Oracle® Database
Release Notes for Oracle GoldenGate

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ORACLE®

Oracle Database Release Notes for Oracle GoldenGate, 21c

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Preface

This document describes the new features, major changes, and known issues for this release of Oracle GoldenGate.

- Documentation Accessibility
- Conventions
- Related Information

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`.

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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, such as "From the File menu, select **Save**." Boldface also is used for terms defined in text or in the glossary.
italic `italic`	Italic type indicates placeholder variables for which you supply particular values, such as in the parameter statement: `TABLE table_name`. Italic type also is used for book titles and emphasis.
`monospace` `MONOSPACE`	Monospace type indicates code components such as user exits and scripts; the names of files and database objects; URL paths; and input and output text that appears on the screen. Uppercase monospace type is generally used to represent the names of Oracle GoldenGate parameters, commands, and user-configurable functions, as well as SQL commands and keywords.
UPPERCASE	Uppercase in the regular text font indicates the name of a utility unless the name is intended to be a specific case.
{}	Braces within syntax enclose a set of options that are separated by pipe symbols, one of which must be selected, for example: `{option1 | option2 | option3}`.

Convention	Meaning
[ ]	Brackets within syntax indicate an optional element. For example in this syntax, the `SAVE` clause is optional: `CLEANUP REPLICAT group_name [, SAVE count]`. Multiple options within an optional element are separated by a pipe symbol, for example: `[option1	option2]`.

Related Information

The Oracle GoldenGate Product Documentation Libraries are found at:

Oracle GoldenGate Documentation

Oracle GoldenGate for Big Data Documentation:

https://docs.oracle.com/en/middleware/goldengate/big-data/index.html

For additional information on Oracle GoldenGate, refer to:

https://www.oracle.com/middleware/technologies/goldengate.html

Oracle Database High Availability

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Introduction

This chapter introduces the Release Notes for Oracle GoldenGate.

Topics:

- Latest Release Information
- Purpose of this Document
- Certification Information
- Product Documentation
- Oracle Support
- Licensing Information

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

Purpose of this Document

This document contains the release information for Oracle GoldenGate.

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

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

Product Documentation

For complete documentation on Oracle GoldenGate, go to https://docs.oracle.com/en/middleware/goldengate/core/index.html.

Oracle Support

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

Lifetime Support Policy for Oracle GoldenGate

Licensing Information

Detailed information regarding license compliance for Oracle GoldenGate is available here:

Licensing Information in the *Oracle GoldenGate Licensing Information* guide.

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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.

- Patch Installation
- New Features
- Default Behavior Changes
- Deprecated and Desupported Features and Parameters
- What's New with Oracle GoldenGate Documentation

Patch Installation

Refer to the following topics for the latest instructions to install patches:

- Installing Patches for Oracle GoldenGate Microservices Architecture
- Patching Oracle GoldenGate Classic Architecture for Oracle Database

New Features

This section describes the critical security updates, new features, and enhancements made to Oracle GoldenGate.

- Release 21c (21.14) - April 2024
- Release 21c (21.12) - November 2023
- Release 21c (21.10.0.0.0) - April 2023
- Release 21c (21.4.0.0.0) - October 2021
- Release 21c (21.3.0) - August 2021
- Release 21c (21.1.0): Initial Release May 2021

Release 21c (21.14) - April 2024

Oracle Access Manager

Oracle GoldenGate now supports Oracle Access Manager (OAM) as an external identity provider for authentication.

Release 21c (21.12) - November 2023

Db2 for i
The Oracle GoldenGate for Db2 for i release version 21.12 includes the following enhancements:

Db2 for i Installation Process
The installation process of Oracle GoldenGate for Db2 for i has been updated.
For more information, see: Installing Oracle GoldenGate Files for IBM DB2 for i.

Support for IBM i Access ODBC Driver
Oracle GoldenGate for Db2 for i now supports the IBM i Access ODBC driver.
For more information, see Supported ODBC Driver.

SSL Connections
SSL connections can now be enabled for Db2 for i by setting `SSL=1` in the DSN configuration file.
For more information, see Enabling SSL.

User Profiles and Security
It is recommended that the Oracle GoldenGate processes are operated using a dedicated user profile that is not used for any other purpose.
For more information, see User Profiles and Security Privileges.

Release 21c (21.10.0.0.0) - April 2023

Oracle Autonomous Database on Shared Exadata Infrastructure

Oracle GoldenGate Parallel Replicat (Integrated Mode)
Integrated Parallel Replicat (iPR) supports GoldenGate replication apply for procedural replication, Automatic CDR, and DML handlers.
See Deciding Which Apply Method to Use Deciding Which Apply Method to Use and About Parallel Replicat About Parallel Replicat for more information.

Release 21c (21.4.0.0.0) - October 2021

All Databases

Administration Service Configuration page allows cloning of existing credentials
Administration Service web interface allows cloning of existing credentials.

Web Workers and Axios 21.1 implemented for Microservices Architecture web interface
Microservices Architecture web interface is enhanced with the implementation of Web Workers and Axios 21.1. Webworkers allows running scripts in the background threads, which allows performing tasks without interfering with the web interface. Axios is an promise-based HTML client for the web browser and node.js.

SQL Server

The CDC Cleanup job is part of the Microservices Architecture Administration Service
A new Purge Change Data task has been added to the Administration Service in Oracle GoldenGate Microservices Architecture for SQL Server, which replaces the previous requirement of installing the Oracle GoldenGate CDC Cleanup job through the `ogg_cdc_cleanup_setup` program.

Release 21c (21.3.0) - August 2021

All Databases

Heartbeat TARGETONLY is supported for heterogeneous database targets
The `TARGETONLY` option for `ADD` and `ALTER HEARTBEATTABLE` is now available for DB2 LUW, DB2 for i Series, DB2 z/OS, MySQL, and PostgreSQL databases.

Parallel Replicat is supported for Heterogeneous Databases
All heterogeneous databases available with Oracle GoldenGate 21c (21.3.0) support parallel Replicat.

Integration with External Identity Management (IdM) system using OpenID/OAuth2.0
Oracle GoldenGate Microservices Architecture supports integration with Identity Cloud Service (IDCS), which is an external Identity Management system, using OpenID/OAuth2.0 protocol.

DB2 LUW

Capture and delivery for DB2 LUW 11.5 is supported
Support for capture and delivery with DB2 LUW 11.5 is available.

DB2 for iSeries

Remote capture and delivery is supported from DB2 iSeries
Remote capture and delivery is available with DB2 iSeries.

IBM iSeries version 7.4 is now available
Oracle GoldenGate supports IBM iSeries version 7.4.

MySQL

MySQL Database Service (MDS) Remote Capture and Delivery Support
Oracle GoldenGate now supports remote capture and delivery for the Oracle MySQL Database Service.

PostgreSQL

Oracle GoldenGate Microservices Architecture supports PostgreSQL
PostgreSQL support is available with Oracle GoldenGate Microservices Architecture.

PostgreSQL 13 is supported
PostgreSQL 13 is supported with Oracle GoldenGate 21c (21.3.0).

Oracle native JSON datatype is supported for PostgreSQL
JSON datatype is supported with Oracle GoldenGate MA and Classic on PostgreSQL.

Release 21c (21.1.0): Initial Release May 2021

Oracle GoldenGate Microservices Architecture is available with Oracle and heterogeneous databases
Oracle GoldenGate 21c supports the following databases:

- Oracle Database 21c

- DB2 z/OS

- MySQL

- SQL Server

All Databases

Parallel Replicat Core Infrastructure Support for Heterogeneous Databases
Parallel Replicat is supported with SQL Server, DB2 z/OS, and MySQL.

Heartbeat History Endpoints Display Historic Heartbeat and Lag Information for ER Processes
Historic and lag information for ER processes and heartbeat records is retrieved and is available from the Administration Server's Replicat Process Information page.

Oracle Database

Unified Build Support
Oracle GoldenGate uses a single, unified build for capturing from and applying to multiple major Oracle Database versions for supported operating systems by including the latest Oracle database client libraries as part of Oracle GoldenGate.

Automatic Extract of tables with supplemental logging is supported
Oracle GoldenGate provides a new `auto_capture` mode to capture changes for all the tables that are enabled for logical replication. You can list the tables enabled for auto-capture using the `LIST TABLES AUTO_CAPTURE` command option. Use the `TRANLOGOPTIONS ENABLE_AUTO_CAPTURE` option to set up automatic capture.
When this parameter is enabled in Extract, any table that has supplemental logging on it will be automatically captured by Extract and you don't need to add the table as a `TABLE` parameter. You can use the new DDL options for `ALTER TABLE ... ENABLE LOGICAL REPLICATION ALL KEYS`, `ALTER TABLE ... ENABLE LOGICAL REPLICATION ALLOW NOVALIDATE KEYS`, `CREATE TABLE ... ENABLE LOGICAL REPLICATION ALL KEYS`, or `CREATE TABLE ... ENABLE LOGICAL REPLICATION NOVALIDATE KEYS` to add supplemental logging to a table and allow Oracle GoldenGate to automatically capture it. This also requires Oracle Database 21c and higher.

Oracle native JSON datatype is supported
Oracle GoldenGate capture and apply processes now support the new native JSON datatype, which is supported by Oracle Database 21c and higher.

Automatic Conflict Detection and Resolution for Oracle Database 21c is available

This feature provides support in Oracle Database 21c and Oracle GoldenGate to enhance Automatic CDR to support:

- Earliest timestamp resolution

- Delete always win

- Site priority resolution

These features can be enabled in the `DBMS_GOLDENGATE.ADD_AUTO_CDR` procedure.

Kerberos Authentication is supported
Oracle GoldenGate supports external authentication for database login (`DBLOGIN`) for Kerberos user accounts.

Oracle Cloud Infrastructure Key Management Service (OCI KMS) integration is available
Oracle GoldenGate supports integration with the OCI KMS for trail file encryption, which simplifies securing Oracle GoldenGate cloud deployments.

Autonomous Database Extract is supported
Oracle GoldenGate can now capture from the Autonomous Databases in OCI. This feature allows capturing data out of specific Autonomous environment in a secure way without allowing access to any other data in that shared environment. For additional details, see Capturing from Pluggable Databases in *Using Oracle GoldenGate for Oracle Database*.

Replicat Compatibility Constraint
Replicat compatibility with different trail file formats is ensured using this feature. The Replicat compatibility constraint is associated to the record (LCR) by the primary Extract to restrict certain record to apply by specific version of Replicat in Oracle GoldenGate 21c or higher releases without bumping up the trail file format version. This feature is displayed by the LogDump utility.

Large DDL (greater than 4 MB) replication is supported
DDLs that are greater than 4 MB in size will be provided replication support.

Certificate management is available from the Microservices Architecture Web UI
Server certificates and multiple client certificates can be managed from the Servicer Manager. Each deployment has a Certificate Store that holds the server, client certificates, and CA certificates, which are used when setting up a secure communication channels for a deployment.

Support for multiple client certificates for wss protocol is available
You can store multiple client certificates in the Certificate Store and explicitly specify the type of authentication mechanism for the distribution paths and target-initiated paths as part of the specification.
You can select one of the three authentication mechanisms, Credentials, Client Certificates, or OAuht2.0 (available with Oracle GoldenGate 21.3.0). If you choose the client certificate authentication mechansim, then you can chose a specific client certificate.

DB_UNIQUE_NAME with heartbeat table
`DB_UNIQUE_NAME` is available with the heartbeat table to allow users to uniquely identify the source of the heartbeat. `DB_UNIQUE_NAME` will allow better use of the heartbeat table in active-active environments, where, typically all the replicas have the same `DB_NAME` but identify each replica site uniquely using the `DB_UNIQUE_NAME`.

DB_UNIQUE_NAME with trail file header

`DB_UNIQUE_NAME` is added in the trail file header along with `DB_NAME`, which helps in troubleshooting replication in active-active environments, where mostly all replicas have the same `DB_NAME` but identify each replica site uniquely using the `DB_UNIQUE_NAME`.

Oracle GoldenGate Upgrade Simplification

The process to upgrade to Oracle GoldenGate 21c has been further simplified. There are fewer steps necessary for the administrator to upgrade to the latest Oracle GoldenGate release. This includes automatic repositioning of Replicat after a trail file format upgrade.

Partition Name Filtering

The Partition Filtering option filters explicitly on the partition name of tables. Data can be filtered based on source partition names in Extract, Pump, Distribution Service, and Replicat.

Bounded Recovery Checkpoint Performance

The Bounded Recovery (BR) Checkpoint has been enhanced to allow Extract to continue mining the redo log and generate trail files during the BR checkpoint, which decreases the BR intervals and improves Extract restart times.

Active Data Guard (ADG) Redirection

If ADG is configured in a cascaded mode to transport redo logs to a downstream database, Oracle GoldenGate can connect to ADG as a source database for the `REGISTER` command instead of connecting to the database where redo is originated. There is no source database connection needed for registering Extract.

New Replicat parameter INCLUDETAG

Oracle GoldenGate for Oracle now supports `INCLUDETAG` in addition to the existing `EXCLUDETAG` parameter to allow more flexibility in configuring multi-way replication topologies.

DB2 z/OS

Capture from temporal tables is supported

Capture from temporal tables is supported with DB2 z/OS.

ECSA Storage is reduced when capturing from DB2 z/OS

ECSA storage requirements is reduced by using 64-bit common storage for storing log read buffers .

EOF option is supported for ADD/ALTER EXTRACT

The EOF option is supported to allow Extract to support various starting positions.

MySQL

DDL replication with remote capture

Oracle GoldenGate supports DDL replication with remote capture from MySQL 8.0 onwards.

Capture DDL metadata from BINLOG

Supports capturing DDL and metadata directly from MySQL BINLOG for MySQL version 8.0 and higher.

JSON Datatype Support
MySQL capture and delivery of JSON data is now supported.

SQL Server

Support SQL Server 2019 Standard and Enterprise
Capture and Delivery for SQL Server 2019 Enterprise and Standard Editions is
supported.

Support Azure SQL Server Database Managed Instance
Capture and delivery for Azure SQL Server database managed instance is supported.

Default Behavior Changes

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

- Release 21c (21.14.0.0.0) - April 2024
- Release 21c (21.10.0.0.0) - April 2023
- Release 21c (21.4.0.0.0) - October 2021
- Release 21c (21.3.0) - August 2021
- Release 21c (21.1.0) - Initial Release May 2021

Release 21c (21.14.0.0.0) - April 2024

PostgreSQL - Capture and delivery support for base partitioned tables
For PostgreSQL, capturing from base partitioned tables is now supported. This is a change
from the previous version of Oracle GoldenGate where Extract might have been configured
to capture directly against inidividual partitions, such as `TABLE schema.basetable_part1` or
`TABLE schema.basetable_part2`.
If you have configured the Extract to capture from PostgreSQL individual partitions in earlier
versions of Oracle GoldenGate and are now upgrading or patching to Oracle GoldenGate
21.14 or after, you need to perform steps specified in Doc ID 3017127.1 to avoid data loss.

Release 21c (21.10.0.0.0) - April 2023

Oracle Database and MA Deployments

**Opatches bundled with JDK for all Oracle and Microservices Architecture
deployments**
The JDK is now packaged in the Oracle GoldenGate patch starting release version
21.10 and 19.1.0.0.230418. Please note that only `<GG_HOME>/jdk` directory is updated
with the GoldenGate patch releases. See Doc ID 2359395.1 for more information and
additional references for updating JDK either through GoldenGate patch or
independently.
You still have the option to install the latest JDK patch into `<GG_HOME>/jdk` directory
independently at any time. See Doc ID 1492980.1 for more information.

Release 21c (21.4.0.0.0) - October 2021

SQL Server

For Oracle GoldenGate Microservices Architecture installations against a source SQL Server database, the Oracle GoldenGate CDC Cleanup job has been replaced with a new Purge Change Data task. A new task is required for Extract to run.
You can create the task from the Administration Service, Configuration, Tasks tab. Create the task after enabling supplemental logging for the tables in a source database and prior to starting the Extract.

Oracle GoldenGate Replicat for SQL Server no longer supports OLE DB and Replicat will only use ODBC for its connectivity and to deliver DML operations, and if connecting with the Microsoft ODBC Driver 17 for SQL Server, version 17.8.1 or newer, Replicat will set the connection as the Replication User automatically, which replaces the need to use the `DBOPTIONS USEREPLICATIONUSER` parameter.

Release 21c (21.3.0) - August 2021

DB2 for i
For DB2 for i, the `ADD HEARTBEATTABLE` command has been enhanced to handle upgrade or misconfiguration of heartbeat table functionality. Now, you can run the `ADD HEARTBEATTABLE` command again to repair the functionality of an existing heartbeat table setup without deleting the existing heartbeat data.

