

# Oracle® GoldenGate

Release Notes for Windows and UNIX

12c (12.1.2)

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This document describes the new features, major changes, and the known issues for the 12c (12.1.2) release of Oracle GoldenGate for the Windows and UNIX platforms. It includes the following sections:

- [Section 1, "New Features in 12.1.2"](#)
- [Section 2, "Command Changes and Additions"](#)
- [Section 3, "Parameter Changes and Additions"](#)
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## 1 New Features in 12.1.2

This section outlines the new features that are being introduced in this release. It is divided according to each database that this release supports, followed by new features that apply to all supported databases.

- [Section 1.1, "New Features for Oracle Database"](#)
- [Section 1.2, "New Features for MySQL"](#)
- [Section 1.3, "New Features for Sybase"](#)
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## 1.1 New Features for Oracle Database

The following new features support the Oracle Database only.

### 1.1.1 Release 12.1.2.1.0

- Integrated Extract - Extract for Oracle now supports multiple extracts using a shared LogMiner dictionary with the introduction of the `SHARE` option for `REGISTER EXTRACT`. Use of this option returns to an existing LogMiner data dictionary build with a specified SCN creating a clone. This allows for faster creation captures by leveraging existing dictionary builds.
- Edition-based Redefinition (EBR) - This feature enables you to upgrade the database component of an application while it is in use when you are using an Integrated Extract with DDL replication, thereby minimizing or eliminating down time.
- Active Data Guard (ADG) - A new processing option (`TRANLOGOPTIONS MINEFROMACTIVEDG`) is introduced allowing you to configure Classic Extract to mine online redo logs shipped to the Oracle Active Data Guard standby system allowing real-time replication directly from ADG hosts. Oracle GoldenGate connects to the standby database to get metadata and other required data as needed. This mode is useful in load sensitive environments where ADG is already in place or can be implemented. It can also be used as cost effective method to implement high availability using the ADG Broker role planned (switchover) and failover (unplanned) changes.
- `CREATE TABLE AS SELECT` (CTAS) with DMLs- You can now use CTAS statements to provide the DMLs that were created as a part of the original CTAS operation on the primary to the target database.
- Native (redo-based) object replication - You can use integrated Extract to add redo-based capture for the existing User Defined Data Type (UDT) and the new ANYDATA data type. It is not enabled by default and can only be enabled if a 12.1.0.1 database with source database compatibility is 12.0.0.0.0 or greater and the patch for bug 18038108 is installed or a 12.1.0.2 database with source database compatibility is 12.1.0.2.0 or greater. The Integrated Extract will replicate the data natively is fetch-based as it is for classic Extract is fetch-based by default. You can use `USENATIVEOBSUPPORT` to specify that the capture is redo-based.
- Support for DDL and DML handlers - Support for DDL and DML handlers in direct (fallback) mode execution was added. You can replace map level `SQLEXEC` statements with DML statement handlers.
- Column level character set enhancements - The ability to map character set based on columns. For cross-RDBMS replication and if you are using different character set for each column, you can now define the character set based on the column level.
- Support for SOCKS5 - This release is SOCKS5 compliant, which allows you replicate to and from cloud databases without opening additional TCP port on your network. It leverages your SOCKS compliance setting and uses it for data transfer.

### 1.1.2 Release 12.1.2.0.0

- Installation from Oracle Universal Installer - Oracle GoldenGate can now be installed using the Oracle Universal Installer (OUI). OUI is a graphical Java application. The required Java Runtime Environment (JRS) is automatically installed with OUI. The host platform must be Java-enabled. If this is the first time you are installing an Oracle product with OUI, you will be prompted to create the Oracle central inventory, which also creates a subdirectory for Oracle GoldenGate to contain inventory information. For more information, see *Installing and Configuring Oracle GoldenGate for Oracle Database*.
- Improved performance of integrated capture - Integrated capture has been improved to deliver faster performance. This enhancement is transparent to users and requires no configuration changes.
- Integrated Replicat - Replicat for Oracle can now operate in integrated mode for improved scalability within Oracle target environments. In integrated mode, the Replicat process leverages the apply processing functionality that is available within the Oracle database. Integrated Replicat handles referential integrity and data description language (DDL) operations to ensure that these operations are done in the correct

order, so that the administrator does not need to worry about things like parent-child relationships or DDL that would involve multiple tables or structure changes within a single table. This feature requires Oracle 11.2.0.4 or later, or Oracle 12.1.0.1 or later. See *Installing and Configuring Oracle GoldenGate for Oracle Database* for configuration instructions and required privileges.

- Capture and apply to multitenant container database - Oracle GoldenGate now supports the capture from, and delivery to, Oracle multitenant container databases (CDB). Extract can capture from one or more pluggable databases (PDB) within a CDB and write the data to a single trail. Replicat can apply to one PDB, but you can configure multiple processes to handle apply to more than one PDB. For more information, see *Installing and Configuring Oracle GoldenGate for Oracle Database*.
- Three-part object names - To support the specification of objects within a given PDB, Oracle GoldenGate now supports three-part object name specifications in `TABLE` and `MAP` statements and other parameters and commands that accept object names as input. The format is `container.schema.object`. For more information and required privileges, see *Installing and Configuring Oracle GoldenGate for Oracle Database*.
- Native DDL capture - This release of Oracle GoldenGate introduces "native" DDL capture for Extract in integrated mode. This feature is available for Oracle database version 11.2.0.4 and later. Native DDL capture removes the need to use the DDL trigger (and its supporting objects) for the capture of DDL for the supported Oracle versions. With native DDL capture, the capture of DDL is integrated into the database logging server. If the source database is earlier than Oracle 11.2.0.4, or if Extract is in classic capture mode, the DDL trigger must still be used. To switch to the native DDL capture support, see *Upgrading Oracle GoldenGate for Windows and UNIX*.
- Enhanced character set conversion: The conversion of the source character set to an Oracle target character set is now performed by Replicat instead of Oracle Call Interface (OCI). The name of the source character set is included in the trail and Replicat uses that character set for its session. This enhancement eliminates the requirement to set `NLS_LANG` on the target to support conversion. See the list of supported Oracle character sets in *Administering Oracle GoldenGate for Windows and UNIX*. See `SOURCECHARSET` in [Section 3, "Parameter Changes and Additions"](#) for additional information.
- Remote task data type support - Remote task now supports all Oracle data types, including BLOB, CLOB, NCLOB, LONG, UDT, and XML.
- Capturing UDTs that contain CLOBs is now supported.
- See [Section 3, "Parameter Changes and Additions"](#) for other Oracle-related parameter changes.

## 1.2 New Features for MySQL

The following are the new features that support MySQL specifically.

- Community Edition is now supported.
- Starting and positioning Extract using `ATCSN` or `AFTERCSN` is supported.
- Use of the unified audit trail file format is supported.
- MySQL 5.6 is now supported.
- MySQL NDB Cluster 7.1, 7.2 and 7.3 are now supported.

## 1.3 New Features for Sybase

The following are the new features that support Sybase specifically.

- Starting and positioning Extract using `ATCSN` or `AFTERCSN` is supported.
- Use of the unified audit trail file format is supported.
- Sybase 15.7 is supported.

- The UNITEXT data type is supported.

## 1.4 New Features for SQL Server

The following are the new features that support SQL Server specifically.

- Starting and positioning Extract using ATCSN or AFTERCSN is supported.
- Use of the unified audit trail file format is supported.
- SQL Server 2014 capture and delivery is now supported.
- SQL Server 2012 capture is now supported.
- A new TRANLOGOPTIONS option ACTIVESECONDARYTRUNCATIONPOINT was added to keep the secondary truncation point in sync with Extract. The advantage of this method is that you can use third-party transaction-log backup software without concern that Extract may need to access the log backups to retrieve unprocessed transaction data. For more information, see *Installing and Configuring Oracle GoldenGate for SQL Server*.

## 1.5 New Features for DB2 LUW

The following are the new features that support DB2 LUW specifically.

- Starting and positioning Extract using ATCSN or AFTERCSN is supported.
- Use of the unified audit trail file format is supported.
- Two new TRANLOGOPTIONS options were added to specify the positioning by timestamp within a given LRI range in the Extract by providing an LRI range, begin and end timestamps, in the Extract parameter file. For example:

```
TRANLOGOPTIONS TSLOOKUPBEGINLRI 75200.666197, TSLOOKUPENDLRI 75207.666216
```

- DB2 10.1 and 10.5 are now supported.

## 1.6 New Features for DB2 for z/OS

The following are the new features that support DB2 for z/OS specifically.

- With the Oracle GoldenGate Release 12.1.2.1.1, different builds are provided for DB2 for z/OS v11 and versions prior to this version.
- DB3 11.1 and z/OS 2.1 are supported.
- Starting and positioning Extract using ATCSN or AFTERCSN is supported.
- Use of the unified audit trail file format is supported.

## 1.7 New Features for DB2 for i

The following are the new features that support DB2 for i specifically.

- Starting and positioning Extract using ATCSN or AFTERCSN is supported.
- Use of the unified audit trail file format is supported.
- Native (on box) delivery (Replicat) is now supported.
- Native commands for Extract, Replicat, DEFGEN, GGSCI, KEYGEN and LOGDUMP allow submission of Oracle GoldenGate commands directly from the IBM i native command line.

- The installer was updated to allow for the creation of the native library, as well as, setting the ownership of the Oracle GoldenGate objects to a specified user profile.

## 1.8 New Features for SQL/MX

The following are the new features that support SQL/MX specifically.

- Starting and positioning Extract using `ATCSN` or `AFTERCSN` is supported.
- Use of the unified audit trail file format is supported.
- SQL/MX now uses `CACHEMGR` instead of `TRANSMEMORY`. See these parameters in *Reference for Oracle GoldenGate for Windows and UNIX* for more information.

## 1.9 New Features for Teradata

The following are the new features that support Teradata specifically.

- Teradata 14.10 and 15.0 are supported.
- Starting and positioning Extract using `ATCSN` or `AFTERCSN` is supported.
- Use of the unified audit trail file format is supported.

## 1.10 New Features for Informix

The following are the new features that support Informix specifically.

- Support for CDC records was added by adding the `CDCRECORDSFETCHCOUNT`, `CDCSESSIONTIMEOUT`, and `CDCRECORDQUEUE SIZE` options to the `VAM` parameter.
- A new parameter, `LOGICALLOGWARNINGTHRESHOLD`, was added to the `VAM` parameter to specify the logical log usage threshold.
- Support for real-time data replication with both capture and delivery for the Informix Dynamic Server (IDS) Database Enterprise Editions 11.7 and 12.1 are supported.

## 1.11 New Features for All Supported Databases and Platforms

This section introduces the new features that are common to all of the databases and platforms that are supported in this release.

- Coordinated Replicat - Replicat now can run in coordinated mode to provides improved scalability on all platforms. Coordinated Replicat is a multithreaded process that applies transactions in parallel instead of serially. Each thread handles all of the filtering, mapping, conversion, SQL construction, and error handling for its assigned workload. A coordinator thread coordinates transactions across threads to account for dependencies. This enhancement simplifies the administration of Oracle GoldenGate over the use of multiple single-threaded Replicats, and it will reduce maintenance overhead of the product. For more information and configuration instructions, see *Administering Oracle GoldenGate for Windows and UNIX*. See [Section 3, "Parameter Changes and Additions"](#) for related parameter additions and changes. If you convert to coordinated Replicat, it is recommended that you review the version 12.1.2 documentation for all of the Replicat parameters that you are currently using, to determine if they are affected by the change. Some commands and parameters now can be controlled at the thread level.
- SQL-92 Rules for object names and literals - Oracle GoldenGate now treats strings that are within single quotes as literals. Oracle GoldenGate has supported double-quoted object names since version 11.2 but did not fully implement the rule of single quotes for literals until version 12. Supporting double quotes for object names and single quotes for literals brings Oracle GoldenGate into compliance with SQL-92 rules. The change to default SQL-92 rules affects literals in parameter files (including `OBEY` files), `SQLEXEC` clauses,

token values, conversion functions, user exits, and GGSCI commands. It also affects literal strings in the DESC options of the ADD commands. See *Reference for Oracle GoldenGate for Windows and UNIX* for the parameters that you are using, to determine whether single or double quotes are now required. See *Upgrading Oracle GoldenGate for Windows and UNIX* for information about your options for converting your parameter files to use the new naming convention or retain the existing one. See [Section 3, "Parameter Changes and Additions"](#) for related parameter changes.

