**Step by Step Apply Rolling PSU Patch In Oracle Database 12c RAC Environment**

[](https://oracledbwr.com/wp-content/uploads/2018/11/ro.jpg)

**Rolling upgrade patch :-**

* The rolling upgrade refers to upgrading different databases or different instances of the same database (in a Real Application Clusters environment) one at a time, without stopping the database.
* The advantage of a RAC rolling upgrade is that it enables at least some instances of the RAC installation to be available during the scheduled outage required for patch upgrades. Only the RAC instance that is currently being patched needs to be brought down. The other instances can continue to remain available. This means that the impact on the application downtime required for such scheduled outages is further minimized. Oracle’s opatch utility enables the user to apply the patch successively to the different instances of the RAC installation.
* Rolling upgrade of patches is currently available for one-off patches and PSU patches.
* Rolling patch upgrades are not available for deployments where the Oracle Database software is shared across the different nodes.
* **Before Opatchauto utility, we need to manually down the instance and cluster related services(prepatch.sh) before applying rolling patch.**
* The GI System patch includes updates for both the Clusterware home and Database home that can be applied in a rolling fashion.
* **This patch is Oracle RAC Rolling Installable** has to be mentioned in README.html.

**Step by step apply Rolling PSU Patch in Oracle Database 12c RAC environment :-**

Description:-

In this article we are going to see Step by step Apply Rolling PSU Patch in Oracle Database 12c RAC environment

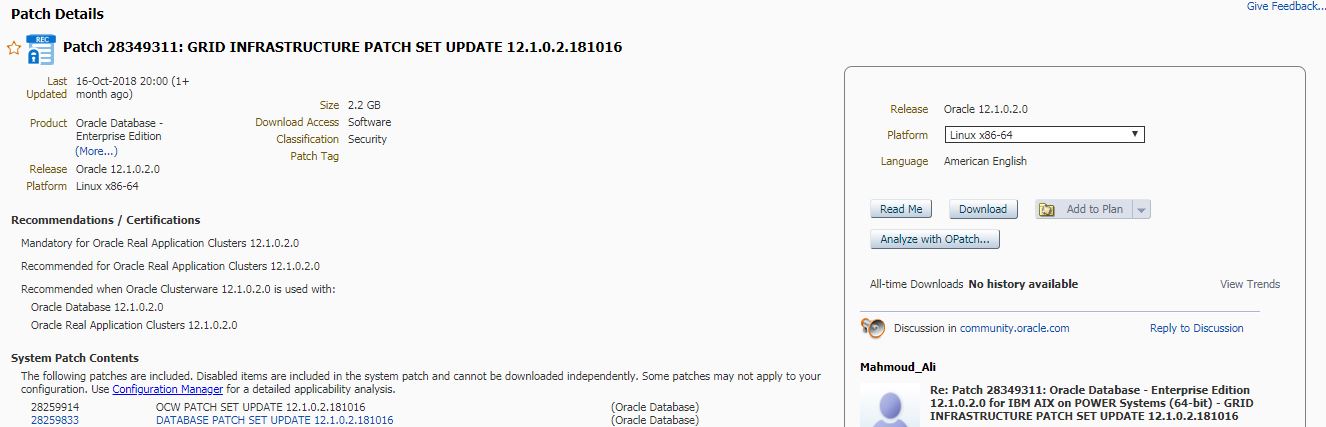
Let start the Demo:-

**Download the latest the PSU patch for GRID and ORACLE\_HOME :-**

**Patch 28349311 –  GRID INFRASTRUCTURE PATCH SET UPDATE 12.1.0.2.181016**

The **patch 28349311**was the super seeded patch of database PSU patch.

The above PSU patch is rolling applicable and so involves minimal downtime.

[](https://oracledbwr.com/wp-content/uploads/2018/11/Roll-patch.jpg)

Database Env :-

For Node 1,

prod()

{

ORACLE\_HOME=/u01/app/oracle/product/12.1.0.2/db\_1

export ORACLE\_HOME

ORACLE\_BASE=/oracle/app/oracle

export ORACLE\_BASE

ORACLE\_SID=prod1

export ORACLE\_SID

LD\_LIBRARY\_PATH=$ORACLE\_HOME/lib:/usr/lib:.

