Oracle® Fusion Middleware
Release Notes for Oracle GoldenGate

12*c* (12.3.0.1)
E84052-07
May 2018

ORACLE®

Oracle Fusion Middleware Release Notes for Oracle GoldenGate, 12*c* (12.3.0.1)

E84052-07

Contents

Preface

1   Introduction

2   What's New in this Release

3 Known Issues and Workarounds

4 Bugs Fixed and Enhancements

Preface

This guide explains the Oracle GoldenGate error messages and their resolutions.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc`.

Accessible Access to Oracle Support

Oracle customers who have purchased support have access to electronic support through My Oracle Support. For information, visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info` or visit `http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs` if you are hearing impaired.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Related Information

The Oracle GoldenGate Product Documentation Libraries are found at

Oracle GoldenGate

Oracle GoldenGate Application Adapters

Oracle GoldenGate for Big Data

Oracle GoldenGate Plug-in for EMCC

Oracle GoldenGate Monitor

Oracle GoldenGate for HP NonStop (Guardian)

Oracle GoldenGate Veridata

Oracle GoldenGate Studio

Additional Oracle GoldenGate information, including best practices, articles, and solutions, is found at:

Oracle GoldenGate A-Team Chronicles

1
Introduction

This chapter introduces the Release Notes for Oracle GoldenGate12*c* (12.3.0.1).

1.1 Latest Release Information

This document is accurate at the time of publication. Oracle will update the release notes periodically after the software release. You can access the latest information and additions to these release notes on the Oracle Technology Network at:

http://www.oracle.com/technetwork/indexes/documentation/index.html

1.2 Purpose of this Document

This document contains the release information for Oracle Fusion Middleware Release for Oracle GoldenGate.

Oracle recommends you review its contents before installing, or working with the product.

1.3 System Requirements and Specifications

Oracle GoldenGate follows the Fusion Middleware system requirements and certifications for production environments. For more information, see http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html.

1.4 Certification Information

To see versions of platforms and related software for which Oracle GoldenGate is certified and supported, go to http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html

1.5 Product Documentation

For complete documentation on Oracle GoldenGate, go to http://docs.oracle.com/goldengate/c1230/gg-winux/index.html.

1.6 Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support at https://support.oracle.com

1.7 Licensing Information

Licensing information for Oracle Fusion Middleware is available at:

https://shop.oracle.com

Detailed information regarding license compliance for Oracle Fusion Middleware is available at:

Licensing Information

1.8 Downloading and Applying Required Patches

Go to My Oracle Support to download the latest software patches.

https://support.oracle.com

See the README file in the patch distribution for up-to-date information on the software fixes provided by the patch.

To download and install the latest software patch:

1. Login to My Oracle Support.

2. Click the **Patches & Updates** tab.

3. Under the Patch Search tab, select **Product or Family (Advanced Search)**, and select the **Include all patches in a product family** check box.

4. Enter **Oracle GoldenGate** as the product, select the platform and release, and click **Search**.

The list of currently available patches for Oracle GoldenGate is returned.

For SQL Server CDC Extract you may need these software patches:

- For SQL Server 2012, 2014, and 2016, Microsoft has identified and fixed an issue where some UPDATE operations may be written incorrectly to a CDC staging table as an INSERT followed by a DELETE, rather than a DELETE/INSERT pair. This may cause downstream replication issues, such as a primary key violation, therefore it is recommended to apply the Microsoft fix for this issue: https://support.microsoft.com/en-us/help/3030352

- For SQL Server 2016, prior to enabling supplemental logging, ensure that you have patched the SQL Server instance based on the following bug fix from Microsoft: https://support.microsoft.com/en-us/help/3166120/fix-could-not-find-stored-procedure-sys.sp-cdc-parse-captured-column-list-error-in-sql-server-2016 If the instance is not correctly patched with the Microsoft fix, issuing ADD TRANDATA against a table for the database may incorrectly report that supplemental logging succeeded, when in fact it may not have; therefore no records will be captured for that table.

2

What's New in this Release

This chapter describes the features, enhancements, and changes made to Oracle GoldenGate. Oracle updates the release notes periodically after the software release. This document is accurate at the time of publication.

2.1 New Features

This section describes the features and enhancements made to Oracle GoldenGate.

2.1.1 Release 12.3.0.1.4 - May 2018

`INFO EXTRACT group_name CONTAINERS`

- New command that lists the Pluggable Databases (PDBs) that are registered with a specified Extract group name.

File-based Initial Load Replication in Microservices Architecture
The Microservices Architecture fully supports initial-load replication using file-based .initial load processing.

Performance Metrics Server with the Classic Architecture
The monitoring functionality previously provided by the Manager process is now provided using the new Performance Metrics server process.

2.1.2 Release 12.3.0.1.3 - March 2018

SQL Server

- Oracle GoldenGate 12.3.0.1.3 for SQL Server (CDC Extract) can replicate column data that contains `SPARSE` settings and `FILESTREAM` data.

- A new parameter `TRANLOGOPTIONS QUERYTIMEOUT` is added for CDC Extract (not Classic Extract) that allows setting the query timeout value in cases where Extract abends from a connection timeout condition. The values are `Min (0) = Infinite`, `Max (2147483645)`, `Default(30)`

`ENABLEMONITORING` **Parameter**
The `GLOBALS` parameter `ENABLEMONITORING` is enhanced to add the `UDPPORT` and `HTTPPORT` options for use with the `UDP` mode. This allows for monitoring by Performance Metrics Server in the Classic Architecture.