- **Security enhancements** - The following enhanced security protection was added to secure database passwords and user IDs, and the data in the trails and across TCP/IP. For more information about these features, see *Administering Oracle GoldenGate for Windows and UNIX*. These features are not supported on the iSeries, z/OS, and NonStop platforms.
  - **Credential store:** You can use a credential store to secure database user IDs and their encrypted passwords and associate them with an alias. It is the alias, not the actual user ID or password, that is specified in a command or parameter file. This feature eliminates the need to supply an encrypted password or encryption key as command or parameter input. All commands and parameters that take a database login as input have the option to specify an alias rather than an actual user ID and password. The credential store is implemented as an autologin wallet within the Oracle Credential Store Framework (CSF). See [Section 2, "Command Changes and Additions"](#) for new commands that support this feature.
  - **Wallet and master key:** You can encrypt data in trail files and across TCP/IP by using a master-key wallet and storing one or more versions of a master key within this wallet. Oracle GoldenGate uses an auto-login wallet that does not require human intervention to supply the necessary passwords. Each time Oracle GoldenGate creates a trail file, it generates a new encryption key automatically. This encryption key encrypts the trail contents, while the master key encrypts the encryption key. To encrypt data across the network, Oracle GoldenGate generates a session key using a cryptographic function based on the master key. See [Section 2, "Command Changes and Additions"](#) for new commands that support this feature. See the ENCRYPTTRAIL and DECRYPTTRAIL parameters in [Section 3, "Parameter Changes and Additions"](#) for behavior changes.
- **Character set conversion enhancements** - Extract now writes the name of the source character set to the trail, so that Replicat can use the specified character set for its session. This enhancement enables automatic character-set conversion without user-supplied input by means of a parameter specification. Additionally, the replacement of invalid code points ("bad characters") in REPLACEBADCHAR has been enhanced. See [Section 3, "Parameter Changes and Additions"](#) for parameter changes related to this enhancement.
- **Enhanced time zone conversion** - Extract now writes the source time zone to the trail. Replicat sets its session to this time zone. This eliminates the need to use SQLEXEC to alter the Replicat session time zone to apply the source database time zone to the target. See [Section 3, "Parameter Changes and Additions"](#) for parameter changes related to this enhancement.
- **Enhanced SHOWSYNTAX** - The SHOWSYNTAX feature now works with dynamic SQL.
- **Owner and catalog/container wildcarding** - You can now use wildcards to specify owners/schemas and the Oracle PDB or SQL/MX catalog of a name specification. This allows easier TABLE and MAP specifications and easier setup in HR/DR scenarios where you want to replicate everything but the internal objects and schemas.
- **Automatic discard file creation** - By default, Oracle GoldenGate processes now generate a discard file with default values whenever a process is started with the START command through GGSCI. However, if you currently specify the DISCARDFILE parameter in your parameter files, those specifications remain valid. If you did not specify DISCARDROLLOVER along with DISCARDFILE, however, your discard file will roll over automatically every time the process starts. This automatic rollover behavior contradicts the DISCARDFILE [APPEND/PURGE] option because the new default is to rollover. See [Section 3, "Parameter Changes and Additions"](#) for more information about DISCARDFILE and the new NODISCARDFILE.
- **Commit sequence number (CSN)/XID or CSN-based transaction filtering in checkpoint table for logical recovery (Replicat only)** - Replicat now uses CSN-based information to filter the duplicated records and

transactions. It stores the CSN state information while checkpointing in the checkpoint table. By default this feature is ON. Any transactions with CSN lower than the completed CSN are treated as duplicates and filtered. Any transactions with the same completed CSN and found in the transaction list are treated as duplicate and filtered.

- Enhanced `START REPLICAT` - This command now includes the `FILTERDUPTRANSACTIONS` option for use with nonintegrated Replicat. See [Section 2, "Command Changes and Additions."](#)

## 2 Command Changes and Additions

This section contains information about new and updated Oracle GoldenGate commands as the result of new features or functionality changes in the product for this release.

### 2.1 Trandata Commands

The following changes affect the `TRANDATA` and `SCHEMATRANDATA` commands.

- `ADD SCHEMATRANDATA` and `ADD TRANDATA` have been enhanced to support integrated Replicat for Oracle. By default, these commands now enable the unconditional logging of the primary key and the conditional supplemental logging of all unique key(s) and foreign key(s) of a table. These are known as the scheduling columns, which must be available to integrated Replicat to compute dependencies. A new `NOSCHEDULINGCOLS` option disables the logging of scheduling columns. A new `ALLCOLS` option enables the unconditional logging of all of the key and non-key columns of a table.
- `DELETE SCHEMATRANDATA` and `DELETE TRANDATA` have also been enhanced based on the changes to the `ADD` commands. By default, these commands attempt to remove the supplemental logging of the key columns that are used by Oracle GoldenGate (can be the primary key, a unique key, `KEYCOLS` columns, or all columns) and also the scheduling columns. To delete the logging of the Oracle GoldenGate key columns, but not the scheduling columns, include the `NOSCHEDULINGCOLS` option. If the `ADD` command was issued with the `ALLCOLS` option, use the `DELETE` command with the `ALLCOLS` option to remove the supplemental logging of all of the columns, including the Oracle GoldenGate key columns.

### 2.2 Integrated Replicat Commands

These changes are the result of the new integrated Replicat feature (Oracle only).

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**Note:** Before using Integrated Replicat, refer to the section [Section 7.2, "Additional Installation Instructions for Oracle"](#) in this document for database patch information.

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- `ADD REPLICAT` now has an `INTEGRATED` option to create the Replicat group in integrated mode (for Oracle)
- `ALTER REPLICAT` has new `INTEGRATED` and `NONINTEGRATED` options to enable you to switch a group from integrated mode to nonintegrated mode, or from nonintegrated mode to integrated mode.
- A new `REGISTER REPLICAT` command was added to register a Replicat group with a target Oracle database to support integrated mode. In normal circumstances, starting Replicat registers the group with the database. This command is for use if Oracle GoldenGate returns a message that an integrated Replicat is not registered with the database.
- `SEND REPLICAT` now has an `INTEGRATEDPARAMS` option that can be used to send parameter changes to the database inbound server of an integrated Replicat.
- A new `UNREGISTER REPLICAT` command was added to unregister an integrated Replicat group from an Oracle target database. This command is only required if the group is forcibly deleted, rather than being stopped gracefully and then deleted.

## 2.3 Coordinated Replicat Commands

These changes are the result of the new coordinated Replicat feature.

- `ADD REPLICAT` now has a `COORDINATED` option to create the Replicat group in coordinated mode. You can also specify the maximum number of threads allowed for the Replicat group.
- A new `SYNCHRONIZE REPLICAT` command was added to enable the threads of a coordinated Replicat to process up to the same position in the trail after an unclean shutdown. This command helps with the recovery of a coordinated Replicat.

## 2.4 Wallet Commands

These changes are the result of the new wallet and master key security enhancement.

- `CREATE WALLET` - Creates the master-key wallet. This wallet stores the master key that is used to encrypt the encryption keys that secure data in the trail files and across TCP/IP.
- `OPEN WALLET` - Opens the wallet so that work can be performed on it.
- `PURGE WALLET` - Permanently removes master key versions from the wallet. The versions must be marked with the `DELETE MASTERKEY` command first.
- `ADD MASTERKEY` - Adds a master key to the wallet.
- `INFO MASTERKEY` - Shows information about the contents of a currently open wallet.
- `RENEW MASTERKEY` - Creates a new version of the master key.
- `DELETE MASTERKEY` - Marks a version of the master key for deletion.
- `UNDELETE MASTERKEY` - Removes a deletion mark from a master key version, thus retaining that version instead of deleting it.

## 2.5 Credential Store Commands

These changes are the result of the new credential store security enhancement.

- `ADD CREDENTIALSTORE` - creates a credential store, where user IDs and their encrypted passwords are stored.
- `ALTER CREDENTIALSTORE` - enables the management of user ID and password pairs in the credential store.
- `INFO CREDENTIALSTORE` - returns information about the credential store.
- `DELETE CREDENTIALSTORE` - removes a credential store from the system.
- `{DBLOGIN | MININGDBLOGIN} USERIDALIAS` - supplies an alias for the login user ID and password when there is a local Oracle GoldenGate credential store that contains a credential with the required privileges for this `DBLOGIN` command.

## 2.6 Other Command Changes

This section contains information about other changes to Oracle GoldenGate commands.

### 2.6.1 Release 12.1.2.1.0

- The `SCN` option of the `REGISER EXTRACT` command was changed to add the `SHARE` option to return to an existing LogMiner data dictionary build with a specified SCN creating a clone.
- The `SEND EXTRACT` command was changed to add the following options:
  - `BR BRFSOPTION` performs synchronous/asynchronous writes of the mapped data in Bounded Recovery.



- CACHEDMGR returns statistics about the Oracle GoldenGate memory cache manager.
- CACHEDMGR CACHEFSOPTION performs synchronous or asynchronous writes of the mapped data in the Oracle GoldenGate memory cache manager.
- NOPREPAREFORUPGRADETOIE dynamically turns off the PREPAREFORUPGRADETOIE option if necessary and is the default.

## 2.6.2 Release 12.1.2.0.0

- START EXTRACT has new ATCSN and AFTERCSN options to specify an Extract start point that is at, or after, a specified CSN that is valid for the database, such as an Oracle SCN. To support starting at, or after, a CSN, the trail must be of Oracle GoldenGate version 10.0.0 or later, because the CSN is stored in the file header so that it is available to downstream processes.
- REGISTER EXTRACT has a new SCN option for Oracle, allowing you to register Extract to begin capture at a specific system change number (SCN).
- ADD EXTRACT and ALTER EXTRACT have a new SCN option for Oracle that starts Extract at the transaction in the redo log that has the specified Oracle system change number (SCN). This option is valid for both capture modes of Extract.
- REGISTER EXTRACT has a new CONTAINER option for Oracle databases to specify the PDB of an Oracle multitenant container database (CDB) in which to register an Extract group. Additional options of ADD CONTAINER and DROP CONTAINER enable you to add a PDB to, or drop a PDB from, the Extract configuration.
- UNREGISTER EXTRACT also has a CONTAINER option to support the unregistering of an Extract from a specified PDB.
- START REPLICAT now has a FILTERDUPTRANSACTIONS option that causes Replicat to ignore transactions that it already processed. This option can be used if Extract was repositioned to a new start point and you think that there are duplicate transactions in the trail that could cause Replicat to abend. This option is not valid (or needed) for an Oracle integrated Replicat.
- Commands that return processing information have been enhanced to show information about integrated and coordinated Replicat groups.
- Commands that take object names as input have been enhanced to support three-part names.
- Several commands can be issued for specific threads of a coordinated Replicat.
- A new SET NAMECCSID command enables you to set the CCSID (coded character set identifier) of the GGSCI session when you need to issue commands for tables in a DB2 for i database. This command is required if the CCSID of the object names stored in the SQL catalog tables is different from the CCSID of the system. The SQL catalog tables are created with the CCSID of the system, but the actual database object names could be represented with a different CCSID. The catalog does not indicate this difference when queried, and therefore Oracle GoldenGate could retrieve the name incorrectly unless NAMECCSID is present to supply the correct CCSID value. See also the NAMECCSID parameter.
- STATS EXTRACT has a new REPORTCHARCONV option that adds statistics for character-set conversion, when performed, to the statistics output. It is valid for Replicat and for Extract when TABLE parameters have a TARGET clause and character-set conversion is performed. The following statistics are provided:
  - Total column character set conversion failure: the number of validation or conversion failures in the current Extract run.
  - Total column data truncation: the number of times that column data was truncated in the current Extract run as the result of character set conversion
- SEND REPLICAT now has CACHEDMGR options that return statistics about the Oracle GoldenGate memory cache manager. CACHESTATS should only be used as explicitly directed by Oracle Support.
  - The CACHESTATS option returns statistics for virtual memory usage and file caching.

- The `CACHEQUEUES` option returns statistics for the free queues only.
- The `CACHEPOOL n` option returns statistics for the specified object pool only.

### 3 Parameter Changes and Additions

This section contains information about new and updated Oracle GoldenGate parameters as the result of new features or functionality changes in the product for this release.

#### 3.1 Parameter Changes and Additions for Oracle Database

This section contains information about parameter changes that apply only to the Oracle Database.

##### 3.1.1 Release 12.1.2.1.0

- The `DBOPTIONS` parameter has the added `INSTANTIATION_FILTERING` option to enable Instantiation SCN automatic filtering, which fetch at mapping-time instantiation. The SCN data is used to prevent conflicts between Oracle data pump utilities and Oracle GoldenGate.
- The new `SOCKSPROXY` parameter allows you to use the new SOCKS5 functionality.
- The `DDLOPTIONS` parameter has the added `CAPTUREGLOBALTEMPTABLE` option to allow Global Temporary Tables DDLs to be visible to Extract so that they can be replicated.
- The `EXCLUDETAG` parameter was added for use in your data pump or Replicat parameter file to specify changes to be excluded from trail files.
- The `TRANLOGOPTIONS` parameter has the following changes:
  - The `EXCLUDETAG` option has been extended to include the `EXCLUDETAG +` option to direct the Extract process to ignore the individual records that are tagged with any redo tag.
  - The `GETCTASDML` option was added to enable CTAS DMLs to be sent from LogMiner and replicated on the target database.
  - The new `MINEFROMACTIVEDG` option specifies that Extract is allowed to mine redo from an Active Data Guard instance.
  - The new `MINEFROMSNAPSHOTSTBY` option controls whether or not Oracle GoldenGate can capture from redo that is archived by a snapshot standby database. It enables Extract to run on a snapshot standby in classic capture mode or in integrated capture mode in an upstream configuration.
  - The `PREPAREFORUPGRADETOIE` option was added to enable upgrading from Classic to Integrated Extract on Oracle RAC.
  - The `USENATIVEOBSUPPORT` option was added to enable integrated Extract to do redo-based capture for UDT and ANYDATA data types.
  - The new `USEPREVRESETLOGSID` option specifies that Extract will take the previous `RESETLOG` id as the current branch.

