Oracle® Database

Readme

12c Release 2 (12.2)

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Oracle Database Readme, 12c Release 2 (12.2)

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Contents

3 Documentation Addendum

Preface

This document describes last-minute features and changes that are not included in the Oracle Database Documentation Library for Oracle Database 12*c* Release 2 (12.2).

Audience

This Readme documents differences between the server and its integral parts and its documented functionality, as well as known problems and workarounds.

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

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Related Documents

Each platform release, such as Linux and Windows, provides release notes specific to that platform. Additional product Readme files may also exist. This Readme is provided instead of system bulletins or similar publications.

For licensing information, refer to the *Oracle Database Licensing Information User Manual*.

Conventions

The following text conventions are used in this document:

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

1

Purpose of this Readme

This Readme is relevant only to the delivered Oracle Database 12*c* Release 2 (12.2) product and its integral parts, such as SQL, PL/SQL, the Oracle Call Interface (OCI), SQL*Loader, Import/Export utilities, and so on.

This Readme documents differences between the server and its integral parts and its documented functionality, as well as known problems and workarounds.

Operating system releases, such as Linux, UNIX, and Windows, often provide Readme documents that are specific to that operating system. Additional Readme files may also exist. This Readme is provided instead of system bulletins or similar publications.

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2

Readme Information for Oracle Database 12*c* Release 2 (12.2)

These sections describe last-minute features and changes that are not included in Oracle Database Documentation Library for this release of Oracle Database 12*c* Release 2 (12.2). If you are on Oracle Database 12*c* Release 2 (12.2), this is the Readme section that you need to read.

2.1 Compatibility, Upgrading, Downgrading, and Installation

These sections describe compatibility, upgrading, downgrading, and installation topics for Oracle Database 12*c* Release 2 (12.2).

2.1.1 Oracle REST Data Services (ORDS)

JDK7 is the minimum Java version for Oracle REST Data Services (ORDS).

2.1.2 Core Dump ORA-00600 [8153] Error Encountered After Database Upgrade

A core dump `ORA-00600 [8153]` error is encountered after the database is upgraded to Oracle Database 12*c* Release 2 (12.2) and then downgraded back to its original release (reference Bug 20898997).

Always apply the patch for this bug before upgrading the database to Oracle Database 12*c* Release 2 (12.2).

2.1.3 Downgrading Oracle Database 12*c* Release 2 (12.2) to Oracle Database 11*g* Release 2 (11.2.0.3) Results in Errors When Running utlrp.sql

If SQLJ types are present when downgrading from Oracle Database 12*c* Release 2 (12.2) to Oracle Database 11*g* Release 2 (11.2.0.3), then the following `ORA-00600` error can occur when running `utlrp.sql` to recompile invalid objects after running `catrelod.sql` (reference Bug 16230705):

```
ORA-00600: internal error code, arguments: [16211]
```

Apply the patch for this bug and recompile the type using the `ALTER TYPE COMPILE` statement.

2.1.4 Select Product Languages Screen Missing in Oracle Client

Starting with Oracle Database 12*c* Release 2 (12.2.0.1), the Select Product Languages screen has been removed and Oracle Universal Installer installs all supported language files irrespective of the operating system locale (reference Bug 18223148).

2.2 Features Not Available or Restricted in This Release of Oracle Database 12*c* Release 2 (12.2)

Review this list of components and features that are not available or are restricted in this release of Oracle Database 12*c* Release 2 (12.2):

- XStream does not support LONG columns in databases with varying width multibyte character sets.
- OC4J is not shipping in this release.
- You cannot search on an updated document until the index is synchronized.
- Creation of a database with sample schema using Database Configuration Assistant (DBCA) with multiple pluggable databases (PDBs) is not supported.
- Oracle Database XE upgrades are not supported.
- Oracle Linux 6.4 or Red Hat Enterprise Linux 6.4 is supported.
- Oracle Enterprise Manager (EM): To monitor Oracle Database 12*c* Release 2 (12.2), you must be on EM 12*c* PS4 with Bundled Patch 2 or later applied. The EM agent that is used to monitor the database must be an EM 12*c* PS4 agent with Agent Bundled Patch 3 or later applied.
- Oracle Database Clients on 32-bit are not supported.
- The `-procag` flag is not displayed when you specify the command `oclumon dumpnodeview -help` in Oracle Database 12*c* Release 2 (12.2.0.1).
- XStream does not support `LONG` columns in databases with varying width multibyte character sets.

2.2.1 Restrictions Using Zero Data Loss Recovery Appliance Release 12.1 Backups

Zero Data Loss Recovery Appliance release 12.1 does not support backups from protected databases using Oracle Database 12*c* Release 2 (12.2).

Recovery Appliance support for 12.2 databases is not yet available.

2.2.2 Oracle Database Vault - Oracle Enterprise Manager Functionality Limitation

The Oracle Database Vault Administrator's Guide, Oracle Database Security Guide, and Oracle Database 2 Day + Security Guide for Oracle Database 12*c* Release 2 (12.2) describe Oracle Enterprise Manager (Enterprise Manager) functionality that

administers aspects of Oracle Database Vault. Some of the Enterprise Manager functionality described in these documents may not be available at the time of this release. Use the Oracle Database Vault PL/SQL interface APIs to enable and configure these functionalities.

2.2.3 Oracle Advanced Security - Oracle Enterprise Manager Functionality Limitation

The Oracle Database Advanced Security Guide, Oracle Database Security Guide, and Oracle Database 2 Day + Security Guide for Oracle Database 12*c* Release 2 (12.2) describe Oracle Enterprise Manager (Enterprise Manager) functionality for administering Transparent Data Encryption (TDE) and Oracle Data Redaction. Some of the Enterprise Manager functionality described in these documents may not be available at the time of this release. Use the TDE and Oracle Data Redaction PL/SQL interface APIs to enable and configure these functionalities.

2.2.4 Features Not Available or Restricted for a Multitenant Container Database in Oracle Database 12*c* Release 2 (12.2)

The following is a list of features that are not available or are restricted for a multitenant container database (CDB):

- Flashback Transaction Query (in both local undo mode and shared undo mode)
- Database Recovery Advisor
- Oracle Sharding
- Audit Vault Redo Collector

2.3 Deprecated and Desupported Features for Oracle Database

Oracle Database 12*c* Release 2 (12.2) introduces behavior changes for your database in addition to new features. Changes in behavior include deprecated and desupported initialization parameters, options, syntax, and the deprecation and desupport of features and components. For more information, see the *Oracle Database Upgrade Guide.*

2.3.1 Deprecation of Oracle Streams for CDB

Oracle Streams for multitenant container database (CDB) is deprecated in Oracle Database 12*c* Release 2 (12.2).