Admin Client Changes
For the MA Administration Server, a new endpoint is created at `/services/v2/enckeys`, providing an API for generating AES encryption keys and using them to encrypt data. In addition, support for managing `ENCKEYS` is added to the `/`

`services/v2/config/files` endpoint. The `EDIT ENCKEYS`, `ENCRYPT PASSWORD`, and `VIEW ENCKEYS` commands were added.

2.1.3 Release 12.3.0.1.2 - December 2017

Oracle Database

New option
The `TRANLOGOPTIONS SOURCE_OS_TIMEZONE` time zone option was added for Integrated Extract so that you can set the Extract to the system time zone of the source database, when the Integrated Extract is installed on a remote server of a different time zone.

DB2 z/OS

New option
The `TRANLOGOPTIONS DB2ZV11COMPATIBILITYMODE` option was added so that you can set the DB2 z/OS version.

2.1.4 Release 12.3.0.1.1 - Initial Release

Oracle Database

Microservices Architecture
Oracle GoldenGate Microservices Architecture is a new administration architecture that provides REST-enabled services as part of the Oracle GoldenGate environment. The REST-enabled services provide remote configuration, administration, and monitoring through HTML5 web pages, command line, and APIs.
All APIs are accessible and available under standard Oracle GoldenGate Licensing, except for the APIs associated with the Performance Metric Service. To access the Performance Metric Service APIs, it requires additional licensing through Oracle GoldenGate Management Pack or Oracle GoldenGate Foundation Suite.

Single Service Manager per Installation
Oracle recommends that you create only one Service Manager on a system where you install Microservices Architecture to facilitate easy upgrades.

Oracle Database Sharding
Oracle GoldenGate provides a cohesive platform for a sharded Oracle Database, allowing data replication across various sharded database topologies. All the functionality of a sharded database, in addition to providing pre-configured Oracle GoldenGate replication as part of the `GDSCTL DEPLOY` command, is included.

Parallel Replicat
Parallel Replicat is a new variant of Replicat that applies transactions in parallel to improve performance. It takes into account dependencies between transactions, similar to Integrated Replicat. The dependency computation, parallelism of the mapping and apply is performed outside the database so it can be off-loaded to a middle-tier server. The transaction integrity is calculated and maintained within this process. In addition, Parallel Replicat supports the parallel apply of large

transactions by splitting a large transaction into chunks and applying them in parallel.

Procedural Replication

Integrated Replicat has been enhanced to allow you to replicate certain Oracle-supplied PL/SQL procedures that cannot be replicated as DML or DDL. This requires that the source and target databases are Oracle Database 12*c* Release 2 (12.2) and later.

Automatic Conflict Detection and Resolution

You can configure and manage Oracle GoldenGate to automate conflict detection and resolution when it is configured in Oracle Database 12*c* Release 2 (12.2) and later.

`DBA_GOLDENGATE_SUPPORT_MODE` has a new value `PLSQL`

This view has a new value, `PL/SQL`.

`PMSRVR` Commands

The `PMSRVR` commands control the Performance Metrics Server.

General Features

`ADD TRANDATA`, `INFO TRANDATA`, and `ADD SCHEMATRANDATA` enhancements

These commands are enhanced to provide additional table handling information by adding the `NOVALIDATE` option:

- Warning on object type table, xmltype table, iot table, cluster table

- Support mode, including full support, support using fetch, or not supported

- List of Oracle GoldenGate key columns

- Columns and their types that caused the table to be unsupported or fetch supported

- Fetch restrictions

- Warning on lack of unique key

`TRANLOGOPTIONS`

The `FETCHINLINESFLOB` and `VALIDATEINLINESFLOB` options are added to the `TRANLOGOPTIONS` parameter.

The `DLFAILOVER_TIMEOUT` *seconds* option provides a configurable timeout in seconds to allow for standby database reinstatement post-role transition.

The `DISABLESOFTEOFDELAY` option sets the wait time that the `EOFDELAY` will take effect when an EOF is reported along with records to be returned.

The `SUPPRESSNOOOPUPDATES` option allows you to control whether no-op updates are filtered or not in Integrated Extract.

`GETENV`

The `JULIANTIMESTAMP_PRECISE` option is added to the `GETENV` parameter.

`ALLOWNULLABLEKEYS` | `NOALLOWNULLABLEKEYS`

The `ALLOWNULLABLEKEYS` | `NOALLOWNULLABLEKEYS` GLOBALS parameter changes the key selection logic.

`ADD HEARTBEATTABLE` and `ALTER HEARTBEATTABLE`

The `TARGETONLY` and `NOTARGETONLY` options are added to these parameters. This is available with Oracle Database only.

MAPALLCOLUMNS | NOMAPALLCOLUMNS

MAPALLCOLUMNS | NOMAPALLCOLUMNS are added as Global parameters and as an option to the MAP parameter to control whether or not Replicat obtains non-key columns.

Error Log Enhancements

You can control the ggserr.log file behavior by changing appender-ref from ggserr.Standard to one of these options:

- ggserr.Legacy

- ggserr.None

- ggserr.Syslog

OUTPUTFORMAT

Use the OUTPUTFORMAT parameter to output data in text, SQL, and XML formats.

CACHEMGR

The CACHEMGR CACHEVMUSAGE option was added and returns the statistics for the virtual memory use.