export LD\_LIBRARY\_PATH

LIBPATH=$ORACLE\_HOME/lib32:$ORACLE\_HOME/lib:/usr/lib:/lib

export LIBPATH

TNS\_ADMIN=${ORACLE\_HOME}/network/admin

export TNS\_ADMIN

PATH=$ORACLE\_HOME/bin:$PATH:.

export PATH

}

For Node 2,

prod()

{

ORACLE\_HOME=/u01/app/oracle/product/12.1.0.2/db\_1

export ORACLE\_HOME

ORACLE\_BASE=/oracle/app/oracle

export ORACLE\_BASE

ORACLE\_SID=prod2

export ORACLE\_SID

LD\_LIBRARY\_PATH=$ORACLE\_HOME/lib:/usr/lib:.

export LD\_LIBRARY\_PATH

LIBPATH=$ORACLE\_HOME/lib32:$ORACLE\_HOME/lib:/usr/lib:/lib

export LIBPATH

TNS\_ADMIN=${ORACLE\_HOME}/network/admin

export TNS\_ADMIN

PATH=$ORACLE\_HOME/bin:$PATH:.

export PATH

}

Grid Env :-

For Node 1,

grid()

{

ORACLE\_BASE=/u01/app/oracle; export ORACLE\_BASE

ORACLE\_HOME=/u01/app/12.1.0.2/grid; export ORACLE\_HOME

export ORACLE\_SID=+ASM1

ORACLE\_TERM=xterm; export ORACLE\_TERM

BASE\_PATH=/usr/sbin:$PATH; export BASE\_PATH

SQLPATH=/u01/app/oracle/scripts/sql:/u01/app/12.1.0.2/grid/rdbms/admin:/u01/app/oracle/product/12.1.0.2/db\_1/rdbms/admin; export SQLPATH

PATH=$ORACLE\_HOME/bin:$BASE\_PATH; export PATH

LD\_LIBRARY\_PATH=$ORACLE\_HOME/lib:/lib:/usr/lib; export LD\_LIBRARY\_PATH

CLASSPATH=$ORACLE\_HOME/JRE:$ORACLE\_HOME/jlib:$ORACLE\_HOME/rdbms/jlib; export CLASSPATH

}

For Node 2,

grid()

{

ORACLE\_BASE=/u01/app/oracle; export ORACLE\_BASE

ORACLE\_HOME=/u01/app/12.1.0.2/grid; export ORACLE\_HOME

export ORACLE\_SID=+ASM2

ORACLE\_TERM=xterm; export ORACLE\_TERM

BASE\_PATH=/usr/sbin:$PATH; export BASE\_PATH

SQLPATH=/u01/app/oracle/scripts/sql:/u01/app/12.1.0.2/grid/rdbms/admin:/u01/app/oracle/product/12.1.0.2/db\_1/rdbms/admin; export SQLPATH

PATH=$ORACLE\_HOME/bin:$BASE\_PATH; export PATH

LD\_LIBRARY\_PATH=$ORACLE\_HOME/lib:/lib:/usr/lib; export LD\_LIBRARY\_PATH

CLASSPATH=$ORACLE\_HOME/JRE:$ORACLE\_HOME/jlib:$ORACLE\_HOME/rdbms/jlib; export CLASSPATH