##### 3.1.2 Release 12.1.2.0.0

- The new `HANDLEDLFAILOVER` option for the `TRANLOGOPTIONS` parameter allows Extract in integrated capture mode to controls whether or not Extract will query the apply progress of a target standby database and only write trail data up to that point. It is intended to keep Extract at a safe point behind any data loss failover. The valid values are `TRUE` or `FALSE`; the default is `FALSE`.
- The new `ALLOWINVISIBLEINDEXKEYS` parameter allows Extract and Replicat to use columns that are part of an Oracle invisible index as a unique row identifier. By default, the process abends when this type of index is the only available unique identifier. This is a `GLOBALS` parameter.

- The BULKLOAD parameter was enhanced with the following options:
  - LOGGING | NOLOGGING - LOGGING is the default and enables redo logging for the loaded objects. NOLOGGING increases BULKLOAD performance by disabling redo logging of the loaded objects.
  - PARALLEL | NOPARALLEL - PARALLEL enables BULKLOAD to use multiple load sessions to load the same segment concurrently. NOPARALLEL is the default and disables parallel loading.
  - SKIPALLINDEXES | SKIPUNUSEDINDEX | NOSKIPALLINDEXES - Controls the handling of indexes. NOSKIPALLINDEXES is the default, which allows index maintenance during a direct load. SKIPALLINDEXES skips all index maintenance. SKIPUNUSEDINDEX skips unusable indexes.
- The DBOPTIONS parameter has the following changes:
  - [NO] ALLOWUNUSEDCOLUMN - Controls whether Extract abends when it encounters a table with an unused column. ALLOWUNUSEDCOLUMN is now the default. NOALLOWUNUSEDCOLUMN was added to allow an abend on unused columns.
  - INTEGRATEDPARAMS - Supports integrated Replicat by enabling parameters to be sent to the inbound server.
  - LIMITROWS is now the default.
  - SESSIONPOOLMAX, SESSIONPOOLMIN, and SESSIONPOOLINCR options support integrated capture and control the number of incremental sessions that can be added to the OCI Session Pool, which is used by Extract for fetching from a container database.
  - SETTAG option supports bi-directional replication. Sets the value for an Oracle redo tag that will be used to identify the transactions of the associated Replicat in the redo log. These transactions can be filtered by an Extract that has the TRANLOGOPTIONS parameter with the EXCLUDETAG option set to the tag value.
  - DBOPTIONS SUPPRESSTRIGGERS is now the default.
  - A new SKIPTEMPLOB option changes the LOB apply mode behavior to directly apply LOB data to an Oracle target. A new NOSKIPTEMPLOB option uses the previous method of using a temporary LOB when applying the data. SKIPTEMPLOB, the default, improves database SQL execution time. There is no user-visible behavior change, except that when the SHOWSYNTAX parameter is specified, the output shows a SQL statement that includes a RETURNING clause to retrieve the LOB locator that enables the direct write of the LOB to the target column. For more information, see *Reference for Oracle GoldenGate for Windows and UNIX*.
- The DDL parameter has the following new options:
  - A SOURCECATALOG | ALLCATALOGS option to specify how unqualified object names in an OBJNAME clause are resolved to the correct container of a multitenant container database.
  - ALLOWEMPTYOBJECT and ALLOWEMPTYOWNER options to allow an OBJNAME specification to process DDL that contains no object or owner name.
- The DDLOPTIONS parameter has the following new options:
  - A DEFAULTUSERPASSWORDALIAS option that can be used instead of DEFAULTUSERPASSWORD to specify a credential alias if an Oracle GoldenGate credential store is being used.
  - A NOTAG option that prevents the tagging of DDL that is applied by Replicat with the default tag of 00 or a tag specified with the SETTAG option of DBOPTIONS. Note that this functionality is available only with Integrated Capture.
- A new DDLRULEHINT parameter enables you to add a RULE hint to the DDL trigger to improve the performance of the trigger.
- A new HAVEUDTWITHNCHAR parameter supports data that contains user-defined types that have an NCHAR, NVARCHAR2, or NCLOB attribute. When this data is encountered in the trail, HAVEUDTWITHNCHAR causes

Replicat to connect to the Oracle target in AL32UTF8, which is required when a user-defined data type contains one of those attributes

- The following new options were added to TRANLOGOPTIONS:
  - {ACTIVATIONIDPADLEN | DATABASEIDPADLEN | THREADPADLEN | SEQPADLEN | RESETLOGSIDPADLEN} specify the minimum default padding length when Extract forms the archive log name using the format specifiers %A, %D, %T, %S, and %R in the ALTARCHIVELOGFORMAT parameter.
  - ALLOWDATALOSS enables classic Extract to continue processing when errors occur due to invalid redo records. By default, Extract abends on these errors.
  - ASMUSERALIAS *alias* [DOMAIN *domain*] specifies the alias of credentials that Extract uses to log into an ASM instance. The credentials are stored in the Oracle GoldenGate credential store.
  - CHECKPOINTRETENTIONTIME controls the number of days that Extract retains checkpoints before they are purged.
  - CHECKTABLELEVELSUPPLOG causes Extract to send a warning to the report file if it encounters a table for which the ADD TRANDATA command was not issued to create an Oracle GoldenGate supplemental log group. CHECKTABLELEVELSUPPLOG also verifies whether the key columns in any user-defined log groups for the table are the same as, or a superset of, the key columns of the log group that was created with the ADD TRANDATA command.
  - MININGUSERALIAS specifies the alias for the login credentials that Extract uses to log into a downstream mining database. The login credentials are stored in the Oracle GoldenGate credential store.
- A new UPDATERECORDFORMAT parameter was added to enable Extract to combine the before and after images of an UPDATE operation into a single record in the trail. This parameter is valid for Oracle versions 11g and later and supports both Extract capture modes. See *Reference for Oracle GoldenGate for Windows and UNIX* for available options.

## 3.2 General Parameter Changes and Additions

This section contains information about changes to parameters that apply to all of the databases supported by this release of Oracle GoldenGate.

### 3.2.1 Release 12.1.2.1.1

- A new DBOPTIONS option for SQL Server, TRANSNAME, allows an individual Replicat to use a specific transaction name that is specified in the parameter file.

### 3.2.2 Release 12.1.2.1.0

- A new GLOBALS parameter, USEIPV4, forces the use of Internet Protocol version 4 (IPv4) by Oracle GoldenGate for TCP/IP connections.
- The new CHARMAP parameter specifies that the character mapping file overrides the character code point mapping. By enabling character set conversion for some character sets, you may encounter performance degradation.
- The TABLE | MAP parameter was changed to add the KEYANDMOD option, which is used as an extension of the key option for both Extract and Replicat. For update DMLs on the source, Extract logs the key and modified columns. Replicat on the target will use the KEY and MODIFIED columns during conflict detection in a WHERE clause.

### 3.2.3 Release 12.1.2.0.0

- The USEANSISQLQUOTES parameter is now deprecated, and the new NOUSEANSISQLQUOTES parameter can be used to force the old conventions where literals are in double quotes.

- The new GLOBALS parameters, CATALOGEXCLUDE, SCHEMAEXCLUDE, and EXCLUDEWILDCARDOBJECTSONLY, parameters have been added to control the exclusion of objects from wildcard specifications.
  - CATALOGEXCLUDE and SCHEMAEXCLUDE exclude objects that are owned by the specified catalog or schema, respectively, from the Oracle GoldenGate configuration when wildcards are being used to specify the owners in TABLE or MAP statements.
  - EXCLUDEWILDCARDOBJECTSONLY forces the inclusion of non-wildcarded objects specified in TABLE or MAP parameters when an exclusion parameter contains a wildcard that otherwise would exclude that object.
- A new parameter, LOGALLSUPCOLS, controls how Extract writes supplementally logged columns specified with ADD TRANDATA or ADD SCHEMATRANDATA to the trail. This parameter supports integrated Replicat (for Oracle database) and the Oracle GoldenGate Conflict Detection and Resolution feature (CDR).
- A new GLOBALS parameter, NOUSEANSISQLQUOTES, was added to allow the retention of the pre-version 12 object naming conventions (non-SQL-92 quote rules). To keep your current parameter files that do not conform to SQL-92 rules, add this parameter to the GLOBALS file before you upgrade Oracle GoldenGate, and keep that parameter going forward. NOUSEANSISQLQUOTES affects Extract, Replicat, DEFGEN, and GGSCI. For more information, see *Upgrading Oracle GoldenGate for Windows and UNIX*.
- A new COORDSTATINTERVAL parameter sets the amount of time between requests for statistics sent by the Replicat coordinator thread to the apply threads.
- A new COORDTIMER parameter sets the amount of time that the coordinator thread waits for the apply threads to start.
- A new GLOBALS parameter CREDENTIALSTORELOCATION sets the name of the credential store if it is in a non-default location.
- The DISCARDFILE parameter is no longer required unless you want override the new default behavior, which is to automatically create discard files with default values. DISCARDFILE enables you to customize the name, location, size, and write mode of the discard file.
- A new NODISCARDFILE parameter was added to prevent the creation of a discard file.
- The behavior of ENCRYPTTRAIL and DECRYPTTRAIL has changed:
  - ENCRYPTTRAIL is only required for the primary Extract. You can use it for a data pump to specify a different encryption algorithm for the output trail. Use DECRYPTTRAIL and then use ENCRYPTTRAIL before the output trail specification.
  - DECRYPTTRAIL is no longer required for a data pump unless you need the data to be decrypted in the output trail. By default, if a data pump must process encrypted data, it decrypts the data and then encrypts it again automatically before writing to the output trail unless DECRYPTTRAIL is specified. Replicat always decrypts the trail before applying data to the target.
- A new parameter TRAILBYTEORDER was added for EXTFILE, RMTFILE, EXTTRAIL, and RMTTRAIL and as a GLOBALS parameter. TRAILBYTEORDER specifies whether the metadata in the file records is BIGENDIAN, LITTLEENDIAN, or NATIVEENDIAN. Valid for files with FORMAT RELEASE of 12.1 or higher.
- FORMATXML now outputs XML stored as CLOB or BLOB up to 4000 bytes by default. To include larger sizes, use the new ENCODING option.
- A new NOCATALOG parameter for DEFGEN removes the Oracle container name or the SQL/MX catalog name from a table specification before the definition is written to the definitions file.
- A new GLOBALS parameter NODUPMSGSUPPRESSION prevents the automatic suppression of duplicate informational and warning messages in the report file, the error log, and the system log files.
- The REPLACEBADCHAR parameter has been enhanced with new options to control the response of Oracle GoldenGate when a valid code point does not exist for the source or target character set when mapping character-type columns. By default, the check for invalid code points is only performed when the source

and target databases have different character sets, and the default response is to abend. You can use the `FORCECHECK` option to force the process to check for invalid code points when the source and target databases have the same character set. `REPLACEBADCHAR` applies to the entire parameter file.