SQLEXEC on Before and After Images

This functionality should work for any type of Extract or Replicat including Integrated Replicat. It allows a SQLEXEC to call the stored procedure and return the masked value for BAN, and then use that returned value in the WHERE CLAUSE similar to:

```
SQLEXEC (BEFOREFILTER, SPNAME MASK_COL, PARAMS (in_mask = BAN, mask_type =
'CHARACTER', OPTIONS = 'N'),
```

Where the return value,MASK_RESULT, returns the masked value of the BAN column. The other options are to mask it using only character data (A-Z, a-z, 0-9), and the last OPTIONS is a list of possible options, such as whether the value should be deterministic or which values to encrypt.

In processing UPDATE and DELETE statements, you want the stored procedure to take the BEFORE image of the value and use that masked value in the WHERE CLAUSE. However, Oracle GoldenGate does not do this by default, so the MOD_COMPARE_COLS option is introduced so that you can control the values that are used in the WHERE CLAUSE.The MOD_COMPARE_COLS option works similar to COLMAP except that the values for the assigned columns are used in the WHERE CLAUSE instead of as values in the actual SET clause.

```
IGNOREINSERTS
GETUPDATES
GETDELETES
TABLE ADM. MESSAGE_LOG, TARGET ADM. MESSAGE_LOG,
SQLEXEC (BEFOREFILTER, SPNAME MASK_COL, PARAMS (in_mask = BEFORE.BAN, mask_type
= 'CHARACTER', OPTIONS = 'N'),
COLMAP (USEDEFAULTS, pk_col = @GETVAL(MASK_COL.mask_result)),
MOD_COMPARE_COLS (BAN = MASK_COL.MASK_RESULT);
```

In this example, the WHERE CLAUSE for UPDATEs and DELETEs (since we are using IGNOREINSERTS) are modified to use the MASK_COL.MASK_RESULT value from the SQLEXEC statement instead of using the actual before image of the BAN column from the trail.

MySQL

- Support for extraction and replication of DDL (data definition language) operations is introduced.

- InnoDB now supports up to 1017 columns.

- Support added for Capture and Delivery to MySQL Database with TDE Enabled.

- MySQL has been certified for delivery to Amazon Aurora, which is derived from MySQL v5.6 for both a single instance and a cluster setup of Amazon Aurora.

SQL Server

- A new change data capture (CDC)-based Extract is introduced.

- The CDC-based Extract supports capture from SQL Server 2008 - 2016 databases enabled with TDE, and remote capture.

- Capture from a source database configured as a Primary or readable Synchronous mode Secondary of an AlwaysOn Availability group.

- Delivery to SQL Server 2016 targets.

- New parameters `TRANLOGOPTIONS NO` and `MANAGECDCCLEANUP` added for SQL Server CDC Extract. `MANAGECDCCLEANUP` is the default and instructs the CDC Extract to check for the Oracle GoldenGateCleanup task objects.

- For the CDC Extract, there is a new utility `ogg_cdc_cleanup_setup.bat`, which is used to create the Oracle GoldenGateCDC Cleanup job and associated objects, for controlling data retention in the CDC tables.

- TLS 1.2 support has been added for Oracle GoldenGate for SQL Server, and requires the Extract to run with the new `DBOPTIONS DRIVER SQLNCLI11` parameter.

- Single user `TRANLOGOPTIONS EXCLUDEUSER` functionality has been added for the SQL Server Classic Extract. However, multiple excluded users are not supported.

DB2 z/OS

- There is no longer a native DB2 z/OS build. This allows Oracle GoldenGatefor DB2 z/OS to maintain compatibility with the other platform features and significantly reduces the MIPs costs associated with running the product.

- Extract uses stored procedures to read the transaction log.

- AES encryption and 64–bit support is included.

- `BATCHSQL` is now supported for DB2 z/OS

IBM for I

- `COLCHARSET` support now functional in `TABLE` specifications in Extract

  `TEXT` data conversions significantly more efficient in Extract when writing Unicode trails

2.2 Default Behavior Changes

This section describes the default behavior changes made to Oracle GoldenGate in relation to the last release.

2.2.1 Release 12.3.0.1.4 - May 2018

Removed support for file to database load utilities
Oracle GoldenGate no longer supports the ability to generate data and control files for database load utilities such as SQLLOADER and BCP.

Primary Key or reference key column name identifier are restricted to 30 characters
The key column name identifier cannot be more than 30 characters long but if the column name is not part of the key column, then it can be 255 characters long.

2.2.2 Release 12.3.0.1.3 - March 2018

Coordinated Replicat doesn't do dependency calculations
Coordinated Replicat doesn't do dependency calculations for non-barrier transactions when a mapped table is partitioned based on THNREADRANGE. It relies on specified THREADRANGE columns to compute a hash value. It partitions the incoming data based on the hash value and sends all the records that match this hash value to same thread.

2.2.3 Release 12.3.0.1.2 - December 2017

The TIMESTAMP_PRECISE option is available with @GETENV ('TRANSACTION', 'TIMESTAMP_PRECISE') and @GETENV ('RECORD', 'TIMESTAMP_PRECISE')
The TIMESTAMP_PRECISE option is used with TRANSACTION and RECORD options. @GETENV ('TRANSACTION', 'TIMESTAMP_PRECISE') returns information about a source transaction, but with fraction precision. It returns the timestamp from year to microseconds. @GETENV ('RECORD', 'TIMESTAMP_PRECISE') returns the location or the Oracle rowid of a record in an Oracle GoldenGate trail file, with fraction precision. This option returns the timestamp from year to microseconds. However, depending on the database, the value can be in milliseconds with 0 microseconds.

