PATCHING

1. Source the Env file:

```
[oracle@localhost ~]$ . oraenv
ORACLE_SID = [PROD] ? PROD
The Oracle base remains unchanged with value /u01/apps/oracle/server/19.3
[oracle@localhost ~]$
```

2. Navigate to the OPatch Folder:

```
[oracle@localhost ~]$ cd $ORACLE_HOME/OPatch
[oracle@localhost OPatch]$
[oracle@localhost OPatch]$
[oracle@localhost OPatch]$
[oracle@localhost OPatch]$ pwd
/u01/apps/oracle/server/19.3/home/OPatch
```

3. Check for the list of patch applied previously in the server using opatch lsinventory:

opatch - utility used to check the patch status of the oracle software.
lsinventory - used to list all the patches that are applied to oracle home.
NOTE: should run this utility by giving full oracle home path.

```
[oracle@localhost OPatch]$ $ORACLE_HOME/OPatch/opatch lsinventory
Oracle Interim Patch Installer version 12.2.0.1.17
Copyright (c) 2025, Oracle Corporation.  All rights reserved.


Oracle Home       : /u01/apps/oracle/server/19.3/home
Central Inventory : /u01/apps/oracle/server/oraInventory
   from           : /u01/apps/oracle/server/19.3/home/oraInst.loc
OPatch version    : 12.2.0.1.17
OUI version       : 12.2.0.7.0
Log file location : /u01/apps/oracle/server/19.3/home/cfgtoollogs/opatch/opatch2025-01-28_22-21-09PM_1.log

Lsinventory Output file location : /u01/apps/oracle/server/19.3/home/cfgtoollogs/opatch/lsinv/lsinventory2025-01-28_22-21-09PM.txt

--------------------------------------------------------------------------------
Local Machine Information::
Hostname: PROD
ARU platform id: 226
ARU platform description:: Linux x86-64

Installed Top-level Products (1):

Oracle Database 19c                                           19.0.0.0.0
There are 1 products installed in this Oracle Home.


Interim patches (2) :

Patch  29585399     : applied on Thu Apr 18 12:51:33 IST 2019
Unique Patch ID:  22840393
Patch description:  "OCW RELEASE UPDATE 19.3.0.0.0 (29585399)"
   Created on 9 Apr 2019, 19:12:47 hrs PST8PDT
   Bugs fixed:
     27222128, 27572040, 27604329, 27760043, 27877830, 28302580, 28470673
     28621543, 28642469, 28699321, 28710663, 28755846, 28772816, 28785321
     28800508, 28808652, 28815557, 28847541, 28847572, 28870496, 28871040
     28874416, 28877252, 28881191, 28881848, 28888083, 28911140, 28925250
     28925460, 28935956, 28940472, 3, 28942694, 28951332, 28963036, 28968779
```

