Oracle 12c upgrace to 19c with latest RU patch

Oracle often comes up with utilities to help DBA's to automate or ease the burden as much as possible and one such utility is the "Autoupgrade". The advantages here is that

1.) We can resume the upgrade when it encounters any issues , fix them and rerun the job.

2.) Using the configuring file add in multiple "CDB's" and "Pdb's" and the utility takes care to upgrade them all one by one.

Stages in the upgrade :

- Analyze
- Fixups
- Deploy

This document provides the step by step procedure to upgrade oracle 12c database to 19c using the autopgrade.jar utility

The database should first be in archivelog mode, if not put the database to archivelog mode.

```
[oracle@oracle-12201-upgrade 19c_upg]$ sqlplus "/as sysdba"

SQL*Plus: Release 12.2.0.1.0 Production on Thu Feb 10 12:05:37 2022

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Connected to:
Oracle Database 12c Enterprise Edition Release 12.2.0.1.0 - 64bit Production

SQL> shut immediate;
Database closed.
Database dismounted.
startup mount ;
ORACLE instance shut down.
SQL>
ORACLE instance started.

Total System Global Area 1207959552 bytes
Fixed Size                  8792152 bytes
Variable Size             436209576 bytes
Database Buffers          754974720 bytes
Redo Buffers                7983104 bytes
alter dataDatabase mounted.
tSQL> SQL>
  2
SQL>
SQL> alter database archivelog;

Database altered.

SQL> alter database open;

Database altered.
```

Backup the database before attempting any changes or upgrades config.

```
RMAN> backup as compressed backupset database plus archivelog;


Starting backup at 10-FEB-22
current log archived
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=270 device type=DISK
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=3 RECID=1 STAMP=1096286854
channel ORA_DISK_1: starting piece 1 at 10-FEB-22
channel ORA_DISK_1: finished piece 1 at 10-FEB-22
piece handle=/opt/oracle/product/12.2.0.1/dbhome_1/dbs/010lg0k8_1_1 tag=TAG20220210T120735 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:03
Finished backup at 10-FEB-22
```

Before we use AutoUpgrade, Oracle recommends that we download the latest Autoupgrade version available from MOS Note: 2485457.1 – AutoUpgrade Tool

```
autoupgrade.jar
p6880880_190000_Linux-x86-64.zip
```

Unzip to find the jar file and move the following location

$ORACLE_HOME/rdbms/admin/

Create a configuration file to include the paths for the following variables. Here we can provide multipe CDB's and PDB's to be upgraded. Add the following block for each database

#database1

```
[oracle@oracle-12201-upgrade 19c_upg]$
[oracle@oracle-12201-upgrade 19c_upg]$ cat prddb_config.cfg
global.autoupg_log_dir=/tmp/19c_upg/logs
upg1.dbname=ORCLCDB
upg1.start_time=NOW
upg1.source_home=/opt/oracle/product/12.2.0.1/dbhome_1
upg1.target_home=/u01/app/oracle/product/dbhome_1
upg1.sid=ORCLCDB
upg1.log_dir=/tmp/19c_upg/logs
upg1.upgrade_node=oracle-12201-upgrade
upg1.target_version=19.14
upg1.run_utlrp=yes
upg1.timezone_upg=yes
```

#database2

Similar contents as above with appropriate values.

