

Borrar un nodo en un RAC 11gr2

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Para el sitio



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1. Introducción

El siguiente documento explica de una forma muy superficial los principales pasos para llevar a cabo la eliminación de un nodo del RAC..

Se mencionan a paso a paso los comandos necesarios y la salida de aquellos comandos... ya sea pasando por la eliminación de la instancia Oracle en ejecución en el nodo, la desinstalación del motor Oracle y la desinstalación del Grid Infrastructure...

2. Ejecutar un “unpin” de los nodos

Para poder eliminar un nodo desde un RAC lo primero que se debe ejecutar es el comando unpin, que no es más que nada un indicativo a Oracle Clusterware para desprender un nodo del RAC.

La sintáxis del comando es

```
crsctl unpin css -n node1 node4
```

Este commando va de forma implícita en el commando crsctl delete node

Para poder eliminar un nodo del cluster, en nuestro caso el nodo número 3 , ejecutamos los siguientes comandos

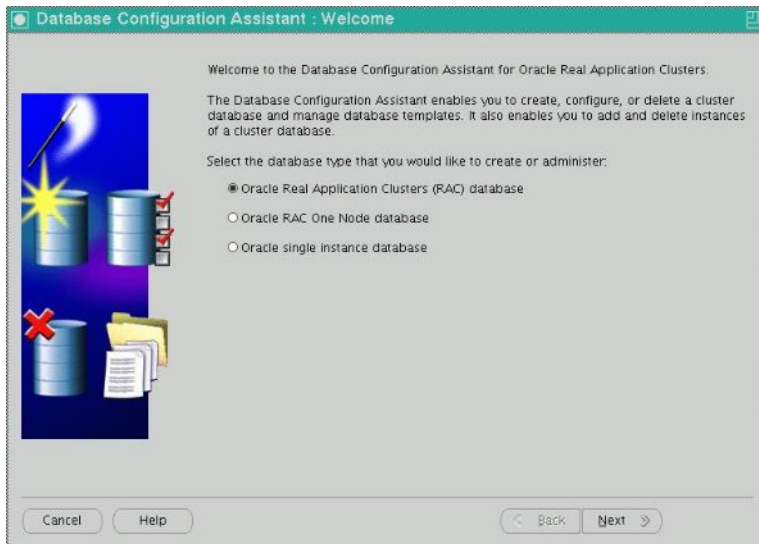
```
[root@nodo1 oracle]# env | grep ORACLE
ORACLE_SID=+ASM1
ORACLE_HOME=/u01/app/11.2.0/grid
[root@nodo1 oracle]#
[root@nodo1 oracle]# id
uid=0(root) gid=0(root) groups=0(root),1(bin),2(daemon),3(sys),4(adm),6(disk),10(wheel)
[root@nodo1 oracle]#
[root@nodo1 oracle]# crsctl unpin css -n nodo3
CRS-4667: Node nodo3 successfully unpinned.
[root@nodo1 oracle]#
```

```
[root@nodo2 oracle]# env | grep ORACLE
ORACLE_SID=+ASM2
ORACLE_HOME=/u01/app/11.2.0/grid
[root@nodo2 oracle]#
[root@nodo2 oracle]# id
uid=0(root) gid=0(root) groups=0(root),1(bin),2(daemon),3(sys),4(adm),6(disk),10(wheel)
[root@nodo2 oracle]#
[root@nodo2 oracle]# crsctl unpin css -n nodo3
CRS-4667: Node nodo3 successfully unpinned.
[root@nodo2 oracle]#
```

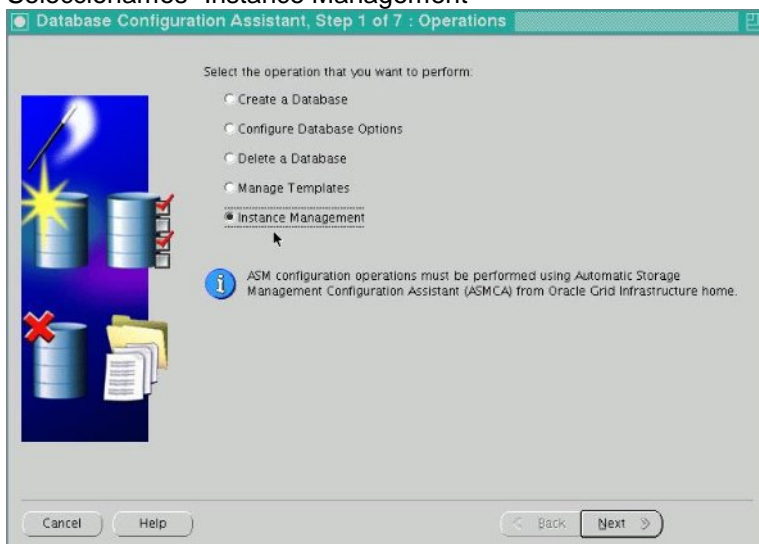
3. Borrado de la instancia a través de DBCA

