SharePlex® 12.0

Release Notes

Revision: 3/9/2025

About SharePlex

For over two decades, SharePlex has provided high speed database replication for mission critical database environments.

SharePlex supports a wide variety of configurations to meet different and complex data availability needs. A primary class of use cases revolves around database scaling and availability.

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

- SharePlex also supports bi-directional, active/active configurations with conflict resolution for PostgreSQL to PostgreSQL and Oracle to Oracle to support horizontal scaling and strategic placement of databases near regional users.

- SharePlex can support cross platform (Oracle ← → PostgreSQL) bi-directional, active-active replication with conflict resolution to de-risk Oracle to PostgreSQL migrations in complex Oracle environments.

- SharePlex can improve scaling by offloading Oracle or PostgreSQL reporting workloads.

Another class of use cases involves (generally) cross-platform data movement to support application integration, database interoperability and data lake population. Examples include:

- PostgreSQL and/or Oracle replication to Snowflake to support data warehouse/data lake pipelines

- PostgreSQL and/or Oracle replication to Kafka for real-time streaming analytic applications

- PostgreSQL to Oracle (or) Oracle to PostgreSQL replication to provide interoperability between systems to support database refactoring or migration from Oracle to PostgreSQL.

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's value and versatility continue 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.

Revision History

Document Version	Date	Change History
2	16th January 2025	• Added support for Kubernetes in the SharePlex Features Interoperable with Versions 11.x and 12.0 section. • Added information about supported platforms for Oracle RDS in the Compatibility Across Operating Systems (Remote Collection and Posting) section.
3	10th March 2025	Added a known issue (SPO-25030) related to the **sp_security** command.

What's New in this Release

Compare and Repair commands support

SharePlex now supports the Compare and Repair commands for Oracle to PostgreSQL data replication on the Linux platform.

Operating System support

This release includes support for the following operating systems:

- Windows operating system
- Ubuntu operating system when using Oracle and PostgreSQL as source databases

Database support

This release includes support for the following databases:

- Oracle 23ai as both a source and target
- PostgreSQL 17 as both a source and target
- Alloy DB and Alloy DB Omni as both source and target
- MariaDB 11.4.2 as a target with Oracle as the source database

Platform support

- Apache Kafka 3.8
- Confluent Kafka 7.6

Other features

- SharePlex now supports data replication from Oracle to Confluent Kafka in AVRO format, with integrated schema registry and JDBC sink connector on the Linux platform.
- PostgreSQL Capture can now ignore transactions originating from a specific SharePlex port.
- Users can now configure data transformations during data replication from PostgreSQL to Oracle.
- Users can now replicate data from an Oracle instance to multiple Kafka instances using a single SharePlex instance.

Resolved Issues in this release

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

Issue ID	Known Issues	Source and Target	Component/ Feature
SPO-24959	During Oracle-to-Kafka replication, when the JSON DDL option is set to "no" (`json ddl=no`), SharePlex is encountering the following two issues: • The object cache file is not being generated after DDL is performed on the data being replicated. • After adding a column, inserting a record causes a core dump in Poster with a segmentation error.	Oracle-to-Kafka	JSON DDL
SPO-24942	The Oracle Poster process is displaying the `code has triggered` message in the OPO logs in all SharePlex environments where version 11.4 is installed.	Oracle to Oracle	Poster
SPO-24920	The Poster process is displaying the `invalid byte sequence for encoding 'UTF8': 0xc3 0x41` error when users insert multiple rows of Western European character data into a table.	Oracle to PostgreSQL	Poster
SPO-24917	If the table in replication has an **IS JSON** constraint, the event log displays the warning `Command server: JSON column not supported` during activation.	Oracle to Oracle	JSON column
SPO-24908	The SQL Server Poster process stopped with a core dump while replicating data from Oracle to SQL Server due to an out-of-sync issue.	Oracle to SQL Server	Poster
SPO-24896	While replicating data from one source to three targets, some tables are missing on two of the targets due to name mangling during the Reader process.	Multiple source and targets	Reader
SPO-24890	Data frequently goes out of sync during the execution of the UPDATE statement while replicating data from Oracle to PostgreSQL. This occurs when the WHERE condition does not include the PK column values, and it retains the pre-image of the changed columns along with some random columns.	Oracle to PostgreSQL	UPDATE statement
SPO-24885	SharePlex is unable to replicate NULL or empty string from PostgreSQL to PostgreSQL or EDB to EDB.	PostgreSQL to PostgreSQL, EDB to EDB	Empty string
SPO-24884	Users are unable to set a SharePlex PostgreSQL Capture parameter to ignore transactions originating from a specific SharePlex port.	PostgreSQL to PostgreSQL	Capture
SPO-24879	SharePlex Poster displays the 'TABLE DOESN'T EXIST' error when users do not grant the necessary privileges to existing tables during Oracle to Snowflake replication.	Oracle to Snowflake	Poster
SPO-24878	The SharePlex Capture process encounters a core dump issue when replicating a table from Oracle to PostgreSQL where the last column has been dropped. However, this issue does not	Oracle to PostgreSQL	Poster

Issue ID	Known Issues	Source and Target	Component/ Feature
	occur if any other column is dropped or if a new column is added after dropping the last column.		
SPO-24876	The SharePlex Poster process stops with an error when replicating data from Oracle to PostgreSQL, if the table name, column name, or both exceed 30 characters.	Oracle to PostgreSQL	Poster
SPO-24872	The PostgreSQL Repair process displays the error 'function concat() does not exist' when replicating a table with more than 34 columns from EDB to EDB.	EDB to EDB	PostgreSQL Repair
SPO-24862	When replicating data from an on-premise Oracle source to an RDS PostgreSQL target, with SharePlex installed on EC2, the replication speed is slower than expected.	Oracle to RDS PostgreSQL	
SPO-24851	During Oracle-to-Oracle replication on SharePlex version 11.3, after executing DML operations, the compare command returns a negative garbage value. Additionally, the repair status shows incorrect "Total Rows" information during the initial phase of execution.	Oracle-to-Oracle	Repair
SPO-24850	Initial queries executed by SharePlex's open Poster to fetch metadata from the PostgreSQL database and manage the shareplex_open_trans table are entering in an idle_in_transaction state due to missing commits.	Oracle to AWS RDS PostgreSQL	Poster
SPO-24845	The Poster process does not exit even if the execution time elapsed exceeds the time set through the `SP_OPO_MAX_OEXN_TIME` parameter.	Oracle to Oracle	Poster
SPO-24842	Users are unable to replicate LOB column data to the target using a PL/SQL block when the data length exceeds 4000 characters.	Oracle to Oracle	LOB column
SPO-24812	The SharePlex Capture process displays the '"Log parser error 12" with ORA-22287' error during while executing the remote capture operations in Oracle-to-Oracle replication.	Oracle to Oracle	Capture
SPO-24747	SharePlex is unable to replicate XML data from Oracle to Oracle due to a duplicate tag in the code.	Oracle to Oracle	XML data

Deprecated Platforms and Operating Systems

Platforms or operating systems that have been deprecated in SharePlex 12.0 version:

- 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, 2.3.1, 2.5.0, 3.0, 3.3

- MySQL 5.5, 5.6, 5.7

- PostgreSQL 9.4, 9.5, 9.6, 10

- SQL Server 2012, 2014

- AIX 7.1, 7.2

- Windows Server 2012, 2016

> **NOTE:** If an operating system is no longer supported, it is possible to support the replication with remote capture or remote post through SharePlex processes running on a supported OS platform on an intermediate server. For additional information, see Compatibility Across Operating Systems (Remote Collection and Posting).

Planned platform deprecation in future releases:

No platforms are anticipated to be deprecated at this time.

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 1.3 only.

Internet protocol

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

Operating System	Source	Target	SharePlex versions	On-premises	Cloud
Linux RHEL 7	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
Linux RHEL 8	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
Linux RHEL 9	Link-Local IPV6	Link-Local IPV6	11.4 and above	√	√
HP UA	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
HP IA	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
SUN Sparc	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
SUN Solaris	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√
AIX	Link-Local IPV6	Link-Local IPV6	11.0 and above	√	√

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 9.4.x/10.x.

Versions with interoperability for Oracle database as a source

The following SharePlex versions are interoperable for Oracle database as a source, including the Compare/Repair feature:

- 9.4.x
- 10.0.x
- 10.1.x
- 10.2

> **NOTES:**
>
> - SharePlex 10.2, as a source, and above versions are not interoperable with older versions than 10.2 as a target when using Extended Data Types and TLS 1.3.
>
> - For the supported features of SharePlex 11.0 and above , including its version interoperability, see SharePlex Features Interoperable with Versions 11.x and 12.0.

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**

SharePlex Features Interoperable with Versions 11.x and 12.0

The below table provides a list of features with their SharePlex version compatibility details with supported source and target databases.

SharePlex feature	Supported source database	Supported target database	SharePlex source version	SharePlex target version
Ability to replicate PostgreSQL timestamp to Oracle Date Unidirectional replication	PostgreSQL	Oracle	SharePlex 11.0 and above	SharePlex 11.1 and above
Ability to replicate PostgreSQL timestamp to Oracle Date replication with BDR support	PostgreSQL	Oracle and PostgreSQL	SharePlex 11.1 and above	SharePlex 11.1 and above
Activate config with LSN using user provided LSN[1]	PostgreSQL	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.1 and above	SharePlex 11.1 and above
show_last_posted utility[1]	PostgreSQL	PostgreSQL	SharePlex 11.1 and above	SharePlex 11.1 and above
High Availability cluster environment with CrunchyData[1]	PostgreSQL	PostgreSQL	SharePlex 11.1 and above	SharePlex 11.0 and above
PG2O-O2PG BDR - SharePlex prepared routines - !MostRecentRecord, !LeastRecentRecord, !UpdateUsingKeyOnly, !HostPriority, !UpdateUsingKeyOnly	Oracle and PostgreSQL	Oracle and PostgreSQL	SharePlex 11.0 & Above	SharePlex 11.0 & Above
Case sensitive column names	PostgreSQL	Oracle	SharePlex 11.1 & Above	SharePlex 11.1 and above
PostgreSQL Database as a Service as source	PostgreSQL	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.1 and above	SharePlex 11.0 & Above
Trigger scripts	PostgreSQL	PostgreSQL	SharePlex 11.1 and above	SharePlex 11.1 and above
SharePlex PostgreSQL - config.sql and build_config.sql scripts	PostgreSQL	Not target dependent	SharePlex 11.1 and above	SharePlex 11.1 and above
Implementation of the BOOLEAN data type	PostgreSQL	PostgreSQL, Oracle, Kafka, Snowflake	SharePlex 11.1 & Above	SharePlex 11.1 & Above

SharePlex feature	Supported source database	Supported target database	SharePlex source version	SharePlex target version
Implementation of the TIME data type	PostgreSQL	PostgreSQL, Kafka, Snowflake	SharePlex 11.1 & Above	SharePlex 11.1 & Above
Implementation of the BYTEA data type	PostgreSQL	PostgreSQL, Kafka, Oracle	SharePlex 11.1 & Above	SharePlex 11.1 & Above
Column name > 30 characters[3]	PostgreSQL, Oracle	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.1 and above	SharePlex 11.1 and above
Kafka Partition key	Oracle	Kafka	SharePlex 11.1 and above	SharePlex 11.1 and above
Long table name	Oracle	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.0 and above	SharePlex 11.1 and above
PostgreSQL Compression Algorithm with Physical replication[2]	PostgreSQL	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.0 and above	SharePlex 11.0 and above
PostgreSQL Compression Algorithm with Logical replication[2]	PostgreSQL	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake	SharePlex 11.1 and above	SharePlex 11.1 and above
Compare and Repair commands	PostgreSQL	PostgreSQL	SharePlex 11.4 and above	SharePlex 11.4 and above
Docker Container	Oracle, PostgreSQL	Oracle, PostgreSQL	SharePlex 11.4 and above	SharePlex 11.4 and above
Compare and Repair commands[4, 5]	Oracle	PostgreSQL	SharePlex 12.0	SharePlex 12.0
Ignore Port	PostgreSQL	PostgreSQL	SharePlex 12.0	SharePlex 12.0
AVRO format	Oracle	Confluent Kafka	SharePlex 12.0	SharePlex 12.0
Kubernetes	PostgreSQL	PostgreSQL	SharePlex 12.0	SharePlex 12.0

Conditions of Support:

1. These features are available only with PostgreSQL physical replication and not with PostgreSQL Database as a Service.

2. Types of PostgreSQL Compression Algorithm:

- pglz is supported with physical replication, where Capture receives data in compressed format and decompresses it.