}

**Steps to Upgrade the OPATCH UTILITY:-**

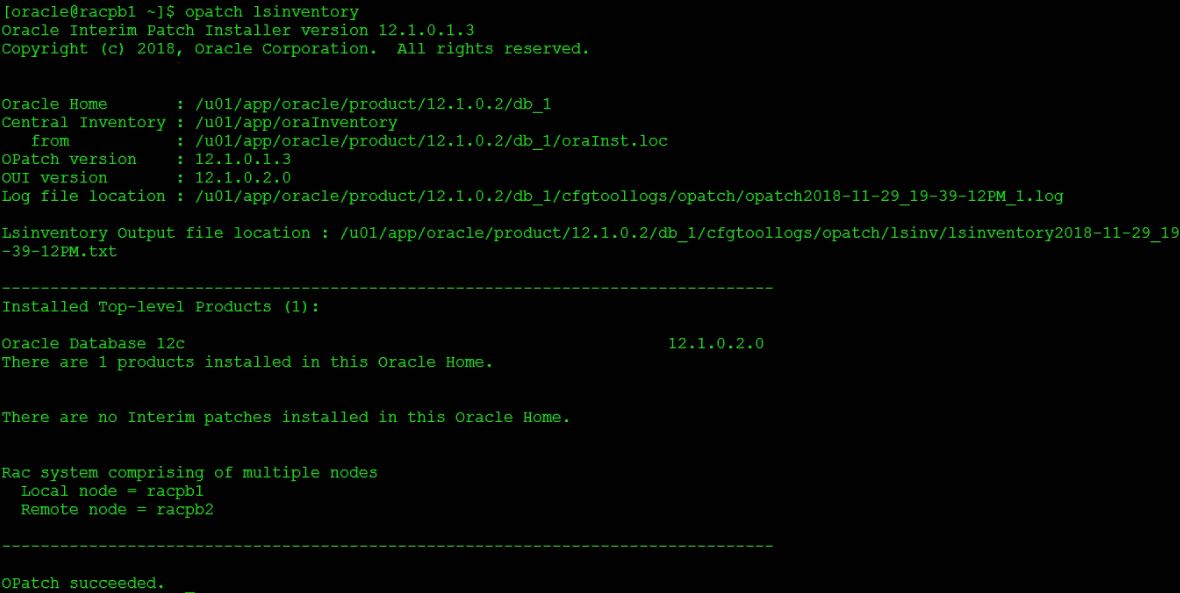
**Step 1:-**Check the opatch version and inventory for **ORACLE\_HOME**on both nodes

For Node 1,

opatch version

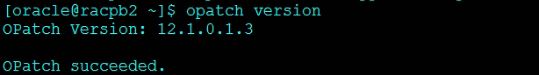
[](https://oracledbwr.com/wp-content/uploads/2018/11/1-2.jpg)

opatch lsinventory

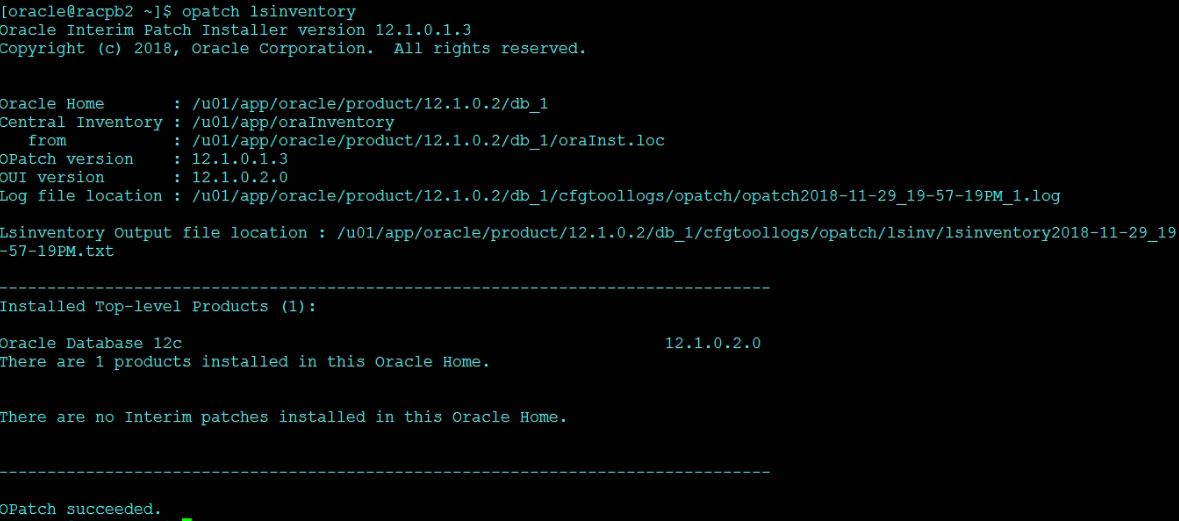
[](https://oracledbwr.com/wp-content/uploads/2018/11/2-3.jpg)

For Node 2,

opatch version

[](https://oracledbwr.com/wp-content/uploads/2018/11/3-2.jpg)

opatch lsinventory

[](https://oracledbwr.com/wp-content/uploads/2018/11/4-2.jpg)

