

# ORACLE RAC CONFIGURATION

## ENVIRONMENT:

Node/Server	Private IP	Public IP	Virtual IP
DB1	192.168.1.101	192.168.0.101	192.168.0.111
DB2	192.168.1.102	192.168.0.102	192.168.1.112

## Scan IP:

192.168.0.121

192.168.0.122

192.168.0.123

## HOST FILE:

### Enter these entries in both nodes host file:

vi /etc/hosts

# Public

192.168.0.101 db1.db.com db1

192.168.0.102 db2.db.com db2

# Private

192.168.1.101 db1-priv.db.com db1-priv

192.168.1.102 db2-priv.db.com db2-priv

# Virtual

192.168.0.111 db1-vip.db.com db1-vip

192.168.0.112 db2-vip.db.com db2-vip

# SCAN

192.168.0.121 db-scan.db.com db-scan

192.168.0.122 db-scan.db.com db-scan

192.168.0.123 db-scan.db.com db-scan

## DISABLE IPV6:

**Add the following lines to /etc/sysctl.conf:**

```
ifconfig | grep inet
```

```
vi /etc/sysctl.conf
```

```
# Disable IPv6
```

```
net.ipv6.conf.all.disable_ipv6 = 1
```

```
net.ipv6.conf.default.disable_ipv6 = 1
```

```
net.ipv6.conf.lo.disable_ipv6 = 1
```

**Now execute this for apply:**

```
/sbin/sysctl -p
```

**For checking:**

```
ifconfig | grep inet
```

## DISABLE FIREWALL:

```
systemctl disable firewalld
```

```
systemctl stop firewalld
```

## CREATE USERS AND GROUPS:

```
groupadd dba -g 1600
```

```
useradd -g dba -G dba,vboxsf -s /bin/bash oracle -u 1601
```

```
useradd -g dba -G dba,vboxsf -s /bin/bash grid -u 1602
```

```
echo "password" | passwd --stdin oracle
```

```
echo "password" | passwd --stdin grid
```

```
echo "%dba ALL=(ALL:ALL) NOPASSWD: ALL" >> /etc/sudoers
```

## INSTALL NECESSARY PACKAGES:

**Preinstall packages:**

```
yum install -y compat-openssl10
```

```
yum install -y ksh
```

```
yum install -y libnsl
```

```
yum install -y sysstat
yum install -y xterm
yum install libaio-devel*
```

#### **Oracle preinstall:**

```
yum install -y oracle-database-preinstall-19c
```

#### **If above command not working so download like that:**

```
curl -o oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm
https://yum.oracle.com/repo/OracleLinux/OL7/latest/x86_64/getPackage/oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm

rpm -i oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm
```

#### **Install this on browser and SCP to Node:**

```
rpm -i compat-libstdc++-33-3.2.3-72.el7.x86_64.rpm
```

#### **Checking:**

```
cd /etc/security/limits.d/

ls -l

cat oracle-database-preinstall-19c.conf

https://yum.oracle.com/oracle-linux-7.html

https://yum.oracle.com/repo/OracleLinux/OL7/8/base/x86_64/index.html
```

#### **ADD BELOW LIMITS FOR ORACLE AND GRID USER:**

```
vi /etc/security/limits.conf

grid soft stack 10240

oracle soft stack 10240

grid soft nfile 4096

grid hard nfile 63536

oracle soft nfile 4096

oracle hard nfile 63536
```

#### **INSTALL ORACLE ASM:**

```
yum install -y oracleasm*
```

```
yum install kmod-oracleasm -y
```

**If above command not install ASM so SCP oracle ASM from this website:**

<https://www.oracle.com/linux/downloads/linux-asmlib-v7-downloads.html>

```
rpm -i oracleasm-lib-2.0.15-1.el7.x86_64.rpm
```

## CONFIGURE ORACLE ASM:

To configure it run below command:

```
oracleasm configure -i
```

### EXAMPLE:

Look the example and set this data:

```
[root@db1 u01]# oracleasm configure -i
```

Configuring the Oracle ASM library driver.

This will configure the on-boot properties of the Oracle ASM library driver. The following questions will determine whether the driver is loaded on boot and what permissions it will have. The current values will be shown in brackets ('[]'). Hitting <ENTER> without typing an answer will keep that current value. Ctrl-C will abort.

Default user to own the driver interface []: **grid**

Default group to own the driver interface []: **dba**

Start Oracle ASM library driver on boot (y/n) [n]: **y**

Scan for Oracle ASM disks on boot (y/n) [y]: **y**

Writing Oracle ASM library driver configuration: done

### Start the service:

```
systemctl list-unit-files | grep asm
```

```
systemctl enable oracleasm.service
```

```
systemctl start oracleasm.service
```

```
systemctl list-unit-files | grep asm
```

## CREATE DIRECTORIES:

Create directories and give permissions according to you we have two home and base one for grid and second for oracle:

```
mkdir /u01
mkdir /u01/oracle/
mkdir /u01/oracle/V19BaseDatabase
mkdir /u01/oracle/V19Database
mkdir /u01/oracle/V19BaseGrid
mkdir /u01/oracle/V19Grid
chmod 777 /u01
chmod 777 /u01/oracle/
chown oracle:dba /u01/oracle/V19Database
chown oracle:dba /u01/oracle/V19BaseDatabase
chown grid:dba /u01/oracle/V19BaseGrid
chown grid:dba /u01/oracle/V19Grid
cd /u01/oracle; ls -l
```

## SETUP NTP SERVICES (\*3RD ADAPTER NEEDED): ---- OPTIONAL

**Note: If you need to open the internet on your environment so need to add this if not so skip this part:**

```
systemctl enable chronyd
systemctl restart chronyd
chronyc -a 'burst 4/4'
chronyc -a makestep
```

## OPTIONAL – ADD BELOW LINE IN .BASHRC TO SET ENVIROMENT:

### For Oracle user:

Set according to your directories and names:

```
vi /home/oracle/.bashrc
PATH=$PATH:$HOME/bin ; export PATH
```

```
TMP=/tmp ; export TMP
TMPDIR=$TMP ; export TMPDIR
ORACLE_SID=ora19c1 ; export ORACLE_SID
ORACLE_UNQNAME=ora19c ; export ORACLE_UNQNAME
ORACLE_GLOBAL_NAME=ora19c1.db.com ; export ORACLE_GLOBAL_NAME
ORACLE_BASE=/u01/oracle/V19BaseDatabase ; export ORACLE_BASE
ORACLE_HOME=/u01/oracle/V19Database ; export ORACLE_HOME
ORACLE_GRID=/u01/oracle/V19Grid ; export ORACLE_GRID
ORACLE_HOSTNAME=db1.db.com ; export ORACLE_HOSTNAME
PATH=/usr/sbin:$PATH ; export PATH
PATH=$ORACLE_HOME/bin:$PATH ; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib ; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib ; export CLASSPATH
CLASSPATH=$ORACLE_HOME/JRE:$CLASSPATH ; export CLASSPATH
#export DISPLAY=192.168.1.6:7.0
```

#### **For Grid User:**

Set according to your directories and names:

```
vi /home/grid/.bashrc
PATH=$PATH:$HOME/bin ; export PATH
TMP=/tmp ; export TMP
TMPDIR=$TMP ; export TMPDIR
ORACLE_SID=+ASM1 ; export ORACLE_SID
ORACLE_BASE=/u01/oracle/V19BaseGrid ; export ORACLE_BASE
ORACLE_HOME=/u01/oracle/V19Grid ; export ORACLE_HOME
ORACLE_GRID=/u01/oracle/V19Grid ; export ORACLE_GRID
ORACLE_HOSTNAME=db1.db.com ; export ORACLE_HOSTNAME
PATH=/usr/sbin:$PATH ; export PATH
PATH=$ORACLE_HOME/bin:$PATH ; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib ; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib ; export CLASSPATH
```

```
CLASSPATH=$ORACLE_HOME/JRE:$CLASSPATH ; export CLASSPATH
```

```
#export DISPLAY=192.168.1.6:7.0
```

### **IMPORTANT NOTE:**

Every things will be same on bash for node 2 accept ASM SID and HOSTNAME will be change on node 2 like that:

```
ORACLE_SID=+ASM2 ; export ORACLE_SID
```

```
ORACLE_HOSTNAME=db2.db.com ; export ORACLE_HOSTNAME
```

### **ISCSI RPM DOWNLOAD: ----- (OPTIONAL ONLY NEED IN OPENFILER)**

```
yum install iscsi-initiator-utils* -y
```

```
yum install iscsi-initiator-utils-devel* -y
```

### **CLONE NODES FROM BASE IMAGE:**

Note: If you using virtual machine so after cloning do some changes on clone node if using physical machine so need to follow these steps:

Change the MAC address in the Virtual Box Adapter both nodes.

Change the hostname that will give above:

```
vi /etc/hosts
```

Change the IP address of 2nd Node and set according that give above:

```
hostnamectl set-hostname db2.db.com
```

Change bash file.

Note: No changes are required to first node.

### **INSTALL AND CONFIGURE OPEN FILER VM AND SHARED DISK:**

Note: Open file is use to shred disk in both nodes if you not using open filer so skip this:

### **REFERENCE LINK TO INSTALL AND CONFIGURE OPEN FILER:**

<http://abilim.blogspot.com/2014/01/step-by-step-configuring-automatic.html>

### **Download Open filer ISO:**

<http://www.openfiler.com/community/download>

### **Installation of Open Filer:**

- 1- Add openfiler iso on vmware (with assign storage 15 gb and ram 4 gb) must you have hdd or scsi drive
- 2- Begin instllation follow some easy steps
- 3- You must have remember assign static ip address and local hostname in the time of installation
- 4- After the installation you have to power off the virtual machine and add hardive capacity for being purpose of sharing
- 5- Afterward power on the vm machine and trigger url address on screen just copy and paste on the web browser
- 6- You must have ssl ver 1 min and max 3 then you could access the machine

### **ERROR:**

Solve open filer interface is not opening for that we use Firefox there we configure:

Enter this url:

about:config

Now enter this on bar and set 1:

security.tls.version.min

### **Configuration steps:**

- 1- After you open the page of open filer via browser  
Id : openfiler  
Password : password
- 2- Then go to system option and check IP address and local host name
- 3- After check the configuration your start three services initiator.i target,scst target
- 4- After you select volume tab and select option create new volume group and enter volume group name.
- 5- Then go to again volume tab and scroll down and fill the some option available and select disk full size. **(File system select block)**
- 6- Then go to ISCI target and select add option after that generate a address.
- 7- Then go to network ACL and enter network id.
- 8- Then go to LUN mapping option and click on map after that generate and address.