- pglz and lz4 are supported with logical replication, as decompression is done by the output plugin (pgoutput), and Capture receives data in decompressed format.

3. When a table or column name exceeds 30 characters, Oracle does not log key columns for each update operation in the **Redo** log, resulting insufficient key columns for SharePlex Poster to use, leading to an Out of Sync condition at the target.

It is recommended to set `SP_OCT_USE_SUPP_KEYS = 0`, which directs SharePlex to select the appropriate set of key columns for Poster to use.

> **NOTE:** This may cause additional overhead during the identification of key columns in the SharePlex Read process and at the target during update transactions, potentially resulting in latency at the target.

4. The **Compare and Repair** commands for Oracle-to-PostgreSQL replication are certified for use with Oracle 18c, 19c, and 21c, as well as all supported PostgreSQL platforms.

5. The **AVRO File** format and the **Compare and Repair** commands (Oracle to PostgreSQL) are not supported on the Windows operating system.

Source and Target System Requirements and Data Types

This chapter contains the requirements when capturing from various source databases and replicating to supported target databases.

Supported Source and Target Combinations

The following table provides information about the supported source and target database combinations.

Target databases	Oracle (Source)	PostgreSQL (Source)	PostgreSQL Database as a Service (Source)
Azure Event Hub	√	X	X
File Output	√	X	X
JMS	√	X	X
Kafka	√	√	√
MariaDB	√	X	X
MySQL	√	X	X
Oracle	√	√	√
PostgreSQL	√	√	√
PostgreSQL Database as a Service	√	√	√
Snowflake	√	√	√
SQL Server	√	√	√

Platform Support Matrix

Oracle as source & target	All supported platforms[1]
Postgres as source	Linux
Postgres as Target	Linux, Windows
SQL Server	Linux, Windows
My SQL	Linux, Windows
SnowFlake	Linux, Windows
MariaDB	Linux
Kafka	Linux
Event Hub	Linux
JMS	All supported platforms
File	All supported platforms

1. Refer to the System Requirements section of the respective platform for detailed platform support information.

Compatibility Across Operating Systems (Local Installation)

SharePlex allows replication between source and target installations across different operating system platforms. The table below outlines the OS platform combinations that are supported.

Source Platform	Supported Target Platform
Linux	Linux , AIX , Solaris Sparc, Windows
AIX	AIX , Linux
Solaris Sparc	Solaris Sparc , Linux
Windows	Windows , Linux
HP-UX	HP-UX
Solaris Intel	Solaris Intel

Compatibility Across Operating Systems (Remote Collection and Posting)

If users cannot or choose not to install SharePlex directly on the source and/or target server, they can use an intermediate server where SharePlex collects data from the source and/or posts data to the target remotely. In these situations, users must consider the operating system of both the intermediate server running SharePlex and the source and/or target database platform.

Shareplex Platform	Database Platform
Linux	Linux
	Sun Solaris Sparc
	Sun Solaris Intel
AIX	AIX
Solaris Sparc	Solaris Sparc
Solaris intel	Solaris intel
Windows	Windows
HP-UX	HP-UX

NOTE: SharePlex supports replication to and from Oracle RDS when it is installed on any of the supported operating systems (Windows, Linux, and Unix).

Compatibility matrix for supported operating system and target platform

The table below provides information about supported operating systems and target database versions compatible with Oracle as a source. The statistics in this table apply only to on-premise platforms.

Operating Systems	Target platforms									
	Oracle	**PostgreSQL**	**Azure Event Hubs**	**File Output**	**JMS**	**Kafka**	**MariaDB**	**MySQL**	**SnowFlake**	**SQL Server**
Versions	12cR1, 12cR2, 18c, 19c, 21c, 23ai	13.4, 13.6, 14.1, 15.x, 16, 17, EDB 15.x, 16, Fujitsu Enterprise PostgreSQL 15 SP2, AlloyDB Omni 15.5.x	NA	NA	ActiveMQ 5.8, 5.16.7, IBM MQ 8, 9.3	Apache 3.6.1, 3.8, Confluent 7.6	11.4.2	8.0.26	8.38.2	2016, 2017, 2019, 2022
AIX										
7.3	√	X	X	√	√	X	X	X	X	X
CentOS										
7.x	√	√	√	√	√	√	√	√	√	√
HP-UX										
11.31	√	X	X	√	√	X	X	X	X	X
Oracle Linux										
9.x	√	√	√	√	√	√	√	√	√	√
8.x	√	√	√	√	√	√	√	√	√	√
7.x	√	√	√	√	√	√	√	√	√	√

Operating Systems	Target platforms									
	Oracle	PostgreSQL	Azure Event Hubs	File Output	JMS	Kafka	MariaDB	MySQL	SnowFlake	SQL Server
Versions	12cR1, 12cR2, 18c, 19c, 21c, 23ai	13.4, 13.6, 14.1, 15.x, 16, 17, EDB 15.x, 16, Fujitsu Enterprise PostgreSQL 15 SP2, AlloyDB Omni 15.5.x	NA	NA	ActiveMQ 5.8, 5.16.7, IBM MQ 8, 9.3	Apache 3.6.1, 3.8, Confluent 7.6	11.4.2	8.0.26	8.38.2	2016, 2017, 2019, 2022
Oracle Solaris SPARC										
11.4	√	X	X	√	√	X	X	X	X	X
Oracle Solaris x86										
11.4	√	X	X	√	√	X	X	X	X	X
RHEL										
9.x	√	√	√	√	√	√	√	√	√	√
8.x	√	√	√	√	√	√	√	√	√	√
7.x	√	√	√	√	√	√	√	√	√	√
SUSE SLES										
12.x	√	√	√	√	√	√	√	√	√	√
15.x	√	√	√	√	√	√	√	√	√	√
Rocky Linux										
8.x	√	√	√	√	√	√	√	√	√	√
Ubuntu										
22.04	√	√	√	√	√	√	√	√	√	√

Operating Systems	Target platforms									
	Oracle	**PostgreSQL**	**Azure Event Hubs**	**File Output**	**JMS**	**Kafka**	**MariaDB**	**MySQL**	**SnowFlake**	**SQL Server**
Versions	12cR1, 12cR2, 18c, 19c, 21c, 23ai	13.4, 13.6, 14.1, 15.x, 16, 17, EDB 15.x, 16, Fujitsu Enterprise PostgreSQL 15 SP2, AlloyDB Omni 15.5.x	NA	NA	ActiveMQ 5.8, 5.16.7, IBM MQ 8, 9.3	Apache 3.6.1, 3.8, Confluent 7.6	11.4.2	8.0.26	8.38.2	2016, 2017, 2019, 2022
Windows										
2022	√	√	X	√	√	X	X	√	√	√
2019	√	√	X	√	√	X	X	√	√	√

The table below provides information about supported operating systems and target database versions compatible with PostgreSQL as a source. The statistics in this table apply only to on-premise platforms.

Operating Systems	Target platforms				
	Kafka	**Oracle**	**PostgreSQL**	**SnowFlake**	**SQL Server**
Versions	Apache 3.6.1, 3.8, Confluent 7.6	19c, 21c, 23ai	13.x, 14.x, 15.x, 16, 17, EDB 15.x, 16, Fujitsu Enterprise PostgreSQL 15 SP2, AlloyDB Omni 15.5.x	8.38.2	2016, 2017, 2019, 2022
AIX					
7.3	X	√	X	X	X
CentOS					
7.x	√	√	√	√	√
HP-UX					
11.31	X	√	X	X	X
Oracle Linux					
9.x	√	√	√	√	√
8.x	√	√	√	√	√
7.x	√	√	√	√	√
Oracle Solaris SPARC					
11.4	X	√	X	X	X
Oracle Solaris x86					
11.4	X	√	X	X	X
RHEL					
9.x	√	√	√	√	√
8.x	√	√	√	√	√
7.x	√	√	√	√	√
SuSE SLES					
12.x	√	√	√	√	√
15.x	√	√	√	√	√
Rocky Linux					
8.x	√	√	√	√	√
Ubuntu					
22.04	√	√	√	√	√

Operating Systems	Target platforms				
	Kafka	**Oracle**	**PostgreSQL**	**SnowFlake**	**SQL Server**
Versions	Apache 3.6.1, 3.8, Confluent 7.6	19c, 21c, 23ai	13.x, 14.x, 15.x, 16, 17, EDB 15.x, 16, Fujitsu Enterprise PostgreSQL 15 SP2, AlloyDB Omni 15.5.x	8.38.2	2016, 2017, 2019, 2022
Windows					
2019	X	√	X	X	X
2022	X	√	X	X	X

System Requirements and Conditions of Support When Replicating from Oracle

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

> **PRE-REQUISITE:** 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 basics

This section contains the requirements for an Oracle database as a source when capturing from an Oracle database and replicating to supported target databases.

Supported operating systems

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 Source and Target Combinations.

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

Supported operating systems via local installation:

> **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 7.3
- CentOS Linux 7.x
- HP-UX 11.31 Itanium
- Oracle Linux 7.x, 8.x, and 9.x
- Oracle Solaris SPARC 11.4
- Oracle Solaris x86 11.4
- RHEL 7.x, 8.x, and 9.x
- Rocky Linux 8.x
- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

- Windows Server 2019 and 2022*

LIMITATIONS: For limitations related to **Windows** platform support, see the Windows-related issues in the Known Issues section.

* Unsupported features on the Windows platform:

- PostgreSQL database as a source

- Compare/Repair commands for Oracle to PostgreSQL replication

- AVRO file format

- MariaDB

- sp_client utility

NOTE: The release of the Windows platform with version 12.0 does not support in-place upgrades from older SharePlex versions due to compatibility issues. Hence, it is recommended to perform a fresh installation of SharePlex 12.0. For further details, please refer to the SharePlex 12.0 Upgrade Guide.

Supported versions

SharePlex supports the Standard and Enterprise Editions of Oracle 12cR1, 12cR2, 18c, 19c, 21c, and 23ai*.

NOTES:

- Unless specified, Oracle, RAC, and ASM are supported for the same versions.

- SharePlex supports only the 64-bit version of Oracle Database

- In addition to the supported operating systems for Oracle and the supported cloud platforms for Oracle, the Oracle versions listed above are also supported when running on an on-premises Oracle Exadata Database Machine. Any issues reported on an on-premises Oracle Exadata Database Machine will be tested against Oracle Exadata Cloud Service for reproduction purposes.

- Amazon RDS for Oracle 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-12-1`, `default:oracle-ee-19,` and `default:oracle-se2-19`.

- On **Windows** Server, Oracle 19c versions below 19.6 have an Oracle bug (29865658) that causes the SharePlex **ora_setup, Reader,** and **Poster** processes to get stuck. This bug is fixed in version 19.6 and later.To avoid this issue with SharePlex, either upgrade the Oracle 19c database to version 19.6 or higher. Users need to contact Oracle to obtain a patch for bug **29865658** or set the `CLIENT_STATISTICS_ LEVEL` database parameter to 'OFF'.

Steps to update the `CLIENT_STATISTICS_LEVEL` Database Parameter

1. To see the current value of `CLIENT_STATISTICS_LEVEL`, use the following command:

   ```
   SQL> SHOW PARAMETER CLIENT_STATISTICS_LEVEL;
   ```

2. If the current value is set to **TYPICAL**, update it to OFF using the following command:

    ```
    SQL> ALTER SYSTEM SET CLIENT_STATISTICS_LEVEL = 'OFF' SCOPE=SPFILE;
    ```

3. To apply the change, restart the database by executing the following commands:

    ```
    SQL> SHUTDOWN IMMEDIATE;
    ```

    ```
    SQL> STARTUP;
    ```

*Conditions of Support for Oracle 23ai:

- Oracle 23ai is supported on **DBCS**, **ExaCS/CC**, and **Oracle On-premises Exadata** platforms.

- On Oracle 23ai, the **Copy/Append** command is not supported with encrypted tablespaces.