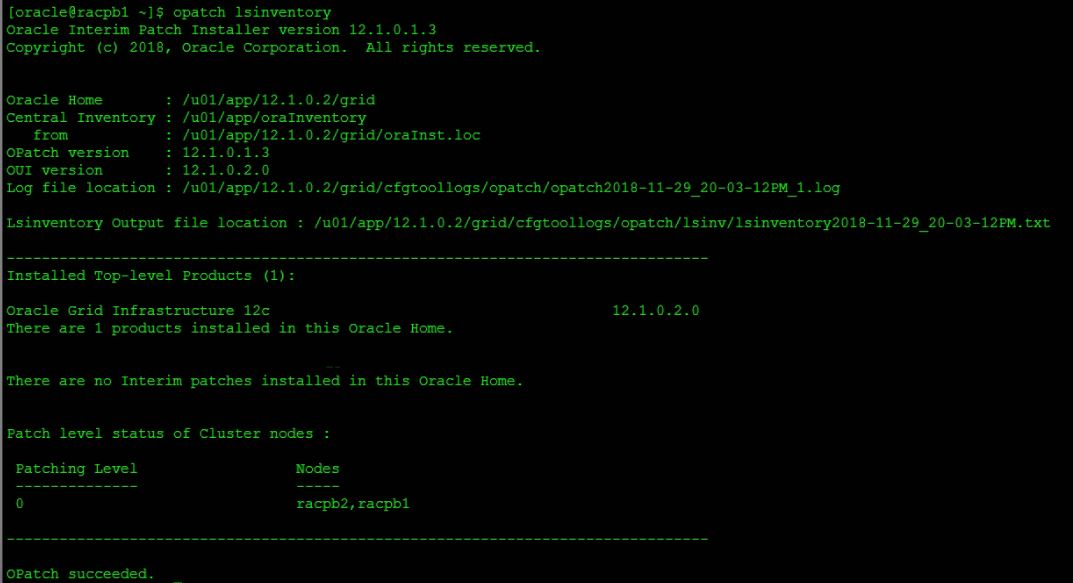
**Step 2:-**Check the opatch version and inventory for **GRID HOME**on both nodes

For Node 1,

opatch version

[](https://oracledbwr.com/wp-content/uploads/2018/11/5-2.jpg)

opatch lsinventory

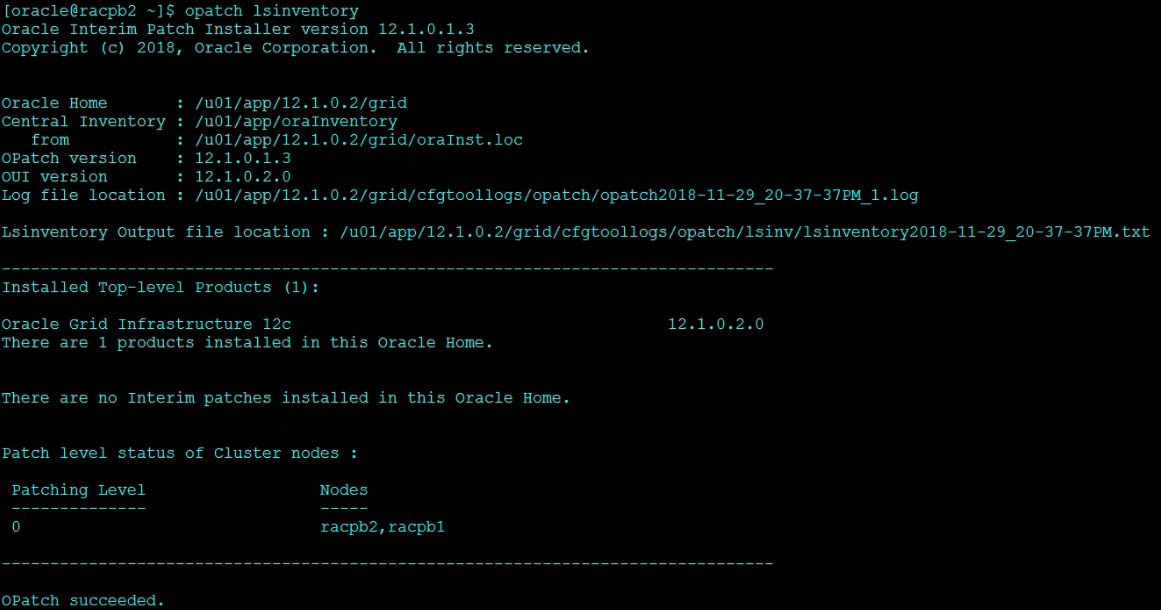
[](https://oracledbwr.com/wp-content/uploads/2018/11/6-2.jpg)

