Oracle 11g RAC Interview question and answers

# ****What is the major difference between 10g and 11g RAC?****

There is not much difference between 10g and 11gR (1) RAC.

But there is a significant difference in 11gR2.

**Prior to 11gR1(10g) RAC, the following were managed by Oracle CRS**

* Databases
* Instances
* Applications
* Node Monitoring
* Event Services
* High Availability

**From 11gR2(onwards) its completed HA stack managing and providing the following resources as like the other cluster software like VCS etc.**

* Databases
* Instances
* Applications
* Cluster Management
* Node Management
* Event Services
* High Availability
* Network Management (provides DNS/GNS/MDNSD services on behalf of other traditional services) and SCAN – Single Access Client Naming method, HAIP
* Storage Management (with help of ASM and other new ACFS filesystem)
* Time synchronization (rather depending upon traditional NTP)
* Removed OS dependent hang checker etc, manages with own additional monitor process

# **What are Oracle Cluster Components?**

Cluster Interconnect (HAIP)

Shared Storage (OCR/Voting Disk)

Clusterware software

# ****What are Oracle RAC Components?****

VIP, Node apps etc.

# ****What are Oracle Kernel Components (nothing but how does Oracle RAC database differs than Normal single instance database in terms of Binaries and process)****

Basically Oracle kernel need to switched on with RAC On option when you convert to RAC, that is the difference as it facilitates few RAC bg process like LMON,LCK,LMD,LMS etc.

**To turn on RAC**  
# link the oracle libraries  
$ cd $ORACLE\_HOME/rdbms/lib  
$ make -f ins\_rdbms.mk rac\_on  
# rebuild oracle  
$ cd $ORACLE\_HOME/bin  
$ relink oracle

Oracle RAC is composed of two or more database instances. They are composed of Memory structures and background processes same as the single instance database.Oracle RAC instances use two processes GES(Global Enqueue Service), GCS(Global Cache Service) that enable cache fusion.Oracle RAC instances are composed of following background processes:

ACMS—Atomic Controlfile to Memory Service (ACMS)  
GTX0-j—Global Transaction Process  
LMON—Global Enqueue Service Monitor  
LMD—Global Enqueue Service Daemon  
LMS—Global Cache Service Process  
LCK0—Instance Enqueue Process  
RMSn—Oracle RAC Management Processes (RMSn)  
RSMN—Remote Slave Monitor

# ****What is Clusterware?****

Software that provides various interfaces and services for a cluster. Typically, this includes capabilities that:

* Allow the cluster to be managed as a whole
* Protect the integrity of the cluster
* Maintain a registry of resources across the cluster
* Deal with changes to the cluster
* Provide a common view of resources

# ****Background process and functionality exists in 11Gr2 ?****

|  |  |
| --- | --- |
| **Process Name** | **Functionality** |
| crsd | The CRS daemon (crsd) manages cluster resources based on configuration information that is stored in Oracle Cluster Registry (OCR) for each resource. This includes start, stop, monitor, and failover operations. The crsd process generates events when the status of a resource changes. |
| cssd | Cluster Synchronization Service (CSS): Manages the cluster configuration by controlling which nodes are members of the cluster and by notifying members when a node joins or leaves the cluster.  If you are using certified third-party clusterware, then CSS processes interfaces with your clusterware to manage node membership information. CSS has three separate processes: the CSS daemon (ocssd), the CSS Agent (cssdagent), and the CSS Monitor (cssdmonitor). The cssdagent process monitors the cluster and provides input/output fencing. This service formerly was provided by Oracle Process Monitor daemon (oprocd. A cssdagent failure results in Oracle Clusterware restarting the node. |
| diskmon | Disk Monitor daemon (diskmon): Monitors and performs input/output fencing for Oracle Exadata Storage Server. As Exadata storage can be added to any Oracle RAC node at any point in time, the diskmon daemon is always started when ocssd is started. |
| evmd | Event Manager (EVM): Is a background process that publishes Oracle Clusterware events |
| mdnsd | Multicast domain name service (mDNS): Allows DNS requests. The mDNS process is a background process on Linux and UNIX |
| gnsd | Oracle Grid Naming Service (GNS): Is a gateway between the cluster mDNS and external DNS servers. The GNS process performs name resolution within the cluster. |
| ons | Oracle Notification Service (ONS): Is a publish-and-subscribe service for communicating Fast Application Notification (FAN) events |
| oraagent | Extends clusterware to support Oracle-specific requirements and complex resources. It runs server callout scripts when FAN events occur. |
| orarootagent | Oracle root agent (orarootagent): Is a specialized oraagent process that helps CRSD manage resources owned by root, such as the network, and the Grid virtual IP address |
| oclskd | Cluster kill daemon (oclskd): Handles instance/node evictions requests that have been escalated to CSS |
| gipcd | Grid IPC daemon (gipcd): Is a helper daemon for the communications infrastructure |
| ctssd | Cluster time synchronisation daemon(ctssd) to manage the time syncrhonization between nodes, rather depending on NTP |