- In 23ai, when creating a table with an XMLType column, it is created with a default storage type of **TRANSPORTABLE BINARY XML**. To enable SharePlex support, change the XMLType column's storage type to **BINARY XML**.

Supported cloud platforms

Oracle Cloud Infrastructure:

- Oracle Exadata Cloud Service (ExaCS)[1]

- Oracle Exadata Cloud@Customer (ExaCC)[1]

- Oracle Database Cloud Service (DBCS)[2]

    - Enterprise Standard Edition

    - Enterprise Edition High Performance

    - Enterprise Edition Extreme Performance

- Oracle Compute (IaaS) Virtual Machines and Bare Metal

Amazon Web Services:

- Amazon RDS for Oracle [3]

- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure:

Azure Virtual Machine (IaaS)

Conditions of support

1. **Oracle Exadata:** Issues on Oracle Exadata will be tested against Oracle Exadata Cloud Service for reproduction purposes.

2. **Oracle Database Cloud Service (DBCS):** SharePlex only supports Transparent Data Encryption (TDE) feature on DBCS EE-HP, DBCS EE-EP, and ExaCS/CC.

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

Oracle source basic conditions of support

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 3. Add or change objects in an active configuration
Special characters	• SharePlex currently does not support the use of a dot (.) in Oracle schema names or in Oracle objects such as , sequences, tables, columns, materialized views, synonyms, users, and other related objects. • If a quoted username (Oracle allows quoted identifier names) is used during Ora_setup, the setup process will fail, and subsequent configuration activation will also fail.

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 data types to ensure successful DML operations.

- If the precision or size of the target data type 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 / non-supported SharePlex features for Oracle to open targets replication

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

SharePlex feature	Supported open targets
reconcile command (target instantiation)	All
Compare/Compare Using and **repair/repair using** commands*	PostgreSQL
copy/copy using and **append/append using** commands	Not supported
Hash horizontally partitioned replication	All
Column-based horizontally partitioned replication	All
Vertically partitioned replication	All
Column mapping	All
Key definition	All
Build configuration with scripts	Not supported
Named queues	All
Commit Reduction (feature of Post Enhanced Performance)	All
Dependency Checking (feature of Post Enhanced Performance)	Not supported
Transformation	Not supported
Conflict resolution	PostgreSQL
Peer-to-peer replication (bi-directional)	PostgreSQL
Consolidated replication (many to one)	All
Broadcast replication (one to many)	All
High availability replication (active/passive bi-directional)	PostgreSQL
Change tracking target (CDC)	Not supported
Data encryption	All
Data compression	All
SSH	All
auth_hosts file	All

SharePlex feature	Supported open targets
Monitoring scripts	All
SNMP monitoring	All
Continue posting on error (SP_OPX_CONT_ON_ERR)	All
Suspend on out of sync errors (SP_OPX_OUT_OF_SYNC_SUSPEND)	All
Reduced key (SP_OPX_REDUCED_KEY)	All
Logical Transaction Rollback on out-of-sync transactions	Not supported
HSM: Oracle database wallet key store on external storage using `sp_hsm` utility	All

* The Compare and Repair commands for Oracle to PostgreSQL replication are certified for use with Oracle 18c, 19c, and 21c.

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.

For OLTP, SharePlex supports the following operating systems only:

- AIX 7.3
- CentOS Linux 7.x
- HP-UX 11.31 Itanium
- Oracle Linux 7.x, 8.x, and 9.x
- Oracle Solaris SPARC 11.4
- RHEL 7.x, 8.x, and 9.x
- Rocky Linux 8.x
- SuSE SLES 12.x and 15.x
- Windows Server 2019 and 2022

Supported Oracle database version/s

SharePlex supports the Standard and Enterprise Editions of Oracle 12cR1, 12cR2, 18c, 19c, and 21c for replicating the OLTP compressed data.

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 or an open 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.

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

Secured/Compressed Object	Can be replicated to:
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. 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. 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.

IMPORTANT: Shareplex does not support OLS policy configuration changes on tables during active replication. Users need to apply these configurations before activating the configuration.

3. 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.

Oracle to open targets DDL support

SharePlex provides default and optional DDL support.

> **NOTES:** 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

SharePlex provides limited DDL support for replication from Oracle to open targets. 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 cross platforms.

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:**
>
> - TRUNCATE TABLE is not supported from Oracle compressed objects to open targets.
>
> - The default mappings of Oracle data types to their open target counterpart for replicated ALTER TABLE ADD COLUMN DDL are shown in the "Supported Data type" section of the respective target. When adds the column, it defines it with the default data type. This mapping applies to the entire configuration (not per table).

Oracle to Azure Event Hubs replication

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

Supported target operating systems

SharePlex replicates remotely to the Azure Event Hubs service. Remote replication from the following operating systems is supported:

- CentOS Linux 7.x

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- SuSE SLES 12.x and 15.x

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported Azure Event Hubs target

Supported platform as a service: Azure Event Hubs

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.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to an Azure Event Hubs target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to an Azure Event Hubs target. For additional information, see Oracle to open target DDL support.

Oracle to File Output replication

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

Supported target operating systems

Supported operating systems via local installation:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- SuSE SLES 12.x and 15.x

- Rocky Linux 8.x

- Windows Server 2019 and 2022

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported file types

- XML file
- SQL file
- JSON file

XML format supported open targets

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

- File in XML format
- JMS
- Kafka
- Azure/Kafka Event Hubs

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	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

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 Conditions of support for the above-mentioned supported data types.

JSON format supported open targets

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

- File in XML format
- JMS
- Kafka
- Azure/Kafka Event Hubs

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
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

Conditions of support: See Conditions of support for the above-mentioned supported data types.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a File Output target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a File Output target. For additional information, see Oracle to open target DDL support.

Oracle to JMS Message Queues replication

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

Supported target operating systems

Local SharePlex installation is supported on the below operating systems:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Windows Server 2019 and 2022

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported JMS Message Queues

- JMS - Apache ActiveMQ 5.8 and 5.16.7

- JMS - IBM MQ 8 and 9.3

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.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a JMS Message Queues target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a JMS Message Queue target. For additional information, see Oracle to open target DDL support.

Oracle to Kafka replication

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

Supported target operating systems

Supported operating systems via local installation:

- CentOS Linux 7.x

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- SuSE SLES 12.x and 15.x

- Rocky Linux 8.x

Remote replication from the following operating systems is supported:

- CentOS Linux 7.x

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- SuSE SLES 12.x and 15.x

- Rocky Linux 8.x

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported Kafka targets

- Apache Kafka 3.6.1 and 3.8

- Confluent Kafka 7.6.0

Confluent Kafka, along with Schema Registry and AVRO format, supports the following authentication methods:

- SASL_PLAINTEXT with PLAIN authentication

- Kerberos SASL_PLAINTEXT with GSSAPI authentication

We test and reproduce issues against:

- Apache Kafka

- Confluent Kafka

> **NOTE:** If you would like to use a different vendor who provides their own Kafka distribution or provides a Kafka compliant interface, you are welcome to do so. From a support perspective, our support and development teams will share any Kafka broker errors that SharePlex receives and also ensure SharePlex itself is working properly to capture data, the target configuration formats in SharePlex are correct, and the SharePlex poster is posting or attempting to post according to the Kafka versions under support. If there are SharePlex issues with Kafka support that can be reproduced on Apache Kafka or otherwise demonstrated to be definitely associated with SharePlex, our team will address those as standard Kafka issues.

Supported formats

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

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

- AVRO format
  For AVRO supported data type information, see AVRO Format Supported Data Types.

AVRO format supported data types

> **NOTE:** SharePlex supports the AVRO format with Confluent Kafka version 7.6.0 and the JDBC connector version `confluentinc-kafka-connect-jdbc-10.7.6`.

Oracle	Kafka (AVRO format)
VARCHAR2	string
CHAR	string
ROWID	string
NUMBER (P, S <= 0)	P-S < 10 -> int P-S < 19 -> long P-S >= 19 -> decimal (logical)
NUMBER (P, S > 0)	decimal (logical)
BINARY FLOAT	float
BINARY DOUBLE	double
DATE	date (logical)/string
TIMESTAMP	timestamp-millis (logical)/string

Oracle	Kafka (AVRO format)
TIMESTAMP_TZ	timestamp-millis (logical)/string
TIMESTAMP_LTZ	timestamp-millis (logical)/string
INTERVAL_YEAR	string
INTERVAL_DAY	string
RAW	bytes
CLOB	string
BLOB	bytes
LONG	string
LONG VARCHAR	string
LONG RAW	bytes

LIMITATIONS:

- An UPDATE on a key column results in a DELETE operation followed by the INSERT. If the UPDATE does not include data for LOB columns, those columns will become empty.

- The Confluent `kafka-connect-jmespath` predicate plugin, used for filtering fields, does not support the AVRO BYTES datatype. Therefore, binary LONGs/LOBs (such as LONG RAW and BLOB) mapped to AVRO BYTES cannot be filtered out. When such columns lack data, they are populated with the value `_splex_default` during updates, which must be filtered out using appropriate transform and predicate configurations.

- Commit operations are not directly posted as commits. They are handled by the JDBC Sink Connector and are configurable with JDBC Sink Connector configurations, which commits after a configurable limit is reached.

- TRUNCATE operations are not supported by the JDBC Sink Connector. The Poster will ignore any TRUNCATE transactions.

- DateTime Handling with AVRO parameter `datetime_logical` set to yes using the Target command `datetime_logical = yes`:

  - Timestamp precision is supported up to milliseconds.

  - Timestamps with timezones do not retain timezone information and must be mapped to TIMESTAMP.

  - DATE and TIMESTAMP can store values only after 01-Jan-1970. If earlier values are received, processing stops with an error.

- If an Oracle Date datatype includes TIME, the JDBC Sink Connector will fail to insert the record in the Oracle target database when **datetime_logical** is set to `no` and the date format includes time.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a Kafka target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a Kafka target. For additional information, see Oracle to open target DDL support.

Oracle to MariaDB replication

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

Supported target operating systems

Supported operating systems via local installation:

- RHEL 7.x and 8.x
- Rocky Linux 8.x
- Oracle Linux 7.x and 8.x

Remote replication from the following operating systems is supported:

- RHEL 7.x and 8.x
- Rocky Linux 8.x
- Oracle Linux 7.x and 8.x

Supported target operating systems via remote replication:

- AIX 7.3
- CentOS Linux 7.x
- HP-UX 11.31 Itanium
- Oracle Linux 7.x and 8.x
- Oracle Solaris SPARC 11.4
- Oracle Solaris x86 11.4
- RHEL 7.x, 8.x, and 9
- Rocky Linux 8.x
- SuSE SLES 12.x and 15.x

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

> **LIMITATION:** The `SP_OPX_THREADS` parameter is not supported in MariaDB.

Supported target versions and ODBC requirements

MariaDB 11.4.2

ODBC driver requirement:

mariadb-connector-odbc-3.1.20-1.x86_64

Supported target cloud platforms

Amazon Web Services: Amazon RDS for MariaDB

Supported data types

SharePlex supports the following data types for replication from Oracle to MariaDB:

Oracle	MariaDB
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)	DATETIME (6)
TIMESTAMP (p)	DATETIME (p)
VARCHAR2 (n)	VARCHAR (n)

Conditions of support: Because Oracle and MariaDB 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.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a MariaDB target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a MariaDB target. For additional information, see Oracle to open target DDL support.

Oracle to MySQL replication

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

Supported target operating systems

Supported operating systems via local installation:

- RHEL 7.x and 8.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

- Windows Server 2019 and 2022

Remote replication from the following operating systems is supported:

- RHEL 7.x and 8.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

- Windows Server 2019 and 2022

Supported target operating systems via remote replication:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x and 8.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Windows Server 2019 and 2022

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

> **LIMITATION:** The `SP_OPX_THREADS` parameter is not supported in MySQL.

Supported target versions and ODBC requirements

MySQL 8.0.26

ODBC driver requirement:

ODBC 8.0.26 for Linux

Supported target cloud platforms

Amazon Web Services

- Amazon RDS for MySQL
- Amazon Aurora

Microsoft Azure

- Azure Virtual Machine (IaaS)
- MySQL Azure database (PaaS)

Supported data types

SharePlex supports the following data types for replication from Oracle to MySQL:

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)	DATETIME (6)
TIMESTAMP (p)	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.