Procedemos a ejecutar el comando dbca, con lo cual nos traerá la consola gráfica

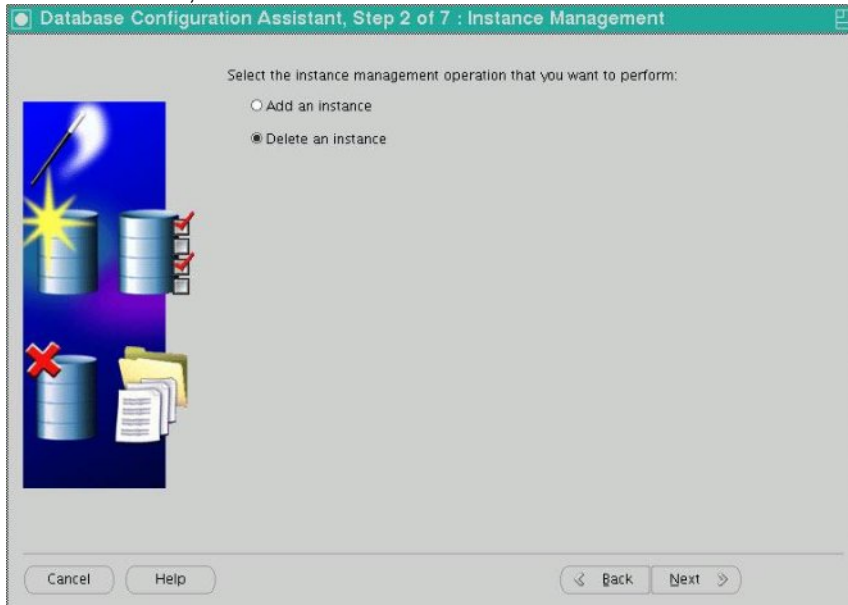
Acá seleccionamos “Oracle Real Application Clusters (RAC) database”



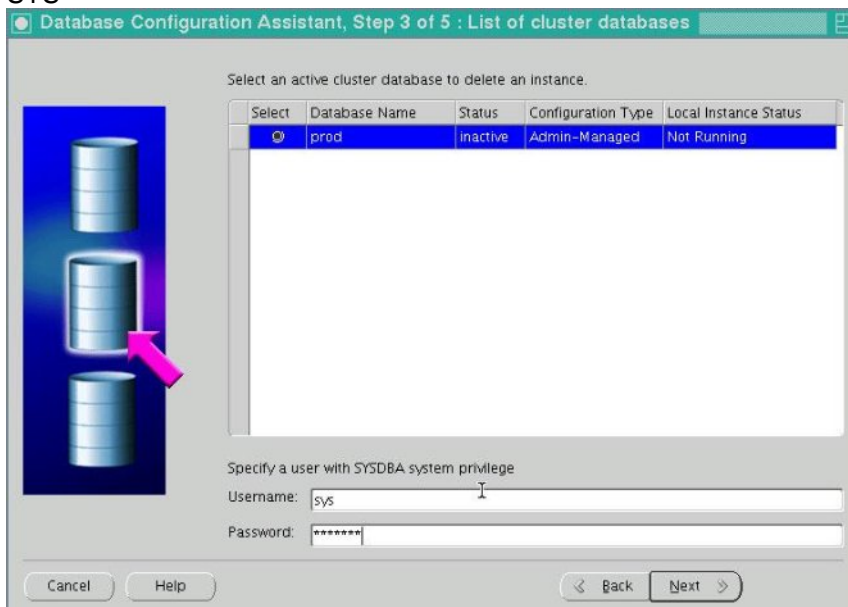
Seleccionamos “Instance Management”