- A new `SOURCECATALOG` parameter allows a default source Oracle PDB or SQL/MX catalog to be specified for subsequent `TABLE` or `MAP` statements. It allows two-part names to be used in those statements, rather than having to include the PDB or container in every specification.
- The following parameter changes support the enhancements made to character-set conversion:
  - The new `SOURCECHARSET` parameter now supports character-set conversion when an override to the default behavior is required. Only Extract versions 11.2.1 and later write information about the source character set to the trail, and Replicat converts character sets by default. `SOURCECHARSET` can be used for Extract versions earlier than 11.2.1, which do not identify the source character set in the trail, to specify a source character set for accurate character-set conversion by Replicat.
  - The `PASSTHRU` option of `SOURCECHARSET` can be used to prevent the automatic conversion of the source data to the target character set. This functionality replaces the deprecated `NOCHARSETCONVERSION` parameter. The `DB2ZOS` option is required if the version of a trail that contains DB2 z/OS data is Oracle GoldenGate 9.0 or 9.5. This parameter ensures that Replicat recognizes that the data is from DB2 on z/OS. (DB2 on z/OS permits a mix of ASCII and EBCDIC character formats.)
  - `[NO] BINARYCHARS` is deprecated. It is replaced by the `PASSTHRU` option of `SOURCECHARSET`.
  - `[NO] CHARSETCONVERSION` is deprecated. It is replaced by the `SOURCECHARSET` parameter.
  - `TRAILCHARSET` is now an alias for `SOURCECHARSET` and can be left in the parameter file. However, to ensure proper data replication, Oracle GoldenGate no longer overwrites the source database character set with the `TRAILCHARSET` parameter value if: a) the trail file has source database character set information and, b) Replicat is running against an Oracle database. This applies to Oracle databases only. For non-Oracle databases, `TRAILCHARSET` now behaves like the new `SOURCECHARSET` parameter and overwrites the trail character set with the specified one.
- The new `SOURCETIMEZONE` and `PRESERVETARGETTIMEZONE` parameters can be used to override the trail time zone and force the use of a specific time zone or the time zone of the target database. These parameters also support trails written by earlier Extract versions that do not write the timezone to the trail.
- The `MAP` parameter has the following new options to support coordinated Replicat:
  - `COORDINATED` - forces transactions made on objects in the same `MAP` statement to be processed as barrier transactions. Barrier transactions are managed automatically in a coordinated Replicat configuration. Barrier transactions are transactions that require coordination across threads. Examples include DDL statements, transactions that include updates to primary keys, and certain `EVENTACTIONS` actions. One use case for this would be force a `SQLEXEC` to be executed in a manner similar to a serial execution. This could be beneficial if the results can become ambiguous unless the state of the target is consistent across all transactions.
  - `THREAD thread_ID` - Enables the partitioning of the Replicat workload across multiple processing threads of a coordinated Replicat. `THREAD` specifies that all of the object or objects in the same `MAP` statement are to be processed by the specified Replicat thread. The specified thread handles filtering, manipulation, delivery to the target, error handling, and other work that is configured for those objects. All tables that have referential dependencies among one another must be mapped in the same thread.
  - `THREADRANGE (thread_range[, column_list])` - Enables the partitioning of the workload of a specific target table evenly among a range of threads, based on the value of a specified column or columns. Each specified thread handles filtering, manipulation, error handling, delivery to the target, and other work for its range of rows. Using a range of threads may improve apply performance for very large tables or tables that frequently incur long-running transactions or heavy volume, but can be used in other cases, as well.

- A new `USEDEDICATEDCOORDINATIONTHREAD` parameter supports coordinated Replicat by forcing Replicat to maintain a dedicated coordination thread to apply barrier transactions. The thread ID of this thread is always 0. By default, Replicat uses the thread with the lowest thread ID to apply barrier transactions.
- A new `USERIDALIAS` parameter was added to support the credential store feature. `USERIDALIAS` enables you to specify an alias, rather than a user ID and password, in the parameter file. The user IDs and encrypted passwords are stored in the credential store.
- A new `NAMECCSID` parameter was added for DB2 for i to enable you to specify the CCSID (coded character set identifier) of the database object names stored in the SQL catalog tables. The SQL catalog tables are created with the CCSID of the system, but the actual database object names could be represented in the catalog with characters from a different CCSID. The catalog does not indicate this difference when queried, and therefore Oracle GoldenGate could retrieve the name incorrectly unless `NAMECCSID` is present to supply the correct CCSID value. This parameter can be set for `GLOBALS`, Extract, Replicat, and `DEFGEN`. The `SHOW` command now shows the current default CCSID.
- The behavior of the `EVENTACTIONS` option `IGNORE` was changed. Now, an `IGNORE` action is processed after all the qualification, filtering, mapping, and user-exit operations are processed. The record or transaction is ignored in the final output phase and prevents the record or transaction from being written to the output target (the trail in the case of Extract or the database in the case of Replicat). Therefore, in certain expressions, for example those that include `SQLEXEC` operations, the `SQLEXEC` will be executed before the `IGNORE` is processed. This means that, while the record is not written to the trail or target database, all of the effects of processing the record through qualification, filtering, mapping and user-exit will occur. Note that `IGNORE` is not valid for DDL records. Because DDL operations are autonomous, ignoring a record is equivalent to ignoring the entire transaction.

## 4 Changes to Conversion Functions

The hash calculation used by the `@RANGE` function to partition data among Replicat processes has been changed. This change is transparent, and no re-partitioning of rows in the parameter files is required, so long as the upgrade of Oracle GoldenGate is performed as directed in *Upgrading Oracle GoldenGate for Windows and UNIX*. Note that if the Replicat processes are not upgraded all at the same time, or the trails are not cleaned out prior to the upgrade, rows may shift partitions as a result of the new hash method, which may result in collision errors.

## 5 Default Behavior Changes

In addition to the content mentioned in prior to this section these are some additional changes in product behavior.

### 5.1 Release 12.1.2.1.0

- The `All` option of the `GETBEFORECOLS` parameter was changed so that Extract will log all CDR supported data types to the trail.

### 5.2 Release 12.1.2.0.0

- `ADD TRANDATA` and `ADD SCHEMATRANDATA` now log all unique indexes and conditionally log foreign key columns in Oracle tables.
- In MySQL, `LOBFORWARDREADING` is now the default instead of `LEGACYLOBREADING`.
- In order to get OEM Plugin and Oracle GoldenGate Monitor to work with Oracle GoldenGate 12.1.2, add the following line at the end of the `cfg/Config.properties` files:

```
jagent.ssl=false
```

- In earlier versions of GoldenGate, files created by GoldenGate processes were created with 666 file permissions. Oracle standards dictate that file permissions should be 640 by default. The following versions of GoldenGate now create files with permissions 640 by default, in compliance with Oracle guidelines. The `OUTPUTFILEUMASK` parameter may be used to control the permissions of trail and discard files.
  - OGG 12.1.2.0.0+
  - OGG 11.2.1.0.7+
  - OGG 11.1.1.1.6+
- As of Oracle GoldenGate 12c, it is no longer possible to create a trail file from a DB2 z/OS Extract that has both ASCII and EBCDIC data. If you are capturing data from ASCII tables in DB2 z/OS and are already using the `ASCIITOEBCDIC`, `TRAILCHARSETEBCDIC`, `EBCDICTOASCII`, or `TRAILCHARSETASCII` parameter, this change has no effect. If none of these conversion control parameters was being used, the new 12c default will add A2E conversion of data from any ASCII tables during capture. If the pre-12c configuration replicated data from z/OS to z/OS, Replicat will convert this data back to ASCII during apply.

## 6 Deprecated Parameters and Commands

This section contains information about the parameters and commands that are no longer used in this new release.

- The `CACHEBUFFERSIZE` option of the `CACHEMGR` parameter is now deprecated.
- `TRANLOGOPTIONS _OPTIMIZEROWMIGRATION` is now the default, and the parameter has been removed.
- In SQL Server `LEGACYLOBREADING` has been deprecated.
- `[NO]BINARYCHARS` is deprecated. It is replaced by the `PASSTHRU` option of `SOURCECHARSET`. `BINARYCHARS` will be honored, but a warning will be generated.
- `[NO]CHARSETCONVERSION` is deprecated. It is replaced by the `SOURCECHARSET` parameter.
- `[NO]DYNSQL` is deprecated. `SHOWSYNTAX` no longer depends on this parameter. However, `SHOWSYNTAX` is not compatible with Coordinated Replicat.
- `ETOLDFORMAT` is deprecated.
- `TRAILCHARSET` is deprecated and acts as an alias for `SOURCECHARSET` if present.
- The `DBOP` option of `SQLEXEC` is deprecated. However, be aware that it never functioned properly.
- The `EOFDELAYMS` and `MAXCOMMITPROPAGATIONDELAY` options of `THREDOPTIONS` are deprecated.
- The `USEANSISQLQUOTES` parameter, which forced the SQL-92 standard in previous releases, is now deprecated.

## 7 Installation and Upgrades

This section contains information about installation and upgrades for this release.

For full upgrade instructions, see *Upgrading Oracle GoldenGate for Windows and UNIX*.

### 7.1 Uncompression Instructions

The installation file downloaded from Oracle is not compressed using `gzip`; it is a standard `.zip` file. To uncompress the download, use the following methods:

- **Windows** - Use WinZip or another method that can support files with the `.zip` extension.



- **UNIX / Linux** - Use the `unzip` command utility to uncompress the downloaded file.
- **Mainframe** - Use the `unzip` command utility to uncompress the downloaded file.

If you do not have any of these utilities on the server, you can download them from Oracle's website at

<http://updates.oracle.com/unzips/unzips.html>

## 7.2 Additional Installation Instructions for Oracle

These are additional instructions that clarify or correct information in *Upgrading Oracle GoldenGate for Windows and UNIX* and *Installing and Configuring Oracle GoldenGate for Oracle Database*.

- Refer to MOS note 1557031.1 for details on recommended patches for Oracle Databases 11.2.0.3 through 12.1. This document covers both Oracle GoldenGate 11.2.1 and 12.1.2, and all patches that are needed for Integrated Extract and Integrated Replicat.
- To support DDL capture without installing DDL trigger, the source database must be at least Oracle 11.2.0.4 with compatibility set to 11.2.0.4.
- In Oracle 11.2.0.4 you will need to set `ENABLE_GOLDENGATE_REPLICATION` to `TRUE` in the `init.ora` parameter file for any source or target database. This parameter will enable the numerous Oracle GoldenGate database integration points. Be aware that this functionality is included for use with the Oracle GoldenGate for Oracle product only. If this parameter is not set, the following error will be raised.

```
26947, 00000, "Oracle GoldenGate replication is not enabled."
// *Cause: The 'enable_goldengate_replication' parameter was not set to 'true'.
// *Action: Set the 'enable_goldengate_replication' parameter to 'true'
//           and retry the operation.
//           Oracle GoldenGate license is needed to use this parameter.
```

## 8 Corrected Problems

For questions on specific bugs or ticket numbers, consult Oracle Customer Support. SR is the Oracle Support SR number, and BugDB is the bug identification number. The information in this section is divided into the following releases:

- [Section 8.1, "Release 12.1.2.1.9 — 25 August 2015"](#)
- [Section 8.2, "Release 12.1.2.1.8 — 20 July 2015"](#)
- [Section 8.3, "Release 12.1.2.1.7 — 16 June 2015"](#)
- [Section 8.4, "Release 12.1.2.1.6 — 4 May 2015"](#)
- [Section 8.5, "Release 12.1.2.1.5 — 19 March 2015"](#)
- [Section 8.6, "Release 12.1.2.1.4 — 10 March 2015"](#)
- [Section 8.7, "Release 12.1.2.1.3 — 5 February 2015"](#)
- [Section 8.8, "Release 12.1.2.1.2 — 20 January 2015"](#)
- [Section 8.9, "Release 12.1.2.1.1 — 14 November 2014"](#)
- [Section 8.10, "Release 12.1.2.1.0 — 11 August 2014"](#)
- [Section 8.11, "Release 12.1.2.1.0 for Informix — 15 May 2014"](#)
- [Section 8.12, "Version 18682388 — 2 May 2014"](#)
- [Section 8.13, "Version 18507404 — 10 April 2014"](#)
- [Section 8.14, "Release 12.1.2.0.0 — 25 September 2013"](#)

## 8.1 Release 12.1.2.1.9 — 25 August 2015

### **Bug 20724906 - DELETE TRANDATA does not remove UK/FK logging if add trandata issued with nokey**

The DELETE TRANDATA command was changed so that it removes all column entries.

### **BUG 21473564 - DB2 for i: Extract Abends with ERROR OGG-00146 on MQT Table Operations**

Extract abends on direct DML operations for MQT Tables. While MQT tables are not supported by Oracle GoldenGate, the Extract should not abend and this problem has been resolved.

### **Bug 21182116 - DB2 for i: ggos400install reports error on chown when library in IASP**

An issue with some ASP and IASP installations failing during some chown operations was fixed.

### **Bug 20898978 - DB2 on Z/OS: Extract Checkpoint invalid when upgrading from OGG V11 to OGG V12**

The upgrade functionality was fixed to convert from the old checkpoint format to the new checkpoint structure.

### **Bug 21124385 - DB2 on Z/OS: Extract Abends with CEE3201S The system detected an operation exception (System**

Extract was changed to correctly recognize CAF connections.

### **Bug 21180187 - MySQL: Extract abend with ERROR OGG-04036 Positioning sequence ID is out**

Extract was fixed so that it correctly processes transaction logs that are greater than 4GB.

### **Bug 21226965 - Oracle: Replicats abend with core dump file and no errors in any logs or trace files**

Replicat was fixed so that it correctly processes parameter files that contain TABLE statement with EVENTACTIONS.

### **Bug 21165823 - Oracle: Extract - FORMATXML ignored COLS parameter and includes LOB columns**

An issue with FORMATXML being set and some LOBs being output to the trail irrespective of a COLS or EXCEPTCOLS setting was fixed.

### **Bug 21026962 - Oracle: Extract abends: ERROR OGG-01041 ... Failed to prepare fetch on table**

An issue with Classic Extract being used and failing due to lack of defined key columns was fixed.

### **Bug 21103736 - Oracle: findDBInstance() is not behaving correctly with mining database login**

When a mining database connection logs off, it no longer clears the default database metadata.

