

Oracle® GoldenGate

Patch Set Notes

10.4 for Open Systems

September 2009

These patch set notes accompany the Oracle GoldenGate 10.4.0.x patch set. This document contains the following sections:

- [Patch Set Overview](#)
- [Critical Patch Updates](#)
- [Accessing the Latest Version of this Document](#)
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1 Patch Set Overview

Patch sets are a mechanism for delivering fully tested and integrated product fixes. Patch sets provide bug fixes only; they do not include new functionality and they do not require certification on the target system.

Patch sets include all of the libraries that have been rebuilt to implement the bug fixes in the set. All of the fixes in the patch set have been tested and are certified to work with each other. Because the patch set includes only low impact patches, it does not require you to certify applications or tools against the server.

You can apply the Oracle GoldenGate release 10.4.0.x patch set to any Oracle GoldenGate 10.4 installation.

2 Critical Patch Updates

Review the latest Critical Patch Updates, and recent change list, please read the Release Notes.

3 Accessing the Latest Version of this Document

This is the initial documentation release, there are no prior versions.

4 System Requirements

Check your platform-specific installation guide for a list of supported operating systems.

5 Preinstallation Tasks

Complete the following preinstallation tasks before installing the patch set:

- [Review Known Preinstallation Issues](#)
- [Oracle Dynamic Build Installation](#)
- [Oracle on Solaris](#)
- [Oracle DDL Replication](#)
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5.1 Review Known Preinstallation Issues

There are many changes in default parameters, and in the way the some parameters function. Before upgrading to 10.4 you may need to modify your EXTRACT or REPLICAT parameter files. Please follow the documented Installation and Upgrade instructions for this release.

There is a new FORMAT RELEASE version for 10.4. If you are moving data between previous versions, please make sure FORMAT RELEASE is set correctly, or it will default to the new FORMAT RELEASE 10.4 trail format, which is not backwards compatible.

The installation and upgrade procedures for Windows are documented on the support download site. Please follow the procedures at the site to ensure correct installation or upgrade. The following list highlights the significant changes that you will encounter before or during the upgrade process.

5.2 Oracle Dynamic Build Installation

Oracle GoldenGate for Oracle builds can now be downloaded using dynamic linked libraries instead of static linked libraries. Dynamic linked library applications require the library paths to be set up correctly so that the application knows where to find them.

The following parameters will need to be correctly set in the environment in order to capture or apply data to the proper database.

\$ORACLE_HOME = the Oracle software installation directory.
\$ORACLE_SID = the instance GGS is connecting to
\$LD_LIBRARY_PATH = the location to the Oracle Library files (or the correct library path environment variable from below)
\$PATH= needs to include the Oracle bin path

For each OS platform the load library path variable used to resolve library references can be different when executing the GGS software.

AIX references LIBPATH environment variable.

HPUX references SHLIB_PATH environment variable.

SUN, Tru64 and LINUX references LD_LIBRARY_PATH environment variable.

The library path must be correctly configured to point to the proper libraries for the version you will be capturing from. Contact your Oracle Administrator for details on where the proper Oracle libraries are located.

5.3 Oracle on Solaris

In Solaris 9 and Solaris 10 environments, there is a known memory leak that could affect our product and cause Extract to Abend. Due to this issue, the build from Oracle GoldenGate may not completely address the problem. We recommend that customers apply a Solaris patch to their systems. Based on the information below, the patch 119963-15 should be applied.

BUG ID: 6514832 libumem complains on redzone violation in std::deque even with 119963-08

http://bugs.sun.com/bugdatabase/view_bug.do?bug_id=6514832

The patch for Solaris 10 is here:

<http://sunsolve.sun.com/search/document.do?assetkey=1-21-119963-15-1>

This patch for Solaris 9 is here:

<http://sunsolve.sun.com/search/document.do?assetkey=1-21-111712-23-1>

5.4 Oracle DDL Replication

The DDL trigger has been modified with this release. Please rebuild the DDL trigger using the method outlined in the Oracle GoldenGate Administration Guide in the Configuring DDL Synchronization chapter.

