

Oracle RAC 19c(19.20.0.0.0) on SUSE Linux Enterprise Server 15 (SP5) for x86-64

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Introduction

This document provides details on installing Oracle Grid/Database 19c on SUSE Linux Enterprise Server 15 SP5. It covers x86_64 version but installation steps are same for other supported platforms. (x86, ia64, System z, etc.).

Official Oracle product documentation is available at: <http://docs.oracle.com/en/>

System Requirements and Specifications

Hardware Requirements

Requirement	Minimum
RAM	32 GB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	8 GB
Disk space for software files	8 GB
Disk space for database files	8 GB

Software Requirements

SUSE

- *SUSE Linux Enterprise Server 15 SP5 GM (x86_64)*
(<https://www.suse.com/products/server/download>)

Oracle

- *Oracle Grid Infrastructure 19c (19.3) (x86_64)*
- *Oracle Database 19c (19.3) (x86_64)*
(<https://www.oracle.com/database/technologies/oracle19c-linux-downloads.html>)
- *Patch 35319490: GI RELEASE UPDATE 19.20.0.0.0*
(<https://support.oracle.com>)

Cluster(4-node) Information

HP DL360 Gen10 Server (Intel Xeon Gold 6136 (~24 CPU)), 96GB RAM

4 NIC per server (two bonded as active/passive) + Static IP Address

Local HDD (500GB)

Shared SAN Partition (ASM: 40GB, NFS:500GB, OAST:600GB)

OS: SUSE Linux Enterprise Server 15 SP5(x86_64)

Kernel version: 5.14.21-150500.55.28-default

Network configuration:

Public

10.124.140.21 c1n1.yeslab.pgu1.suse.com c1n1

10.124.140.22 c1n2.yeslab.pgu1.suse.com c1n2

10.124.140.23 c1n3.yeslab.pgu1.suse.com c1n3

10.124.140.24 c1n4.yeslab.pgu1.suse.com c1n4

Private

10.1.1.11 c1n1-priv

10.1.1.12 c1n2-priv

10.1.1.13 c1n3-priv

10.1.1.14 c1n4-priv

Virtual

10.124.140.25 c1n1-vip c1n1-vip.yeslab.pgu1.suse.com

10.124.140.26 c1n2-vip c1n2-vip.yeslab.pgu1.suse.com

10.124.140.27 c1n3-vip c1n3-vip.yeslab.pgu1.suse.com

10.124.140.28 c1n4-vip c1n4-vip.yeslab.pgu1.suse.com

SCAN

c1-scan.yeslab.pgu1.suse.com (10.124.140.29, 10.124.140.51, 10.124.140.52)

Prerequisites

1. Installing SUSE Linux Enterprise Server 15 SP5 on each cluster node

1-1. Install SUSE Linux Enterprise Server 15 SP5 with “Enhanced Base System, Software Management, X Window System, Oracle Server Base” pattern. You can follow official Oracle Grid/Database Installation manual for selective SLES OS required rpms, however “Oracle Server Base” pattern from SUSE will fulfil minimum setup required for Oracle RAC Installation.

