Remove Node from Oracle Rac 11Gr2

# Remove Oracle Instance

## Remove Instance from OEM Database Control Monitoring

If Oracle Enterprise Manager (Database Control) is configured for the existing Oracle RAC, remove the instance from the DB Control cluster configuration before removing it from the cluster database.

The URL for this example is: https://racnode1.idevelopment.info:1158/em

|  |
| --- |
| [oracle@racnode1 ~]$ **emca -displayConfig dbcontrol -cluster**  STARTED EMCA at May 4, 2012 12:42:12 PM  EM Configuration Assistant, Version 11.2.0.3.0 Production  Copyright (c) 2003, 2011, Oracle. All rights reserved.  Enter the following information:  Database unique name: **racdb**  Service name: **racdb.idevelopment.info**  Do you wish to continue? [yes(Y)/no(N)]: **y**  May 4, 2012 12:42:24 PM oracle.sysman.emcp.EMConfig perform  INFO: This operation is being logged at  /u01/app/oracle/cfgtoollogs/emca/racdb/emca\_2012\_05\_04\_12\_42\_12.log.  May 4, 2012 12:42:27 PM oracle.sysman.emcp.EMDBPostConfig showClusterDBCAgentMessage  INFO:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Current Configuration \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  INSTANCE NODE DBCONTROL\_UPLOAD\_HOST  ---------- ---------- ---------------------  racdb racnode1 racnode1.idevelopment.info  racdb racnode2 racnode1.idevelopment.info  racdb racnode3 racnode1.idevelopment.info  Enterprise Manager configuration completed successfully  FINISHED EMCA at May 4, 2012 12:42:27 PM  [oracle@racnode1 ~]$ **emca -deleteInst db**  STARTED EMCA at May 4, 2012 12:43:37 PM  EM Configuration Assistant, Version 11.2.0.3.0 Production  Copyright (c) 2003, 2011, Oracle. All rights reserved.  Enter the following information:  Database unique name: **racdb**  Service name: **racdb.idevelopment.info**  Node name: **racnode3**  Database SID: **racdb3**  Do you wish to continue? [yes(Y)/no(N)]: **y**  May 4, 2012 12:43:59 PM oracle.sysman.emcp.EMConfig perform  INFO: This operation is being logged at /u01/app/oracle/cfgtoollogs/emca/racdb/racdb3/emca\_2012\_05\_04\_12\_43\_36.log.  May 4, 2012 12:44:00 PM oracle.sysman.emcp.util.DBControlUtil stopOMS  INFO: Stopping Database Control (this may take a while) ...  May 4, 2012 12:44:07 PM oracle.sysman.emcp.EMDBPostConfig showClusterDBCAgentMessage  INFO:  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Current Configuration \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  INSTANCE NODE DBCONTROL\_UPLOAD\_HOST  ---------- ---------- ---------------------  racdb racnode1 racnode1.idevelopment.info  racdb racnode2 racnode1.idevelopment.info  Enterprise Manager configuration completed successfully  FINISHED EMCA at May 4, 2012 12:44:07 PM |
|  |

## Backup OCR

Backup the OCR using ocrconfig -manualbackup from a node that is to remain a member of the Oracle RAC.

|  |
| --- |
| [root@racnode1 ~]# **/u01/app/11.2.0/grid/bin/ocrconfig -manualbackup** |

Note that voting disks are automatically backed up in OCR after the changes we will be making to the cluster.

## Remove Instance from any Services - (if necessary)

The instance racdb3 is hosted on node racnode3 which is part of the existing Oracle RAC and the node being removed in this guide. The racdb3 instance is in the preferred list of the service racdbsvc.idevelopment.info.

|  |
| --- |
| [oracle@racnode1 ~]$ **srvctl config service -d racdb -s racdbsvc.idevelopment.info -v**  Service name: racdbsvc.idevelopment.info  Service is enabled  Server pool: racdb\_racdbsvc.idevelopment.info  Cardinality: 3  Disconnect: false  Service role: PRIMARY  Management policy: AUTOMATIC  DTP transaction: false  AQ HA notifications: false  Failover type: NONE  Failover method: NONE  TAF failover retries: 0  TAF failover delay: 0  Connection Load Balancing Goal: LONG  Runtime Load Balancing Goal: NONE  TAF policy specification: NONE  Edition:  Preferred instances: racdb3,racdb1,racdb2  Available instances: |

Update the racdbsvc.idevelopment.info service to remove the racdb3 instance.

|  |
| --- |
| [oracle@racnode1 ~]$ **srvctl modify service -d racdb -s racdbsvc.idevelopment.info -n -i racdb1,racdb2**  [oracle@racnode1 ~]$ **srvctl config service -d racdb -s racdbsvc.idevelopment.info -v**  Service name: racdbsvc.idevelopment.info  Service is enabled  Server pool: racdb\_racdbsvc.idevelopment.info  Cardinality: 2  Disconnect: false  Service role: PRIMARY  Management policy: AUTOMATIC  DTP transaction: false  AQ HA notifications: false  Failover type: NONE  Failover method: NONE  TAF failover retries: 0  TAF failover delay: 0  Connection Load Balancing Goal: LONG  Runtime Load Balancing Goal: NONE  TAF policy specification: NONE  Edition:  Preferred instances: racdb1,racdb2  Available instances:  [oracle@racnode1 ~]$ **srvctl status service -d racdb -s racdbsvc.idevelopment.info -v**  Service racdbsvc.idevelopment.info is running on instance(s) racdb1,racdb2 |