5.5 Teradata ODBC Driver Update

Due to Oracle GoldenGate improvements for Teradata, please use the updated ODBC drivers whenever connecting to a Teradata environment:

- Use ODBC Driver version 3.6.0.5 or greater for the TTU 8.2 family, V2R6.x.
- Use ODBC driver 12.0.0.1 or greater for the V12 family.

5.6 SQL Server 2000 Non-Native SQL Server driver requirements

In order to use the non-Native SQL Server ODBC client for Oracle GoldenGate, you will need to make sure that a patch is applied to SQL Server first. This patch is publicly documented in 950565. The patch can be downloaded here: [FIX: Error message when you insert data to a table that contains two image columns by using the SQL Server ODBC driver: "\[Microsoft\]\[ODBC SQL Server Driver\]\[SQL Server\]Invalid locator de-referenced"](#)

Windows XP Service Pack 2, x86-based versions

| File name | File version | File size | Date | Time |
|---------------|----------------|-----------|-------------|-------|
| Odbcdbc.dll | 2000.85.1133.0 | 24,576 | 28-Mar-2008 | 13:54 |
| Sqldrsv32.dll | 2000.85.1133.0 | 442,368 | 28-Mar-2008 | 13:54 |

Windows XP Service Pack 3, x86-based versions

| File name | File version | File size | Date | Time |
|---------------|----------------|-----------|-------------|-------|
| Odbcdbc.dll | 2000.85.3000.0 | 24,576 | 28-Mar-2008 | 13:47 |
| Sqldrsv32.dll | 2000.85.3000.0 | 442,368 | 28-Mar-2008 | 13:47 |

5.7 SQL Server 2005 CU6 Upgrade / Installation changes

In Cumulative Update 6 for SQL Server 2005, Microsoft has enabled new functionality that will allow Oracle GoldenGate to capture from tables without primary keys. If this is a brand new environment that does not have Oracle GoldenGate already installed, you must use the SQL Server 2000 installation / upgrade instructions in the Oracle GoldenGate 9.5 Administrator's Guide. There is no need to use any of aspects of Microsoft's native Replication.

If you already have Oracle GoldenGate installed, and are planning on upgrading your SQL Server 2005 environment to CU 6 or higher, please follow this procedure. (Note: It does require downtime, so please plan appropriately.)

If you have SQL Server Native Replication for other objects of the database you cannot have Oracle GoldenGate replicate tables without primary keys, even with CU6. Adding supplemental logging on these tables will cause the native SQL Server replication to stop working.

1. Ensure that the source database is quiesced and there are no further transactions to process.
2. Ensure that Oracle GoldenGate Capture is reading the current log position and that all open transactions have been committed and Captured.
3. Stop Extract
4. In SQL Server Management Studio, expand the instance.
5. If SQL Native Replication is in use for any database in the Instance, only remove the Oracle GoldenGate Publication.
 - a. Expand the **Replication** folder and the **Local Publications** folder.
 - b. Delete the GoldenGate Publication.
 - c. Skip ahead to Instruction 8.
6. Right-click the **Replication** folder and then select **Disable Publishing and Distribution**.
7. Select **Yes, disable publishing on this server** to remove the distributor database and any publications for the SQL Server instance (Note, this removes all publications for all databases in the instance).
8. Select **Finish** to complete the steps.
9. Perform the SQL Server 2005 upgrade to CU6 or higher.
10. Re-Issue ADD TRANDATA for all tables to be Captured.
11. Start Extract.
12. Start application/user activity.

If you previously had Microsoft native replication for use with Oracle GoldenGate, you can use these steps to remove it.

1. In SQL Server Management Studio, expand the instance
2. Right-click the **Replication** folder and then select **Distributor** Properties.
3. Click **Publishers**
4. Uncheck the publication. This will delete all local publications.
5. Optionally, the jobs setup in the SQLAgent for native replication can be deleted. These include the following:
 - Agent history clean up: <Distributor database name>
 - Distribution clean up: <Distributor database name>
 - Expired subscription clean up
 - Reinitialize subscriptions having data validation failures

- Replication agents checkup
6. Additionally, the ADD Trandata commands add jobs with names based on the server, instance, database name, and iteration of the publication as in server/instance-database_SRC-1. These can also optionally be deleted.