Installation of 19c software binaries

Download the 19c binaries from edelivery.com or the https://www.oracle.com/downloads/databases/

```
p33561310_190000_Linux-x86-64.zip
p33515361_190000_Linux-x86-64.zip
```

Installation of 19c software only

```
yum install -y oracle-database-preinstall-19c
```

mkdir /u01/app/oracle/product/19.0.0/dbhome_1

cd /u01/app/oracle/product/19.0.0/dbhome_1

```
unzip -q /vagrant/upgrade_test/p6880880_190000_Linux-x86-64.zip
```

./runInstaller -silent -noconfig oracle.install.option=INSTALL_DB_SWONLY UNIX_GROUP_NAME=oinstall INVENTORY_LOCATION=/opt ORACLE_BASE=/opt/oracle oracle.install.db.InstallEdition=EE oracle.install.db.OSDBA_GROUP=dba oracle.install.db.OSOPER_GROUP=dba oracle.install.db.OSBACKUPDBA_GROUP=dba oracle.install.db.OSDGDBA_GROUP=dba oracle.install.db.OSKMDBA_GROUP=dba oracle.install.db.OSRACDBA_GROUP=dba oracle.install.db.rootconfig.executeRootScript=false

Execute root script in another session

```
[oracle@oracle-12201-upgrade dbhome_1]$ cd OPatch
[oracle@oracle-12201-upgrade OPatch]$ ./opatch version
OPatch Version: 12.2.0.1.29

OPatch succeeded.
[oracle@oracle-12201-upgrade OPatch]$
```

Always make sure to ==apply the latest patch== set to the Oracle home before starting the upgrade

Patch 33515361 - Database Release Update 19.14.0.0.220118

https://updates.oracle.com/Orion/Services/download?type=readme&aru=24589353#CBBF ABAA (read me)

Prechecks to check for conflicats

Cd 33515361

```
opatch prereq CheckConflictAgainstOHWithDetail -ph ./
```

```
opatch apply
```

19c comes with bundle of both RU and OJVM combined

Patch 33561310 - Oracle JavaVM Component Release Update 19.14.0.0.220118

https://updates.oracle.com/Orion/Services/download?type=readme&aru=24538862 **(readme)**

```
Cd 33561310
opatch prereq CheckConflictAgainstOHWithDetail -ph ./
opatch apply
```

```
[oracle@oracle-12201-upgrade OPatch]$ ./opatch lspatches
33561310;OJVM RELEASE UPDATE: 19.14.0.0.220118 (33561310)
33515361;Database Release Update : 19.14.0.0.220118 (33515361)
```

Analyze

Once the db software is installed and latest patches applied , we need to run ANALYZE , where the upgrade utility checks for configuration and points us to any issue to be fixed.

Common commands in the CLI (Command line interface)

Lsj : list jobs

Tasks : Check the current running jobs and status

Status : Show status of specific job id

Set the home path to the new 19c home

export ORACLE_HOME=/u01/app/oracle/product/19.0.0/dbhome_1

export PATH=$PATH:$ORACLE_HOME/jdk/bin

$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/rdbms/admin/autoupgrade.jar -config prddb_config.cfg -mode ANALYZE

```
oracle@oracle-12201-upgrade:/tmp/19c_upg

[oracle@oracle-12201-upgrade 19c_upg]$ vi prddb_config.cfg
[oracle@oracle-12201-upgrade 19c_upg]$ $ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/rdbms/admin/autoupgrade.jar -config prddb_config.cfg -mode ANALYZE
AutoUpgrade 21.2.210721 launched with default options
Processing config file ...
+--------------------------------+
| Starting AutoUpgrade execution |
+--------------------------------+
1 databases will be analyzed
Type 'help' to list console commands
upg> lsj
+----+--------+---------+---------+-------+--------------+--------+-------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+-------+
| 100|ORCLCDB|PRECHECKS|PREPARING|FINISHED|22/02/10 12:19|12:19:14|       |
+----+--------+---------+---------+-------+--------------+--------+-------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|                       MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
| 100|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:19|12:19:16|Loading database information   |
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+-------+--------------+--------+---------------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+---------------+
| 100|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:19|12:21:00|Remaining 1/251|
+----+--------+---------+---------+-------+--------------+--------+---------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+-------+--------------+--------+---------------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+---------------+
| 100|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:19|12:21:00|Remaining 1/251|
+----+--------+---------+---------+-------+--------------+--------+---------------+
Total jobs 1
```