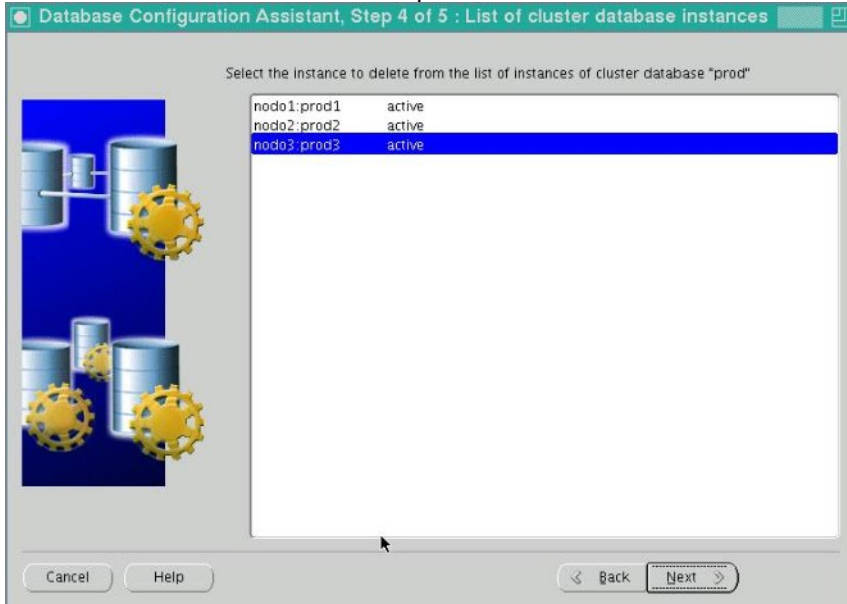
A continuación , seleccionamos "Delete an Instance"



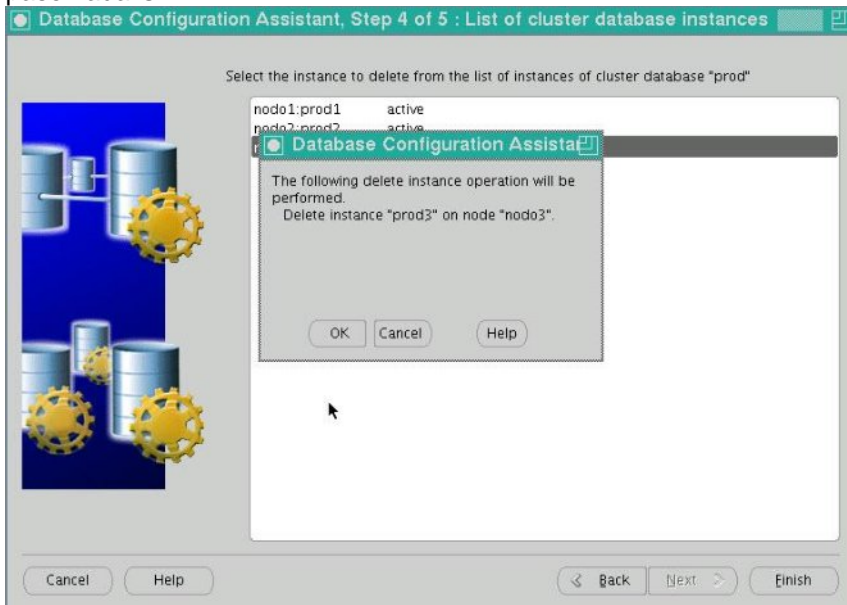
Acá seleccionamos la base de datos con la cual estamos trabajando e ingresamos la password de SYS



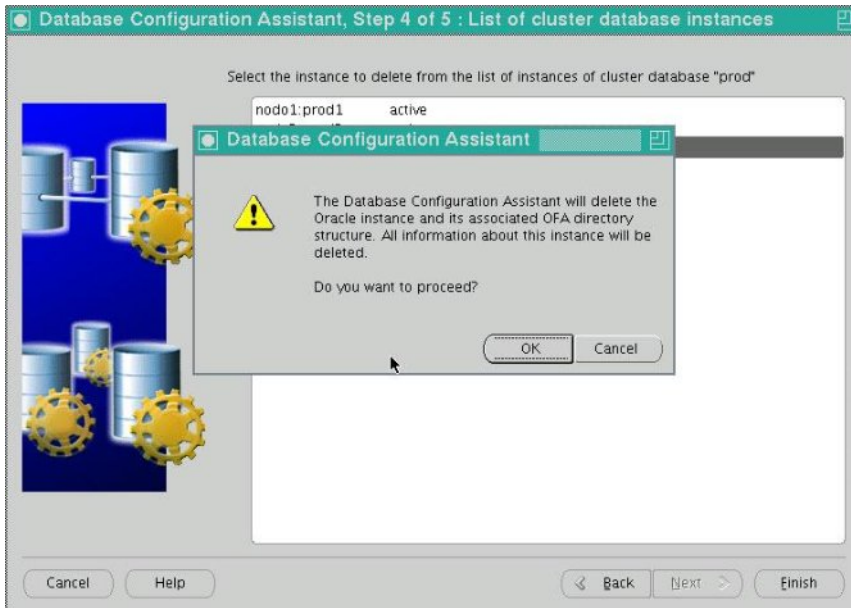
Seleccionamos el nodo en donde queremos realizar la eliminación de la instancia (nodo3)



