## Production RAC cluster Requirements

## RAC clusters

**PRD Cluster**:

HREWOEL41.hr.state.sbu HREWOEL41

HREWOEL42.hr.state.sbu HREWOEL42

HREWOEL43.hr.state.sbu HREWOEL43

**HF Cluster**:

HREWOEL44.hr.state.sbu HREWOEL44

HREWOEL45.hr.state.sbu HREWOEL45

HREWOEL46.hr.state.sbu HREWOEL46

**KC Cluster**:

HREWOEL47.hr.state.sbu HREWOEL47

HREWOEL48.hr.state.sbu HREWOEL48

## Operating System Requirements

| **Item** | **Requirements** |
| --- | --- |
| SSH Requirement | Ensure that OpenSSH is installed on your servers. OpenSSH is the required SSH software. |
| Oracle Linux 7 | Minimum supported versions:   * Oracle Linux 7.4 with the Unbreakable Enterprise Kernel 4: 4.1.12-124.19.2.el7uek.x86\_64 or later * Oracle Linux 7.4 with the Unbreakable Enterprise Kernel 5: 4.14.35-1818.1.6.el7uek.x86\_64 or later * Oracle Linux 7.7 with the Unbreakable Enterprise Kernel 6: 5.4.17-2011.4.4.el7uek.x86\_64 or later * Oracle Linux 7.5 with the Red Hat Compatible Kernel: 3.10.0-862.11.6.el7.x86\_64 or later   Note:  Oracle recommends that you update Oracle Linux to the latest available version and release level. |
| Packages for Oracle Linux 7 | Subscribe to the Oracle Linux 7 channel on the Unbreakable Linux Network, or configure a yum repository from the Oracle Linux yum server website, and then install the Oracle Database Preinstallation RPM, oracle-database-preinstall-19c. The Oracle Database Preinstallation RPM, oracle-database-preinstall-19c, automatically installs all required packages listed in the table below, their dependencies for Oracle Grid Infrastructure and Oracle Database installations, and also performs other system configuration. If you install the Oracle Database Preinstallation RPM, oracle-database-preinstall-19c, then you do not have to install these packages, as the Oracle Database Preinstallation RPM automatically installs them.  bc binutils compat-libcap1 compat-libstdc++-33 elfutils-libelf elfutils-libelf-devel fontconfig-devel glibc glibc-devel ksh libaio libaio-devel libXrender libXrender-devel libX11 libXau libXi libXtst libgcc libstdc++ libstdc++-devel libxcb make policycoreutils policycoreutils-python smartmontools sysstat  Note:  If you intend to use 32-bit client applications to access 64-bit servers, then you must also install (where available) the latest 32-bit versions of the packages listed in this table. |
| Optional Packages for Oracle Linux 7 | Based on your requirement, install the latest released versions of the following packages:  ipmiutil (for Intelligent Platform Management Interface) net-tools (for Oracle RAC and Oracle Clusterware) libvirt-libs (for KVM) nfs-utils (for Oracle ACFS) python (for Oracle ACFS Remote) python-configshell (for Oracle ACFS Remote) python-rtslib (for Oracle ACFS Remote) python-six (for Oracle ACFS Remote) targetcli (for Oracle ACFS Remote) |

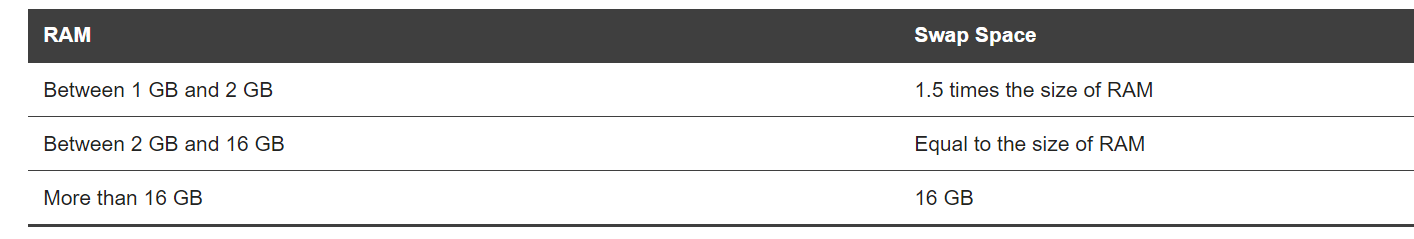
## Memory and CPU requirement for each RAC node

## Assumption is both memory and CPU must match with current production RAC nodes

## Below is screenshot of existing RAC node configuration details:

## 

## SWAP size Requirements:



## Kernel and OS version on new TEST VM RAC nodes

## Kernel and OS version must match with TEST VM RAC nodes as shown below

## 

## OS users and Groups:

## Note: Do not create “oracle” user manually, Run “oracle-database-preinstall-19c” rpm package which will automatically create oracle user and other groups

## 

## Common File System layout and sizes:

## 

## /infshare is OCFS2 file system must be shared between nodes within the cluster

## /u02 is for Oracle/GI Binaries

## /u01 is for temporarily storing any exports

## /hrewwnonprdfs01 – Windows CIFS mount point

## 

## DNS Configuration for SCAN Listener

Sample IP addresses listed here are based on what exist in current production cluster.