Figure 1-1 Software Installed as shown below

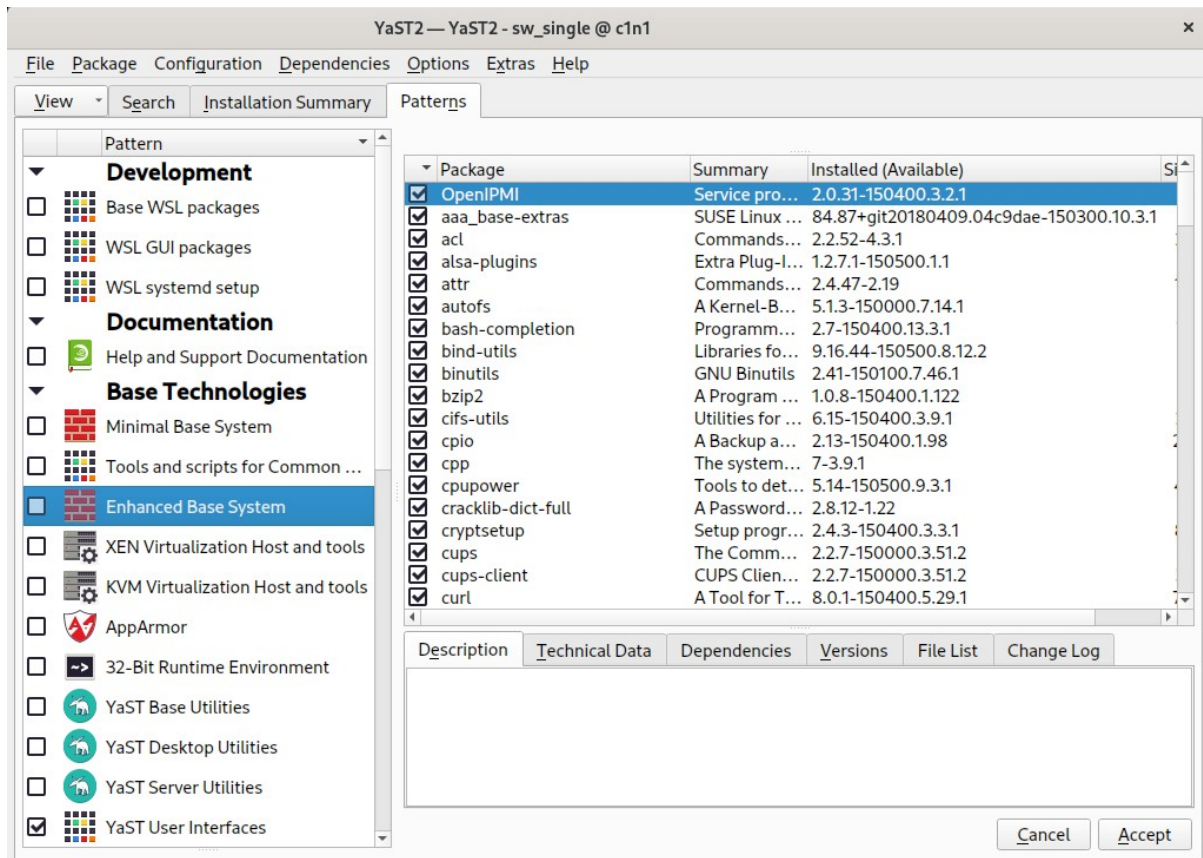


Figure 1-2 Software Installed as shown below

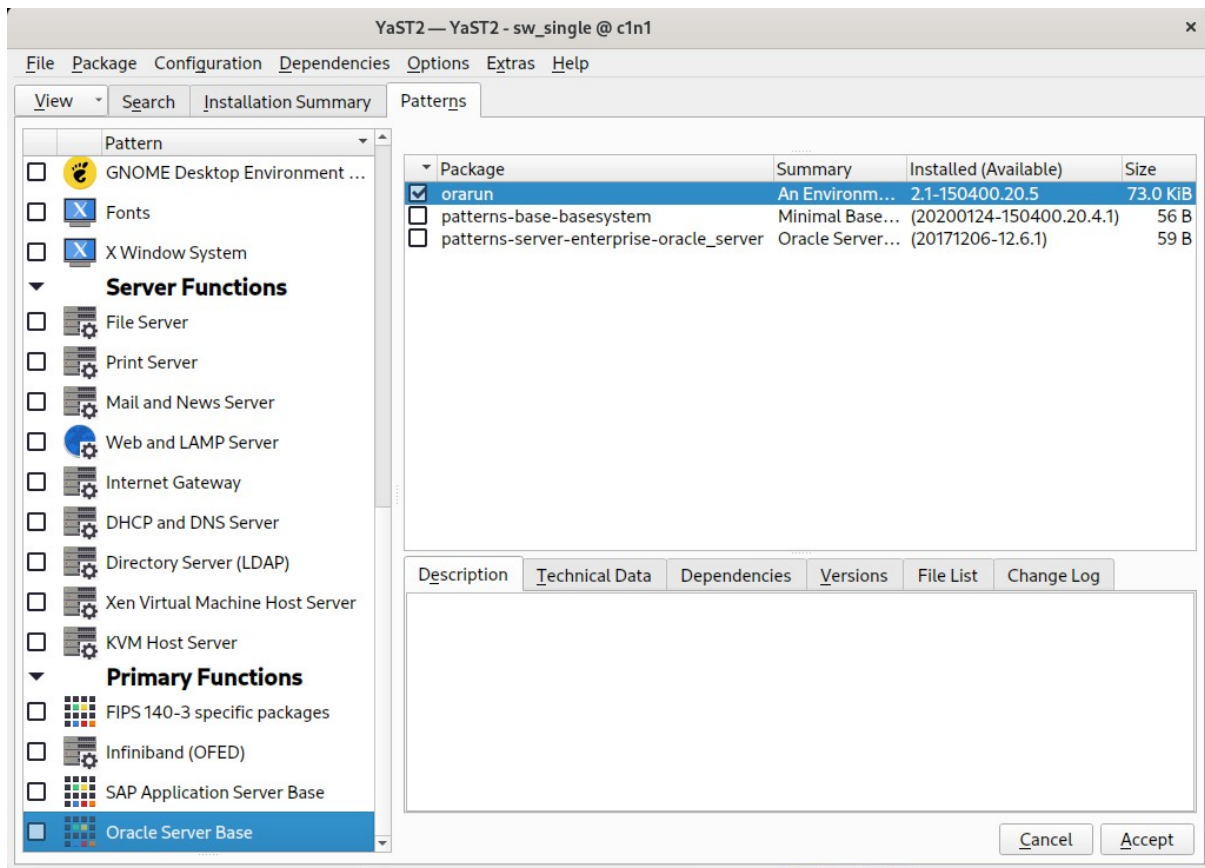


Figure 1-3 OS release information and kernel version

```
oracle@cn1:~> more /etc/os-release
NAME="SLES"
VERSION="15-SP5"
VERSION_ID="15.5"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP5"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp5"
DOCUMENTATION_URL="https://documentation.suse.com/"
oracle@cn1:~> uname -a
Linux cn1 5.14.21-150500.55.28-default #1 SMP PREEMPT_DYNAMIC Fri Sep 22 10:04:29 UTC 2023 (c11336f) x86_64 x86_64 x86_64 GNU/Linux
oracle@cn1:~>
```

2. Oracle software pre-install verify

2-1. Login to the SLES 15 SP5 64-bit OS as a non-admin user. Download Oracle Database 19c Grid Infrastructure (19.3) for Linux x86-64 from:

<https://www.oracle.com/database/technologies/oracle19c-linux-downloads.html>.

2-2. Extract LINUX.X64_193000_grid_home.zip and run Oracle 'runcluvfy.sh' tool to verify cluster setup is ready for install. Resolve any issues you encounter, before proceeding. Please refer official Oracle Install Guide for help.