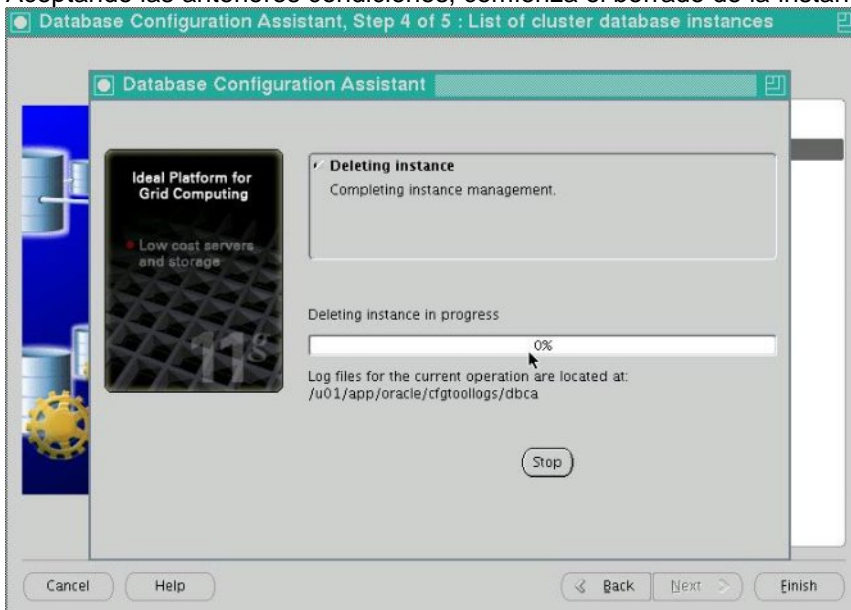
Nos preguntará si deseamos eliminar la instancia, en este punto podemos arrepentirnos sin que pase nada ☺



Nos vuelve a consultar.... ☺



Aceptando las anteriores condiciones, comienza el borrado de la instancia...



Si vamos a las restantes instancias y hacemos una consulta sobre la `v$thread` , veremos que ahora hay sólo 2 instancias disponibles para la base de datos prod

```
SQL> r
1* select thread#, status, instance from v$thread

  THREAD# STATUS INSTANCE
-----
         1 OPEN   prod1
         2 OPEN   prod2

SQL>
```


4. Deshabilitación de los listeners en el nodo

Chequemos si hay listener corriendo en el nodo que deseamos eliminar del RAC , si así fuese , debemos ejecutar los siguientes comandos

```
srvctl disable listener -n <nodo>
```

```
srvctl disable listener -n <nodo>
```

Para el caso nuestro la ejecución quedaría como sigue

```
oracle@nodo3 $ ps -fea | grep lsnr
oracle   9546 24537  0 21:25 pts/2    00:00:00 grep lsnr
oracle  26004      1  0 Sep13 ?        00:00:01 /u01/app/11.2.0/grid/bin/tnslsnr LISTENER -
inherit
oracle   28577      1  0 Sep13 ?        00:00:01 /u01/app/11.2.0/grid/bin/tnslsnr
LISTENER_SCAN1 -inherit
oracle@nodo3 $ srvctl disable listener -n nodo3
oracle@nodo3 $
oracle@nodo3 $ srvctl stop listener -n nodo3
oracle@nodo3 $
oracle@nodo3 $
oracle@nodo3 $ ps -fea | grep lsnr
oracle   9659 24537  0 21:26 pts/2    00:00:00 grep lsnr
oracle   28577      1  0 Sep13 ?        00:00:01 /u01/app/11.2.0/grid/bin/tnslsnr
LISTENER_SCAN1 -inherit
oracle@nodo3 $
```

Se actualiza el inventario por la eliminación de la instancia que acabamos de hacer , que en el fondo son recursos a nivel de clusterware y porque en el inventario se ven reflejados.