Alternatively, by using the SQL query we can check the previous patches applied to the database.
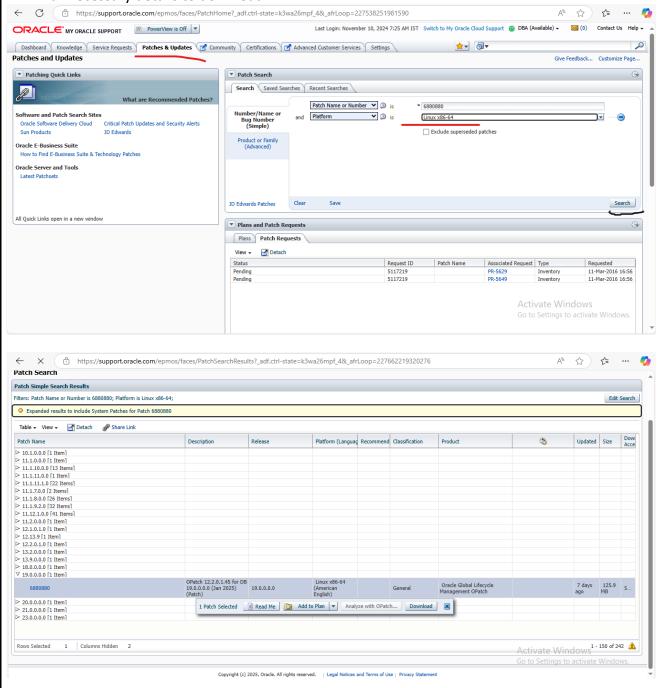
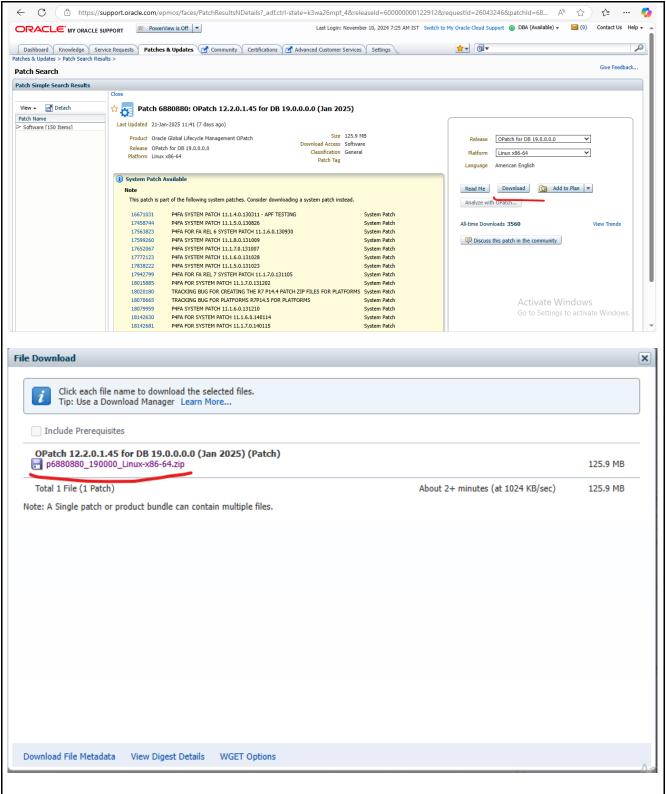## SELECT PATCH_ID,ACTION,STATUS FROM DBA_REGISTRY_SQLPATCH;

```
SQL> select PATCH_ID,ACTION,STATUS from dba_registry_sqlpatch;

  PATCH_ID ACTION                                        STATUS
---------- --------------------------------------------- ---------------
  29517242 APPLY                                         SUCCESS
```

4. Update the opatch utility when it is older version.
5. Download the OPatch from Oracle Website.
6. Log in to the oracle support webpage and select the patches and updates tab and fill the details with necessary details to download.

7. After downloading move the current opatch folder for backup and extract the zipfile which will create a new Opatch folder like previous one.

8. Before and After updating the OPatch we get,


```
[oracle@localhost OPatch]$ ./opatch version
OPatch Version: 12.2.0.1.17


OPatch succeeded.
```

```
[oracle@localhost OPatch]$ ./opatch version
OPatch Version: 12.2.0.1.45

OPatch succeeded.
```

9. Then, check patch status:

```
SQL> select CON_ID, PATCH_ID, PATCH_TYPE, ACTION, DESCRIPTION, SOURCE_VERSION, TARGET_VERSION from cdb_registry_sqlpatch;

   CON_ID   PATCH_ID PATCH_TYPE ACTION    DESCRIPTION                      SOURCE_VERSION                                         TARGET_VERSION
--------- ---------- ---------- --------- -------------------------------- ------------------------------------------------------ --------------------
        0   29517242 RU         APPLY     Database Release Update : 19.3.0 19.1.0.0.0                                             19.3.0.0.0
                                          .0.190416 (29517242)
```

10. Take a full backup including the controlfile and spfile
11. Shutdown the database and stop the listener.
12. Now download the patch file from the oracle SR page for 19c version use 2118136.2 use this number and enter directly into the browser, which leads to the oracle support page.
13. Click the first link and it will ask which file to download, select 3rd option.

Selection(s)

What would you like to download?

- ◯ Oracle Database Base Releases
- ◯ Oracle Database Patchsets
- 🖉 Oracle Database Release Updates (RUs)
- ◯ Oracle Database Release Update Revisions (RURs - discontinued since Apr 2023)
- ◯ Oracle Database PSU, SPU(CPU), Bundle Patches (Versions 12.1 & lower)
- ◯ OJVM Update/PSU/Bundle Patches
- ◯ Latest Available Microsoft Windows Patches
- ◯ Monthly Recommended Patches (MRPs)

Additional Clarification

Please select an option above to begin clarifying the issue you are experiencing.