```
oracle@ln1:/home/oracle/grid_19c> ls
addnode      clone  dbjava  diagnostics  gppp      install  jdbc  lib  OPatch  ords  perl  qos  rhp  rootupgrade.sh  sqlpatch  tomcat  welcome.html  xdk
assistants  crs    dbs     dnm          gridsetup.sh  instantclient  jdk  md  opmn  oss  plsql  racg  root.sh  runcluvfy.sh  sqlplus  ucp  wln
bin         css    deinstall  env.ora     has      inventory  jlib  network  oracle  oui  precomp  rdbms  root.sh.old  sdk  srvn  usn  wdg
cda        cv     dso     eva         hs       javam    ldap  nls  ord    owm  OPatch  relnotes  root.sh.old.1  slax  suptools  util  xag
oracle@ln1:/home/oracle/grid_19c>
```

(Note:

1. GI RunInstaller Fails If OpenSSH Is Upgraded to 8.x.

Workaround:

Before installation, as root user: (please change the path if the location of your "scp" is not the same with below)

Rename the original scp.

```
mv /usr/bin/scp /usr/bin/scp.orig
```

Create a new file </usr/bin/scp>.

```
vi /usr/bin/scp
```

Add the below line to the new created file </usr/bin/scp>.

```
/usr/bin/scp.orig -T $*
```

Change the file permission.