## Remove Instance from the Cluster Database

As the Oracle software owner, run the Oracle Database Configuration Assistant (DBCA) in silent mode from a node that will remain in the cluster to remove the racdb3 instance from the existing cluster database. The instance that's being removed by DBCA must be up and running.

|  |
| --- |
| [oracle@racnode1 ~]$ **dbca -silent -deleteInstance -nodeList racnode3 \**  **-gdbName racdb.idevelopment.info -instanceName racdb3 \**  **-sysDBAUserName sys -sysDBAPassword \*\*\*\*\*\***  Deleting instance  20% complete  21% complete  22% complete  26% complete  33% complete  40% complete  46% complete  53% complete  60% complete  66% complete  Completing instance management.  100% complete  Look at the log file "/u01/app/oracle/cfgtoollogs/dbca/racdb.log" for further details. |

Review the DBCA trace file which is located in [/u01/app/oracle/cfgtoollogs/dbca/trace.log\_OraDb11g\_home1\_<DATE>](http://www.idevelopment.info/data/Oracle/DBA_tips/Oracle11gRAC/resources/RemoveNode11gR2RACOnRHEL55/trace.log_OraDb11g_home1_2012-05-04_12-56-14-PM).

Verify that the racdb3 database instance was removed from the cluster database.

|  |
| --- |
| [oracle@racnode1 ~]$ **srvctl config database -d racdb -v**  Database unique name: racdb  Database name: racdb  Oracle home: /u01/app/oracle/product/11.2.0/dbhome\_1  Oracle user: oracle  Spfile: +RACDB\_DATA/racdb/spfileracdb.ora  Domain: idevelopment.info  Start options: open  Stop options: immediate  Database role: PRIMARY  Management policy: AUTOMATIC  Server pools: racdb  Database instances: racdb1,racdb2  Disk Groups: RACDB\_DATA,FRA  Mount point paths:  Services: racdbsvc.idevelopment.info  Type: RAC  Database is administrator managed  [oracle@racnode1 ~]$ **sqlplus / as sysdba**  SQL> **select inst\_id, instance\_name, status,**  2 **to\_char(startup\_time, 'DD-MON-YYYY HH24:MI:SS') as "START\_TIME"**  3 **from gv$instance order by inst\_id;**  INST\_ID INSTANCE\_NAME STATUS START\_TIME  ---------- ---------------- ------------ --------------------  1 racdb1 OPEN 01-MAY-2012 11:30:01  2 racdb2 OPEN 01-MAY-2012 11:30:00 |

As seen from the output above, the racdb3 database instance was removed and only racdb1 and racdb2 remain.

When DBCA is used to delete the instance, it also takes care of removing any [Oracle dependencies](http://www.idevelopment.info/data/Oracle/DBA_tips/Oracle11gRAC/CLUSTER_22.shtml#Add Instance - Oracle dependencies) like the public redo log thread, undo tablespace, and all instance related parameter entries for the deleted instance. This can be examined in the trace file produced by DBCA /u01/app/oracle/cfgtoollogs/dbca/trace.log\_OraDb11g\_home1\_<DATE>:

|  |
| --- |
| ... thread SQL = SELECT THREAD# FROM V$THREAD WHERE UPPER(INSTANCE) = UPPER('racdb3')  ... threadNum.length=1  ... threadNum=3  ... redoLog SQL =SELECT GROUP# FROM V$LOG WHERE THREAD# = 3  ... redoLogGrNames length=2  ... Group numbers=(5,6)  ... logFileName SQL=SELECT MEMBER FROM V$LOGFILE WHERE GROUP# IN (5,6)  ... logFiles length=4  ... SQL= ALTER DATABASE DISABLE THREAD 3  ... archive mode = false  ... SQL= ALTER DATABASE DROP LOGFILE GROUP 5  ... SQL= ALTER DATABASE DROP LOGFILE GROUP 6  ... SQL=DROP TABLESPACE UNDOTBS3 INCLUDING CONTENTS AND DATAFILES  ... sidParams.length=2  ... SQL=ALTER SYSTEM RESET undo\_tablespace SCOPE=SPFILE SID = 'racdb3'  ... SQL=ALTER SYSTEM RESET instance\_number SCOPE=SPFILE SID = 'racdb3' |

Check if the redo log thread and UNDO tablespace for the deleted instance is removed (which for my example, they were successfully removed). If not, manually remove them.

|  |
| --- |
| SQL> **select thread# from v$thread where upper(instance) = upper('racdb3');**  THREAD#  ----------  3  SQL> **select group# from v$log where thread# = 3;**  GROUP#  ----------  5  6  SQL> **select member from v$logfile where group# in (5,6);**  MEMBER  --------------------------------------------------  +RACDB\_DATA/racdb/onlinelog/group\_5.270.781657813  +FRA/racdb/onlinelog/group\_5.281.781657813  +RACDB\_DATA/racdb/onlinelog/group\_6.271.781657815  +FRA/racdb/onlinelog/group\_6.289.781657815  SQL> **alter database disable thread 3;**  Database altered.  SQL> **alter database drop logfile group 5;**  Database altered.  SQL> **alter database drop logfile group 6;**  Database altered.  SQL> **drop tablespace undotbs3 including contents and datafiles;**  Tablespace dropped.  SQL> **alter system reset undo\_tablespace scope=spfile sid = 'racdb3';**  System altered.  SQL> **alter system reset instance\_number scope=spfile sid = 'racdb3';**  System altered. |

# Remove Oracle Database Software

In this step, the Oracle Database software will be removed from the node that will be deleted. In addition, the inventories of the remaining nodes will be updated to reflect the removal of the node's Oracle Database software home.