SQL Server
Extract for SQL Server no longer abends when DDL changes are made to the underlying user tables. In prior releases, if the Extract encountered a mismatch between the user table metadata and the CDC Capture Change Tracking table metadata, due to columns added after TRANDATA was enabled for the table, the Extract would abend. From Oracle GoldenGate 21c (21.3.0) onward, Extract will not abend when table changes are made to the user table. It will continue to process the data as it exists in the CDC Capture Change Tracking table.
This allows the Extract to continue to run when DDL changes occur, but you should use governance to properly handle DDL changes so that Extract can pick up the data for changed columns.
For more information, see the Requirements for Table Level DDL Changes in the SQL Server chapter of the *Using Oracle GoldenGate for Heterogeneous Databases* guide.

Release 21c (21.1.0) - Initial Release May 2021

Oracle GoldenGate binaries are no longer installed on a shared drive
Oracle always recommended installing the Oracle GoldenGate binaries (`OGG_HOME`) on a local file system as a best practice. From this release onward, it is a requirement. The binaries must be installed on local drives. For more information refer to MOS note DOC ID 2689857.1.

Simplified heartbeat administration for Oracle Databases
Heartbeat table administration operations are only be done in the schema of the `DBLOGIN` user. `GGSCHEMA` is now only required for CDB root Extracts.

Logging of full metadata enabled when upgrading from Oracle GoldenGate 19c to 21c and the database is MySQL 8.0
This change is applicable when upgrading from Oracle GoldenGate 19c to 21c with MySQL 8.0.

However, for upgrading Oracle GoldenGate 19c to 21c with MySQL 5.7 no change is required.

Table containing IDENTITY columns with default sequence needs to be created with primary key
For Oracle database, table with identity column needs to be created with primary key, otherwise the Replicat will abend with errors similar to the following:
```
2020-02-07 08:17:53 ERROR OGG-00516 Fatal error executing DDLreplication: error
[Error code [1430], ORA-01430: column being added already exists intable]
```

One shiphome supporting all Oracle Database versions
Instant Client 21c is bundled with Oracle GoldenGate. When launching the Oracle GoldenGate executables with Oracle data layer dependency, it is mandatory to go through the bundled instant client connectivity, libraries, and tools..

Microservices Architecture does not support the management of individual threads for coordinated Replicat
Microservices Architecture does not support the management of individual threads for coordinated Replicat. If you are using individual threads in Classic Architecture and are migrating to MA, you may need to remove those threads before migrations.

A new Extract needs to be created when the DB timezone is changed
You need to create new Extract if DB timezone is changed, especially in case of Oracle Cloud deployment.

Deprecated and Desupported Features and Parameters

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

- Release 21c (21.12.0.0.0) - December 2023
- Release 21c (21.4.0.0.0) - October 2021
- Release 21c (21.3.0) - August 2021
- Release 21c (21.1.0) - Initial Release May 2021

Release 21c (21.12.0.0.0) - December 2023

NonStop SQL/MX
Oracle GoldenGate will not support NonStop SQL/MX after Oracle GoldenGate release 21.12 and later.

Release 21c (21.4.0.0.0) - October 2021

USEODBC and USEREPLICATIONUSER options for the DBOPTIONS command have been deprecated for Oracle GoldenGate Replicat for SQL Server
The DBOPTIONS options of USEODBC and USEREPLICATIONUSER have been deprecated for Replicat. Replicat can continue to run with these parameters but they will be ignored and will be desupported in future. Functionality for USEREPLICATIONUSER is now automatic when using the Microsoft ODBC Driver 17 for SQL Server, version 17.8.1 or higher. Functionality for USEODBC is now the default and Replicat connections always use ODBC.

Release 21c (21.3.0) - August 2021

Oracle GoldenGate Classic Architecture is deprecated
Oracle GoldenGate Classic Architecture for Oracle database and heterogeneous databases DB2 z/OS, MySQL, SQL Server, and PostgreSQL is deprecated and may be desupported and unavailable in a future release. Oracle recommends using the Oracle GoldenGate Microservices Architecture.

CUSEREXIT for Extract is deprecated and will be desupported in future
The CUSEREXIT for Extract is deprecated and will be desupported in future releases.

Release 21c (21.1.0) - Initial Release May 2021

Oracle Database: Oracle GoldenGate Classic Extract is desupported
Oracle GoldenGate does not support classic Extract.

Oracle Database: Oracle GoldenGate Classic Architecture is deprecated
Oracle GoldenGate Classic Architecture for Oracle Database is deprecated and may be desupported and unavailable in a future release. Oracle recommends using the Oracle GoldenGate Microservices Architecture.

UDT protocol between Distribution Server and Receiver Server has been desupported
In Oracle GoldenGate Microservices Architecture 21c (21.1.0), the UDT protocol that the Distribution Server uses for sending trails files has been desupported.
Use the wss, ws or ogg protocol instead of UDT because this feature will be desupported in the next major Oracle GoldenGate release.

RMTTASK desupport and deprecation
The RMTTASK parameter is desupported for Oracle GoldenGate Microservices Architecture. The parameter has been deprecated for Classic Architecture and will be desupported for Classsic Architecture in future releases.

NO_OBJECTDEFS and NO_TRAILDEFS parameters are desupported
The NO_OBJECTDEFS and NO_TRAILDEFS parameters are desupported.

OPTIMIZE_PROGRESS_TABLE parameter is desupported
The parameter OPTIMIZE_PROGRESS_TABLE has been desupported for Oracle GoldenGate 21c and higher releases.

Oracle GoldenGate replication support for Oracle Sharding is deprecated

Oracle GoldenGate replication support for Oracle Sharding High Availability is deprecated with Oracle Database 21c and may be desupported in the future release. For Oracle Sharding in Database 21c, the Oracle GoldenGate support is limited to one pluggable database in a multitenant database.

What's New with Oracle GoldenGate Documentation

New guides, updates to guides, and other changes that are relevant with this release are covered in this section.

With the Oracle GoldenGate 21c (21.3) release onward, the names of all the Microservices are changed to Administration Service, Distribution Service, Receiver Services, Performance Monitoring Service.

Refer to the following table for a list of guides with some critical updates in content on new features and updates from previous releases.

> **Note:**
>
> There are various other updates in documentation, which you may notice as you use specific features.

Release Date	Publication	Updates
August 2021	*Installing Oracle GoldenGate*	Installation steps for non-Oracle databases available with this release have been added.
August 2021	*Step by Step Data Replication Using Oracle GoldenGate Microservices*	This guide was introduced with the Oracle GoldenGate 21c (21.1.0) release. In this release, some of the critical updates that you may want to learn about are: • How to Add Certificates for a Secure Deployment • Enabling Authorization Profile for External Identity Provider
August 2021	*Using Oracle GoldenGate for Heterogeneous Databases*	Configurations, supported types, and other aspects of heterogeneous databases that are available with this release of Oracle GoldenGate have been included in this guide.

Release Date	Publication	Updates
August 2021	*Command Line Interface Reference for Oracle GoldenGate*	This guide describes many new and updated commands available with this release. Some of the new commands that you may want to see are: • ADD/ALTER/INFO/DELETE/INFO/VALIDATE AUTHORIZATIONPROFILE • Updates to the encryption profile commands such as ADD/ALTER/DELETE ENCRYPTIONPROFILE.
August 2021	*Reference for Oracle GoldenGate*	The following parameters are no longer included in the guide as they are applicable only with classic Extract and classic Extract has been desupported from the Oracle GoldenGate 21c (21.1.0) release: • `INFO MARKER` • `MARKERTABLE` • `PURGEMARKERHISTORY` • `GET_MARKER_INFO`
November 2021	*Release Notes for Oracle GoldenGate*	The syntax in the "**Automatic Extract of tables with supplemental logging is supported**" feature is corrected. See the updated content in Release 21c (21.1.0): Initial Release May 2021

3

Known Issues and Workarounds

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

Release 21c (21.13.0.0.0) - January 2024

Bug 36104153: Aurora PostgreSQL - Error in Amazon Aurora PostgreSQL WAL causes Extract to generate the error "Sequence ID Out Of Order"

In some conditions where large transactions are committed on a source Aurora PostgreSQL database, a sender error in the Amazon Aurora PostgreSQL Write-Ahead-Log (WAL) causes the Extract to disconnect and upon restarting, generates a `Sequence ID Out Of Order` error in the Extract. The error in the Aurora PostgreSQL logs which causes the problem is a known issue in Aurora PostgreSQL.

Workaround

Set the AWS Aurora parameter group setting `rds.logical_wal_cache` to `0` to turn-off the write-through cache and then restart the writer instance. With the non-availability of the write-through cache, Aurora PostgreSQL uses the Aurora storage layer for the implementation of the native PostgreSQL logical replication process. It writes the WAL data to storage and then reads the data back from storage to decode and send to its targets (subscribers).

However, this workaround can result in some performance issue during logical replication for Aurora PostgreSQL database clusters but it does not cause any data loss from existing logical replication.

For more details, see:https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/AuroraPostgreSQL.Replication.Logical.html

Release 21c (21.10.0.0.1) - May 2023

Bug 35384626: MySQL - Extract keeps loading after creating it in the WEBUI

When creating an Extract or Replicat, the creation indicator continues to spin and appears to not complete Extract or Replicat creation process.

Workaround

Refresh the browser to update the status of the Extract or Replicat creation process.

Bug 35401376: MySQL - Plugin based DDL replication not supported in 21.10

For MySQL, plugin based DDL replication is not supported in Oracle GoldenGate release 21.10. In addition, for Oracle GoldenGate versions 21.1 to 21.9 that are upgraded to version 21.10 and new installations, plugin based DDL replication will not work.

Workaround

For MySQL 8.0, use log based DDL replication for new Oracle GoldenGate installations and for Oracle GoldenGate versions 21.1 to 21.9 that are upgraded to Oracle GoldenGate version 21.10.

For MySQL 5.7, no workaround is available for new Oracle GoldenGate installations and for Oracle GoldenGate versions 21.1 to 21.9 that are upgraded to Oracle GoldenGate version 21.10.

Bug 35188073: SingleStoreDB - Source NUMBER columns to MySQL and Singlestore BIT columns are not working correctly

For Oracle to MySQL and Oracle to SingleStoreDB, mapping of Oracle `Number` type to MySQL and SingleStoreDB `Bit` type is not working correctly, and causes Replicat to abend.

Workaround

None.

Release 21c (21.10.0.0.0) - April 2023

For Bug 35384626: Microsoft SQL Server - Extract keeps loading after creating it in the WEBUI

When creating an Extract or Replicat, the creation indicator continues to spin and appears to not complete the Extract or Replicat creation process.

Workaround

Refresh the browser to update the status of the Extract or Replicat creation process.

Release 21c (21.7.0) - August 2022

Bug 34497845: MySQL - In Oracle GoldenGate MA with Group Replication Cluster, Administration Service is failing to start with specified CSN with error, "OGG-12111 JSON element '/' does not match any schemas"

In MA with group replication cluster configuration, the Administration Service fails to start with specified CSN and generates the error, `OGG-12111 JSON element '/' does not match any schemas` .

Workaround

None.

Bug 34497984: MySQL - In Oracle GoldenGate 21c MA (21.7.0), Extract cannot be altered to begin at the specified timestamp

In MA mode, there is an issue with the Extract not being altered to restart at a specified timestamp and fails with the error `Invalid BEGIN datetime entry`.

Workaround

None.

Release 21c (21.7.0) - July 2022

Bug 33772499: Oracle - Integrated Extract latency spikes when enabling TRANLOGOPTIONS PERFORMANCEPROFILE HIGH with low to medium intensity workload

When `TRANLOGOPTIONS PERFORMANCEPROFILE HIGH` parameter is enabled for low to medium intensity workload, it spikes in integrated Extract latency up to several seconds. This is because the `PERFORMANCEPROFILE HIGH` setting increases the Extract's read buffer size to 8MB and the rule to flush the extract read buffer is either when the buffer is full or there is no incoming records for 0.2 seconds. Therefore, any continuous workload with Extract ingestion rate below 8MB will result in integrated Extract latency to exceed 1 second.

Workaround

Ensure that if the Extract ingestion rates (or redo generation rates if 100% of redo is being captured) are below specific value, such as ~15 MB/sec to get ~0.5 second extract latency, do not use `PERFORMANCEPROFILE HIGH` parameter. If sub-second latency is required, it is recommended to lower the buffer size accordingly. For example, set the buffer size to one-third of the redo generation rate in MB/sec to get ~0.3 second maximum Extract latency.

Bug 34654016: MySQL - Order of primary keys in log-based DDL replication

For the log based DDL replication in MySQL release 8.0 or MariaDB release 10.5 and later for Oracle GoldenGate release 21.7.0 and previous releases, the primary keys need to be added in the table in the same order in which columns are defined while creating the table. If the primary keys are added in a different order than the order in which the columns were defined at the time of creating the table, then out of the order primary key is not part of the primary keys.

Workaround

None

Release 21c (21.5.0.0.2) - February 2022

Bug 32853695: SQL Server – ADD TRANDATA fails to enable change data capture for Azure SQL Database Managed Instance

When adding TRANDATA to a table in an Azure SQL Database Managed Instance database, you may encounter the following error:

```
ERROR OGG-05268  Failed to enable change data capture for table
'dbame.table' in the database
'dbname'. SQL error: 50000: [Microsoft][ODBC Driver 17 for SQL Server]
[SQL Server]Could not find stored procedure
'msdb.dbo.rds_cdc_enable_db'.
```

> **✎ Note:**
>
> This issue may occur in any of the bundle patches of Oracle GoldenGate 21c releases including Oracle GoldenGate for Marketplace 21c (21.1.0), Oracle GoldenGate 21c (21.3.0) and higher versions.

Workaround

Manually run `EXEC sys.sp_cdc_enable_db` against the database and rerun `ADD TRANDATA`.

Release 21c (21.4.0.0.0) - October 2021

Bug 33478888: DB2 for i - DELETE TRANDATA command failing with unknown error

The `DELETE TRANDATA` command is failing with an unknown error.

Workaround

Use the native CL command on the IBM i system, `ENDJRNPF`.

Bug 33523611: SQL Server - ADD HEARTBEATTABLE errors on heartbeat creation with TRIM function error

There is an issue with creating the heartbeat table for SQL Server versions 2016 and earlier, and several objects do not get created, making the heartbeat feature unusable.

Workaround

None.

Release 21c (21.3.0) — October 2021

Bug 33407415: PostgreSQL - Extract writes incorrect record in trail with Default logging enabled at the table level

Tables that are configured to be captured by Extract where the FULL Replica Identity logging is *not* set, can cause downstream Replicat problems when encountering Update and Delete operations, causing the Replicat to abend.

Workaround

Run the `ADD TRANDATA` command with the `ALLCOLS` option for any table configured to be captured by Extract, regardless of whether the table has a Primary Key or not. This ensures that the table has FULL Replica Identity logging.

Release 21c (21.3.0) — August 2021

Bug 33107581: Generic - Oracle GoldenGate distribution path abended while using client certificate with a new Certificate Authority (CA)

When using a client certificate for authentication/authorization in a distribution path, the certificate identity needs to be registered as an authorized user in the target deployment and the Certificate Authority (CA) needs to be added to the target deployment's trust store. In some cases, the target deployment may not pick up the newly added CA from its trust store, which results in the distribution path abending with SSL errors.

Workaround

Restart the target deployment whenever you add a new Certificate Authority (CA) to its trust store.

Bug 31717411: Oracle - Integrated Replicat cannot unregister from database if deleted without a DBLOGIN connection

Integrated Replicat is not allowed to be unregistered with the database if the Replicat was deleted without having a connection to the database. The Replicat will be deleted from Oracle GoldenGate but cannot be unregistered from the database.

Workaround

Ensure that you establish a connection to the database prior to deleting the Replicat.

Bug 33193847: Oracle - Non-integrated Replicat fails when applying large JSON doc when underlying storage is BLOB column

Non-integrated Replicat runs into an error (ORA-4083) when applying large JSON documents to a target table where the underlying storage is a BLOB column with the `IS_JSON` check constraint.

Workaround

Use the `DBOPTIONS NOSKIPTEMPLOBS` Replicat parameter.