Run lsj and status to check for the running jobs and also the tail the logfile displayed to check for any errors.

```
upg> lsj
+----+--------+---------+---------+-------+--------------+--------+-------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+-------+
| 100|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:19|12:21:05|       |
+----+--------+---------+---------+-------+--------------+--------+-------+
Total jobs 1

upg> lJob 100 completed
s------------------ Final Summary -------------------
Number of databases          [ 1 ]

Jobs finished                [1]
Jobs failed                  [0]
Jobs pending                 [0]

Please check the summary report at:
/tmp/19c_upg/logs/cfgtoollogs/upgrade/auto/status/status.html
/tmp/19c_upg/logs/cfgtoollogs/upgrade/auto/status/status.log
```

<mark>DEPLOY</mark>

Run the command with the "DEPLOY" flag to start the database upgrade . If any errors, fix the issues and resume the upgrade using "resume -job jobid"

<mark>$ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/rdbms/admin/autoupgrade.jar -config prddb_config.cfg -mode DEPLOY</mark>

```
[oracle@oracle-12201-upgrade 19c_upg]$
[oracle@oracle-12201-upgrade 19c_upg]$ $ORACLE_HOME/jdk/bin/java -jar $ORACLE_HOME/rdbms/admin/autoupgrade.jar -config prddb_config.cfg -mode DEPLOY
AutoUpgrade 21.2.210721 launched with default options
Processing config file ...
+--------------------------------+
| Starting AutoUpgrade execution |
+--------------------------------+
1 databases will be processed
Type 'help' to list console commands
upg>
upg>
upg> lsj
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|                       MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
| 101|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:21|12:21:24|Loading database information   |
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
|Job#|DB_NAME |   STAGE |OPERATION| STATUS|    START_TIME| UPDATED|                       MESSAGE|
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
| 101|ORCLCDB|PRECHECKS|PREPARING|RUNNING|22/02/10 12:21|12:21:24|Loading database information   |
+----+--------+---------+---------+-------+--------------+--------+------------------------------+
Total jobs 1
```

```
upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:43:12|Running|
+----+--------+---------+---------+--------+--------------+--------+-------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-----------------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|          MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:43:35|0%Upgraded CDB$ROOT|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-----------------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|          MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:43:35|0%Upgraded CDB$ROOT|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-----------------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|          MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:43:35|0%Upgraded CDB$ROOT|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-----------------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|          MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:46:36|12%Upgraded CDB$ROOT|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
Total jobs 1

upg> lsj
+----+--------+---------+---------+--------+--------------+--------+-----------------+
|Job#|DB_NAME |    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|          MESSAGE|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
| 101|ORCLCDB |DBUPGRADE|EXECUTING| RUNNING|22/02/10 12:21|12:46:36|12%Upgraded CDB$ROOT|
+----+--------+---------+---------+--------+--------------+--------+-----------------+
Total jobs 1
```