The @GETENV COMPATIBILITY option values are from 0 to 6.
The actual values for the COMPATIBILITY option are from 0 to 6. A value of 5 means that the trail file is of Oracle GoldenGate version 12.2.0.1 and a value of 6 is for a trail file of Oracle GoldenGate version 12.3.0.1. These values are increasing as per Oracle GoldenGate versions depending on the trail file version.

The @GETENV options, TRANSACTION transaction_info, USERID, USERNAME are not valid for Pump Extract or Replicat. GGFILEHEADER is only valid for Replicat
The @GETENV options TRANSACTION transaction_info, USERID, USERNAME work on the main Extract and not on the pump Extract and Replicat. GGFILEHEADER is valid only for Replicat.

Admin Client CONNECT command supports the ! modifier
Admin Client does not allow connecting to a server through HTTPS when the server certificate is invalid. To override this behavior, use the ! modifier with the CONNECT command. For example, when using the Admin Client to connect to the Oracle GoldenGate Microservices Architecture services that are secured with a self-signed SSL certificate, you must use a command with the ! modifier:
CONNECT https://myserver.example.org as oggadmin !

`PASSTHRU` and `NOPASSTHRU` parameters with data pump are deprecated
The `PASSTHRU` and `NOPASSTHRU` parameters in the data pump as standalone parameters indicate whether the pump is reading a trail and sending to a remote system with no further processing (`PASSTHRU`) or may perform some processing on the data (`NOPASSTHRU`). These parameters in this context only were deprecated.

2.2.4 Release 12.3.0.1.1 - Initial Release

Supported `EXTTRAIL`, `RMTTRAIL`, `EXTFILE`, and `RMTFILE` Settings for `FORMAT RELEASE` with Oracle Database 12.2
When using the `FORMAT RELEASE` option, the following settings are supported in Oracle Database 12.2:

- Non-CDB with compatibility set to 12.1, `FORMAT RELEASE` 12.2 or above is supported.

- Non-CDB with compatibility set to 12.2, `FORMAT RELEASE` 12.2 or above is supported.

- CDB/PDB with compatibility set to 12.2, only `FORMAT RELEASE` 12.3 is supported. This is due to the use of local undo for PDBs, which requires augmenting the transaction ID with the PDB number to ensure uniqueness of `trx` IDs.

Log Miner does not Support Parallelism on Oracle Database Standard Edition
Log Miner does not support parallelism because of certain restrictions in Oracle Database Standard Edition.
The default parallelism value in Oracle Database Standard Edition is 1, and if you specify a value of greater than 1, Integrated Extract abends.
Similarly for Integrated Replicat, internal apply engine does not support parallelism on Oracle Database Standard Edition. Integrated Replicat abends if a value greater than 1 value is specified.

Converting Regular Deployment to XAG Managed Deployment is Not Supported
The option to support conversion of regular deployment to XAG-managed deployment is not available. For Oracle GoldenGate Microservices Architecture, the XAG managed property needs to be specified at deployment creation time.

System Change Number
The value size is expanded from 6 bytes to 8 bytes. This is applicable to Oracle Database 12*c* Release 2 (12.2) and later.

Extract
Checkpointing was changed to support the 8-byte representation for both classic and integrated Extract.

Long Identifiers
Support for long identifiers limit of 128 bytes was added. This is applicable to Oracle Database 12*c* Release 2 (12.2) and later.

Oracle Database

- Support for the Local Undo Oracle Database 12.2 feature, which allowed each PDB to use its own, local undo tablespace, has been added.

- Classic capture mode when replicating a `CREATE USER` command using the DDL trigger was changed and now the trigger owner and the Extract login user *must* match.

Character Sets for Pluggable Databases
Oracle GoldenGate now provides replication support for pluggable databases with different character sets.

DB2 LUW `EOFDELAY`
The `EOFDELAY` wait time will take effect even when an `EOF` is reported along with records to be returned.

DB2 for i
The default behavior of a DB2 for I Extract has been reverted to convert all character data to Unicode. Extracts with multiple journals are no longer allowed by default

SQL Server (CDC Extract) `ADD TRANDATA`
If you encounter the following error: `Could not find stored procedure 'sys.sp_cdc_parse_captured_column_list'` When adding `TRANDATA` to an SQL Server 2016 table, you may need to install a patch related to the following SQL Server bug: SQL Server 2016 Patch

`@RANGE`
The `@RANGE` function now abends when there are missing or NULL columns.

2.3 Deprecated Features

This section describes the deprecated and no longer supported features of Oracle GoldenGate.

2.3.1 Deprecated Features

Release 12.3.0.1 - April

`VAMTRAILSOURCE` for Teradata
The parameter `VAMTRAILSOURCE` has been deprecated for Teradata.

2.3.2 Release 12.3.0.1.2 - December 2017

`USERSUBDIRS`, `NOUSESUBDIRS` for Extract and Replicat
The parameters `USERSUBDIRS`, `NOUSESUBDIRS` have been deprecated for Extract and Replicat.

`VAMTRAILSOURCE` for Teradata
The parameter `VAMTRAILSOURCE` has been deprecated for Teradata.