Bug 31660023: Heterogeneous Databases - The Administration Service web interface does not persist the checkpoint table information

In the Administration Service web interface, the checkpoint table doesn't appear on the Credentials page after you navigate to a different page and return back to the Credentials page. A new user may not know whether a checkpoint table exists or not. Also, if a user provides the same table name as earlier, an error is displayed stating that the checkpoint table already exists. This leads to confusion and the user will need to use the command line to check whether the checkpoint table exists or not.

Workaround

None.

Bug 32995974 - MySQL: Microservices connectivity supports one set of SSL certificates per deployment

Only a single set of SSL certificates per MySQL Microservices deployment is allowed. This limitation is because there is only one set of environment variables (`OGG_MYSQL_OPT_SSL_CA`, `OGG_MYSQL_OPT_SSL_CERT`, `OGG_MYSQL_OPT_SSL_KEY`) to specify the certificates.

Workaround

None.

Bug 32843519: PostgreSQL MA: Support for special characters in PostgreSQL identifier names

Support for all possible and valid characters that can be part of PostgreSQL identifier names is not available.

Workaround

None.

Bug 32396863: PostgreSQL - Bidirectional scenario fails when the schema is specified with space "Sch EBIDJTB2"

Filter table is not filtering the records properly when schema is used with space.

Workaround

Remove the space from the schema.

Bug 33123982: PostgreSQL - Alter Extract EOF option is missing in Oracle GoldenGate Microservices web interface

In the Administration Service, Alter Extract shows only three options **Now**, **Position in Log**, and **Custom Time**. However, the **EOF** option is missing.

Workaround

None.

Bug 32940435: PostgreSQL - Replicat abends with invalid byte sequence when using domain type integer

Oracle GoldenGate for PostgreSQL does not support domain type replication.

Workaround

None.

Bug 33066696: SQL Server - UPGRADE HEARTBEATTABLE does not reset TRANDATA

The `UPGRADE HEARTBEATTABLE` command works in SQL Server and does modify the tables, but for existing heartbeat tables, `TRANDATA` needs to be deleted from the `gg_heartbeat` and `gg_heartbeat_seed` tables and then re-added after the upgrade process.

At present, if the heartbeat was previously enabled, the CDC Capture instance of the `gg_heartbeat` and `gg_heartbeat_seed` tables is of the old structure, even though the base tables are upgraded to the new structure.

Workaround

You need to run `DELETE TRANDATA` for the `gg_heartbeat` and `gg_heartbeat_seed` tables, then run the `UPGRADE HEARTBEATTABLE` command followed by `ADD TRANDATA` for the `gg_heartbeat` and `gg_heartbeat_seed` tables.

Bug 33225788: SQL Server - BATCHSQL suspended with parallel Replicat and heartbeat table implemented

Parallel Replicat reports a warning that `BATCHSQL` is suspended for every heartbeat record. Under heavy workloads, this may degrade Replicat performance as it switches out of batch mode.

Workaround

Do not enable `BATCHSQL` in the Replicat when an Oracle GoldenGate heartbeat table is also configured.

Release 21c (21.1.0) — Initial Release May 2021

Bug 31677892: MySQL - Timestamp values differ in source and target when environment variable TZ differs from MySQL database timezone settings

When the time zone of the Oracle GoldenGate installation server does not match the time zone of the source database server, then TIMESTAMP data sent to the target database will differ from that of the source database.

For Microservices installations, regardless if the time zones are the same, the Extract will resolve the time zone to UTC.

Workaround

Set the TZ variable value to match the timezone value set in MySQL database.

The Extract process has been enhanced to report the current timezone in the session and also display the a message to ensure that the environment variable TZ is set to match the database timezone as timestamp in MySQL depends upon correct setting of TZ.

Determine the source database time zone by running the following query:

```
select @@system_time_zone
```

This will return a time zone value, such as PDT.

For Classic Architecture, create a session variable for Oracle GoldenGate, called TZ, and set it equal to the time zone value of the database.

For MA, create a new variable in the deployment that contains the source Extract, called TZ and set it to the value of the source database time zone, then stop any running Oracle GoldenGate processes and restart the Administration Server, then start the Extracts and Replicats.

Bug 31825720: MySQL - In MA, SQLEXEC with parameterized input fails when client character set is not compatible with database character set

In MA, when SQLEXEC is configured with parametrized input in the Extract parameter file, the query reports no records fetched for the query supplied even though the database contains matching records. This is due to the client character set not matching with the database character set causing the query input parameter to be replaced with symbols and so record match fails.

Workaround

Set the client character set to match with database charset in GLOBALS file.

Bug 32595302: MySQL - Extract abend with error "ERROR OGG-00768 The data type (245) is not supported in SQLEXEC functionality"

Columns of JSON data type cannot be used in a SQLEXEC function.

Workaround

None.

Bug 32795888: SQL Server - ADD HEARTBEATTABLE functionality for Azure SQL Database Managed Instance only supports a target configuration

The `ADD HEARTBEATTABLE` functionality for an Azure SQL Database Managed Instance only supports a target configuration and cannot be used as a source for heartbeat functionality. `ALTER HEARTBEATTABLE NOTARGETONLY` is not supported as well.

Workaround

None.

Bug 32817253: SQL Server - Extract abends on Azure Managed Instance SQL Server Agent Check with Access is Denied

An Extract configured with a user that has sysadmin rights running against an Azure SQL Database Managed Instance will Abend with an `Access is Denied` error.

Workaround

Remove the `sysadmin` rights for the Extract user and only set the account to the `db_owner` role within the source database.

Bug 32203789: Checkprm options not supported from Admin Client

When running shell commands from the Admin Client for a Microservices installation, command options after two dashes, `--`, are ignored.

Workaround

Escape the `--` option with a backslash `\--`. For example:

```
SHELL ./checkprm \--COMMAND EXTRACT
```

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.

- Release 21c (21.14.0.0.0) - April 2024
- Release 21c (21.13.0.0.3) - March 2024
- Release 21c (21.13.0.0.1) - February 2024
- Release 21c (21.13.0.0.0) - January 2024
- Release 21c (21.12.0.0.4) - November 2023
- Release 21c (21.12.0.0.3) - November 2023
- Release 21c (21.12.0.0.2) - November 2023
- Release 21c (21.12.0.0.1) - October 2023
- Release 21c (21.12.0.0.0) - October 2023
- Release 21c (21.11.0.0.3) - August 2023
- Release 21c (21.11.0.0.1) - July 2023
- Release 21c (21.11.0.0.0) - July 2023
- Release 21c (21.10.0.0.3) - May 2023
- Release 21c (21.10.0.0.1) - May 2023
- Release 21c (21.10.0.0.0) - April 2023
- Release 21c (21.9.0.0.3) - March 2023
- Release 21c (21.9.0.0.2) - February 2023
- Release 21c (21.9.0.0.1) - January 2023
- Release 21c (21.9.0.0.0) - January 2023
- Release 21c (21.8.0.0.3) - November 2022
- Release 21c (21.8.0.0.2) - November 2022
- Release 21c (21.8.0.0.1) - October 2022
- Release 21c (21.8.0.0.0) - October 2022
- Release 21c (21.7.0) - August 2022
- Release 21c (21.7.0) - July 2022
- Release 21c (21.6.0) - July 2022
- Release 21c (21.6.0) - June 2022
- Release 21c (21.6.0) - April 2022

Release 21c (21.14.0.0.0) - April 2024

Bug 36250403: Amazon Aurora PostgreSQL - Oracle GoldenGate queries that use 'SHOW/SET' in upper case reports an error that superuser is required

Fixed an issue with the Precise Instantiation process for PostgreSQL where Oracle GoldenGate queries written in upper case caused an error indicating that a superuser or replication role user is required.

Bug 36405584: Big Data - Replicat handler log rotation feature

Fixed an issue with Web UI to quickly render the Replicat's log file and display it.

Bug 35514782: Db2 for i - Extract is fetching from sequence 1 when altering the Extract with sequence number only

Fixed an issue with the alter Extract process that fetches the records from LSN value 1 and ignores the specified sequence number.

Bug 36059350: Db2 for i - High CPU usage for OGGHB

Fixed an issue with the heartbeat prestart job that resulted in high CPU usage.

Bug 36221982: Db2 for i - Extract abended due to journal sequence number is out of order, without JSN being reset

Fixed an issue with checkpoint value not updated correctly for auto-commit records, causing the Extract to abend without JSN being reset.

Bug 35688767: Db2 z/OS - IBM adds support for EDITPROCS when replicating data in Db2 v13, add capability to Oracle GoldenGate

Added support for calling the `EDITPROC` process to decrypt, or otherwise modify columns that were adjusted by this process when data was inserted, deleted, or updated, and is only available for Db2 versions 13.1 or higher.

Bug 35827335: Db2 z/OS - Function OGGREADB fails with error S0C4 on two different Db2 subsystems on same LPAR

Fixed an issue with the `READ` function being abended with an S0C4 error when the current Workload Manager (WLM) is refreshed and the workload is moved to a different WLM.

Bug 36138756: Db2 z/OS - Extract crashes after a "refresh WLM" on mainframe

Fixed an issue with the Workload Manager (WLM) that causes the Extract to crash when WLM is refreshed.

Bug 35665808: Exadata Cloud at Customer (Gen2) - Size of checkpoint tables dramatically increase during 4 and half hours

Fixed an issue with parallel Replicat that was causing the size of the checkpoint table to increase tremendously.

Bug 35978782: Exadata on Premise - Initial load Extract abended with error "OGG-00663 OCI Error ORA-01406: fetched column value was truncated"

Fixed an issue with Extract abending with error, `OGG-00663 OCI Error ORA-01406: fetched column value was truncated` for `nvarchar2` data type.

Bug 36229965: Exadata on Premise - Integrated Extract captured Replicat transactions since replication marker was missing

Fixed an issue of missing tag with the `RANGE` function that was causing integrated Extract to not filter Replicat transactions.

Bug 34187297: Google GCP PostgreSQL - Support AlloyDB for PostgreSQL capture and delivery

Added support for AlloyDB for capture and delivery.

Bug 36154619: Microsoft SQL Server - Deletion of the initial load Extract fails with DBLOGIN required

Fixed the issue of `DBLOGIN` command required to delete the initial load Extract.

Bug 35741391: MySQL: HeatWave - Extract abends with error "OGG-00768 Failed to validate plugins ddl_rewriter and ddl_metadata for non-admin user"

Fixed an issue with HeatWave for AWS Extract that abends with the error, `OGG-00768 Failed to validate plugins ddl_rewriter and ddl_metadata for non-admin user`, when configured with the credentials of a non-administrator user.

Bug 36156723: MySQL - Extract abends with error "ERROR OGG-02092 Unexpected condition in function indexOutOfRangeError" when CREATE TABLE IF NOT EXISTS DDL statement is issued

Fixed an issue with Extract abending when DDL capture is enabled and the `CREATE TABLE IF NOT EXISTS` DDL statement is issued for an existing table.

Bug 36202275: MySQL - Binary metadata subtype is marked incorrectly in the trail when DDL is enabled

Fixed an issue with Extract not setting the correct sub-data types for binary columns when DDL `INCLUDE` is used.

Bug 36414499: MySQL - Incorrect GTID set in extended checkpoint causes data loss on restarting the Extract

Fixed an issue with the GTID set in the extended checkpoint file that caused the Extract to not capture data on restart.

Bug 34711188: Oracle - Integrated Replicat reports a warning "OGG-02544 Unhandled error ORA-26786 & ORA-01403 For CLOB Data With DBRUs 19.14 And Up"

Fixed an issue with the `WHERE` clause that was causing the integrated Replicat to display the warning, `OGG-02544 Unhandled error ORA-26786 & ORA-01403 For CLOB Data With DBRUs 19.14 And Up`.

Bug 34854743: Oracle - Replicat abends with error when source with nonstop table $PS321.RJAWRK.IRAYRZIP

Fixed an issue with Replicat abending on skipping the catalog name or the first part of the three-part NSK table name.

Bug 35273507: Oracle - Replicat abends with error "OGG-01296 error mapping with PR integrated with widetable + OLTP compession"

Fixed an issue with Replicat abending with error, `OGG-01296 error mapping with PR integrated with widetable + OLTP compession`.

Bug 35711285: Oracle - Purge trail task gives error "No files found for specified trails" for trails which are present in deployment

Fixed an issue with the purge trail task skipping orphan trail files not associated with any Oracle GoldenGate processes.

Bug 36051773: Oracle - Parallel integrated Replicat getting abended with false message "OGG-01172 Discard file exceeded max bytes (50000000)"

Fixed an issue with discard file exceeding its maximum size and causing the Replicat to abend with the error, `OGG-01172 Discard file exceeded max bytes (50000000)`.

Bug 36071790: Oracle - Parallel integrated Replicat getting abended repeatedly with OCI error "ORA-00060: deadlock detected while waiting for resource (status = 60)"

Fixed a deadlock issue with parallel Replicat with unified progress table, if two appliers process transactions in fallback, at the same time.

Bug 36181629: Oracle - Oracle GoldenGate 21.13 adminclient cannot connect with OGG main service manager or adminsrvr

Fixed an issue of Oracle GoldenGate version 21.13 AdminClient not able to connect with the Service Manager or the Admin Server.

Bug 36183947: Oracle - Initial load Extract fails during start with error "OCI-22053: overflow error"

Fixed an issue of initial load Extract failing if the object IDs exceed 2,147,483,647.

Bug 36205348: Oracle - Initial load Extract hung on tables with more than 32k partitions

Fixed a performance issue with initial load Extract when table partitions exceed 32000.

Bug 30905606: PostgreSQL - Support capture from base partition table

Added support for capture from base partitioned tables without having to reference individual partitions.

This is a default behavior change from versions of Oracle GoldenGate prior to 21.14, see PostgreSQL - Capture and delivery support for base partitioned tables for more information.

Bug 33119456: PostgreSQL - The TRANDATA command does not work if schema has wildcard

Added support for wildcard characters in the schema name to be used with the `TRANDATA` command.

Bug 33499616: PostgreSQL - Extract abends on insert for table with serial column with error OGG-30069

Updated the error message when the column metadata could not be retrieved from the PostgreSQL database due to Oracle GoldenGate Extract user's insufficient privileges on the table.

Bug 35856371: PostgreSQL - Support for ARRAY of enum type

Added support for columns of `ARRAY` type of `enums`, `real`, `double precision`, `numeric`, `timestamp`, `timestamptz`, `time`, `timetz`, `date`, `interval`, `boolean`, `bit`, `varbit`, `money`, `tsquery` types, for capture.

Bug 34850906: Generic - Distribution path creation does not honor the source sequence number (SSN) to begin with

Fixed an issue with the distribution path and target-initiated path creation process in Web UI when the SSN and RBA offset values are changed.

Bug 35023596: Generic - Replicat abends with error "OGG-02774 Overflow detected when mapping 16-19 digits long numbers"

Fixed an issue with Replicat abending when using the `COLMAP()` function to map 16-19 digit long numbers.

Bug 35974186: Generic - Replicat to abend with more meaningful message if key column is missing

Added a warning message about the missing key column before Replicat abends.

Bug 36038243: Generic - Administration Service on Windows crashes with error "OGG-00542 Unexpected threading library failure -Error code 0"

Fixed an issue with Admin Service when running on Microsoft Windows, that was causing it to crash with the error, `OGG-00542 Unexpected threading library failure -Error code 0`.

Bug 36130968: Generic - Admin server dumping core

Fixed an issue with an active monitor task of the Admin Server being deleted, causing the Admin Server to generate a core dump error.

Bug 36248094: Generic - The REPLACEBADNUM rule is not honored when there is a bad number mapping

Added an additional check for fixed precision columns of source integer digits to correctly map and display the integer digits.

Bug 36319657: Generic - WEBUI - Purge task to support a global purge for all trails (including any new trails created in new sub-directories)

Added support in the Web UI for the Purge task to support a global purge of all trails, including any new trail files created in new sub-directories.

Bug 36411284: Generic - Complete the output trail file if the source is initial load trail file and is completed

Fixed an issue with distribution path/pump not processing the input initial load trail files to complete the output trail file, causing parallel Replicat to wait for completion.

Release 21c (21.13.0.0.3) - March 2024

Bug 36227758 : Oracle - Modifying auto restart options of recvpath/distpath not working

Fixed an issue with `AUTORESTART` options of recvpath/distpath not working on being modified.

Bug 36303041: Oracle - Performance metrics service memory leak is reported in IAM deployments

Fixed an issue of memory leak in performance metrics service in IAM deployments.

Bug 36307633: Oracle - Getting false "down" alerts for OGG targets from OEM/OGG plugin

Fixed an issue with performance metrics service that was triggering false down alerts from OEM/Oracle GoldenGate plugin.