El comando es el siguiente

```
./runInstaller -updateNodeList ORACLE_HOME=$ORACLE_HOME "CLUSTER_NODES={<nombre del nodo que deseamos eliminar>}" -local
```

Ejecutando el comando en nuestra plataforma

```
oracle@nodo3 $ env | grep ORACLE
ORACLE_UNQNAME=prod
ORACLE_SID=prod3
ORACLE_BASE=/u01/app/oracle
ORACLE_HOSTNAME=nodo1
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1
oracle@nodo3 $
oracle@nodo3 $ cd $ORACLE_HOME/oui/bin
```

```
oracle@nodo3 $ ./runInstaller -updateNodeList ORACLE_HOME=$ORACLE_HOME
"CLUSTER_NODES={nodo3}" -local
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 1896 MB   Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /u01/app/oraInventory
'UpdateNodeList' was successful.
oracle@nodo3 $
```

Con lo anterior se actualiza el inventario por la eliminación de la instancia que acabamos de hacer y por la eliminación del listener.

5. Proceso de desinstalación motor Oracle (eliminación de binarios)

Para proceder a desinstalar lo que nos queda del nodo3 , tenemos que ejecutar el comando deinstall de la siguiente forma (todo desde el nodo que queremos eliminar) , este comando se debe ejecutar con el ORACLE_HOME apuntando al motor RDBMS , ya que esto es lo que vamos a desinstalar.

```
oracle@nodo3 $ cd $ORACLE_HOME/deinstall
oracle@nodo3 $ ./deinstall -local
```

La salida del comando sería la siguiente

```
oracle@nodo3 $ cd $ORACLE_HOME/deinstall
oracle@nodo3 $ ./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 ##

Checking for existence of the Oracle home location /u01/app/oracle/product/11.2.0/dbhome_1
Oracle Home type selected for deinstall is: Oracle Real Application Cluster Database
Oracle Base selected for deinstall is: /u01/app/oracle
Checking for existence of central inventory location /u01/app/oraInventory
Checking for existence of the Oracle Grid Infrastructure home /u01/app/11.2.0/grid
The following nodes are part of this cluster: nodo3
Checking for sufficient temp space availability on node(s) : 'nodo3'

## [END] Install check configuration ##

Network Configuration check config START

Network de-configuration trace file location: /u01/app/oraInventory/logs/netdc_check2012-09-14_09-40-52-PM.log

Network Configuration check config END

Database Check Configuration START

Database de-configuration trace file location:
/u01/app/oraInventory/logs/databasedc_check2012-09-14_09-40-57-PM.log

Database Check Configuration END

Enterprise Manager Configuration Assistant START

EMCA de-configuration trace file location: /u01/app/oraInventory/logs/emcadc_check2012-09-14_09-40-59-PM.log

Enterprise Manager Configuration Assistant END
Oracle Configuration Manager check START
OCM check log file location : /u01/app/oraInventory/logs//ocm_check2286.log
```

Oracle Configuration Manager check END

CHECK OPERATION END

CHECK OPERATION SUMMARY

Oracle Grid Infrastructure Home is: /u01/app/11.2.0/grid
The cluster node(s) on which the Oracle home deinstallation will be performed are:nodo3
Since -local option has been specified, the Oracle home will be deinstalled only on the
local node, 'nodo3', and the global configuration will be removed.
Oracle Home selected for deinstall is: /u01/app/oracle/product/11.2.0/dbhome_1
Inventory Location where the Oracle home registered is: /u01/app/oraInventory
The option -local will not modify any database configuration for this Oracle home.

CLEAN OPERATION START

Enterprise Manager Configuration Assistant START

EMCA de-configuration trace file location: /u01/app/oraInventory/logs/emcadclean2012-09-14_09-40-59-PM.log

Updating Enterprise Manager ASM targets (if any)
Updating Enterprise Manager listener targets (if any)
Enterprise Manager Configuration Assistant END
Database de-configuration trace file location:
/u01/app/oraInventory/logs/databasedclean2012-09-14_09-41-55-PM.log

Network Configuration clean config START

Network de-configuration trace file location: /u01/app/oraInventory/logs/netdc_clean2012-09-14_09-41-55-PM.log

De-configuring Local Net Service Names configuration file...
Local Net Service Names 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

Oracle Configuration Manager clean START
OCM clean log file location : /u01/app/oraInventory/logs//ocm_clean2286.log
Oracle Configuration Manager clean END
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/oracle/product/11.2.0/dbhome_1' from the central inventory on
the local node : Done

Delete directory '/u01/app/oracle/product/11.2.0/dbhome_1' on the local node : Done

The Oracle Base directory '/u01/app/oracle' will not be removed on local node. The directory
is in use by Oracle Home '/u01/app/11.2.0/grid'.