2.3.3 Release 12.3.0.1.1 - Initial Release

Oracle GoldenGate Director
Oracle GoldenGate Director is not supported with Oracle GoldenGate12.3.0.1 release. Use Oracle GoldenGate Studio instead.

ORACLE

SYSLOG

The SYSLOG parameter for GLOBALS and MGR.PRM is removed. To control where messages are written, see Using the Error Log in the *Administering Oracle GoldenGate*.

Reverse Utility

The reverse utility is deprecated.

INFO MARKER

The INFO MARKER command is deprecated. Extract and Replicat no longer check the marker table history from NKS source.

NOASYNCTRANSPROCESSING

The NOASYNCTRANSPROCESSING option of TRANLOGOPTIONS is deprecated. There is no default behavior change.

FORMATASCII, FORMATSQL, and FORMATXML

The new OUTPUTFORMAT parameter replaces the deprecated FORMATASCII, FORMATSQL, and FORMATXML parameters.

CACHEMGR

The CACHEPOOL *n* and CACHEFSOPTION { MS_SYNC | MS_ASYNC options are deprecated.

EXTFILE, EXTTRAIL, RMTFILE, RMTTRAIL

The following options of EXTFILE, EXTTRAIL, RMTFILE, and RMTTRAIL have been deprecated for Data Pump. The Data Pump writes the output trail in the same format and metadata Endian as the input source trail file:

FORMAT RELEASE for data pump Extract *only* is deprecated. All other uses of this option are applicable.

TRAILBYTEORDER

TRAILCHARSETUNICODE

The Extract TRAILCHARSETUNICODE parameter has been deprecated because the default behavior of a DB2 for I Extract is now reverted to convert all character data to Unicode. The character conversion efficiency has been significantly improved., however if a table must be sent without conversion, COLCHARSET(PASSTHRU) may be used on the TABLE statement.

USEANSISQLQUOTES | NOUSEANSISQLQUOTES

The GLOBALS USEANSISQLQUOTES | NOUSEANSISQLQUOTES parameters have been deprecated.

3

Known Issues and Workarounds

This chapter describes the known issues at the time of release.

3.1 Release 12.3.0.1.4 — May 2018

Bug 27917936 — Oracle: Task-based initial load is not supported for MA

Task-based initial load is disabled in Oracle GoldenGate MA. However, file-based initial load is fully-supported.

Workaround
Use file-based initial-load in MA

Bug 27812006 — Oracle: PURGE WALLET does'nt delete the MASTERKEY

In Oracle GoldenGate12c (12.3.0.1), when deleting a masterkey in the wallet and then purging the wallet, the undelete operation reports that the deleted key has been added back.

Workaround
None.

Bug 28001613 - HP-UX: Oracle GoldenGate Collector doesn't start if FIPS mode is enabled

FIPS 140 mode cannot be enabled on HP-UX to ensure that Oracle GoldenGate Collector starts.

Workaround
None.

Bug 28000908 - zLinux: Administration Server fails with SEGV in Task Manager

The Administration Server may terminate abnormally with a segment violation (SEGV) in Task Manager.

Workaround
None.

Bug 27248167 — Oracle: Time zones that are not replicated properly

Some of the time zones are not replicated properly for Oracle. These time zones are:

- `AMERICA/FORT_NELSON`

- `EUROPE/ASTRAKHAN`

- `EUROPE/KIROV`

- `EUROPE/ULYANOVSK`

- `ASIA/BARNAUL`

- `ASIA/TOMSK`

Workaround
None

Bug 26782577 - Oracle: ALTID Missing data for Lob out of line columns.

The LOB data is out of sync when using the `altid` parameter on partitioned table. The LOB marker record in the redo log contains the object `ID` of the base table and is filtered out by the `altid` parameter.

Workaround
None

**Bug 27732417 - Linux x86-64: Oracle GoldenGate12c (12.3.0.1.*x)*

For Oracle GoldenGate OUI 12.3.0.1.*x*, you must install the latest OUI opatch version before applying any opatches to your Linux x86-64 system running Oracle Database.

Workaround
None

AIX Support

The AIX release for Oracle Database only supports AIX 7.2 and *not* 7.1.

3.2 Release 12.3.0.1.2 — December 2017

Bug 27028084 - MySQL: Binary log file size in remote capture

For remote capture in Oracle GoldenGate MySQL, the binary log file size greater than 4 GB is not supported. Consequently, while positioning an offset, an offset greater than 4294967295 is also not supported.

Workaround
None

Bug 26929711 - DB2 z/OS: ERROR OGG-00551 Database operation failed: init sp - execute. ODBC error:

When running Oracle GoldenGate Extract against DB2 for z/OS V11, in compatibility mode, the Extract fails to correctly identify the version of the database needed for log reading APIs. Extract identifies DB2 for z/OS V11 as V10, in compatibility mode, which causes the incorrect selection of V10 stored procedures for log reading.

Workaround
None

3.3 Release 12.3.0.1.1 — Initial Release

Bug 26856080 — Oracle: Admin Client AUTORESTART help commands are not working

In the Admin Client, the help commands for the `AUTORESTART` parameter are missing.

Workaround
None

Bug 26190334 — Documentation update for JAgent exclusive support on 12.3 OGG Core Classic Mode

JAgent supports only the Classic mode for Oracle GoldenGate Microservices Architecture is not supported.