Log in as the Oracle Database software owner when executing the tasks in this section.

## Verify Listener Not Running in Oracle Home

If any listeners are running from the Oracle home being removed, they will need to be disabled and stopped.

Check if any listeners are running from the Oracle home to be removed.

|  |
| --- |
| [oracle@racnode3 ~]$ **srvctl config listener -a**  Name: LISTENER  Network: 1, Owner: grid  Home: <CRS home>  /u01/app/11.2.0/grid on node(s) racnode3,racnode2,racnode1  End points: TCP:1521 |

In Oracle 11*g* Release 2 (11.2) the default listener runs from Grid home. Since the listener is running from the Grid home (shown above), disabling and stopping the listener can be skipped in release 11.2.

If any listeners were explicitly created to run from the Oracle home being removed, they would need to be disabled and stopped.

|  |
| --- |
| $ srvctl disable listener -l <listener\_name> -n <name\_of\_node\_to\_delete>  $ srvctl stop listener -l <listener\_name> -n <name\_of\_node\_to\_delete> |

## Update Oracle Inventory - (Node Being Removed)

As the Oracle software owner, execute runInstaller from *Oracle\_home*/oui/bin on the node being removed to update the inventory. Set "CLUSTER\_NODES={*name\_of\_node\_to\_delete*}".

|  |
| --- |
| [oracle@racnode3 ~]$ **cd $ORACLE\_HOME/oui/bin**  [oracle@racnode3 bin]$ **./runInstaller -updateNodeList ORACLE\_HOME=$ORACLE\_HOME "CLUSTER\_NODES={racnode3}" -local**  Starting Oracle Universal Installer...  Checking swap space: must be greater than 500 MB. Actual 9983 MB Passed  The inventory pointer is located at /etc/oraInst.loc  The inventory is located at /u01/app/oraInventory  'UpdateNodeList' was successful. |

After executing runInstaller on the node to be deleted, the inventory.xml file on that node (/u01/app/oraInventory/ContentsXML/inventory.xml) will show only the node to be deleted under the Oracle home name.

|  |
| --- |
| ...  <HOME NAME="OraDb11g\_home1" LOC="/u01/app/oracle/product/11.2.0/dbhome\_1" TYPE="O" IDX="2">  <NODE\_LIST>  <NODE NAME="racnode3"/>  </NODE\_LIST>  </HOME>  ... |

The inventory.xml file on the other nodes will still show all of the nodes in the cluster. The inventory on the remaining nodes will be updated after de-installing the Oracle Database software.

|  |
| --- |
| ...  <HOME NAME="OraDb11g\_home1" LOC="/u01/app/oracle/product/11.2.0/dbhome\_1" TYPE="O" IDX="2">  <NODE\_LIST>  <NODE NAME="racnode1"/>  <NODE NAME="racnode2"/>  <NODE NAME="racnode3"/>  </NODE\_LIST>  </HOME>  ... |

## De-install Oracle Home

Before attempting to de-install the Oracle Database software, review the /etc/oratab file on the node to be deleted and remove any entries that contain a database instance running out of the Oracle home being de-installed. Do not remove any +ASM entries.

|  |
| --- |
| ...  #  +ASM3:/u01/app/11.2.0/grid:N # line added by Agent  ... |

If a rouge entry exists in the /etc/oratab file that contains the Oracle home being deleted, then the deinstall described in the next step will fail:

|  |
| --- |
| ERROR: The option -local will not modify any database configuration for this Oracle home.  Following databases have instances configured on local node : 'racdb3'. Remove these  database instances using dbca before de-installing the local Oracle home. |

When using a non-shared Oracle home (as is the case in this example guide), run deinstall as the Oracle Database software owner from the node to be removed in order to delete the Oracle Database software.

|  |
| --- |
| [oracle@racnode3 ~]$ **cd $ORACLE\_HOME/deinstall**  [oracle@racnode3 deinstall]$ **./deinstall -local**  Checking for required files and bootstrapping ...  Please wait ...  Location of logs /u01/app/oraInventory/logs/  ############ ORACLE DEINSTALL & DECONFIG TOOL START ############  ######################### CHECK OPERATION START #########################  ## [START] Install check configuration ##  No Enterprise Manager configuration to be updated for any database(s)  No Enterprise Manager ASM targets to update  No Enterprise Manager listener targets to migrate  Checking the config status for CCR  Oracle Home exists with CCR directory, but CCR is not configured  CCR check is finished  Do you want to continue (y - yes, n - no)? [n]: **y**  A log of this session will be written to:  '/u01/app/oraInventory/logs/deinstall\_deconfig2012-05-04\_01-39-32-PM.out'  Any error messages from this session will be written to:  '/u01/app/oraInventory/logs/deinstall\_deconfig2012-05-04\_01-39-32-PM.err'  ... <SNIP> ...  Oracle deinstall tool successfully cleaned up temporary directories.  #######################################################################  ############# ORACLE DEINSTALL & DECONFIG TOOL END ############# |

Review the complete [deinstall output](http://www.idevelopment.info/data/Oracle/DBA_tips/Oracle11gRAC/resources/RemoveNode11gR2RACOnRHEL55/deinstall_oracle_database.txt).