See Conditions of support for the above-mentioned supported data types.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a MySQL target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a MySQL target. For additional information, see Oracle to open target DDL support.

Oracle to Oracle replication

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

Supported target operating systems

Supported operating systems via local installation:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- SuSE SLES 12.x and 15.x

- Rocky Linux 8.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

Remote replication from the following operating systems is supported:

> **NOTE:** By using remote replication, database running on Solaris SPARC 11.1, 11.2, and 11.3 or Windows 2012, 2012 r2, and 2016 can leverage remote replication to capture and/or post data using SharePlex installed on Solaris SPARC 11.4, or Windows 2019 and 2022 respectively ensuring replication continues without the need for direct installation on the unsupported platform.

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported target versions

SharePlex supports the Standard and Enterprise Editions of Oracle 12cR1, 12cR2, 18c, 19c, 21c, and 23ai*.

> **NOTES:**
>
> - Unless specified, Oracle, RAC, and ASM are supported for the same versions.
>
> - SharePlex supports only the 64-bit version of Oracle Database
>
> - In addition to the supported operating systems for Oracle and the supported cloud platforms for Oracle, the Oracle versions listed above are also supported when running on an on-premises Oracle Exadata Database Machine. Any issues reported on an on-premises Oracle Exadata Database Machine will be tested against Oracle Exadata Cloud Service for reproduction purposes.
>
> - Amazon RDS for Oracle 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-12-1, default:oracle-ee-19, and default:oracle-se2-19.
>
> - On **Windows** Server, Oracle 19c versions below 19.6 have an Oracle bug (29865658) that causes the SharePlex **ora_setup, Reader,** and **Poster** processes to get stuck. This bug is fixed in version 19.6 and later.To avoid this issue with SharePlex, either upgrade the Oracle 19c database to version 19.6 or higher. Users need to contact Oracle to obtain a patch for bug **29865658** or set the `CLIENT_STATISTICS_` `LEVEL` database parameter to 'OFF'.

*Conditions of Support for Oracle 23ai:

- Oracle 23ai is supported on **DBCS**, **ExaCS/CC**, and **Oracle On-premises Exadata** platforms.

- On Oracle 23ai, the **Copy/Append** command is not supported with encrypted tablespaces.

Supported target cloud platforms

Oracle Cloud Infrastructure

- Oracle Exadata Cloud Service (ExaCS)[1]

- Oracle Exadata Cloud@Customer (ExaCC)[1]

- Oracle Database Cloud Service (DBCS)[2]

    - Enterprise Standard Edition

    - Enterprise Edition High Performance

    - Enterprise Edition Extreme Performance

- Oracle Compute (IaaS) Virtual Machines and Bare Metal

Amazon Web Services

- Amazon RDS for Oracle [3]

- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

Azure Virtual Machine (IaaS)

Conditions of support

1. **Oracle Exadata:** Issues on Oracle Exadata will be tested against Oracle Exadata Cloud Service for reproduction purposes.

2. **Oracle Database Cloud Service (DBCS):** SharePlex only supports Transparent Data Encryption (TDE) feature on DBCS EE-HP, DBCS EE-EP, and ExaCS/CC.

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

Supported data types

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

1. 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.

2. 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 (compressed with ZLIB or ZSTD compression libraries)

  - 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. NCLOB

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

4. XMLTYPE

SharePlex supports the replication of XMLTYPE stored as CLOB and BINARY. SharePlex does not support XMLTYPE stored as OBJECT RELATIONAL or TRANSPORTABLE BINARY. 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.

> **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.

6. 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 BINARY FLOAT

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

8. 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.

Supported operations and objects for DDL replication

SharePlex provides default and optional DDL support.

> **NOTE:** 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

- During DDL replication, data containing the ALTER statement related to Oracle extended statistics— 'Virtual by User'— is not supported. Oracle also does not recommend to use the extended stastistics 'Virtual by User'.

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
Index	Create Alter Drop	**Yes**	SP_OCT_AUTOADD_ ENABLE=1

Supported object	Supported DDL Operation	Enabled by default?	Controlling parameter
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 data types: LONG, DATE, RAW, LONG RAW, ROWID, LONG VARCHAR, CHAR, CLOB, BLOB, CFILE, BFILE, TIMESTAMP, INTERVAL YEAR TO MONTH, INTERVAL DAY TO SECOND, VARCHAR2, NUMBER, and ANYDATA.

3. For CREATE MATERIALIZED VIEW the following applies:

   - SharePlex supports the following data types 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, VARCHAR2, NUMBER, 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
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

Supported object	Supported Operation
Cluster	Create cluster
	Crop cluster
Sequence	Create
	Drop
	Alter
Partition/ Subpartition	Add
	Split
	Merge
	Drop
	Modify
	Coalesce
	Exchange
	Move
	Truncate
	Rename
	Set
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

Supported object	Supported Operation
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

Supported operations and objects 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. For additional information, see Supported Operations and Objects for DML Replication.

Oracle to PostgreSQL replication

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

Supported target operating systems

Supported operating systems via local installation:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported target versions and ODBC requirements

- PostgreSQL 13.4, 13.6, 14.1, 15.x, 16, and 17

- Enterprise Database (EDB) 15.x, 16

- Fujitsu Enterprise PostgreSQL 15 SP2

- AlloyDB Omni 15.5.x

ODBC driver requirement:

ODBC drivers for Community Edition: postgresql13-odbc-13.02.0000, postgresql14-odbc-13.02.0000,postgresql15-odbc-16.00.0000, and postgresql16-odbc-16.00.0000

ODBC drivers for Enterprise Edition (EDB): edb-odbc-13.02.0000, edb-odbc-16.00.0000.01

Supported target cloud databases and platforms

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

Google Cloud Platform

- Cloud SQL for PostgreSQL

- AlloyDB for PostgreSQL

Supported data types

SharePlex supports the following data types for replication from Oracle to PostgreSQL:

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

Oracle	PostgreSQL
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)
BLOB	BYTEA

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to a PostgreSQL target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to a PostgreSQL target. For additional information, see Oracle to open target DDL support.

Oracle to Snowflake replication

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

Supported operating systems

SharePlex replicates remotely to Snowflake. Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Oracle Linux 7.x, 8.x, and 9.x

- Windows Server 2019 and 2022

> **NOTE:** SharePlex Snowflake supports only the 64-bit version of the listed operating systems.

Supported target versions and ODBC requirements

Snowflake 8.38.2

ODBC driver requirement for Linux: Snowflake 3.1.4 and above

ODBC driver requirement for Windows: From Snowflake 3.1.4 to Snowflake 3.2 version

Supported target cloud platforms

Microsoft Azure

Supported data types

SharePlex supports the following data types for replication from Oracle to Snowflake:

Oracle	Snowflake
CLOB	TEXT
NUMBER	INT, INTEGER, NUMBER
CHAR(n)	VARCHAR(n)
CLOB	VARCHAR(n)
NCHAR	CHAR(n)
VARCHAR2(n)	VARCHAR(n)
CLOB	VARCHAR(n)
NCLOB	TEXT

Oracle	Snowflake
CLOB	VARCHAR(n)
LONG	TEXT
BLOB	BINARY, VARBINARY
RAW(n)	VARBINARY
LONGRAW	VARBINARY
BINARY_FLOAT	REAL
NUMBER	SMALLINT
NUMBER	BIGINT
NUMBER	NUMERIC, DECIMAL
DATE	DATE
BINARY_DOUBLE	DOUBLE PRECISION
TIMESTAMP	TIMESTAMP
TIMESTAMP_TZ	TIMESTAMP_TZ

NOTE: It is anticipated that the Snowflake DB's default "HEX" format for binary type will be maintained for Oracle binary to Snowflake binary data type replication. Since source Oracle DB binary data is stored only in "HEX" format, Shareplex does not guarantee data integrity for any other format.

Conditions of support

- **Char(n) data type -** In Oracle, Char(n) is a fixed-size data type. If you insert char data with a length less than "n" into the "Char(n)" column, the remaining slots (n - length) are padded with space to occupy the complete "n" memory positions. Snowflake uses VARCHAR(n) for char storage since Snowflake lacks a comparable fixed-length character data type and only saves char data up to its length. Live replication will ensure that char column data is correctly copied. However, if users are manually inserting data into Snowflake for the equivalent of a Char(n) Oracle column, then the user will need to handle padding as well to occupy the full "n" length so that data will be in sync in both the source and target DB.

- **Binary & Text data types -** Snowflake Binary & Text data types have size limitation of 8 MB, so Oracle's advance Data type replication will be restricted to max 8 MB size limit of equivalent counterpart. Refer table below.

Oracle Data type	Max Size	Snowflake Data type	Max Size
LONG	2 GB	TEXT	8 MB of unicode chars
CLOB	4 GB	TEXT	8 MB of unicode chars
LONGRAW	2 GB	BINARY or VARBINARY	8 MB
BLOB	4 GB	BINARY or VARBINARY	8 MB

See Conditions of support for the additional conditions of support for the above-mentioned supported data types.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables, with some conditions. DML can be replicated from an Oracle source to a Snowflake target.

Tables

SharePlex supports the following DML operations on tables when replicating data from an Oracle source to the Snowflake target:

- Singular and bulk operation - Insert with key(s)/ non key(s)

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)/ non key(s)

> **LIMITATIONS:**
> **The following DML operations related limitations are observed while replicating data from Oracle to Snowflake:**
>
> - Slowness while performing DML operations
>   - **Single Insert:** Frequent commits and rollbacks can cause slowness in replication.
>   - **Batch Inserts:** Insert with advance data types [target Snowflake data types: TEXT and BINARY] can cause significant slowness in replication for data with plain text or binary JSON and XML.
>   - **Single Update and Delete :** Frequent commits and rollbacks can cause slowness.

For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex does not support DDL operations and objects when replicating data from an Oracle source to a Snowflake target.

Oracle to SQL Server replication

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

Supported target operating systems

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

Supported operating systems via local installation:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

- Windows Server 2019 and 2022

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

- Windows Server 2019 and 2022

Supported target versions and ODBC requirements

SQL Server 2016, 2017, 2019, and 2022

ODBC driver requirement: ODBC 17.10.1.1-1 and 18.3.2.1-1

Supported target cloud platforms and databases

Amazon Web Services

Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

- Azure Virtual Machine (IaaS)
- Azure SQL Database
- Azure SQL Managed Instance

Supported data types

SharePlex supports the following data types for replication from Oracle to SQL Server:

Oracle	SQL Server
ANYDATA	VARIENT
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)
LONG	VARCHAR (MAX)
LONGRAW	VARBINARY (MAX)
NCHAR (n)	NCHAR (n)
NCLOB	NVARCHAR (MAX)
NUMBER	FLOAT (53)
NUMBER (p,0:)	NUMERIC (p,s)
NUMBER (p,0:)*	DECIMAL
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:

NUMBER (P, 0) - DECIMAL: If we add a new column with the Number data type in the Oracle source, the new column will be replicated with the Numeric data type to the SQL Server target.

See Conditions of support for the additional conditions for the above-mentioned supported data types.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables and sequences, with some conditions. DML can be replicated from an Oracle source to an SQL Server target. For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

SharePlex supports DDL operations on tables and sequences, with some conditions. DDL can be replicated from an Oracle source to an SQL Server target. For additional information, see Oracle to open target DDL support.

System Requirements and Conditions of Support When Replicating from PostgreSQL

This chapter contains the requirements when capturing from a PostgreSQL database and replicating to supported target databases.

PostgreSQL source basics

This section contains the requirements for a PostgreSQL database as a source when capturing from a PostgreSQL database and replicating to supported target databases.

Supported operating systems

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

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

Supported operating systems via local installation

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

- Ubuntu 22.04

Supported versions and ODBC requirements

- PostgreSQL 13.x, 14.x, 15.x, 16, and 17

- Enterprise Database (EDB) 15.x, 16

- Fujitsu Enterprise PostgreSQL 15 SP2

- AlloyDB Omni 15.5.x

ODBC driver requirement:

ODBC drivers for Community Edition: postgresql13-odbc-13.02.0000, postgresql14-odbc-13.02.0000,postgresql15-odbc-16.00.0000, and postgresql16-odbc-16.00.0000

ODBC drivers for Enterprise Edition (EDB): edb-odbc-13.02.0000 and edb-odbc-16.00.0000.01

Supported cloud platforms and databases

Amazon Web Services:

- Amazon EC2 (IaaS) Virtual Machine

- Amazon RDS for PostgreSQL

- Amazon Aurora

Microsoft Azure:

- Azure Virtual Machine (IaaS)

- Azure Flexible Server

Google Cloud Platform:

- Cloud SQL for PostgreSQL

- AlloyDB for PostgreSQL

PostgreSQL source basic conditions of support

Supported / non-supported SharePlex features for PostgreSQL as a source

The following table shows whether specific SharePlex features are supported for replication from PostgreSQL to Oracle and open targets .