Oracle GoldenGate v10 uses some "International Components for Unicode" code which is packaged as several Dynamic Load Libraries (DLLs). The Authorized Program Facility (APF) requires that all modules dynamically loaded by an APF-authorized program must come from APF-authorized sources. For USS, this means that the files must have the "a" extended attribute.

5.8 DB2 z/OS Library Considerations

The installation documentation is incorrect, and "tar xvpf" should be used for expanding the tarball instead of "tar xvf" (the "p" option causes the extended attributes to be restored on specific library files required to run Oracle GoldenGate).

If the user who expands the tarball does not have z/OS authorization to add the "a" extended attribute, someone who is authorized must add the attribute using "extattr +a extract *dll".

5.9 Large Row Support and User Exits– From a release prior to 9.0

If you are upgrading from a version prior to 9.0 and you use user exits in your environment, the user exits will need some minor code changes and recompilation to accommodate the large row support feature. For more information about these changes, refer to the User Exit callback parameters section in the Oracle GoldenGate for Windows and UNIX Reference Guide. Please note that your current user exit will most likely fail if you attempt to use it with version 9.0 and above without the code changes and recompilation, regardless of whether or not you have large rows in your environment.

In prior versions of Oracle GoldenGate, you may have used the parameter ALLOWLARGETABLE to work with tables defined with large rows. As of version 9.0, this parameter is no longer valid (nor required), so it must be removed from the parameter files prior to upgrade. The Extract process in Oracle GoldenGate 9.0 will abend if it encounters this parameter. If you have used this parameter in a prior version, you must regenerate the source definitions file and transfer it to the target.

5.10 Oracle Interval Datatype Support – From a release prior to 9.5

Due to changes in the trail for INTERVAL datatypes, Oracle GoldenGate cannot support replication of those fields between 9.5 and earlier versions. If you are upgrading from a version prior to 9.5 and you have INTERVAL datatypes being captured by Oracle GoldenGate, you will need to upgrade both source and target versions.

5.11 COMPRESSEDUPDATE changes for DB2 LUW, DB2 z/OS, and SQL Server

anyone upgrading from prior to 9.5.1 for the following databases, need to be aware of the COMPRESSUPDATE changes, and may require changes to your parameter files. In DB2 LUW, DB2 z/OS the default is COMPRESSUPDATES, and the parameter works as specified in the documentation. For Teradata, COMPRESUPDATES is the only option. The default for SQL Server is NOCOMPRESSUDPATES and works as specified in the documentation. In Oracle, C-tree, Sybase, and NSK this parameter is ignored.

6 Installation Tasks

Please follow the Installation and Upgrade Instructions for 10.4 located in a separate document.

7 Known Issues

Review the following known issues after you apply the patch set:

- [General](#)
- [Oracle DDL](#)
- [Oracle](#)
- [SQL Server](#)
- [DB2 \(z/OS and Windows and UNIX\)](#)
- [Teradata](#)
- [TimesTen](#)
- [Sybase](#)
- [MySQL](#)
- [C-tree](#)
- [SQL/MX](#)

7.1 General

- The warning “GGG WARNING 250 GoldenGate Collector, port 7870: did not recognize command (G).” means that the 9.5 server/collector proceeds as if the unrecognized command didn't happen, and extract proceeds with the assumption that the target doesn't support the new 10.0 trail file headers. This is just a warning message and will not cause any problems with replication.
- ALLOWDUPTARGETMAPS does not work properly with REPERROR. (OS-7998)
- When installing Oracle GoldenGate in a Windows environment, the full directory path name cannot contain any spaces.
- Oracle GoldenGate can support row sizes up to 2 MB (each character LOB/LONG column contributes up to 4KB and each binary LOB column contributes up to 8KB towards this limit), column sizes up to 64 KB, and object names up to the limits supported by the underlying databases.