After the de-install completes, the Oracle home node will be successfully removed from the inventory.xml file on the local node.

## Update Oracle Inventory - (All Remaining Nodes)

From one of the nodes that is to remain part of the cluster, execute runInstaller (without the -local option) as the Oracle software owner to update the inventories with a list of the nodes that are to remain in the cluster. Use the CLUSTER\_NODES option to specify the nodes that will remain in the cluster.

|  |
| --- |
| [oracle@racnode1 ~]$ **cd $ORACLE\_HOME/oui/bin**  [oracle@racnode1 bin]$ **./runInstaller -updateNodeList ORACLE\_HOME=$ORACLE\_HOME "CLUSTER\_NODES={racnode1,racnode2}"**  Starting Oracle Universal Installer...  Checking swap space: must be greater than 500 MB. Actual 9521 MB Passed  The inventory pointer is located at /etc/oraInst.loc  The inventory is located at /u01/app/oraInventory  'UpdateNodeList' was successful. |

Review the inventory.xml file on each remaining node in the cluster to verify the Oracle home name does not include the node being removed.

|  |
| --- |
| ...  <HOME NAME="OraDb11g\_home1" LOC="/u01/app/oracle/product/11.2.0/dbhome\_1" TYPE="O" IDX="2">  <NODE\_LIST>  <NODE NAME="racnode1"/>  <NODE NAME="racnode2"/>  </NODE\_LIST>  </HOME>  ... |

# Remove Node from Clusterware

This section describes the steps to remove a node from Oracle Clusterware.

## Verify Grid\_home

Most of the commands in this section will be run as root. Ensure that *Grid\_home* correctly specifies the full directory path for the Oracle Clusterware home on each node, where *Grid\_home* is the location of the installed Oracle Clusterware software.

|  |
| --- |
| [root@racnode1 ~]# **GRID\_HOME=/u01/app/11.2.0/grid**  [root@racnode1 ~]# **export GRID\_HOME** |

## Unpin Node

Run the following command as root to determine whether the node you want to delete is active and whether it is pinned.

|  |
| --- |
| [root@racnode1 ~]# **$GRID\_HOME/bin/olsnodes -s -t**  racnode1 Active Unpinned  racnode2 Active Unpinned  racnode3 Active Unpinned |

If the node being removed is already unpinned then you do not need to run the crsctl unpin css command below and can proceed to the next step.

If the node being removed is pinned with a fixed node number, then run the crsctl unpin css command as root from a node that is to remain a member of the Oracle RAC in order to unpin the node and expire the CSS lease on the node you are deleting.

|  |
| --- |
| [root@racnode1 ~]# **$GRID\_HOME/bin/crsctl unpin css -n racnode3**  CRS-4667: Node racnode3 successfully unpinned. |

If Cluster Synchronization Services (CSS) is not running on the node you are deleting, then the crsctl unpin css command in this step fails.

## Disable Oracle Clusterware

Before executing the rootcrs.pl script described in this section, you must ensure EMAGENT is not running on the node being deleted.

|  |
| --- |
| [oracle@racnode3 ~]$ **emctl stop dbconsole** |

If you have been following along in this guide, the EMAGENT should not be running since the instance on the node being deleted was [removed from OEM Database Control Monitoring](http://www.idevelopment.info/data/Oracle/DBA_tips/Oracle11gRAC/CLUSTER_24.shtml#Remove Instance from OEM Database Control Monitoring).

Next, disable the Oracle Clusterware applications and daemons running on the node to be deleted from the cluster. Run the rootcrs.pl script as root from the *Grid\_home*/crs/install directory on the node to be deleted.