SharePlex feature	Supported targets
reconcile command (target instantiation)	Oracle, PostgreSQL
compare/compare using and **repair/repair using** commands	PostgreSQL
copy/copy using and **append/append using** commands	Not supported
Hash horizontally partitioned replication	PostgreSQL
Column-based horizontally partitioned replication	PostgreSQL
Vertically partitioned replication	PostgreSQL, Oracle
Column mapping	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
Key definition	PostgreSQL, Oracle
Build configuration with scripts	Not supported
Named queues	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
Commit Reduction (feature of Post Enhanced Performance)	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
Dependency Checking (feature of Post Enhanced Performance)	Not supported

SharePlex feature	Supported targets
Transformation	Oracle
Conflict resolution	PostgreSQL, Oracle
Peer-to-peer replication (bi-directional)	PostgreSQL, Oracle
Consolidated replication (many to one)	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
Broadcast replication (one to many)	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
High availability replication (active/passive bi-directional)	Not supported
Change tracking target (CDC)	Not supported
Data encryption	Not supported
Data compression	Not supported
SSH	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
auth_hosts file	Not supported
Monitoring scripts	Not supported
SNMP monitoring	Not supported
Continue posting on error (SP_OPX_CONT_ON_ERR)	PostgreSQL, SQL Server, Kafka, Snowflake
Suspend on out of sync errors (SP_OPX_OUT_OF_ SYNC_SUSPEND)	PostgreSQL, SQL Server, Kafka, Snowflake
Reduced key (SP_OPX_REDUCED_KEY)	PostgreSQL, SQL Server, Kafka, Snowflake
Logical Transaction Rollback on out-of-sync transactions	Not supported
Tables without key[1]	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake
Special characters[2]	PostgreSQL, Oracle, SQL Server, Kafka, Snowflake

Conditions of support:

1. Data inconsistency is likely to occur in replication or compare-repair processes when SharePlex replication involves tables containing non-key columns with duplicate data.

2. SharePlex supports special characters like hyphen (-), underscore (_), and plus (+) in PostgreSQL database names, as well as a dot (.), but other PostgreSQL objects, such as column names, do not support all special characters.

Supported and non-supported key features for physical and logical slots

The table below presents information on the metrics that are supported and not supported for physical and logical slots in on-premises and PostgreSQL Database as a Service environments.

> **NOTE:** SharePlex supports logical replication with pgoutput plugin only.

SharePlex Features	PostgreSQL On-Prem/Cloud VM/EDB (Enterprise Database)		PGDB as a Service AWS-RDS and Aurora, Azure Flexi server
	Physical Replication	**Logical Replication (pgoutput plugin)**	**Logical Replication (pgoutput plugin)**
Activate with LSN	Supported	Not supported	Not supported
HA Cluster Replication with failover	Applicable with On-prem PostgreSQL database CrunchyData*	Not supported	Applicable only with Azure Flexi server using the **pg_ failover_slots** extension; it is not supported with AWS-RDS and Aurora.
Horizontal and Vertical Partitioning	Supported	Supported	Supported
Utilities and Commands	Supported	Supported	Supported
Database level Table Partitioning	Supported	Supported	Supported
Bi-Directional Replication	Supported	Supported	Supported
DDL Support	Not supported	Not supported	Not supported
Replication Performance	No Lag	Minimal Lag	Minimal Lag
Insert using PostgreSQL Copy command	Not supported	Not supported	Not supported

* The **HA Cluster Replication with Failover** feature is not supported with PostgreSQL Enterprise Database (EDB).

> **LIMITATIONS:**
>
> **The following limitations are observed related to the TRUNCATE operation:**
>
> - Applicable only for physical replication. If the truncate operation is performed on a table in replication, the Capture process ignores the DML operations performed on the table until the commit for the truncate operation is received or processed by the Capture process. Therefore, TRUNCATE should either be performed with auto-commit enabled or both TRUNCATE and COMMIT should be executed without any DML operations in between on the table.
>
> - Applicable only for logical replication. In bi-directional replication, the bulk delete operations performed immediately after a TRUNCATE operation are processed with some delay by the Capture processes. There is no data inconsistency once the bulk delete operations are processed.

PostgreSQL to Kafka replication

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

Supported operating systems

Supported operating systems via local installation:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x and 8.x

> **NOTE:** SharePlex supports only the 64-bit version of the listed operating systems.

Supported Kafka targets

- Apache Kafka 3.6.1 and 3.8

- Confluent Kafka 7.6

We test and reproduce issues against:

- Apache Kafka

- Confluent Kafka

> **NOTE:** If you would like to use a different vendor who provides their own Kafka distribution or provides a Kafka compliant interface, you are welcome to do so. From a support perspective, our support and development teams will share any Kafka broker errors that SharePlex receives and also ensure SharePlex itself is working properly to capture data, the target configuration formats in SharePlex are correct, and the SharePlex poster is posting or attempting to post according to the Kafka versions under support. If there are SharePlex issues with Kafka support that can be reproduced on Apache Kafka or otherwise demonstrated to be definitely associated with SharePlex, our team will address those as standard Kafka issues.

Supported formats

- XML format

  For XML supported data type information, see XML format supported data types.

- JSON format

  For JSON supported data type information, see JSON format supported data types.

XML format supported data types

SharePlex supports the following data types for replication from PostgreSQL to Kafka in XML format:

PostgreSQL	Kafka (XML format)
SMALLINT	Decimal
INT	Decimal
BIGINT	Decimal
REAL	Decimal
DOUBLE PRECISION	Decimal
NUMERIC	Decimal
CHAR	String
VARCHAR	String
TEXT	String
BYTEA	Base64Binary
DATE	DateTime
TIME	Time
TIME WITH TIME ZONE	Time
TIMESTAMP	DateTime
TIMESTAMP WITH TIME ZONE	DateTimeStamp
BOOLEAN	String
JSON/JSONB	String

JSON format supported data types

SharePlex supports the following data types for replication from PostgreSQL to Kafka in JSON format:

PostgreSQL	Kafka (JSON format)
SMALLINT	Number
INT	Number
BIGINT	Number
REAL	Number
DOUBLE PRECISION	Number
NUMERIC	Number
CHAR	String
VARCHAR	String
TEXT	String
BYTEA	String containing base64 encoded data
DATE	String containing date
TIME	String containing time
TIME WITH TIME ZONE	String containing time
TIMESTAMP	String containing timestamp
TIMESTAMP WITH TIME ZONE	String containing timestamp
BOOLEAN	String
JSON/JSONB	String

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL source to a kafka target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL source to a Kafka target. It only supports tables as objects for data replication.

PostgreSQL to Oracle replication

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

Supported target operating systems

The following operating systems are supported from PostgreSQL to Oracle database. SharePlex supports only the 64-bit version of the listed operating systems.

Local SharePlex installation is supported on the below platforms:

- AIX 7.3

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- CentOS Linux 7.x

- Oracle Solaris SPARC 11.4

- SuSE SLES 12.x and 15.x

- Rocky Linux 8.x

- Ubuntu 22.04

- Windows 2019 and 2022*

> ***NOTE:** Compare and Repair commands are not supported for PostgreSQL or Oracle on the Windows platform.

Remote replication from the following operating systems is supported:

- AIX 7.3

- HP-UX 11.31 Itanium

- Oracle Linux 7.x and 8.x

- RHEL 7.x, 8.x, and 9.x

- CentOS Linux 7.x

- Oracle Solaris SPARC 11

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

Supported target operating systems via remote replication:

All platforms listed above, plus Windows Server 2019 and 2022, are supported via remote replication.

Supported target database versions

Oracle 19c, 21c, and 23ai*

For detailed notes on the supported Oracle versions, see the **Notes** section under Supported target versions for **Oracle-to-Oracle replication**.

*Conditions of Support for Oracle 23ai:

- Oracle 23ai is supported on **DBCS**, **ExaCS/CC**, and **Oracle On-premises Exadata** platforms.

- On Oracle 23ai, the **Copy/Append** command is not supported with encrypted tablespaces.

Supported target cloud platforms

Oracle Cloud Infrastructure

- Oracle Exadata Cloud Service (ExaCS)
- Oracle Exadata Cloud@Customer (ExaCC)
- Oracle Database Cloud Service (DBCS)
    - Enterprise Standard Edition
    - Enterprise Edition High Performance
    - Enterprise Edition Extreme Performance
- Oracle Compute (IaaS) Virtual Machines and Bare Metal

For information on the conditions of support for Oracle Cloud Infrastructure, see the Conditions of support subsection added under **Supported Target Cloud Platforms** in the **Oracle-to-Oracle replication** section.

Amazon Web Services

- Amazon RDS for Oracle
- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

Azure Virtual Machine (IaaS)

Supported characterset

UTF 8

Supported data types

SharePlex supports the following data types for replication from PostgreSQL to Oracle:

PostgreSQL	Oracle
INT	NUMBER / INT
REAL	BINARY_FLOAT / NUMBER
SMALLINT	NUMBER
BIGINT	NUMBER
NUMERIC	NUMBER
DOUBLE PRECISION	BINARY_DOUBLE / NUMBER
CHAR(1:2000)	CHAR(n)
CHAR(2001:)	CLOB
CHAR(1:1000)	NCHAR(n)
VARCHAR(1:4000)	VARCHAR2(n)
VARCHAR(4001:)	CLOB
VARCHAR	CLOB
VARCHAR(1:2000)	NVARCHAR2(n)
TEXT	CLOB / NCLOB
DATE	DATE
TIMESTAMP(0)	DATE
TIMESTAMP(0)	TIMESTAMP(0)
TIMESTAMP	TIMESTAMP / TIMESTAMP [(fractional_seconds_precision)] WITH LOCAL TIME ZONE
TIMESTAMP WITH TIME ZONE	TIMESTAMP WITH TIME ZONE
BOOLEAN	CHAR (1)*
BYTEA	BLOB

> ***NOTE:** For PostgreSQL Physical or Logical replication, BOOLEAN values will be replicated as 1/0 in a CHAR(1) column on the Oracle target.

SharePlex supports the following PostgreSQL data types for replication from PostgreSQL to Oracle when conflict resolution is configured:

- VARCHAR

- SMALLINT

- INT

- BIGINT

- NUMERIC

- DATE

- CHAR

- TIMESTAMP(0)

- TIMESTAMP

- TIMESTAMP WITH THE TIME ZONE

- TIME

- TIME WITH TIME ZONE

- BOOLEAN

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL source to an Oracle target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)

- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL source to an Oracle target. It only supports tables as objects for data replication.

PostgreSQL to PostgreSQL replication

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

Supported target operating systems

Local SharePlex installation is supported on the following platforms:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

- Ubuntu 22.04

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

- Ubuntu 22.04

Supported target operating systems via remote replication:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

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

Supported target versions and ODBC requirements

- PostgreSQL 13.x, 14.x, 15.x, 16, and 17

- Enterprise Database (EDB) 15.x, 16

- Fujitsu Enterprise PostgreSQL 15 SP2

- AlloyDB Omni 15.5.x

ODBC driver requirement:

ODBC drivers for Community Edition: postgresql13-odbc-13.02.0000, postgresql14-odbc-13.02.0000,postgresql15-odbc-16.00.0000, and postgresql16-odbc-16.00.0000

ODBC drivers for Enterprise Edition (EDB): edb-odbc-13.02.0000 and edb-odbc-16.00.0000.01

Supported target cloud platforms

Amazon Web Services:

- Amazon EC2 (IaaS) Virtual Machine

- Amazon RDS for PostgreSQL

- Amazon Aurora

Microsoft Azure:

- Azure Virtual Machine (IaaS)

- Azure Flexible Server

Google Cloud Platform:

- Cloud SQL for PostgreSQL

- AlloyDB for PostgreSQL

Supported characterset

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Supported data types

SharePlex PostgreSQL supports the following data types for replication from PostgreSQL to PostgreSQL:

- CHAR
- VARCHAR
- TEXT
- SMALLINT
- INT
- BIGINT
- NUMERIC
- REAL
- DOUBLE PRECISION
- DATE
- TIMESTAMP (0)
- TIMESTAMP
- TIMESTAMP WITH TIME ZONE
- BOOLEAN
- BYTEA
- TIME
- TIME WITH TIME ZONE
- JSON
- JSONB

LIMITATIONS:

- The JSON & JSONB data types are supported only with logical replication.