- 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.
- In some cases, BATCHSQL can improve performance up to 500% or more. However, there is a performance issue in BATCHSQL with primary-key updates when there are LOBs in the table. If you are doing a high number of primary-key updates and have LOBs in those tables, it may be faster to turn off BATCHSQL.
- @RANGE works only on tables with a primary or unique key defined.
- The FORMATXML, FORMATASCII, and FORMATSQ parameters place hexadecimal data into the trail file. This is expected behavior that accommodates unprintable characters.
- When mapping tables with the same names to different schemas, the statistics reported by STATS may show the incorrect source table.
- User Token values must be printable ASCII characters.
- Column functions (@DATE) only support second precision up to the micro second, even though normal replication can handle as far as nanoseconds.
- User tokens may truncate timestamp values depending on the amount of significant digits and accuracy in the source and target databases.

7.2 Oracle DDL

- Please do not make DDL changes to tables that are currently in the process of an initial load. It is not supported. Do not attempt to replicate DDL during initial loads unless you are using SPECIALRUN.
- If you are spreading the apply load over multiple REPLICATs and each one is doing DDL, please make sure that they do not have overlapping DDL commands.
- INSTR and INSTRCOMMENTS does not support " or NULL values.
- There is no default name for GGSHEMA, you must always specify a username for the DDL objects in the GLOBALS file.
- There is a limit of 2mb for a single DDL operation. That includes Packages, Procedures and Functions.
- DDL operations with TIMESTAMP data types may cause problems if there is a lag which forces DDL resolution.

7.3 Oracle

- Using THREADS EXCEPT should not be used in RAC environments. It is causing a the wrong threads to be excluded from EXTRACT. Do not use THREADOPTIONS PROCESSTHREADS EXCEPT [#], or ALTER THREAD commands without Oracle GoldenGate Technical Service assistance.
- 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. The Oracle bug # is 7171015. This was fixed in Oracle 11.2.0.0.0.
- Oracle GoldenGate does not support the use of '~' or '- ~' in numeric fields.
- If the error below is received when the server character set is UTF8, you will need to set the 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.

- The Oracle GoldenGate direct load and bulk direct load initial-load methods do not support RAC environments. Use methods that write to a trail instead. See the Oracle GoldenGate for Windows and UNIX Administrator Guide for information about direct load methods.
- Packed operations (array inserts, and QMI, QMD) on XMLTYPE datatypes are not supported.
- FORMATXML does not accept the ORACLE and NONAMES parameters. (Ticket 10080)
- TRACETABLE functionality does not support TRUNCATE TABLE commands.
- If using LONG datatypes and the DB_BLOCK_SIZE is greater than 4kb, you may need to set the MAXLONGLEN parameter.
- 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, write the data to a trail first and then use Replicat to generate the files needed for the load. See the Oracle GoldenGate documentation for more information about initial load methods. (Ticket 7156)
- Oracle 10g online RESETLOGS is not supported
- On a Windows NT system, you cannot have multiple Managers running on the same port.
- In 64-bit environments with 32-bit databases, the LD_LIBRARY_PATH must include the 32-bit Oracle libraries.
- Compressed tablespace and table (Create Table... Compress or Create / Alter Tablespace ... Default Compress) were added functionality for Oracle 9.2.0. We currently do not support either of these options. Nor do we support uncompressed partitions of a partitioned table that is compressed.
- Due to the way Oracle normalizes the TIMESTAMP WITH LOCAL TIME ZONE to the database local time zone, the datatype value does not transfer timestamps correctly between databases that are in different time zones. For two databases in the same time zone, the value will transfer correctly if the Replicat session time zone is set to the dbtimezone. This can be accomplished using: SQLEXEC "ALTER SESSION SET TIME_ZONE = dbtimezone". Put this SQLEXEC any place below the USERID parameter and above the first MAP statement.
- HANDLECOLLISIONS only works with specifically named tables or tables that have been already resolved.
- If you wish to replicate TRUNCATE or TRUNCATE PARTITION operations, please do not use GETTRUNCATES. Instead use the DDL Replication options.
- As of Oracle 10.2.x, truncate operations are not logged on empty, non-partitioned, tables. This means that Oracle GoldenGate cannot propagate truncate operations on empty tables, even if GETTRUNCATES is specified. If desired, DDL replication can be used to capture truncates on empty tables. Similarly, as of Oracle 10.2.x, truncate operations are not logged for individual empty partitions. For partitioned tables, this means that table-level truncates cannot be processed reliably. Table-level truncates are not propagated if the table contains ANY empty partitions. For this reason, GETTRUNCATES should NOT be used on partitioned tables in Oracle versions 10.2.x and higher. If desired, DDL replication can be used to capture truncates on partitioned tables that may include empty partitions. The GETTRUNCATES parameter only supports truncates for tables. Truncates against individual partitions are only supported using DDL replication options.
- When using SOURCEDEFS and SEQUENCE value replication is desired, please add in ASSUMETARGETDEFS and be sure to use DYNAMICRESOLUTION as well so that the sequences are correctly resolved.