Public Interface : 10.68.104.0

Private Interface : 192.168.0.0

Both Public and VIP interface must be in the same subnet

PRD2-EW-SCAN/HF2-EW-SCAN/KC2-EW-SCAN: These are unique SCAN names per cluster must be registered with DNS and resolved to one of 3 IP addresses in round robin fashion

10.68.104.xxx PRD2-EW-SCAN

10.68.104.xxx PRD2-EW-SCAN

10.68.104.xxx PRD2-EW-SCAN

10.68.104.xxx HF2-EW-SCAN

10.68.104.xxx HF2-EW-SCAN

10.68.104.xxx HF2-EW-SCAN

10.68.104.xxx KC2-EW-SCAN

10.68.104.xxx KC2-EW-SCAN

**Multicast Requirements for Networks Used by Oracle Grid Infrastructure**

Multicasting is required on the private interconnect. For this reason, at a minimum, you must enable multicasting for the cluster:

* Across the broadcast domain as defined for the private interconnect
* On the IP address subnet ranges 224.0.0.0/24 and optionally 230.0.1.0/24

You do not need to enable multicast communications across routers.

**IP Name and Address Requirements for Manual Configuration of Cluster**

Each Node in a RAC cluster must have one public IP, one Public VIP, one ServiceLAN IP, and two Private IP address as follows. Both Public IP and Public VIP must be in same subnet.

Sample IP addresses listed here are based on what exist in current production cluster.