- Columns with the JSON and JSONB data types are not supported when defining a unique key.

- Partition keys defined on JSON and JSONB data type columns are not supported for replicating partitioned table data.

- A table containing columns with data types such as VARCHAR > 2k, VARCHAR without specified length, TEXT, BYTEA, JSON, and JSONB, without a defined key, and where basic data type columns are non-key columns with duplicate data across multiple rows, can result in data inconsistency during the Repair process.

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL source to a PostgreSQL target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL source to a PostgreSQL target. It only supports tables as objects for data replication.

PostgreSQL to Snowflake replication

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

Supported operating systems

The following operating systems are supported for capture from a PostgreSQL database and replication to a Snowflake target database. SharePlex Snowflake supports only the 64-bit version of the listed operating systems.

SharePlex replicates remotely to Snowflake. Replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Oracle Linux 7.x, 8.x, and 9.x

Supported target versions and ODBC requirements

Snowflake 8.38.2

ODBC driver requirement: Snowflake 3.1.4 and above

Supported target cloud platforms

Microsoft Azure

Supported data types

SharePlex supports the following data types for replication from PostgreSQL to Snowflake:

PostgreSQL	Snowflake
TEXT	TEXT
INT	INT,INTEGER,NUMBER
CHAR(1:2000)	VARCHAR(n)
CHAR(2001:)	VARCHAR(n)
CHAR(n)	CHAR(n)
VARCHAR(1:4000)	VARCHAR(n)
VARCHAR(4001:)	VARCHAR(n)
VARCHAR	VARCHAR(n)
REAL	REAL
SMALLINT	SMALLINT

PostgreSQL	Snowflake
BIGINT	BIGINT
NUMERIC (whole number without fraction)	NUMERIC, DECIMAL
NUMERIC (fractional number)	FLOAT
DATE	DATE
DOUBLE PRECISION	DOUBLE PRECISION
TIMESTAMP	TIMESTAMP
TIMESTAMP_TZ	TIMESTAMP_TZ
BOOLEAN	BOOLEAN
TIME	TIME

Conditions of support

- **Char(n) data type -** In PostgreSQL, Char(n) is a fixed-size data type. If you insert char data with a length less than "n" into the "Char(n)" column, the remaining slots (n - length) are padded with space to occupy the complete "n" memory positions. Snowflake uses VARCHAR(n) for char storage since Snowflake lacks a comparable fixed-length character data type and only saves char data up to its length. Live replication will ensure that char column data is correctly copied. However, if users are manually inserting data into Snowflake for the equivalent of a Char(n) PostgreSQL column, then the user will need to handle padding as well to occupy the full "n" length so that data will be in sync in both the source and target database.

- **Text data types -** Snowflake Text data types have size limitation of 8 MB, so PostgreSQL's TEXT data type replication will be restricted to max 8 MB size limit of equivalent counterpart. Refer table below.

PostgreSQL Data type	Max Size	Snowflake Data type	Max Size
TEXT	unlimited	TEXT	8 MB of unicode chars

Supported operations and objects for DML replication

SharePlex supports DML operations on tables, with some conditions. DML can be replicated from an PostgreSQL source to a Snowflake target.

Tables

SharePlex supports the following DML operations on tables when replicating data from an PostgreSQL source to the Snowflake target:

- Singular and bulk operation - Insert with key(s)/ non key(s)

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)/ non key(s)

> **LIMITATIONS:**
> **The following DML operations related limitations are observed while replicating data from PostgreSQL to Snowflake:**
>
> - Slowness while performing DML operations
>   - **Single Insert:** Frequent commits and rollbacks can cause slowness in replication.
>   - **Batch Inserts:** Insert with advance data types [target Snowflake data types: TEXT and BINARY] can cause significant slowness in replication for data with plain text or binary JSON and XML.
>   - **Single Update and Delete :** Frequent commits and rollbacks can cause slowness.

For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL source to a Snowflake target. It only supports tables as objects for data replication.

PostgreSQL to SQL Server replication

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

Supported target operating systems

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

Supported operating systems via local installation:

- RHEL 7.x and 8.x

- Rocky Linux 8.x

- Oracle Linux 7.x, and 8.x

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

Supported target operating systems via remote replication:

All platforms listed above, plus Windows Server 2019 and 2022, are supported via remote replication.

Supported target versions and ODBC requirements

SQL Server 2016, 2017, 2019, and 2022

ODBC driver requirement: ODBC 17.10.1.1-1 and 18.3.2.1-1

Supported target cloud platforms and databases

Amazon Web Services

Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

- Azure Virtual Machine (IaaS)

- Azure SQL Database

- Azure SQL Managed Instance

Supported data types

SharePlex supports the following data types for replication from PostgreSQL to SQL Server:

PostgreSQL	SQL Server
INT	INT
REAL	REAL
SMALLINT	SMALLINT
BIGINT	BIGINT
NUMERIC / DECIMAL	NUMERIC / DECIMAL
DOUBLE PRECISION	FLOAT
CHAR (1:8000)	CHAR(n)
CHAR (8001:)	VARCHAR (MAX)
CHAR (1:2000)	NCHAR (n)
VARCHAR (1:8000)	VARCHAR (n)
VARCHAR (8001:)	VARCHAR (MAX)
VARCHAR(1:2000)	NVARCHAR (n)
VARCHAR	VARCHAR (MAX) / TEXT
TEXT	TEXT / NTEXT / VARCHAR(MAX)
DATE	DATE
TIMESTAMP (p)	DATETIME2 (p)
TIMESTAMP	DATETIME2
TIMESTAMP WITH TIME ZONE	DATETIMEOFFSET

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL source to an SQL Server target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL source to an SQL Server target. It only supports tables as objects for data replication.

System Requirements and Conditions of Support When Replicating from PostgreSQL Database as a Service

This chapter contains the requirements when capturing from a PostgreSQL database and replicating to supported target databases.

PostgreSQL Database as a Service as source and target basics

SharePlex supports replication for the PostgreSQL Database as a Service as source, according to the details below.

Supported operating systems

Supported source operating systems via remote capture:.

- RHEL 7.x, 8.x, and 9.x
- Rocky Linux 8.x
- Oracle Linux 7.x, 8.x, and 9.x
- Ubuntu 22.04

Supported target operating systems remote replication:

- RHEL 7.x, 8.x, and 9.x
- Rocky Linux 8.x
- Oracle Linux 7.x, 8.x, and 9.x
- Ubuntu 22.04

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

Supported cloud platforms and databases

Amazon Web Services:

- Amazon RDS for PostgreSQL

- Amazon Aurora

Microsoft Azure:

Azure Database for PostgreSQL Flexible Server

Google Cloud Platform:

- Cloud SQL for PostgreSQL

- Alloy DB

> **NOTE:** PostgreSQL Database as a Service supports only logical replication.

Supported PostgreSQL versions

PostgreSQL 13.x , 14.x, 15.x, 16

ODBC driver requirement

ODBC drivers for Community Edition: postgresql13-odbc-13.02.0000, postgresql14-odbc-13.02.0000,postgresql15-odbc-16.00.0000, and postgresql16-odbc-16.00.0000

Supported data types

- CHAR

- VARCHAR

- SMALLINT

- INT

- BIGINT

- NUMERIC

- REAL

- DOUBLE PRECISION

- DATE

- TIMESTAMP [p]

- TIMESTAMP

- TIMESTAMP [p] [WITH TIME ZONE]

- TEXT

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL Database as a Service as source to a PostgreSQL target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)

- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL Database as a Service as source to a PostgreSQL target. It only supports tables as objects for data replication.

PostgreSQL Database as a Service to Kafka replication

SharePlex supports replication from PostgreSQL Database as a Service to Kafka, according to the details below.

Supported operating systems

Supported source operating systems via remote capture:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

Remote replication from the following operating systems is supported:

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Oracle Linux 7.x, 8.x, and 9.x

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

Supported Kafka targets

- Apache Kafka 3.6.1 and 3.8

- Confluent Kafka 7.6

We test and reproduce issues against:

- Apache Kafka

- Confluent Kafka

NOTE: If you would like to use a different vendor who provides their own Kafka distribution or provides a Kafka compliant interface, you are welcome to do so. From a support perspective, our support and development teams will share any Kafka broker errors that SharePlex receives and also ensure SharePlex itself is working properly to capture data, the target configuration formats in SharePlex are correct, and the SharePlex poster is posting or attempting to post according to the Kafka versions under support. If there are SharePlex issues with Kafka support that can be reproduced on Apache Kafka or otherwise demonstrated to be definitely associated with SharePlex, our team will address those as standard Kafka issues.

Supported formats

- XML format

  For XML supported data type information, see XML format supported data types.

- JSON format

  For JSON supported data type information, see JSON format supported data types.

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL Database as a Service as source to a Kafka target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

Supported operations and objects for DDL replication

SharePlex does not support DDL operations and objects when replicating data from a PostgreSQL Database as a Service as source to a Kafka target.

PostgreSQL Database as a Service to Oracle replication

SharePlex supports replication from PostgreSQL Database as a Service to Oracle, according to the details below.

Supported target operating systems

The following operating systems are supported from PostgreSQL Database as a Service to Oracle database. SharePlex supports only the 64-bit version of the listed operating systems.

Local SharePlex installation is supported on the below platforms:

- AIX 7.3

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- CentOS Linux 7.x

- Oracle Solaris SPARC 11

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

Remote replication from the following operating systems is supported:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x and 8.x

- Oracle Solaris SPARC 11

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

Supported target operating systems via remote replication:

All platforms listed above, plus Windows Server 2019 and 2022, are supported via remote replication.

Supported target database versions

Oracle 19c, 21c, and 23ai*

> For detailed notes on the supported Oracle versions, see the **Notes** section under Supported target versions for **Oracle-to-Oracle replication**.

*Conditions of Support for Oracle 23ai:

- Oracle 23ai is supported on **DBCS**, **ExaCS/CC**, and **Oracle On-premises Exadata** platforms.

- On Oracle 23ai, the **Copy/Append** command is not supported with encrypted tablespaces.

Supported target cloud platforms and databases

Oracle Cloud Infrastructure

- Oracle Exadata Cloud Service (ExaCS)
- Oracle Exadata Cloud@Customer (ExaCC)
- Oracle Database Cloud Service (DBCS)
  - Enterprise Standard Edition
  - Enterprise Edition High Performance
  - Enterprise Edition Extreme Performance
- Oracle Compute (IaaS) Virtual Machines and Bare Metal

> For information on the conditions of support for Oracle Cloud Infrastructure, see the Conditions of support subsection added under **Supported Target Cloud Platforms** in the **Oracle-to-Oracle replication** section.

Amazon Web Services

- Amazon RDS for Oracle
- Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

Azure Virtual Machine (IaaS)

Supported characterset

UTF 8

Supported data types

SharePlex supports the following data types for replication from PostgreSQL Database as a Service to Oracle:

PostgreSQL	Oracle
INT	NUMBER / INT
REAL	BINARY_FLOAT / NUMBER
SMALLINT	NUMBER
BIGINT	NUMBER
NUMERIC	NUMBER
DOUBLE PRECISION	BINARY_DOUBLE / NUMBER
CHAR(1:2000)	CHAR(n)
CHAR(2001:)	CLOB
CHAR(1:1000)	NCHAR(n)
VARCHAR(1:4000)	VARCHAR2(n)
VARCHAR(4001:)	CLOB
VARCHAR	CLOB
VARCHAR(1:2000)	NVARCHAR2(n)
TEXT	CLOB / NCLOB
DATE	DATE
TIMESTAMP(0)	DATE
TIMESTAMP(0)	TIMESTAMP(0)
TIMESTAMP	TIMESTAMP / TIMESTAMP [(fractional_seconds_precision)] WITH LOCAL TIME ZONE
TIMESTAMP WITH TIME ZONE	TIMESTAMP WITH TIME ZONE
BOOLEAN	CHAR (1)*
BYTEA	BLOB

> ***NOTE:** For PostgreSQL Physical or Logical replication, BOOLEAN values will be replicated as 1/0 in a CHAR(1) column on the Oracle target.