|  |
| --- |
| [root@racnode3 ~]# **GRID\_HOME=/u01/app/11.2.0/grid**  [root@racnode3 ~]# **export GRID\_HOME**  [root@racnode3 ~]# **cd $GRID\_HOME/crs/install**  [root@racnode3 ~]# **./rootcrs.pl -deconfig -force**  Using configuration parameter file: ./crsconfig\_params  Network exists: 1/192.168.1.0/255.255.255.0/eth0, type static  VIP exists: /racnode1-vip/192.168.1.251/192.168.1.0/255.255.255.0/eth0, hosting node racnode1  VIP exists: /racnode2-vip/192.168.1.252/192.168.1.0/255.255.255.0/eth0, hosting node racnode2  VIP exists: /racnode3-vip/192.168.1.253/192.168.1.0/255.255.255.0/eth0, hosting node racnode3  GSD exists  ONS exists: Local port 6100, remote port 6200, EM port 2016  CRS-2673: Attempting to stop 'ora.registry.acfs' on 'racnode3'  CRS-2677: Stop of 'ora.registry.acfs' on 'racnode3' succeeded  CRS-2791: Starting shutdown of Oracle High Availability Services-managed resources on 'racnode3'  CRS-2673: Attempting to stop 'ora.crsd' on 'racnode3'  CRS-2790: Starting shutdown of Cluster Ready Services-managed resources on 'racnode3'  CRS-2673: Attempting to stop 'ora.oc4j' on 'racnode3'  CRS-2673: Attempting to stop 'ora.CRS.dg' on 'racnode3'  CRS-2673: Attempting to stop 'ora.FRA.dg' on 'racnode3'  CRS-2673: Attempting to stop 'ora.RACDB\_DATA.dg' on 'racnode3'  CRS-2673: Attempting to stop 'ora.DOCS.dg' on 'racnode3'  CRS-2677: Stop of 'ora.FRA.dg' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.RACDB\_DATA.dg' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.DOCS.dg' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.oc4j' on 'racnode3' succeeded  CRS-2672: Attempting to start 'ora.oc4j' on 'racnode2'  CRS-2676: Start of 'ora.oc4j' on 'racnode2' succeeded  CRS-2677: Stop of 'ora.CRS.dg' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.asm' on 'racnode3'  CRS-2677: Stop of 'ora.asm' on 'racnode3' succeeded  CRS-2792: Shutdown of Cluster Ready Services-managed resources on 'racnode3' has completed  CRS-2677: Stop of 'ora.crsd' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.drivers.acfs' on 'racnode3'  CRS-2673: Attempting to stop 'ora.mdnsd' on 'racnode3'  CRS-2673: Attempting to stop 'ora.crf' on 'racnode3'  CRS-2673: Attempting to stop 'ora.ctssd' on 'racnode3'  CRS-2673: Attempting to stop 'ora.evmd' on 'racnode3'  CRS-2673: Attempting to stop 'ora.asm' on 'racnode3'  CRS-2677: Stop of 'ora.mdnsd' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.crf' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.evmd' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.ctssd' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.drivers.acfs' on 'racnode3' succeeded  CRS-2677: Stop of 'ora.asm' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.cluster\_interconnect.haip' on 'racnode3'  CRS-2677: Stop of 'ora.cluster\_interconnect.haip' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.cssd' on 'racnode3'  CRS-2677: Stop of 'ora.cssd' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.gipcd' on 'racnode3'  CRS-2677: Stop of 'ora.gipcd' on 'racnode3' succeeded  CRS-2673: Attempting to stop 'ora.gpnpd' on 'racnode3'  CRS-2677: Stop of 'ora.gpnpd' on 'racnode3' succeeded  CRS-2793: Shutdown of Oracle High Availability Services-managed resources on 'racnode3' has completed  CRS-4133: Oracle High Availability Services has been stopped.  Successfully deconfigured Oracle clusterware stack on this node |

## Delete Node from Clusterware Configuration

From a node that is to remain a member of the Oracle RAC, run the following command from the *Grid\_home*/bin directory as root to update the Clusterware configuration to delete the node from the cluster.

|  |
| --- |
| [root@racnode1 ~]# **$GRID\_HOME/bin/crsctl delete node -n racnode3**  CRS-4661: Node racnode3 successfully deleted.  [root@racnode1 ~]# **$GRID\_HOME/bin/olsnodes -t -s**  racnode1 Active Unpinned  racnode2 Active Unpinned |

where racnode3 is the node to be deleted.

## Update Oracle Inventory - (Node Being Removed)

As the Oracle Grid Infrastructure owner, execute runInstaller from *Grid\_home*/oui/bin on the node being removed to update the inventory. Set "CLUSTER\_NODES={*name\_of\_node\_to\_delete*}". Note that this step is missing in the official Oracle Documentation (*Oracle Clusterware Administration and Deployment Guide 11g Release 2 (11.2) E10717-11 April 2010*).

|  |
| --- |
| [grid@racnode3 ~]$ **cd $GRID\_HOME/oui/bin**  [grid@racnode3 bin]$ **./runInstaller -updateNodeList ORACLE\_HOME=$GRID\_HOME "CLUSTER\_NODES={racnode3}" CRS=TRUE -local**  Starting Oracle Universal Installer...  Checking swap space: must be greater than 500 MB. Actual 9983 MB Passed  The inventory pointer is located at /etc/oraInst.loc  The inventory is located at /u01/app/oraInventory  'UpdateNodeList' was successful. |

After executing runInstaller on the node to be deleted, the inventory.xml file on that node (/u01/app/oraInventory/ContentsXML/inventory.xml) will show only the node to be deleted under the Grid home name.

|  |
| --- |
| ...  <HOME NAME="Ora11g\_gridinfrahome1" LOC="/u01/app/11.2.0/grid" TYPE="O" IDX="1" CRS="true">  <NODE\_LIST>  <NODE NAME="racnode3"/>  </NODE\_LIST>  </HOME>  ... |

The inventory.xml file on the other nodes will still show all of the nodes in the cluster. The inventory on the remaining nodes will be updated after de-installing the Oracle Grid Infrastructure software.

|  |
| --- |
| ...  <HOME NAME="Ora11g\_gridinfrahome1" LOC="/u01/app/11.2.0/grid" TYPE="O" IDX="1" CRS="true">  <NODE\_LIST>  <NODE NAME="racnode1"/>  <NODE NAME="racnode2"/>  <NODE NAME="racnode3"/>  </NODE\_LIST>  </HOME>  ... |

## De-install Oracle Grid Infrastructure Software

When using a non-shared Grid home (as is the case in this example guide), run deinstall as the Grid Infrastructure software owner from the node to be removed in order to delete the Oracle Grid Infrastructure software.