2.3.2 Deprecation of JPublisher

Oracle JPublisher was deprecated in Oracle Database 12*c* Release 1 (12.1). As of October 2014, all JPublisher features are desupported and unavailable in Oracle Database 12*c* Release 2 (12.2). Oracle recommends that you use the alternatives listed here:

- To continue to use Web service callouts, Oracle Corporation recommends that you use the OJVM Web Services Callout utility, which is a replacement for the Web Services Callout utility.
- To create Java client applications for PL/SQL programs and SQL objects, Oracle Corporation recommends that developers use other JDK development tools that assist you to create Java `STRUCT` classes, and other prestructured options.

> **See Also:**
>
> My Oracle Support Note 1937939.1 for more information about JPublisher deprecation and desupport: https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=1937939.1
>
> Also, see JDK Tools and Utilities on Oracle Technology Network:
>
> http://docs.oracle.com/javase/8/docs/technotes/tools/

2.4 Oracle Application Express

To learn more about Oracle Application Express, refer to the *Oracle Application Express Release Notes* and the *Oracle Application Express Installation Guide.*

2.5 Oracle Database Security

Oracle provides a patch that will strengthen native network encryption security for both Oracle Database servers and clients.

> **See Also:**
>
> *Oracle Database Security Guide*

2.6 Oracle Grid Infrastructure for a Cluster

Be aware of these issues for Oracle Grid Infrastructure for a Cluster in Oracle Database 12*c* Release 2 (12.2).

2.6.1 Oracle ACFS and Oracle Clusterware Shut Down

Some mount points that are not used by Oracle Grid Infrastructure can prevent unmounts and disable volumes in the kernel (reference Bug 8651848).

The following are examples of mount points that are not used by Oracle Grid Infrastructure:

- Network File System (NFS)
- Samba/Common Internet File System (CIFS)

If this reflects your situation, then stop using these features before initiating a shutdown, file system unmount, or disabling volumes.

Additionally, certain user space processes and system processes can use the file system or volume device in a way that prevents Oracle Grid Infrastructure from shutting down during a patch or upgrade. If this occurs, then use the `lsof` and `fuser` commands (Linux and UNIX) or the `handle` and `wmic` commands (Windows) to identify active processes on Oracle Automatic Storage Management Cluster File System

(Oracle ACFS) file systems and Oracle ASM Dynamic Volume Manager (Oracle ADVM) volumes. To ensure that these processes are stopped, dismount all Oracle ACFS file systems or Oracle ADVM volumes and issue an Oracle Clusterware shutdown. Otherwise, errors can occur during Oracle Clusterware shutdown relating to activity on Oracle ACFS file systems or Oracle ADVM volumes that stop the successful shutdown of Oracle Clusterware.

2.7 Oracle Multimedia

For additional information, refer to the Oracle Multimedia Readme file located at:

ORACLE_HOME/ord/im/admin/README.txt

2.8 Oracle ODBC Driver

For additional information, see the *Oracle ODBC Driver Release Notes*.

2.9 Oracle SQL Developer

For additional information, refer to the Oracle SQL Developer Readme file located at:

ORACLE_HOME/sqldeveloper/readme.html

2.10 Pro*C

For additional information, see the *Pro*C/C++ Release Notes*.

2.11 Pro*COBOL

For additional information, see the *Pro*COBOL Release Notes*.

2.12 SQL*Plus

For additional information about SQL*Plus, see the *SQL*Plus Release Notes*.

2.13 Open Bugs

These are known bugs in Oracle Database 12*c* Release 2 (12.2).

A supplemental list of bugs may be found as part of the release documentation specific to your platform.

2.13.1 Database Upgrade Assistant (DBUA) Known Bugs

These are known bugs for Database Upgrade Assistant (DBUA) in Oracle Database 12*c* Release 2 (12.2).

2.13.1.1 Bug 24674586

During upgrade, the DBUA shows a prerequisite failure requesting that all underscore initialization parameters be dropped. If you drop the underscore initialization parameters from

the SPFILE and continue the upgrade using DBUA without bouncing the database, the database instance fails to start up in upgrade mode.

Workaround:

Bounce the database after removing the underscore initialization parameters from SPFILE and then proceed with the DBUA.

2.13.2 Global Data Services (GDS) and Sharding Known Bugs

These are known bugs for Global Data Services (GDS) and Sharding in Oracle Database 12*c* Release 2 (12.2).

2.13.2.1 Bug 23703739

When using an IPv6 IP address for Global Data Services (GDS) or shard database hosts running Oracle RAC, the automatic valid node checking for registration (VNCR) feature of GDS and sharding does not correctly add the IP address to the list of invited nodes. As a result, host registration is refused by the Global Service Manager (GSM) or shard director.

Workaround:

Use the GDSCTL command add `invitednode` to add the IPv6 address manually.

2.13.3 JavaScript Object Notation (JSON) Known Bugs

These are known bugs for JavaScript Object Notation (JSON) in Oracle Database 12*c* Release 2 (12.2).

2.13.3.1 Bug 25186856

`LOB` input parameters and `LOB` outputs for JavaScript Object Notation (JSON) generation functions (for example, `JSON_OBJECT`, `JSON_ARRAY`, `JSON_OBJECTAGG`, and `JSON_ARRAYAGG`) have known problems and are not supported.

Workaround:

Use `VARCHAR` parameters instead.

2.13.3.2 Bug 24693010

The JavaScript Object Notation (JSON) generation functions (`JSON_OBJECT`, `JSON_ARRAY`, `JSON_OBJECTAGG`, and `JSON_ARRAYAGG`) can give incorrect JSON output values in a few cases including the following:

- The database character sets are not a UTF8 character set.
- Some of the strings are not be properly escaped.

Workaround:

If possible, limit use of `JSON_OBJECTAGG` to `VARCHAR2` or `JSON_ARRAYAGG` to `VARCHAR2` results and avoid `CLOB` outputs. Use `CLOB` outputs only when using single-byte character sets.

To avoid incorrect JSON output from `JSON_OBJECTAGG` or `JSON_ARRAYAGG`, escape `VARCHAR2` columns using a custom PL/SQL function before passing the results to the operators. The escaping function must escape the double quotation character, the backslash character, and any ASCII control characters or whitespace characters other than the space.