SharePlex supports the following PostgreSQL data types for replication from PostgreSQL Database as a Service to Oracle when conflict resolution is configured:

- VARCHAR
- SMALLINT

- INT

- BIGINT

- NUMERIC

- DATE

- CHAR

- TIMESTAMP(0)

- TIMESTAMP

- TIMESTAMP WITH THE TIME ZONE

- TIME

- TIME WITH TIME ZONE

- BOOLEAN

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL Database as a Service to an Oracle target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)

- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL Database as a Service as source to an Oracle target. It only supports tables as objects for data replication.

PostgreSQL Database as a Service to PostgreSQL replication

SharePlex supports replication from PostgreSQL Database as a Service to PostgreSQL, according to the details below.

Supported target operating systems

Local SharePlex installation is supported on the following platforms:

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Ubuntu 22.04

Remote replication from the following operating systems is supported:

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- Ubuntu 22.04

Supported target operating systems via remote replication:

- AIX 7.3

- CentOS Linux 7.x

- HP-UX 11.31 Itanium

- Oracle Linux 7.x, 8.x, and 9.x

- Oracle Solaris SPARC 11.4

- Oracle Solaris x86 11.4

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

- SuSE SLES 12.x and 15.x

- Ubuntu 22.04

- Windows Server 2019 and 2022

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

Supported target versions and ODBC requirements

- PostgreSQL 13.x , 14.x, 15.x, 16, and 17

- Enterprise Database (EDB) 15.x and 16

- Fujitsu Enterprise PostgreSQL 15 SP2

- AlloyDB Omni 15.5.x

ODBC driver requirement:

ODBC drivers for Community Edition: postgresql13-odbc-13.02.0000, postgresql14-odbc-13.02.0000,postgresql15-odbc-16.00.0000, and postgresql16-odbc-16.00.0000

ODBC drivers for Enterprise Edition (EDB): edb-odbc-13.02.0000 and edb-odbc-16.00.0000.01

Supported target cloud platforms and databases

Amazon Web Services:

- Amazon EC2 (IaaS) Virtual Machine

- Amazon RDS for PostgreSQL

- Amazon Aurora

Microsoft Azure:

- Azure Virtual Machine (IaaS)

- Azure Flexible Server

Google Cloud Platform:

- Cloud SQL for PostgreSQL

- AlloyDB for PostgreSQL

Supported characterset

UTF 8

Supported data types

SharePlex PostgreSQL supports the following data types for replication from PostgreSQL Database as a Service to PostgreSQL:

- CHAR
- VARCHAR
- TEXT
- SMALLINT
- INT
- BIGINT
- NUMERIC
- REAL
- DOUBLE PRECISION
- DATE
- TIMESTAMP (0)
- TIMESTAMP
- TIMESTAMP WITH TIME ZONE
- BOOLEAN
- BYTEA
- TIME
- TIME WITH TIME ZONE

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL Database as a Service to a PostgreSQL target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL Database as a Service as source to a PostgreSQL target. It only supports tables as objects for data replication.

PostgreSQL Database as a Service to Snowflake replication

SharePlex supports replication from PostgreSQL Database as a Service to Snowflake, according to the details below.

Supported operating systems

The following operating systems are supported for capture from a PostgreSQL Database as a Service and replication to a Snowflake target database. SharePlex Snowflake supports only the 64-bit version of the listed operating systems.

SharePlex replicates remotely to Snowflake. Replication from the following operating systems is supported:

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

Supported target versions and ODBC requirements

Snowflake 8.38.2

ODBC driver requirement: Snowflake 3.1.4 and above

Supported target cloud platforms

Microsoft Azure

Supported data types

SharePlex supports the following data types for replication from PostgreSQL Database as a Service to Snowflake:

PostgreSQL	Snowflake
TEXT	TEXT
INT	INT,INTEGER,NUMBER
CHAR(1:2000)	VARCHAR(n)
CHAR(2001:)	VARCHAR(n)
CHAR(n)	CHAR(n)
VARCHAR(1:4000)	VARCHAR(n)
VARCHAR(4001:)	VARCHAR(n)

PostgreSQL	Snowflake
VARCHAR	VARCHAR(n)
REAL	REAL
SMALLINT	SMALLINT
BIGINT	BIGINT
NUMERIC (whole number without fraction)	NUMERIC, DECIMAL
NUMERIC (fractional number)	FLOAT
DATE	DATE
DOUBLE PRECISION	DOUBLE PRECISION
TIMESTAMP	TIMESTAMP
TIMESTAMP_TZ	TIMESTAMP_TZ
BOOLEAN	BOOLEAN
TIME	TIME

Conditions of support

- **Char(n) data type -** In PostgreSQL, Char(n) is a fixed-size data type. If you insert char data with a length less than "n" into the "Char(n)" column, the remaining slots (n - length) are padded with space to occupy the complete "n" memory positions. Snowflake uses VARCHAR(n) for char storage since Snowflake lacks a comparable fixed-length character data type and only saves char data up to its length. Live replication will ensure that char column data is correctly copied. However, if users are manually inserting data into Snowflake for the equivalent of a Char(n) PostgreSQL column, then the user will need to handle padding as well to occupy the full "n" length so that data will be in sync in both the source and target database.

- **Text data types -** Snowflake Text data types have size limitation of 8 MB, so PostgreSQL's TEXT data type replication will be restricted to max 8 MB size limit of equivalent counterpart. Refer table below.

PostgreSQL Data type	Max Size	Snowflake Data type	Max Size
TEXT	unlimited	TEXT	8 MB of unicode chars

See Conditions of support for the additional conditions of support for the above-mentioned supported data types.

Supported operations and objects for DML replication

SharePlex supports DML operations on tables, with some conditions. DML can be replicated from an PostgreSQL Database as a Service to a Snowflake target.

Tables

SharePlex supports the following DML operations on tables when replicating data from an PostgreSQL Database as a Service to the Snowflake target:

- Singular and bulk operation - Insert with key(s)/ non key(s)

- Singular and bulk operation - Update with key(s)/ non key(s)

- Singular and bulk operation - Delete with key(s)/ non key(s)

> **LIMITATIONS:**
> **The following DML operations related limitations are observed while replicating data from PostgreSQL Database as a Service to Snowflake:**
>
> - Slowness while performing DML operations
>   - **Single Insert:** Frequent commits and rollbacks can cause slowness in replication.
>   - **Batch Inserts:** Insert with advance data types [target Snowflake data types: TEXT and BINARY] can cause significant slowness in replication for data with plain text or binary JSON and XML.
>   - **Single Update and Delete :** Frequent commits and rollbacks can cause slowness.

For additional information, see Supported Operations and Objects for DML Replication.

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL Database as a Service as source to a Snowflake target. It only supports tables as objects for data replication.

PostgreSQL Database as a Service to SQL Server replication

SharePlex supports replication from PostgreSQL Database as a Service to SQL Server, according to the details below.

Supported target operating systems

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

Supported operating systems via local installation:

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

Remote replication from the following operating systems is supported:

- Oracle Linux 7.x, 8.x, and 9.x

- RHEL 7.x, 8.x, and 9.x

- Rocky Linux 8.x

Supported target operating systems via remote replication:

All platforms listed above, plus Windows Server 2019 and 2022, are supported via remote replication.

Supported target versions and ODBC requirements

SQL Server 2016, 2017, 2019 and 2022

ODBC driver requirement: ODBC 17.10.1.1-1 and 18.3.2.1-1

Supported target cloud platforms and databases

Amazon Web Services

Amazon EC2 (IaaS) Virtual Machine

Microsoft Azure

- Azure Virtual Machine (IaaS)

- Azure SQL Database

- Azure SQL Managed Instance

Supported data types

SharePlex supports the following data types for replication from PostgreSQL Database as a Service to SQL Server:

PostgreSQL	SQL Server
INT	INT
REAL	REAL
SMALLINT	SMALLINT
BIGINT	BIGINT
NUMERIC / DECIMAL	NUMERIC / DECIMAL
DOUBLE PRECISION	FLOAT
CHAR (1:8000)	CHAR(n)
CHAR (8001:)	VARCHAR (MAX)
CHAR (1:2000)	NCHAR (n)
VARCHAR (1:8000)	VARCHAR (n)
VARCHAR (8001:)	VARCHAR (MAX)
VARCHAR(1:2000)	NVARCHAR (n)
VARCHAR	VARCHAR (MAX) / TEXT
TEXT	TEXT / NTEXT / VARCHAR(MAX)
DATE	DATE
TIMESTAMP (p)	DATETIME2 (p)
TIMESTAMP	DATETIME2
TIMESTAMP WITH TIME ZONE	DATETIMEOFFSET

Supported DML operations

SharePlex supports DML operations on tables. DML can be replicated from a PostgreSQL Database as a Service to an SQL Server target.

Tables

SharePlex supports the following DML operations on tables:

- Singular and bulk operation - Insert
- Singular and bulk operation - Update with key(s)/ non key(s)
- Singular and bulk operation - Delete with key(s)
- Above operations with rollback/savepoint

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

Supported operations and objects for DDL replication

Currently, SharePlex does not support DDL operations when replicating data from a PostgreSQL Database as a Service as source to an SQL Server target. It only supports tables as objects for data replication.

Known Issues in this Release

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

Issue ID	Known Issues	Component/Feature
SPO-25030	The **sp_security** command fails with the error message: `No spadmin group; cannot continue` when running the command on a Windows Server in a domain environment. NOTE: Please contact Quest Support to obtain a bug-fixed version of the product.	sp_security
SPSQL-8730	In **SPUtils Task Manager** on Windows, the port for **Sp_CopSvr** is visible, but the port details for the SharePlex processes started by **Sp_CopSvr** are not displayed. WORKAROUND: Check for the SharePlex process connected to the specific port using `sp_ctrl`. This will display the processes associated with that port, showing their Cygwin PIDs. The corresponding Windows PIDs can be found using the **ps** command.	SPUtils/Windows
SPSQL-8734	The PIDs displayed for all SharePlex processes in the sp_ctrl **Status** command output do not match the PIDs shown in the **SPUtils Task Manager** tab. WORKAROUND: Execute the following command in the Command Prompt to view the Windows PID when the process is in a running state: `ps -W	findstr <cygwin_pid>`	SPUtils Task Manager/Windows
SPSQL-5252	In the bi-directional replication of data from PostgreSQL 14.7 Google Cloud Platform to Oracle, the Poster process stops with an error when a user-defined procedure tries to resolve the conflicts that occurred on columns with a VARCHAR data type. This issue is observed if the update statement is triggered simultaneously in the same row on both source and target.	Bi-directional replication
SPSQL-8400	In the Compare/Repair process, the row count in the Oracle table might be outdated because it is initially fetched from the system table `sys.tab$`, which is not updated in real-time and depends on the DB stats analyzer process. As a result, users may encounter the error `source vs target table size difference too large` incorrectly in some cases. **Workaround:** Either wait for the row count to be updated in the system table by the stats analyzer process, or use the override option as suggested.	Compare/Repair
SPSQL-4858	SharePlex displays the `ORA-22990: LOB locators cannot span transactions` error, and Compare results show out-of-sync data when	Compare