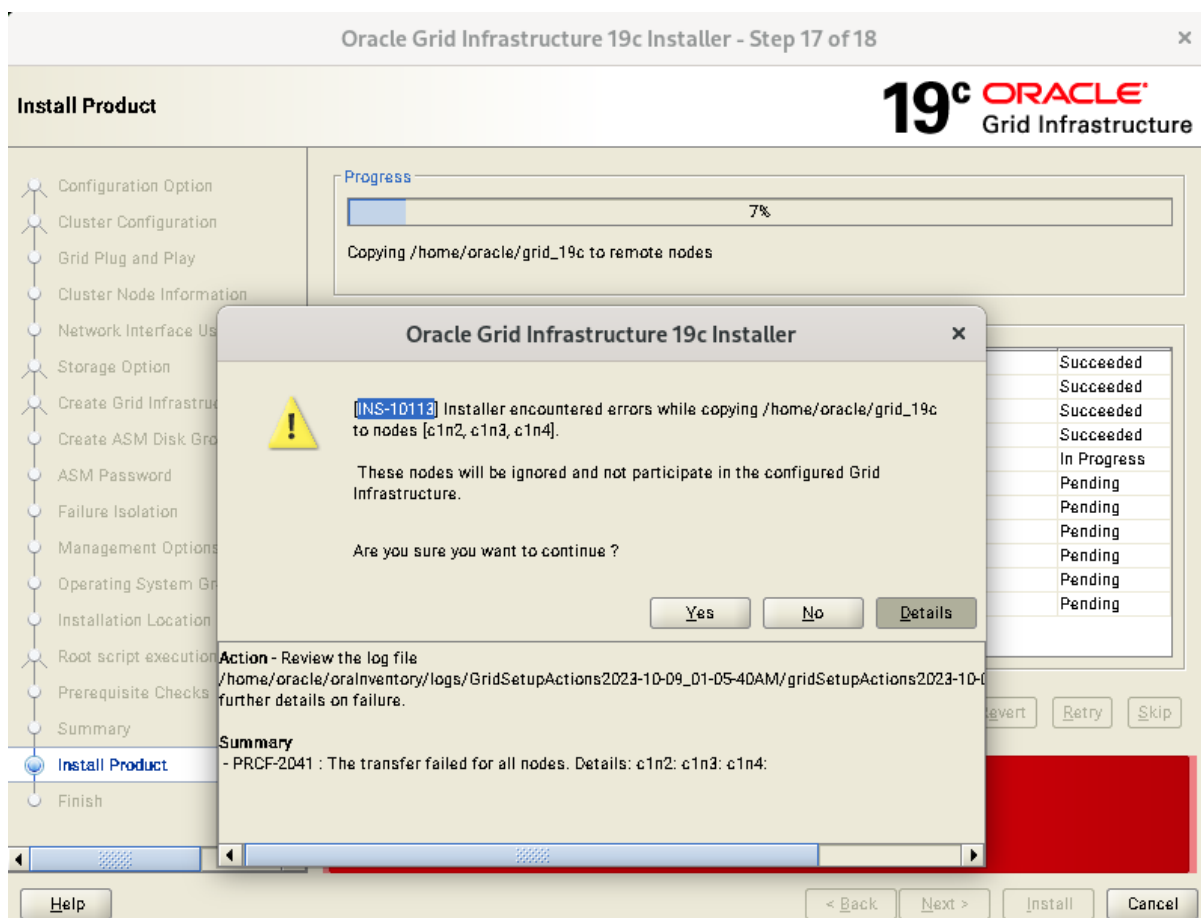
```
chmod 555 /usr/bin/scp
```

After installation:

```
mv /usr/bin/scp.orig /usr/bin/scp
```



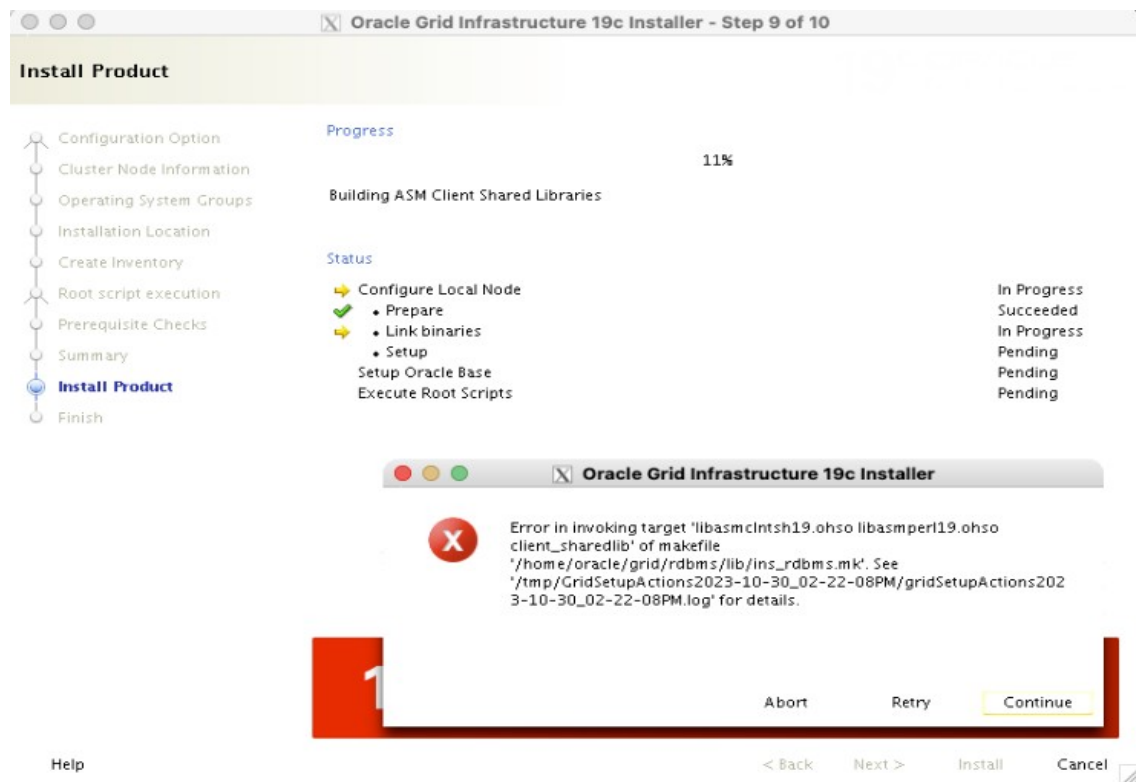
2. [INS-10113] Installer encountered errors while copying...