Workaround
None

Bug 25897967 — Oracle: Must remove deployments and stop ServiceManager process before uninstalling Oracle GoldenGate

If there are Oracle GoldenGate 12.3 processes running when `OGG_HOME/deinstall/deinstall.sh` is executed, then those processes continue to run after deinstallation. The orphaned services' process IDs become defunct because the associated binaries no longer exist. However, the Service Manager process is kept alive and remains listening on the original port. Subsequent attempts to add deployments (after reinstalling Oracle GoldenGate Microservices Architecture) may be blocked due to the discovery of the active, existing Service Manager port.

Workaround
When uninstalling Oracle GoldenGate MA, the best practice is to delete all affiliated deployments and/or stop their processes. In addition, identify the process ID of the Service Manager and manually kill the process. If the Service Manager is set up as an operating system service daemon, `deinstall.sh` does not clean up the configuration, so this task is also manual.

Bug 26104564 — Oracle: Deleting AUTORESTART task is killing ER, which was brought up by an AUTORESTART task

When an `execute` task is deleted, the associated `ER` process is killed. This is because the task owns the running state of the ER process.

Workaround
The correct method of creating an "execute" task is as follows:

1. Create the ER process in stopped state.

2. Create the task.

3. Start the task.

Bug 25502490 — Oracle: Unable to deploy MA on Solaris Sparc Hosts

The `LD_LIBRARY_PATH_64` environment variables must be set correctly before running Oracle GoldenGate on Solaris Sparc or Solaris x86_64.

Workaround
Before running the configuration wizard or any Oracle GoldenGate executables, you can resolve this issue in one of two ways:

- Remove the `/usr/sfw/lib/sparcv9` directory, that is installed with Solaris, from the `LD_LIBRARY_PATH_64` environment variable . Oracle recommends this workaround.

- Update the `LD_LIBRARY_PATH_64` environment variable to include `$OGG_HOME/lib` as the first entry.

Bug 22826452 — Extract does not capture records if WILDCARDRESOLVE IMMEDIATE is used

Do not use `WILDCARDRESOLVE IMMEDIATE` in a multitenant environment if performing DDL on that system. Extract may fail to capture records after the DDL operations.

Workaround
None

Bug 22739872 — Oracle: START MGR can hang for XAGENABLEd setup if the MGR process has abended

When using `XAGENABLE`, if you start manager from `GGSCI` and it immediately abends the command may hang.

Workaround
None

Bug 22967088 — Oracle: IR abends with 3117-ORA-03117: two-task save area overflow

If Integrated Replicat abends with `OGG-00665OCI Error Flushing database inbound server, '..' (status = 3117-: two-task save area overflow)`, disabling `ENABLEMONITORING`.

Workaround
Restart the Replicat.

Bug 19512704 — Oracle: Wrong results with @BINTOHEX and @STRCAT functions

Using `STRCAT` to concatenate a string that has used `BINTOHEX` returns the wrong information.

Workaround
None

Bug 22854712 — Oracle: NOUSERID should force downstream mode

The `NOUSERID` parameter is only supported with downstream Integrated Extract.

Workaround
None

**Bug 25043127 — Honor MAPINVISIBLECOLUMNS and
NOMAPINVISIBLECOLUMNS in user exit**

The `MAPINVISIBLECOLUMNS` and `NOMAPINVISIBLECOLUMNS` parameters do not function
properly with user exits.

Workaround
None

XL C++ runtime environment on AIX

You must install the XL C++ runtime environment (RTE) version 13.1 on the AIX
systems that you want to use Oracle GoldenGate because it cannot run with older
RTE versions.

Workaround
Ensure that the RTE version 13.1 is installed before you install Oracle GoldenGate.

**Bug 26564428 — Solaris 10: Replicat doesn't map derived objects when schema
name is specified with it**

The Performance Metrics Server home page does not correctly display statistics.

Workaround
None

**Bug 26564428 — Replicat doesn't map derived objects when schema name is
specified with it**

When a source schema name is appended to the derived object (indexes and
triggers) during DDL (like `CREATE TRIGGER tkggu1.mytrigger1`), then the derived object
is not mapped correctly by the Replicat. Since `mapderived` is default for Replicat, the
statement should map per the map statements.

Workaround
Do not append a source schema name to the derived object name in DDL statement
so that the statement is executed on the correct schema.

**Bug 26533353 — Deployment creation fails when Integrate with XAG option is
used**

Creating deployment with the **Integrate with XAG** option results in the Service
manager not starting.

Workaround
None

**Bug 26501195 — realpath() resolution fails on Solaris 10 - 404 returned instead
of index.html**

The MA Service Manager and server web pages do not display in Solaris 10.

Workaround

To display these pages, upgrade to Solaris 11.

Bug 26596046 — SQL Server: CDC Extract encountered OGG-14053 and not process data for myheart

Oracle GoldenGate for non-Oracle bi-directional and cascading `HEARTBEATTABLE` implementations are not working correctly.

Workaround

None

Bug 26593572 — The Admin Client does not allow connection to deployment as a non-admin user

The Admin Client does not allow connection to deployment as a non-administration user.

Workaround

The Admin Client can only connect to the deployment using the credentials specified during deployment.

Bug 26613655 — SQL Server CDC: GGSCI ADD HEARTBEATTABLE does not create Fetch Processes

The `ADD HEARTBEATTABLE` command does not create all objects needed by CDC Extract for SQL Server.