For Node 2,

opatch version

[](https://oracledbwr.com/wp-content/uploads/2018/11/7-2.jpg)

opatch lsinventory

[](https://oracledbwr.com/wp-content/uploads/2018/11/8-3.jpg)

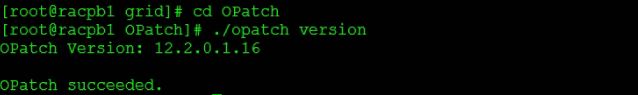
**Step 3:-**Update the opatch utility

Take the backup of **OPatch** directory from**GRID and ORACLE\_HOME**on both nodes

Unzip the **OPatch**downloaded zip into **GRID and ORACLE\_HOME** directory

**For Grid home:**

[](https://oracledbwr.com/wp-content/uploads/2018/11/9-3.jpg)

[](https://oracledbwr.com/wp-content/uploads/2018/11/10-2.jpg)[](https://oracledbwr.com/wp-content/uploads/2018/11/11-2.jpg)

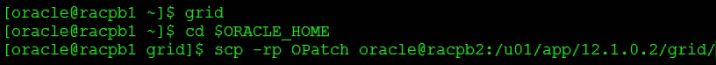
**For Database home:**

For Node 1,

[](https://oracledbwr.com/wp-content/uploads/2018/11/12-3.jpg)

[](https://oracledbwr.com/wp-content/uploads/2018/11/13-2.jpg)

**Copy patch p6880880\_122010\_Linux-x86-64.zip to the node 2(racpb2) or Copy the unzipped OPatch folder to the node 2(racpb2).**

[](https://oracledbwr.com/wp-content/uploads/2018/11/15-2.jpg)

[](https://oracledbwr.com/wp-content/uploads/2018/11/14-3.jpg)

For Node 2,

After copying to Node 2,check the new **OPatch**version in both **GRID and ORACLE\_HOME**,

[](https://oracledbwr.com/wp-content/uploads/2018/11/16-1.jpg)

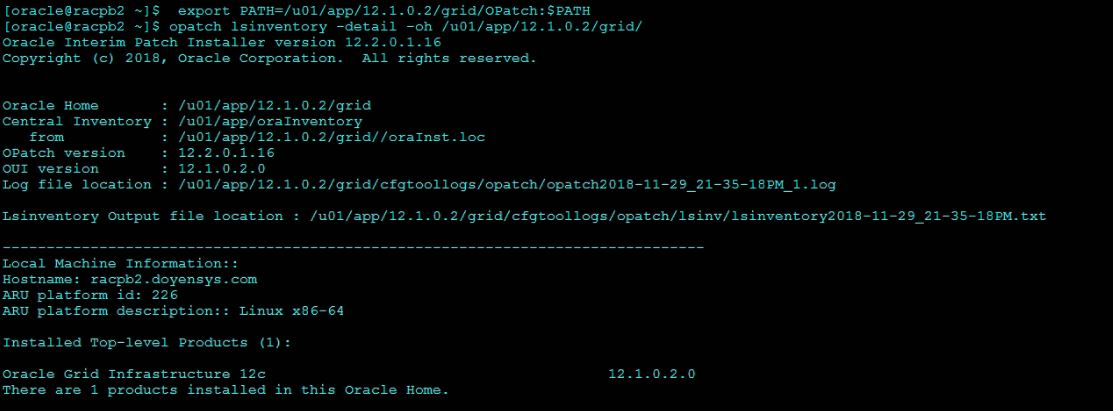
After upgrade the **OPatch**utility on both nodes apply the GRID and ORACLE\_HOME PSU patches.