Bug 36308199: Oracle - IAM deployment creation failing with error OGG-25643 "Could not register or unregister redirect URIs and post-logout redirect URIs in the IDP application - Label 21.13.0.0.0_240108"

Fixed an issue with `redirectURI` and `postLogoutRedirectURI` generating an error on failing to self-register when enabling or validating an authorization profile.

Bug 36327419: Oracle - Ping LCRs in Extract is occasionally responsible for a huge lag

Fixed an issue with Extract reporting excessive lag if it processes an erroneous ping LCR.

Release 21c (21.13.0.0.1) - February 2024

Bug 36192293: DB2 z/OS - DSNLess support with DataDirect driver

Fixed the issue with DSNLess support not working correctly with DataDirect driver.

Bug 35491874: Exadata on Premise - DDL statements preceded by comments generate extract core dump

Fixed an issue with Extract abending when processing DDL statements that are preceded by comments.

Bug 35767560: Exadata on Premise - Extract abends with error "OGG-06615 Oracle redo compatible version 19.20.0 is not supported"

Fixed the compatibility version calculations that were causing the integrated Extract to abend with error, `OGG-06615 Oracle redo compatible version 19.20.0 is not supported`.

Bug 35885601: MariaDB - Certify MariaDB 10.11 for remote/local capture and delivery

Added support for MariaDB release 10.11 for both remote/local capture and delivery.

Bug 34973701: Oracle - REST API shows incorrect lag value for parallel Replicat

Fixed an issue with parallel Replicat displaying higher and incorrect lag value.

Bug 36170225: Oracle - Validate AuthorizationProfile <non-existent-profile> kicks user out of admin client session after OGG-12029,12101

Fixed an issue with the Admin Client validation process that was not disconnecting the session when validating a non-existent authorization profile.

Bug 36185446: Oracle - Web UI backend query error "query formatting error with processName, processType"

Fixed an issue with the Web UI query that was not displaying the heartbeat history table data properly.

Bug 36159890: Generic - Using strace or pstack with receiver service process causes it to hang and distribution path abends after network timeout

Fixed an issue with using `strace` or `pstack` commands with the receiver service process that was causing the distribution path to abend after network timeout.

Bug 36172552: Generic - REST API metrics for parallel Replicat "mappedTotalTruncates" shows wrong count when truncate is performed

Fixed an issue with REST API metrics, `mappedTotalTruncates` for parallel Replicat displaying wrong value when the truncate process is performed.

Release 21c (21.13.0.0.0) - January 2024

Bug 35427338: DB2 z/OS - Extract did not capture after alter datatypes (promoted)

Fixed an issue with Extract not capturing changes after altering tables and/or columns, when using `TRANLOGOPTIONS TRACKSCHEMACHANGES` and `TRANLOGOPTIONS APIFILTER` commands.

Bug 35874800: MySQL - Replicat is unable to apply data on target when FETCHMODCOLS parameter is used on LOB column

Fixed an issue with Replicat unable to apply data on the target when `FETCHMODCOLS` parameter is used on `LOB` datatype column.

Bug 35887121: MySQL - Extract during initial load for 1GB data is not captured for LONGBLOB and LONGTEXT datatypes

Fixed an issue with Extract not being captured for `LONGBLOB` and `LONGTEXT` datatypes during the initial load process for 1GB data.

Bug 35975267: MySQL - Extract on Windows excludes DDL operations for table names with special character

Fixed an issue with Extract installed on Windows that excludes DDL operations for tables with special characters in their names.

Bug 29039470: Oracle - Replicat abends with error ORA-904 after renaming a column

Fixed an issue of Replicat abending with error, `ORA-904` after renaming a column in the table.

Bug 30587981: Oracle - Replicat abends while processing comment on column DDL

Fixed an issue of mapping different base table names on source and target databases that caused Replicat to abend while processing the `COMMENT ON COLUMN` DDL.

Bug 31845901: Oracle - OGG v19.x- ulg.sql shows "all column logging" in dba_log_groups

Fixed an issue with `ulg.sql` file creating `ALL COLUMN LOGGING` log group on being re-run.

Bug 33638397: Oracle - Display exact Replicat model used in report file

Fixed an issue with the Extract or Replicat report file not listing the exact Extract or Replicat type.

Bug 33770537: Oracle - SCHEMATRANDATA command generates an error "ORA-06564 adding SCHEMATRANDATA with PREPARECSN NONE on lower case table name"

Fixed an issue of schemas that contain table names in lowercase with double quotation marks (""), generating an error with the `ADD SCHEMATRANDATA` command used with `PREPARECSN` parameter with value `NONE`.

Bug 34804430: Oracle - Replicat is not able to process datatype SYS.ANYDATA with an opaque value

Fixed an issue with Replicat not processing the `SYS.ANYDATA` datatype with an `OPAQUE` value.

Bug 34997772: Oracle - Replicat incorrectly formats values when the NSK originated trails has table metadata and SYSKEY column

Fixed an issue with Replicat incorrectly formatting numeric data when replicating the trail files with table metadata and `SYSKEY` columns, from HP NonStop to Oracle.

Bug 35022667: Oracle - The HealthCheck Report Tool tab displays the error "topo_rep_stats-ORA-06550: line 1, column 142:PLS-00201: identifier 'DBMS_STREAMS_ADVISOR_ADM.ANALYZE_CURRENT_PERFORMANCE' must be declared "

Fixed an issue of using the incorrect procedure `dbms_streams_advisor_adm.ANALYZE_CURRENT_PERFORMANCE` instead of procedure `UTL_RPA_ADM.ANALYZE_CURRENT_PERFORMANCE` for Oracle GoldenGate version 19 and higher.

Bug 35128813: Oracle - STATS command of Extract and Replicat not fully shown post STATS ER DDLSONLY command

Fixed an issue with the `STATS ER DDLSONLY` command that was causing partial or no display of the `STATS` command's output for Extract and Replicat.

Bug 35195530: Oracle - Integrated Replicat abends with error "ORA-01843: not a valid month for 1899-12-31 or 1899-12-30 or 1899-12-29 date data"

Fixed an issue with the source database timezone and session timezone values that was causing integrated Replicat to abend with an error, `ORA-01843: not a valid month for 1899-12-31 or 1899-12-30 or 1899-12-29 date data`.

Bug 35505014: Oracle - Fix of bug 35019370 does not fully address the issue with existing certificate

Fixed an issue with certificate usernames containing Ampersand (&), not being displayed.

Bug 35547445: Oracle - Divergence observed with procedural Replication

Added support for `EDITION` for procedural Replication in Oracle GoldenGate.

Bug 35560594: Oracle - Parallel Replicat repeatedly abends with error "OGG-00519 Fatal error executing DDL replication: error ...ORA-00933: unexpected token at or near"

Fixed an issue with the `ALTER TRIGGER RENAME` DDL that was causing parallel Replicat to repeatedly abend with the error, `OGG-00519 Fatal error executing DDL replication: error ...ORA-00933: unexpected token at or near`.

Bug 35601091 - Integrated Replicat abends with error "OGG-01112 Unexpected condition in processReplicatLoop at line 1578"

Fixed an issue with Extract using the `TARGET` keyword and with different structures of source and targets tables, was causing the Replicat to abend with the error, `OGG-01112 Unexpected condition in processReplicatLoop at line 1578`.

Bug 35639628: Oracle - On-premise per PDB Extract is not capturing DDL/DML when streams_pool_size is set to 0

Set the default parameters correctly for on-premise per PDB Extract.

Bug 35663518: Oracle - Integrated Extract abends with error "OGG-01112 Unexpected condition in function output_lob_cols at line 6152" with FETCH command options

Fixed an issue with integrated Extract abending when using the `FETCHOPTIONS MISSINGCOLS`, `FETCHOPTIONS SUPPRESSDUPLICATES`, and `TRANLOGOPTIONS FETCHPARTIALLOB` commands.

Bug 35666217: Oracle - DDL for public synonym is not captured when exclude all is specified in DDL clause

Fixed an issue with `CREATE PUBLIC SYNONYM` DDL not being captured if DDL`EXCLUDE ALL` command is included in the Extract parameter file.

Bug 35782788: Oracle - OGGCA is not using response file OGG_SOFTWARE_HOME for the service manager

Fixed an issue with the Oracle GoldenGate Configuration Assistant (OGGCA) not using the `OGG_SOFTWARE_HOME` response file for the Service Manager.

Bug 35938863: Oracle - TLS cipher uninstall capability for an existing deployment

Fixed an issue with OGGCA to allow selection of atleast one mandatory cipher suite.

Bug 35974811: Oracle - Parallel - Non IR abends with error "OGG-02092 Unexpected condition in function indexOutOfRangeError for online Non Blocking workload"

Fixed an issue with the `indexOutofRangeError` function that was causing parallel - non integrated Replicat to abend with the error, `OGG-02092 Unexpected condition in function indexOutOfRangeError for online Non Blocking workload`.

Bug 36067679: Oracle - The BR checkpoint is not used by Extract on forcestop

Fixed an issue with Extract not using the `BR Checkpoint` option on encountering the `FORCESTOP` option.

Bug 36110787: Oracle - The authorization profile test failure message does not identify profile & deployment names on the AuthorizationProfile page

Updated the error message displayed upon authorization profile failure to include profile and deployment names.

Bug 36144606: Oracle - Request to external ID provider (IAM) returns error code despite successful execution

Fixed an issue with the validation of the JWT signature.

Bug 35033867: Teradata - Certify Teradata VantageCloud Lake for delivery

Added support for Teradata VantageCloud Lake edition for delivery.

Bug 32785364: Generic - Ggserror log prints wrong time offset timestamp

Fixed an issue with the time offset in the `ggserr.log` not accounting for day-light saving.

Bug 34012362: Generic - Add logging for rollbacks

Added diagnostic improvements and rollback logging to trace rollbacks.

Bug 34394921: Generic - Add tracing for parser errors

Added diagnostic tracing for identifying and diagnosing parser errors.

Bug 34426814: Generic - Output of INFO EXTRACT/REPLICAT, DETAIL through GGSCI at Japanese environment is garbled

Fixed an issue with the output of the `INFO` command in the Japanese environment, which was displaying garbage output values.

Bug 34717189: Generic - Grant DDL processing for unrelated table by integrated Extract

Fixed performance issues with integrated Extract processing `GRANT DDL` for unrelated tables, when `DDL MAPPED` is enabled, on high latency Oracle GoldenGate hub topology implementation.

Bug 34749779: Generic - Replicat binary function has wrong data in Linux

Fixed an issue with the character data replicated from Tandem to Oracle using the `@BINARY()` function being padded with '0's (zeros) instead of spaces.

Bug 35514317: Generic - Improvement to generate message when partial lobs seen with INSERTALLRECORDS command

Updated the error message that gets displayed when using `INSERTALLRECORDS` command with partial lob updates.

Bug 35787151: Generic - Authorization information missing when starting DistPath if OGG_CLIENT_TLS_CAPATH is set in the server's environment

Fixed an issue with DistPath authorization process that was failing due to the setting of `OGG_CLIENT_TLS_CAPATH` and `OGG_CLIENT_TLS_CERTPATH` options.

Bug 35796458: Generic - For user exit, Extract does not return same record after setting MORE_RECS flag in PROCESS_RECORD callback

Fixed an issue with the `MORE_RECS` flag not working in the `PROCESS_RECORD` callback function.

Bug 36017123: Generic - Heartbeat history not showing in GUI when Replicat name is contained within the Extract name

Fixed an issue with Heartbeat history not displaying the instances when Replicat name is contained within the Extract name, in the GUI.

Bug 36064097: Generic - XAG fails to start GoldenGate Microservices resource with multiple distpath

Fixed an issue with XAG failing to start Oracle GoldenGate Microservices resource with multiple distpaths.

Release 21c (21.12.0.0.4) - November 2023

Bug 35662758: Db2 for i - Replace FTP for remote capture for DB2 i upon Extract initialization

Replaced FTP for remote capture on Extract initialization with ASFILE service that is part of the IBM Toolbox for Java.

Bug 35810571: Db2 for i - Add validations to check whether all necessary objects exists in GGSCHEMA upon running the DBLOGIN command

Added validations and appropriate error message for user profile authorities, and added validations to check for availability of all objects in their latest versions in GGSCHEMA library on running the `DBLOGIN` command.

Bug 35816177: PostgreSQL - Certify PostgreSQL 16 for capture and delivery

Added support for PostgreSQL version 16 for capture and delivery.

Release 21c (21.12.0.0.3) - November 2023

Bug 35651578: Db2 for z/OS - Extract's "begin now" option does not work after patching to April'23 RU

Fixed a timestamp issue that was causing the Extract to not start with the `BEGIN NOW` option on a non-data sharing Db2 system.

Bug 35718681: Db2 for z/OS - GGSCI under version 21.10 incorrectly detects the session character set

Fixed an issue with Replicat truncating some table columns when converting to UTF-8 character set.

Bug 35905291: Db2 for z/OS - More memory manager parameters are required to configure legacy JCL

Added support for additional JCL parameters to be passed to the memory monitor task.

Bug 35145292: Oracle - INFO SCHEMATRANDATA command fails in Microservices deployment with ~81k tables

Fixed an issue with the `INFO SCHEMATRANDATA` command in the Microservices deployment if the number of tables is more than 65535.

Bug 35360186: Oracle - In Oracle GoldenGate 21.9 Microservices release, only report file for replicat main process is showing in the adminsrvr report file section

Fixed an issue with Administration service, which was listing only the main process in the file section of the Adminsrvr report, for coordinated Replicat.

Release 21c (21.12.0.0.2) - November 2023

Bug 33652805: MySQL - Support for position by GTID set

Added support for positioning the Extract using the GTID set.

Bug 35838196: MySQL - Oracle GoldenGate incorrectly writes binary value which causes unreadable target data value

Fixed an issue with the MySQL Extract writing incorrect binary data to the trail.

Release 21c (21.12.0.0.1) - October 2023

Bug 35816173: Google GCP for PostgreSQL - Certify Google GCP for PostgreSQL version 15 for capture and delivery

Added support for Oracle GoldenGate capture and delivery for Google GCP for PostgreSQL version 15.

Bug 35858877: MariaDB - Replicate process failed frequently without any error or warning messages

Fixed an issue with Replicat failing frequently when tables contain large number of `bit` data type columns.

Bug 34922587: Microsoft SQL Server - Extract is deleted when logged in to the wrong database

Fixed an issue where Extract was deleted if the user logged in to a wrong database in a Classic Architecture deployment.

Bug 35651029: Microsoft SQL Server - Modify the default "keep rule for purge change data task" option to 60 minutes

Modified the value of `Keep Rule for Purge Change Data` option to 60 minutes from three days.

Bug 32408803: PostgreSQL - Oracle Goldengate for PostgreSQL Change Data Capture (CDC) support for enum datatype

Added support for `ENUM` datatype.

Bug 34336451: PostgreSQL - Set the option keepalive =1 in the connection field

Fixed the issue of idle TCP connections getting disconnected by setting the `KeepAlive` option to `1` in the `Connection` field.

Bug 35032631: PostgreSQL – Certify Azure database for PostgreSQL 14: capture and delivery

Added support for capture and delivery of Azure database for PostgreSQL version 14.

Bug 35076537: PostgreSQL - Extract getting abended with positioning sequence ID out of order error for BYTEA and TEXT data types

Fixed an issue with Extract abending with the error `OGG-04036 Positioning sequence ID is out of order` for `BYTEA` and `TEXT` data types.

Bug 35575990: PostgreSQL - Extract fails to parse the record when colon is part of the column name

Fixed an issue with Extract failing to parse records when column name includes a colon (:).

Release 21c (21.12.0.0.0) - October 2023

Bug 35524848: Oracle - Parallel Replicat is not scaling and displays OGG-10178 warning in the report

Fixed an issue with parallel Replicat when using `INSERTUPDATE` command that was causing the Replicat to issue the `OGG-10178` warning and preventing it from scaling.

Bug 35771974: Teradata - Delivery to Teradata fails with error "ODBC error: SQLSTATE 37000 native database error -3885 The column has been referenced twice."

Fixed an issue with the `HANDCOLLISIONS` command process logic that caused the missing primary key updates to generate an error on the target database.

Release 21c (21.11.0.0.3) - August 2023

The 21.11.0.0.3 release is to deliver MySQL MA build on Windows.

Release 21c (21.11.0.0.1) - July 2023

Bug 35347516: Db2 for i - DSN-Less support for all three Db2 databases

Added support for DSN-less connection for all Db2 databases.

Bug 35619119: Db2 for i - Extract is losing the first open transaction when it restarts

Fixed an issue with Extract skipping the first open transaction when restarted with an open transaction.