14. Then it will ask version to download, For 19 select version 19

Selection(s)

What would you like to download?
> Oracle Database Release Updates (RUs)   [Change]

Please select the version:

- ◯ 21.0.0.0
- 🖉 19.0.0.0
- ◯ 18.0.0.0
- ◯ 12.2.0.1

15. Then, Select the update type for patching use Database update,

Related Information

19.0.0.0

Description	Database Update	GI Update	Windows Bundle Patch
JAN 2025 (19.26.0.0.0)	37260974	37257886	37486199
OCT2024 (19.25.0.0.0)	36912597	36916690	36878821
JUL2024 (19.24.0.0.0)	36582781	36582629	36521936
APR2024 (19.23.0.0.0)	36233263	36233126	36219938

16. Then, Click Download,

Patch Search   Give Feedback...

Patch Simple Search Results

Close

View ▾   Detach   REC   Patch 37260974: DATABASE RELEASE UPDATE 19.26.0.0.0

Patch Name
▷ Software [2 Items]

Last Updated 21-Jan-2025 22:24 (7 days ago)

Product   Oracle Database - Enterprise Edition   Size   1.7 GB   Release   Oracle Database 19.0.0.0
(More...)   Download Access Software   Platform Linux x86-64
Release   Oracle Database 19.0.0.0.0   Classification Security   Language American English
Platform Linux x86-64   Patch Tag

ⓘ **System Patch Available**   Read Me   Download   Add to Plan ▾
Note   Analyze with OPatch...
This patch is part of the following system patch. Consider downloading the system patch instead.
37257886   GI RELEASE UPDATE 19.26.0.0.0   System Patch   All-time Downloads **No history available**   View Trends

Discuss this patch in the community

Bugs Resolved by This Patch
10121473   INCORRECT WAIT EVENT PARAMETER DESCRIPTION FOR "LIBRARY CACHE LOCK"

17. Click this and file starts to downlaoad,

DATABASE RELEASE UPDATE 19.26.0.0.0 (Patch)
💾 p37260974_190000_Linux-x86-64.zip

18. Move the downloaded file into the Linux Server using **WINSCP**.

19. Unzip the file in the linux server at any directory. After unziping the directory with the filename will be created.

```
[oracle@localhost home]$ ll
total 1831680
drwxr-xr-x.  5 oracle oinstall       81 Jan 20 10:00 37260974
```

20. Then, Check for patch conflicts in the server using,

$ORACLE_HOME/OPatch/opatch prereq CheckConflictAgainstOHWithDetail -ph ./

```
[oracle@localhost 37260974]$ $ORACLE_HOME/OPatch/opatch prereq CheckConflictAgainstOHWithDetail -ph ./
Oracle Interim Patch Installer version 12.2.0.1.45
Copyright (c) 2025, Oracle Corporation.  All rights reserved.

PREREQ session

Oracle Home       : /u01/apps/oracle/server/19.3/home
Central Inventory : /u01/apps/oracle/server/oraInventory
   from           : /u01/apps/oracle/server/19.3/home/oraInst.loc
OPatch version    : 12.2.0.1.45
OUI version       : 12.2.0.7.0
Log file location : /u01/apps/oracle/server/19.3/home/cfgtoollogs/opatch/opatch2025-01-29_00-49-45AM_1.log

Invoking prereq "checkconflictagainstohwithdetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
```

21. Then, using the opatch utility apply the patch by - navigate to the patch file location then call the oracle_home/opatch/ opatch apply command to call the utility to the patch file to patch the database.(give y in required area).

```
[oracle@localhost 37260974]$ $ORACLE_HOME/OPatch/opatch apply
Oracle Interim Patch Installer version 12.2.0.1.45
Copyright (c) 2025, Oracle Corporation.  All rights reserved.


Oracle Home       : /u01/apps/oracle/server/19.3/home
Central Inventory : /u01/apps/oracle/server/oraInventory
   from           : /u01/apps/oracle/server/19.3/home/oraInst.loc
OPatch version    : 12.2.0.1.45
OUI version       : 12.2.0.7.0
Log file location : /u01/apps/oracle/server/19.3/home/cfgtoollogs/opatch/opatch2025-01-29_00-51-53AM_1.log

Verifying environment and performing prerequisite checks...
OPatch continues with these patches:   37260974

Do you want to proceed? [y|n]
y
User Responded with: Y
All checks passed.

Please shutdown Oracle instances running out of this ORACLE_HOME on the local system.
(Oracle Home = '/u01/apps/oracle/server/19.3/home')


Is the local system ready for patching? [y|n]
y
User Responded with: Y
Backing up files...
```