**Step 4:-**Validation of Oracle Inventory

**To check the GRID HOME inventory :-**

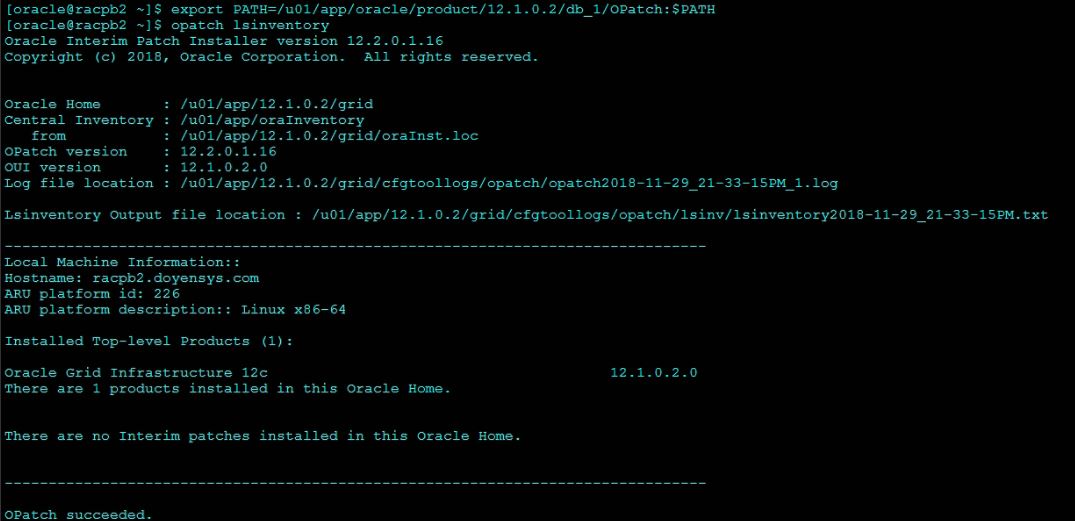
opatch lsinventory -detail -oh /u01/app/12.1.0.2/grid

Before beginning patch application, check the consistency of inventory information for GI home and each database home to be patched

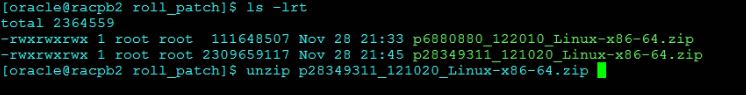
[](https://oracledbwr.com/wp-content/uploads/2018/11/18.jpg)

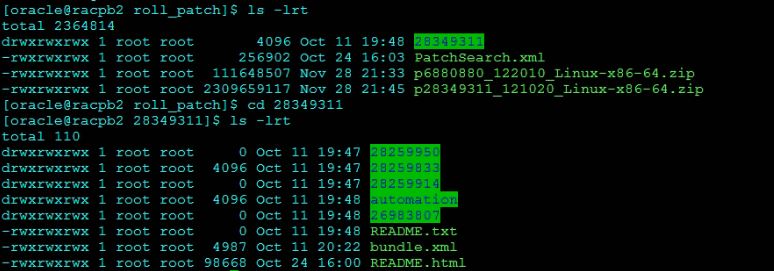
**To check the ORACLE\_HOME inventory :-**

opatch lsinventory -detail -oh $ORACLE\_HOME

[](https://oracledbwr.com/wp-content/uploads/2018/11/17-1.jpg)

**Step 5:- Download and Unzip the Oct 18 PSU Rolling Patch**

[](https://oracledbwr.com/wp-content/uploads/2018/11/19.jpg)

[](https://oracledbwr.com/wp-content/uploads/2018/11/20.jpg)