Bug 34900665: Db2 for z/OS - Change heartbeat purge frequency to be more conformant with other databases for Db2 for z/OS and Db2 LUW

Increased the heartbeat purge frequency for Db2 for z/OS and Db2 LUW databases to a maximum of 199 days.

Bug 35364524 - Db2 for z/OS: Replace the z/OS Admin Task Scheduler

Replaced the Admin Task Scheduler with another sub-task process, which monitors the ECSA memory when the Extract is completed.

Bug 35367684: PostgreSQL - The initial load Extract does not capture the VARCHAR column without any explicit length, defined as unique key

Fixed an issue with initial load Extract not capturing the data of the `VARCHAR` column defined without any explicit length but defined as a unique key and `DBOPTIONS MAXLOBKEYLEN` option is undefined.

Bug 35615197: PostgreSQL - The DB login happens successfully with wrong host entry in the useridalias string

Fixed an issue of the `DBLOGIN` command being successfully run with incorrect `dbServerHost` and `dbServerPort` parameter values.

Bug 35575448: Teradata - Error "OGG-02603 Checkpoint table <schema>.<chkpointtable> does not exist. Create this table with the ADD CHECKPOINTTABLE command"

Fixed an issue with the timestamp query to create the checkpoint table.

Bug 34948936: Generic - Memory leak in OGGBD replicat processes

Fixed a memory leak issue in the Replicat process that was causing some table definitions for each schema not to be deleted correctly.

Release 21c (21.11.0.0.0) - July 2023

Bug 34812191: Microsoft SQL Server - Support capture and delivery for SQL Server 2022

Added support for capture and delivery for SQL Server 2022.

Bug 35309968: Microsoft SQL Server - Credentials from Admin Service page are not editable

Fixed an issue with the **Edit an existing credential** option on the Credentials page of Admin Service page that was not allowing editing of existing credentials.

Bug 35353317: MySQL - Replicat using incorrect metadata while processing DDL record when source database is case sensitive and target is case insensitive

Fixed an issue of Replicat using incorrect metadata while processing DDL records, when source database is case sensitive and target database is not case sensitive.

Bug 34262780: Oracle - Integrated Replicat fails with error "OGG-00664 OCI error ORA-01406"

Fixed an issue of small buffer size of `SOURCE_TRASACTION_ID` option that was causing integrated Replicat to fail with error `OGG-00664 OCI error ORA-01406`.

Bug 34277295: Oracle - Integrated Extract fails with error OGG-01112 in DDLEXT_process_extract for GRANT ddl

Fixed an issue with integrated Extract failing with error OGG-01112 for `GRANT` DDL on `FLASHBACK ARCHIVE` clause.

Bug 34294074: Oracle - Parallel Replicat abends intermittently with error OGG-00418

Fixed an issue with parallel Replicat mappers abending due to idle connection timeout or connection not working.

Bug 35401796: Oracle - Integrated Replicat crashes with message "* stack smashing detected ***: /opt/ogg/classic/19/commbank04/19c/replicat terminated"**

Fixed a memory corruption issue that occurs when the source database is a PDB and there is a timezone difference between the source and target databases, which causes integrated Replicat to crash with the stack smashing detected message.

Bug 35406535: Oracle - BR files not getting cleared upon BR cancel and disabled

Fixed an issue with BR files not being removed if BR is canceled and/or disabled.

Bug 32131835: Generic - Enhance logdump to optionally disable all column data output

Added new command, `COLUMNINFO` with on and off parameters for Logdump utility to enable or disable column data output.

Bug 34732293: Generic - Mapper memory leak occurs when parallel Replicat is started with ATCSN/AFTERCSN

Fixed a memory leak issue when parallel Replicat is started with `ATCSN` or `AFTERCSN` commands.

Bug 35164853: Generic - When the GLOBALS file is not present, the AllowNullableKeys command is effectively true

Fixed an issue of incorrect default option in absence of a GLOBALS file by making `NOALLOWNULLABLEkEYS` as the correct default.

Bug 35225748: Generic - Extract registration information getting removed from microservices metadata

Fixed an issue of Extract registration information being removed from the microservices metadata.

Bug 35350661: Generic - Modify recvsrvr /targets and /targets/path endpoints

Modified `/targets` endpoint information in receiver service and `/targets/<path>` endpoint information for individual paths to remove duplicate and dead path information.

Bug 35401164: Generic - Added a new TRANLOGOPTIONS UNSUPPORTEDLCROPTION parameter

Added a new option, `UNSUPPORTEDLCROPTION`, to the `TRANSLOGOPTIONS` command to include details of unsupported LCR's in Integrated Extract in the Extract discard file.

Release 21c (21.10.0.0.3) - May 2023

Bug 35384626: Oracle - Extract keeps loading after creating it in the WEBUI

Fixed an issue with Extract continuing to load after being created in the Web UI.

Bug 35040942: PostgreSQL - The Extract fails to connect to the Postgresql database when an asterisk exists in the password

Fixed an issue with Extract unable to login to the PostgreSQL database because the password contained an asterisk (*) character.

Bug 35095323: PostgreSQL - Support multiple hosts and ports for PostgreSQL connections

Added support for multiple hosts and ports to be specified in DSN-less connection string to handle failover situations.

Bug 35222608: PostgreSQL - Enhance the PostgreSQL WebUI to accept multiple hosts and ports

Enhanced the PostgreSQL Web UI to accept multiple hosts and ports.

Bug 35290862: PostgreSQL - Oracle GoldenGate does not detect primary key for tables with mulitple indexes

Fixed an issue with Extract and Replicat not detecting primary key of some tables with multiple indexes.

Bug 35347431: PostgreSQL - Add support for using client certificate and client key for ODBC connection in absence of a keyStore

Added support for using client certificate and the client key directly, without creating or using the `KeyStore`, through the ODBC connection options `ClientSSLCertificate` and `ClientSSLKey`, respectively.

Release 21c (21.10.0.0.1) - May 2023

Bug 32826925: MySQL - Add FETCHPARTIALJSON option for TRANLOGOPTIONS to enable support for JSON column updates

Added `FETCHPARTIALJSON` parameter to `TRANLOGOPTIONS` command to support partial updates to JSON columns.

Bug 34884991: MySQL - Replicat abends with error "ogg-01163 bad column length (2058) specified for column"

Fixed an issue with Oracle Replicat abending with error, `OGG-01163 Bad column length (2058) specified for column`, due to binary length being incorrectly set in the source database.

Bug 34978924: MySQL: For the Oracle GoldenGate Marketplace release, the DBLOGIN command fails when there is * in the password

Fixed an issue with the `DBLOGIN` command failing to connect with the database if the password contains an asterisk (*) for the Oracle GoldenGate Marketplace release.

Bug 34982288: MySQL - Replicat failed with error "SQL error 1292 - Incorrect datetime value (daylight savings?)"

Modified timestamp type to datetime type in the heartbeat table to fix an issue with Replicat abending due to incorrect datetime value.

Bug 35191044: MySQL - The DBLOGIN command generates an error "SQL error (9002). FATAL: Invalid Username specified. Please check the Username and retry connection. The Username should be in <username@hostname> format." in Oracle GoldenGate Classic deployment

Fixed an issue with the `DBLOGIN` command generating a fatal invalid username error when username is specified in the username@hostname format, containing an "@" symbol to connect to the MySQL Azure database, in Oracle GoldegnGate CA deployment.

Bug 35365552: MySQL - Oracle GoldenGate libraries for MySQL have been updated to version 8.0.26

Updated the Oracle GoldenGate libraries for MySQL to version 8.0.26.

Bug 31084701: SingleStoreDB - Support delivery for SingleStoreDB and SingleStoreDB Cloud

Added support for SingleStoreDB and SingleStoreDB Cloud delivery.

Release 21c (21.10.0.0.0) - April 2023

Bug 34541766: Db2 for i - Extract abends for initial load setup with DBOPTIONS USEDATABASEENCODING parameter

Fixed an issue with initial load remote Extract that fails when a table contains `CLOB` or `DBCLOB` datatype columns and the `USEDATABASEENCODING` parameter is used.

Bug 34905329: Db2 for i - Extract abends with error "OGG-15051 Java or JNI exception: java.net.ConnectException: Connection timed out (Connection timed out)."

Fixed an issue with remote Extract abending due to improper handling of IASP devices.

Bug 35249469: Db2 for i - A core dump occurred while adding trandata with a warning "JAVA AS400 SecurityException" during running the DBLOGIN command

Fixed an issue with the `DBLOGIN` command that generates a core dump while adding transaction data.

Bug 33410759: Db2 LUW - Replicat abends with error "bad column length (5505), maximum allowable length is 2000 for XML datatype"

Fixed an issue with the XML datatype used with the `FETCHCOLS` command, which caused the Replicat to abend with the error, `bad column length (5505), maximum allowable length is 2000 for XML datatype`.

Bug 34997922: Db2 z/OS - Extract is abending with a stack smashing event

Fixed an issue with Extract abending with a stack smashing event.

Bug 35069862: Db2 z/OS - Customers have found the positioning code is very slow and more so with tape archive logs

Fixed an issue with Extract taking a long time to search for the configure position in the log.

Bug 35080022: Db2 z/OS - Extract continues in a loop when a Db2 archive log does not exist

Fixed an issue with Extract that goes in to a loop to find the LSN value in an non-existant old archive log.

Bug 31445469: Exadata on Premise - Using classic Replicat, the LOGBSN value present in the trail file is not propagated to the checkpoint table

Fixed an issue with classic Replicat process where the `LOGBSN` value is present in the trail file but is not propogated to the checkpoint table.

Bug 34791431: Exadata on Premise - Replicat inserts garbage characters in CLOB column when characterset is source database is set to CESU-8

Fixed an issue with Replicat writing data of `CLOB` datatype incorrectly (as garbage characters) for a multibyte database when Extract automatically writes a trail file in a lower Oracle GoldenGate release to maintain compatibility but the trail file metadata is not compatible with the lower release version.

Bug 35097023: Exadata on Premise - Parallel Replicat abends with error 1403 and skips transactions and continues progressing after two auto restart attempts from the manager

Fixed an issue with parallel Replicat abending with error 1403, on incorrectly reading the low watermark value from the checkpoint table, and incorrectly filters out transactions on restart.

Bug 31607593: Microsoft SQL Server - Automatically remove OracleGGExtractCheckpiont record for an Extract when that Extract is deleted

Added support to automatically delete the `OracleGGExtractCheckpiont` record for an Extract when this Extract is deleted.

Bug 35018016: Microsoft SQL Server - Installing OGG 21.4 Microservice for SQLServer report missing vcredist program

Fixed an issue with the Oracle GoldenGate setup.exe file that displayed the vcredist_x64.exe file as missing for Oracle GoldenGate MA installation for Microsoft SQL Server.

Bug 33389554: Oracle - Performance metrics service crashed with the authorization profile file or directory error

Fixed an issue with the Performance Metrics service request containing authorization information that is not required in a classic architecture deployment.

Bug 34696417: Oracle - GGSCI dumps core after overflowing command buffer

Fixed a core dump issue with GGSCI when writing large amounts of text with GGSCI commands.

Bug 34760678: Oracle - Parallel integrated Replicat consumes higher PGA with large # of appliers leading to PGA limit breach/4036

Fixed an issue with parallel integrated Replicat consuming high PGA with large number of appliers, breaching the PGA limit.

Bug 34851353: Oracle - Parallel Replicat is missing transactions randomly which is causing data integrity issue

Fixed an issue with parallel Replicat that uses `AFTERCSN` and the `SPLIT_TRANS_RECS` parameter is set, skipping transactions when rollback happens due to an error.

Bug 35103202: Teradata - The INFO CHECKPOINTTABLE command does not find the table created using ADD CHECKPOINTTABLE command

Fixed an issue with the `INFO CHECKPOINTTABLE` command not able to find the checkpoint table created using the `ADD CHECKPOINTTABLE` command.

Bug 34626040: Generic - Replicat abends when trying to use _LOW_WATERMARK_UPDATE_TIME parameter in the parameter file

Fixed an issue with the `_LOW_WATERMARK_UPDATE_TIME` parameter that caused Replicat to abend.

Bug 34996483: Generic - Hundreds of errors with message "Error opening topology file " - error 2 (No such file or directory) in pmsvr.log" filling up pmsrvr.log

Fixed an issue with an error message for microservices architecture being incorrectly displayed for a classic architecture deployment.

Bug 35161065: Generic - Modifying distribution path tcpRcvBuf or tcpSndBuf prevents path starting and causes Distsrvr to fail with core dump

Fixed an issue with distribution path failing to restart and Distribution Server also failing with core dump, when modifying the distribution path to set the values of `tcpRcvBuf` and/or `tcpSndBuf` parameters while distribution path still running.

Bug 35229639: Generic - ADMINSRVR Web UI: Request ER lag by report lag command

Replaced the `GETLAG` command with the `Report Lag` command to get the ER process lag value from the ADMINSRVR web UI.

Release 21c (21.9.0.0.3) - March 2023

Bug 30955775: PostgreSQL - Replicat abends with error "OGG-00252 ODBC driver does not adequately support stored procedures (level=1)"

Added support for SQLEXEC calls to stored procedures in the DataDirect ODBC driver for PostgreSQL.

Bug 33802081: Azure Database for PostgreSQL - Certify delivery for Azure Cosmos database for PostgreSQL

Added support for Azure Cosmos database for PostgreSQL.

Bug 34391293: PostgreSQL - Extract fails with error 16002 while reading a transaction generated before table metadata changed

Fixed an issue with Extract failing to process transactions generated before a new column is added to the table in the source database.

Bug 34707256: PostgreSQL - Support PostgreSQL 15

Added support for PostgreSQL version 15.

Bug 34707905: PostgreSQL - For GaussDB, display a warning and continue instead of an error if a non-mandatory parameter is unavailable in some PostgreSQL variant

Fixed an issue of database operations abending with an error instead of displaying a warning and continuing if non-mandatory parameters, such as `idle_in_transaction_session_timeout` are unavailable in PostgreSQL GaussDB database.

Bug 34723782: PostgreSQL - Extension to the add/drop columns feature implemented through the bug 34391293

Fixed an issue with Extract to gracefully handle basic DDL operations (add column/drop column) when it is either in running or stop state.

Bug 35031894: PostgreSQL - Upgrade the DataDirect ODBC Driver for PostgreSQL to version 08.02.2122 (B1297, U1055)

Added support for the new DataDirect ODBC Driver version 08.02.2122 (B1297, U1055). To use the new driver, the existing DSN entries in `odbc.ini` file need to be updated to `Driver=/<GoldenGate_Installation_Path>/lib/ggpsql25.so` (with lower case file name: `ggpsql25.so`).

Bug 35072059: PostgreSQL - Extract and Replicat are not displayed in the Microservices web UI after adding it without reloading

Fixed an issue with Microservices web UI not displaying newly added Extract and Replicat without refreshing the UI.

Release 21c (21.9.0.0.2) - February 2023

Bug 35055861: Exadata Cloud at Customer (Gen2) - The DROP partition DDL is skipped by OCI GoldenGate Extract at intermediate database

Fixed an issue with OCI GoldenGate Extract skipping the `DROP partition` DDL.

Bug 35019370: Oracle - Usernames containing ampersand (&) are not displayed in Microservices GUI

Fixed an issue with Microservices web UI not displaying usernames containing an ampersand (&).

Bug 34406231: Generic - Secure recvsrvr exhibits unbounded memory consumption

Fixed an issue with the receiver service (`recvsrvr`) consuming unlimited memory resources.

Release 21c (21.9.0.0.1) - January 2023

Bug 32987062: MySQL - Support for schema evolution for MySQL

Added support for schema tracking for MySQL version 8.0 and MariaDB version 10.5 or above, using the `TRANLOGOPTIONS TRACKSCHEMACHANGES` parameter..

Bug 34736636: MySQL - Support capture and delivery for Aurora MySQL 8.0 (DML and DDL)

Added support for DML and DDL operations on Aurora MySQL 8.0.

Bug 34811323: MySQL - Extract keeps abending with error "OGG-00146 (Lost connection to MySQL server during query)"

Fixed an issue of frequent loss of connection with MySQL Database Service (MDS) in MySQL version 8.0.31.

Bug 33110687: SQL Server - Support remote capture and delivery for Google Cloud SQL for SQL Server

Added support for Google Cloud SQL for SQL Server versions 2017 and 2019, Standard and Enterprise editions.

Bug 33770748: SQL Server - Database types (variants) should match vendor names

Corrected the database names to match the names provided by the database vendors.