22. After patch is succeeded, start the listener and startup the database.
23. Then run the ./datapatch -verbose to apply SQL changes to the database after a patch has been applied to the Oracle binaries using opatch.

```
[oracle@localhost OPatch]$ ./datapatch -verbose
SQL Patching tool version 19.26.0.0.0 Production on Wed Jan 29 01:07:37 2025
Copyright (c) 2012, 2025, Oracle.  All rights reserved.

Log file for this invocation: /u01/apps/oracle/server/19.3/cfgtoollogs/sqlpatch/sqlpatch_17849_2025_01_29_01_07_37/sqlpatch_invocation.log

Connecting to database...OK
Gathering database info...done
Bootstrapping registry and package to current versions...
done
Determining current state...done

Current state of interim SQL patches:
  No interim patches found

Current state of release update SQL patches:
  Binary registry:
    19.26.0.0.0 Release_Update 250118124854: Installed
  SQL registry:
    Applied 19.3.0.0.0 Release_Update 190410122720 successfully on 24-JAN-25 02.23.00.693743 PM

Adding patches to installation queue and performing prereq checks...done
Installation queue:
```

```
Installing patches...
^[`
Patch installation complete.  Total patches installed: 1

Validating logfiles...done
Patch 37260974 apply: SUCCESS
  logfile: /u01/apps/oracle/server/19.3/cfgtoollogs/sqlpatch/37260974/26040769/37260974_apply_PROD_2025Jan29_01_08_40.log (no errors)
SQL Patching tool complete on Wed Jan 29 01:22:34 2025
```

Patch is applied.

24. Check the patch status using the CDB_REGISTRY_SQLPATCH

   SELECT PATCH_ID,ACTION,STATUS FROM DBA_REGISTRY_SQLPATCH;

```
SQL> SELECT PATCH_ID,ACTION,STATUS FROM  DBA_REGISTRY_SQLPATCH;

  PATCH_ID ACTION                                              STATUS
---------- --------------------------------------------------- ---------------
  29517242 APPLY                                               SUCCESS
  37260974 APPLY                                               SUCCESS
```

25. Then, there will be invalid objects in the database so run the utlrp.sql script which is in the
    $ORACLE_HOME/rdbms/admin

```
[oracle@localhost admin]$ pwd
/u01/apps/oracle/server/19.3/home/rdbms/admin
```

```
SQL> @utlrp.sql

Session altered.


TIMESTAMP
--------------------------------------------------------------------------------
COMP_TIMESTAMP UTLRP_BGN            2025-01-29 01:28:11

DOC>    The following PL/SQL block invokes UTL_RECOMP to recompile invalid
DOC>    objects in the database. Recompilation time is proportional to the
DOC>    number of invalid objects in the database, so this command may take
DOC>    a long time to execute on a database with a large number of invalid
DOC>    objects.
DOC>
DOC>    Use the following queries to track recompilation progress:
DOC>
DOC>    1. Query returning the number of invalid objects remaining. This
DOC>       number should decrease with time.
DOC>         SELECT COUNT(*) FROM obj$ WHERE status IN (4, 5, 6);
DOC>
DOC>    2. Query returning the number of objects compiled so far. This number
DOC>       should increase with time.
DOC>         SELECT COUNT(*) FROM UTL_RECOMP_COMPILED;
DOC>
DOC>    This script automatically chooses serial or parallel recompilation
DOC>    based on the number of CPUs available (parameter cpu_count) multiplied
DOC>    by the number of threads per CPU (parameter parallel_threads_per_cpu).
DOC>    On RAC, this number is added across all RAC nodes.
DOC>
DOC>    UTL_RECOMP uses DBMS_SCHEDULER to create jobs for parallel
```

```
OBJECTS WITH ERRORS
-----------------
                0

DOC> The following query reports the number of exceptions caught during
DOC> recompilation. If this number is non-zero, please query the error
DOC> messages in the table UTL_RECOMP_ERRORS to see if any of these errors
DOC> are due to misconfiguration or resource constraints that must be
DOC> fixed before objects can compile successfully.
DOC> Note: Typical compilation errors (due to coding errors) are not
DOC>       logged into this table: they go into DBA_ERRORS instead.
DOC>#

ERRORS DURING RECOMPILATION
--------------------------
                        0


Function created.


PL/SQL procedure successfully completed.


Function dropped.


PL/SQL procedure successfully completed.
```

26. The patching of 19C Database is completed.

ROLLBACK THE PATCHING:

27. Use the command: opatch rollback -id <patch_id>

```
SQL> SELECT PATCH_ID,ACTION,STATUS FROM  DBA_REGISTRY_SQLPATCH;

  PATCH_ID ACTION                                            STATUS
---------- ------------------------------------------------- --------------
  29517242 APPLY                                             SUCCESS
  37260974 APPLY                                             SUCCESS
```