# ****Under which user or owner the process will start?****

|  |  |  |
| --- | --- | --- |
| **Component** | **Name of the Process** | **Owner** |
| Oracle High Availability Service | ohasd | init, root |
| Cluster Ready Service (CRS) | Cluster Ready Services | root |
| Cluster Synchronization Service (CSS) | ocssd,cssd monitor, cssdagent | grid owner |
| Event Manager (EVM) | evmd, evmlogger | grid owner |
| Cluster Time Synchronization Service (CTSS) | octssd | root |
| Oracle Notification Service (ONS) | ons, eons | grid owner |
| Oracle Agent | oragent | grid owner |
| Oracle Root Agent | orarootagent | root |
| Grid Naming Service (GNS) | gnsd | root |
| Grid Plug and Play (GPnP) | gpnpd | grid owner |
| Multicast domain name service (mDNS) | mdnsd | grid owner |

# How does OCSSD starts if voting disk & OCR resides in ASM Diskgroups?

To solve this problem the ASM disk headers have new metadata in 11.2: you can use kfed to read the header of an ASM disk containing a voting disk. The kfdhdb.vfstart and kfdhdb.vfend fields tell CSS where to find the voting file. This does not require the ASM instance to be up. Once the voting disks are located, CSS can access them and joins the cluster.

# ****What is GNS?****

Grid Naming service is alternative service to DNS , which will act as a sub domain in your DNS but managed by Oracle, with GNS the connection is routed to the cluster IP and manages internally.

# ****What is GPNP?****

Grid Plug and Play along with GNS provide dynamic

In previous releases, adding or removing servers in a cluster required extensive manual preparation.

In Oracle Database 11g Release 2, GPnP allows each node to perform the following tasks dynamically:

* Negotiating appropriate network identities for itself
* Acquiring additional information from a configuration profile
* Configuring or reconfiguring itself using profile data, making host names and addresses resolvable on the network

For example a domain should contain

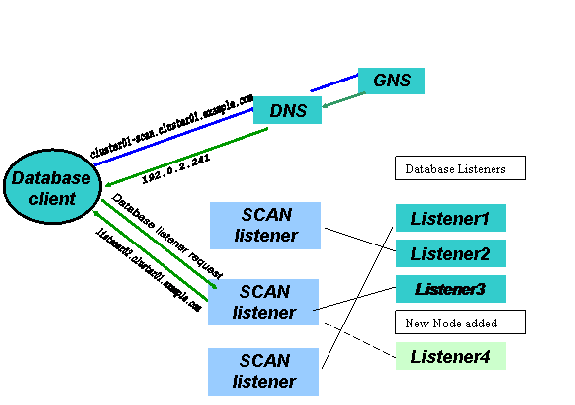
* Cluster name: **cluster01**
* Network domain: **example.com**
* GPnP domain: **cluster01.example.com**

To add a node, simply connect the server to the cluster and allow the cluster to configure the node.

To make it happen, Oracle uses the profile located in $GI\_HOME/gpnp/profiles/peer/profile.xml which contains the cluster resources, for example disk locations of ASM. etc.