### **Bug 21079205 - Oracle: Non-update columns with KEYCOLS treated as GGSPKUpdate**

An issue with using Integrated Extract where updates appear as primary key updates in the trail was fixed.

### **Bug 21328574 - Oracle: OGG extract-Formatting error on: table name xxx, rowid xxx.Number of digits 124**

Extract was fixed so that when TRANLOGOPTIONS \_CONVERTBADNUMBER ZERO is set invalid length number are correctly recognized.

### **Bug 21121987 - SQL Server: Extract reads log backup in 1KB offsets when VLFs >4GB**

Fixed an issue with Extract to correctly position into a log backup when there are VLFs greater than 4 GB in size.

## 8.2 Release 12.1.2.1.8 — 20 July 2015

### **Bug 21110369 - Oracle: ulg.sql - Fix the logic of schematrandata part to support different DB versions**

ulg.sql now checks the existence of LOGMNR\$SCHEMA\_ALLKEY\_SUPLOG and will no longer fail for versions prior to 11.2.0.3.

### **Bug 20319240 - Oracle: New Position from alter should be honored even the duplicate suppression remains**

When replicat is altered by ggsci, the correct startup file position is now used.

### **Bug 20648352 - DB2 z/OS: ENABLEMONITORING in SMF 92 type logs grows causing file system issues**

An issue of excessive audit entries when ENABLEMONITORING was enabled was corrected.

### **Bug 20951173 - DB2 z/OS: OGG-00551 Database operation failed: Retrieving tablespace reorg timestamp**

An issue with tables migrated from DB2 releases prior to DB2 v9 was corrected.

### **Bug 20989581 - DB2 z/OS: OGG-00869 Parse failed for delete from SYSIBM.SYSTABLES**

When no activity is seen by the currently running Extract and prior to encountering the drop, a truncate record will no longer be generated for the dropped table.

## 8.3 Release 12.1.2.1.7 — 16 June 2015

### **Bug 20679687 - Sybase: Extract failed to reserve the DBCC context**

Fixed by removing the old DBCC Context prior to reserving the context at start. The old context wasn't released due to extract abend.

### **Bug 20917331 - Sybase: Create Checkpoint Table Script Incorrect**

The chkpt\_syb\_create.sql was fixed and no longer creates some columns as not nullable.

### **Bug 20643144 - Oracle: Replicat abends with CDR and BATCHSQL**

Batchsql was fixed and no longer encounters intermittent crashes with CDR.

### **Bug 19813884 - Oracle: IE Does Not Propagating Negative Date for Deletes**

Negative dates are now correctly replicated.

### **Bug 20347665 - MySQL: EXTFILE/RMTFILE with Format Release Option Does Not Create File Sequences**

Using EXTFILE or RMTFILE now correctly creates the remote files.

### **Bug 20778054 - Informix: Extract Incorrectly Captures GGSPKUPDATE as Fieldcomp**

Informix extract was fixed to correctly capture GGSPKUPDATE operations and no longer cause the replicat to abend.

### **Bug 20853556 - DB2: IFI Locks Are Released Only at EOF**

The lock held by IFI will be released at the end of any IFI buffer.

### **Bug 20803745: Data Pump Does Not Read Trail File After ALTER EXTRACT BEGIN**

Data Pump was fixed to correctly process records based on the begin\_timestamp.

## 8.4 Release 12.1.2.1.6 — 4 May 2015

### **Bug 20657667 - SQL Server: Extract Incorrectly Captures Compressed DATETIME Data.**

Fixed an issue with Extract that caused some DATETIME ranges to be captured incorrectly when ROW/PAGE compression is enabled.

### **Bug 20681946 - SQL Server: Extract Incorrectly Captures Compressed VARBINARY(MAX) with FILESTREAM.**

Fixed an issue with Extract that caused some VARBINARY(MAX) with FILESTREAM data ranges to be captured incorrectly when ROW/PAGE compression is enabled.

### **Bug 20664851 - SQL Server: Extract Incorrectly Captures Compressed Non-Persisted Computed Columns.**

Fixed an issue with Extract that caused non-persisted computed columns to be captured incorrectly when ROW/PAGE compression is enabled.

### **Bug 20660006 - SQL Server: Extract Abends without Error on Table with >128 Columns and Compression Enabled.**

Fixed an issue with Extract that caused Extract to abend on heap tables with > 128 columns when ROW/PAGE compression is enabled.

### **Bug 20659379 - SQL Server: Extract Incorrectly Captures Compressed Out-of-Row LOB Data.**

Fixed an issue with Extract that caused out-of-row lob data to be captured incorrectly when ROW/PAGE compression is enabled.

### **Bug 19048634 - convprm not working**

The convprm utility was fixed to recognize the keyword TOKEN.

### **Bug 20343181 - Oracle: IR inserted 2 rows for 1 row update when using INSERTUPDATES**

Changed the default behavior of Integrated Replicat to IGNOREUPDATEBEFORES when INSERTUPDATES is configured.

### **Bug 20532340 - Oracle: Replicat abend with OGG-01296 for trail before image record length 0 (x0000)**

Fixed the after image trail record validation logic.

## 8.5 Release 12.1.2.1.5 — 19 March 2015

### **Bug 20969822 - Teradata: Replicat abends with "The SLOB parcel is incorrect" message**

Using ODBC 15 with Teradata is not supported. Use ODBC 14 instead.

### **Bug 19414121 - Oracle: Replicat abends while using MAPSESSIONSCHEMA and MAPSCHEMAS**

Replicat was fixed to correctly switch session for DDL processing even when current session user is different from login user.

### **Bug 20543714 - Oracle: Extract abends with ERROR OGG-06106 Bad value for source record**

Extract was fixed so that a SHELL option with EVENTACTIONS is parsed and processed correctly.

### **Bug 20367405 - Informix: Extract consumes a large amount of memory**

Extract was fixed so that it does not consume a large amount of memory.

### **Bug 20078949 - Oracle: OGG-02092 Unexpected condition in indexOutOfRangeError at line 48. Index 11 out**

Replicat was fixed so that the limits are checked to make sure the NUMFILES limit is not exceeded.

**Bug 19142865 - Oracle: OGG STOP command does not check for invalid arguments**

A check was added to flag invalid arguments.

**Bug 19067094 - Oracle: OGG: STATS showing negative values**

After rolling back a transaction, any negative stats are changed to zero.

**Bug 20554464 - SQL Server: DEFGEN parses special characters incorrectly**

DEFGEN was fixed so that the list of special characters are double-quoted correctly.

**Bug 18958026 - DB2 for i: Full support for native names**

Complete support for native names handling was added.

**Bug 19798268 - DB2 LUW: Extract LRI range for positioning by timestamp**

Extract was enhanced to accept an LRI range (lower LRI, upper LRI) to position by timestamp.

**Bug 20660883 - DB2 z/OS: Error OGG-00809 Variant mismatch at line 4488**

Extract was fixed to recognize a duplicate LRSN and avoid incorrect skipping of log records.

**Bug 20563015 - Oracle: Restful API does not return correct stats from Integrated Replicat**

Added support for gathering SQL statistics from Integrated Replicat.

**Bug 20531064 - DB2: Extract abends: Update converted to an insert in migrated row sequence**

An issue where compressed tables that were not being captured were causing a failure at the stage when log headers are examined for the type of record leading to an abend was corrected.

**Bug 19327073 - Oracle: Issue an error message, if CHECKPOINTSECS is set to zero.**

Add a check to correctly handle when CHECKPOINTSECS is equal to zero.

**Bug 18875912 - Oracle: Replicat 12.1.2.0.0 will not allow a SOURCEDEFS statement with DDL in the trail**

The issue with DDL replication with SOURCEDEFS was corrected so that you can use the EXCLUDE ALLSTAYMETADATA statement.

**Bug 20641896 - SQL Server: Replicat abends with OGG-01154 SQL error -2147217900**

Extract was fixed to correctly handle real and float data for tables that have compression enabled.

**Bug 20577891 - Extract abends without error for tables created with compression and non-PK clustered index**

Extract was not correctly processing the SQL Server uniqueifier when compression was enabled on a table containing a non-clustered PK and a clustered non-PK column.

## **8.6 Release 12.1.2.1.4 — 10 March 2015**

**Bug 19374174 - Oracle: ERROR OGG-01028 Formatting Invalid numeric data detected**

Corrupted redo records are ignored.

**Bug 19264441 - Oracle: Replicat does not properly restore current schema post DDL**

The session schema is now used when it is different from the login schema.

**Bug 17866697 - DB2 z/OS: GGSCI Stats table not returning statistics**

Statistics can now be converted to EBCDIC and returns the correct data.

**Bug 19560158 - Oracle: Integrated and Classic Extract abends with OGG-01161 Bad column index**

Fixed a problem with Trigger DDL and SCN greater than 8 bytes, 214748364.

**Bug 19987316 - SQL Server: Extract abends OGG-00146 for a compressed SQL\*Server table**

SQL Server-Compressed column definition in tables are now sorted colid order and then ColOrdinal order.

**Bug 20045536 - DB2 z/OS: Compatibility between OGG z/OS Extract 12.1.2.0.1 IBM APAR PI12599 for DB2 z/OS**

Enhanced Oracle GoldenGate to provide compatibility with the APAR. A new `TRANLOGOPTIONS` parameter, `IFILLOCKSECONDS`, has been added to tune the amount of time the IFI locks are held.

**Bug 19798268 - DB2 LUW: Extract LRI range for positioning by timestamp**

Extract was enhanced to accept an LRI range (lower LRI, upper LRI) to position by timestamp.

**Bug 19920244 - DB2 z/OS: Error OGG-00785 after DB2 reorganization**

Corrected the code to accurately detect the use of the IBM REORG utility.

## 8.7 Release 12.1.2.1.3 — 5 February 2015

**Bug 18996447 - Oracle: OGG release 12c Replicat fails with missing CDR column though the trail only has insert/delete**

Replicat was changed to rely on the prior before image in `BATCHSQL` with CDR mode so that if the first operation causes a `DELETEROWMISSING` conflict and the last operation in `BATCH` was an insert operates correctly.

**Bug 19594967 - EMDS - Replicat abended with ERROR OGG-00870 ORA-01455**

The stats query was changed so that large stats counts do not result in an overflow error.

**Bug 19545128 - Error on exception table causes Replicat to skip good transactions too**

Replicat was modified so that it does not abend if there is an error when applying to an exception table; valid (good) transactions are not skipped.

**Bug 19244349 - Extract captures all the columns as before/after image**

Extract was modified so that it captures only the updated columns in the before and after images into the trail file.

**Bug 19782389 - Integrated Replicat slow in processing DML on table with SDO\_GEOMETRY data type**

Null UDTs in a table with `SDO_GEOMETRY` data type do not causes errors.

**Bug 20148126 - OGG v11.2.1.0.25 Extract getting stuck**

The issue of using wildcarded special characters in Extract was fixed.

**Bug 20021370 - Extract still hangs after applying patch 19945618 for OGG 12.1.2.1.0**

For SQL Server, an issue of positioning into high log block numbers caused an overflow, which causes incorrect positioning into the transaction log, and has been corrected.

**Bug 19681198 - Extract hangs when trying to read a transaction log backup**

Extract appears to hang when processing a SQL Server transaction log backup file when there is an extra empty block after the MSTL block. Extract now determines the correct block to beginning reading from after the MSTL block

### **Bug 19903590 - Replicat gives 1403 errors on insert into Sybase and all records are discarded**

In rare instances, Replicat is reporting a negative row count and abends, however all records are processed. A new `DBOPTIONS ROWCHKCOUNT` parameter was introduced to resolve this negative row count abend condition.

### **Bug 20092876 - Replicat should use the SCN also for DDL operations**

Mapped DDLs cannot honor `FILTER` in `MAP` statements when a `file_def` has already been resolved for this object by a prior DML. The following limitations apply

- Only for Replicat
- Only for MAPPED DDLs.
- Only works if a DML precedes the DDL which resolved a `file_def`.
- Only first one is used for DDL per table

For example, only the first `MAP` statement affects the DDL operation:

```
MAP src.table, TARGET tgt.table, FILTER( @GETENV('TRANSACTION', 'CSN') > 100);
MAP src.table, TARGET tgt.table2, FILTER( @GETENV('TRANSACTION', 'CSN') > 1000);
```

- Only simple CSN filters operate as in the preceding example.
- No other operation can be used in conjunction, such as including a below range as in this example:

```
FILTER ( @GETENV('TRANSACTION', 'CSN') > 100 && @GETENV('TRANSACTION', 'CSN') < 1000 )
```

## **8.8 Release 12.1.2.1.2 — 20 January 2015**

### **Bug 19774448 - DB2 LUW Versions 10.1 & 10.5 - Add Extract positions using LRI not LSN**

For DB2 LUW, the use of `TRANLOG LRI_ number` with `ADD EXTRACT` and `ALTER EXTRACT` was added to the Reference for Oracle GoldenGate for Windows and UNIX.