Avoid using `JSON_ARRAY` or `JSON_OBJECT` with character sets other than AL32UTF8.

2.13.3.3 Bug 24490872

The input to JavaScript Object Notation (JSON) aggregate functions `JSON_OBJECTAGG` and `JSON_ARRAYAGG` is limited to 4,000 bytes for each input value. A longer value returns an error message.

Workaround:

None.

2.13.3.4 Bug 24469879

SQL condition `JSON_EXISTS` can now be used with a path expression predicate. However, the path expression predicate cannot contain Unicode escape sequences.

Workaround:

Instead, characters from the database character set (for example, AL32UTF8) can be used. If characters from the database character set are not used, the predicate cannot be evaluated correctly.

2.13.4 Multitenant Container Database (CDB) and Pluggable Database (PDB) Known Bugs

These are known bugs for multitenant container database (CDB) and pluggable database (PDB) in Oracle Database 12*c* Release 2 (12.2).

2.13.4.1 Bug 25794607

Plugging in a PDB from `RDBMS_12.2.0.1.0` to `RDBMS_12.2.0.1.0CLOUD` does not raise any violations.

Workaround:

No workaround exists. This is an unsupported operation and must be avoided.

2.13.4.2 Bug 24970279

After configuring Oracle Label Security (OLS) with Oracle Internet Directory (OID) on a pluggable database (PDB) using Database Configuration Assistant (DBCA), the PDB has invalid objects. This issue is seen only when you select an OLS with OID configuration without selecting a Database Vault configuration while configuring a pluggable database using DBCA.

Workaround:

Run `ORACLE_HOME/rdbms/admin/utlrp.sql` on the PDB after the DBCA operation is complete.

2.13.5 Oracle ASM Cluster File System (Oracle ACFS) Known Bugs

These are known bugs for Oracle ASM Cluster File System (Oracle ACFS) in Oracle Database 12*c* Release 2 (12.2).

2.13.5.1 Bug 24585489

If Oracle ACFS replication and Oracle ACFS Security are active or have ever been active on the file systems involved in the replication, then the `acfsutil repl` upgrade command cannot be used to upgrade Oracle ACFS replication.

Workaround:

Execute one of the following:

- Install the patch for this bug.
- To update replication for Oracle Database 12*c* Release 2 (12.2), terminate replication on the primary and the standby databases using the `acfsutil repl terminate` command, then run `acfsutil repl init` to start replication upgrade for 12.2.

2.13.5.2 Bug 24509867

If Oracle ACFS security, encryption, or auditing are enabled and if you create a snapshot that directly invokes `acfsutil snap duplicate create` or `acfsutil snap duplicate apply` to apply the snapshot, the apply command fails even though no error is reported.

Workaround:

Do not enable Oracle ACFS security, encryption, or auditing if you are directly invoking `acfsutil snap duplicate create` or `acfsutil snap duplicate apply`.

2.13.5.3 Bug 24501993

Use Case 1:

Consider that security, encryption and auditing are already enabled on the file system, and snap-based replication needs to be initialized with the specified tags. If replication is enabled for the specified tags and security, encryption and auditing are also enabled, and if the security directory is not tagged with one of the specified tags, then replication will fail.

Use Case 2:

Consider that replication is initialized with the specified tags, and security, encryption and auditing need to be initialized. If snap-based replication is initialized with tags that do not replicate the files in the security directory, an attempt to enable security, encryption and auditing fails.

Workaround for Use Case 1:

Tag the security directory with the one of the specified tags for the replication.

Workaround for Use Case 2:

1. Pause the replication.
2. Enable security, encryption and auditing and add a tag that is specified for the replication to the security directory recursively running as Oracle ACFS Security administrator.
3. Resume the replication.

2.13.5.4 Bug 24346121

When using `acfsutil snap dup create` piped into `acfsutil snap dup apply` to perform a data transfer, confusing error output can occur if the same transfer is accidentally performed multiple times in succession (for example, if the same command line is invoked multiple times). During each of the duplicated invocations, a set of error messages are produced by the `snap dup create` operation. These messages are benign and can be ignored. In this case, the snap dup apply operation does not write any data to disk, and the operation immediately terminates with an exit status of 2. The error messages result from the termination of the apply process while the create process is still trying to send data to it.

Workaround:

These messages are benign and can be ignored.

2.13.5.5 Bug 23327160

The `compatible.advm` disk group attribute or Oracle ACFS compatibility value for an Oracle ACFS file system needs to be set to a value that is equivalent to a supported Oracle Database base release stream to take advantage of the new Oracle ACFS features associated with each release. Invalid numbers are values between 12.1 and 12.2.0.1.0 that are not complete release numbers; for example, 12.1.2, 12.1.8, 12.1.1.1, and 12.2.1

Workaround:

Specify Oracle Database base release numbers that are valid and complete; for example: 12.1, 12.1.0.1, 12.1.0.1.0, 12.1.0.2, 12.1.0.2.0, 12.2, 12.2.0.1, and 12.2.0.1.0

2.13.5.6 Bug 22191226

Terminating Oracle ACFS replication on the primary database can take a long time if a large amount of data is currently being transferred from the primary database to the standby database.

Workaround:

If you are willing to lose some updates from the primary database, then you can terminate replication more quickly by invoking the `acfsutil repl terminate primary` operation and, while waiting for this operation to complete on the primary database, the you can terminate replication on the standby database with the `acfsutil repl terminate standby immediate` operation. Using the `immediate` keyword results in speedy termination on the standby database and breaks a connection from the primary database enabling the termination command on the primary database to complete soon after.

2.13.6 Oracle ASM Dynamic Volume Manager (Oracle ADVM) Known Bugs

These are known bugs for Oracle ASM Dynamic Volume Manager (Oracle ADVM) in Oracle Database 12*c* Release 2 (12.2).

2.13.6.1 Bug 21878915

If this directory location is part of the search string when Oracle ADVM volumes are present, negative interactions between the Oracle ADVM driver and its local Oracle ASM proxy instance can result.

Workaround:

Do not include the directory location used to store Oracle ADVM volumes in the specification of `ASM_DISKSTRING`. These volumes are for the use of the Oracle ACFS file system. The directory locations vary by operating system platform:

- For the Windows system, the directory is `\Device\Asm`.
- For other systems, it `is /dev/asm`.