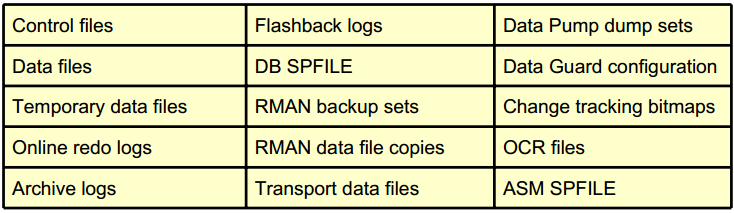
So this profile will be read local or from the remote machine when plugged into cluster and dynamically added to cluster.

# ****How does SCAN works?****

**[](http://oracle-info.com/wp-content/uploads/2012/10/clip_image002.gif)**

1. Client Connected through SCAN name of the cluster (remember all three IP addresses round robin resolves to same Host name (SCAN Name), here in this case our scan name is cluster01-scan.cluster01.example.com
2. The request reaches to DNS server in your corp and then resolves to one of the node out of three.  a. If GNS (Grid Naming service or domain is configured) that is a subdomain configured in  the DNS entry for to resolve cluster address the request will be handover to GNS (gnsd)
3. Here in our case assume there is no GNS, now the with the help of SCAN listeners where end points are configured to database listener.
4. Database Listeners listen the request and then process further.
5. In case of node addition, Listener 4, client need not to know or need not change any thing from their tns entry (address of 4th node/instance) as they just using scan IP.
6. Same case even in the node deletion.

# ****What are the file types that ASM support and keep in disk groups?****



# **List Key benefits of ASM?**

* Stripes files rather than logical volumes
* Provides redundancy on a file basis
* Enables online disk reconfiguration and dynamic rebalancing
* Reduces the time significantly to resynchronize a transient failure by tracking changes while disk is offline
* Provides adjustable rebalancing speed
* Is cluster-aware
* Supports reading from mirrored copy instead of primary copy for extended clusters
* Is automatically installed as part of the Grid Infrastructure

# ****What is node listener?****

In 11gr2 the listeners will run from Grid Infrastructure software home

* The node listener is a process that helps establish network connections from ASM clients to the ASM instance.
* Runs by default from the Grid $ORACLE\_HOME/bin directory
* Listens on port 1521 by default
* Is the same as a database instance listener
* Is capable of listening for all database instances on the same machine in addition to the ASM instance
* Can run concurrently with separate database listeners or be replaced by a separate database listener
* Is named tnslsnr on the Linux platform

# ****List some of the background process that used in ASM?****

|  |  |
| --- | --- |
| **Process** | **Description** |
| **RBAL** | Opens all device files as part of discovery and coordinates the rebalance activity |
| **ARBn** | One or more slave processes that do the rebalance activity |
| **GMON** | Responsible for managing the disk-level activities such as drop or offline and advancing the ASM disk group compatibility |
| **MARK** | Marks ASM allocation units as stale when needed |
| **Onnn** | One or more ASM slave processes forming a pool of connections to the ASM instance for exchanging messages |
| **PZ9n** | One or more parallel slave processes used in fetching data on clustered ASM installation from GV$ views |

# ****What is SCAN listener?****

A scan listener is something that additional to node listener which listens the incoming db connection requests from the client which got through the scan IP, it got end points configured to node listener where it routes the db connection requests to particular node listener.

# ****What is the difference between CRSCTL and SRVCTL?****

crsctl manages clusterware-related operations:

* Starting and stopping Oracle Clusterware
* Enabling and disabling Oracle Clusterware daemons
* Registering cluster resources

srvctl manages Oracle resource–related operations:

* Starting and stopping database instances and services
* Also from 11gR2 manages the cluster resources like network,vip,disks etc

# ****How to control Oracle Clusterware?****

To start or stop Oracle Clusterware on a specific node:

# crsctl stop crs

# crsctl start crs

To enable or disable Oracle Clusterware on a specific node:

# crsctl enable crs

# crsctl disable crs

# ****How to check the cluster (all nodes) status?****

To check the viability of Cluster Synchronization Services (CSS) across nodes:

$ crsctl check cluster

CRS-4537: Cluster Ready Services is online

CRS-4529: Cluster Synchronization Services is online

CRS-4533: Event Manager is online

# ****How to check the cluster (one node) status?****

$ crsctl check crs

CRS-4638: Oracle High Availability Services is online

CRS-4537: Cluster Ready Services is online

CRS-4529: Cluster Synchronization Services is online

CRS-4533: Event Manager is online

# ****How to find Voting Disk location?****

To determine the location of the voting disk:

# crsctl query css votedisk

## STATE File Universal Id File Name Disk group

– —– —————– ———- ———-

1. ONLINE 8c2e45d734c64f8abf9f136990f3daf8 (ASMDISK01) [DATA]

2. ONLINE 99bc153df3b84fb4bf071d916089fd4a (ASMDISK02) [DATA]

3. ONLINE 0b090b6b19154fc1bf5913bc70340921 (ASMDISK03) [DATA]

Located 3 voting disk(s)

# ****How to find Location of OCR?****

#cat /etc/oracle/ocr.loc

ocrconfig\_loc=+DATA

local\_only=FALSE

#OCRCHECK (also about OCR integrity)

# ****List some background process that used in ASM Instances?****

|  |  |
| --- | --- |
| **Process** | **Description** |
| **RBAL** | Opens all device files as part of discovery and coordinates the rebalance activity |
| **ARBn** | One or more slave processes that do the rebalance activity |
| **GMON** | Responsible for managing the disk-level activities such as drop or offline and advancing the ASM disk group compatibility |
| **MARK** | Marks ASM allocation units as stale when needed |
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# What are types of ASM Mirroring?

|  |  |  |
| --- | --- | --- |
| **Disk Group Type** | **Supported Mirroring Levels** | **Default Mirroring Level** |
| External redundancy | Unprotected (None) | Unprotected (None) |
| Normal redundancy | Two-wayThree-wayUnprotected (None) | Two-way |
| High redundancy | Three-way | Three-way |

# ****What is ASM Striping?****

ASM can use variable size data extents to support larger files, reduce memory requirements, and improve performance.

Each data extent resides on an individual disk.

Data extents consist of one or more allocation units.

The data extent size is:

* Equal to AU for the first 20,000 extents (0–19999)
* Equal to 4 × AU for the next 20,000 extents (20000–39999)
* Equal to 16 × AU for extents above 40,000

ASM stripes files using extents with a coarse method for load balancing or a fine method to reduce latency.

* Coarse-grained striping is always equal to the effective AU size.
* Fine-grained striping is always equal to 128 KB.

# ****How many ASM Diskgroups can be created under one ASM Instance?****

ASM imposes the following limits:

* 63 disk groups in a storage system
* 10,000 ASM disks in a storage system
* Two-terabyte maximum storage for each ASM disk (non-Exadata)
* Four-petabyte maximum storage for each ASM disk (Exadata)
* 40-exabyte maximum storage for each storage system
* [1 million](http://www.blogger.com/blogger.g?blogID=2188080867995209962) files for each disk group
* ASM file size limits (database limit is 128 TB):
  + External redundancy maximum file size is 140 PB.
  + Normal redundancy maximum file size is 42 PB.
  + High redundancy maximum file size is 15 PB.

# ****How to find the cluster network settings?****

To determine the list of interfaces available to the cluster:

**$ oifcfg iflist –p -n**

To determine the public and private interfaces that have been configured:

**$ oifcfg getif**

**eth0 192.0.2.0 global public**

**eth1 192.168.1.0 global cluster\_interconnect**

To determine the Virtual IP (VIP) host name, VIP address, VIP subnet mask, and VIP interface name:

**$ srvctl config nodeapps -a**

**VIP exists.:host01**

**VIP exists.: /192.0.2.247/192.0.2.247/255.255.255.0/eth0**

# ****How to change Cluster interconnect in RAC?****

On a single node in the cluster, add the new global interface specification:

$ oifcfg setif -global eth2/192.0.2.0:cluster\_interconnect

Verify the changes with oifcfg getif and then stop Clusterware on all nodes by running the following command as root on each node:

# oifcfg getif

# crsctl stop crs

Assign the network address to the new network adapters on all nodes using ifconfig:

#ifconfig eth2 192.0.2.15 netmask 255.255.255.0 broadcast 192.0.2.255

Remove the former adapter/subnet specification and restart Clusterware:

$ oifcfgdelif -global eth1/192.168.1.0

# crsctl start crs

# ****Managing or Modifying SCAN in Oracle RAC?****

To add a SCAN VIP resource:

$ srvctl add scan -n cluster01-scan

To remove Clusterware resources from SCAN VIPs:

$ srvctl remove scan [-f]

To add a SCAN listener resource:

$ srvctl add scan\_listener

$ srvctl add scan\_listener -p 1521

To remove Clusterware resources from all SCAN listeners:

$ srvctl remove scan\_listener [-f]

# ****How to check the node connectivity in Oracle Grid Infrastructure?****

$ cluvfy comp nodecon -n all –verbose

# ****Stop all nodes in one command****

In 10g its not possible, where in 11g it is possible

[root@pic1]# crsctl start cluster -all  
[root@pic2]# crsctl stop cluster –all

# ****What is OLR? Which of the following statements regarding the Oracle Local Registry (OLR) is true?****

* Each cluster node has a local registry for node-specific resources.
* The OLR should be manually created after installing Grid Infrastructure on each node in the cluster.
* One of its functions is to facilitate Clusterware startup in situations where the ASM stores the OCR and voting disks.
* You can check the status of the OLR using ocrcheck.

# ****What is runfixup.sh script in Oracle Clusterware 11g release 2 installation****

With Oracle Clusterware 11g release 2, Oracle Universal Installer (OUI) detects when the minimum requirements for an installation are not met, and creates shell scripts, called fixup scripts, to finish incomplete system configuration steps. If OUI detects an incomplete task, then it generates fixup scripts (runfixup.sh). You can run the fixup script after you click the Fix and Check Again Button.

The Fixup script does the following:

If necessary sets kernel parameters to values required for successful installation, including:

* Shared memory parameters.
* Open file descriptor and UDP send/receive parameters.

Sets permissions on the Oracle Inventory (central inventory) directory. Reconfigures primary and secondary group memberships for the installation owner, if necessary, for the Oracle Inventory directory and the operating system privileges groups.

* Sets shell limits if necessary to required values.

# ****How to stop whole cluster with single command****

crsctl stop cluster (possible only from 11gr2), please note crsctl commands becomes global now, if you do not specify node specifically the command executed globally for example

crsctl stop crs (stops in all crs resource in all nodes)

crsctl stop crs –n <ndeoname) (stops only in specified node)

# ****CRS is not starting automatically after a node reboot, what you do to make it happen?****

crsctl enable crs (as root)

##to disable

crsctl disable crs (as root)

# ****What is the difference between TAF and FAN & FCF? at what conditions you use them?****

1. **TAF with tnsnames**

A feature of Oracle Net Services for OCI8 clients. TAF is transparent application failover which will move a session to a backup connection if the session fails. With Oracle 10g Release 2, you can define the TAF policy on the service using dbms\_service package. It will only work with OCI clients. It will only move the session and if the parameter is set, it will failover the select statement. For insert, update or delete transactions, the application must be TAF aware and roll back the transaction. YES, you should enable FCF on your OCI client when you use TAF, it ’ll make the failover faster.  
Note: TAF will not work with JDBC thin.

1. **FAN with tnsnames with aq notifications true**

FAN is a feature of Oracle RAC which stands for Fast Application Notification. This allows the database to notify the client of any change (Node up/down, instance up/down, database up/down). For integrated clients, inflight transactions are interrupted and an error message is returned. Inactive connections are terminated.   
FCF is the client feature for Oracle Clients that have integrated with FAN to provide fast failover for connections. Oracle JDBC Implicit Connection Cache, Oracle Data Provider for .NET (ODP.NET) and Oracle Call Interface are all integrated clients which provide the Fast Connection Failover feature.

1. **FCF, along with FAN when using connection pools**

FCF is a feature of Oracle clients that are integrated to receive FAN events and abort inflight transactions, clean up connections when a down event is received as well as create new connections when a up event is received. Tomcat or JBOSS can take advantage of FCF if the Oracle connection pool is used underneath. This can be either UCP (Universal Connection Pool for JAVA) or ICC (JDBC Implicit Connection Cache). UCP is recommended as ICC will be deprecated in a future release.