### **Bug 18877282 - Sybase: Warn user when running Replicat in BatchSQL mode if unsupported on the database**

For Sybase, a warning is now displayed if you attempt to use BatchSQL mode and your database version does not support it.

### **Bug 19721652 - Extract abends with OGG-01028 failed to start transaction even with fix for 18874054**

For Oracle, when ignoring non-insert records, the associated transactions are now deleted.

### **Bug 19516537 - OGG: CA LAG info missing CR when some threads have not processed any records**

For Oracle, a newline character is added to the output for the lag command for Coordinated Replicat.

### **Bug 17423191 - Index out of bounds error when registering Replicat process with OEM 12c**

For Oracle, support for both slash (/) and backslash (\) characters as directory separators was added.

### **Bug 19241234 - Replicat abends after applying GoldenGate roll up Patch 18891094**

For Oracle, a check for `GETENV` being invoked with a NULL record header to get one of the header tokens now returns an empty value instead of abending.

### **Bug 19818362 - Replicat abends with conversion from character set UTF-8 of source column @STRCAT**

For SQL Server, fixed `REPLACEBADCHAR` functionality in `COLMAP` clause.

### **Bug 19781984 - Discard file did not display record value correctly**

For SQL Server, fixed issue causing incorrect values to be displayed in the discard file.

**Bug 19889991 - MySQL:- VAM error -Failed to query database on V12 Extract**

For MySQL, when the connection is lost during a query of metadata it is correctly reconnected.

**Bug 19681035 - Extract abends when process page compression table**

For SQL Server, the index mapping of the columns for the compressed page was corrected.

**Bug 19535319 - UBS-VLF: OGG-01137- BatchSQL suspended, continuing in normal mode**

For Oracle, fixed an issue with BatchSQL with self-reference foreign key

**Bug 19441114 - Integrated Extract does not get before image for update**

For Oracle, fixed a problem with after image with Extract which causing an error in CDR when processing `partial_lob_data` and `xmldiff_data` in Replicat.

**Bug 19602692 - The Replicat hangs on synonym creation replication**

For Oracle, the Replicat iterative functionality was fixed so that when the parameter file contains more than 20 `DDLSUBST` parameters it no longer hangs.

**Bug 19724915 - Extract abends with OGG-00458: Cannot find metadata property `DDL_MK_TAB_VALID`**

For Oracle, an application error is generated when the trigger encounters an `ORA-01089` error.

**Bug 19132627 - Core dump after applying Patch 18900918**

For Oracle, the copying of the SCN is restricted to the size of the buffer in the database fetch.

## **8.9 Release 12.1.2.1.1 — 14 November 2014**

**Bug 14028505 - DB2400 - System files not in catalog will not be seen and fail to replicate**

For DB2 for i, support was added to process physical files created with no DDS or SQL DDL

**Bug 18922312 - ERROR OGG-00146 Call to `reportErrorOnConversion` returned with error status -1:**

For DB2 for i, the VAM framework now checks the table name lengths with the name comparisons when looking up the metadata.

**Bug 19690344 - Extract runs extremely slow when there is LOB data in the table not captured**

For DB2 for i, skipped entries and before images are cleaned up when the pointer handles are part of the journal entry.

**BUG 17610281 - `ALTER EXTRACT SEQNO` and `JRNRCR` did not reposition Extract**

For DB2 for i, the incorrect copying of the journal name over the journal receiver name was corrected.

**Bug 18719668 - Extract returns multiple log backup results when DB restored over existing DB**

For SQL Server, Extract was fixed to always retrieve the most recent transaction log backup.

**Bug 18720237 - Extract is very slow when trying to capture data from a compressed backup log file**

For SQL Server, the buffering mechanism was changed to increase capturing speed.

**Bug 18968295 - `ADD TRANDATA` fails on wildcard for `DBO.SYS*` tables that are user tables**

For SQL Server, user table names are now listed based on the specified wildcard pattern.



**Bug 19182294 - MySQL Extract abends with unexpected condition in SETTHENEXTCHECKPOINT at line 5**

For MySQL, the cache size is now set consistently.

**Bug 19259702 - MYSQL Extract slow**

For MySQL, when the `binlog_rows_query_log_events` parameter is set to ON in the `my.cnf` file, this event is now ignored to improve Extract performance.

**Bug 19348208 - MySQL Extract abends with Event Pointer Null error**

For MySQL, with larger events the event read offset is now set correctly.

**Bug 19484290 - Update VAMSERV to use the new HP TMFARLIB**

For SQL/MX, the VAMSERV functionality was corrected by using the latest HP TMFARLIB.

**Bug 9358300 - SQL/MX Any way to force GoldenGate OSS processes to start on a specific CPU**

For SQL/MX, the `RMTHOST` parameter was enhanced to add the ability to specify which CPU a process with run on.

## 8.10 Release 12.1.2.1.0 — 11 August 2014

**Bug 17303284 - Classic Extract (and Integrated Extract with DDL trigger) captures DDLS on table with column encrypted**

When using the DDL trigger to capture DDL changes, the `IDENTIFIED` clause may cause Replicat to fail when the password in the clause is incorrect. You do not need to use `IDENTIFIED` as it is not necessary for encryption to operate correctly.

**Bug 17553193 - Replicats hang for DDL for SEQUENCES with GLOBAL|SESSION**

The `SESSION SEQUENCE` updates are not needed for sequence replication and therefore no longer replicated. Sequence DDL is still replicated.

**Bug 18080965 - CDB:CA abend while applying SEQUENCE DDL/DMLS**

If a transaction contains DML and DDL (as with a `CREATE TABLE AS SELECT`) the entire mixed transaction with Coordinated Replicat is now treated as a barrier transaction.

**Bug 18107827 - IE does not capture Valid Time Temporal column data**

Oracle GoldenGate does not support replication of identity column data or Valid Time Temporal column data.

**Bug 18303979 - NOPASSTHRU pump fails without DDL setup GGS\_DDL\_HIST**

Pumps replicating DDL and using `NOPASSTHRU` must have access to the `GGS_DDL_HIST` table used by the trigger-based Extract. Therefore, triggerless DDL is not supported in this use case.

**Bug 18730186 - IR abends with MESSAGE 21580 NOT FOUND; PRODUCT=RDBMS; FACILITY= error**

This error could occur when the `GLOBALS` checkpoint table is specified. The metadata flag is now set before reading the `GLOBALS` checkpoint table.

**Bug 17344605 - CE capturing GGADMIN internal table DML GGS\_MARKER**

DDL delete records (`GGS_MARKER`) are no longer processed by Extract and are no longer in the trail file.

**Bug 17932579 - CR abends with THIS THREAD AND THE COORDINATOR ARE CONNECTED TO DIFFERENT CATALOGS error**

The string containing the pluggable database name of the coordinator is now properly terminated.

**Bug 18172712 - CDB: CR abends with OCI ERROR WRITING LOB FOR COLUMN CLOB\_DATA (3) error**

The use of a RETURNING INTO clause in an update no longer fails when the WHERE clause results in zero updated rows.

**Bug 18854034 - CDB: IR abends with OCI ERROR ALLOCATING TEMP UDT LOB error**

OCI operations for UDTs in integrated Replicat mode are now properly closed prior to attempting another operation.

**Bug 18919292 - IR abending without any errors**

When there is an Object Table record that does not contain an OID, integrated Replicat is now automatically changed to classic Replicat.

**Bug 18041617 - CR abends without mapping error upon insert into table with XML column**

Fixed character set conversion issue with multibyte XML columns.

**Bug 18341258 - IR parsing error in DDL statement**

No longer automatically forces the capitalization the DDL object name. If an object is in CAPS it will remain in CAPS.

**Bug 18542722 - MAXPROC: UNEXPECTED CONDITION IN VALIDATE AT LINE 596 error**

In limited cases, repairing the data store in GGSCI could result in an error so now the object is checked before use.

**Bug 18630824 - IR abends with MAPPING IN UDT TABLE error**

When composing SQL or composing the LCR column data arrays sent over to apply by integrated Replicat, the hidden column is now correctly renamed.

**Bug 17817146 - IE hangs during the OGG\_IE\_IR\_DC test when using the parameter INQESIZE**

The thread options that are processed by LogMiner are now ignored by integrated Extract.

**Bug 18265155 - IE crashes while running spatial W/L in downstream capture**

Integrated Extract now uses the database metadata for fetching with a triggerless extract.

**Bug 18419621 - RMTTASK neither abends nor proceeds forward while using AES encryption**

The initial load RMTTASK Replicat no longer fails when Advanced Encryption Standard encryption is enabled because the Extract and Replicat buffers sizes are now in sync.

**Bug 18711326 - Pump abends with PROBLEM IN NETWORK COMMUNICATION W/ ENC + COMPRESS error**

The buffer overrun is now captured during compression.

**Bug 18769110 - Initial load Extract stops for invalid 3 part name and doesn't execute valid PDBS**

Pluggable database switch result is now checked on initial load and an error is issued if it fails.

**Bug 19055597 - EXTRACT abends while using the FETCHPARTIALXML parameter with UDT**

The scope of this parameter has been limited to XML columns only.

**Bug 13439313 - BR performance for DBFS do not truncate new PO'S (at persist time)**

When an Oracle Database File System file is truncated using `ftruncate`, the PO is now only written once improving performance.

**Bug 13956167 - Replicat abends with FATAL ERROR EXECUTING DDL REPLICATION/ORA-903 error**

With data pump-based batch workload processing, Extract no longer capture internal table and does not write them to the trail.

**Bug 17073019 - CR Severe performance degradation with CA with barriers checkpointing**

The need for one checkpoint after the barrier transaction for all but the barrier thread was eliminated. For RAC environments, the PCTFREE is now set to a high value for optimization.

**Bug 17362306 - IR abends/apply slave fatal error ORA-26857: LCR POSITION CANNOT BE NULL**

Integrated Replicat now processes partial transactions in direct mode before switching to integrated Replicat processing.

**Bug 18606943 - Big memory leak observed in classic Replicat with SF-LOB apply**

The leak found on the edge case of direct LOB writes was corrected.

**Bug 17780777 - DDL duplicate mapping does not work in the presence of schema wildcarding**

When Replicat executes duplicate DDLs when duplicate MAPs exist and one of them has wildcarded schema, the normalized name is now used instead of the parameter name.

**Bug 18093856 - IR, CR, and REPLICAT abend due to ORA-00001: UNIQUE CONSTRAINT**

Trigger suppression is no longer disabled after switching from integrated Replicat to non- integrated Replicat.

**Bug 17581201 - CDB: GGSCI crashing with core dump when deleting Replicat checkpoint**

The error state of session context returned is now checked.

**Bug 17507446 - RMTFILE IR should abend with proper error message**

A new error message was added to direct you to use special run Replicat if you attempt to use the unsupported Direct Load RMTFILE.

**Bug 17887929 - UDT:CE abends with OBJECT WAS RESOLVED**

The error message for interval UDT is now specific.

**Bug 18643085 - CE repeatedly abends with DETECT PARTIAL PDATA AT RBA error**

When classic Extract fails during the log writer process, it can now continue even though there is incomplete log data.

**Bug 18702559 - CE repeatedly abending without error stack during start**

The file\_def pointer is now checked before the CDR metadata is checked.

**Bug 18281963 - Inconsistency in O/P of INFO & STATS command for RMTTASK Replicats**

The STATS command was modified so that the record source in the checkpoint file is no longer checked for Replicat in an initial load configuration.

**Bug 17361738 - CA Delete without DBLOGIN displays redundant error messages for each**

Deleting a coordinated Replicat while not logged in to a database no longer causes one error to be issued for each thread.

**Bug 18631513 - IR abends with SOURCEISTABLE TRAIL IS NOT SUPPORTE error**

Integrated Replicat now displays the correct, newly added error message when repositioning to the middle of a transaction.

**Bug 18885003 - Synchronize Replicat should be executed only for CA Replicat group**  
Synchronize Replicat is not valid for non-coordinated Replicat.

## 8.11 Release 12.1.2.1.0 for Informix — 15 May 2014

This section describes the bugs resolved in this release.

**Bug 17714378 - Informix: Extractabend with CALL TO VAMREAD RETURNED WITH ERROR 16002 error**  
Do not use mixed cases for database object names, including table names and column names.

**Bug 17035390 - Informix: Class CTABLENAME support for Informix catalog name delimiter colon (:)**  
You must use a period (.) not a colon (:) delimiter for fully qualified Informix catalog names. Informix does not support the use of a colon as a delimiter to retrieve fully qualified catalog names.

**Bug 18157703 - Informix: DBOPTIONS LIMITROWS/NOLIMITROWS support**  
For Informix, the use of the LIMITROWS and NOLIMITROWS parameters with DBOPTIONS was added.

## 8.12 Version 18682388 — 2 May 2014

This section describes the bugs resolved in this release.

**Bug 18221995 - OGG: CE abends with OGG-02704 FAILED TO READ ENTIRE LOB COLUMN SPECIFICATION**  
Classic Extract failures to read the entire LOB column was corrected.