Oracle Universal Installer cleanup was successful.

Oracle Universal Installer clean END

[START] Oracle install clean

```
Clean install operation removing temporary directory '/tmp/deinstall2012-09-14_09-39-50PM'
on node 'nodo3'
```

```
## [END] Oracle install clean ##
```

```
##### CLEAN OPERATION END #####
```

```
##### CLEAN OPERATION SUMMARY #####
```

```
Cleaning the config for CCR
```

```
As CCR is not configured, so skipping the cleaning of CCR configuration
```

```
CCR clean is finished
```

```
Successfully detached Oracle home '/u01/app/oracle/product/11.2.0/dbhome_1' from the central
inventory on the local node.
```

```
Successfully deleted directory '/u01/app/oracle/product/11.2.0/dbhome_1' on the local node.
```

```
Oracle Universal Installer cleanup was successful.
```

```
Oracle deinstall tool successfully cleaned up temporary directories.
```

```
#####
```

```
##### ORACLE DEINSTALL & DECONFIG TOOL END #####
```

```
oracle@nodo3 $
```

Volvemos a actualizar el inventario pues acabamos de hacer la desinstalación del motor Oracle , para ello debemos ejecutar el siguiente comando

```
./runInstaller -updateNodeList ORACLE_HOME=$ORACLE_HOME "CLUSTER_NODES={nodo1,nodo2}"
```

En donde aparece CLUSTER_NODES, se debe indicar le nombre de los nodos que quedan disponibles dentro de la Grid Infraestructure

La salida del commando sería la siguiente

```
oracle@nod01 $ env | grep ORACLE
ORACLE_UNQNAME=prod
ORACLE_SID=prod1
ORACLE_BASE=/u01/app/oracle
ORACLE_HOSTNAME=nod01
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/oracle/product/11.2.0/dbhome_1
oracle@nod01 $
oracle@nod01 $ cd $ORACLE_HOME/oui/bin
oracle@nod01 $ ./runInstaller -updateNodeList ORACLE_HOME=$ORACLE_HOME
"CLUSTER_NODES={nod01,nod02}"
Starting Oracle Universal Installer...

Checking swap space: must be greater than 500 MB.   Actual 1854 MB   Passed
The inventory pointer is located at /etc/oraInst.loc
The inventory is located at /u01/app/oraInventory
'UpdateNodeList' was successful.
oracle@nod01 $
```

6. Proceso de desconfiguración del Grid Infraestructure

Para llevar a cabo la desinstalación del Grid Infraestructure en el nodo3, debemos ejecutar el siguiente comando

```
cd $ORACLE_HOME/crs/install  
  
./rootcrs.pl -deconfig -force
```

El cual tiene por objetivo solamente eliminar la configuración del Grid Infraestructure del nodo donde se ejecuta , bajando servicios , pero no lleva a cabo la eliminación de los binarios

