**How to remove/delete a node from Grid Infrastructure Clusterware when the node has failed (Doc ID 1262925.1)**

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**Applies to:**

Oracle Database - Enterprise Edition - Version 11.2.0.1 and later  
 Information in this document applies to any platform.

**Goal**

This document is intented to provide the steps to be taken to remove a node from the Oracle cluster.

The node itself is unavailable due to some OS issue or hardware issue which prevents the node from starting up.

It is also possible to use this note to remove the node and add it back in situations where the GRID home has been corrupted and the clusterware needs to be rebuilt from the ground up on the problem node.

This document will provide the steps to remove such a node so that it can be added back after the node is fixed.

The steps to remove a node from a Cluster is already documented in the Oracle documentation at

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| **Version** | **Documentation Link** |
| 11gR2 | <https://docs.oracle.com/cd/E11882_01/rac.112/e41959/adddelclusterware.htm#CHDFIAIE> |

This note is different because the documentation covers the scenario where the node is accessible and the removal is a planned procedure.

This note covers the scenario where the Node is unable to boot up and therefore it is not possible to run the clusterware commands from this node.

Please note that after using the information provided here to remove the 'problem' node, if it is subsequently restarted at a later date, it will rejoin the Cluster.

This fact has been reported under internal bug:17058972 - Development are currently considering this bug.

For 10gR2 or 11gR1, refer to [note 466975.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=466975.1)

**Solution**

**Removing a Node from an 11.2 Cluster where the node no longer exists.**

The following steps demonstrate the process for removing a node from a Grid Infrastructure Cluster:  
  
 Please Note this demonstrates the process in a test environment using the conditions specified in the environment section below which may not necessarily match those of your environment.

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 The environment  
 ------------------------  
  
 2 Node 11.2 Grid Cluster, Nodes sage and thyme  
 ASM based Storage  
 2 Node RAC Database where the Instances are Administrator Managed (not policy managed), plb112i1 and plb112i2  
 1 Service plb1 running as preferred on both RAC Instances  
  
  
 The Issue  
 -----------------  
  
 Node 2 thyme is lost, cannot be recovered and needs to be removed from the cluster.

The following video links to a flash video demonstrating the initial steps in removing a failed node from the cluster.

Given that flash is no longer available from MOS, to view this video, right click the hyperlink title and choose 'Save Link As...'/'Save Target As...' Then save the file with a filename extention of swf - this can then be played.



Video - [Delete A Failed Grid Node Video 1 (5:00)](https://support.oracle.com/epmos/main/downloadattachmentprocessor?parent=DOCUMENT&sourceId=1262925.1&attachid=1262925.1:DeleteNodeGridVideo1&width=100%25&height=100%25)

[](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=778.1)

The process for performing the removal of a failed node has been based on the node deletion processes documented in the Grid and RAC administration guides.

Documentation Reference:  
  
 <https://docs.oracle.com/cd/E11882_01/rac.112/e41960/adddelunix.htm#BEIEEAFC> Oracle Real Application Clusters Administration and Deployment Guide  
 11g Release 2 (11.2)  
 Part Number E16795-08  
  
 10 Adding and Deleting Oracle RAC from Nodes on Linux and UNIX Systems  
  
 - Deleting Oracle RAC from a Cluster Node

***1. Reconfigure the RDBMS Services in the cluster to take into account node 2 is gone.***

1.1 Reconfigure the Service plb1 so that it is only running on the remaining instance.

[oracle@sage ~]$ srvctl modify service -d db112i -s plb1 -n -i db112i1 -f

1.2 Examine the configuration to ensure the service is removed from instance db112i2 and node Thyme.

[oracle@sage ~]$ srvctl status service -d db112i -s plb1  
 Service plb1 is running on instance(s) db112i1  
  
 [root@sage ~]# /opt/app/oracle/product/grid/bin/crsctl stat res -t  
 ..  
 ora.db112i.plb1.svc  
 1 ONLINE ONLINE sage  
 ..

***2. Reconfigure the RDBMS Instances in the cluster to take into account node 2 is gone.***

2.1. Remove the database instances. As this is an Administrator Managed database this can be performed through dbca. From the RAC Instance Management section in dbca follow the wizard to remove the Instance db112i2 from node 2 thyme.

