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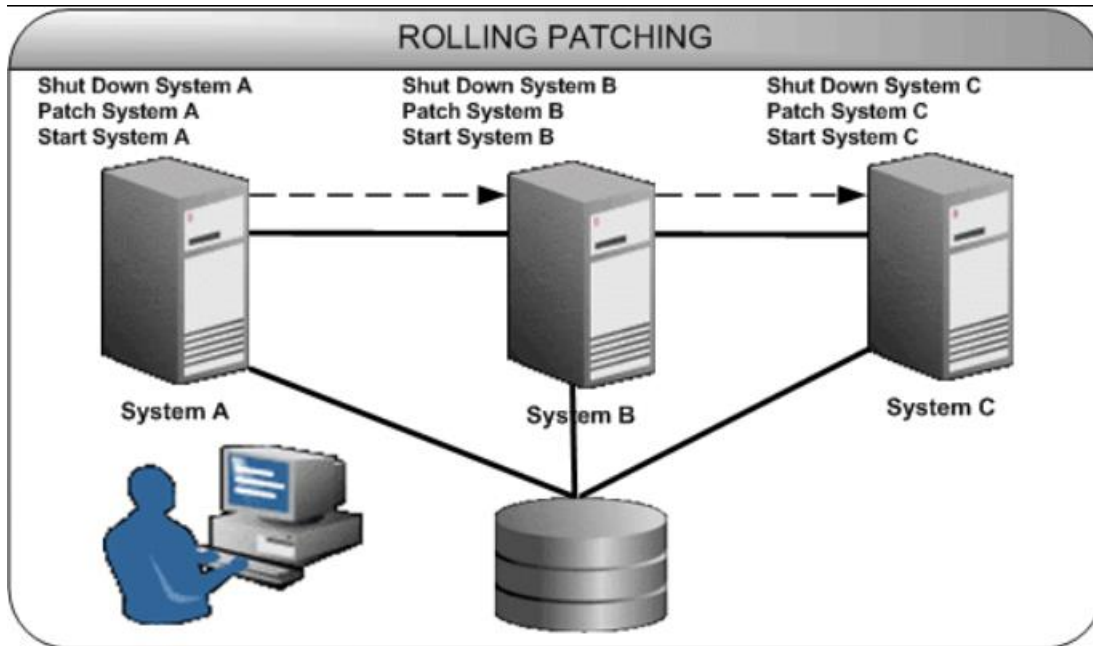
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INSTALLATION OF PATCH 16989137ON 2 NODE RAC (MINIMUM DOWNTIME OPATCH)

1. ROLLING PATCHING



Each node is patched and brought up while the other nodes stay up and running. There is no downtime when using this patch method. The summary of operations for minimum downtime patching includes:

- Assume 3 nodes are being patched.
- Shutdown all instances for the Oracle Home to be patched on Node 1.
- Apply the patch to the Oracle Home on node 1.
- Start the instance on Node 1.
- Shutdown all instances for the Oracle Home to be patched on Node 2.
- Apply the patch to the Oracle Home on node 2.
- Start the instance on Node 2.
- Shutdown all instances for the Oracle Home to be patched on Node 3.
- Apply the patch to the Oracle Home on node 3.
- Start the instance on Node 3.

The patch readme file will indicate if rolling patching is available for the patch. Carefully review the patch set readme and any other files that come with the patch set to determine the proper way to install the patch.

The OPatch Utility

The OPatch utility is used to patch Oracle Clusterware software and Oracle RAC and Non-RAC Database software. The OPatch utility requires that the variable ORACLE_HOME be set. When running OPatch you should set the value of ORACLE_HOME to the location of the product to be patched. Thus, if you are patching Oracle Clusterware you will set ORACLE_HOME to the location of GRID_HOME. Because of this, and other occasions when it is helpful to be able to set the Oracle environment to point to GRID_HOME, we recommend that you actually add an entry in the /etc/oratab file called grid which points to the GRID_HOME. Then you can

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use the oraenv program (or coraenv) to configure your environment easily. You can also include the ORACLE_HOME location when running commands from OPatch. You can also use the -oh parameter when calling OPatch and include the ORACLE_HOME location there as seen in this example:

```
Opatch lsinventory -detail -oh /u01/app/11.2.0/grid
```

Once you have configured \$ORACLE_HOME correctly, you can begin the OPatch patch application process. Following the install instructions, you will typically run the pre-patch scripts, OPatch and then the post-patch scripts.

You can use the OPatch -help switch to get help for the OPatch utility. You can run OPatch -help and OPatch will present a general help screen. If you want help for a specific function you can type in the name of that function followed by the -help switch as seen in this example:

```
Opatch apply -help
```

```
Opatch lsinventory -help
```

An Oracle OPatch for a RAC configuration can take one of two forms, either as a Rolling Opatch or as a Minimum Downtime Opatch

In addition to being informed by Oracle Support, the type of OPatch can be determined by checking the <Patch No>/etc/config/inventory file. If the the variable online_rac_installable is set to **true** then the patch is a rolling patch.