2.13.7 Oracle Automatic Storage Management (Oracle ASM) Known Bugs

These are known bugs for Oracle Automatic Storage Management (Oracle ASM) in Oracle Database 12*c* Release 2 (12.2).

2.13.7.1 Bug 24805974

In an extended cluster, once the storage split issue has been addressed, the administrator can issue the command `crsctl modify site <site_name> -s rejuvenate` to rejuvenate the site. This command, however, does not automatically restart Oracle ASM instances or its clients, such as database instances, on the rejuvenated site.

Workaround:

Identify the Oracle ASM instances that should be running on this site and manually issue the `srvctl start asm` or the `srvctl relocate asm` command.

2.13.7.2 Bug 20760821

Oracle Database 12*c* Release 1 (12.1) database instances cannot access disk groups with the `COMPATIBLE.ASM` attribute set to Oracle Database 12*c* Release 2 (12.2). If attempted, the following errors are returned:

```
ORA-15001: diskgroup %s does not exist or is not mounted
ORA-15040: diskgroup is incomplete
```

Workaround:

Apply the patch for Bug 20760821 to the Oracle Database 12*c* Release 1 (12.1) `ORACLE_HOME` directory.

2.13.7.3 Bug 12332603

Oracle Automatic Storage Management (Oracle ASM) loses the rolling migration state if Cluster Ready Services (CRS) shuts down on all nodes and the initial version of Oracle ASM is earlier than Oracle Database 12*c* Release 1 (12.1.0.2).

Workaround:

Consider the following scenario of 4 nodes (`node1`, `node2`, `node3`, and `node4`) that are at Oracle Database 11*g* Release 2 (11.2.0.4) and that are being upgraded to Oracle Database 12*c* Release 2 (12.2.0.1):

- `node1` and `node2` are upgraded to 12.2.0.1 and running.
- `node3` and `node4` are still at 11.2.0.4 and running.

Now, consider that there is an outage where all CRS stacks are down which leaves the cluster in a heterogeneous state (for example, two nodes at 11.2.0.4 and two nodes at 12.2.0.1).

To proceed with the upgrade, start nodes still at 11.2.0.4 only (for example, `node3` or`node4`, or both) and execute the following command on the Oracle ASM instance on `node3` or`node4`, or both before starting any 12.2.0.1 nodes:

```
ALTER SYSTEM START ROLLING MIGRATION TO '12.2.0.1'
```

Continue the upgrade procedure as already documented from this point forward.

Note that before executing the preceding step to bring the Oracle ASM cluster back into rolling migration, you cannot start two nodes of different versions in the cluster. If you do so, one of the Oracle ASM versions fail with either the `ORA-15153` or `ORA-15163` error message.

2.13.8 Oracle Database Configuration Assistant (DBCA) Known Bugs

This section describes known bugs for Oracle Database Configuration Assistant (DBCA).

2.13.8.1 Bug 25710407

When creating a database using the DBCA from the General_Pupose.dbc or Data_Warehouse.dbc templates (or from the Seed Database) using the 12.2.0.1 Production SH in Linux and Solaris platform, the following errors in the database alert log are returned:

```
ORA-12012 , ORA-20001 AND ORA-06512 FROM ORA$AT_OS_OPT_SY_XXX

Platforms : Linux 12.2.0.1 Production SH
            Solaris 12.2.0.1 Production SH
```

The database alert log contents are:

```
Errors in file
/u01/app/oracle/diag/rdbms/orcl/ORCL1/trace/ORCL1_j000_73185.trc:
ORA-12012: error on auto execute of job "SYS"."ORA$AT_OS_OPT_SY_936"
ORA-20001: Statistics Advisor: Invalid task name for the current user
ORA-06512: at "SYS.DBMS_STATS", line 47207
ORA-06512: at "SYS.DBMS_STATS_ADVISOR", line 882
ORA-06512: at "SYS.DBMS_STATS_INTERNAL", line 20059
ORA-06512: at "SYS.DBMS_STATS_INTERNAL", line 22201
ORA-06512: at "SYS.DBMS_STATS", line 47197
2017-03-13T00:47:21.394481+00:00
```

This issue is happening because of the unavailability of the Stats Advisor Tasks from the created database:

```
SQL> select name, ctime, how_created
from sys.wri$_adv_tasks
where owner_name = 'SYS'
and name in
('AUTO_STATS_ADVISOR_TASK','INDIVIDUAL_STATS_ADVISOR_TASK');  2
 3    4
```

Workaround:

Connect to the created database using the SYSDBA privilege and run the following command:

```
SQL> select name, ctime, how_created
from sys.wri$_adv_tasks
where owner_name = 'SYS'
and name in
('AUTO_STATS_ADVISOR_TASK','INDIVIDUAL_STATS_ADVISOR_TASK');  2
 3    4

no rows selected

SQL> EXEC dbms_stats.init_package();

PL/SQL procedure successfully completed.
```

Now there are rows in these queries:

```
SQL> select name, ctime, how_created from sys.wri$_adv_tasks where
owner_name
= 'SYS' and name in
('AUTO_STATS_ADVISOR_TASK','INDIVIDUAL_STATS_ADVISOR_TASK');

NAME
--------------------------------------------------------------------------
------
```

```
--
CTIME     HOW_CREATED
--------- ------------------------------
AUTO_STATS_ADVISOR_TASK
13-MAR-17 CMD

INDIVIDUAL_STATS_ADVISOR_TASK
13-MAR-17 CMD
```

Once the Stats Advisor Tasks are available in database, the database alert log no longer has:

```
ORA-06512 FROM ORA$AT_OS_OPT_SY_XXX
```

2.13.8.2 Bug 24433132

Oracle Database Configuration Assistant (DBCA) incorrectly reports a failure with the following error message when you are creating a version earlier than Oracle Database 12*c* Release 2 (12.2.0.1) of a pluggable database (PDB) in a multitenant container database (CDB):

```
ORA-65107: Error encountered when processing the current task on instance:1
```

Workaround:

This error message can be ignored and you may proceed upgrading the PDB.

2.13.9 Oracle Database Enterprise Edition Known Bugs

These are known bugs for Oracle Database Enterprise Edition in Oracle Database 12*c* Release 2 (12.2).