- 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 modified by `/+ PARALLEL +/-` hints are not supported by Extract. It is considered a Direct Load operation in the redo logs.
- `ALTARCHIVELOGFORMAT` specifications must be on a separate `TRANLOGOPTIONS` statement.
- Extract does not support `RECOVERY_PARALLELISM > 1`.

7.4 SQL Server

- `TEXT / IMAGE` fields are only supported up to the first 1000 characters unless the `MAXCOLUMNLEN` parameter is used. (This applies to trigger-based Extract only. Log-based Extract supports larger column sizes up to the row size limitation mentioned earlier).
- Oracle GoldenGate cannot capture or 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'`, please 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 Replicate uses the ANSI standard format of `'yyyy-mm-dd'`
- Left Partitioned tables are not supported in SQL Server 2005 and SQL Server 2008.
- SQL Server Extract is not properly ignoring transactions with the `ggs_repl` on them. To have it ignore them, please set any `TRANLOGOPTIONS` setting; such as `TRANLOGOPTIONS REQUIRELONGDATACAPTURECHANGES`.

7.5 DB2 (z/OS and Windows and UNIX)

- `DDLGEN` for DB2 on z/OS does not work correctly with `NULL/NOT NULL` constraints and `TIMESTAMP` datatypes.
- `FORMATXML` and `FORMATASCII` do not work correctly with `DATE` or `TIMESTAMP` datatypes.
- 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 just an informational message and can be ignored.
- `GGSCI` on z/OS now requires 48MB of memory instead of 8MB.

7.6 Teradata

- Moving multi-byte 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 and above and GG v10.0.0.30 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.
- There is a known Teradata issue with LOBS on Teradata 13. This will be supported when Teradata 13 is released. DR108729

7.7 TimesTen

- None

7.8 Sybase

- The Sybase Replicat does not support Primary Keys that contain the binary data types, including BINARY and VARBINARY.
- When Server OS is UTF-8 (LANG=en_US.UTF-8), ADD CHECKPOINTTABLE gives error message "ERROR: failed to create checkpoint table" but checkpoint table is successfully created. The work around is to execute command "info checkpointtable" first then "add checkpointtable" (FPA-3857)
- There is a limitation on data mapping when dealing with more than 1 LOB columns. In such a situation, this release will guarantee correct mapping only on identical source and target table structures. If the source and target table structures are not identical, there's 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.
- Deferred Updates and Deferred Deletes are not supported. Please use other methods to update or delete data.
- In Sybase 15, the INFO TRANDATA command may not show the correct status of LOB logging.

7.9 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 !"
- INITIALLOAD methods are not supported to pull data from MySQL.
- Precision errors can occur when replicating data to MySQL because it is not dynamic SQL due to floating point limitations.

7.10 C-tree

- No known issues

7.11 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 HP 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 & Day to Second.
- ASSUMETARGETDEFS is not supported by SQL/MX EXTRACT. Please use SOURCEDEFS instead.
- Outstanding HP Issues regarding SQL/MX and Oracle GoldenGate.
 - No Population of Interval Datatypes. There is a current bug in the HP ODBC client that does not support the population of Interval datatypes (HP ticket # 10-070723-6463).
- TMFARLIB can return out of order records if the customer is using AUX Audit trails (OS-8812, HP ticket #10-070402-9249).
- Certain GGSCI commands are timing out when trying to communicate with certain processes. This is an HP issue that has been logged with them (OS-8839, HP ticket #10-090318-8875).