Workaround

After creating the `HEARTBEATTABLE` entries, use GGSCI to `ADD TRANDATA schema.gg_heartbeat` and `ADD TRANDATA schema.gg_heartbeat_seed`.

Mac OS Browser Support

Mozilla Firefox browser is not supported on Mac OS for embedded UI.

Workaround

Use a different browser.

Bug 25061436 — DB2 for i: On system time change rollback extract stops or loses records

An issue has been raised with IBM about the generation of system sequence numbers where the system sequence numbers roll back during the one hour window in the fall daylight savings time adjustment period at 2 a.m. This can cause a loss of data and/or hung Extract.

Workaround

Shut down the Extract during the fall Daylight Savings Time change at or before 2 a.m. local time and wait until 2 a.m. standard time has passed to restart Extract.

Bug 26546679 — SQL Server CDC: Doc for the Release Notes needed regarding unsupported Data Types

For tables that contain `SPARSE` columns, the `sql_variant` data type, or the `FILESTREAM` attribute, Extract may fail if processing `DML` for these tables. .

Workaround
You must remove these tables from Extract with either the `TABLEEXCLUDE` parameter, or you can remove `TRANDATA` for the specific tables with `DELETE TRANDATA`

Bug 26492075 — SQL Server CDC: Invalid character found in column with different character set than the database

Due to a limitation with SQL Server's Change Data Capture abilities, column level collations that are different from the database collation, may cause incorrect data to be written to the CDC tables for character data, and Extract may capture them as they are written to the CDC tables.

Workaround
None

Bug 26046195 — SQL Server CDC: versions prior to 2012 have a problem with primary key updates

SQL Server 2008 and 2008R2 Change Data Capture may write a primary key update to the CT staging table as a Delete or Insert that is not part of the same transaction. If this occurs, data written to the trail is as a Delete, followed by an Insert, and this could impact target foreign key constraints.

Workaround
Disable target table foreign key constraints.

Bug 26768896 — CDC Extract for SQL Server 2016 SP1+ Standard Edition:

The `DELETE HEARTBEATTABLE` command does not remove all of the heartbeat objects.

Workaround
You must manually delete all of the heartbeat components.

Bug 26020817 - Oracle: Extract will have actual LAG + 1 hour during DST transition from DST to Non-DST

Oracle GoldenGate Extract timestamp does not adjust after DST change. An Extract has an actual lag value + 3600 seconds (1 hour) when there is a time transition from DST to non-DST (in November of every year). This recurs during 1 AM to 2 AM non-DST.

Workaround
None

Bug 26812463 - Oracle: GRANT ... TO ... IDENTIFIED BY DDL operation

Combination DDL operations that create a user at the same that as granting permissions to that user are not supported in DDL replication for Classic Extract. For

example, `GRANT DBA TO scott IDENTIFIED BY tiger;` is not a supported DDL operation, and Replicat will abend when it encounters these types of operations.

Workaround
You can workaround this by splitting the DDL operation into two separate commands. The first DDL to create the user, and a second DDL to grant the permissions to the new user.

Bug 27622553 — SQL Server CDC: Oracle GoldenGate 12c (12.2.0.1) Replicat does not support Oracle GoldenGate 12c (12.3.0.1) SQL Server CDC Extract LSN Formats

Oracle GoldenGate 12c (12.2.0.1) and lower releases do not support the LSN format of the CDC Extract introduced with Oracle GoldenGate 12c (12.3.0.1) and so, `ATCSN` and `AFTERSCN` are not supported. The `LSN` value that is stored in the trail by the Oracle GoldenGate 12c (12.3.0.1) CDC Extract is different than with Classic Extract when positioning an Oracle GoldenGate 12c (12.2.0.1) Replicat using `ATCSN` or `AFTERCSN` that was generated from an Oracle GoldenGate 12c (12.3.0.1) CDC Extract. This is regardless of using `FORMAT RELEASE` Oracle GoldenGate 12c (12.2.0.1) with the Extract.

Workaround
None

4

Bugs Fixed and Enhancements

This chapter describes the bugs fixed and enhancements at the time of release.

The Bug number is the number of the BugDB ticket. For questions on specific tickets or issues, consult Oracle Support.

4.1 Release 12.3.0.1.4 — May 2018

Bug 27701581 - Increase the upper limit of the DBOPTIONS parameter options LOBBUFSIZE and XMLBUFSIZE

The upper limit for `LOBBUFSIZE` and `XMLBUFSIZE` was increased from 10485760 to 104857600.

Bug 27752568 - Oracle: Autonomous Data Warehouse Cloud Replicat does not detect primary keys

An issue where if the table in an Oracle Autonomous Data Warehouse Cloud instance has a primary key defined, then Replicat doesn't detect it was fixed.

4.2 Release 12.3.0.1.3 — March 2018

Bug 26608571 — SQL Server: CDC Extract Support when Native Transactional Replication is also enabled

The CDC Extract was enhanced to coexist with native SQL Server Transactional Replication, which uses the Trans Repl log reader agent to populate the change tracking tables instead of the CDC Capture job.

Bug 27384760 — SQL Server CDC: Extract - `TRANDATA` not added when existing customer CDC table exists

An issue where `TRANDATA` wasn't getting added in case an existing customer CDC table exists was fixed.