## CONFIGURE OPEN-FILER RAC NODES:

Check ISCSI RPM:

```
rpm -qa iscsi*
```

### Now enable shared storage on node:

Note: the LUN map and IP will be different according to your environment:

```
iscsiadm -m discovery -t sendtargets -p 192.168.0.109
```

```
iscsiadm -m node -T iqn.2006-01.com.openfiler:tsn.3d59eeab4b63 -p 192.168.0.109 -l
```

```
iscsiadm -m node -T iqn.2006-01.com.openfiler:tsn.3d59eeab4b63 -p 192.168.0.109 --op update -n node.startup -v automatic
```

## SETUP SHARED STORAGE:

### Now create partition with fdisk:

#### RAC 1:

```
fdisk /dev/sdi
```

```
N > > > W
```

### Now setup oracle ASM to shared disk:

```
oracleasm createdisk ASMDATA /dev/sde1
```

```
oracleasm createdisk ASMOCR /dev/sdd1
```

#### RAC 2:

```
oracleasm scandisk
```

## INSTALL GRID ON RAC1:

### As a grid user:

Download the grid zip from oracle website and SCP then unzip it:

```
unzip -qq LINUX.X64_193000_grid_home.zip -d /u01/oracle/V19Grid/
```

### As grid user run the gridSetup on RAC 1:

```
/u01/oracle/V19Grid/gridSetup.sh
```

1)

Oracle Grid Infrastructure 19c Installer - Step 1 of 9

**19<sup>c</sup> ORACLE<sup>®</sup>**  
Grid Infrastructure

### Select Configuration Option

Select an option to configure the software. The wizard will register the home in the central inventory and then perform the selected configuration.

- ☒ Configure Oracle Grid Infrastructure for a New Cluster
- ☐ Configure Oracle Grid Infrastructure for a Standalone Server (Oracle Restart)
- ☐ Uppgrade Oracle Grid Infrastructure
- ☐ Set Up Software Only

Configuration Option

- Cluster Configuration
- Operating System Groups
- Installation Location
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Help < Back Next > Install Cancel

2)

Oracle Grid Infrastructure 19c Installer - Step 2 of 9

**19<sup>c</sup> ORACLE<sup>®</sup>**  
Grid Infrastructure

### Select Cluster Configuration

Choose the required cluster configuration.

- ☒ Configure an Oracle Standalone Cluster
- ☐ Configure an Oracle Domain Services Cluster
- ☐ Configure an Oracle Member Cluster for Oracle Databases
- ☐ Configure an Oracle Member Cluster for Applications
- ☐ Configure as an Oracle Extended cluster

Oracle Extended clusters are special purpose clusters that constitute nodes which span across multiple sites. Specify a minimum of 3 site names and a maximum of 5 (e.g., siteA, siteB, siteC).

Site names:

Configuration Option

- Cluster Configuration
- Operating System Groups
- Installation Location
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Help < Back Next > Install Cancel

### 3) add your scan

Oracle Grid Infrastructure 19c Installer - Step 3 of 17

## Grid Plug and Play Information

19c ORACLE Grid Infrastructure

Single Client Access Name (SCAN) allows clients to use one name in connection strings to connect to the cluster as a whole. Client connect requests to the SCAN name can be handled by any

☒ Create Local SCAN

Cluster Name:

SCAN Name:

SCAN Port:

☐ Use Shared SCAN

SCAN Client Data:

☐ Configure GNS

☐ Configure nodes Virtual IPs as assigned by the Dynamic Networks

☒ Create a new GNS

GNS VIP Address:

GNS Sub Domain:

☐ Use Shared GNS

GNS Client Data:

### 4) add second node for that click > add

Oracle Grid Infrastructure 19c Installer - Step 4 of 17

## Cluster Node Information

19c ORACLE Grid Infrastructure

Provide the list of nodes to be managed by Oracle Grid Infrastructure with their Public Hostname and Virtual Hostname.

Public Hostname	Virtual Hostname
db1.db.com	db1-vip.db.com

## 5) Add the host name of RAC2

Oracle Grid Infrastructure 19c Installer - Step 4 of 17

Cluster Node Information

Configuration Option  
Cluster Configuration  
Grid Plug and Play  
Cluster Node Information  
Network Interface Usage  
Storage Option  
Create Grid Infrastructure Ma  
Grid Infrastructure Managem  
Create ASM Disk Group  
ASM Password  
Operating System Groups  
Installation Location  
Root script execution  
Prerequisite Checks  
Summary  
Install Product  
Finish

SSH

Help

< Back Next > Install Cancel

**Add Cluster Node Information**

☒ Add a single node

Specify the name for the public host name. If you want to configure virtual host name manually, then you will be prompted for the virtual IP address.

Public Hostname: db2.db.com

Virtual Hostname: db2-vip.db.com

☐ Add a range of nodes

Specify the node range expression for the required nodes. You can use the following patterns to build the expression: Constant strings such as "myhostname", single character ranges such as "[a-z]" and multi-character sequences such as "[ab|cd|..]".

Public Hostname Expression:

Virtual Hostname Suffix:

Nodes to be generated: 0

OK Cancel

## 6) setup RAC 2 SSH

Oracle Grid Infrastructure 19c Installer - Step 4 of 17

Cluster Node Information

19c ORACLE Grid Infrastructure

Provide the list of nodes to be managed by Oracle Grid Infrastructure with their Public Hostname and Virtual Hostname.

Public Hostname	Virtual Hostname
db1.db.com	db1-vip.db.com
db2.db.com	db2-vip.db.com

SSH connectivity...

Use Cluster Configuration File... Add... Edit... Remove

OS Username: grid OS Password: \*\*\*\*\*

☐ Reuse private and public keys existing in the user home

Test Setup

Help

< Back Next > Install Cancel

7) correct the private to asm private

Oracle Grid Infrastructure 19c Installer - Step 5 of 17

### Specify Network Interface Usage

Private interfaces are used by Oracle Grid Infrastructure for internode traffic.

Interface Name	Subnet	Use for
enp0s3	192.168.1.0	ASM & Private
enp0s8	192.168.0.0	Public
enp0s9	192.168.0.0	Do Not Use
virbr0	192.168.122.0	Do Not Use

Navigation: < Back Next > Install Cancel

8)

Oracle Grid Infrastructure 19c Installer - Step 6 of 17

### Storage Option Information

You can place Oracle Cluster Registry (OCR) files and voting disk files on Oracle ASM storage, or on a file system.

☒ Use Oracle Flex ASM for storage

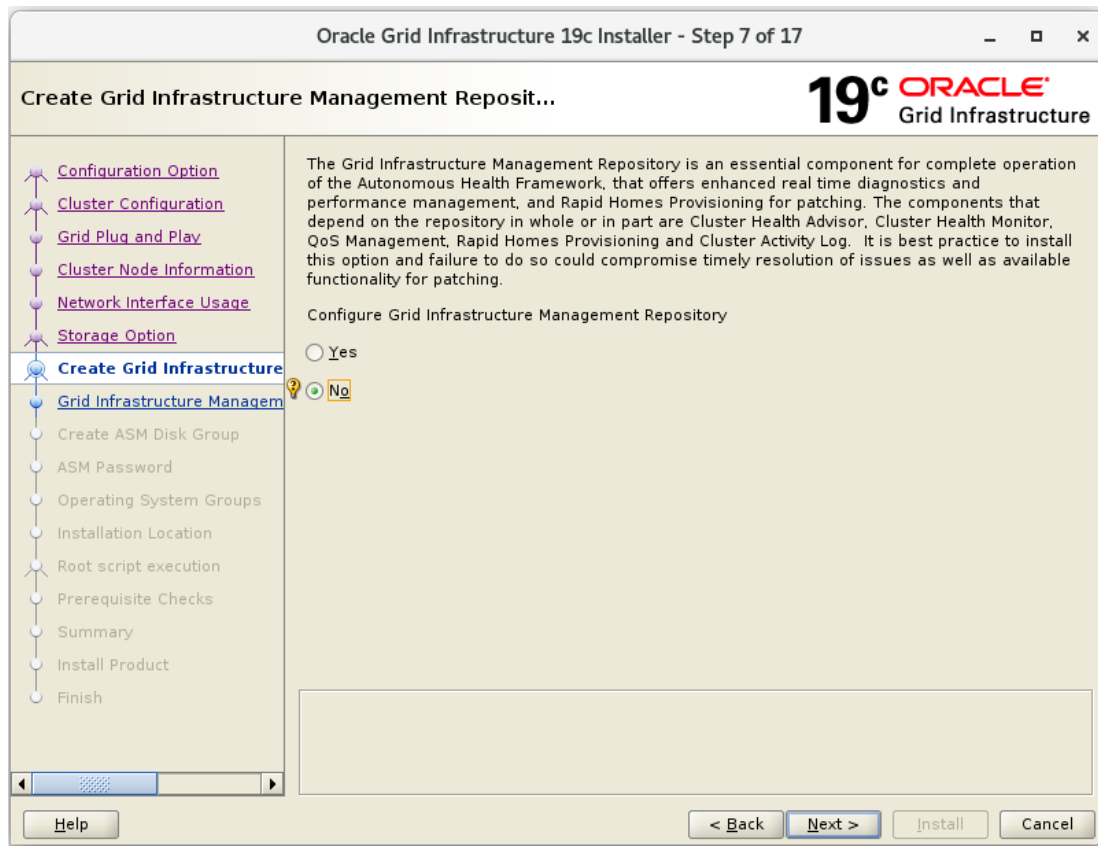
Choose this option to configure OCR and voting disks on ASM storage. ASM instance will be configured on reduced number of cluster nodes.

☐ Use Shared File System

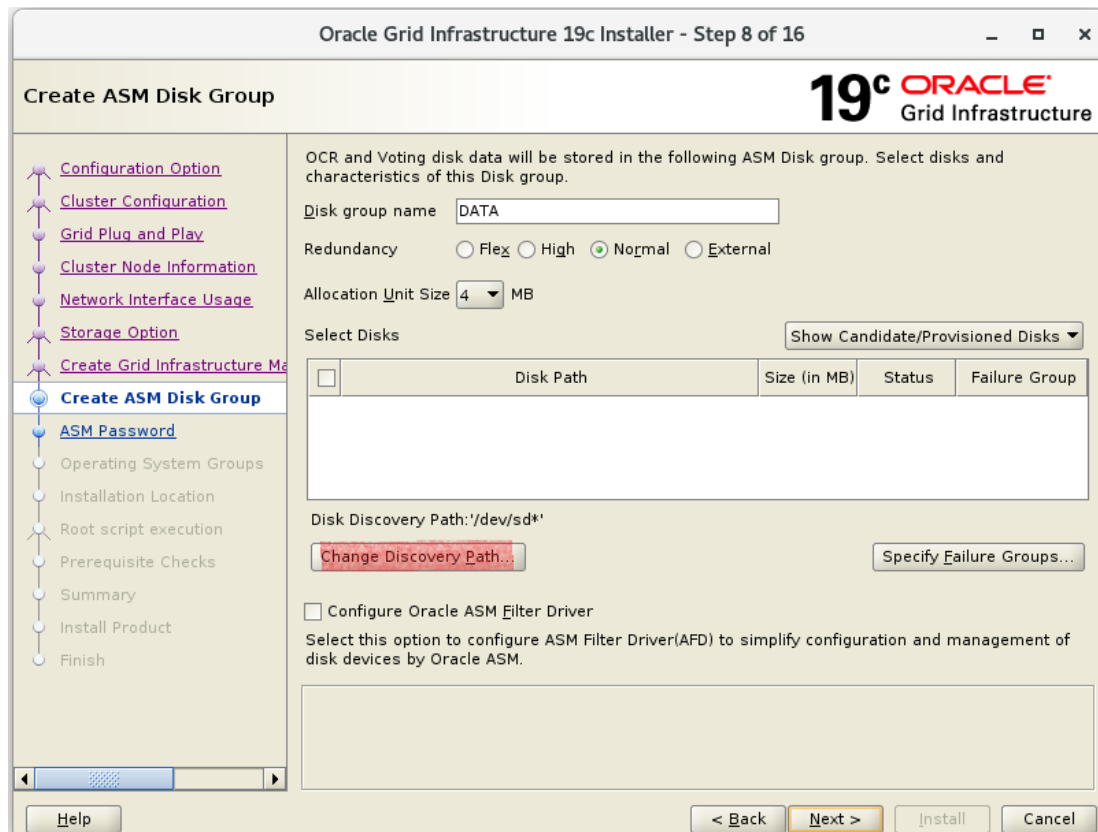
Choose this option to configure OCR and voting disk files on an existing shared file system.