Run TASKS to see the current running tasks.

```
upg> tasks
+----+--------------------+-------------+
|  ID|                NAME|        Job#|
+----+--------------------+-------------+
|   1|                main|      WAITING|
|  60|          event_loop|TIMED_WAITING|
|  61|             console|     RUNNABLE|
|  62|        queue_reader|      WAITING|
|  63|               cmd-0|      WAITING|
|  64|       job_manager-0|      WAITING|
| 451|           exec_loop|      WAITING|
| 871|               cmd-1|      WAITING|
| 872|       job_manager-1|      WAITING|
|1285|               cmd-2|      WAITING|
|1286|          bqueue-101|      WAITING|
|2100|monitor_orclcdb-cdb$root|TIMED_WAITING|
|2102|        catctl_CDB$ROOT|      WAITING|
|2103|  abort_monitor_CDB$ROOT|TIMED_WAITING|
|2104|          async_read|     RUNNABLE|
+----+--------------------+-------------+
```

```
upg> status
--------------- Config -------------------
User configuration file    [/tmp/19c_upg/prddb_config.cfg]
General logs location      [/tmp/19c_upg/logs/cfgtoollogs/upgrade/auto]
Mode                       [DEPLOY]
DB upg fatal errors        ORA-00600,ORA-07445
DB Post upgrade abort time [60] minutes
DB upg abort time          [1440] minutes
DB restore abort time      [120] minutes
DB GRP abort time          [3] minutes
---------------------- Jobs ----------------------
Total databases in configuration file [1]
Total Non-CDB being processed          [0]
Total CDB being processed              [1]
Jobs finished successfully             [0]
Jobs finished/aborted                  [0]
Jobs in progress                       [1]
Jobs stage summary
    Job ID: 101
    DB name: ORCLCDB
        SETUP           <1 min
        PREUPGRADE      <1 min
        PRECHECKS       <1 min
        PREFIXUPS       <1 min
        DRAIN           <1 min
        DBUPGRADE       6 min (IN PROGRESS)
------------ Resources ----------------
Threads in use                         [29]
JVM used memory                        [49] MB
CPU in use                             [13%]
Processes in use                       [20]

upg> status -job 101
Progress
----------------------------------
Start time:     22/02/10 12:21
Elapsed (min):  28
End time:       N/A
Last update:    2022-02-10T12:49:36.356
Stage:          DBUPGRADE
Operation:      EXECUTING
Status:         RUNNING
Pending stages: 7
Stage summary:
    SETUP           <1 min
    PREUPGRADE      <1 min
    PRECHECKS       <1 min
    PREFIXUPS       <1 min
    DRAIN           <1 min
    DBUPGRADE       6 min (IN PROGRESS)
```

```
Job Logs Locations
----------------------------------
Logs Base:      /tmp/19c_upg/logs/ORCLCDB
Job logs:       /tmp/19c_upg/logs/ORCLCDB/101
Stage logs:     /tmp/19c_upg/logs/ORCLCDB/101/dbupgrade
TimeZone:       /tmp/19c_upg/logs/ORCLCDB/temp

Additional information
----------------------------------
Details:
[Upgrading] is [21%] completed for [orclcdb-cdb$root]
                   +---------+--------------+
                   |CONTAINER|    PERCENTAGE|
                   +---------+--------------+
                   | CDB$ROOT|  UPGRADE [21%]|
                   | PDB$SEED|UPGRADE PENDING|
                   | ORCLPDB1|UPGRADE PENDING|
                   +---------+--------------+

Error Details:
None

upg> ls
Unrecognized cmd: ls
upg> lsj
+----+-------+---------+---------+-------+-------------+--------+-------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|   START_TIME| UPDATED|            MESSAGE|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
| 101|ORCLCDB|DBUPGRADE|EXECUTING|RUNNING|22/02/10 12:21|12:52:36|37%Upgraded CDB$ROOT|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
Total jobs 1
```

```
upg> lsj
+----+-------+---------+---------+-------+-------------+--------+-------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|   START_TIME| UPDATED|            MESSAGE|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
| 101|ORCLCDB|DBUPGRADE|EXECUTING|RUNNING|22/02/10 12:21|13:07:44|0%Upgraded PDB$SEED|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
Total jobs 1

upg> lsj
+----+-------+---------+---------+-------+-------------+--------+-------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|   START_TIME| UPDATED|            MESSAGE|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
| 101|ORCLCDB|DBUPGRADE|EXECUTING|RUNNING|22/02/10 12:21|13:16:46|21%Upgraded ORCLPDB1|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
Total jobs 1

upg> lsj
+----+-------+---------+---------+-------+-------------+--------+-------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|   START_TIME| UPDATED|            MESSAGE|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