1. **ONS, with clusterware either FAN/FCF**

ONS is part of the clusterware and is used to propagate messages both between nodes and to application-tiers  
ONS is the foundation for FAN upon which is built FCF.  
RAC uses FAN to publish configuration changes and LBA events. Applications can react as those published events in two way :  
- by using ONS api (you need to program it)  
- by using FCF (automatic by using JDBC implicit connection cache on the application server)  
you can also respond to FAN event by using server-side callout but this on the server side (as their name suggests it)

**Relationship between FAN/FCF/ONS**

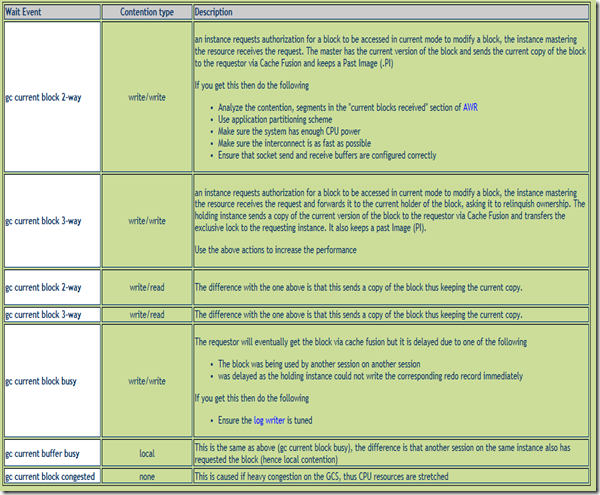
ONS –> FAN –> FCF  
ONS -> send/receive messages on local and remote nodes.  
FAN -> uses ONS to notify other processes about changes in configuration of service level  
FCF -> uses FAN information working with conection pools JAVA and others.

# ****Can you add voting disk online? Do you need voting disk backup?****

Yes,  as per documentation, if you have multiple voting disk you can add online, but if you have only one voting disk , by that cluster will be down as its lost you just need to start crs in exclusive mode and add the votedisk using

crsctl add votedisk <path>

# Describe some rac wait events you experienced?

**[](http://oracle-info.com/wp-content/uploads/2013/01/image21.png)**

# Can you modify VIP address after your cluster installation?

Yes

# How do you interpret AWR report in RAC instances, what sections in awr report for rac instances are most important?

1. **Viewing Contents in OCR/Voting disks**

There are three possible ways to view the OCR contents.

a. OCRDUMP (or)

b. crs\_stat -p (or)

c. By using strings.

Voting disk contents are not persistent and are not required to view the contents, because the voting disk contents will be overwritten. if still need to view, strings are used.

1. **Server pools – Read in my blog**
2. **Verifying Cluster Interconnect**

Cluster interconnects can be verified by:

i. oifcfg getif

ii. From AWR Report.

iii. show parameter cluster\_interconnect

iv. srvctl config network

1. **Does scan IP required or we can disable it**

SCAN IP can be disabled if not required. However SCAN IP is mandatory during the RAC installation. Enabling/disabling SCAN IP is mostly used in oracle apps environment by the concurrent manager (kind of job scheduler in oracle apps).

To disable the SCAN IP,

i. Do not use SCAN IP at the client end.

ii. Stop scan listener

srvctl stop scan\_listener

iii. Stop scan

srvctl stop scan (this will stop the scan vip's)

iv. Disable scan and disable scan listener

srvctl disable scan

1. **Migrating to new Diskgroup scenarious**

1. Case 1: Migrating disk group from one storage to other with same name

a. Consider the disk group is DATA,

b. Create new disks in DATA pointing towards the new storage (EMC),

a) Partioning provisioning done by storage and they give you the device name or mapper like /dev/mapper/asakljdlas

c. Add the new disk to diskgroup DATA

Alter diskgroup data add disk '/dev/mapper/asakljdlas'

d. drop the old disks from DATA with which rebalancing is done automatically.