Navigation: < Back Next > Install Cancel

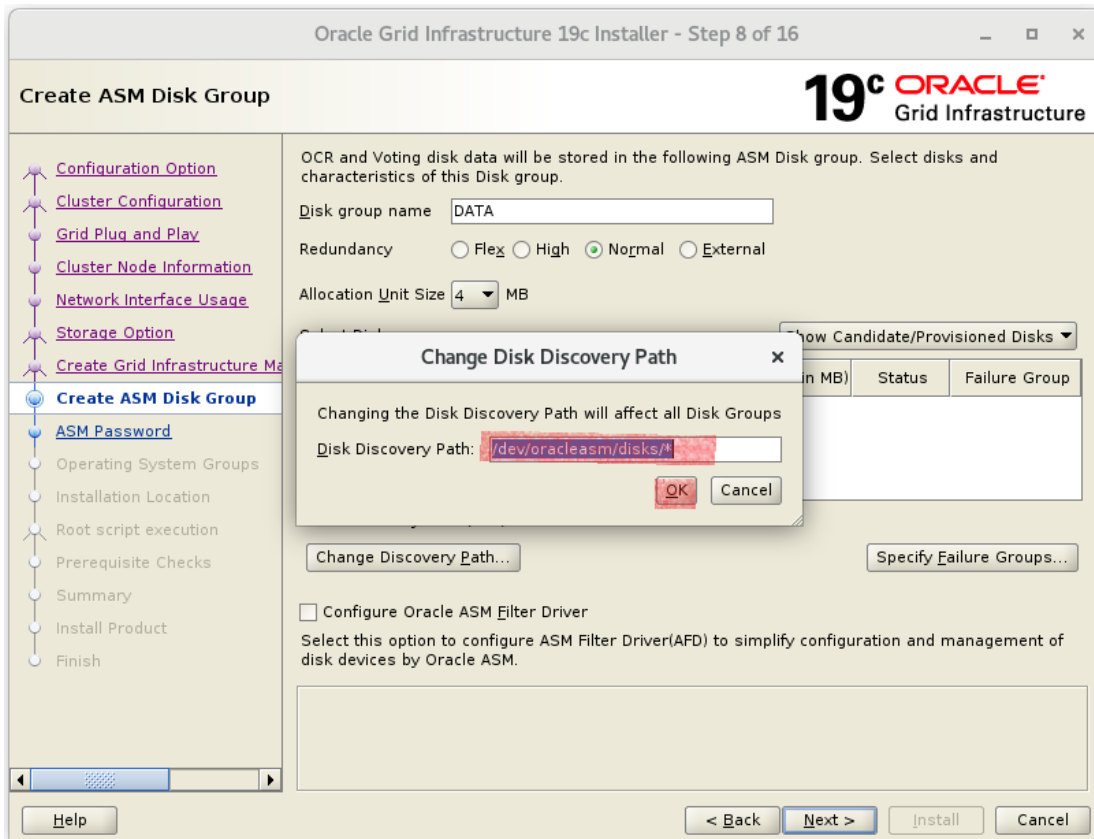
9)



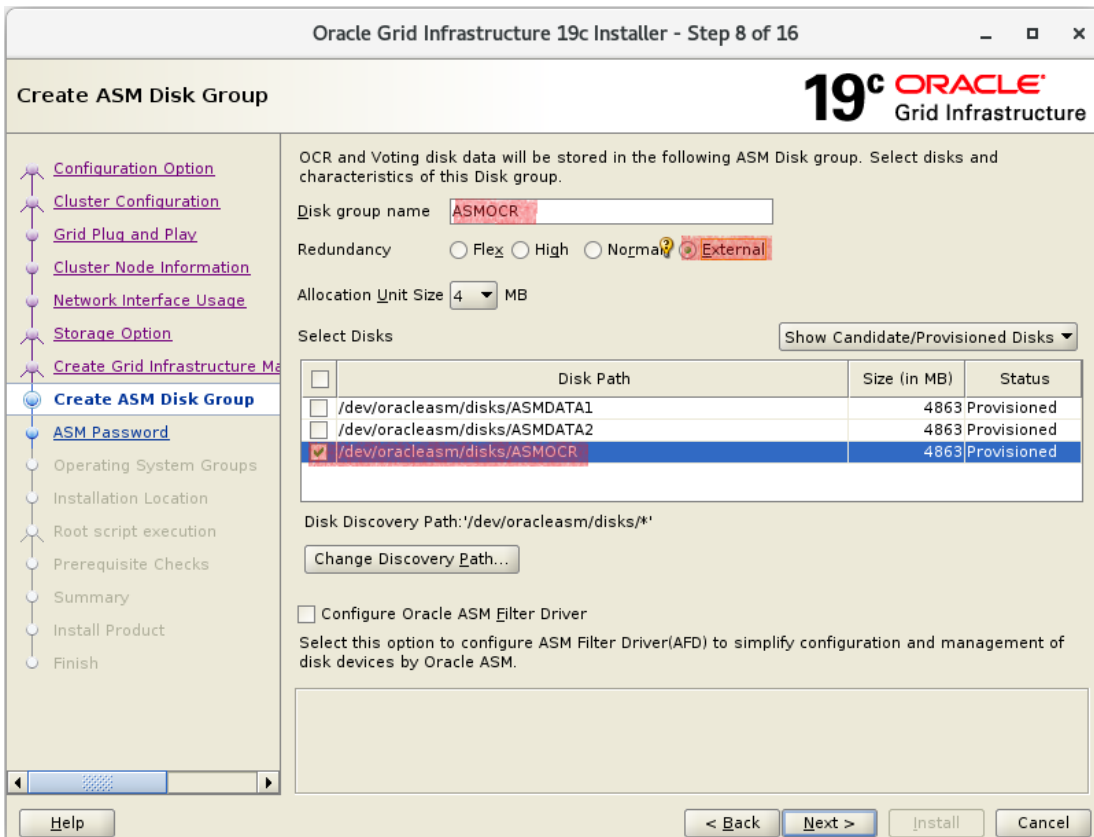
10) it don't show oracle asm disk by default so add that



11) add the path of oracle asm: /dev/oracleasm/disks/\*



12) now select OSR and rename it and select external



13)

Oracle Grid Infrastructure 19c Installer - Step 9 of 16

## Specify ASM Password

**19c ORACLE**  
Grid Infrastructure

The new Oracle Automatic Storage Management (Oracle ASM) instance requires its own SYS user with SYSASM privileges for administration. Oracle recommends that you create a less privileged ASMSNMP user with SYSDBA privileges to monitor the ASM instance.

Specify the password for these user accounts.

☐ Use different passwords for these accounts

	Password	Confirm Password
SYS		
ASMSNMP		

☒ Use same passwords for these accounts

Specify Password:  Confirm Password:

**Messages:**

Specify Password:[INS-30011] The password entered does not conform to the Oracle recommended standards.

Help < Back Next > Install Cancel

14)

Oracle Grid Infrastructure 19c Installer - Step 10 of 18

## Failure Isolation Support

**19c ORACLE**  
Grid Infrastructure

Choose one of the following Failure Isolation Support options.

☐ Use Intelligent Platform Management Interface (IPMI)

To ensure successful installation with IPMI enabled, ensure your IPMI drivers are properly installed and enabled.

User Name :

Password :

☒ Do not use Intelligent Platform Management Interface (IPMI)

Help < Back Next > Install Cancel



15)

Oracle Grid Infrastructure 19c Installer - Step 11 of 18

## Specify Management Options

**19c ORACLE**  
Grid Infrastructure

You can configure to have this instance of Oracle Grid Infrastructure and Oracle Automatic Storage Management to be managed by Enterprise Manager Cloud Control. Specify the details of the Cloud Control configuration to perform the registration.

☐ Register with Enterprise Manager (EM) Cloud Control

O\_M\_S host:

O\_M\_S port:

EM Admin User Name:

EM Admin Password:

**Management Options**

- Configuration Option
- Cluster Configuration
- Grid Plug and Play
- Cluster Node Information
- Network Interface Usage
- Storage Option
- Create Grid Infrastructure Metadata
- Create ASM Disk Group
- ASM Password
- Failure Isolation
- Management Options**
- Operating System Groups
- Installation Location
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Help < Back Next > Install Cancel

16)

Oracle Grid Infrastructure 19c Installer - Step 12 of 18

## Privileged Operating System Groups

**19c ORACLE**  
Grid Infrastructure

Select the name of the operating system group, that you want to use for operating system authentication to Oracle Automatic Storage Management.

Oracle ASM Administrator (OSASM) Group: dba

Oracle ASM DBA (OSDBA for ASM) Group: dba

Oracle ASM Operator (OSOPER for ASM) Group (Optional): dba

**Operating System Groups**

- Configuration Option
- Cluster Configuration
- Grid Plug and Play
- Cluster Node Information
- Network Interface Usage
- Storage Option
- Create Grid Infrastructure Metadata
- Create ASM Disk Group
- ASM Password
- Failure Isolation
- Management Options
- Operating System Groups**
- Installation Location
- Root script execution
- Prerequisite Checks
- Summary
- Install Product
- Finish

Help < Back Next > Install Cancel

17)

Oracle Grid Infrastructure 19c Installer - Step 13 of 18

## Specify Installation Location

**19c ORACLE**  
Grid Infrastructure

Specify the Oracle base. The Oracle base directory for the Oracle Grid Infrastructure installation is the location where diagnostic and administrative logs, and other logs associated with Oracle ASM and Oracle Clusterware are stored. This location would also contain files pertaining to the configuration of Oracle Clusterware.