2.13.9.1 Bug 25376799

When upgrading the database to release 12.2 and then downgrading back to the original release, the Oracle XML DB (XDB) component might be invalid with some invalid objects. For example:

OBJECT_NAME	OWNER
DBMS_SODA_ADMIN	XDB
DBMS_SODA_ADMIN	XDB
DBMS_SODA_ADMIN	PUBLIC
DBMS_SODA_DML	XDB
DBMS_SODA_DML	XDB
DBMS_SODA_UTIL	SYS
DBMS_SODA_UTIL	SYS

Workaround:

Drop the invalid objects by issuing the following statements under SYS:

```
drop public synonym DBMS_SODA_ADMIN;
drop package XDB.DBMS_SODA_ADMIN;
drop package SYS.DBMS_SODA_UTIL;
drop package XDB.DBMS_SODA_DML;
```

Then run `@utlrp` to revalidate XDB after dropping the invalid SODA objects.

2.13.9.2 Bug 24647145

Starting in Oracle Database 12*c* Release 2 (12.2), context indexes can create a table that did not exist in earlier releases. If you use Data Pump to import a context index created prior to release 12.2 into release 12.2 or later, then the new context index table is created in the system tablespace. If you later try to use transportable tablespace to move the context index, you get the following error:

```
ORA-39932: Extensible Index <index name> not fully contained in the
transportable set
```

Workaround:

For transportable tablespace to work, the table that lives in the `SYSTEM` tablespace needs to be moved to the tablespace where the rest of the index tables reside. Then, the index on that internal table needs to be rebuilt. To find tables that are created by context indexes that prevent a transportable tablespace operation because they are in the `SYSTEM` tablespace, execute the following query:

```
SELECT t1.table_name, t2.index_name FROM user_tables t1, user_indexes
t2 WHERE t1.table_name = t2.table_name AND t1.table_name LIKE
'DR$index_name%$U' AND t1.tablespace_name='SYSTEM';
```

Then, for all tables returned by this query (there can be more than one for a partitioned index), do the following:

```
ALTER TABLE table_name MOVE TABLESPACE tablespace_name
```

tablespace_name is the name of the new tablespace for the table. For all of the indexes returned by this query, execute the following:

```
ALTER INDEX index_name REBUILD;
```

2.13.9.3 Bug 24484204

Analytic view queries using bind variables or that have asymmetric predicates are slow. The typical example of the latter is a query with predicates that span dimensions. For example, (Year, Region) as in `('1998','EAST')` or in `('1999', 'WEST')`.

Workaround:

To workaround this problem, disable the join back optimization by specifying `ALTER SESSION SET _hcs_no_av_jback_opt = TRUE`.

2.13.9.4 Bug 24477640

Running an analytic view (AV) query that includes an AV calculated measure with a CASE statement yields an `ORA-00600` error.

Workaround:

Specify the `ALTER SESSION SET _hcs_no_sp_jback_opt = TRUE` statement. Or, use other constructs in your calculation definition.

2.13.9.5 Bug 24459231

Rapid Home Provisioning Control (RHPCTL) utility commands do not work when the Rapid Home Provisioning Server (RHPS) is started the first time after configuring it.

Workaround:

Restart the RHPS by issuing the commands `srvctl stop rhpserver` and then `srvctl start rhpserver`.

2.13.9.6 Bug 24322363

Software-only images are the only type of images supported with persistent home paths provisioned using Rapid Home Provisioning (RHP). Images created from existing working copies or homes are not supported for provisioning homes with a persistent home path.

Workaround:

Use images created from software-only installations.

2.13.9.7 Bug 24291322

Symbolic links are not allowed in the directory object paths or filenames when opening BFILEs. The entire directory path and filename is checked and the following error is returned if any symbolic link is found:

```
ORA-22288: file or LOB operation FILEOPEN failed soft link in path
```

Workaround:

If the database directory object or filename you are trying to open contains symbolic links, change it to provide the real path and filename.

2.13.9.8 Bug 23713504

The service-oriented buffer cache access optimization feature continuously monitors data block reads from disk or inter-node block transfers and performs data-dependent caching using this information. The data-dependent caching does not work in the case of service relocation if there are no data block reads or transfers in the recent past. This can happen if

all of the blocks queried are already in the buffer cache and, therefore, no new blocks are read or transferred.

Workaround:

None.

2.13.9.9 Bug 23569490

If you have a large number of collections and are working with pre-12.2 clients, you need a larger object cache, due to a change in snapshot size and thus a need for collection image conversion.

Workaround:

The object cache size can be set using the `OBJECT_CACHE_OPTIMAL_SIZE` initialization parameter. This is set to a low value by default.

Based on the number of collections and object types used in the application, the size required can be found by using this formula:

```
max(20K * Number of Collection Types, 5K * Object type)
```

2.13.9.10 Bug 22022250

If an attempt is made to compile an editioned type object that depends on a second type object that is currently invalid, and the second invalid type object is currently being inherited from an earlier edition, this action can result in the second type object incorrectly continuing to be inherited from the earlier edition. Oracle Database fails to determine that the invalid type object needs to be actualized into the current edition.

Workaround 1:

Preemptively, before attempting DDL on a type object, you must verify that all of the type objects on which the target object currently depends are already valid or are actually in the current edition.

Workaround 2:

If preemptive prevention is not taken, then the only workaround is to determine which objects are being incorrectly inherited from an ancestor edition and then to manually compile those objects in the correct editions.