If you want you can the rebalance by alter system set asm\_power\_limit =12 for full throttle.

alter diskgroup data drop disk 'path to hitachi storage'

Note: you can get the device name in v$asm\_disk in path column.

e. Request SAN team to detach the old Storage (HITACHI).

2. Case 2: Migrating disk group from one to another with different diskgroup name.

a. Create the Disk group with new name in the new storage.

b. Create the spfile in new diskgroup and change the parameter scope = spfile for control files etc.

c. Take a control file backup in format +newdiskgroup

d. Shutdown the db, startup nomount the database

e. restore the control file from backup (now the control will restore to new diskgroup)

f. Take the RMAN backup as copy of all the databases with new format.

RMAN> backup database as copy format '+newdiskgroup name' ;

g. RMAN> Switch database to copy.

h. Verify dba\_data\_files,dba\_temp\_files, v$log that all files are pointing to new diskgroup name.

3. Case 3: Migrating disk group to new storage but no additional diskgroup given

a. Take the RMAN backup as copy of all the databases with new format and place it in the disk.

b. Prepare rename commands from v$log ,v$datafile etc (dynamic queries)

c. Take a backup of pfile and modify the following referring to new diskgroup name

.control\_files

.db\_create\_file\_dest

.db\_create\_online\_log\_dest\_1

.db\_create\_online\_log\_dest\_2

.db\_recovery\_file\_des

d. stop the database

e. Unmount the diskgroup

asmcmd umount ORA\_DATA

f. use asmcmd renamedg (11gr2 only) command to rename to new diskgroup

renamedg phase=both dgname=ORA\_DATA newdgname=NEW\_DATA verbose=true

g. mount the diskgroup

asmcmd mount NEW\_DATA

h. start the database in mount with new pfile taken backup in step 3

i Run the rename file scripts generated at step2

k. Add the diskgroup to cluster the cluster (if using rac)

srvctl modify database -d orcl -p +NEW\_FRA/orcl/spfileorcl.ora

srvctl modify database -d orcl -a "NEW\_DATA"

srvctl config database -d orcl

srvctl start database -d orcl

l. Delete the old diskgroup from cluster

crsctl delete resource ora.ORA\_DATA.dg

m. Open the database.

1. **Database rename in RAC, what could be the checklist for you?**

a. Take the outputs of all the services that are running on the databases.

b. set cluster\_database=FALSE

c. Drop all the services associated with the database.

d. Stop the database

e. Startup mount

f. Use nid to change the DB Name.

Generic question, If using ASM the usual location for the datafile would be +DATA/datafile/OLDDBNAME/system01.dbf'

Does NID changes this path too? to reflect the new db name?

Yes it will, by using proper directory structure it will create a links to original directory structure. +DATA/datafile/NEWDBNAME/system01.dbf'

this has to be tested, We dont have test bed, but thanks to Anji who confirmed it will

g. Change the parameters according to the new database name

h. Change the password file.

i. Stop the database.

j. Mount the database

k. Open database with Reset logs

l. Create spfile from pfile.

m. Add database to the cluster.

n. Create the services that are dropped in prior to rename.

o. Bounce the database.

1. **Check database running in server by script**

Write a shell script to read the database name from oratab and iterate the loop taking inpt as DB name in srvctl to get the result.

#!/bin/ksh  
ORACLE\_HOME=  
PATH=$ORACLE\_HOME/bin:$PATH  
LD\_LIBRARY\_PATH=${SAVE\_LLP}:${ORACLE\_HOME}/lib  
export TNS\_ADMIN ORACLE\_HOME PATH LD\_LIBRARY\_PATH  
for INSTANCE in `cat /etc/oratab|grep -v "^#"|cut -f1 -d: -s`  
do  
export ORACLE\_SID=$INSTANCE  
echo `srvctl status service -d $INSTANCE -s $1| grep -i "is running"`  
done

1. **Difference between OHAS and CRS**

OHAS is complete cluster stack which includes some kernel level tasks like managing network,time synchronization, disks etc, where the CRS has the ability to manage the resources like database,listeners,applications, etc With both of this Oracle provides the high availability clustering services rather only affinity to databases.