Oracle base:

This software directory is the Oracle Grid Infrastructure home directory.

Software location: /u01/oracle/V19Grid

Configuration Option  
Cluster Configuration  
Grid Plug and Play  
Cluster Node Information  
Network Interface Usage  
Storage Option  
Create Grid Infrastructure Metadata  
Create ASM Disk Group  
ASM Password  
Failure Isolation  
Management Options  
Operating System Groups  
**Installation Location**  
Root script execution  
Prerequisite Checks  
Summary  
Install Product  
Finish

Help

18)

Oracle Grid Infrastructure 19c Installer - Step 14 of 19

## Create Inventory

**19c ORACLE**  
Grid Infrastructure

You are starting your first installation on this host. Specify a directory for installation metadata files (for example, install log files). This directory is called the "inventory directory". The installer automatically sets up subdirectories for each product to contain inventory data. The subdirectory for each product typically requires 150 kilobytes of disk space.

Inventory Directory:

Members of the following operating system group (the primary group) will have write permission to the inventory directory (orainventory).

orainventory Group Name: dba

Configuration Option  
Cluster Configuration  
Grid Plug and Play  
Cluster Node Information  
Network Interface Usage  
Storage Option  
Create Grid Infrastructure Metadata  
Create ASM Disk Group  
ASM Password  
Failure Isolation  
Management Options  
Operating System Groups  
Installation Location  
**Create Inventory**  
Root script execution  
Prerequisite Checks  
Summary  
Install Product  
Finish

Help

19)

Oracle Grid Infrastructure 19c Installer - Step 15 of 19

## Root script execution configuration

During the software configuration, certain operations have to be performed as "root" user. You can choose to have the installer perform these operations automatically by specifying inputs for one of the options below. The input specified will also be used by the installer to perform additional prerequisite checks.

☒ Automatically run configuration scripts

☒ Use "root" user credential

Password :

☐ Use sudo

Program path :

User name :

Password :

**Help** **< Back** **Next >** **Install** **Cancel**

20) ignore that it will show because of DNS

Oracle Grid Infrastructure 19c Installer - Step 16 of 19

## Perform Prerequisite Checks

**Verification Result**

Some of the minimum requirements for installation are not completed. Review and fix the issues listed in the following table, and recheck the system.

☒ Ignore A

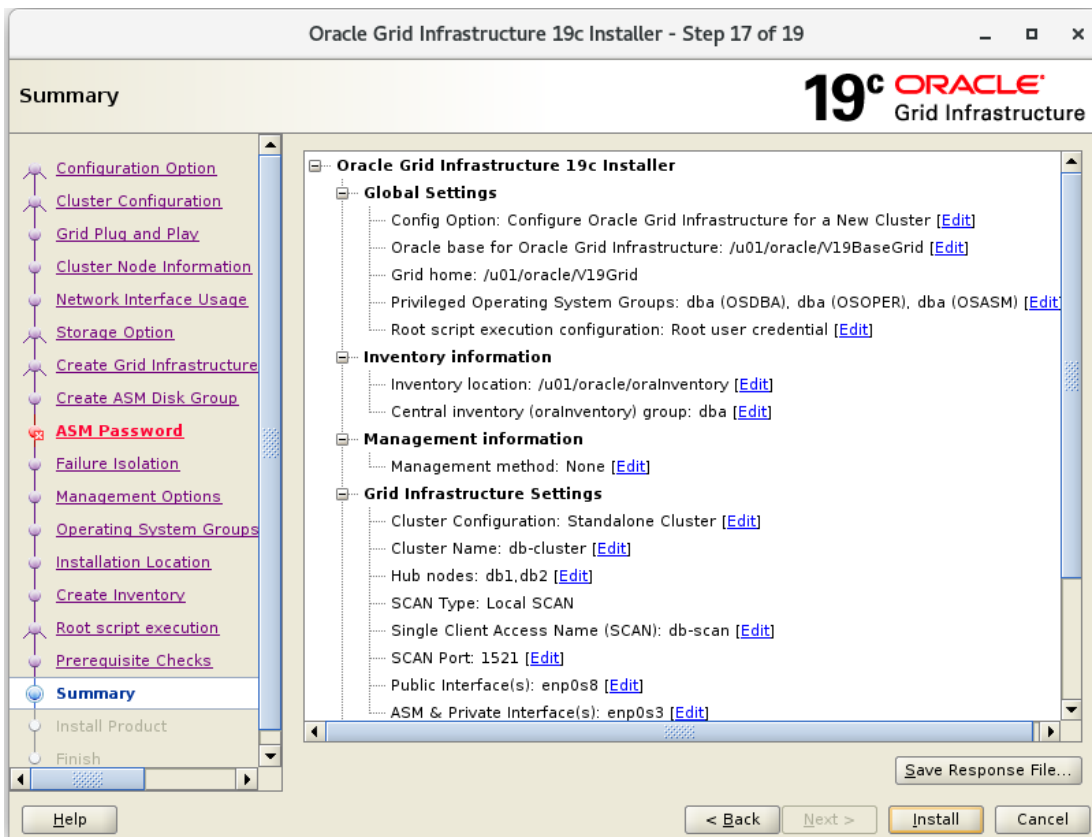
Checks	Status	Fixable
Checks		
resolv.conf Integrity	Ignored	No
Daemon "avahi-daemon" not configured and running	Ignored	Yes
[DNS/NIS name service]		
DNS/NIS name service	Ignored	No

This task checks consistency of file /etc/resolv.conf file across nodes [\(more details\)](#)

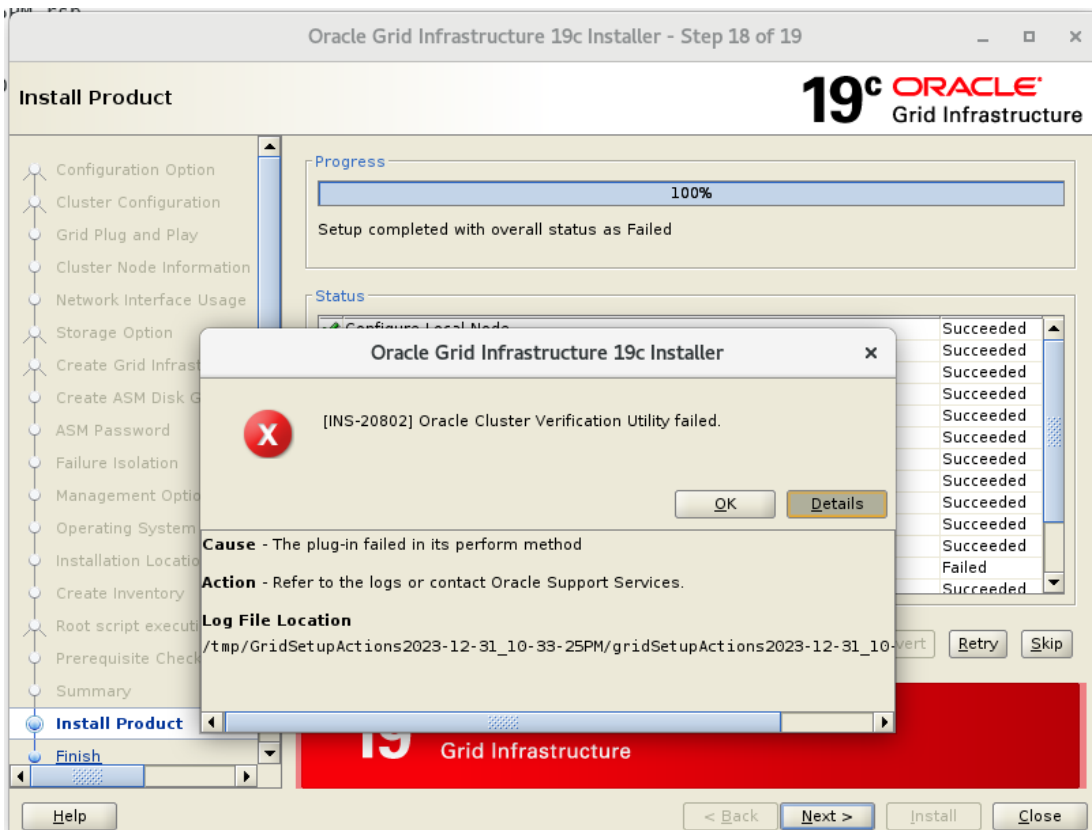
Check Failed on Nodes: [db2, db1]

**Help** **< Back** **Next >** **Install** **Cancel**

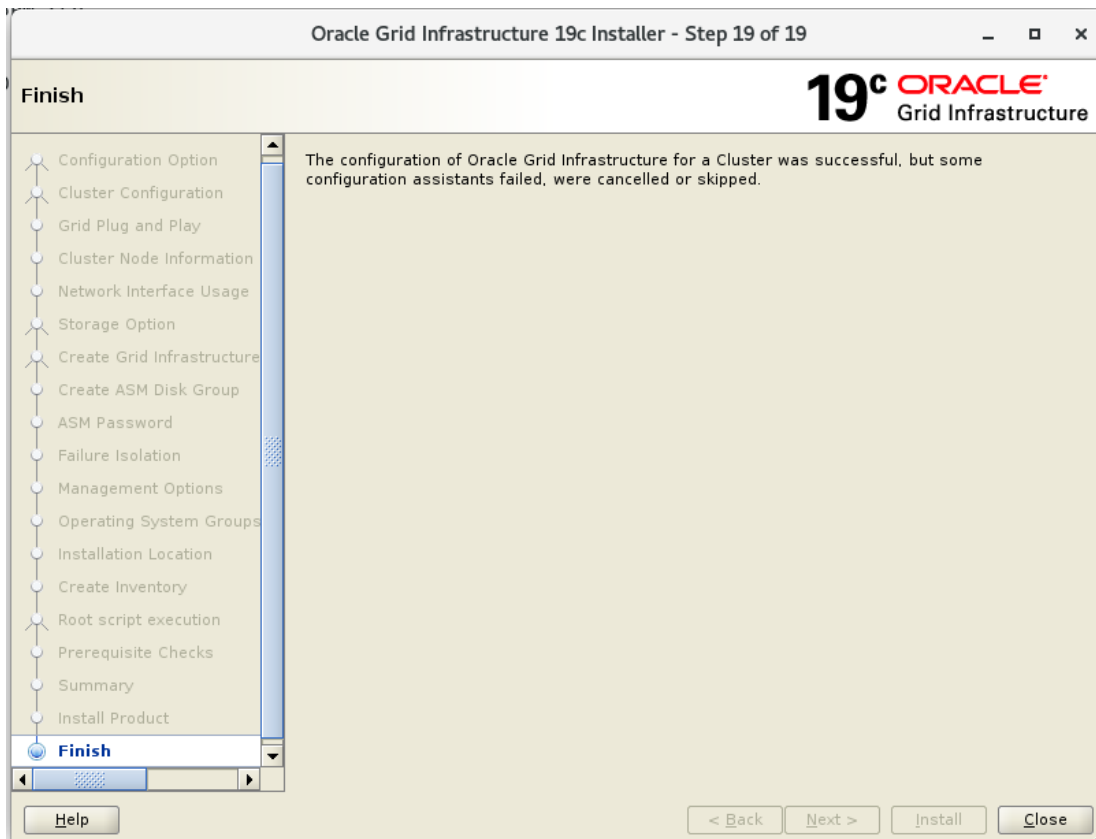
21)



