 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.

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
- BINARY FLOAT
- BLOB [2]
- CHAR
- CLOB [2]
- DATE
- INTERVAL
- LONG RAW[2]
- LONG [2]
- NCHAR
- NCLOB [3]
- NUMBER
- NVARCHAR2 [8]
- RAW [8]
- ROWID
- SDO_GEOMETRY
- TIMESTAMP
- TIMESTAMP WITH LOCAL TIME ZONE
- TIMESTAMP WITH TIME ZONE
- UDT (User Defined Type)[5]

- UROWID

- VARCHAR

- VARCHAR2 [8]

- VARRAY collectors

- XMLTYPE [4]

> **NOTE:** SharePlex supports columns that are defined as INVISIBLE.

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 secure file 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.

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.

NCLOB

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

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.

User-defined types

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

> **NOTE:** SharePlex replicates tables with the UDT fields in the base type ONLY. In case of columns containing multiple subtypes, replication is applicable only for base type fields.

Extended Data Types

- Extended Data Types are not supported for the **Copy** command.
- Extended Data Types are not supported on a key column. The keys that do not support the Extended Data Types include:
    - Primary key on the Oracle table
    - Unique key on the Oracle table
- Horizontal partitioning is not supported by tables containing the Extended Data Type columns.
- SharePlex does not replicate data with Extended Data Type when target type is JMS Message Queues, File output (XML, JSON, SQL), Event Hubs, or Kafka.

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.

PostgreSQL Target

SharePlex supports replication from Oracle to PostgreSQL, according to the details below.

Supported Operating Systems for PostgreSQL

The following operating systems are supported for PostgreSQL Server database. SharePlex supports only the 64-bit version of the listed operating systems.

Native SharePlex installation is supported on the below platforms:

- IaaS (Infrastructure as a Service) support - Azure and AWS

- Windows Server 2022

Supported Cloud Platforms for PostgreSQL

Oracle Cloud Infrastructure

- Oracle Compute (IaaS) Virtual Machines and Bare Metal

Amazon Web Services

- Amazon RDS for PostgreSQL

- Amazon Aurora

- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

- Azure Virtual Machine (IaaS)

- Azure DBaaS

Supported Database Versions for PostgreSQL

PostgreSQL 9.4, 9.5, 9.6, 10, 13.4, and 14.0
ODBC driver requirement: pgsql-14

Supported Data Types: Oracle to PostgreSQL

How to Read the Supported Data Types Table/Grid

This section contains information about the supported data types 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.

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.

SQL Server Target

SharePlex supports replication from Oracle to SQL Server, according to the details below.

Supported Operating Systems for SQL Server

The following operating systems are supported for SQL Server database. SharePlex supports only the 64-bit version of the listed operating systems.

Native SharePlex installation is supported on the below platforms:

- IaaS (Infrastructure as a Service) support - Azure and AWS

- Windows Server 2022

Supported Cloud Platforms for SQL Server

Amazon Web Services
Amazon EC2 (IaaS) Virtual Machine
Microsoft Azure

- Azure Virtual Machine (IaaS)

- Azure SQL Database

- Azure SQL Managed Instance

Supported Database Versions for SQL Server

SQL Server 2016, 2017, 2019, and 2022
 ODBC driver requirement:

- Microsoft ODBC Driver 17 for SQL Server

- Microsoft ODBC Driver 18 for SQL Server

> **NOTE:** The SQL Server database is supported on Windows server operating systems.

Supported Data Types: Oracle to SQL Server

Oracle	SQL Server
ANYDATA	VARIENT
BINARY_DOUBLE	FLOAT (53)

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

NOTE: To understand how to read the above grid/table, see How to read the supported data types table/grid.

Conditions of support

See Supported Data Types: Oracle to Oracle for additional conditions of support for Oracle source data types.

MySQL Target

SharePlex supports replication from Oracle to MySQL, according to the details below.

Supported Operating Systems for MySQL

The following operating systems are supported for MySQL Server database. SharePlex supports only the 64-bit version of the listed operating systems.

Native SharePlex installation is supported on the below platforms:

- IaaS (Infrastructure as a Service) support - Azure and AWS

- Windows Server 2022

Supported Cloud Platforms for MySQL

Amazon Web Services

- Amazon RDS for MySQL

- Amazon Aurora

Microsoft Azure

- Azure Virtual Machine (IaaS)

- MySQL Azure database (PaaS)

Supported Database Versions for MySQL

MySQL 5.5, 5.6, 5.7, and 8
ODBC driver requirement: MySQL ODBC Drivers 8.0.26

Supported Data Types: Oracle to MySQL

Oracle	MySQL
BINARY_DOUBLE [1]	DOUBLE
BINARY_FLOAT	DOUBLE
BLOB	LONGBLOB
CHAR (n)	CHAR (n)
CLOB	LONGTEXT
DATE	DATETIME (0)

Oracle	MySQL
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)

NOTE: To understand how to read the above grid/table, see How to read the supported data types table/grid.

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.

See Supported Data Types: Oracle to Oracle for additional conditions of support for Oracle source data types.

JMS Message Queues Target

SharePlex supports replication from Oracle to JMS Message Queues, according to the details below.

Supported JMS Message Queues

- JMS - Apache ActiveMQ 5.8

- JMS - IBM MQ 8

Supported File Types

- XML file
  For XML supported data type information, see XML Supported Data Types.

- JSON file
  For JSON supported data type information, see JSON Supported Data Types.

File Output Target

SharePlex supports replication from Oracle to File Output, according to the details below.

Supported File Types

- XML file
- SQL file
- JSON file

XML Supported Data Types

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

- File in XML format
- JMS

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

Oracle	XML
VARCHAR2	string
VARRAY	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.