Bug 34136947: SQL Server - Support Windows Server 2022 for GG 21c for SQL Server

Added support for Windows Server 2022 for Oracle GoldenGate release version 21 for SQL Server.

Bug 34701351: SQL Server - Initial load Extract getting abended on SQL_VARIANT - Discarding record

Fixed an issue with initial load Extract abending when unsupported data type, `SQL_VARIANT` is used in the table.

Bug 34734445: SQL Server - Extract initial load is slow in capturing tables with LOB columns

Fixed an issue with initial load Extract taking more time due to incorrect cursor type and concurrency mode used for tables with LOB columns.

Bug 33343803: Generic - Added support for enabling XAG for non-Oracle Databases with Microservices builds

Added support for XAG for all non-Oracle databases when creating Oracle GoldenGate deployments.

Release 21c (21.9.0.0.0) - January 2023

Bug 34485118: Db2 for i - Journal name or current journal receiver not displayed occasionally

Fixed an issue with message OGG-06613 not being displayed on resetting the journal.

Bug 33870429: Db2 LUW - Replace database related error message format with ODBCUTIL error messaging format

Replaced the local functions handling database errors with `ODBCUTILL_CHECK_ERR` function.

Bug 34908570: Db2 LUW - Initial load Extract on Db2 fails

Fixed an issue with initial load Extract failing on all Db2 databases due to unsupported data type, `sql_variant`.

Bug 34569165: Exadata Cloud at Customer (Gen 2) - Parallel Replicat hangs in Oracle GoldenGate

Fixed an issue with parallel Replicat hanging or stopping when the parameter file includes the `END RUNTIME` parameter without including the `SPECIALRUN` parameter.

Bug 31581999: Oracle - The Service Manager registered as system daemon did not come up after host reboot

Fixed an issue with availability of the Service Manager on restart.

Bug 33677192: Oracle - The warning message "OGG-01896" is not applicable to Oracle GoldenGate 21c

Removed the warning message, `OGG-01896 Identity column not supported`, which was displayed on performing the `ADD TRANDATA` function.

Bug 34450666: Oracle - Extract consuming lots of memory even though there is not much activity on the database

Fixed a memory leak issue in integrated Extract.

Bug 34468353: Oracle - PDB change table capture process runs into a CACHEMGR error, Extract moving to hang/stale state due to mutex lock

Fixed an issue with Extract going into a hang/stale state due to mutex lock.

Bug 34591776: Oracle - Allow INCLUDETAGONLY parameter specific to procedural replication only

Added support for `INCLUDETAGONLY` parameter for procedural replication.

Bug 34255518: Teradata - Support Teradata 17.20 version with TTU 17.20

Added Teradata supported database versions 17.10 and 17.20.

Bug 34376951: Generic - New credential option to distinguish between Distribution Service alias and database user alias

Added the new option on the MA web UI for all databases to distinguish between distribution path alias and database user alias.

Bug 34644950: Generic - The GETENV ('DELTASTATS','TABLE'...) command returning zero in cdr exception when mapping from pdb to pdb

Fixed an issue with the `GETENV` function returning zero in a CDR exception when mapping from PDB to PDB.

Bug 34677478: Generic - The Service Manager does not respond when deployment has special characters

Fixed an issue with action buttons on the Service Manager interface not responding when the deployment name includes a special character (.).

Bug 34811459: Generic - When metadata is derived from source, a new column in COLMAP is to be automatically added to the target metadata

Added support for a new column in the `COLMAP` option which is automatically added to the target metadata when the metadata is derived from the source database.

Bug 33343803: Generic - Added support for enabling XAG for non-Oracle Databases with Microservices builds

Added support for XAG for all non-Oracle databases when creating Oracle GoldenGate deployments.

Release 21c (21.8.0.0.3) - November 2022

Bug 33952632: Microsoft SQL Server - Support Microsoft ODBC Driver 18 for SQL Server

Added support for Microsoft ODBC Driver version 18 for SQL Server to Oracle GoldenGate for SQL Server.

Bug 34784214: MySQL - Alias not showing in the Credential Alias section when adding a new Extract and the username includes '@'

Fixed an issue with the new Extract adding process not displaying the username with @ symbol, in the credential alias list.

Bug 34764925: Generic - Drop-down menu in Web UI does not expand or show all deployments

Fixed an issue with the drop-down menu in Service Manager not expanding and not listing all deployments.

BUG 33701569: Generic - The START REPLICAT command with ATCSN/AFTERCSN parameters does not work for cross-database positioning

Fixed an issue with Replicat positioning using `ATCSN/AFTERCSN` when the source trail files are from a different database than that of the target database.

Release 21c (21.8.0.0.2) - November 2022

Bug 33577700: PostgreSQL - Upgrade to DataDirect driver 8.0

Added support for the new ODBC DataDirect driver version 8.0.

Bug 34350756: PostgreSQL - Web UI should by default use USERIDALIAS only and not the SOURCEDB for all the databases

Fixed an issue with the Web UI not using the `USERIDALIAS` parameter as default for all databases.

Bug 34592431: PostgreSQL - Upgrade the DataDirect ODBC driver to version 08.02.2041 (B1138, U0886)

Added support for the new DataDirect ODBC Driver version 08.02.2041 (B1138, U0886).

Bug 34717788: PostgreSQL - Schemawildcard tests are failing. Replicat not replicating data

Added support for catalog name in the `defgen` parameter file that was causing the Replicat not to replicate data.

Release 21c (21.8.0.0.1) - October 2022

Bug 33731146: Db2 z/OS: Customers need to install the z/OS SQL and programs with a new Linux version

Updated Db2 z/OS objects (native SQL and executable files for SP and UDF) need to be installed when z/OS version for Oracle GoldenGate is to be installed on Linux or zLinux.

Bug 34544773: Db2 z/OS: Some DB2 subsystems get deadlock on a page for the SYSIBM.ADMIN_TASKS table

Fixed an issue of locks being held while creating tasks or when deleting completed tasks.

Bug 34610452: Db2 z/OS - The CREATE WALLET command getting error "OGG-01117 Received signal: Illegal instruction (4)"

Fixed an issue with the `CREATE WALLET` command generating an error, `OGG-01117 Received signal: Illegal instruction (4)`.

Bug 34660087: Db2 z/OS: Redistribution files missing in microservices distributions

Added all the redistribution files missing from the Microservices Architecture distributions.

Release 21c (21.8.0.0.0) - October 2022

Bug 29400201: Db2 LUW - Add support for capture of graphic/vargraphic/dbclob datatypes in non-unicode database

Added support for `graphic`, `vargraphic`, and `dbclob` data types in Extract for non-unicode database.

Bug 33851705: Db2 LUW - Possibility of a DDL mismatch in Extract

Added support for `migrated delete to empty page` record type to fix a possible DDL mismatch.

Bug 34488932: Exadata on Premise - PMSRVR data store getting corrupted

Fixed an issue of the LMDB datastore not updating the metrics and getting corrupted.

Bug 34530777: Exadata on Premise - Replicat hanging in GGS environment and reporting high CPU

Fixed an issue with the `DDLOPTIONS REMOVECOMMENTS` parameter that causes Replicat to hang.

Bug 33815569: Microsoft SQL Server - Remote Replicat is applying incorrectly

Fixed an issue with the conversion of binary numeric column type at the source database to numeric character column type at the target database.

Bug 34508928: Microsoft SQL Server - Administration server throws an error as username length exceeds 128 chars specified in userName.json for dsnless connections string

Increased the `username` field length to 2048 to support DSN-less connections string and DataDirect driver.

Bug 34568201: Microsoft SQL Server - DELETE/ADD TRANDATA command generates errors when non-Azure connections are made after making a connection to an Azure SQL Server database

Fixed an issue with version compatibility check when connecting to Azure SQL Server database and then to on-premise or managed instance of SQL Server database.

Bug 34479250: MySQL - In Extract, number of columns(bitmaps) used by user are more

Increased support for the same number of columns (4096 columns) as supported by MySQL.

Bug 34654016: MySQL - Order of primary keys in log-based DDL replication

Fixed an issue with not adding the primary keys in the same order in which the columns were defined while creating the table for log-based DDL replication process in MySQL release 8.0 and MariaDB release 10.5 or later.

Bug 32078475: Oracle - Column REPLICAT_NAME of view DBA_GOLDENGATE_INBOUND is empty for integrated Replicat

Fixed an issue with the `SELECT REPLICAT_NAME FROM ALL_GOLDENGATE_INBOUND` command not returning any value.

Bug 32453277: Oracle - Data missed during initial load due to underlying error ORA-1555

Fixed an issue with the initial load Extract not abending due to underlying error, `ORA-01555: snapshot too old`, but results in missing data in the target table.

Bug 33878956: Oracle - GGSCI command prompt not displaying PDB name after patch 33376981

Fixed an issue with the `DBLOGIN` command not displaying the PDB name after installing the patch 33376981.

Bug 34014805: Oracle - Formatting issue in 'SEND <ext_name> SHOWTRANS TABULAR' output

Fixed an issue with the display of the `XID` and `Items` fields in the output of the `SEND extract name SHOWTRANS TABULAR` command from GGSCI.

Bug 34249351: Oracle - Integrated apply mode does not support operation code 100 (error OGG-02505)

Fixed an issue with integrated Replicat generating error OGG-02505 when using the `GETTRUNCATES` parameter and `AUTOCDR` option set on the target table.

Bug 34335657: Oracle - Heartbeat table feature is not working from Oracle GoldenGate February 2022 release

Fixed an issue with the heartbeat table process not working due to non-default `heartbeattable` name specified in the `GLOBALS` file and seed table not being processed.

Bug 34580723: Oracle - Memory leak in coordinated and classic Replicat

Fixed a memory leak issue in coordinated and classic Replicat processes on using the`@GETENV` function when source and target are container databases with different names.

Bug 34586713: Oracle - Parallel Replicat with unified checkpointing abending with error "OGG-01112 Unexpected condition in function Update at line 2247"

Fixed an issue of parallel and integrated parallel Replicat abending when using shared checkpoint progress table.

Bug 31685016: PostgreSQL - Google Cloud SQL platform certification for Extract

Added Google CloudSQL platform support for Oracle GoldenGate Extract for PostgreSQL.

Bug 31801715: PostgreSQL - Automated transition from initial load to CDC

Added the initial load precise instantiation feature.

Bug 34294112: PostgreSQL - Support citext data type as primary key

Added support for `citext` data type as primary key, with maximum data length of 8000.

Bug 34466942: PostgreSQL - The varchar(4000) column got omitted from the before image

Fixed an issue with CDR in Replicat failing to preserve the inline LOB data value in the before image of the record.

Bug 34428238: Teradata - Replicat abends with error "OGG-00551 Database operation failed: Preparing statement (UPDATE %T SET %S WHERE %W...)"

Fixed an issue with Replicat abending due to a failed non-operational (NOOP) detection process.

Bug 33701099: Generic - CDATA tag not around large column data

Fixed an issue of missing `CDATA` tag around DDL statements for the `XML _AUDIT_VAULT` format.

Bug 33915722: Generic - Unable to stop PMSRVR

Fixed an issue with Performance Monitoring Service hanging after being shutdown on the AIX system.

Bug 34392942: Generic - Mixed-up output messages generated when working with trail file from HP NONSTOP Base24 system to RHEL 8.5

Fixed an issue of mixed-up output messages by adding support for the TLF column.

Bug 34014874: Generic - Oracle GoldenGate generating XML files with invalid characters

Fixed an issue of XML files being generated with invalid characters.

Bug 34424244: Generic - Critical Extract in abended state does not change the deployment health value to unhealthy

Fixed an issue with the `HEALTH DEPLOYMENT` command not changing its value to `UNHEALTHY` when Extract with autorestart enabled, abends abnormally.

Bug 34454725: Generic - Spelling mistake in the Session Expiring message on the Web UI

Corrected the spelling on the Session Expiring message pop-up.

Bug 34466195: Generic - Parallel Replicat intermittently takes too long to stop when using SPLIT_TRANS_RECS parameter

Fixed an issue with parallel Replicat intermittently taking 10+ minutes to stop when configured with the `SPLIT_TRANS_RECS` parameter.

Bug 34513929: Generic - CVS issue: Add support for "Delete record to empty page" record type in Db2 LUW database

Added support for `Delete record to empty page` record type.

Bug 34609774: Generic - JMSCAP Extract abends with error after running the FORCESTOP command

Fixed an issue with restarting of JMS Extract that abends after processing records.

Release 21c (21.7.0) - August 2022

Bug 33493969: Db2 z/OS - Extract abends with error "OGG-00796 unexpected IFI error 00e60830"

Fixed an issue of Extract abending with an unexpected error with code "00e60830".

Bug 34461080: Db2 z/OS - Replicat fails for Db2 z/OS when resolving a table

Fixed an issue with Replicat failing when resolving an existing target table.

Bug 30233514: MySQL - Support capturing from MySQL InnoDB cluster

Added failover support for Extract on MySQL InnoDB cluster.

Bug 33211888: MySQL - Support for multiple FILTERTABLES in the Extract

Added support to configure multiple filter tables in the Extract parameter file.

Bug 34468484: MySQL - SSL support in group replication cluster

Added SSL support in group replication cluster.

Bug 34468542: MySQL - Position by EOL (End of Log)

Added support for position by EOL (End of Log).

Bug 34468627: MySQL - Introduction of extended checkpoint

Introduced an extended checkpoint file in group replication support capture in addition to the core checkpoint file.

Bug 31685016: PostgreSQL - Google Cloud SQL platform certification for Extract

Added Google CloudSQL platform support for Oracle GoldenGate Extract for PostgreSQL.

Bug 33783733: PostgreSQL - Support for citext datatype

Added `citext` extension support for `citext` datatype.

Bug 33917539: PostgreSQL - Set BatchMechanism=2 Programmatically on ODBC connection

Fixed an issue with the performance of ODBC array operations for `INSERT`/`UPDATE`/`DELETE` statements.

Bug 33946655: PostgreSQL - Extract to Aurora fails with errors, OGG-00551 and OGG-00145

Fixed an issue with Extract checking an incorrect database configuration handle for errors.

Bug 34119732: PostgreSQL - Replicat is encountering no data found issue.

Fixed a duplicate target mapping detection issue with Replicat when wildcard and non-wildcard mapping is configured between two different case-sensitive databases.

Bug 34398525: PostgreSQL - Upgrade DataDirect ODBC driver to version 08.02.2033 (B1016, U0751)

Added support for the new DataDirect ODBC Driver version 08.02.2033 (B1016, U0751).

Bug 34077537: Generic - Distribution Path and Receiver Path not displaying client certificate in the Details page of the web interface when the authentication method is changed to Certificate

Fixed an issue with the Details page in the Distribution Service/Receiver Service web interfaces, not listing the available client certificates for `DISTPATH` and `RECVPATH` when the authentication method is changed to `Certificate`.

Bug 34097013: Generic - The HREF link does not contain a properly URI encoded link

Fixed the HREF links for usernames to be URI encoded.

Bug 34468688: Generic - New CSN format for atCSN and afterCSN in group replication support

Added new CSN format for `atCSN` and `afterCSN` parameters in group replication.

Release 21c (21.7.0) - July 2022

Bug 33915518: Db2 LUW - Oracle GoldenGate 21c (21.3) for Db2 shows wrong read checkpoint dates from year 1901

Fixed an issue of `INFO EXTRACT` command showing incorrect read checkpoints timestamp values for Extracts.

Bug 32980442: MySQL - MySQLaaS - Extract abends randomly due to memory corruption

Fixed an issue with Extract abending randomly due to memory leak and potential memory corruption issue.

Bug 34293509: MySQL - Parallel Replicat gives error with DDL operation

Fixed an issue with parallel Replicat abending with a mapping error for DDL operations.

Bug 34323649: MySQL - The ALTER EXTRACT command with Position in Log option throws a JSON error

Fixed an issue with the MA user interface that generated an JSON error on using the `ALTER EXTRACT` command with the `Position in Log` option.

Bug 33277760: Oracle - The cleanup checkpoint operation fails with incorrect HTTP status code

Fixed the status message displayed for the failed cleanup operation of checkpoint tables.

Bug 33697211: Oracle - Coordinated and Parallel Replicat processes are vulnerable when running on Solaris/SPARC environment

Fixed an issue with coordinated and parallel Replicats abending when scanning ports using any of the network tools, such as NMap on Solaris and SPARC environments.