2.13.9.11 Bug 21546668 and Bug 24370018

Upgrading Oracle E-Business Suite (Oracle EBS) 12.2 from Oracle Database 11*g* Release 2 (11.2.0.4) to 12.2, returns the following error in the upgrade file:

```
Identifier CATALOG 15-08-03 04:29:22
SCRIPT    = [/ade/b/3767230542/oracle/rdbms/admin/sqlsessend.sql]
ERROR     = [ORA-22348: The object type DDL is not supported in
Editioned schema]
STATEMENT = [alter type sql_plan_row_type modify attribute (
  object_owner  VARCHAR2(128),
  object_name   VARCHAR2(128),
```

```
  object_alias  VARCHAR2(261),
  qblock_name   VARCHAR2(128))
cascade]
------------------------------------------------------------------------------

------------------------------------------------------------------------------
Identifier CATPROC 15-08-03 04:33:04
SCRIPT    = [/ade/b/3767230542/oracle/rdbms/admin/sqlsessstart.sql]
ERROR     = [ORA-22348: The object type DDL is not supported in Editioned
schema]
STATEMENT = [alter type sql_plan_row_type modify attribute (
  object_owner  VARCHAR2(128),
  object_name   VARCHAR2(128),
  object_alias  VARCHAR2(261),
  qblock_name   VARCHAR2(128))


DIAGNOSTIC ANALYSIS:
------------------------------------------------------------------------------
from catupgrd840.log

04:29:22 SQL> alter type sql_plan_stat_row_type compile specification reuse
settings;

Type altered.

Elapsed: 00:00:00.03
04:29:22 SQL>
04:29:22 SQL> alter type sql_plan_row_type modify attribute (
04:29:22   2    object_owner  VARCHAR2(128),
04:29:22   3    object_name   VARCHAR2(128),
04:29:22   4    object_alias  VARCHAR2(261),
04:29:22   5    qblock_name   VARCHAR2(128))
04:29:22   6  cascade;
alter type sql_plan_row_type modify attribute (
*
ERROR at line 1:
ORA-22348: The object type DDL is not supported in Editioned schema

........


Elapsed: 00:00:00.07
04:33:04 SQL>
04:33:04 SQL> Rem alter sql_plan_row_type for long identifiers
04:33:04 SQL> alter type sql_plan_row_type modify attribute (
04:33:04   2    object_owner  VARCHAR2(128),
04:33:04   3    object_name   VARCHAR2(128),
04:33:04   4    object_alias  VARCHAR2(261),
04:33:04   5    qblock_name   VARCHAR2(128))
04:33:04   6  cascade;
alter type sql_plan_row_type modify attribute (
*
ERROR at line 1:
ORA-22348: The object type DDL is not supported in Editioned schema
```

Workaround:

Drop the types causing the error in the environment being upgraded before the database upgrade. The types are auto-regenerated later. Run the following PL/SQL commands:

```
declare
  cursor c1 is
    select u.name, o.name
    from sys.type$ t, sys.obj$ o, sys.user$ u
    where o.type# = 13
          and bitand(t.properties, 8388608) = 8388608 --transient
cursor types
          and o.oid$ = t.tvoid
          and o.spare3 = u.user#
          and bitand(u.spare1, 16) = 16;
  type_owner varchar2(128);
  type_name  varchar2(128);
begin
  -- Drop system generated editioned transient cursor types
  open c1;
  loop
    fetch c1 into type_owner, type_name;
    exit when c1%NOTFOUND;
    begin
      EXECUTE IMMEDIATE 'drop type "' || type_owner || '"."' ||
                        type_name || '" force';
    exception
      when others then
        null;
    end;
  end loop;
  close c1;
exception
  when others then
    null;
end;
/
```

2.13.10 Oracle Database Quality of Service (QoS) Management Known Bugs

This section describes known bugs for Oracle Database Quality of Service (QoS) Management.

2.13.10.1 Bug 25369170

After an Oracle Grid Infrastructure upgrade, the password for the Oracle Database Quality of Service (QoS) Management administration account (qosadmin) needs to be reset and any users created before the upgrade need to be re-created.

Workaround:

Reset the password for the Oracle Database QoS Management administration account (qosadmin) after the upgrade completes by running the following command as a grid operating system user:

```
qosctl qosadmin -setpasswd qosadmin
```

The new password must be entered (there will be no prompt for the old password).

To re-create the Oracle Database QoS Management application users, perform the following steps as a grid operating system user:

1. Prior to upgrading Oracle Grid Infrastructure, run the following command to list the current list of defined users:

   ```
   qosctl qosadmin -listusers
   ```

2. After the upgrade, each user can be added by running the following command:

   ```
   qosctl qosadmin -adduser <user_name>
   ```

2.13.11 Oracle Grid Infrastructure Known Bugs

These are known bugs for Oracle Grid Infrastructure in Oracle Database 12*c* Release 2 (12.2).

2.13.11.1 Bug 25205578

When upgrading an Oracle Grid Infrastructure and, if the Oracle Cluster Ready Services (CRS) stack is down before launching the Oracle Grid Infrastructure installer, the following error is returned:

```
[INS-40418] The installer has detected that Oracle Clusterware is not
running on local node
```

If you bring the CRS stack up and continue with the upgrade, it will fail with the following error:

```
[INS-20802] Creating Container Database for Oracle Grid Infrastructure
Management Repository failed
```

Workaround:

When the `INS-40418` error is returned, terminate the Oracle Grid Infrastructure installer, bring the CRS stack up, and then restart the Oracle Grid Infrastructure installer.

2.13.11.2 Bug 24457200

During an install session, CVU reports a failure in the soft stack shell limits check and the user requests for fix-up and check again action.

Workaround:

Once the fix-ups are generated and executed by the user on the applicable nodes, then the installer needs to be relaunched to load the fixed soft stack shell limits.

2.13.11.3 Bug 24421351

The extended redundancy disk group option is not supported in this release of Oracle Grid Infrastructure 12*c* Release 2 (12.2).

Workaround:

None.

2.13.11.4 Bug 23102210

Sometimes starting an Oracle Grid Infrastructure stack fails with the following error stack when there are reader farm services on a pluggable database (PDB):

```
CRS-5017: The resource action "<rfservice on pdb> start" encountered
the following error:

ORA-12963: A read-only instance cannot be the first instance to open a
database
```

Workaround:

Ensure that PDB is started on a Hub Node and then restart the service reported as part of the `CRS-5017` error message.

2.13.11.5 Bug 21559133

This issue affects rolling upgrade from Oracle Grid Infrastructure 12*c* Release 1 (12.1) to Oracle Grid Infrastructure 12*c* Release 2 (12.2) of Oracle Clusterware standard Cluster with Oracle ASM. A node running Oracle Grid Infrastructure 12*c* Release 1 (12.1) cannot join the cluster after the first node has been upgraded to Oracle Grid Infrastructure 12*c* Release 2 (12.2).

The nodes running Oracle Grid Infrastructure 12*c* Release 1 (12.1) that are in `ONLINE` status continue to be members of the cluster.

Workaround:

Upgrade Oracle Grid Infrastructure from 12*c* Release 1 (12.1) to 12*c* Release 2 (12.2) on the failed node.

2.13.11.6 Bug 21228001

It is not recommended to unmount the Oracle Grid Infrastructure file system when installing, upgrading, or patching the grid. However, if this is attempted, the unmount is likely to fail because logging activity may be in progress.

Workaround:

Stop the Oracle Grid Infrastructure stack, unload the Oracle ACFS drivers using the `acfs_load stop` command, and then unmount the Oracle Grid Infrastructure file system.