Para nuestro caso , la salida del comando sería más o menos la siguiente

```
[root@nodo3 oracle]# . grid_env  
[root@nodo3 oracle]#  
[root@nodo3 oracle]# cd $ORACLE_HOME/crs/install  
[root@nodo3 install]# ./rootcrs.pl -deconfig -force  
Using configuration parameter file: ./crsconfig_params  
Network exists: 1/192.168.84.0/255.255.255.0/eth1, type static  
VIP exists: /nodo1-vip/192.168.84.11/192.168.84.0/255.255.255.0/eth1, hosting node nodo1  
VIP exists: /nodo2-vip/192.168.84.21/192.168.84.0/255.255.255.0/eth1, hosting node nodo2  
VIP exists: /nodo3-vip/192.168.84.31/192.168.84.0/255.255.255.0/eth1, hosting node nodo3  
GSD exists  
ONS exists: Local port 6100, remote port 6200, EM port 2016  
CRS-2673: Attempting to stop 'ora.registry.acfs' on 'nodo3'  
CRS-2677: Stop of 'ora.registry.acfs' on 'nodo3' succeeded  
CRS-2791: Starting shutdown of Oracle High Availability Services-managed resources on  
'nodo3'  
CRS-2673: Attempting to stop 'ora.crsd' on 'nodo3'  
CRS-2790: Starting shutdown of Cluster Ready Services-managed resources on 'nodo3'  
CRS-2673: Attempting to stop 'ora.DATA_DG.dg' on 'nodo3'  
CRS-2673: Attempting to stop 'ora.FRA_DG.dg' on 'nodo3'  
CRS-2673: Attempting to stop 'ora.OV_DG.dg' on 'nodo3'  
CRS-2677: Stop of 'ora.FRA_DG.dg' on 'nodo3' succeeded  
CRS-2677: Stop of 'ora.DATA_DG.dg' on 'nodo3' succeeded  
CRS-2677: Stop of 'ora.OV_DG.dg' on 'nodo3' succeeded  
CRS-2673: Attempting to stop 'ora.asm' on 'nodo3'  
CRS-2677: Stop of 'ora.asm' on 'nodo3' succeeded  
CRS-2792: Shutdown of Cluster Ready Services-managed resources on 'nodo3' has completed  
CRS-2673: Attempting to stop 'ora.cluster_interconnect.haip' on 'nodo3'  
CRS-2677: Stop of 'ora.ctssd' on 'nodo3' succeeded  
CRS-2677: Stop of 'ora.drivers.acfs' on 'nodo3' succeeded  
CRS-2677: Stop of 'ora.cluster_interconnect.haip' on 'nodo3' succeeded  
CRS-2673: Attempting to stop 'ora.cssd' on 'nodo3'  
CRS-2677: Stop of 'ora.cssd' on 'nodo3' succeeded  
CRS-2673: Attempting to stop 'ora.crf' on 'nodo3'  
CRS-2677: Stop of 'ora.crf' on 'nodo3' succeeded  
CRS-2673: Attempting to stop 'ora.gipcd' on 'nodo3'  
CRS-2677: Stop of 'ora.gipcd' on 'nodo3' succeeded  
CRS-2673: Attempting to stop 'ora.gpnpd' on 'nodo3'  
CRS-2677: Stop of 'ora.gpnpd' on 'nodo3' succeeded  
CRS-2793: Shutdown of Oracle High Availability Services-managed resources on 'nodo3' has  
completed  
CRS-4133: Oracle High Availability Services has been stopped.  
Successfully deconfigured Oracle clusterware stack on this node  
[root@nodo3 install]#
```

7. Actualización del Grid en los restantes nodos

Ya estando desinstalado el RDBMS y la Grid Infraestructure, sólo nos quedan unos pocos pasos, entre ellos está el indicarle al Grid Infraestructure restante que debe eliminar completamente el nodo3 de sus registros...

Para ello ejecutamos el siguiente comando

```
[root@nodo2 oracle]# . grid_env
[root@nodo2 oracle]#
[root@nodo2 oracle]# env | grep ORACLE
ORACLE_SID=+ASM2
ORACLE_HOME=/u01/app/11.2.0/grid
[root@nodo2 oracle]# crsctl delete node -n nodo3
CRS-4661: Node nodo3 successfully deleted.
[root@nodo2 oracle]#
```

A raíz del anterior comando, ejecutamos nuevamente una actualización de nuestro inventario desde el nodo que está siendo eliminado..

```
oracle@nodo3 $ env | grep ORACLE
ORACLE_UNQNAME=prod
ORACLE_SID=+ASM3
ORACLE_BASE=/u01/app/oracle
ORACLE_HOSTNAME=nodo3
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/11.2.0/grid
oracle@nodo3 $
oracle@nodo3 $ cd $ORACLE_HOME/oui/bin
oracle@nodo3 $
oracle@nodo3 $ ./runInstaller -updateNodeList ORACLE_HOME=$ORACLE_HOME
"CLUSTER_NODES={nodo3}" CRS=TRUE -local
Starting Oracle Universal Installer...
```

```
Checking swap space: must be greater than 500 MB. Actual 1983 MB Passed
The inventory pointer is located at /etc/orainst.loc
The inventory is located at /u01/app/orainventory
'UpdateNodeList' was successful.
oracle@nodo3 $
```

8. Proceso de desinstalación del Grid Infrastructure

Para desinstalar el Grid Infrastructure del nodo que queremos eliminar, pues debemos ejecutar el `deinstall`, para ello ejecutamos la siguiente línea de comando

Apuntando al `ORACLE_HOME` del grid

```
cd $ORACLE_HOME/deinstall
./deinstall -local
```