**Step 6:- Check Patch Conflict Detection and Resolution**

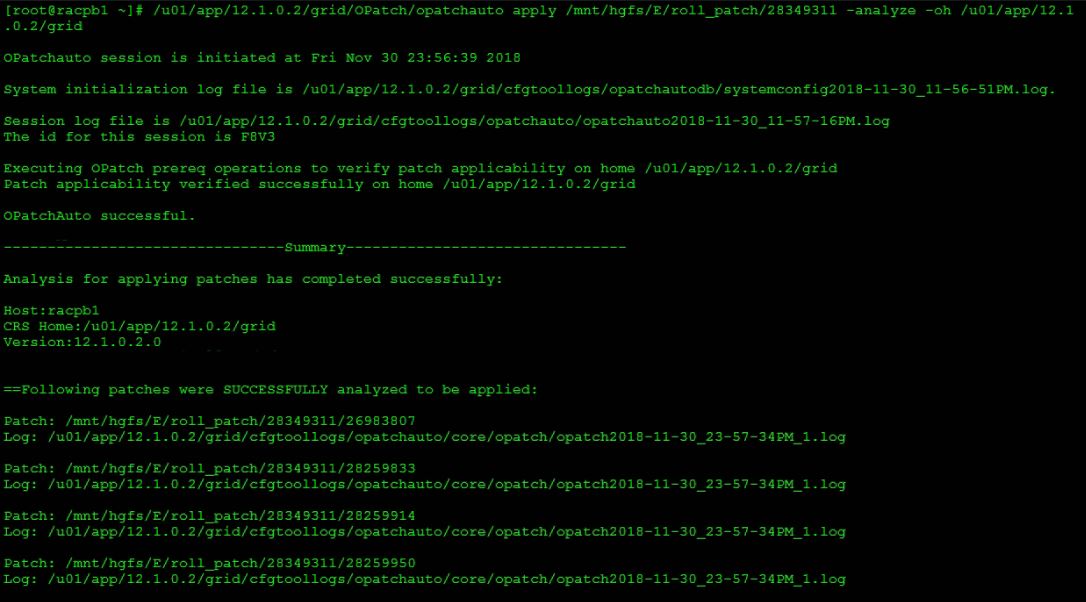
**For GRID HOME,**

When using OPatch 12.2.0.1.5 or later, the following Opatch Option -ocmrf <ocm response file> does not need to be provided.

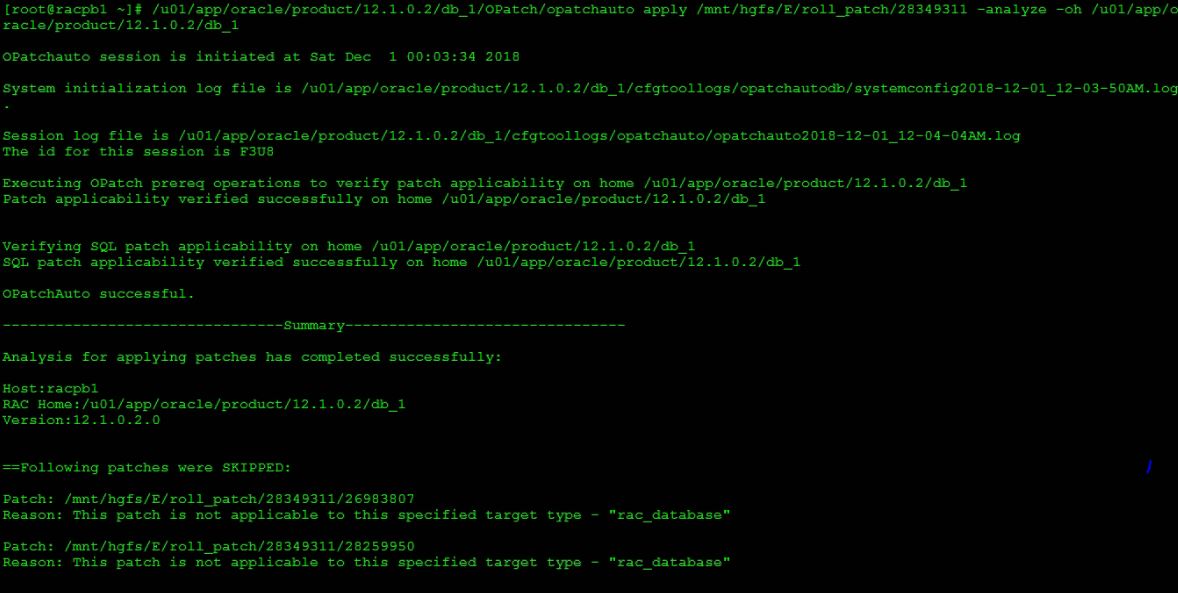
Now our **current OPatch version** for**GRID and ORACLE\_HOME**  is **12.2.0.1.16.**

As root user,

/u01/app/12.1.0.2/grid/OPatch/opatchauto apply /mnt/hgfs/E/roll\_patch/28349311 -analyze -oh /u01/app/12.1.0.2/grid

[](https://oracledbwr.com/wp-content/uploads/2018/11/25.jpg)

**For ORACLE HOME,**

[](https://oracledbwr.com/wp-content/uploads/2018/11/26.jpg)

**Step 7:- Apply the patch using Opatchauto**

**OPatchauto**automatically patch the typical **Grid Infrastructure (GI) and RAC home directories with minimal intervention.**

In general, when we invoke opatchauto will patch both the **GI stack and the database software stack**. Since we have mentioned the **-oh** it will apply the PSU to the specified home.

The main advantage of opatchauto utility was automatically down the CRS and database services and restart the services after apply patching.

To apply a patch using **opatchauto**,we need to run as a **root**user.