2.13.12 Oracle Text Known Bugs

These are known bugs for Oracle Text in Oracle Database 12*c* Release 2 (12.2).

2.13.12.1 Bug 24501029

If the table has a large number of partitions, the `CREATE SEARCH INDEX` statement could fail with the error `ORA-06502`.

Workaround:

Start with a fewer number of partitions on the table, create the search index, then specify the `ALTER TABLE ADD PARTITION` statement to add more partitions.

2.13.12.2 Bug 24440670

`CTX_DDL` APIs support the use of long identifiers for the index name but limit the schema name to 25 characters.

Workaround:

If executing a `CTX_DDL` API as the owner of the index, the schema name can be omitted from the API call. This is helpful for schema names that exceed 25 characters.

2.13.12.3 Bug 24339505

Oracle Text indexes and other features cannot be used with application containers, proxy pluggable database (PDB), hot clone, and near-zero downtime relocation.

Workaround:

None.

2.13.12.4 Bug 23707063

Indexes using stoplists with stop patterns consume program global area (PGA) memory and can fail with an `ORA-04036` error during index creation.

Workaround:

When this error occurs, increase the value of the `PGA_AGGREGATE_LIMIT` initialization parameter to succeed with the index creation. The `PGA_AGGREGATE_LIMIT` initialization parameter can be increased using the `ALTER SYSTEM` statement.

2.13.12.5 Bug 22983344

A `CTXCAT` index cannot be renamed to a name that is more than 25 characters long using the `ALTER INDEX RENAME` statement.

A CTXCAT index name can be more than 25 characters long (up to 128 characters) if it is created with the CREATE INDEX statement.

Workaround:

None.

2.13.12.6 Bug 22983270

A CTXRULE index cannot be renamed to a name that is more than 25 characters long using the ALTER INDEX RENAME statement.

A CTXRULE index name can be more than 25 characters long (up to 128 characters) if it is created with the CREATE INDEX statement.

Workaround:

None.

2.13.13 Oracle Universal Installer Known Bugs

These are known bugs for Oracle Universal Installer (OUI) in Oracle Database 12*c* Release 2 (12.2). It is also recommended that you review Compatibility, Upgrading, Downgrading, and Installation for other issues related to installation and upgrades.

2.13.13.1 Bug 25946538

Starting with Oracle Database 12*c* Release 2 (12.2.0.1), the Select Product Languages screen has been removed and Oracle Universal Installer will install all supported language files irrespective of the operating system locale.

Workaround:

None.

2.13.13.2 Bug 23006768

When installing an Oracle RAC database on an Oracle Member Cluster for Database that is configured to use an Oracle ASM service of an Oracle Domain Services Cluster (DSC) and, if the network selected for ASM or ASM & Private usage is not of the same type as the ASM network of the DSC, then the database instance terminates with the following error:

```
IOS hit ORA-00600: internal error code, arguments: [kfias_creg!net]
```

Workaround:

During the installation of the Oracle Member Cluster for Database, choose the network interface for ASM or ASM & Private so that it is on the same network as the Oracle ASM network of the DSC.

2.13.13.3 Bug 18336219

Oracle Database installer does not check if the password specified for `ASMSNMP` on the Specify Management Options screen is correct or not. If you proceed with the configuration and specify an incorrect password, then Oracle Enterprise Manager Cloud Control cannot discover details and monitor the Oracle ASM instance.

Workaround #1:

Ensure that the correct password (the same password that was specified earlier during the Oracle Grid Infrastructure for a cluster installation) is specified in Specify Management Options screen of Oracle Database installer.

Workaround #2:

On the Oracle Enterprise Manager Cloud Control portal, navigate to the Oracle ASM credentials screen and update the correct password for `ASMSNMP`. Once the correct password is saved on Oracle Enterprise Manager Cloud Control, the Oracle ASM monitoring starts working.

2.13.13.4 Bug 8666656

The Oracle Universal Installer (OUI) `runInstaller` script that resides in the Oracle home (*`ORACLE_HOME`*`/oui/bin/runInstaller`) cannot be used to install the Oracle Database 12*c* releases, Oracle Grid Infrastructure for a cluster, and Oracle Database Client.

Workaround:

Refer to the Installation Guide of the respective product for instructions on how to install the product.

2.13.14 Oracle XML DB Known Bugs

These are known bugs for Oracle XML DB in Oracle Database 12*c* Release 2 (12.2).

2.13.14.1 Bug 25294856

When an Oracle Database 11*g* Release 2 (11.2.0.4) standby database without XDB installed is upgraded and supplemental logging is turned on, the upgrade to Oracle Database 12*c* fails. This is because, as part of the Oracle Database 12*c* upgrade, XDB is automatically installed. As part of the upgrade, some `registerSchema` procedures fail and then cause the XDB component to be invalid.

Workaround:

Set `event="1399 trace name context forever, level 512"` prior to upgrading the standby database. This event disables supplemental log generation for procedures.

2.13.14.2 Bug 23333562

Transportable tablespace based export and import involving XMLType columns along with XMLIndex can take long time.

Workaround:

Drop the index prior to running export and re-create the index after the import is complete. Alternatively, conventional export or import can be run.

2.13.15 RMAN Known Bugs

These are known bugs for Oracle Recovery Manager (RMAN) in Oracle Database 12*c* Release 2 (12.2).

2.13.15.1 Bug 24309579

When there is a `REFRESH` PDB, the RMAN recovery catalog cannot be used. If you attempt to use the RMAN recovery catalog, you get an internal error during resynchronization.

Workaround:

Do not use the RMAN recovery catalog. Specify `nocatalog`.

2.13.16 Standard Edition Release Known Bugs

These are known bugs for Oracle Database 12*c* Standard Edition 2.

2.13.16.1 Bug 24905874

A downgrade from 12.2.0.2SE2 to 12.1.0.2SE2 can result in invalid Spatial objects. These invalid Spatial objects can be safely ignored and will not impact any database functionality.

Workaround:

None.

2.13.16.2 Bug 21974326

The SQL*Plus banner for Oracle Database 12*c* Standard Edition 2 is incorrectly displayed as the following:

```
Oracle Database 12c Standard Edition Release 12.2.0.1.0 - 64bit
Production
```

The following is the correct banner:

```
Oracle Database 12c Standard Edition 2 Release 12.2.0.1.0 - 64bit
Production
```

Workaround:

None.

2.13.17 XStream Known Bugs

These are known bugs for XStream in Oracle Database 12*c* Release 2 (12.2).