2.INSTALL NEWEST OPATCH VERSION

INSTALL OPATCH FOR RDBMS INSTANCE

Identify the current Release

```
$ORACLE_HOME/OPatch/opatch version
```

```
Invoking OPatch 11.2.0.1.7
```

```
OPatch Version: 11.2.0.1.7
```

```
OPatch succeeded.
```

Download - p6880880_112000_Linux-x86-64.zip

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6880880	OPatch patch of version 11.2.0.3.11 for Oracle software releases 11.2.0.x (JUN 2015) (Patch)	11.2.0.0.0	Linux x86-64 (American English)
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Copy the latest patch on node1 and node2 on RDBMS Homes

```
su - oracle
cd $ORACLE_HOME
mv OPatch OPatch_old
cp /tmp/p6880880_112000_Linux-x86-64.zip .
unzip p6880880_112000_Linux-x86-64.zip

$ORACLE_HOME/OPatch/opatch version
OPatch Version: 11.2.0.3.11
OPatch succeeded.
```

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3. VALIDATION OF ORACLE INVENTORY

```
SQL> $ORACLE_HOME/OPatch/opatch lsinventory -detail -oh $ORACLE_HOME
```

Oracle Interim Patch Installer version 11.2.0.3.11

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Oracle Home : /u01/app/oracle/product/11.2.0/dbhome_1

Central Inventory : /u01/app/oralInventory

from : /u01/app/oracle/product/11.2.0/dbhome_1/oralnst.loc

OPatch version : 11.2.0.3.11

OUI version : 11.2.0.3.0

Log file location : /u01/app/oracle/product/11.2.0/dbhome_1/cfgtoollogs/opatch/opatch2015-08-25_08-36-16AM_1.log

Rac system comprising of multiple nodes

Local node = racnode2

Remote node = racnode1

4. ENSURE ALL OF THE INSTANCES THAT MAKE UP THE RAC DATABASE ARE SHUTDOWN

```
SQL> srvctl stop instance -d RACDB -i RACDB1
```

```
SQL> emctl stop dbconsole
```

Oracle Enterprise Manager 11g Database Control Release 11.2.0.3.0

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```
https://racnode1.appsdba.info:1158/em/console/aboutApplication
Stopping Oracle Enterprise Manager 11g Database Control ...
... Stopped.
```

5. APPLY PATCH ON NODE1

On the **primary** node in the cluster follow the Opatch instructions as prescribed by the README.txt file.

```
unzip p16989137_112030_Generic.zip
```

```
cd patches/16989137/
```

```
export PATH=$ORACLE_HOME/OPatch:$PATH
```

CHECK FOR INTERIM PATCHES CONFLICT WITH THIS PATCH 16989137

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

```
Oracle Interim Patch Installer version 11.2.0.3.11
Copyright (c) 2015, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /u01/app/oracle/product/11.2.0/dbhome_1
Central Inventory : /u01/app/oralInventory
  from           : /u01/app/oracle/product/11.2.0/dbhome_1/oralnst.loc
OPatch version   : 11.2.0.3.11
OUI version      : 11.2.0.3.0
Log file location : /u01/app/oracle/product/11.2.0/dbhome_1/cfgtoollogs/opatch/o      patch2015-08-
25_14-54-43PM_1.log

Invoking prereq "checkconflictagainstohwithdetail"

Prereq "checkConflictAgainstOHWithDetail" passed.
```

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OPatch succeeded.

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APPLY THE PATCH**Note - Use local tag to apply on the current node****opatch apply –local**

Oracle Interim Patch Installer version 11.2.0.3.11

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Oracle Home : /u01/app/oracle/product/11.2.0/dbhome_1

Central Inventory : /u01/app/oralInventory

from : /u01/app/oracle/product/11.2.0/dbhome_1/oralnst.loc

OPatch version : 11.2.0.3.11

OUI version : 11.2.0.3.0

Log file location :

/u01/app/oracle/product/11.2.0/dbhome_1/cfgtoollogs/opatch/16989137_Aug_25_2015_15_35_07/apply2015-08-25_15-35-07PM_1.log

Verifying environment and performing prerequisite checks...

OPatch continues with these patches: 16989137

Do you want to proceed? [y|n]

y

User Responded with: Y

All checks passed.

Provide your email address to be informed of security issues, install and initiate Oracle Configuration Manager. Easier for you if you use your My Oracle Support Email address/User Name.

Visit <http://www.oracle.com/support/policies.html> for details.

Email address/User Name:

You have not provided an email address for notification of security issues.

Do you wish to remain uninformed of security issues ([Y]es, [N]o) [N]: Y

Backing up files...

Applying interim patch '16989137' to OH '/u01/app/oracle/product/11.2.0/dbhome_1'

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Patching component oracle.ctx, 11.2.0.3.0...

Patching component oracle.rdbms.dbscripts, 11.2.0.3.0...

Verifying the update...

Patch 16989137 successfully applied.

Log file location:

/u01/app/oracle/product/11.2.0/dbhome_1/cfgtoollogs/opath/16989137_Aug_25_2015_15_35_07/apply2015-08-25_15-35-07PM_1.log

OPatch succeeded.

6. CHECK THE INVENTORY IF THE PATCH IS APPLIED

```
opatch lsinventory
```

Interim patches (1) :

Patch 16989137 : applied on Tue Aug 25 15:35:24 EDT 2015

Unique Patch ID: 17521951

Created on 10 Apr 2014, 16:16:32 hrs PST8PDT

Bugs fixed:

16989137

Rac system comprising of multiple nodes

Local node = racnode1

Remote node = racnode2

7. ENSURE ALL OF THE INSTANCES THAT MAKE UP THE RAC DATABASE ARE STARTED

```
srvctl start instance -d RACDB -i RACDB1
```

```
emctl start dbconsole
```

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8. REPEAT THE SAME STEPS ON NODE – 2 (STEP 2 TO STEP 7)

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9. REFERENCES

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<http://www.hhutzler.de/blog/installation-of-psu-11-2-0-3-8-patch-17272731-on-top-of-oel-6-4/>

<http://abcdba.com/abcdbarachowtoapplymindowntimeopatch>