22) ignore this it will show because of DNS you can verify from details



23)



#### ERROR:

IF YOU SEE IN INSTALLATIO THAT NODE 2 FILE COPYING ERROR SO CHECK THE PERMISSION OF RAC1 AND RAC2 ALSO:  
chmod 777 /u01 -R on both node

#### Add entry in /etc/oratab on both Node:

+ASM1:/u01/oracle/V19Grid:Y

RAC2:

+ASM2:/u01/oracle/V19Grid:Y

#### INSTALL RPM:

# as root

/u01/oracle/V19Grid/cv/rpm

CVUQDISK\_GRP=dba; export CVUQDISK\_GRP

rpm -i cvuqdisk-1.0.10-1.rpm

#### ON NODE 2:

```
scp cvuqdisk-1.0.10-1.rpm root@db2:/tmp/
```

```
ssh db2
```

```
/u01/oracle/V19Grid/cv/rpm
```

```
CVUQDISK_GRP=dba; export CVUQDISK_GRP
```

**AFTER GRID INSTALLATION CHECK THE GRID IS INTALLED ON BHOT NODE:**

```
ps -ef | grep pmon
```

```
crsctl stat res -t
```

**INSTALL ORACLE HOME AS ORACLE USER:**

As oracle user:

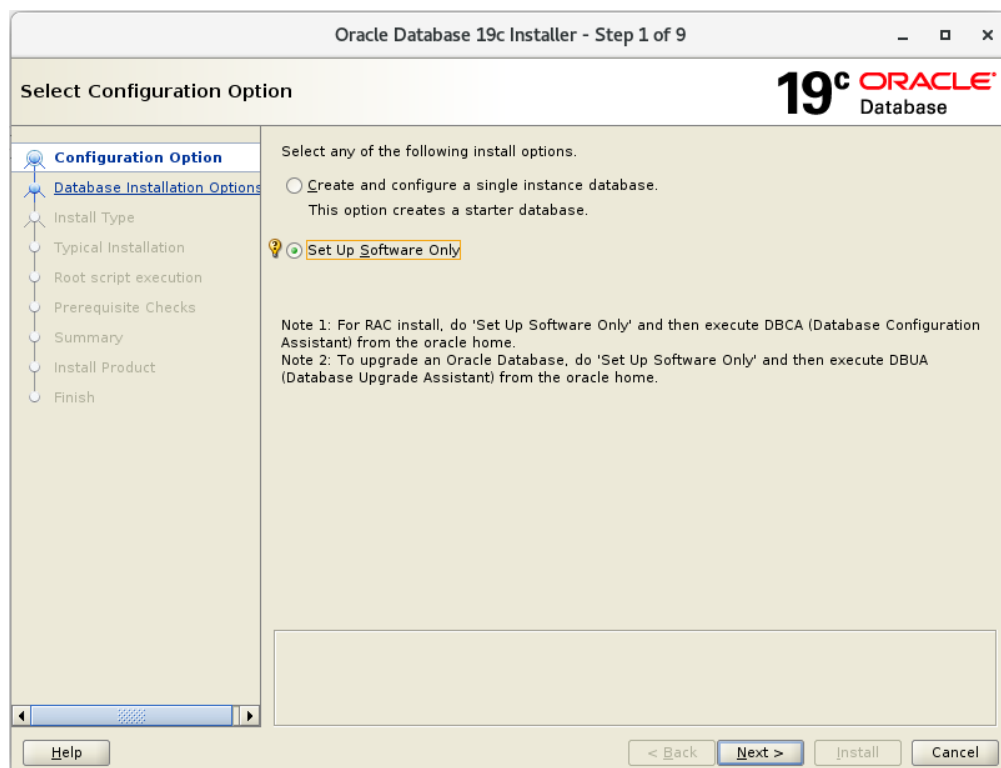
```
cd /u01
```

```
unzip -qq Oracle_DB_19cR300_Enterprise_LIN64_Home.zip -d /u01/oracle/V19Database/
```

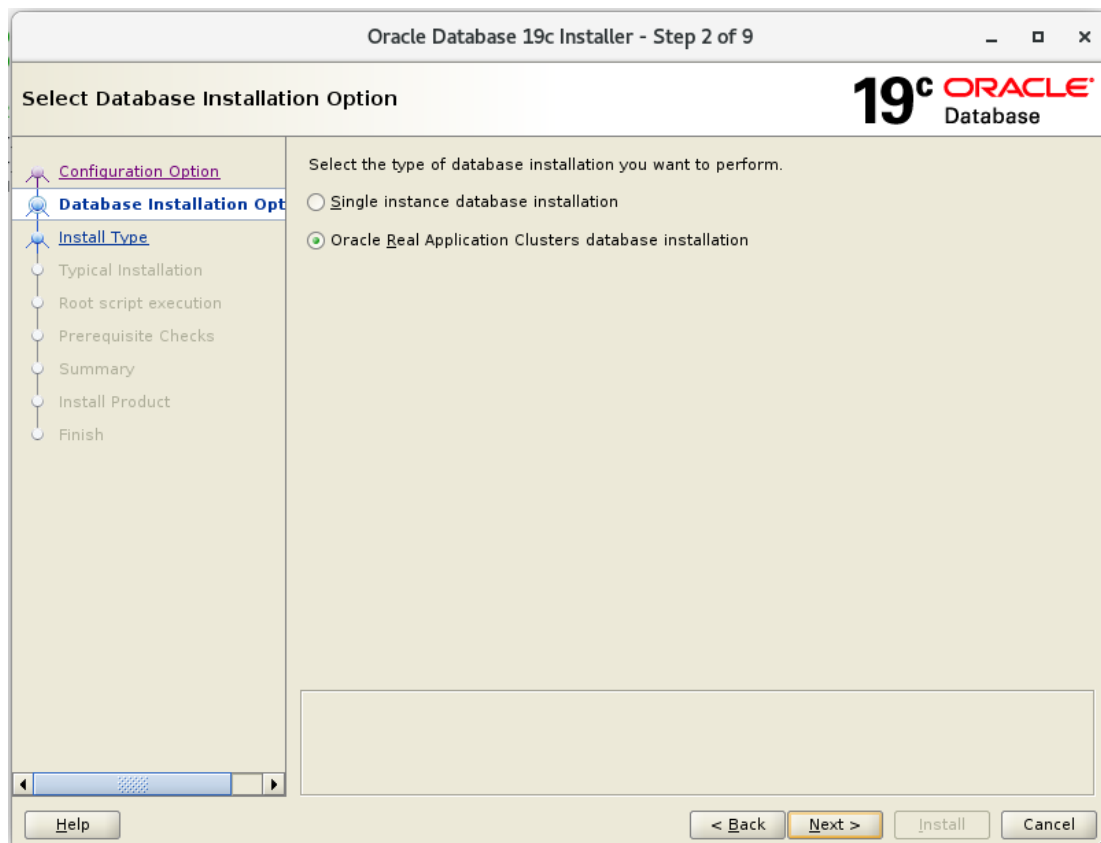
**As oracle user run the run Installer on First Node:**

```
/u01/oracle/V19Database/runInstaller
```

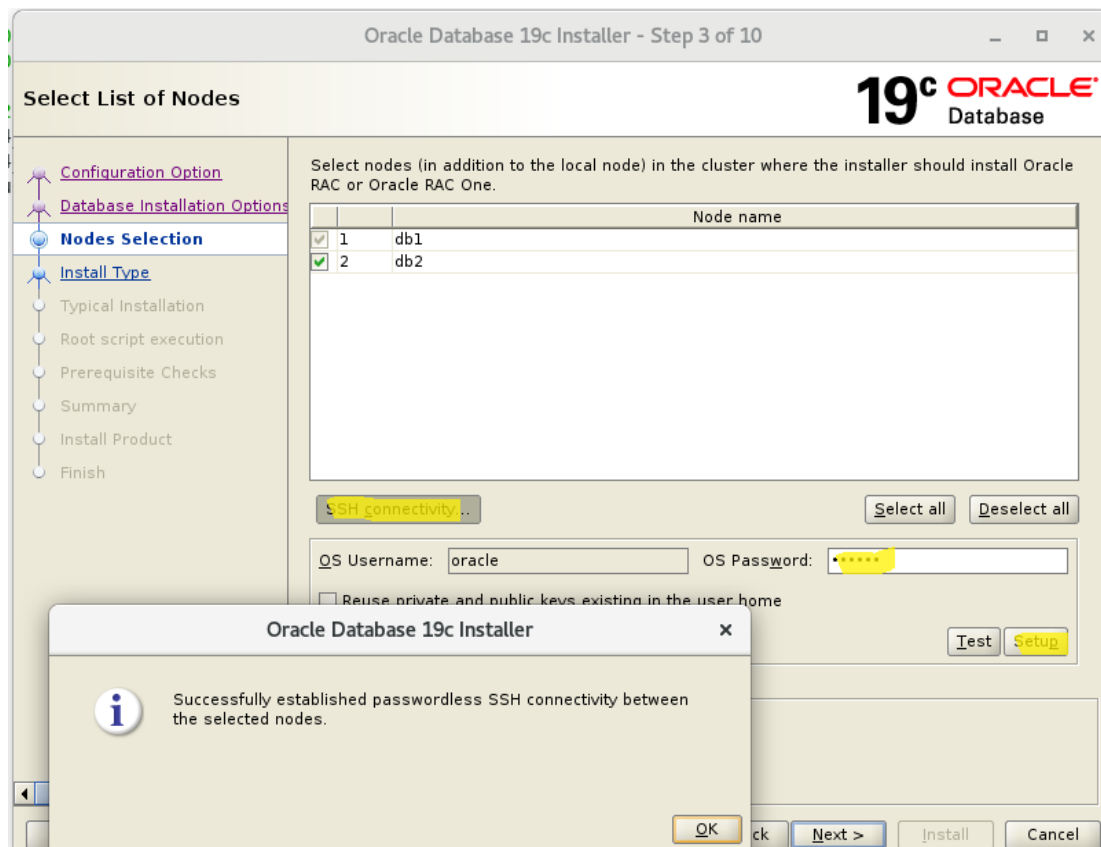
1)



2)



3) Do ssh connectivity for node 2



4)

Oracle Database 19c Installer - Step 4 of 11

## Select Database Edition

19<sup>c</sup> ORACLE Database

Which database edition do you want to install?

☒ Enterprise Edition

Oracle Database 19c Enterprise Edition is a self-managing database that has the scalability, performance, high availability, and security features required to run the most demanding, mission-critical applications.