| 101|ORCLCDB|DBUPGRADE|EXECUTING|RUNNING|22/02/10 12:21|13:19:46|21%Upgraded ORCLPDB1|
+----+-------+---------+---------+-------+-------------+--------+-------------------+
Total jobs 1
```

```
upg> lsj
+----+------+---------+---------+--------+--------------+--------+----------------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|                     MESSAGE|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
| 101|ORCLCDB|POSTCHECKS|PREPARING|RUNNING|22/02/10 12:21|13:54:30|Loading database information|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+----------------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|                     MESSAGE|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
| 101|ORCLCDB|POSTCHECKS|PREPARING|RUNNING|22/02/10 12:21|13:54:30|Loading database information|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+----------------------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|                     MESSAGE|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
| 101|ORCLCDB|POSTCHECKS|PREPARING|RUNNING|22/02/10 12:21|13:54:30|Loading database information|
+----+------+---------+---------+--------+--------------+--------+----------------------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+---------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+------+---------+---------+--------+--------------+--------+---------------+
| 101|ORCLCDB|POSTFIXUPS|EXECUTING|RUNNING|22/02/10 12:21|13:56:59|Remaining 10/12|
+----+------+---------+---------+--------+--------------+--------+---------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+---------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+------+---------+---------+--------+--------------+--------+---------------+
| 101|ORCLCDB|POSTFIXUPS|EXECUTING|RUNNING|22/02/10 12:21|13:56:59|Remaining 10/12|
+----+------+---------+---------+--------+--------------+--------+---------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+---------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+------+---------+---------+--------+--------------+--------+---------------+
| 101|ORCLCDB|POSTFIXUPS|EXECUTING|RUNNING|22/02/10 12:21|13:57:59|Remaining 10/12|
+----+------+---------+---------+--------+--------------+--------+---------------+
Total jobs 1

upg> lsj
+----+------+---------+---------+--------+--------------+--------+---------------+
|Job#|DB_NAME|    STAGE|OPERATION| STATUS|    START_TIME| UPDATED|        MESSAGE|
+----+------+---------+---------+--------+--------------+--------+---------------+
| 101|ORCLCDB|POSTFIXUPS|EXECUTING|RUNNING|22/02/10 12:21|13:57:59|Remaining 10/12|
+----+------+---------+---------+--------+--------------+--------+---------------+
Total jobs 1
```

```
upg> Job 101 completed
------------------- Final Summary -------------------
Number of databases           [ 1 ]

Jobs finished                 [1]
Jobs failed                   [0]
Jobs pending                  [0]


Please check the summary report at:
/tmp/19c_upg/logs/cfgtoollogs/upgrade/auto/status/status.html
/tmp/19c_upg/logs/cfgtoollogs/upgrade/auto/status/status.log
```

The utility first upgrades the CDB followed by the number of PDB' mentioned in the config file.

Connect to the database and check for the version and alert log for any issue and Invalid objects.

```
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production

SQL> show pdbs

    CON_ID CON_NAME                        OPEN MODE  RESTRICTED
---------- ------------------------------ ---------- ----------
         2 PDB$SEED                        READ ONLY  NO
         3 ORCLPDB1                        READ WRITE NO
SQL>
SQL>
SQL>
SQL> select * from v$version;

BANNER
--------------------------------------------------------------------------------
BANNER_FULL
--------------------------------------------------------------------------------
BANNER_LEGACY
--------------------------------------------------------------------------------
    CON_ID
----------
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.14.0.0.0
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
         0

BANNER
--------------------------------------------------------------------------------
BANNER_FULL
--------------------------------------------------------------------------------
BANNER_LEGACY
--------------------------------------------------------------------------------
    CON_ID
----------

SQL> select count(*) from dba_objects where status='INVALID';

  COUNT(*)
----------
         0
```

```
SQL>  alter session set container=ORCLPDB1;

Session altered.

SQL>  select count(*) from dba_objects where status='INVALID';

  COUNT(*)
----------
         0
SQL>
```