Bug 33825749: Oracle - Integrated Replicat fails with "ORA-600 error argument(knalfConvertXid:1)" during initial load replication

Fixed an issue with integrated Replicat generating the error `ORA-600 error with an argument(knalfConvertXid:1)` if a `SOURCEISSTABLE` trail file was pumped.

Bug 34002607: Oracle - Integrated Extract seeing open transaction due to ALTER DATABASE command

Fixed an issue of an orphaned transaction in integrated Extract when executing the `ALTER DATABASE` command.

Bug 34074892: Oracle - Cannot alter to a lower starting CSN for an unregistered Extract

Fixed an issue where an attempt to change the start value of CSN for an unregistered integrated Extract fails with an HTTP status code 500.

Bug 34148778: Oracle - Extract is not capturing the table rename operation/command

Fixed an issue with the `RENAME TABLE` command not being written to the trail file.

Bug 33474567: SQL Server - Extract does not capture data if Microsoft Patch KB3030352 is not applied

Fixed an issue with Extract not capturing any data if the Microsoft Patch KB 3030352 has not been applied.

Bug 33770841: SQL Server - The DBLOGIN command is not working when password has special characters

Fixed an issue with login to SQL Server database using `DBLOGIN` when password contains special characters, * and ?.

Bug 33793123: SQL Server - FILTERTABLE statement cannot interpret wildcard values after an underscore in the table name

Fixed the issue with the `FILTERTABLE` command not being able to interpret the wildcard character specified after the underscore in the table name.

Bug 34116993: SQL Server - Extract hangs with error "SQLSTATE 08S01 native database error 104"

Fixed an issue where the Extract hangs when one of the helper thread detects a fatal error, such as connection disconnected error.

Bug 34183376: SQL Server - Replicat slow in executing UPDATE and DELETE operations when datetime/datetime2 column is part of the key

Fixed an issue with Replicat being slow because the `datetime` and `datetime2` datatypes were cast to `varchar (max)`.

Bug 33552966: TimesTen - Oracle GoldenGate delivery to TimesTen not setting session/connection charset to match the DBCharset

Fixed the issue of session/connection character set not matching the database character set (`DBCharset`).

Bug 33488637: Generic - The Service Manager incorrectly restarts services

Fixed an issue with the Service Manager not being able to detect already running services and incorrectly restarts them.

Bug 33591162: Generic - Replicat is inserting an ASCII '0' value instead of a true NULL value in Oracle GoldenGate 19c target but not in 11g DB target

Fixed an issue with Replicat inserting a "0" (zero) instead of a true NULL value by adding the new `_ZEROTONULL` option to convert strings that start with `\0` to `NULL` for Oracle database.

Release 21c (21.6.0) - July 2022

Bug 34051240: MySQL - The STOP EXTRACT command exits with a core dump error

Fixed an issue where the Extract abends with a core dump error on running the `STOP EXTRACT` command.

Bug 34132554: Oracle - Integrated Extract fails with the error "CACHEMGR: filecaching temporary file details missing" consistently

Fixed an issue with Integrated Extract failing with the error "CACHEMGR: file caching temporary file details missing", when `Cascade Delete` constraint is applied to an ACDR-enabled table.

Bug 33386584: Generic - Distribution path fails or takes long time to restart after some network interruptions

Fixed an issue with failure to restart the distribution or target-initiated paths instantly if there is a network outage and this outage is not detected immediately by either the source of the target-initiated path or destination of the distribution path.

Bug 34212042: Generic - Cannot add new users to Oracle GoldenGate deployment

Updated an error message to indicate that new users cannot be added to the secure store if the `cwallet.bak` file exists in it.

Release 21c (21.6.0) - June 2022

Bug 33110693: MySQL - Support for remote capture and delivery from/to Google Cloud SQL for MySQL

Added support for remote capture and delivery from/to Google Cloud SQL.

Bug 33523154: MySQL - Remote capture abends with the error "Positioning sequence ID is out of order"

Fixed an issue with remote Extract abending for binary log greater than 4 GB.

Bug 33995450: MySQL - Error thrown when user logs in with sslMode VERIFY_IDENTITY without sslCert and sslKey

Fixed an issue with Oracle GoldenGate for MySQL not allowing a user to login with a USERID configured with `ssl-ca` alone, without `ssl-key` and `ssl-cert` for `ssl-mode` as `VERIFY_IDENTITY` despite MySQL allowing the same.

Bug 33944515: MySQL - Oracle GoldenGate web interface changed to support new USER ID string attributes related to SSL

Fixed the web interface to support new USER ID string attributes related to SSL.

Bug 34036662: MySQL - When in Remote mode, Extract does not accept CSN, which is present in trail and has an AtCSN value

Fixed an issue with Extract in remote capture mode not accepting CSN provided with AtCSN, which is present in trail also.

Bug 34050875: MySQL - For remote capture, Oracle GoldenGate should be able to handle the binary log of size greater than 4 GB

Fixed an issue where remote capture was not able to handle the binary log of size greater than 4 GB.

Bug 33211894: PostgreSQL - Support Multiple FILTERTABLES in Extract

Extract enhanced to support multiple filter tables in the Extract parameter file.

Bug 33636116: PostgreSQL - Extract keeps running but stops capturing

Fixed an issue with Extract not capturing records although it's status shows as Running.

Bug 33733412: PostgreSQL – The LIBPQ libraries are now packaged with Oracle GoldenGate

Added the LIBPQ libraries with Oracle GoldenGate for PostgreSQL package, and the PostgreSQL libs module is not required to be installed separately.

Bug 33748762: PostgreSQL - Extract abends with the error "OGG-04016 with error status 16,002"

Fixed an issue with Extract abending with the error, `OGG-04016 with error status 16,002`.

Bug 33801732: PostgreSQL - The database hangs during shutdown if the Extract is running

Fixed an issue with the database server hanging during shutdown if the Extract is still running when the database is shutdown.

Bug 34038178: PostgreSQL - Extract reported canceling statement due to statement timeout

Disabled the `statement_timeout`, `idle_in_transaction_session_timeout` (for all PostgreSQL database versions) and `idle_session_timeout` (for PostgreSQL database version 14 and later) attributes, which were causing timeout issues in Extract and Replicat.

Bug 33954345: Generic - Memory leak in the receiver server process

Fixed a memory leak issue with processing of certificate information in the Certificate Administration process.

Release 21c (21.6.0) - April 2022

Bug 33847292: Generic - DDL text using EVENTACTION gets truncated

Fixed `@DDL(text)` to return the complete value instead of only the first 200 characters.

Bug 33564269: Generic - Service Manager exits soon after starting

Fixed an issue where a host with a tunnel interface that returns a null address in `getifaddrs` causes the Service Manager to crash.

Bug 33540234: Generic - Replicat hangs with waiting at EOF warning

Fixed an issue with Replicat hanging because of an etrollover or a trail file not being closed properly.

Bug 33400286: Generic - ADD EXTRACT with SOURCEISTABLE option for initial load fails with the error OGG-30115

Fixed an issue with adding initial load Extract with the `SOURCEISTABLE` option, if the table contains an invalid number.

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Bug 33531365: Db2 for i - Optimize journal data read size in remote Extract

Enhanced behavior for remote Extract to dynamically increase or decrease the buffer size based on the bytes returned in the last read.

Bug 33922409: Db2 z/OS - After upgrade- Failed to get next timestamp value for EXTRACT xxx (Invalid type (19) retrieving timestamp in

Fixed an issue with retrieving the timestamp for Extract after upgrading from Oracle GoldenGate 19c to 21c.

Bug 33322903: Db2 z/OS - Research and create a way run a separate z/OS thread to deallocate ECSA

Fixed the Extract behavior to allow scheduling a task to manage shared memory on Db2 z/OS so that it will be released at a normal end, at an abend, and if the Extract cores or is terminated.

Bug 33779437: Db2 z/OS - OGGINITB abnormal termination after enhancement 33655208

Fixed an issue with Extract terminating abnormally after printing all the summary information when the STOP command is issued to stop the Extract.

Bug 33629511: Db2 z/OS - Issue with LRSNTIMEDELTA parameter

Fixed an issue with the `LRSNTIMEDELTA` parameter not getting added into the startup LRSN properly, causing Extract to either start in the wrong place or may not find the startup LRSN in the Db2 logs.

Bug 33746251: Oracle ADB-S - Extract reports open transactions related to Federation DMLs even after commits were sent by LogMiner

Fixed an issue with Federation Sync Transactions causing Extract to hang port switchover in the ADB-S environment.

Bug 33618228: Oracle - Extract abends with the error "OGG-01112 Unexpected condition in DDLEXT_process_extract at line 2442"

Added support for Analyze Cluster DDLs to fix an issue with Extract abending when trying to process the Analyze Cluster DDLs.

Bug 31840929: Oracle - Updating description of coordinated Replicat is not updating the description in the corresponding threads

Fixed an issue where altering the description on the main coordinated Replicat thread does not change the descriptions on the child threads.

Bug 33750557: Oracle - Coordinated Replicat thread report file is not shown from the Administration Service web interface

Fixed an issue with coordinated Replicat thread report file not showing from the Administration Service web interface.

Bug 33560107: Oracle - Oracle GoldenGate MA on Windows does not display the ER process name in the purge task

Fixed an issue with Oracle GoldenGate MA on Windows not displaying the ER process name in the purge task.

Bug 33554002: Oracle - Admin Client displays RECVPATH as DISTPATH when health deployment command is executed

Fixed an issue with Admin Client displaying RECVPATH as DISTPATH when the health deployment command is executed.

Bug 33781304: Oracle - STOP Service Manager is throwing "LabelTitleError" in the web interface

Fixed an issue with Service Manager throwing "LabelTitleError" in the web interface when trying to stop Service Manager.

Bug 33688695: Oracle - OGGCA.sh doesn't show up the host name during multiple deployment operations

Fixed an issue with OGGCA not showing up the host name during multiple deployment operations.

Bug 32796406: Oracle - DI Extract abends without any error message in the report file in unsupported configuration

Fixed the error message generated for DI Extract when an invalid parameter combination of SQLEXEC and NOUSERID exists in the parameter file.

Bug 33201508: Oracle - Extract generates duplicate records when using transformation

Fixed an issue with a previously mapped table that was "target", not considered when checking for duplicates.

Bug 33834951: Oracle - Extract abends with the error "CACHEMGR: filecaching: pthread_created failed: errno: 11 (Resource temporarily unavailable), after applying Jan 2022patch 33742666 (19.1.0.0.220118)"

Fixed an issue with Extract abending with the error `CACHEMGR: filecaching: pthread_created failed: errno:11 (Resource temporarily unavailable), after applying Jan 2022 patch 33742666(19.1.0.0.220118)`.

Bug 33659088: Oracle - When integrated Replicat abends put dba_apply_error in the report file

Changed Oracle GoldenGate behavior to include the value of the `dba_apply_error` in the report file for integrated Replicat.

Bug 33884867: SQL Server - Extract abends with "OGG-00551 Database operation failed: Execute direct. ODBC error: SQLSTATE 22007 native database error 241. [Microsoft][ODBC Driver 17 for SQL Server]["

Fixed an issue with translating data from different languages by setting the session language as `us_english` for manager connection.

Bug 34011183: SQL Server - Replicat abends with the error "OGG-05310 Oracle GoldenGate does not support [Unknown]" due to incorrect login

Fixed an issue with Replicat abending with an ambiguous error message when incorrect login credentials are specified for Replicat database connection credentials.

Bug 33941685: SQL Server - Parallel Replicat slows down with lag

Improved performance of the mapper process in parallel Replicat by reducing the overhead.

Bug 33636046: TimesTen - Oracle GoldenGate cannot go back in time, once the rows have been propagated

Fixed an issue with rows lost due to non-durable commits in TimesTen.

Release 21c (21.5.0) - March 2022

Bug 33110174: Oracle - DDL conversion option from default byte to character semantics

New Replicat `DDLOPTIONS` parameter option `NLSLENGTHSEMANTICS` added, which allows setting the values to `CHAR`, `BYTE`, or `DEFAULT`. When set to `CHAR` or `BYTE`, it will override the `NLS_LENGTH_SEMANTICS` setting in a DDL trail record.

Release 21c (21.5.0) - February 2022

Bug 33660937: Generic - When connecting to the DB2 for iSeries database generates an error

Fixed java connectivity issues when connecting to the DB2 for iSeries database from Oracle GoldenGate.

Bug 33794237: Generic - Removed the dependency on Open SSL for Berkeley Database (BDB)

Fixed the dependency on the OpenSSL for connecting to the Berkeley Database.

Release 21c (21.5.0) - January 2022

Bug 32853677: Generic - Administration Service hangs when STOP EXTRACT is executed

Fixed an issue with Administration Service hanging due to long-running tasks running concurrently.

Bug 33548671: Generic - Distribution Service web page does not show RBA in Details/ Path Information section

Enhanced the Distribution Service, Details and Path Information page to display the source sequence number, and source RBA offset values.

Bug 33527471: Generic - Correct mapping logic when dealing with type=150

Fixed mapping error in Replicat when NSK's unsigned decimal column metadata has an incorrect binary length (binary length is less than external length).

Bug 33352112: Generic - Distribution Service fails with the error "OGG-25715" when no swap present

Fixed an issue with Distribution Service not starting when swap space doesn't exist.

Bug 33239354: Generic - TRANSDISCARD and GROUPTRANSOPS is invalid parameter combination

Added a warning message for invalid parameter combination `TRANSDISCARD` and `GROUPTRANSOPS`.

Bug 33531900: Generic - Any process marked as critical to health makes the entire Oracle GoldenGate MA web interface hang

Fixed an issue with Oracle GoldenGate MA web interface hanging when a stopped Extract or Replicat process is set to critical.

Bug 33480347: Generic - Fix handling of before image LOB chunks

Fixed the error `OGG-00875 LOB column not found` when the before record contains out-of-row LOB.

Bug 33272049: Generic - Target-initiated path using wss from Oracle GoldenGate 21c to Oracle GoldenGate 19c doesn't work

Fixed an issue with a higher version target-initiated path (Receiver Path) not working with a lower version when using the `wss` protocol with alias authentication.

Bug 33146993: Generic - The exception "Net Exception: Could not receive handshake reply message from SOCKS server" is observed in non-secure deployment with SOCKS5 proxy

Fixed an issue with `DISTPATH` failing at startup when using SOCKS5 proxy.

Bug 33270938: Generic - Rollback should not happen when disabling GROUPTRANSOPS

Add `COORDNOMETADATABARRIER` to disable a metadata change event being used as a transaction barrier in coordinated Replicat.

Bug 33364860: Generic - Admin Client cannot connect to OCI GoldenGate when Administration Service health API returns unhealthy

Fixed an issue with Admin Client not connecting to OCI GoldenGate when the Administration Service health API returns unhealthy.

Bug 33327100: Generic - Operator role is not working as expected

Fixed an issue with the Operator role allowing configurations such as deletion of parameter files, adding or modifying tasks, which are aligned with the Administrator role.

Bug 33011343: Generic - Multiple pumps from NSK to NSK to open system dynamic collector use more ports

Fixed an issue with multiple Pump processes being started at the same time, abending with connection refused error, when the remote system is heavily loaded.

Bug 33272560: Generic - LMDB size limit should not be fixed at 1GB

Fixed an issue with the LMDB datastore limited to 1GB in size.

Bug 32154847: Db2 for i: Checkpoint time is not correctly adjusted after DST change

Fixed lag reporting when DST changes happen.

Bug 33421004: Db2 for i: Incorrect lag for heartbeat in bi-directional scenario

Fixed an issue with incorrect lag for heartbeat in bi-directional scenario

Bug 33462670: Db2 for z/OS - Extract abend issue due to the error in '/gg_home1/extract': corrupted size vs. prev_size: 0x0000556c4b55a910

Fixed an issue with Extract abending while processing multiple view DDL in the same transaction.

Bug 33090993: Db2 z/OS - Extract abending without any error

Fixed an issue with Extract shutting down without giving an error after mapping a table and its keys.

Bug 33212543: Oracle - Unable to add certificates using Service Manager on Windows

Adding certificate's using the Certificate Management page in Service Manager is supported on Windows.

Bug 33431090: Oracle - Unable to select Autonomous Database Extract and register it when NOUSERID option is selected

Fixed an issue with Administration Service web interface not being able to select an Autonomous Database Extract when NOUSERID is selected.

Bug 32978874: Oracle: Oracle GoldenGate Microservices Architecture contains wrong destination path filters after moving chunk to a new shard

Fixed an issue with DISTPATH rulesets not getting updated using command table.

Bug 33364702: Oracle - Extract hangs during certain error conditions due to formatting thread's busy looping with Performance Monitoring

Fixed an issue with Extract hanging instead of shutting down in certain conditions.