**Bug- 17451407 - Integrated (not Classic) Extract fetches when LOB/SDO\_GEOMETRY is NULL**  
When using an Oracle Database 11.2, it was found that Integrated Extract was fetching NULL native objects resulting in excessive fetch. Integrated Extract was modified to only fetch non-NULL LOB/UDT columns.

## 8.13 Version 18507404 — 10 April 2014

This section describes the bugs resolved in this release.

**Bug 18329410 - Replicat abended with an error: OGG-01668 Process Abending**  
The Compatibility Encoding Scheme for UTF-16: 8-Bit (CESU-8) surrogate pair detection functionality was corrected.

**Bug 18173828 - Extract hung after restart**  
The unique string value with the use of wildcards functionality was locking the Extract execution resulting in a deadlock; this has been corrected.

**Bug 18255804 - GGSCI: INFO ALL abends and creates a core file**  
If your checkpoint tablename ends with a period (.) then an abend occurs resulting in an abend error. Oracle GoldenGate now removes any periods at the end of a checkpoint tablename.

**Bug 18188821 - IE Loadjava JAR Load: OGG-01112 Unexpected condition in DDLEXT\_process\_extract**  
When replicating "CREATE JAVA" DDL statements, Extract was changed so that abends do not occur when checking for fully qualified names.

**Bug 16718963 - Extract is slow on DDL related SQL queries**

Some DDL Select queries had literals resulting in impacts to performance. All DDL queries now use bounded variables.

**Bug 17911313 - Replicat explicit column mapping does not work when using USEDEFAULTS**

When explicit CLOB column mapping for CLOBs greater than 4K was done using an Oracle GoldenGate function in conjunction with USEDEFAULTS, the explicit mapping was being ignored.

**Bug 18105480 - Replicat continues abending with an error: OGG-01296**

Default behavior was inadvertently changed in 11.2.1.0.9 and has now been reverted back to not using columns from a unique index as a key column when a disabled constraint of the same name exists.

**Bug 17943750 - Classic Extract performance degradation from 11g to 12c releases**

The array operator functionality has been improved to be more efficient to correct the slight degradation that was observed.

**Bug 17663470 - Integrated Replicat checkpoint from info cmd not moving when using the END parameter**

When Integrated Replicat reached the timestamp specified by the END parameter, the Replicat Relative Byte Address (RBA) in the checkpoint was reset to zero (0). Oracle GoldenGate no longer resets the RBA to zero.

**Bug 17790908 - Extract pump abend error: OGG-05500 Detected database metadata mismatch**

Oracle GoldenGate now ignores the comparison of client character sets because they are informational only and do not affect replication.

**Bug 16887800 - Replicat takes several hours to start with a large SOURCEDEFS file**

Replicat functionality has been refined by using an array as a name index to detect duplicate entries resulting in a substantial reduction in start up time.

**Bug 17478991 - DDLSUBST functionality case sensitivity**

Due to recent changes in the Oracle GoldenGate Globalization functionality, the DDLSUBST search string had become case-sensitive. The search string is no longer case sensitive.

## 8.14 Release 12.1.2.0.0 — 25 September 2013

Initial Release.

## 9 Known Issues

For questions on specific bugs or ticket numbers, consult Oracle Customer Support. SR is the Oracle Support SR number, and BugDB is the bug identification number. The information in this section is divided into the following releases:

- [Section 9.1, "Release 12.1.2.1.1 — 20 January 2015"](#)
- [Section 9.2, "Release 12.1.2.1.1 — 14 November 2014"](#)
- [Section 9.3, "Release 12.1.2.1.0 for Informix— 15 September 2014"](#)
- [Section 9.4, "Release 12.1.2.1.0 for Informix— 15 May 2014"](#)
- [Section 9.5, "Version 18507404 — 10 April 2014"](#)
- [Section 9.6, "Release 12.1.2.0.0 — 25 September 2013"](#)

## 9.1 Release 12.1.2.1.1 — 20 January 2015

### **Bug 18375425 - Changes related to support of DB2 for z/OS V11.1**

For DB2 for z/OS, after Extract for DB2 v11.1 has been run, fall back to Extract for DB2 v10.1 and earlier requires that you delete and re-add of the Extract group.

## 9.2 Release 12.1.2.1.1 — 14 November 2014

### **Bug 19353864 - DB2 i: Data mismatch while replicating with BATCHSQL**

The BATCHSQL functionality in the DB2 for i Replicat is disabled.

## 9.3 Release 12.1.2.1.0 for Informix— 15 September 2014

### **Bug 18710519 - Informix: Replicat fails with OGG-00551 No additional information available error**

For DB2 for i, the BATCHSQL parameter cannot be used with the Informix CSDK Version 3.50.

### **Bug 19168056 - Oracle/Informix: Memory leak for normal Replicat on Informix**

There is a known memory leak in the Informix ODBC driver that causes Replicat in classic Capture mode to error. Use the following steps to correct this issue:

1. Install the CSDK 4.10 FC4 into a separate directory.
2. Export LD\_LIBRARY\_PATH or the respective operating specific path for library search to this CSDK directory. For example:

```
export LD_LIBRARY_PATH=CSDKInstallPath/lib/cli:CSDKInstallPath/lib/esql:$LD_LIBRARY_PATH
```

3. Run STOP MANAGER.
4. Run START MANAGER.
5. Run START REPLICAT.

### **Bug 19765454 - MySQL-Windows 2012 need special configuration to run Extract**

Extract cannot identify the binlog (binary log) location by default. You must specify the full path of the binary log and index file locations using appropriate slashes (/). You can do this by specifying following two parameters in the my.ini configuration file as in the following sample Extract parameter file:

```
# Binary Logging.  
log-bin="C:/MySQL/test-bin"  
log-bin-index="C:/MySQL/test-bin.index"
```

## 9.4 Release 12.1.2.1.0 for Informix— 15 May 2014

This section describes the known issues discovered in this release.

### **Bug 18528029 - Informix: Replicat fails with unique constraint violated in the initial load**

The initial loading should not be used in Informix 12.1 on Solaris Sparc platform.

### **Bug 18642671 - Informix2ORCL:Core dump generated when Extract mapping number column**

It was determined that there are memory leak issues in the IDS that IBM has addressed. Oracle recommends that you upgrade your databases to the versions as appropriate for your environment:

Existing IDS Version	Upgrade to Version
12.10	12.10.FC3W1
11.70	11.70.xC8
11.50	No upgraded needed.

**Bug 18467113 - Extract abends with "NUMERIC VALUE OUT OF RANGE" for DATETIME column**

Getting "Numeric value out of range" error for DATETIME 'DAY TO FRACTION' and DAY TO SECOND column when fetchoptions fetchpkupdatecols is set.

**Bug 17977607 - Informix:CSN checkpoint with TRANSDISCARD - data mismatch**

A data mismatch occurs when processing with CSN TRANSDISCARD .

**Bug 18022020 - Informix: TRANDATA is failing when dealing with tables with special chars**

Using trandata commands on a table that contains special characters including space does not work.

**Bug 18358725 - Informix:SHOWSYNTAX parameter shows wrong output/data in LOB columns**

The SHOWSYNTAX parameter does not show the correct output for the LOB column.

**Bug 18549047- NLS:Informix: Wrong multibyte data applied if it spans across LOB chunks**

The wrong multibyte data is applied when it spans across LOB chunks.

**Bug 18668671 - Informix: Replicat abend when inserting empty file**

Replicat may abend when inserting an empty file

**Bug 18619500 - ORCL2Informix:Replicat failed due to BATCHSQL**

Using the BATCHSQL parameter Replicat may fail.

**Bug 18310370 - Performance implications of the TRUNCATE statement**

The Informix Replicat processing was changed so that after a TRUNCATE statement is processed, a DELETE FROM rather than TRUNCATE TABLE statement is processed. This change results in slower Replicat processing and requires additional space in the transaction logs when large tables are processed.

**Bug 18157703 - Informix: DBOPTIONS LIMITROWS/NOLIMITROWS support**

For Informix, the use of the LIMITROWS and NOLIMITROWS parameters with DBOPTIONS is not supported.

**Bug 18549047 NLS:INFORMIX: Wrong multibyte data applied if it spans across LOB chunks**

When using ODBC target databases with Replicat, this issue can occur in Informix and Teradata databases.

**Bug 18668671 NLS:INFORMIX CLOB->ORACLE JA16SJIS NVARCHAR2(2000):Replicat abend ORA-01461**

This only occurs when your target database is set to use the UTF-8 national character set.

## 9.5 Version 18507404 — 10 April 2014

This section describes the known issues discovered in this release.

**Bug 17939426 - NLS:TERADATA: Key column cannot be correctly identified if SESSIONCHARSET is UTF-8**

When replicating a table from Oracle (or other databases) to Teradata in an ODBC UTF-8 session with the CharacterSet variable set to UTF8 (in `odbc.ini`), Replicat will abend resulting in an error because the Key column is missing from the map. This does not occur in ODBC UTF-16 sessions when CharacterSet=UTF16.

**Bug 18311521 - NLS:TERADATA: Applying One Multibyte Character to GRAPHIC (1) results in an empty value**

If you set the Teradata ODBC CharacterSet variable to KANJIEUC\_0U, applying one multibyte character to GRAPHIC(1) results in empty value and results in an OGG-03017 warning error. This does not occur if CharacterSet is set to UTF8 or UTF16.

**Bug 18388021 - NLS:TERADATA: DB 6706 Error occurred for multibyte CLOB Japanese Kanji data**

When mapping Oracle CLOB data that contains some Japanese Kanji characters to a Teradata CLOB column, Replicat will abend with an OGG-01154 warning message.

**Bug 17428565 - NLS:TERADATA: Replicat (REPLACEBADCHAR) abends with the database error 'UNTRANSLATABLE CHARACTER'**

If you set your Teradata Replicat REPLACEBADCHAR ESCAPE and the SOURCECHARSET US-ASCII parameters so that all non-ASCII characters are converted to escape sequences before applying to target database, Replicat will abend with an OGG-00869 warning message.

**Bug 17210277 - NLS:TERADATA: CLOB->VARCHAR2 Results in database error: Right truncation of string data**

When replicating 4k Japanese characters (Hiragana letters) from an Oracle CLOB column to a Teradata VARCHAR(30) column with CharacterSet is set to UTF16, Replicat will abend with an OGG-03014 warning message.

## 9.6 Release 12.1.2.0.0 — 25 September 2013

This section describes the known issues discovered in this release.

### General

When mapping numeric data in a key column from a column that has more precision to a column that has less precision, the update or delete statement may fail. Oracle GoldenGate uses the entire value in the where clause, and this could prevent the record from being found.

User tokens may truncate timestamp values depending on the amount of significant digits and accuracy in the source and target databases.

BINARYLAYOUT should not be used with the new tracing functionality. It could create files that are unreadable by Oracle Support and development teams.

Fetching in DB2 and Sybase may not work correctly if multiple rows require fetching in the same transaction. This fix can be requested using an SR; refer to bug 12742927.

If replicating BINARY\_DOUBLE or BINARY\_FLOAT, use SOURCEDEFS (mapping done in Replicat) and not TARGETDEFS. There is a problem with object size resolution that can cause issues with certain data types being the incorrect size which causes the trail file to become unreadable.

Possible issues when using @FUNCTIONS and @FILTER with NCHAR columns (Bug 16343547).

Issue with multibyte characters in a WHERE clause (Bug 16573322).

### Oracle DDL

Using `_ALLOWWILDCARDSCHEMAS` is not compatible with `THREADS >= 1` (Bug 9841878).



Password changes required when a password expires do not cause DDL operation and it will be skipped (Bug 11771481).

DDLCOMMENTS may not work when there is a special non-alphanumeric character in the comments, let ", ' (, ), and so on.

## Oracle

Transient Primary Key updates are not supported by Integrated Replicat when the index supporting the primary key constraint is non-unique. You must change the index to a unique index to workaround this issue.

EXCLUDEUSER and EXCLUDEUSERID may not function correctly if a trigger is on the table that is being captured. There is a bug (Bug 9149420) in the Oracle database that causes the owner of the operation to be changed to the owner of the trigger in the redo log record. This issue is fixed in Oracle 11.2.0.2.

There is a known performance issue that can cause extract to lag behind if it is capturing a lot of changes from IOT objects with Overflow tables.

There is a known bug with Oracle that fetching of CLOBS > 256kb from a compressed SecureFile will fail (Bug 7171015). This was fixed in Oracle 11.2.0.0.0.

If Replicat fails on MAPPING ERROR 213 or an ORA-01438: value larger than specified precision allowed for this column, it could be related to SR 3-1128784511, and this issue is fixed in Oracle release 11.1.0.7 and greater. It is related to decimal precision for numeric types INTEGER, INT and SMALLINT.

If the following error occurs when the server character set is UTF8, you must set NLS\_LANG to AMERICAN\_AMERICA.UTF8.

```
2005-08-04 11:02:24 GGS WARNING 218 SQL error 24816 mapping SCOTT.EMP to JOHN.EMP: ORA-24816: Expanded non LONG bind data supplied after actual LONG or LOB column.
```

FORMATXML does not accept the ORACLE and NONAMES parameters (Bug 9430534).