[oracle@sage ~]$ dbca  
 [oracle@sage ~]$  
  
 [oracle@sage ~]$ srvctl config database -d db112i  
 Database unique name: db112i  
 Database name: db112i  
 Oracle home: /opt/app/oracle/database/11.2/db\_1  
 Oracle user: oracle  
 Spfile: +DATA1/db112i/spfiledb112i.ora  
 Domain: vmdom  
 Start options: open  
 Stop options: immediate  
 Database role: PRIMARY  
 Management policy: AUTOMATIC  
 Server pools: db112i  
 Database instances: db112i1  
 Disk Groups: DATA1  
 Services: plb1  
 Database is administrator managed  
  
 [root@sage ~]# /opt/app/oracle/product/grid/bin/crsctl stat res -t  
 ..  
 ora.db112i.db  
 1 ONLINE ONLINE sage Open  
 ora.db112i.plb1.svc  
 1 ONLINE ONLINE sage  
 ..

***3. Remove the Node from the RAC Cluster***

The following video links to a flash video demonstrating the final steps in removing a failed node from the cluster.

Given that flash is no longer available from MOS, to view this video, right click the hyperlink title and choose 'Save Link As...'/'Save Target As...' Then save the file with a filename extention of swf - this can then be played.



Video - [Delete A Failed Grid Node Video 2 (4:00)](https://support.oracle.com/epmos/main/downloadattachmentprocessor?parent=DOCUMENT&sourceId=1262925.1&attachid=1262925.1:DeleteNodeGridVideo2&width=100%25&height=100%25)

[](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=778.1)

3.1 Using the Installer remove the failed node from Inventory of the Remaining Node(s)

[oracle@sage ~]$ cd $ORACLE\_HOME/oui/bin  
 [oracle@sage bin]$ ./runInstaller -updateNodeList ORACLE\_HOME=/opt/app/oracle/database/11.2/db\_1 "CLUSTER\_NODES={sage}"  
 Starting Oracle Universal Installer...  
  
 Checking swap space: must be greater than 500 MB. Actual 2601 MB Passed  
 The inventory pointer is located at /etc/oraInst.loc  
 The inventory is located at /opt/app/oracle/oraInventory  
 'UpdateNodeList' was successful.

***4. Remove the Node from the Grid Cluster***

The process for performing the removal of a failed node has been based on the node deletion processes documented in the Grid and RAC administration guides.

Documentation Reference:  
  
 Oracle Clusterware Administration and Deployment Guide  
 11g Release 2 (11.2)  
 Part Number E16794-08  
  
 4 Adding and Deleting Cluster Nodes  
  
 <https://docs.oracle.com/cd/E11882_01/rac.112/e41959/adddelclusterware.htm#BEIFDCAF>

From any node that you are not deleting,  run the following commands from the Grid\_home/bin directory as root to delete the node from the cluster:  
  
 4.1 Stop the VIP resource for the node thyme

[root@sage bin]# ./srvctl stop vip -i thyme

4.2 Remove the VIP for the node thyme

[root@sage bin]# ./srvctl remove vip -i thyme -f

4.3 Check the state of the environment and ensure the VIP for node thyme is removed.

[root@sage bin]# ./crsctl stat res -t  
  
 ..  
 ora.sage.vip  
 1 ONLINE ONLINE sage  
 ..

4.4 Remove node 2, thyme from the Grid Infrastructure/clusterware

If the node is pinned, try to unpin it first:

olsnodes -s -t  
 crsctl unpin css -n <node>

# crsctl delete node -n thyme

4.5 As the owner of the Grid Infrastructure Installation perform the following to clean up the Grid Infrastructure inventory on the remaining nodes (in this case node 1, sage).

[root@sage bin]# su - oracle  
 [oracle@sage ~]$ . oraenv db112i1  
  
 [oracle@sage ~]$ cd $ORACLE\_HOME/oui/bin  
  
 [oracle@sage ~]$ ./runInstaller -updateNodeList ORACLE\_HOME=/opt/app/oracle/product/grid "CLUSTER\_NODES={sage}" CRS=TRUE -silent

4.6  As root now list the nodes that are a part of the cluster to confirm the node required (thyme) has been removed successfully and the only remaining node in this case is node sage.  
  
 At the end of this process only the node sage remains as a part of the cluster.

[root@sage bin]# ./olsnodes

sage

**REFERENCES**

[NOTE:466975.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=466975.1) - Steps to Remove Node from Cluster When the Node Crashes Due to OS/Hardware Failure and cannot boot up  
[NOTE:778.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=778.1) - Troubleshooting Video Issues in MOS

[NOTE:1332451.1](https://support.oracle.com/epmos/faces/DocumentDisplay?parent=DOCUMENT&sourceId=1262925.1&id=1332451.1) - How to Add Node/Instance or Remove Node/Instance in 10gR2, 11gR1 and 11gR2 Oracle Clusterware and RAC