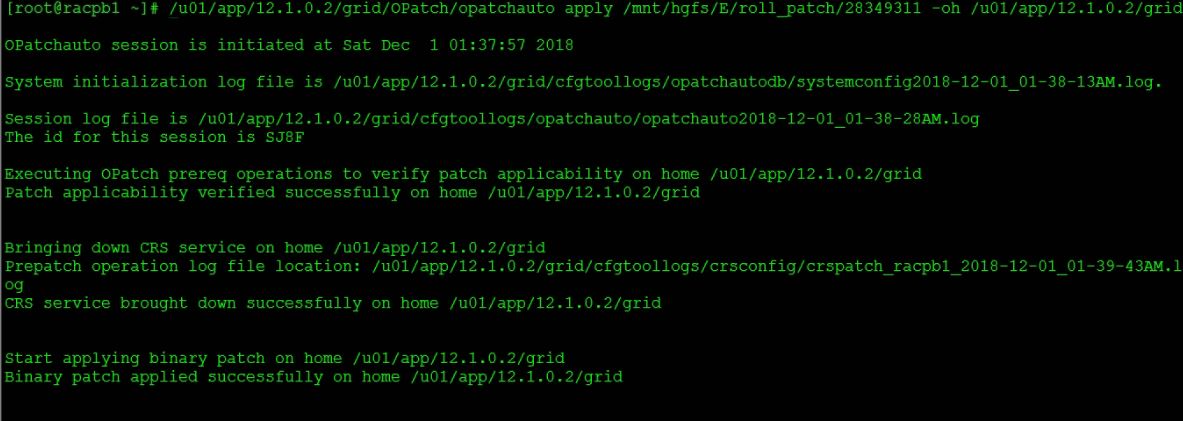
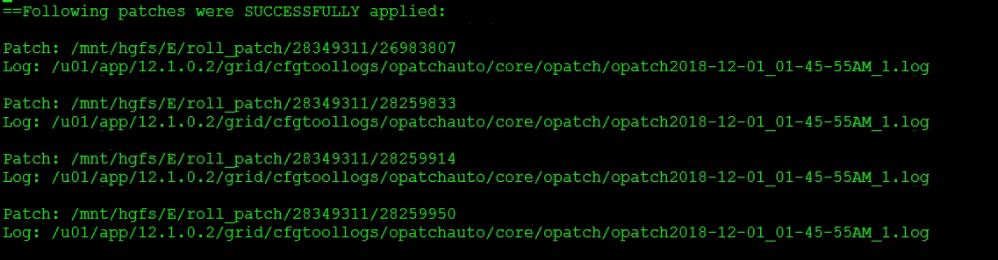
**To patch the GI home and all Oracle RAC database homes of the same version:**

# opatchauto apply /u01/28349311

**Here,we are going to apply a patch separately for both GRID and ORACLE\_HOME in both nodes.**

**opatchauto for GRID HOME on Node1 :-**

/u01/app/12.1.0.2/grid/OPatch/opatchauto apply /mnt/hgfs/E/roll\_patch/28349311 -oh /u01/app/12.1.0.2/grid

[](https://oracledbwr.com/wp-content/uploads/2018/11/28.jpg)[](https://oracledbwr.com/wp-content/uploads/2018/11/29.jpg)

**opatchauto for ORACLE\_HOME on Node 1 :-**

/u01/app/oracle/product/12.1.0.2/db\_1/OPatch/opatchauto apply /mnt/hgfs/E/roll\_patch/27468957 -oh/u01/app/oracle/product/12.1.0.2/db\_1

**Follow the same Step 7 for applying patch using opatchauto for GRID HOME and ORACLE\_HOME  in Node 2.**

Rolling PSU patch (Oct 2018)  is applied on both GRID and ORACLE\_HOME successfully.

DATAPATCH :-

* **Datapatch is the new tool that enables automation of post-patch SQL actions for RDBMS patches. So, In 12c you don’t use carbundle psu apply now this is all done using datapatch.**
* OPatchAuto calls datapatch to complete post patch actions upon installation of the binary patch and restart of the database.

**Step 8:-**To check the Oct PSU 2018 applied to your database using the following SQL statement,

**Check the DBA\_REGISTRY\_SQLPATCH :-**

select BUNDLE\_SERIES,PATCH\_UID,PATCH\_ID,  
VERSION,ACTION,STATUS,ACTION\_TIME ,DESCRIPTION  
from dba\_registry\_sqlpatch;

[](https://oracledbwr.com/wp-content/uploads/2018/11/33.jpg)