☐ Standard Edition 2

Oracle Database 19c Standard Edition 2 is a full-featured data management solution ideally suited to the needs of medium-sized businesses.

Help < Back Next > Install Cancel

5)

Oracle Database 19c Installer - Step 5 of 11

## Specify Installation Location

19<sup>c</sup> ORACLE Database

Specify a path to place all Oracle software and configuration-related files installed by this installation owner. This location is the Oracle base directory for the installation owner.

Oracle base: /u01/oracle/V19BaseDatabase Browse...

This software directory is the Oracle Database home directory.

Software location: /u01/oracle/V19Database

Help < Back Next > Install Cancel



6)

Oracle Database 19c Installer - Step 6 of 11

## Privileged Operating System groups

**19c ORACLE Database**

SYS privileges are required to create a database using operating system (OS) authentication. Membership in OS Groups grants the corresponding SYS privilege, eg. membership in OSDBA grants the SYSDBA privilege.

Database Administrator (OSDBA) group: dba

Database Operator (OSOPER) group (Optional): dba

Database Backup and Recovery (OSBACKUPDBA) group: dba

Data Guard administrative (OSDGDBA) group: dba

Encryption Key Management administrative (OSKMDBA) group: dba

Real Application Cluster administrative (OSRACDBA) group: dba

Configuration Option  
Database Installation Options  
Nodes Selection  
Database Edition  
Installation Location  
**Operating System Groups**  
Root script execution  
Prerequisite Checks  
Summary  
Install Product  
Finish

Help < Back Next > Install Cancel

7)

Oracle Database 19c Installer - Step 7 of 11

## Root script execution configuration

**19c ORACLE Database**

During the software configuration, certain operations have to be performed as "root" user. You can choose to have the installer perform these operations automatically by specifying inputs for one of the options below. The input specified will also be used by the installer to perform additional prerequisite checks.

☒ Automatically run configuration scripts

☒ Use "root" user credential

Password : ? .....

☐ Use sudo

Program path : /usr/bin/sudo Browse...

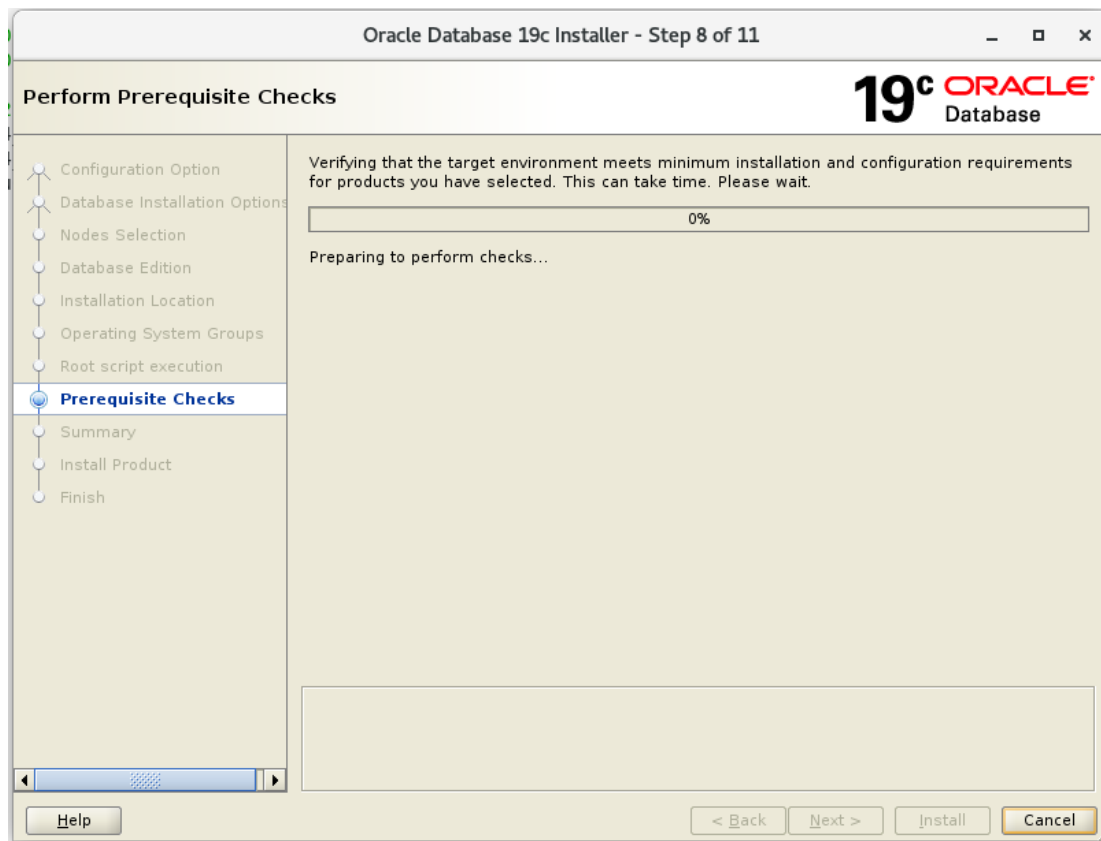
User name : oracle

Password :

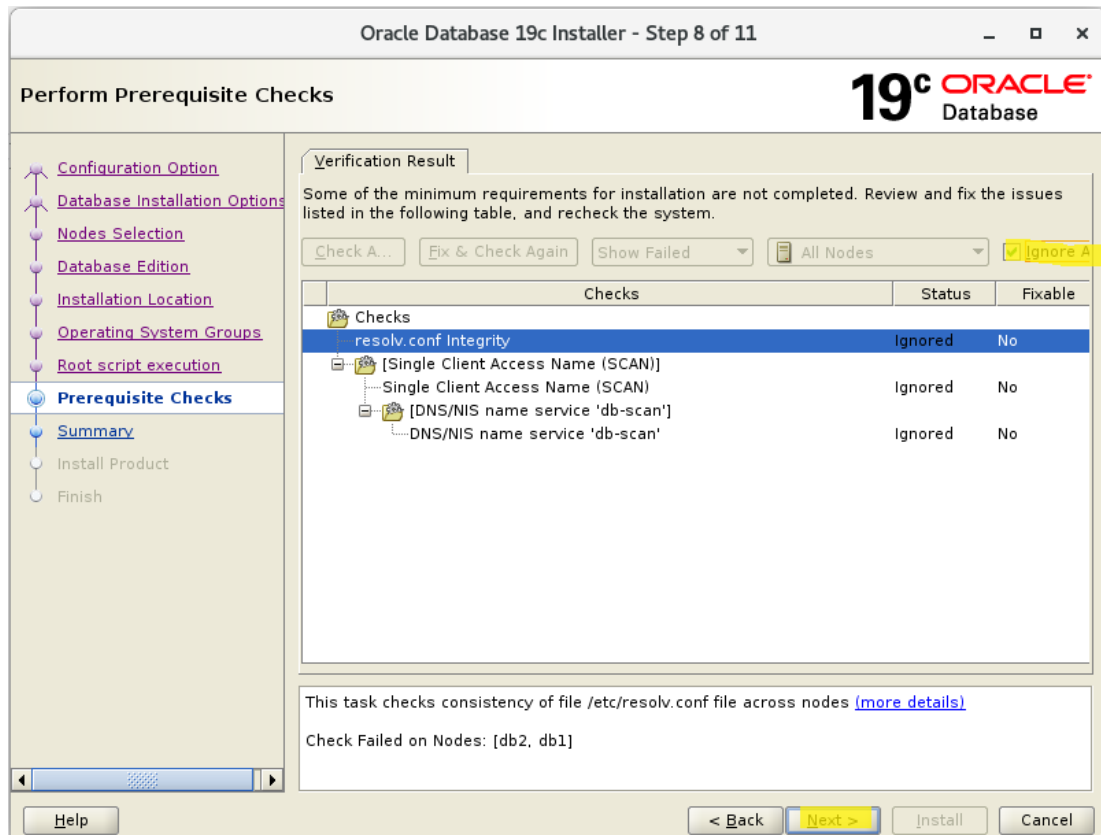
Configuration Option  
Database Installation Options  
Nodes Selection  
Database Edition  
Installation Location  
Operating System Groups  
**Root script execution**  
Prerequisite Checks  
Summary  
Install Product  
Finish

Help < Back Next > Install Cancel

8)



9) This prerequisite failed for DNS SCAN so ignore that



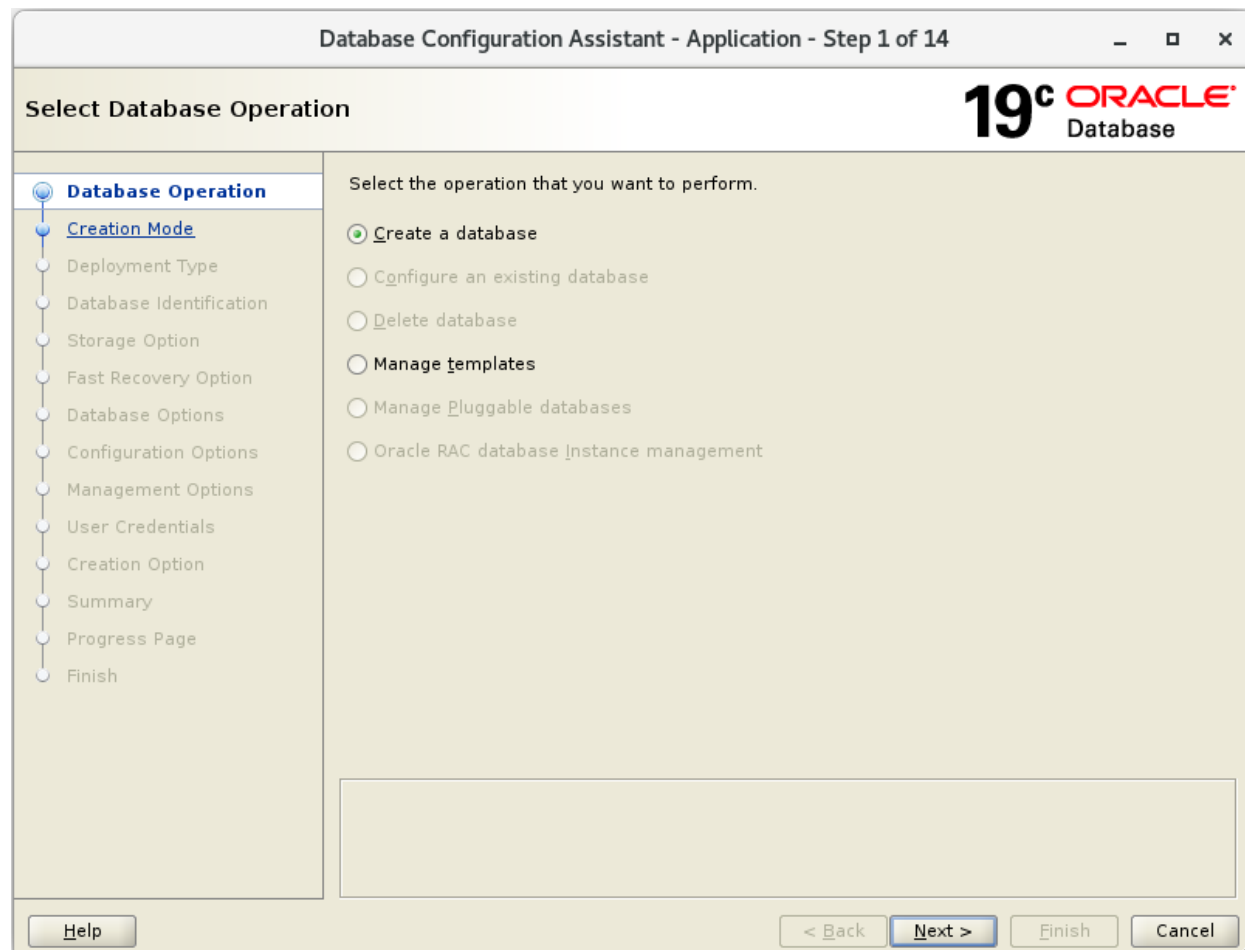
## CREATE DATABASE ON RAC 1:

As oracle user:

```
cd $ORACLE_HOME/bin
```

```
./dbca
```

1)



2)

Database Configuration Assistant - Create a database - Step 2 of 14

**19c ORACLE Database**

### Select Database Creation Mode

- Database Operation
- Creation Mode**
- Deployment Type
- Database Identification
- Storage Option
- Fast Recovery Option
- Database Options
- Configuration Options
- Management Options
- User Credentials
- Creation Option
- Summary
- Progress Page
- Finish

☐ Typical configuration

Global database name:

Storage type:

Database files location:

Fast Recovery Area (FRA):

Database character set:

Administrative password:

Confirm password:

☒ Create as Container database

Pluggable database name:

☒ Advanced configuration

3)

Database Configuration Assistant - Create a database - Step 3 of 14

**19c ORACLE Database**

### Select Database Deployment Type

- Database Operation
- Creation Mode
- Deployment Type**
- Database Identification
- Storage Option
- Fast Recovery Option
- Database Options
- Configuration Options
- Management Options
- User Credentials
- Creation Option
- Summary
- Progress Page
- Finish

Select the type of database you want to create.

Database type:

Configuration type:

Select a template for your database.

Templates that include datafiles contain pre-created databases. They allow you to create a new database quickly. Use templates without datafiles only when necessary, such as when you need to change attributes like block size that cannot be altered after database creation.

Template name	Include datafiles	Details
<input type="radio"/> Data Warehouse	Yes	<a href="#">View details</a>
<input type="radio"/> Custom Database	No	<a href="#">View details</a>
<input checked="" type="radio"/> General Purpose or Transaction Processing	Yes	<a href="#">View details</a>

Template location:

4)

Database Configuration Assistant - Create a database - Step 4 of 16

**19<sup>c</sup> ORACLE Database**

### Select List of Nodes

Select the nodes on which you want to create the cluster database. The local node "db1" should always be selected.

	Node name
<input checked="" type="checkbox"/>	1 db1
<input checked="" type="checkbox"/>	2 db2

5)

Database Configuration Assistant - Create a database - Step 5 of 16

**19<sup>c</sup> ORACLE Database**

### Specify Database Identification Details

Provide a unique database identifier information. An Oracle database is uniquely identified by a Global database name, typically of the form "name.domain".

Global database name:

SID Prefix:

Service name:

☐ Create as Container database

A Container database can be used for consolidating multiple databases into a single database, and it enables database virtualization. A Container database (CDB) can have zero or more pluggable databases (PDB).

☒ Use Local Undo tablespace for PDBs

☐ Create an empty Container database

☒ Create a Container database with one or more PDBs

Number of PDBs:

PDB name:

6)

Database Configuration Assistant - Create 'ora19c' database - Step 6 of 16

**19c ORACLE Database**

Select Database Storage Option

Database Operation  
Creation Mode  
Deployment Type  
Nodes Selection  
Database Identification  
**Storage Option**  
Fast Recovery Option  
Database Options  
Configuration Options  
Management Options  
User Credentials  
Creation Option  
Prerequisite Checks  
Summary  
Progress Page  
Finish

☐ Use template file for database storage attributes  
Storage type and location for database files will be picked up from the specified template (General Purpose or Transaction Processing).

☒ Use following for the database storage attributes  
All the database files will be put at the specified location below. You can customize the name and location of each datafile in the subsequent screen.

Database files storage type: Automatic Storage Management (ASM)

Database files location: +ASM DATA1/{DB\_UNIQUE\_NAME} Browse...

Oracle Managed files option will enable Oracle to automatically generate the names of the datafiles for simplified database management.

☐ Use Oracle-Managed Files (OMF) Multiplex redo logs and control files...

File location variables...

Help < Back Next > Finish Cancel

7) --- Solution --- SELECT name, compatibility FROM v\$asm\_diskgroup; (for-check) ALTER DISKGROUP ASMDATA1 SET ATTRIBUTE 'compatible.asm' = '19.0'; (change)

Database Configuration Assistant - Create 'ora19c' database - Step 6 of 16

**19c ORACLE Database**

Select Database Storage Option

Database Operation  
Creation Mode  
Deployment Type  
Nodes Selection  
Database Identification  
**Storage Option**  
Fast Recovery Option  
Database Options  
Configuration Options  
Management Options  
User Credentials  
Creation Option  
Prerequisite Checks  
Summary  
Progress Page  
Finish

☐ Use template file for database storage attributes  
Storage type and location for database files will be picked up from the specified template (General Purpose or Transaction Processing).

☒ Use following for the database storage attributes  
All the database files will be put at the specified location below. You can customize the name and location of each datafile in the subsequent screen.

Database files storage type: Automatic Storage Management (ASM)

Database files location: +ASM DATA1/{DB\_UNIQUE\_NAME} Browse...

Oracle Managed files option will enable Oracle to automatically generate the names of the datafiles for simplified database management.

☐ Use Oracle-Managed Files (OMF) Multiplex redo logs and control files...

File location variables...

Help < Back Next > Finish Cancel

**Database Configuration Assistant**

[DBT-05802] Creating password file on diskgroup (ASMDATA1) would fail since it requires compatible.asm of version (12.1.0.0.0) or higher. Current compatible.asm version is '11.2.0.2.0'.

OK Details

8) add storage asmdata2 like asmdata1 add (optional enable archive)

Database Configuration Assistant - Create 'ora19c' database - Step 7 of 16

### Select Fast Recovery Option

19c ORACLE Database

Choose the recovery options for the database.

☒ Specify Fast Recovery Area

Recovery files storage type: Automatic Storage Management (ASM)

Fast Recovery Area: +ASMDATA2 [Browse...](#)

Fast Recovery Area size: 4863 MB

☒ Enable archiving [Edit archive mode parameters...](#)

[Help](#) [< Back](#) [Next >](#) [Finish](#) [Cancel](#)

9)

Database Configuration Assistant - Create 'ora19c' database - Step 8 of 16

### Select Oracle Data Vault Config Option

19c ORACLE Database

☐ Configure Oracle Database Vault

Database Vault owner:

Password:  Confirm password:

☐ Create a separate account manager

Account manager:

Password:  Confirm password:

☐ Configure Oracle Label Security

☐ Configure Oracle Label Security with OJD

[Help](#) [< Back](#) [Next >](#) [Finish](#) [Cancel](#)

10)

Database Configuration Assistant - Create 'ora19c' database - Step 9 of 16

### Specify Configuration Options

19<sup>c</sup> ORACLE Database

Memory | **Sizing** | Character sets | Connection mode | Sample schemas

☒ Use Automatic Shared Memory Management

SGA size: 2388 MB

PGA Size: 797 MB

☐ Use Manual Shared Memory Management

Shared pool size: 0 MB

Buffer cache size: 0 MB

Java pool size: 0 MB

Large pool size: 0 MB

PGA size: 0 MB

Total memory for database 0 MB

☐ Use Automatic Memory Management

Memory target: 3185 MB

490 3185 7964

Help < Back Next > Finish Cancel

11)

Database Configuration Assistant - Create 'ora19c' database - Step 10 of 16

### Specify Management Options

19<sup>c</sup> ORACLE Database

Database Operation | Creation Mode | Deployment Type | Nodes Selection | Database Identification | Storage Option | Fast Recovery Option | Data Vault Option | **Configuration Options** | **Management Options** | User Credentials | Creation Option | Prerequisite Checks | Summary | Progress Page | Finish

Specify the management options for the database.

☒ Run Cluster Verification Utility (CVU) checks periodically

☐ Configure Enterprise Manager (EM) database express

EM database express port: 5500

☐ Register with Enterprise Manager (EM) cloud control

OMS host:

OMS port:

EM admin username:

EM admin password:

ASMSNMP user password:

Help < Back Next > Finish Cancel



12)

Database Configuration Assistant - Create 'ora19c' database - Step 11 of 16

### Specify Database User Credentials

**19<sup>c</sup> ORACLE Database**

You must specify passwords for the following user accounts in the new database for security reasons.

☐ Use different administrative passwords

	Password	Confirm password
SYS	<input type="text"/>	<input type="text"/>
SYSTEM	<input type="text"/>	<input type="text"/>
DBSNMP	<input type="text"/>	<input type="text"/>

☒ Use the same administrative password for all accounts

Password:  Confirm password:

**Messages:**

Password: [DBT-06208] The 'ADMIN' password entered does not conform to the Oracle recommended standards.

Help < Back Next > Finish Cancel

13)

Database Configuration Assistant - Create 'ora19c' database - Step 12 of 16

### Select Database Creation Option

**19<sup>c</sup> ORACLE Database**

Select the database creation options.

☒ Create database

Specify the SQL scripts you want to run after the database is created. The scripts are run in the order listed below.

Post DB creation scripts:  Browse...

☐ Save as a database template

Template name:

Template location:  Browse...