TRACETABLE functionality does not support the TRUNCATE TABLE commands.

There is a problem using an Oracle GoldenGate direct bulk load (using the BULKLOAD parameter for Replicat and loading directly to SQL\*Loader) with LOB or XMLType data that is larger than 2000 bytes. Instead, you should write the data to a trail first and then use Replicat to generate the files needed for the load (Bug 9427379).

The archive log directories must be different when using Oracle GoldenGate for Oracle RAC in ALO mode. If not, Extract may return out of order scn errors.

DML operations created through the use of /\*+PARALLEL \*/ hints in RAC environments are not supported with Classic Extract.

GEORASTER objects are not supported.

There is a known bug (ID 8769746) in OCI that can cause CHAR data types to appear as a variable length data type. If this occurs in your environment, use SOURCEDEFS or TARGETDEFS to work around the issue or apply the database patch to prevent the issue from occurring.

SECUREFILE LOBS in Oracle 11g should be using FETCHMODCOLS on those columns to force a fetch of these data types.

To support RMAN log retention on Oracle RAC, you must download and install the database patch that is provided in Bug 11879974 before you add the Extract groups.

When Extract is at the logical end of the redo logs in Oracle RAC, and a node is shutdown using SHUTDOWN IMMEDIATE or SHUTDOWN NORMAL it will not continue processing data. You must bounce Extract in order for it to continue reading the redo logs from the remaining nodes.

In addition to the documented limitations of `SQLEXEC` in the *Oracle GoldenGate Reference for Oracle GoldenGate for Windows and UNIX*, `SQLEXEC` does not support user defined data types (including `SDO_GEOMETRY` and `GEO_RASTER`), `XMLType`, `NCHAR`, or `NVARCHAR2` data types (Bug 12642592).

Classic Extract does not support direct load operations on IOTs.

In Windows environments, use the `FETCHPARTIALXML` parameter when capturing `XMLType` data.

In some cases Replicat may fail when apply LOB updates on a partitioned table with row movement enabled (Bug 13945299).

When using `NOCOMPRESSDELETES` and Integrated Capture UDT columns may not be written to the trail correctly. Do not use these two features together with UDT columns (Bug 14308685).

When Replicat is running with `BATCHSQL` mode and you specify the wrong `NLS_LANG` variable or it is not set, and your source data has incompatible data, Replicat may failed without an error message. For instance, source data has UTF-8 multi byte characters, but `NLS_LANG` is specified as `US7ASCII`, Replicat may fail without error message.

When replicating to Oracle and the time zones are different between the source and target, you must set the time zone for the Replicat by using a `SQLEXEC`. This primarily effects `TIMESTAMP WITH TIMEZONE` data types. In the Replicat parameter file add the following line:

```
SQLEXEC "ALTER SESSION SET TIME_ZONE = '<source db time zone>'"
```

Before replicating sequences with Integrated Extract *and* prior to running `FLUSH SEQUENCE`, you need to enable supplemental logging on the `SYS.SEQ$` table using the following command:

```
ALTER TABLE SYS.SEQ$ ADD SUPPLEMENTAL LOG DATA (PRIMARY KEY) COLUMNS;
```

DML operations created by database level triggers or other types of events that are triggered by DDL operations will not be captured while DDL replication and Oracle GoldenGate database trigger is enabled. Prior to Oracle GoldenGate 11.1 this type of operation was captured. (Bug 11889046)

`EXCLUDEUSER` does not work when the Extract is capturing from an environment where Integrated Replicat is being used to apply data to the system. In this case, use `EXCLUDETAG`. This is for both Oracle 11.2.0.4 and Oracle 12.1.0.1 (Bug 17240844).

## SQL Server

Oracle GoldenGate cannot deliver data to Windows Authenticated Owned tables.

Oracle GoldenGate will issue an error and abend if a timestamp column is part of a key. This includes situations where a unique key is not present.

Oracle GoldenGate does not support Append, or Striped backups.

Oracle GoldenGate does not support external XML objects.

There is a known limitation that Oracle GoldenGate does not support nested XML data inside of XML fields.

If the `DATEFORMAT` is anything other than `ymd`, make sure to change it to `DATEFORMAT` to `ymd`. This can be done in the parameter file by adding the line `SQLEXEC "SET DATEFORMAT 'ymd' "` after the `TARGETDB` parameter in the `REPLICAT` parameter file. This is because the Replicat uses the ANSI standard 'yyyy-mm-dd' format.

SQL Server internal System tables and catalog tables cannot be replicated.

Transparent Data Encryption is not supported.

Column sets are not supported.

Oracle GoldenGate 12.1.2.0.0 for MS SQL Server capture does not support multiple database transaction log (LDF) files.

## DB2 (z/OS and Windows and UNIX)

DDLGEN for DB2 on z/OS does not work correctly with NULL/NOT NULL constraints and TIMESTAMP data types.

FORMATXML and FORMATASCII do not work correctly with DATE or TIMESTAMP data types.

Extract core dumps when using both TRANLOGOPTIONS and EXCLUDEUSER parameters simultaneously.

VALUE COMPRESSION and TABLE COMPRESS options are not supported.

The GoldenGate Manager for DB2, mgr.prm: fcntl failure closing files message is informational message and can be ignored.

GGSCI on z/OS now requires 48MB of memory instead of 8MB.

Oracle GoldenGate supports remote delivery to a DB2 z/OS target utilizing DB2Connect from a server with DB2 LUW 9.x installed.

Data corruption occurs on any DB from/to DB2 z/OS with TIMESTAMP if the target does not begin with 4 YYYY type (Bug 16581958).

## Teradata

Moving multibyte data is only supported between identically configured Teradata systems (identical character sets). On Windows there are no limitations but on linux environments you must use TD ODBC 12.0.0.5 or 13.0.0.5 and above (for Teradata 13) and GG v11.1 or above. If you are on Linux SLES or RHAS, you must also define the full path location of the .odbc.ini file via the ODBCINI environment variable. On Windows and linux you must set the ODBC driver and the TAM should be set to UTF16 character set. Moreover, all object names should be in single-byte characters

Sortranlog extract abends when using KEYCOLS. KEYCOLS should *not* be used in the Sortranlog extract in Teradata in v10.

The GRAPHIC data type may not work when using UNICODE. See Teradata Incident RECE7D793 for details.

When setting up the Extract for Teradata Max Performance mode, use one of the following:

```
TRANLOGOPTIONS COMMITTEDTRANLOG, restartappend  
TRANLOGOPTIONS VAMCOMPATIBILITY 1
```

or

```
TRANLOGOPTIONS COMMITTEDTRANLOG, restartappend, VAMCOMPATIBILITY 1
```

There is an issue with Replicat in the Period data type on AIX platforms (Bug 17336227).

## TimesTen

None

## Sybase

The Sybase Replicat does not support Primary Keys that contain the binary data types, including BINARY and VARBINARY.

When the server operating system is UTF-8 (LANG=en\_US.UTF-8), ADD CHECKPOINTTABLE generates the error message, ERROR: failed to create checkpoint table though checkpoint table is successfully created. The work around is to execute the info checkpointtable command first, and then run the add checkpointtable command (FPA-3857).

There is a limitation on data mapping when dealing with more than 1 LOB columns. In this situation, the correct mapping is only guaranteed only on identical source and target table structures. If the source and target table structures are not identical, there is a possible mismatch during mapping which would result in data integrity issue.

Array fetching for initial loads is not working properly (OS-4600).

Encrypted data is not supported, even using `FETCHCOLS` or `FETCHMODCOLS`.

Many Oracle GoldenGate features in Sybase require support for Decimal. Therefore, in order to support Sybase 15.0, and these features we are requiring all Sybase customers to apply patch 15.0.3 or later.

Oracle GoldenGate for Sybase does not support `SESSIONCHARSET` option for `DBLOGIN`.

## MySQL

In order to delete a MySQL Replicat that uses a checkpoint table, use the `!` option of `DELETE REPLICAT`, as in `DELETE REPLICAT REP_TEST !`.

Precision errors can occur when replicating data to MySQL because it is not dynamic SQL due to floating point limitations.

`TEXT` and `BLOB` data types are not supported in `SQLEXEC`.

## C-tree

No known issues

## SQL/MX

No Forced `SYSKEY` capabilities when applying to the Target. The source target `SYSKEY` value cannot be forced on the Target. This capability is not currently provided with the Hewlett Packard ODBC client. This means that the `SYSKEY` will be automatically assigned on the target and will not be the same value as the source.

Partial Interval Data type Support. In this release, the only Interval data type supported is Month and Day to Second.

`ASSUMETARGETDEFS` is not supported by `SQL/MX EXTRACT`. Use `SOURCEDEFS` instead.

Outstanding HP Issues regarding `SQL/MX` and Oracle GoldenGate.

No population of Interval data types. There is a current bug in the Hewlett Packard ODBC client that does not support the population of Interval data types (Hewlett Packard ticket # 10-070723-6463).

Certain `GGSCI` commands are timing out when trying to communicate with certain processes. This is an Hewlett Packard issue that has been logged with them (OS-8839, Hewlett Packard ticket #10-090318-8875).

Extended `NUMERIC` data type is not currently supported.

Interval data types cause unreliable Replicat behavior.

The `SQL/MX v3` ODBC driver does not allow catalog and/or schema names longer than 73 characters.

The `SQL/MX v3` ODBC driver will not behave predictably with anything other than unquoted uppercase catalog and schema names in the DSN.

## PostgreSQL

The Conflict Detection and Resolution automation that is part of OGG 11.2.1 is not supported in PostgreSQL.

## IBM for I (aka iSeries, aka AS400)

`INZPFM` is not supported by Extract at this time.

Tables created with `CRTPF` using `RCDLEN` are not supported at this time.

## 10 Documentation Changes

The Oracle GoldenGate documentation library has been reorganized and improved as follows.

- In this document, the Known Issues section was added and the Documentation Addendum section was removed.
- New library pages - the documentation library is now organized in a task-based structure to make it easier to locate information about the task or feature you are interested in. The familiar listing by book is also available in the Books tab.
- The Oracle GoldenGate Troubleshooting and Tuning Guide has been discontinued. Troubleshooting information (and other information) can be obtained by using My Oracle Support. See [Section 11, "Getting Help with My Oracle Support"](#) for more information.
- The performance-tuning topics have been integrated into *Administering Oracle GoldenGate for Windows and UNIX*. You can also find performance-tuning help at My Oracle Support. See [Section 11, "Getting Help with My Oracle Support"](#) for more information.
- The Logdump instructions and command documentation has been incorporated into a new book named *Logdump Reference for Oracle GoldenGate*.
- The Oracle GoldenGate Installation and Setup Guide, now named *Installing and Configuring Oracle GoldenGate for Oracle Database*, contains initial setup information that has been expanded to include Oracle-specific configuration steps for classic and integrated modes of Extract and Replicat. This book should be used in conjunction with *Administering Oracle GoldenGate for Windows and UNIX* and *Reference for Oracle GoldenGate for Windows and UNIX* when installing, configuring, and running an Oracle GoldenGate environment.

## 11 Getting Help with My Oracle Support

Use My Oracle Support to find knowledge solutions, workarounds, and other information that is reported by customers, partners, and Oracle employees. My Oracle Support also enables you to open a Service Request. If a patch is required to resolve a service request, you will receive instructions on how to download it from My Oracle Support.

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**Note:** If you purchased Oracle GoldenGate and support through a distributor, contact your distributor instead of attempting to create a service request through My Oracle Support.

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### 11.1 Viewing the Oracle GoldenGate Knowledge Base

To view the Oracle GoldenGate Knowledge Base, follow these steps:

1. Browse to the My Oracle Support web site at <http://support.oracle.com>.
2. Select your language and then log in with your email and Oracle password.
3. Click the **Knowledge** tab.
4. In the **Select a product or product line** field, enter **GoldenGate**, and then select an Oracle GoldenGate product from the context-sensitive list to narrow your results. (You may have to wait a few seconds for this list to appear).
5. In the **Enter search terms** field, enter a search keyword or multiple keywords to focus the query.

Additional information about how to use this tab is obtained by clicking **Help**.

### 11.2 Creating an Oracle GoldenGate Support Request Ticket

If you cannot find an answer to your question or problem in the Knowledge Base, you can open a support request ticket with Oracle Support by following these steps:

1. Browse to the My Oracle Support web site at <http://support.oracle.com>.
2. Select your language, and then sign in with your credentials. If you have not done so, you will have to register to use this web site.
3. Click the **Service Requests** tab.
4. Click **Create SR**.
5. Use the Create Service Request wizard to complete and submit your SR. Additional information about how to use this tab is obtained by clicking **Help**.

## 12 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>.

### Access to Oracle Support

Oracle customers that 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.

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Oracle GoldenGate Release Notes, 12c (12.1.2)  
E40012-13

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