2.13.17.1 Bug 23092968

Using the XStream `IN` replication, operations done in the application root container are not applied correctly because the application synchronization does not work due to a bug.

Workaround:

Do not use the XStream `IN` replication to replicate operations done in the application root container. Manually apply these changes in the application root containers in the target. Note that operations done in the application pluggable databases (PDBs) can still be replicated.

3
Documentation Addendum

Review these important, last-minute changes not included in the Oracle Database Documentation Library for 12.2.

3.1 Oracle Automatic Storage Management Administrator's Guide

Note the following with regard to *Oracle Automatic Storage Management Administrator's Guide* (E85723):

- In Chapter 4, “Administering Oracle ASM Disk Groups”, in the section titled “Managing Oracle ASM Flex Disk Groups”, in the sub-section titled “About Oracle ASM File Groups”, the following item should be added to the list that provides important notes about file groups:
  - When you drop a database, a related Oracle AsM file group is not automatically dropped. You must manually drop the related file group.
- In Chapter 4, “Administering Oracle ASM Disk Groups”, in the section titled“Summary of Disk Group Attributes”, in the sub-section titled “THIN_PROVISIONED”, the Note should be changed to read:

  The `THIN_PROVISIONED` attribute is supported only with Oracle ASM Filter Driver (Oracle ASMFD) in Oracle Grid Infrastructure 12.2 and later releases on Linux. For information about Oracle ASMFD, refer to the section titled "Oracle ASM Filter Driver".

3.2 Oracle Clusterware Administration and Deployment Guide

Note the following with regard to *Oracle Clusterware Administration and Deployment Guide* (E85822):

- In Table 8-2 "Parameters for the clone.pl Script, in Chapter 8 "Cloning Oracle Clusterware", the Note documented in the Description column in the row for `"CLUSTER_NODES={node_name,node_name,…}"` should be deleted.

3.3 Oracle Database JDBC Java API Reference

Note the following with regard to *Oracle Database JDBC Java API Reference* (E85811):

- Starting with Oracle Database 11*g*R2, JDBC clients can use `OracleDriver` to establish connections to a database from a java application.

  Registering the JDBC drivers is no longer a prerequisite.

3.4 Oracle Database Net Services Reference

Note the following with regard to *Oracle Database Net Services Reference* (E85827):

In Chapter 5, "Parameters for the sqlnet.ora File", in the section titled "sqlnet.ora Profile Parameters", the following should be added to the sub-section titled "SSL_VERSION":

- The following sentence should be added to the Usage Notes:

  If you set `SSL_VERSION` to `undetermined`, then by default it uses `3.0`.

- The following Note should be added to the Values:

> **Note:**
>
> The sqlnet.ora parameter `ADD_SSLV3_TO_DEFAULT` has no impact on this parameter.

3.5 Oracle Database New Features Guide

Note the following with regard to *Oracle Database New Features Guide* (E85871):

- In the sub-section titled “ENABLE_PARALLEL_PARTITION_LOAD Flag for DATA_OPTIONS Parameter of Import”, in the sub-section titled “Utilities”, in the section titled “Database Overall”, the name of the `ENABLE_PARALLEL_PARTITION_LOAD` flag should be changed to `TRUST_EXISTING_TABLE_PARTITIONS`.

3.6 Oracle Database Release Notes for Microsoft Windows

Note the following with regard to *Oracle Database Release Notes for Microsoft Windows* (E85843):

- In the Oracle Database Release Notes 12*c* Release 2 for Microsoft Windows (part number E50718–04), the following statement is no longer true:

  Database data files are not supported on Oracle ACFS on Windows.

3.7 Oracle Database Upgrade Guide

Note the following with regard to *Oracle Database Upgrade Guide* (E86577):

- In the chapter titled "Deprecated and Desupported Features for Oracle Database 12c", should include the following desupport notice:

  In Oracle Grid Infrastructure releases before Release 12c (12.1), it was supported to use the `crsuser` utility with Oracle Real Application Clusters (Oracle RAC) to modify the database logon properties of the Oracle Database service from `LocalSystem` to a user ID.

  Oracle introduced the Oracle Home User system privileges role for the DB home in Oracle Grid Infrastructure 12c Release 1 (12.1). This role makes the need for the `crsuser` functionality unnecessary. The `crsuser` facility was also previously used to create user-defined CRS resources that ran as a Windows user other than `LocalSystem`. However, Oracle Grid Infrastructure 12c Release 1 (12.1) and later releases provide that same functionality with `crsctl add wallet -type OSUSER`. The `crsuser` feature no longer works. It is no longer developed or supported.

For more information about the `crsctl add wallet -type OSUSER` command, refer to *Oracle Clusterware Administration and Deployment*.

3.8 Oracle Database Utilities

Note the following with regard to the *Oracle Database Utilities* guide (E85946):

- In Chapter 2, this restriction has been added to the `ACCESS_METHOD` parameter for Data Pump Export:

  "The `ACCESS_METHOD` parameter for Data Pump Export is not valid for transportable tablespace jobs."

- In Chapter 2, this restriction has been added to the `TRANSPORT_TABLESPACES` parameter for Data Pump Export:

  "Transportable tablespace jobs do not support the `ACCESS_METHOD` parameter for Data Pump Export."

- In Chapter 3, this restriction has been added to the `ACCESS_METHOD` parameter for Data Pump Import:

  "The `ACCESS_METHOD` parameter for Data Pump Import is not valid for transportable tablespace jobs."

- In Chapter 3, this restriction has been added to the `TRANSPORT_TABLESPACES` parameter for Data Pump Import:

  "Transportable tablespace jobs do not support the `ACCESS_METHOD` parameter for Data Pump Import."

- In Chapter 3, the sub-section titled “KILL_JOB” in the section titled “Commands Available in Import’s Interactive-Command Mode”, the Description paragraph should read as follows:

  A job that is terminated using `KILL_JOB` cannot be restarted. All attached clients, including the one issuing the `KILL_JOB` command, receive a warning that the job is being terminated by the current user and are then detached. After all clients are detached, the job's process structure is immediately run down and the master table is deleted. Log files are not deleted.

- In Chapter 20, the sub-section titled “DBVERIFY Parameters When Validating Blocks of a Single File” in the section titled “Using DBVERIFY to Validate Disk Blocks of a Single Data File”, the description for the USERID parameter must read as follows:

  Specifies your username and password. This parameter is not necessary for Oracle ASM files.