Description:

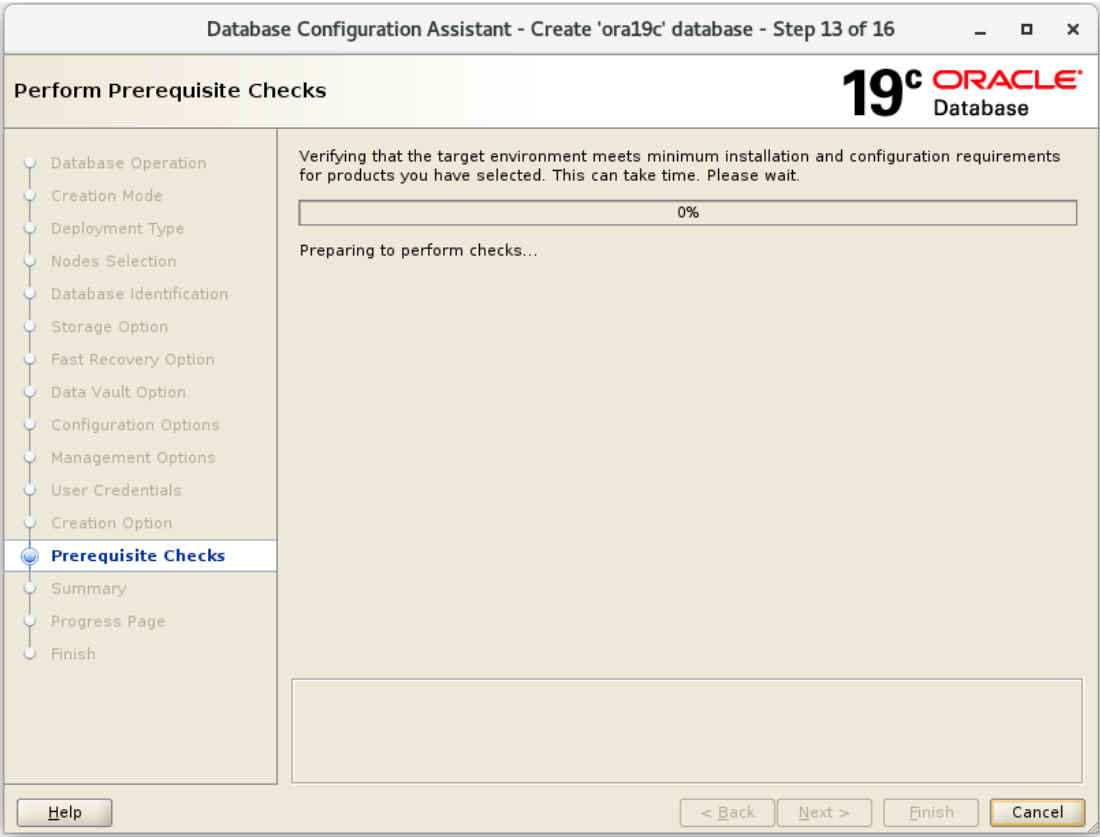
☐ Generate database creation scripts

Destination directory:  Browse...

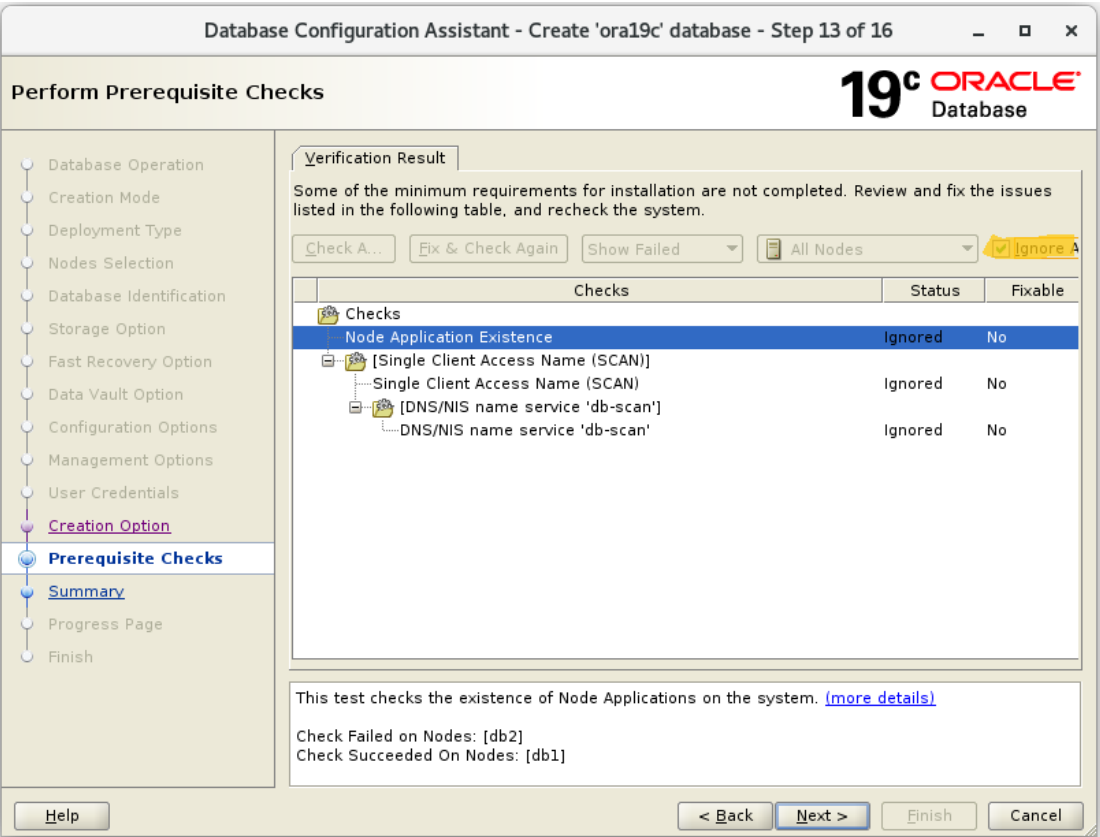
Following advanced configuration options can be used to configure initialization parameters and customize database storage locations.

Help < Back Next > Finish Cancel

14)



15) SAME DNS ERROR



16)

Database Configuration Assistant - Create 'ora19c' database - Step 14 of 16

**Summary**

**Database Configuration Assistant**

- Global Settings
  - Global database name: ora19c
  - Node List: db1,db2
  - Configuration type: Oracle Real Application Cluster (RAC) database - Admin Managed
  - SID: ora19c
  - Create as Container database: No
  - Database Files Storage Type: Automatic Storage Management (ASM)
  - Memory Configuration Type: Automatic Shared Memory Management
  - Template name: General Purpose
- Initialization Parameters
  - audit\_file\_dest: {ORACLE\_BASE}/admin/{DB\_UNIQUE\_NAME}/adump
  - audit\_trail: db
  - cluster\_database: true
  - compatible: 19.0.0
  - control\_files: ('+ASM DATA1/{DB\_UNIQUE\_NAME}/control01.ctl', '+ASM DATA2/{DB\_UNIQUE\_NAME}/control02.ctl')
  - db\_block\_size: 8192 BYTES
  - db\_name: ora19c
  - db\_recovery\_file\_dest: +ASM DATA2
  - db\_recovery\_file\_dest\_size: 4 GB
  - diagnostic dest: {ORACLE\_BASE}

Save Response File...

< Back Next > Finish Cancel

17)

Database Configuration Assistant - Create 'ora19c' database - Step 16 of 16

**Finish**

Database creation complete. For details check the logfiles at:  
/u01/oracle/V19BaseDatabase/cfgtoollogs/dbca/ora19c.

Database Information:  
Global Database Name: ora19c  
System Identifier(SID) Prefix: ora19c  
Server Parameter File name: +ASM DATA1/ORA19C/PARAMETERFILE/spfile.268.1157590427

Note: All database accounts except SYS, SYSTEM and DBSNMP are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts (except DBSNMP). From the Password Management window, unlock only the accounts you will use. Oracle strongly recommends changing the default passwords immediately after unlocking the account.

Password Management...

< Back Next > Finish Close

## Add entry in /etc/oratab

+ora19c1:/u01/oracle/V19Database:Y

## CREATE ASM DATA DISK FOR THE DATABASE RAC 1:

As grid user:

. oraenv

+ASM1

sqlplus / as sysasm

CREATE DISKGROUP ASMDATA1 EXTERNAL REDUNDANCY DISK '/dev/oracleasm/disks/ASMDATA1';

SELECT STATE, NAME FROM V\$ASM\_DISKGROUP;

ALTER DISKGROUP ASMDATA MOUNT;

COL name FOR A10;

COL compatibility FOR A15;

SELECT name, compatibility FROM v\$asm\_diskgroup;

ALTER DISKGROUP ASMDATA SET ATTRIBUTE 'compatible.asm' = '19.0';

CREATE DISKGROUP ASMDATA2 EXTERNAL REDUNDANCY DISK '/dev/oracleasm/disks/ASMDATA2';

SELECT STATE, NAME FROM V\$ASM\_DISKGROUP;

ALTER DISKGROUP ASMDATA2 MOUNT;

SELECT name, compatibility FROM v\$asm\_diskgroup;

ALTER DISKGROUP ASMDATA2 SET ATTRIBUTE 'compatible.asm' = '19.0';

## TEST THE RAC:

Create table on RAC 1 and select from RAC 2:

-- Create the suleman table:

CREATE TABLE suleman5 (

sulemanloyee\_id NUMBER PRIMARY KEY,

sulemanloyee\_name VARCHAR2(50),

hire\_date DATE

);

**-- Insert dummy data:**

```
INSERT INTO suleman5 (sulemanloyee_id, sulemanloyee_name, hire_date) VALUES (1, 'Suleman1', TO_DATE('2023-01-01', 'YYYY-MM-DD'));
```

```
INSERT INTO suleman5 (sulemanloyee_id, sulemanloyee_name, hire_date) VALUES (2, 'Suleman2', TO_DATE('2023-02-01', 'YYYY-MM-DD'));
```

```
INSERT INTO suleman5 (sulemanloyee_id, sulemanloyee_name, hire_date) VALUES (3, 'Suleman3', TO_DATE('2023-03-01', 'YYYY-MM-DD'));
```

**-- Commit the changes**

```
COMMIT;
```

**RAC 2:**

```
select * from suleman;
```

## STARTUP AND SHUTDOWN ORACLE RAC BOTH NODES:

### RAC START:

Startup RAC step by step like that:

1 CRS

2 NODE

3 ASM

4 DB INSTANCE

5 DB

#### 1. CRS:

```
crsctl check cluster -all
```

```
crsctl start crs
```

```
crsctl start crs
```

#### 2. NODE:

GRID:

```
srvctl status nodeapps -n db1
```

```
srvctl status nodeapps -n rac2
```

### **3. ASM:**

GRID:

```
srvctl status asm -n db1
```

```
srvctl status asm -n db2
```

```
srvctl start asm -n rac1
```

```
srvctl start asm -n rac2
```

```
srvctl stop asm -n rac2
```

```
srvctl stop asm -n rac2
```

### **4. DB INSTANCE:**

STOP AND START DB + INSTANCE

```
srvctl status database -d ora19c
```

```
srvctl stop database -d ora19c
```

```
srvctl start database -d ora19c
```

### **5. DB:**

ONLY INSTANCE + PARTICULAR ONE INSTANCE

```
srvctl start instance -d RAC -i instance
```

```
srvctl start instance -d RAC -i instance
```

### **RAC SHUTDOWN:**

Shutdown RAC step by step like that:

1 DB

2 DB INSTANCE

3 ASM

4 NODE

5 CRS

**Run above commands with shutdown clause.**

DOCUMENT MADE BY: SULEMAN SIDDIQUI

IF YOU FACE ANY PROBLEM CONTACT ME:

[sulemansidd992@gmail.com](mailto:sulemansidd992@gmail.com)