Issue ID	Known Issues	Component/ Feature
	users perform DML operations on data in replication after moving a LOB segment. This issue occurs during 23ai batch execution.	
SPSQL-5664	The Copy command fails on Windows machines due to the ORACLE_HOME environment variable not being populated correctly.	Copy command
SPSQL-4971	The tables are going out of sync after performing DML operations through otest, and the CLOB column data is not being inserted during the script execution.	DML operations
SPSQL-5274	SharePlex displays incorrect column names for schemas when the column name exceeds 30 characters on the source, in JSON and XML formats, during replication from Oracle to Kafka.	Kafka
SPSQL-4764	The Poster process fails to replicate data from Oracle 19c to the file target after a Truncate operation is performed on the replicated data. This issue specifically affects tables containing **BFILE** and **SDO_GEOMETRY** columns.	Poster
SPSQL-4982	When there are multiple Named Queues set up in replication, after activating the config, the SharePlex Poster process displays the `execute select pg_replication_origin_create ('sp_post_2600_7');` `failed` error upon its initial startup. However, after displaying the error, SharePlex automatically restarts the Poster process to resolve the issue.	Poster
SPSQL-8303	The Poster process stops due to an error after activation when a partial wildcard in the config file matches both SharePlex demo tables and user-created tables.	Poster
SPSQL-8404	The Poster process stops with an error when users try to replicate a horizontally partitioned table with a case-sensitive schema, table name, and a single partitioning scheme from the Oracle to the PostgreSQL database. **Workaround:** Create separate partitioning schemes for each target table name and create a separate entry for each table in the config file.	Poster
SPSQL-8415	The Snowflake Poster encounters a core dump issue when calling **SQLDriverConnect** from **OdbcDriver::connect()** for Snowflake connections. It also fails when running the **snowflake_cleansp** utility during a function call. This issue is observed with ODBC driver version 3.3 and above.	Poster
SPSQL-6104	The SharePlex Poster process stopped due to an `ORA-40441 error: JSON syntax error`, triggered when users insert bulk JSON data for CLOB/NCLOB storage, which is stored as BASICFILE.	Poster
SPSQL-5630	The Poster process stops due to an error when only the target table has a check constraint, and the inserted data violates that check constraint.	Poster
SPSQL-5454	The SharePlex Poster process stops after activating the configuration for a hash partition on a target VM that has a '-' in its hostname. This issue is observed on the Windows platform.	Poster
SPSQL-5459	When inserting the same rows multiple times into a table without a primary key and then updating all rows, an OOS (out-of-sync) error message appears in the Poster log. This issue occurs for both tables with normal names and table names longer than 30 characters during Oracle to	Poster

Issue ID	Known Issues	Component/ Feature
	PostgreSQL replication.	
SPSQL-6117	The **undo_provision** utility is not fully reverting all the changes made by the **Provision** utility.	Provision
SPSQL-5894	When the Capture, Export, and Post queues have messages, and users run the **Purge Config** command, all queues are emptied as expected. However, error messages are observed in the source event logs.	Purge Config
SPSQL-5550	When using the Query command 'job status "Error"', the status history for previous jobs with the "Error" status is not shown during Oracle to Oracle and PostgreSQL to PostgreSQL replication.	Query command
SPSQL-8019	SharePlex displays the error `index row size 3040 exceeds btree version 4 maximum 2704` when users set the parameter `SP_DEQ_USE_SP_CKSUM=1` and try to repair a table without a Primary Key (PK) during Oracle to PostgreSQL replication. **Workaround:** 1. Ensure that the table has a valid Primary Key (PK) or Unique Key (UK). 2. Set the parameter `SP_DEQ_USE_SP_CKSUM=0` and exclude columns of type LONG, BINARY_FLOAT, BINARY_DOUBLE, and NUMBER without precision during the Compare/Repair process.	Repair
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-16453	The BINARY_FLOAT and BINARY_DOUBLE data types are not supported for the **copy** command.	Character Sets
SPO-20733	Compare will hang and the compare server will exit comparing table that has VARRAY containing UDT type.	Compare
SPO-20451	Compare/Repair using [schema].[table] may not work on AIX 7.2 with Oracle 19c due to establishing a network connection.	Compare
SPO-20843	Copy job status shows 'Locked' even when competed.	Copy/ Append
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 Drop Column
SPSQL-8632	The **Copy** command executes successfully, but when checking the status with the Job Status command, it displays **Syncing** instead of **Done**.	Job Status
SPSQL-8407	During Oracle to Kafka replication, the schema records of all tables are being replicated, not just the tables being replicated from Oracle to Kafka. **Workaround:** Set the schema value to 'no' to avoid sending the schema record. However, validate whether the schema record is used internally before applying this setting.	Kafka

Issue ID	Known Issues	Component/ Feature
SPO-20205	**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.	Kafka
SPO-20842	On Oracle 19c processing large n-items can lead to OOS and/or missing commits.	LOBs, VARRAYs, XML
SPO-22342	Performance issue is observed while performing the DML operations in bulk.	MySQL
SPSQL-4971	The tables are getting out-of-sync after users perform bulk DML operations on the CLOB column data. This issue has been observed while working on Oracle 21c.	Oracle 21c
SPO-22517	Performance issue is observed during replication while using partition table over the cloud.	Partition table
SPSQL-6609	SharePlex displays an error when users attempt to create a database name in lowercase during `pg_setup` that matches an existing database name in uppercase on the system.	pg_setup
SPSQL-4982	The SharePlex Poster process displays the `Poster: execute select pg_replication_origin_create ('sp_post_xxxx_x'); failed` error when creating an origin with logical replication for PostgreSQL to PostgreSQL replication.	Poster
SPSQL-5252	The SharePlex Poster stops due to an error when attempting to resolve conflicts on VARCHAR columns in a PostgreSQL-Oracle bi-directional setup using a user-defined conflict resolution procedure.	Poster
SPO-24922	SharePlex does not support the RAISE command on PostgreSQL databases. Poster stops with the `Post stops error=-1 when trigger issues a RAISE [LABEL]` error message.	RAISE command
SPSQL-5625	SharePlex displays the `Error encountered in remove_trigger objectid` error when users attempt to disable or enable any trigger using the `sp_pg_add_trigger.sql` and `sp_pg_remove_trigger.sql` scripts for the given schema.	Trigger Scripts
SPO-19048	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.	varray columns

Third-party known issues

Issue ID	Known Issue	Component/ Feature
29865658	On **Windows** Server, Oracle 19c versions below 19.6 have an Oracle bug (29865658) that causes the SharePlex **ora_setup, Reader,** and **Poster** processes to get stuck. This bug is fixed in version 19.6 and later. To avoid this issue with SharePlex, either upgrade the Oracle 19c database to version 19.6 or higher. Users need to contact Oracle to obtain a patch for bug **29865658** or set the `CLIENT_STATISTICS_LEVEL` database parameter to 'OFF'.	Oracle

Issue ID	Known Issue	Component/ Feature
SR 3-33906406631	After moving the LOB segment, users may encounter an 'ORA-22275' or 'ORA-22990' Oracle error when performing DML operations. Additionally, the Compare result may be displayed as out of sync. This issue is observed intermittently on Oracle 21c. See Oracle bug report SR 3-33906406631.	Oracle
101806	When replicating data from Oracle to MySQL, SharePlex Poster displays an error after performing the Update operation on columns with the data type integer and column values that are multiples of 1000. This issue is related to a defect in the MySQL database: https://bugs.mysql.com/bug.php?id=101806	MySQL
54799	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: sysctl -w kernel.core_pattern=core. 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.	Linux
125639	There might be an issue when replicating VARRAYs with FLOAT(n) type to a target machine running Oracle 10g, due to the way that Oracle handles Float(n) types. Float is not an Oracle type; it is a SQL-92 type and Oracle is not consistent in the way that it handles the float type. This is a known Oracle bug. See Oracle bug report 4266304.	Oracle
44626	Users wishing to employ IOTs with overflow need to be running Oracle 11g or higher. This is a known Oracle issue addressed under 4627859.	Oracle
53701	There is a known issue with INSERT DIRECT LOAD VALUES (IDLV) in Oracle 11g that prevents the reading or modification of an object after modifying it in parallel. Oracle has provided three solutions for addressing this issue. They can be found in the Oracle update of SR6849411.993 dated 05-07-2008. This issue was fixed by Oracle in 11gR2.	Oracle
59258	Oracle versions 10.2.0.1 through 11.1.0.6 on AIX 5.3 (64 bit), members of SharePlex Admin group, other than the installation user, cannot run ora_ setup or start SharePlex. Please see Oracle Bug # 6800649 and apply Patch 6800649.	Oracle
75179	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.	Oracle
92152	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.	Oracle

Licensing

To use the license utilities, such as to view, add, or remove license keys, see the **SharePlex License Utilities** section in the SharePlex Reference guide or SharePlex Installation and Setup Guide. For more information, contact your account manager.

SharePlex 11 requires new license keys.

License keys issued for versions prior to 11.0 will be incompatible with SharePlex 11.x. Existing customers should obtain a new license key before installing and/or upgrading to SharePlex 11.x. To obtain a new license key, please refer to the Licensing Assistance page on the Support Portal.

SharePlex 11.x are available for installation on Linux and Unix platforms.

Customers who wish to replicate to and from sources and targets that run on Windows can either use the 10.x or 12.0 versions of SharePlex or use remote replication, where the SharePlex software runs on a Linux server. Please see the System Requirements sections for details on supported source/target combinations with remote replication.

> **NOTE:** To upgrade from SharePlex 10.x to 11.0 or 11.1, a new SharePlex license key must be requested. However, to upgrade from SharePlex 11.0 to 11.1, the existing effective SharePlex license key can be utilized.

Understanding SharePlex licensing and platform requirements

SharePlex licenses have validity and usage limits according to specific platforms. For example, you must have a PostgreSQL license to use a PostgreSQL database and a Kafka license to use the Kafka platform.

Additionally, SharePlex supports multiple keys for situations where customers need two platforms on one server. For example, if a user is replicating data from an Oracle source to a Kafka target, where one SharePlex instance is serving as both the source and target, the SharePlex server would require both Oracle and Kafka licenses.

Installing a trial version

To install a trial version of SharePlex, users need to select the **All Platforms** option when prompted during installation of SharePlex or while running the **splex_add_key** utility. For additional information, see the **Install SharePlex** section in the SharePlex Installation Guide.

Third Party Contributions in this Release

This product contains the following third-party components. For third-party license information, go to our website at https://www.quest.com/legal/third-party-licenses.aspx. Source code for components marked with an asterisk (*) is available at https://opensource.quest.com.

Table 1: List of Third-Party Contributions

Component	License or Acknowledgment
ActiveMQ-CPP 3.9.5	Copyright © 2019, The Apache Software Foundation. Apache License 2.0.
Apache Commons Cli 1.2	Copyright © 2000-2014 The Apache Software Foundation. All Rights Reserved. Apache License 2.0.
Apache Commons Collections 3.2.1	Copyright © 2000-2014 The Apache Software Foundation. All Rights Reserved. Apache License 2.0.
Apache Commons IO 2.4	Copyright © 2002-2019 The Apache Software Foundation. All Rights Reserved. Apache License 2.0.
Apache Commons Lang 3.1	Copyright © 2001-2019 The Apache Software Foundation. All Rights Reserved. Apache License 2.0.
Apache Portable Runtime (APR) 1.7.2	Copyright (C) 2014 Free Software Foundation, Inc. Copyright (C) 1996-2019, 2021-2022 Free Software Foundation, Inc. Copyright (C) 2010-2019, 2021 Bootstrap Authors
apr-util-1.6.3	Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All, Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991., Copyright (c) 2012-2014 Jean-Philippe Aumasson Copyright (c) 2012-2014 Daniel J. Bernstein <djb@cr.yp.to>
binutils-2.42	GNU GENERAL PUBLIC LICENSE Version 2, June 1991 Copyright (C) 1989, 1991 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.
bzip2 1.0.6	Copyright 2010 Julian R Seward. All rights reserved.

Component	License or Acknowledgment
	This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2010 Julian R Seward. All rights reserved. Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met: 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer. 2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required. 3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software. 4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission. THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Julian Seward, jseward@bzip.org bzip2/libbzip2 version 1.0.6 of 6 September 2010
check-0.9	Copyright (C) 2001, 2002, Arien Malec Copyright (C) 1991, 1999 Free Software Foundation, Inc. Copyright (C) 2001-2006 Arien Malec, Chris Pickett, Fredrik Copyright (C) 2000,2001,2002 Free Software Foundation, Inc.
cppunit-1.15.1	Copyright (C) 2000, Baptiste Lepilleur
cyrus-sasl-2.1.28	Copyright (C) 1991-2, RSA Data Security, Inc. Created 1991. All, Copyright (c) 2000 Carnegie Mellon University. All rights reserved. Copyright 1997-2001 Messaging Direct Ltd. All rights reserved.
GNU standard C++	The source code for this component may be found on our website at

Component	License or Acknowledgment
class library 6	https://opensource.quest.com/. GNU General Public License (GPL)
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