Bug 27208108 — SQL Server CDC: Extract requires the SQL Server CDC cleanup job to be dropped

An issue where the CDC Extract and `ogg_cdc_cleanup_setup.bat` required that the SQL Server CDC Cleanup job be deleted, was fixed to allow disabling the SQL Server CDC Cleanup job as an alternative.

Bug 26917526 — SQL Server CDC : Extract abends with `Timestamp out of range` when attempting to retrieve the record timestamp using `GETENV`

An issue with Extract abending with the `Timestamp out of range` error, was fixed. The error occurred when Extract attempts to retrieve the record timestamp using `GETENV`.

Bug 26742447 — SQL Server: Replicat abends with the `OGG-10124 Parsing` error for `REPERROR` value

An issue with `REPERROR` not being able to accommodate the 10 digit SQL Server error code was fixed. Previously, `REPERROR` allow 1–7 digits of error code only.

Bug 27024348 — SQL Server CDC: Extract reports it cannot find the Oracle GoldenGate Cleanup job, although it exists on the server

An issue where, if the database name argument is in a different case than the database name on the server, Extract fails to find the Oracle GoldenGate Cleanup job was fixed.

Bug 26981364 — SQL Server: Replicat for SQL Server tries to execute the DDL statement from an Oracle Database instead of ignoring it

An issue with Replicat for SQL Server executing the DDL statement from the Oracle Database instead of ignoring it was fixed.

Bug 27448935 — SQL Server: Oracle GoldenGate Replicat for SQL Server throws error 2147217887 when mapping the IBM i timestamp format

An issue where applying IBM source containing a timestamp column to SQL Server target erroring was fixed. The error occurs because IBM used periods (HH:MM:SS), which causes SQL Server apply to fail when attempting to issue the target SQL against the DB2 for i database. In the `timecnv.c` function with `TIMECNV_convert_to_db_timestamp`, make sure that the periods are changed to colons for SQL Server targets.

Bug 27450186: SQL Server — `DATETIMEOFFSET` fails for midnight and the trail shows a 24:00 timestamp

An issue where SQL Server `DATETIMEOFFSET` failed for midnight and the trail showed a 24:00 time, was fixed. Any `+TZ datetimeoffset`for the exact time 00:00:00 fails because the date goes back one day and the time gets extracted as 24:00:00.

Bug 27305163 - Extract fails to read log records from a data sharing DB2 version 10 subsystem

The `ERROR OGG-01741  Unexpected Log Sequence encountered` error may occur when extracting from a DB2 version 10 data sharing system was fixed.

4.3 Release 12.3.0.1.2 — December 2017

Bug 27012878 — ReverseProxySettings application has two new parameters

The `ReverseProxySettings` application has two new parameters in Oracle GoldenGate version 12.3.0.1 and later:

- `-P`: Password for Service Manager account
- `-u`: Name of Service Manager account to use

Doc 27033479 — New option, SQLMODE, is added for the DBOPTIONS parameter

The `SQLMODE` option is added for the `DBOPTIONS` parameter. When this option is enabled, the `sql_mode` variable is set to `'ANSI_QUOTES'`.

Doc 27061717 — Oracle: Replicat issues replicating TIMESTAMP (6) with TIMEZONE

The daylight saving time adjustment issue when UTC timestamp value converted from local timestamp hits daylight saving time transition period was fixed. From standard time to daylight saving time 1 hour window. Replicat applies timestamp value 1 hour off from expected value.

Bug 26742447 — SQL Server: Replicat abends with OGG-10124 parsing error for REPERROR value

The `REPERROR` option allowed 1-7 digits of error code only, whereas the SQL Server error code contains 10 digits. To fix this, the regular expression was modified to accumulate 10 digits of SQL Server error code.

4.4 Release 12.3.0.1.1 — Initial Release

Bugs 23619553 and 24478636 — CACHEMGR and CACHESIZE can be placed in GLOBALS parameter

For Extracts and Replicats,`CACHEMGR` and all its options can be placed in the `GLOBALS` parameter, except for `CACHEDIRECTORY`.

Bugs 25823686 and 25758012 — Extended Timestamp Precision for RECORD, TIMESTAMP

`@GETENV` has a new value `TIMESTAMP_PRECISE`. It is used with `@GETENV ('RECORD', 'TIMESTAMP_PRECISE')` and `@GETENV ('TRANSACTION', 'TIMESTAMP_PRECISE')`. When used with `@GETENV`, it returns the timestamp value with fractional precision, which implies that the values are returned from `YEAR` to `MICROSECONDS` or `MILLISECONDS`, depending on the type of database.

Bug 23752944 — @STREQNULL, @STRCMPNULL Functions Added

`@STREQNULL` and `@STRCMPNULL` functions work the same way as `@STREQ` and `@STRCMPNULL`, respectively. However, when two arguments passed to the function are both `NULL`, the functions return value because both values are identical. `@STREQNULL` returns `1` and `@STRCMPNULL` .returns a zero (`0`).

Bug 25694972 — The SQLEXEC Before Image is Supported with the SQLEXECONBEFOREIMAGE option

The new `SQLEXECONBEFOREIMAGE` options was added to the `SQLEXEC` parameter for execution on before image records because `SQLEXEC` execution was only happening on after image records.

Bug 11790182 — SQL Server: Classic Extract to Support TRANLOGOPTIONS EXCLUDEUSER

The SQL Server classic Extract was enhanced to filter by user using the `TRANLOGOPTIONS EXCLUDEUSER` parameter.