|  |
| --- |
| [grid@racnode3 ~]$ **cd $GRID\_HOME/deinstall**  [grid@racnode3 deinstall]$ **./deinstall -local**  Checking for required files and bootstrapping ...  Please wait ...  Location of logs /tmp/deinstall2012-05-07\_01-21-53PM/logs/  ############ ORACLE DEINSTALL & DECONFIG TOOL START ############  ######################### CHECK OPERATION START #########################  ## [START] Install check configuration ##  Checking for existence of the Oracle home location /u01/app/11.2.0/grid  Oracle Home type selected for deinstall is: Oracle Grid Infrastructure for a Cluster  Oracle Base selected for deinstall is: /u01/app/grid  Checking for existence of central inventory location /u01/app/oraInventory  Checking for existence of the Oracle Grid Infrastructure home  The following nodes are part of this cluster: racnode3  Checking for sufficient temp space availability on node(s) : 'racnode3'  ## [END] Install check configuration ##  Traces log file: /tmp/deinstall2012-05-07\_01-21-53PM/logs//crsdc.log  Enter an address or the name of the virtual IP used on node "racnode3"[racnode3-vip]  >  **[ENTER]**  The following information can be collected by running "/sbin/ifconfig -a" on node "racnode3"  Enter the IP netmask of Virtual IP "192.168.1.253" on node "racnode3"[255.255.255.0]  >  **[ENTER]**  Enter the network interface name on which the virtual IP address "192.168.1.253" is active  >  **[ENTER]**  Enter an address or the name of the virtual IP[]  >  **[ENTER]**  Network Configuration check config START  Network de-configuration trace file location:  /tmp/deinstall2012-05-07\_01-21-53PM/logs/netdc\_check2012-05-07\_01-22-16-PM.log  Specify all RAC listeners (do not include SCAN listener) that are to be de-configured  [LISTENER,LISTENER\_SCAN3,LISTENER\_SCAN2,LISTENER\_SCAN1]:**LISTENER**  At least one listener from the discovered listener list  [LISTENER,LISTENER\_SCAN3,LISTENER\_SCAN2,LISTENER\_SCAN1] is missing in the specified listener  list [LISTENER]. The Oracle home will be cleaned up, so all the listeners will not be available  after deinstall. If you want to remove a specific listener, please use Oracle Net Configuration  Assistant instead. Do you want to continue? (y|n) [n]: **y**  Network Configuration check config END  Asm Check Configuration START  ASM de-configuration trace file location:  /tmp/deinstall2012-05-07\_01-21-53PM/logs/asmcadc\_check2012-05-07\_01-25-11-PM.log  ######################### CHECK OPERATION END #########################  ####################### CHECK OPERATION SUMMARY #######################  Oracle Grid Infrastructure Home is:  The cluster node(s) on which the Oracle home deinstallation will be performed are:racnode3  Since -local option has been specified, the Oracle home will be deinstalled only on the  local node, 'racnode3', and the global configuration will be removed.  Oracle Home selected for deinstall is: /u01/app/11.2.0/grid  Inventory Location where the Oracle home registered is: /u01/app/oraInventory  Following RAC listener(s) will be de-configured: LISTENER  Option -local will not modify any ASM configuration.  Do you want to continue (y - yes, n - no)? [n]: **y**  A log of this session will be written to:  '/tmp/deinstall2012-05-07\_01-21-53PM/logs/deinstall\_deconfig2012-05-07\_01-21-56-PM.out'  Any error messages from this session will be written to:  '/tmp/deinstall2012-05-07\_01-21-53PM/logs/deinstall\_deconfig2012-05-07\_01-21-56-PM.err'  ######################## CLEAN OPERATION START ########################  ASM de-configuration trace file location:  /tmp/deinstall2012-05-07\_01-21-53PM/logs/asmcadc\_clean2012-05-07\_01-25-16-PM.log  ASM Clean Configuration END  Network Configuration clean config START  Network de-configuration trace file location:  /tmp/deinstall2012-05-07\_01-21-53PM/logs/netdc\_clean2012-05-07\_01-25-16-PM.log  De-configuring RAC listener(s): LISTENER  De-configuring listener: LISTENER  Stopping listener on node "racnode3": LISTENER  Warning: Failed to stop listener. Listener may not be running.  Listener de-configured successfully.  De-configuring Naming Methods configuration file...  Naming Methods configuration file de-configured successfully.  De-configuring backup files...  Backup files de-configured successfully.  The network configuration has been cleaned up successfully.  Network Configuration clean config END  ---------------------------------------->  The deconfig command below can be executed in parallel on all the remote nodes.  Execute the command on the local node after the execution completes on all the  remote nodes.  Run the following command as the root user or the administrator on node "racnode3".  /tmp/deinstall2012-05-07\_01-21-53PM/perl/bin/perl \  -I/tmp/deinstall2012-05-07\_01-21-53PM/perl/lib \  -I/tmp/deinstall2012-05-07\_01-21-53PM/crs/install \  /tmp/deinstall2012-05-07\_01-21-53PM/crs/install/rootcrs.pl \  -force \  -deconfig \  -paramfile "/tmp/deinstall2012-05-07\_01-21-53PM/response/deinstall\_Ora11g\_gridinfrahome1.rsp"  Press Enter after you finish running the above commands  <----------------------------------------  Run the above command as root on the specified node(s) from a different shell:  [root@racnode3 ~]# **/tmp/deinstall2012-05-07\_01-21-53PM/perl/bin/perl \**  **-I/tmp/deinstall2012-05-07\_01-21-53PM/perl/lib \**  **-I/tmp/deinstall2012-05-07\_01-21-53PM/crs/install \**  **/tmp/deinstall2012-05-07\_01-21-53PM/crs/install/rootcrs.pl \**  **-force \**  **-deconfig \**  **-paramfile "/tmp/deinstall2012-05-07\_01-21-53PM/response/deinstall\_Ora11g\_gridinfrahome1.rsp"**  Using configuration parameter file: /tmp/deinstall2012-05-07\_01-21-53PM/response/deinstall\_Ora11g\_gridinfrahome1.rsp  \*\*\*\*Unable to retrieve Oracle Clusterware home.  Start Oracle Clusterware stack and try again.  CRS-4047: No Oracle Clusterware components configured.  CRS-4000: Command Stop failed, or completed with errors.  CRS-4047: No Oracle Clusterware components configured.  CRS-4000: Command Stop failed, or completed with errors.  ################################################################  # You must kill processes or reboot the system to properly #  # cleanup the processes started by Oracle clusterware #  ################################################################  ACFS-9313: No ADVM/ACFS installation detected.  Either /etc/oracle/olr.loc does not exist or is not readable  Make sure the file exists and it has read and execute access  Either /etc/oracle/olr.loc does not exist or is not readable  Make sure the file exists and it has read and execute access  Failure in execution (rc=-1, 256, No such file or directory) for command /etc/init.d/ohasd deinstall  error: package cvuqdisk is not installed  Successfully deconfigured Oracle clusterware stack on this node  Once completed press [ENTER] on the first shell session:  Remove the directory: /tmp/deinstall2012-05-07\_01-21-53PM on node:  Setting the force flag to false  Setting the force flag to cleanup the Oracle Base  Oracle Universal Installer clean START  Detach Oracle home '/u01/app/11.2.0/grid' from the central inventory on the local node : Done  Delete directory '/u01/app/11.2.0/grid' on the local node : Done  Delete directory '/u01/app/oraInventory' on the local node : Done  Delete directory '/u01/app/grid' on the local node : Done  Oracle Universal Installer cleanup was successful.  Oracle Universal Installer clean END  ## [START] Oracle install clean ##  Clean install operation removing temporary directory '/tmp/deinstall2012-05-07\_01-21-53PM' on node 'racnode3'  ## [END] Oracle install clean ##  ######################### CLEAN OPERATION END #########################  ####################### CLEAN OPERATION SUMMARY #######################  Following RAC listener(s) were de-configured successfully: LISTENER  Oracle Clusterware is stopped and successfully de-configured on node "racnode3"  Oracle Clusterware is stopped and de-configured successfully.  Successfully detached Oracle home '/u01/app/11.2.0/grid' from the central inventory on the local node.  Successfully deleted directory '/u01/app/11.2.0/grid' on the local node.  Successfully deleted directory '/u01/app/oraInventory' on the local node.  Successfully deleted directory '/u01/app/grid' on the local node.  Oracle Universal Installer cleanup was successful.  Run 'rm -rf /etc/oraInst.loc' as root on node(s) 'racnode3' at the end of the session.  Run 'rm -rf /opt/ORCLfmap' as root on node(s) 'racnode3' at the end of the session.  Oracle deinstall tool successfully cleaned up temporary directories.  #######################################################################  ############# ORACLE DEINSTALL & DECONFIG TOOL END #############  Remove specified files as root:  [root@racnode3 ~]# **rm -rf /etc/oraInst.loc**  [root@racnode3 ~]# **rm -rf /opt/ORCLfmap**  [root@racnode3 ~]# **rm -rf /u01/app/11.2.0**  [root@racnode3 ~]# **rm -rf /u01/app/oracle** |