**PRD cluster:**

10.68.104.6 HREWOEL41.hr.state.sbu HREWOEL41

192.168.187.6 HREWOEL41-sl.hr.state.sbu HREWOEL41-sl

192.168.101.1 HREWOEL41-priv1.hr.state.sbu HREWOEL41-priv1

192.168.151.2 HREWOEL41-priv2.hr.state.sbu HREWOEL41-priv2

10.68.104.106 HREWOEL41-vip.hr.state.sbu HREWOEL41-vip

10.68.104.7 HREWOEL42.hr.state.sbu HREWOEL42

192.168.187.7 HREWOEL42-sl.hr.state.sbu HREWOEL42-sl

192.168.101.3 HREWOEL42-priv1.hr.state.sbu HREWOEL42-priv1

192.168.151.4 HREWOEL42-priv2.hr.state.sbu HREWOEL42-priv2

10.68.104.107 HREWOEL42-vip.hr.state.sbu HREWOEL42-vip

10.68.104.8 HREWOEL43.hr.state.sbu HREWOEL43

192.168.187.8 HREWOEL43-sl.hr.state.sbu HREWOEL43-sl

192.168.101.5 HREWOEL43-priv1.hr.state.sbu HREWOEL43-priv1

192.168.151.6 HREWOEL43-priv2.hr.state.sbu HREWOEL43-priv2

10.68.104.108 HREWOEL43-vip.hr.state.sbu HREWOEL43-vip

**HF cluster:**

10.68.104.13 HREWOEL44.hr.state.sbu HREWOEL44

192.168.187.13 HREWOEL44-sl.hr.state.sbu HREWOEL44-sl

192.168.105.1 HREWOEL44-priv1.hr.state.sbu HREWOEL44-priv1

192.168.155.2 HREWOEL44-priv2.hr.state.sbu HREWOEL44-priv2

10.68.104.113 HREWOEL44-vip.hr.state.sbu HREWOEL44-vip

10.68.104.14 HREWOEL45.hr.state.sbu HREWOEL45

192.168.187.14 HREWOEL45-sl.hr.state.sbu HREWOEL45-s1

192.168.105.3 HREWOEL45-priv1.hr.state.sbu HREWOEL45-priv1

192.168.155.4 HREWOEL45-priv2.hr.state.sbu HREWOEL45-priv2

10.68.104.114 HREWOEL45-vip.hr.state.sbu HREWOEL45-vip

10.68.104.15 HREWOEL46.hr.state.sbu HREWOEL46

192.168.187.15 HREWOEL46-sl.hr.state.sbu HREWOEL46-s1

192.168.105.5 HREWOEL46-priv1.hr.state.sbu HREWOEL46-priv1

192.168.155.6 HREWOEL46-priv2.hr.state.sbu HREWOEL46-priv2

10.68.104.115 HREWOEL46-vip.hr.state.sbu HREWOEL46-vip

**KC cluster:**

10.68.104.16 HREWOEL47.hr.state.sbu HREWOEL47

192.168.187.16 HREWOEL47-sl.hr.state.sbu HREWOEL47-sl

192.168.104.1 HREWOEL47-priv1.hr.state.sbu HREWOEL47-priv1

192.168.154.2 HREWOEL47-priv2.hr.state.sbu HREWOEL47-priv2

10.68.104.116 HREWOEL47-vip.hr.state.sbu HREWOEL47-vip

10.68.104.19 HREWOEL48.hr.state.sbu HREWOEL48

192.168.187.19 HREWOEL48-sl.hr.state.sbu HREWOEL48-sl

192.168.104.3 HREWOEL48-priv1.hr.state.sbu HREWOEL48-priv1

192.168.154.4 HREWOEL48-priv2.hr.state.sbu HREWOEL48-priv2

10.68.104.119 HREWOEL48-vip.hr.state.sbu HREWOEL48-vip

**Storage Requirements for 3 RAC Clusters:**

DRSHARE : Allocate a 1.5TB size device(s) and make it visible(share) to all Test and Prod hosts. This is used for Daily Database refreshes.

ASMDRSHARE : Allocate a 1.5TB size device(s) and make it visible(share) to all Test and Prod hosts. This is used for any adhoc Database refreshes apart from daily DB refreshes

**PRD Cluster**

Total Storage = 10TB

Allocate 3 5GB raw devices and rest of raw devices should be sliced in 500GB a piece.

Total Raw devices:

3 - 5GB raw devices

20 – 500GB raw devices



**HF Cluster**

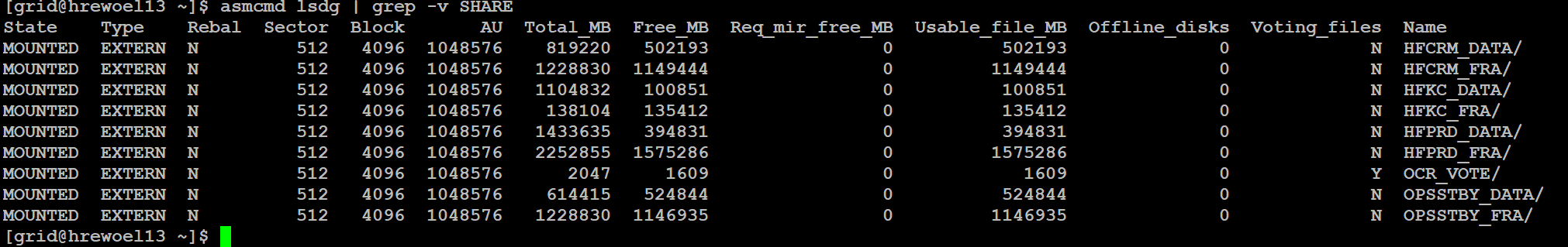
Total Storage = 10TB

Allocate 3 5GB raw devices and rest of raw devices should be sliced in 500GB a piece.

Total Raw devices:

3 - 5GB raw devices

20 – 500GB raw devices



**KC Cluster**

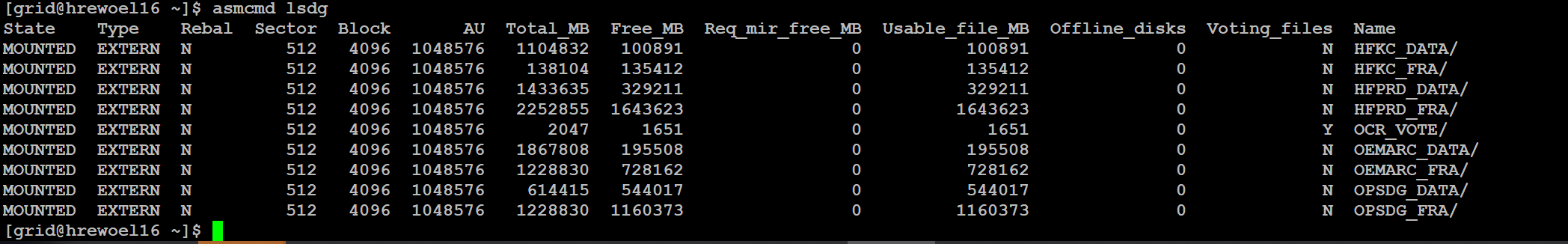
Total Storage = 10TB

Allocate 3 5GB raw devices and rest of raw devices should be sliced in 500GB a piece

Total Raw devices:

3 - 5GB raw devices

20 – 500GB raw devices



**GUI Installer Requirements:**

Oracle GUI installer method will be used for RAC configuration on all nodes which requires X-Windows packages installed on all nodes and also requires KVM console access to DBAs for the duration of installation

**Additional Software Requirements:**

Avamar client software must be installed and configured won all RAC nodes in order to facilitate RMAN backups