La salida del comando sería

```
oracle@nodo3 $ env | grep ORACLE
ORACLE_UNQNAME=prod
ORACLE_SID=+ASM3
ORACLE_BASE=/u01/app/oracle
ORACLE_HOSTNAME=nodo3
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/11.2.0/grid
oracle@nodo3 $
oracle@nodo3 $ cd $ORACLE_HOME/deinstall
oracle@nodo3 $ ./deinstall -local
Checking for required files and bootstrapping ...
Please wait ...
Location of logs /tmp/deinstall2012-09-14_10-34-47PM/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/oracle
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: nodo3
Checking for sufficient temp space availability on node(s) : 'nodo3'

## [END] Install check configuration ##

Traces log file: /tmp/deinstall2012-09-14_10-34-47PM/logs//crsdc.log
Enter an address or the name of the virtual IP used on node "nodo3"[nodo3-vip]
>
>

The following information can be collected by running "/sbin/ifconfig -a" on node "nodo3"
Enter the IP netmask of Virtual IP "192.168.84.31" on node "nodo3"[255.255.255.0]
>
>

Enter the network interface name on which the virtual IP address "192.168.84.31" is active
>
eth1
Enter an address or the name of the virtual IP[]
>
192.168.84.31
The following information can be collected by running "/sbin/ifconfig -a" on node "nodo3"
Enter the IP netmask of the virtual IP "192.168.84.31"[]
>
>
```

```
255.255.255.0
Enter the network interface name on which the virtual IP address "192.168.84.31" is active
>
```

```
Enter an address or the name of the virtual IP[]
>
```

```
Network Configuration check config START
```

```
Network de-configuration trace file location: /tmp/deinstall2012-09-14_10-34-47PM/logs/netdc_check2012-09-14_10-48-56-PM.log
```

```
Specify all RAC listeners (do not include SCAN listener) that are to be de-configured
[LISTENER,LISTENER_SCAN1]:
Network Configuration check config END
```

```
Asm Check Configuration START
```

```
ASM de-configuration trace file location: /tmp/deinstall2012-09-14_10-34-47PM/logs/asmcadc_check2012-09-14_10-48-57-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:nodo3
Since -local option has been specified, the Oracle home will be deinstalled only on the
local node, 'nodo3', 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,LISTENER_SCAN1
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/deinstall2012-09-14_10-34-47PM/logs/deinstall_deconfig2012-09-14_10-45-17-PM.out'
Any error messages from this session will be written to: '/tmp/deinstall2012-09-14_10-34-47PM/logs/deinstall_deconfig2012-09-14_10-45-17-PM.err'
```

```
##### CLEAN OPERATION START #####
```

```
ASM de-configuration trace file location: /tmp/deinstall2012-09-14_10-34-47PM/logs/asmcadc_clean2012-09-14_10-49-02-PM.log
ASM Clean Configuration END
```

```
Network Configuration clean config START
```

```
Network de-configuration trace file location: /tmp/deinstall2012-09-14_10-34-47PM/logs/netdc_clean2012-09-14_10-49-02-PM.log
```

```
De-configuring RAC listener(s): LISTENER,LISTENER_SCAN1
```

```
De-configuring listener: LISTENER
  Stopping listener on node "nodo3": LISTENER
  Warning: Failed to stop listener. Listener may not be running.
Listener de-configured successfully.
```

```
De-configuring listener: LISTENER_SCAN1
  Stopping listener on node "nodo3": LISTENER_SCAN1
  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 "nodo3".

```
/tmp/deinstall2012-09-14_10-34-47PM/perl/bin/perl -I/tmp/deinstall2012-09-14_10-34-47PM/perl/lib -I/tmp/deinstall2012-09-14_10-34-47PM/crs/install /tmp/deinstall2012-09-14_10-34-47PM/crs/install/rootcrs.pl -force -deconfig -paramfile "/tmp/deinstall2012-09-14_10-34-47PM/response/deinstall_Orallg_gridinfrahome1.rsp"
```

Colocar atención a está parte pues se debe ejecutar el comando arriba mostrado, con el usuario root en el nodo que se desea eliminar, una vez ejecutado se presiona ENTER y se continúa con la desinstalación

Press Enter after you finish running the above commands

<-----

```
Remove the directory: /tmp/deinstall2012-09-14_10-34-47PM 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
```

Con todo lo anterior, ya podemos decir que nuestro RAC sólo se compone de 2 nodos