Review the complete [deinstall output](http://www.idevelopment.info/data/Oracle/DBA_tips/Oracle11gRAC/resources/RemoveNode11gR2RACOnRHEL55/deinstall_grid.txt).

After the de-install completes, verify that the /etc/inittab file does not start Oracle Clusterware.

|  |
| --- |
| [root@racnode3 ~]# **diff /etc/inittab /etc/inittab.no\_crs**  [root@racnode3 ~]# |

## Update Oracle Inventory - (All Remaining Nodes)

From one of the nodes that is to remain part of the cluster, execute runInstaller (without the -local option) as the Grid Infrastructure software owner to update the inventories with a list of the nodes that are to remain in the cluster. Use the CLUSTER\_NODES option to specify the nodes that will remain in the cluster.

|  |
| --- |
| [grid@racnode1 ~]$ **cd $GRID\_HOME/oui/bin**  [grid@racnode1 bin]$ **./runInstaller -updateNodeList ORACLE\_HOME=$GRID\_HOME "CLUSTER\_NODES={racnode1,racnode2}" CRS=TRUE**  Starting Oracle Universal Installer...  Checking swap space: must be greater than 500 MB. Actual 9559 MB Passed  The inventory pointer is located at /etc/oraInst.loc  The inventory is located at /u01/app/oraInventory  'UpdateNodeList' was successful. |

Review the inventory.xml file on each remaining node in the cluster to verify the Grid home name does not include the node being removed.