Bug 32909984: Oracle - Extract Pump generates incorrect trail record with 'OUTPUTFORMAT TEXT' parameter for negative numbers

Fixed an issue where negative number with precision writes wrong value to the non-binary trails.

Bug 30739999: Oracle - The sequence.sql script errors if user does not have SYSDBA privileges for Autonomous Database

Fixed an issue with the `sequence.sql` script, which generated errors if a user didn't have SYSDBA privileges for the Autonomous Database.

Bug 33634810: ADB-S - Parallel replicat abends with the error "OGG-01112 Unexpected condition in HandleTransaction"

Fixed an issue with parallel Replicat abending with `Unexpected condition in function HandleTransaction` after a `RestartAbend`.

Bug 33495042: SQL Server - Remote Extract throughput is slow over network with >1ms latency

Improved remote Extract throughput when connecting over network with latency >=1ms.

Bug 33523611: SQL Server - ADD HEARTBEATTABLE errors on heartbeat creation with TRIM function error

Fixed the `ADD HEARTBEATTABLE` command behavior generating a `TRIM` function error on heartbeat creation.

Bug 33407808: SQL Server - In Classic Architecture, Manager running as a Service does not stop

Fixed an issue with the Manager process not stopping when requested by GGSCI on the Windows service manager.

Bug 33066696: SQL Server - UPGRADE HEARTBEATTABLE does not reset TRANDATA

Fixed the `UPGRADE HEARTBEATTABLE` behavior to reset `TRANDATA`.

Release 21c (21.4.0.0.0) - October 2021

Bug 32718671: Oracle - Parallel Replicat ignores DROP PUBLIC SYNONYM

Fixed an issue with parallel Replicat ignoring `DROP PUBLIC SYNONYM`.

Bug 33038860: Oracle: Integrated parallel Replicat for CDB abends and shows a report file name that doesn't exist

Fixed the incorrect error message OGG-303102 printed by parallel Replicat every time it abended.

Bug 32708834: DB2 LUW - Report DPF information when DPF is in use

DPF detection and reporting is enabled.

Bug 33092381: MySQL - Extract shows incorrect lag at checkpoint

Fixed intermittent spikes in the Extract lag.

Bug 32921956: MySQL - NOFILTERDUPTRANSACTIONS is not working as expected

Fixed an issue with the `_csnfiltering` parameter not takinf effect if Replicat is restarted.

Bug 33165985: Exadata - PDB Extract mapping is not working

Fixed an issue with Extract and initial load Extract showing the `ORA-65011: Pluggable database ... does not exist` error when the PDB name is in mixed case.

Bug 33384768: PostgreSQL - In Classic Architecture, Alter Extract with timestamp is not working as expected

Fixed an issue with Extract abending when filtering the `DELETE` operation for a table with nopk having replica identity set to `DEFAULT`.

Bug 33390827: PostgreSQL - Multibyte character issue during Initial Load from PostgreSQL for VARCHAR columns

Corrected the multibyte character issue during Oracle GoldenGate initial load from PostgreSQL.

Bug 33431184: PostgreSQL - Table with no primary key and with replica identity DEFAULT needs to ignore DELETE operation

Corrected Extract behavior to ignore `DELETE` operation when a table has a replica identity set to DEFAULT but doesn't have a primary key.

Bug 33225788: SQL Server - BATCHSQL suspended with parallel Replicat and Heartbeat Table implemented

Fixed the AFTERBUF calculation for SQL Server to fix the data buffer sent from mapper for unified update record.

Bug 32752676: SQL Server - Support Multiple TRANLOGOPTIONS FILTERTABLE parameters in Extract

Enhanced Extract to support multiple filter tables with wildcard, which can be specified using `TRANLOGOPTIONS FILTERTABLE`.

Bug 33353623: Generic - Distribution Service cannot find trail file when Extract uses a trail sub-directory

Fixed the Distribution Service behavior to enable it to find the trail file when Extract uses a trail sub-directory.

Bug 33206894: Generic - Group and show aggregated parallel Replicat's Mappers/Appliers Cache Manager statistics

Enhanced parallel Replicat to group and show aggregated Cache Manager statistics for parallel Replicat's Mappers/Appliers.

Bug 33381904: Generic - Service Manager intermittently fails to start

Fixed the Service Manager failing to start intermittently.

Bug 33200367: Generic - PR faster STOP - apply up to HWM on stop

Fixed an issue with parallel Replicat stopping slowly.

Release 21c (21.3.0.1) - October 2021

Bug 33132559: Oracle - Process Information tab hangs in the deployment console

Fixed an issue with the Process Information tab in Administration Service web interface, which showed a blank page while the data for other tabs was visible.

Release 21c (21.3.0) - August 2021

Bug 31994709: Generic - Coordinated and Parallel Replicat cannot start after changing Oracle GoldenGate Home Directory name

Fixed an issue with coordinated and parallel Replicat not being able to start after changing the Oracle GoldenGate home directory name.

Bug 32516012: Generic - Extract Pump writes incomplete records on PK Updates if assigned multiple output trails

Fixed an issue with Extract Pump writing incomplete records on PK updates if multiple output trails are assigned.

Bug 32197412: Generic - Microservices does not honor Autorestart "Max Retries" and "Retry Window"

Fixed an issue with Microservices not honoring Autorestart "Max Retries" and "Retry Window" settings.

Bug 32909984: Generic - Extract Pump generates incorrect trail record with 'OUTPUTFORMAT TEXT' parameter for negative numbers

Fixed an issue with negative number with precision writing wrong value to the non-binary trails.

Bug 33150898: Generic - Parallel Replicat (non-integrated) with CDR enabled is not working as expected with PK updates

Fixed an issue with parallel non-integrated Replicat CDR not working as expected with PK updates.

Bug 31593244: Generic - Microservices: Incorrect Replicat Lag Reported when Monitored via REST API

Fixed the lag problems from `INFO REPLICAT STATUS` and `SEND REPLICAT GETTLAG` commands.

Bug 30739999: Oracle - The sequence.sql script errors if user does not have sysdba privileges for Autonomous Database

Fixed an issue with the `sequence.sql` script throwing an error if a user does not have SYSDBA privileges.

Bug 32512903: Oracle - Procedural replication mapping generates the error "OGG-02544 Unhandled error (ORA-19031: XML element or attribute does not match any in type"

Fixed an issue with procedural replication occasionally seeing errors "`ORA-19031: XML element or attribute does not match any in type`" or "`ORA-25215: user_data type and queue type do not match`".

Bug 32644918: Oracle - Parallel Replicat abends with the error "OGG-02092 indexOutOfRangeError [0/0] in ggs::Coord::Applier::ExecuteTransaction"

Fixed parallel Replicat abending with the error `OGG-02092 indexOutOfRangeError [0/0] in ggs::Coord::Applier::ExecuteTransaction`.

Bug 32595302: MySQL - Extract abend with error "ERROR OGG-00768 The data type (245) is not supported in SQLEXEC functionality

Fixed an issue with Extract abending with the error "`ERROR OGG-00768 The data type (245) is not supported in SQLEXEC functionality`".

Bug 30257659: MySQL - Extract is unable to capture from tables if lower-case-table-names=1

Fixed an issue with Oracle GoldenGate not being able to recognize the table names when the database was configured to identify table names in uppercase, lowercase, or mixed case.

Bug 32619862: PostgreSQL - Heartbeat is not working when connecting Oracle GoldenGate for PostgreSQL to Oracle GoldenGate for BigData

The name for seed and history table displayed in info heartbeattable is fixed to match with the database table.

Bug 32079019: PostgreSQL - Oracle GoldenGate Replication issue for CLOB datatype

Fixed an issue with the native type validation being disabled for the records that capture read from the log.

Bug 31794343: PostgreSQL - Delivery fails with the error "OGG-00551 Database operation failed: Preparing statement"

Fixed an issue with Replicat, which was abending with the error `current transaction is aborted, commands ignored until end of transaction block`.

Bug 32294434: SQL Server - Replicat fails on an update to a table with a datetime column in the key with a "no data found" error on SQL Server 2016 or later, including Azure.

Fixed an issue with Replicat failing when updating a table with a datetime value in the key, with a `nodata found` error on SQL Server 2016 or later, including Azure.

Bug 33038347: SQL Server - Replicat fails with the error "Invalid character value for cast specification" with source binary data to target GUID

Fixed an issue with binary source column to GUID not working.

Bug 32817253: Azure SQL Database - Extract abends on Azure Managed Instance SQL Server Agent Check with Access is Denied

Fixed an issue with Extract abending on Azure Managed Instance SQL Server Agent Check with the "Access is Denied" error.

Bug 32795888: Azure SQL Database - ADD HEARTBEATTABLE fails on Azure SQL DB Managed Instance and gives incorrect error message that TARGETGONLY is required

Fixed the `ADD`/`ALTER HEARTBEATTABLE` commands, which incorrectly required the `TARGETONLY` parameter for Azure Managed Instance.

Release 21c (21.1.0) - Initial Release May 2021

Bug 30032198: Generic - Parallel Replicat is available for DB2 z/OS, SQL Server, MySQL

Parallel Replicat is supported for DB2 z/OS, SQL Server, MySQL.

Bug 29200958: Generic - $OGG_HOME/lib/htdocs is overly large at 150MB

Directory where the web UI code is placed in the deployment is overly large.

Bug 32568282: Generic - Integrated Replicat supports attribute columns as keys for object tables

Fixed an issue with integrated Replicat falling back to classic Replicat to apply updates or deletes on object tables, or it may raise an `ORA-600` error, if `APPLY_PARALLELISM` value is set to 1.

Bug 32746918: Generic - Distribution Server and Receiver Server web interface allow updating the path authentication method

Enhanced the web interface for Distribution Server and Receiver Server to allow changing or modifying the path authentication method.

Bug 30361687: Oracle - GG_LAG_HISTORY view is enhanced to show component lags

Added component lag values in `GG_LAG_HISTORY` view to show lag for each component in the replication path including procceses such as Extract, Pump, Distribution Service and Replicat.

Bug 27819295: Oracle - ADD SCHEMATRANDATA without waiting for inflight tran sactions is supported

`ADD SCHEMATRANDATA` without waiting for inflight transactions is supported.

Bug 30441675: Oracle - Service Manager fails to start in the docker container when is XAG is enabled

Docker support for `--xagEnabled` command line option is available.

Bug 31941089: Oracle - Autonomous Database Extract failing to start when used with TRANLOGOPTIONS EXCLUDEUSER

Fixed an issue with Extract failing to start when used with `TRANLOGOPTIONS EXCLUDEUSER`.

Bug 31879230: Oracle - BATCHSQL and CDR generate Replicat errors

Fixed an issue with CDR and BATCHSQL enabled, encountering errors when applying records.

Bug 31548760: Oracle - DBLOGIN to Autonomous Data Warehouse (ADWS) fails with the erro "ORA-942 table or view does not exist"

Allows an Autonomous Data Warehouse (ADWS) login in a cloud environment without checking RDBMS.

Bug 32351396: Oracle - Support for multiple Service Managers registered under the same OGG_HOME with XAG

Oracle GoldenGate is enhanced to allow using logical filenames when launching Service Manager.

Bug 29397548 : DB2 z/OS - TARGETONLY/NOTARGETONLY feature to ADD/ALTER HEARTBEATTABLE is supported

`TARGETONLY`/`NOTARGETONLY` for DB2 for i, DB2 z/OS, DB2 LUW is supported.

Bug 30473323: DB2 z/OS - SHOWTRANS output is enhanced to be more DB2 z/OS specific

Fixed an issue with SHOWTRANS output showing information that is not specific to DB2 z/OS.

Bug 25615394: DB2 z/OS - Enable EOF option for add and alter Extract

Enable EOF option for `ADD`/`ALTER EXTRACT` is supported for DB2 z/OS.

Bug 16814471: DB2 z/OS - Capture from temporal tables is supported

Capture from temporal tables is supported with DB2 z/OS.

Bug 30582001: DB2 z/OS - Error mapping from DB2 z/OS Extract to Teradata Replicat

Fixed an issue with incorrect value of `BIGINT` appears replicated in target table.

Bug 29437485: DB2 z/OS - Use 64-bit shared common storage instead of ECSA for log read buffers

ECSA storage requirements is minimized by using 64-bit common storage for storing log read buffers.

Bug 31676227: DB2 z/OS - Extract writes incorrect LOGCSN token to trail

Fixed an issue with Extract not being able to use LOGCSN to replay position.

Bug 32254188: DB2 z/OS - SP and UDT statistics show negative numbers

Fixed an issue with the Extract printing a report of the runtime statistics for the mainframe access functionality for a long duration causing the report to show negative values.

Bug 31962294: DB2 z/OS - Prevent deallocating ECSA that has already been deallocated by IPL

Fixed a possibility for Oracle GoldenGate to delete ECSA not owned by its processes if it was already deallocated by IPL.

Bug 31255253: DB2 z/OS - Extract fetch fails when timestamp part of key

Fixed the fetching of source records when timestamp is part of key or no primary key and all keys include a timestamp.

Bug 31923063: DB2 z/OS - Change Extract to check SP/UDF versions and stop if they are incorrect

Protects users from accidentally using incorrect versions of the DB2 SQL procedures and the Extract, which can cause issues with DB2 z/OS.

Bug 31541257: DB2 z/OS - Protection against crashing an LPAR due to mismatch with DB2 z/OS executables

Fixed an issue that occurs if you define the remote stored procedure and name the remote code with a previous version's module inadvertently, you may cause an abend on the DB2 z/OS system.

Bug 30872061: Maria DB - Amazon RDS for MariaDB has been certified for remote capture and delivery

Amazon RDS for MariaDB for remote capture and delivery is supported.

Bug 31690247: MySQL - Capture and delivery of JSON data type is supported

MySQL capture and delivery of JSON data type is now supported.

Bug 32078366: MySQL - Heartbeat range value/message not matched with document bug description

Fixed an issue with the `ALTER HEARTBEATTABLE` command, which caused an error when using negative values for individual components.

Bug 32532571: MySQL - Extract abends with OGG-04036 Positioning sequence ID is out of order

An issue with setting an internal transaction flag when encountering `FILTERTABLE` operations followed by No-Op operations was fixed.

Bug 31346319: SQL Server - Enable PAGE Compression on OracleGGTranTables table

The `OracleGGTranTables` table used by SQL Server CDC Extract are allowed to become very large.

Bug 31487146: SQL Server - Extract Abends when more than 1000 Tables Enabled with TRANDATA

Fixed an issue with Extract abending while trying to check the version consistency of CDC objects when there are more than 1000 tables with trandata listed in the Extract parameter file.

Bug 32335569: SQL Server - Replicat is slow in applying delete and update when there is CHAR/VARCHAR column as part of the primary key

Fixed performance issue due to index seek caused by VARCHAR key column is bound as NVARCHAR.

Bug 32108804: SQL Server - Replicat on SQL Server timezone offset didn't show the correct value

Fixed an issue where the local date and time is displayed without the timezone offset.

5

What's New in this Release for Oracle GoldenGate for Marketplace

This chapter describes the features, enhancements, and changes made to Oracle GoldenGate for Marketplace.

Topics:

- Oracle GoldenGate on Marketplace New Features: August 2022
- Bugs Fixed and Enhancements for Marketplace
  This chapter describes the bugs fixed and enhancements at the time of release.

Oracle GoldenGate on Marketplace New Features: August 2022

Oracle GoldenGate on Marketplace is Available for Oracle and Non-Oracle Databases
Oracle GoldenGate on Marketplace 21c (21.7) is available for Oracle, MySQL, SQL Server, PostgreSQL, and DB2 z/OS.

Bugs Fixed and Enhancements for Marketplace

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.

- Release 21c (21.7.0) - September 2022

Release 21c (21.7.0) - September 2022

Bug 34329890 - Allow all available Intel/AMD shapes in Oracle GoldenGate Marketplace listings

Enhanced Oracle GoldenGate Marketplace to allows all available Intel/AMD shapes in Oracle GoldenGate Marketplace listings.

Bug 34420956 - Support flex shapes in Oracle GoldenGate Marketplace

Flex shapes are supported in Oracle GoldenGate Marketplace.

Bug 34180215 - Terraform Replicat fails with "Error: 400-InvalidParameter" for Oracle GoldenGate Marketplace MA on Oracle Autonomous Database on Shared Infrastructure

Fixed an issue with terraform Replicat failing with `Error: 400-InvalidParameter` for Oracle GoldenGate Marketplace MA on Oracle Autonomous Database on Shared Infrastructure.