NOTE: To understand how to read the above grid/table, see How to read the supported data types table/grid.

Conditions of support

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)

See Supported Oracle Source and Target Versions for additional conditions of support for Oracle source data types.

JSON Supported Data Types

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

- File in XML format
- JMS

Oracle	JSON
BINARY_DOUBLE	Number
BINARY_FLOAT	Number
BLOB	String containing base64 encoded data
CHAR	String
CLOB	String
DATE	String containing date
INTERVAL DAY TO SECOND	String containing interval
INTERVAL YEAR TO MONTH	String containing interval
LONG	String
NCHAR	String

Oracle	JSON
NCLOB	String
NUMBER	Number
NVARCHAR2	String
RAW	String containing hex encoded data
ROWID	String
TIMESTAMP	String containing timestamp
TIMESTAMP WITH LOCAL TIME ZONE	String containing timestamp
TIMESTAMP WITH TIME ZONE	String containing timestamp
VARCHAR2	String

NOTE: To understand how to read the above grid/table, see How to read the supported data types table/grid.

Conditions of support

See Supported Data Types: Oracle to Oracle for additional conditions of support for Oracle source data types.

Additional Information about Data Types

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.

SharePlex does not support the replication of data from Oracle to Open Targets for the below Extended Data Types:

- VARCHAR2 (4000-32767)

- NVARCHAR2 (4000-16383)

- RAW (2000-32767)

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: • 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

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.

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.

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 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 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
Table	Alter Table Rename	Yes	SP_OCT_DDL_ UPDATE_CONFIG=1

Supported object	Supported DDL Operation	Enabled by default?	Controlling parameter
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_ MVIEW=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
Grant[5]	Create, Drop	No	SP_OCT_REPLICATE_ GRANT=1

Conditions of support

1. 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.

2. 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.

3. 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 MATERIALIZE 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.

4. 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.

5. 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
Sequence	Create
	Drop
	Alter
View	Create
	Alter
	Drop
	Comment on view

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	Create cluster
	Crop cluster
Partition/ Subpartition	Add
	Split
	Merge
	Drop
	Modify
	Coalesce
	Exchange
	Move
	Truncate
	Rename
	Set
Index	Create
	Alter
	Drop
Synonym	Create
	Drop
Directory[1]	Create
	Drop

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

TABLE NOTES:

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 Source and Target System Requirements and Data Types. 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	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: 1. Remove source objects from replication 2. Perform the flashback

Object/operation/feature	Not supported
	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	
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	
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	

SharePlex feature	Supported for Open Target	Not Supported for Open Target
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

System Requirements for Replication of OLTP Compressed Data

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

Supported Operating Systems

The following operating systems are supported for capture from a supported Oracle database and replication to a supported target database.

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

> **NOTE:** For OLTP, SharePlex supports the Windows Server 2022 operating systems only.

Supported Oracle Database Version/s

SharePlex supports Oracle 19c database version for replicating the OLTP compressed data.

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.

Issue ID	Known Issues	Component
SPO-21339	The SharePlex Capture process is getting stuck when users change the Oracle compatibility parameter from 11g to 12c. This issue is observed on the 12c 4 node RAC database.	Capture
SPO-19872	The SharePlex Poster process is slower when processing rollback transactions, whether full or partial.	Poster
SPO-24119	SharePlex Poster is displaying the *ODBC Driver Invalid precision value* error when replicating the BLOB data type with the data size of more than 8000 bytes.	Poster
SPO-22342	Performance issue is observed while performing the DML operations in bulk.	DML
SPO-21993	While activating a config file with an Oracle SCN number, users are not able to delete a column in a DDL activity.	DDL
SPO-14372	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.	DDL
SPO-15585	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.	DDL
SPSQL-5454	Poster stops with an error after activating the configuration for a hash-partitioned table on a target machine with a host name containing '-'	Partition table
SPO-22517	Performance issue is observed during replication while using partition table over the cloud.	Partition table
SPO-20841	Post will fail with ORA-14400 performing DML on partitioned table with VARAY residing in an OLTP compressed tablespace.	Partition table
SPSQL-5664	The **Copy** command is failing with the *'Internal error occurred in server'* error while replicating a table from Oracle to Oracle.	Copy
SPO-19626	SharePlex copy is not supported for tables created with "MAPPING TABLE" clause.	Copy
SPO-16453	The BINARY_FLOAT and BINARY_DOUBLE data types are not supported for the **copy** command.	Copy
SPO-20843	Copy job status shows 'Locked' even when competed.	Copy
SPO-20785	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 Administratoruser before starting	Windows

Issue ID	Known Issues	Component
	any SharePlex utilities or applications.	
SPO-12905	Post gets Oracle error "ORA-14400: inserted partition key does not map to any partition" on a Windows 2016 system.	Windows
SPO-20910	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.	PTC NuTCRACKER
SPO-20141	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.	Compare
SPO-20451	Compare/Repair using [schema].[table] may not work on AIX7.2 with Oracle19c due to establishing a network connection.	Compare
SPO-20733	Compare will hang and the compare server will exit comparing table that has VARRAY containing UDT type.	Compare
SPO-20842	On Oracle 19c processing large n-items can lead to OOS and/or missing commits.	Oracle
SPO-11335	Replication of batch operations to ActiveMQ may cause a hang. The workaround is to set the SP_ORD_BATCH_ENABLE parameter to 0.	JMS

Licensing

SharePlex licensing information can be found in the Quest Software Product Guide. Please contact your account manager if you have questions.

To activate a trial 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. For the customer name, enter: Trial Version.

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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.

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