|  |
| --- |
| ...  <HOME NAME="Ora11g\_gridinfrahome1" LOC="/u01/app/11.2.0/grid" TYPE="O" IDX="1" CRS="true">  <NODE\_LIST>  <NODE NAME="racnode1"/>  <NODE NAME="racnode2"/>  </NODE\_LIST>  </HOME>  ... |

## Verify New Cluster Configuration

Run the following CVU command to verify that the specified node has been successfully deleted from the cluster.

|  |
| --- |
| [grid@racnode1 ~]$ **cluvfy stage -post nodedel -n racnode3 -verbose**  Performing post-checks for node removal  Checking CRS integrity...  Clusterware version consistency passed  The Oracle Clusterware is healthy on node "racnode2"  The Oracle Clusterware is healthy on node "racnode1"  CRS integrity check passed  Result:  Node removal check passed  Post-check for node removal was successful. |

At this point, racnode3 is no longer a member of the cluster. However, if an OCR dump is taken from one of the reamining nodes, information about the deleted node is still contained in the OCRDUMPFILE.

|  |
| --- |
| [grid@racnode1 ~]$ **ocrdump** |

|  |
| --- |
| [SYSTEM.crs.e2eport.racnode3]  ORATEXT : (ADDRESS=(PROTOCOL=tcp)(HOST=192.168.3.153)(PORT=50989))  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION :  PROCR\_NONE, OTHER\_PERMISSION : PROCR\_NONE, USER\_NAME : grid, GROUP\_NAME : oinstall}  ...  [SYSTEM.OCR.BACKUP.2.NODENAME]  ORATEXT : racnode3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION :  PROCR\_READ, OTHER\_PERMISSION : PROCR\_READ, USER\_NAME : root, GROUP\_NAME : root}  ...  [SYSTEM.OCR.BACKUP.DAY.NODENAME]  ORATEXT : racnode3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION :  PROCR\_READ, OTHER\_PERMISSION : PROCR\_READ, USER\_NAME : root, GROUP\_NAME : root}  ...  [SYSTEM.OCR.BACKUP.DAY\_.NODENAME]  ORATEXT : racnode3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : root, GROUP\_NAME : root}  ...  [SYSTEM.OCR.BACKUP.WEEK\_.NODENAME]  ORATEXT : racnode3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : root, GROUP\_NAME : root}  ...  [DATABASE.ASM.racnode3]  ORATEXT : racnode3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : grid, GROUP\_NAME : oinstall}  [DATABASE.ASM.racnode3.+asm3]  ORATEXT : +ASM3  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : grid, GROUP\_NAME : oinstall}  [DATABASE.ASM.racnode3.+asm3.ORACLE\_HOME]  ORATEXT : /u01/app/11.2.0/grid  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : grid, GROUP\_NAME : oinstall}  [DATABASE.ASM.racnode3.+asm3.ENABLED]  ORATEXT : true  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : grid, GROUP\_NAME : oinstall}  [DATABASE.ASM.racnode3.+asm3.VERSION]  ORATEXT : 11.2.0.3.0  SECURITY : {USER\_PERMISSION : PROCR\_ALL\_ACCESS, GROUP\_PERMISSION : PROCR\_READ, OTHER\_PERMISSION :  PROCR\_READ, USER\_NAME : grid, GROUP\_NAME : oinstall} |

This does not mean that the node wasn't removed properly. It is still possible to add the node again with the same hostname, IP address, VIP, etc. anytime in the future.

# Remove Remaining Components

## Remove ASMLib

Remove the ASMLib kernel driver, supporting software, and associated directories from racnode3.

|  |
| --- |
| [root@racnode3 ~]# **/usr/sbin/oracleasm exit**  Unmounting ASMlib driver filesystem: /dev/oracleasm  Unloading module "oracleasm": oracleasm  [root@racnode3 ~]# **rpm -qa | grep oracleasm**  oracleasmlib-2.0.4-1.el5  oracleasm-2.6.18-274.el5-2.0.5-1.el5  oracleasm-support-2.1.7-1.el5  [root@racnode3 ~]# **rpm -ev oracleasmlib-2.0.4-1.el5 oracleasm-2.6.18-274.el5-2.0.5-1.el5 oracleasm-support-2.1.7-1.el5**  warning: /etc/sysconfig/oracleasm saved as /etc/sysconfig/oracleasm.rpmsave  [root@racnode3 ~]# **rm -f /etc/sysconfig/oracleasm.rpmsave**  [root@racnode3 ~]# **rm -f /etc/sysconfig/oracleasm-\_dev\_oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc2.d/S29oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc0.d/K20oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc5.d/S29oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc4.d/S29oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc1.d/K20oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc3.d/S29oracleasm**  [root@racnode3 ~]# **rm -f /etc/rc.d/rc6.d/K20oracleasm** |

## Remove Oracle Software Owners Accounts

Finally, remove the Grid and Oracle user accounts and all associated UNIX groups from racnode3.

|  |
| --- |
| [root@racnode3 ~]# **userdel -r grid**  [root@racnode3 ~]# **userdel -r oracle**  [root@racnode3 ~]# **groupdel oinstall**  [root@racnode3 ~]# **groupdel asmadmin**  [root@racnode3 ~]# **groupdel asmdba**  [root@racnode3 ~]# **groupdel asmoper**  [root@racnode3 ~]# **groupdel dba**  [root@racnode3 ~]# **groupdel oper** |