Workaround:

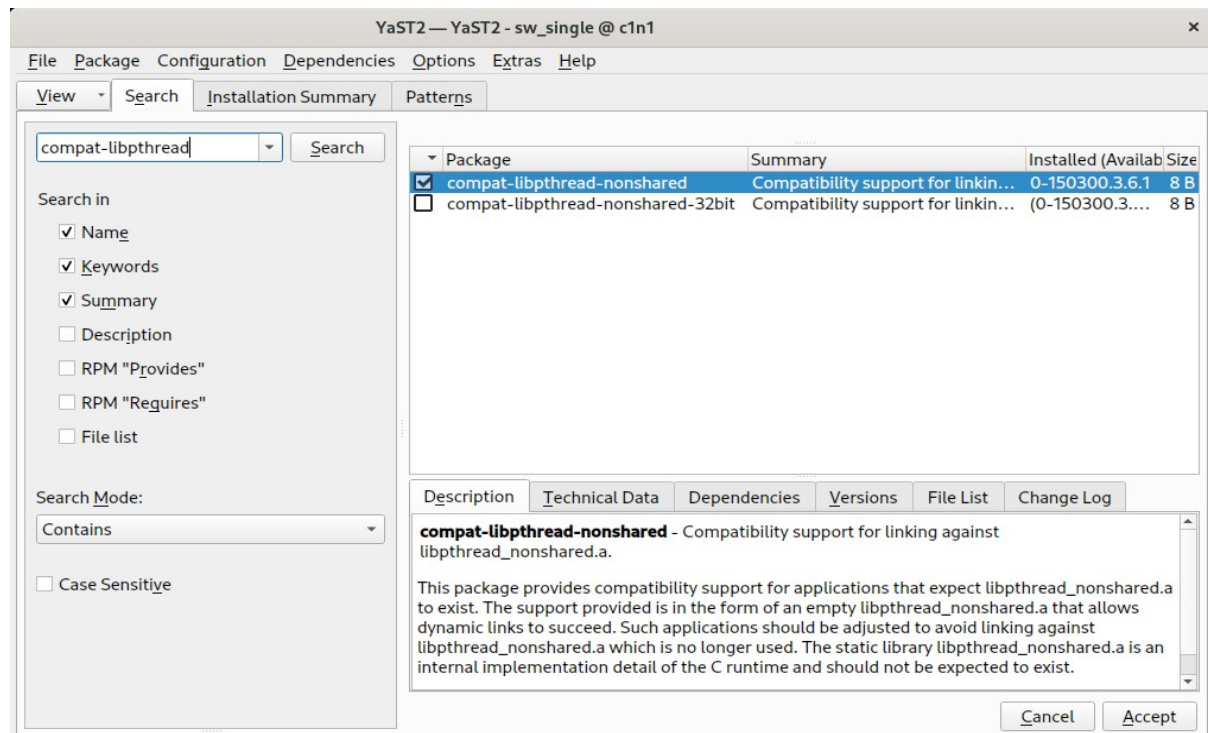
```
# export SRVM_DISABLE_MTTTRANS=true
# ./gridSetup.sh
```


3. Installation/relink fails with :**"Error in invoking target 'libasmclntsh19.ohso libasmpcl19.ohso client_sharedlib' of makefile ins_rdbms.mk"**



Workaround:

Install 'compat-libpthread-nonshared' package.



)

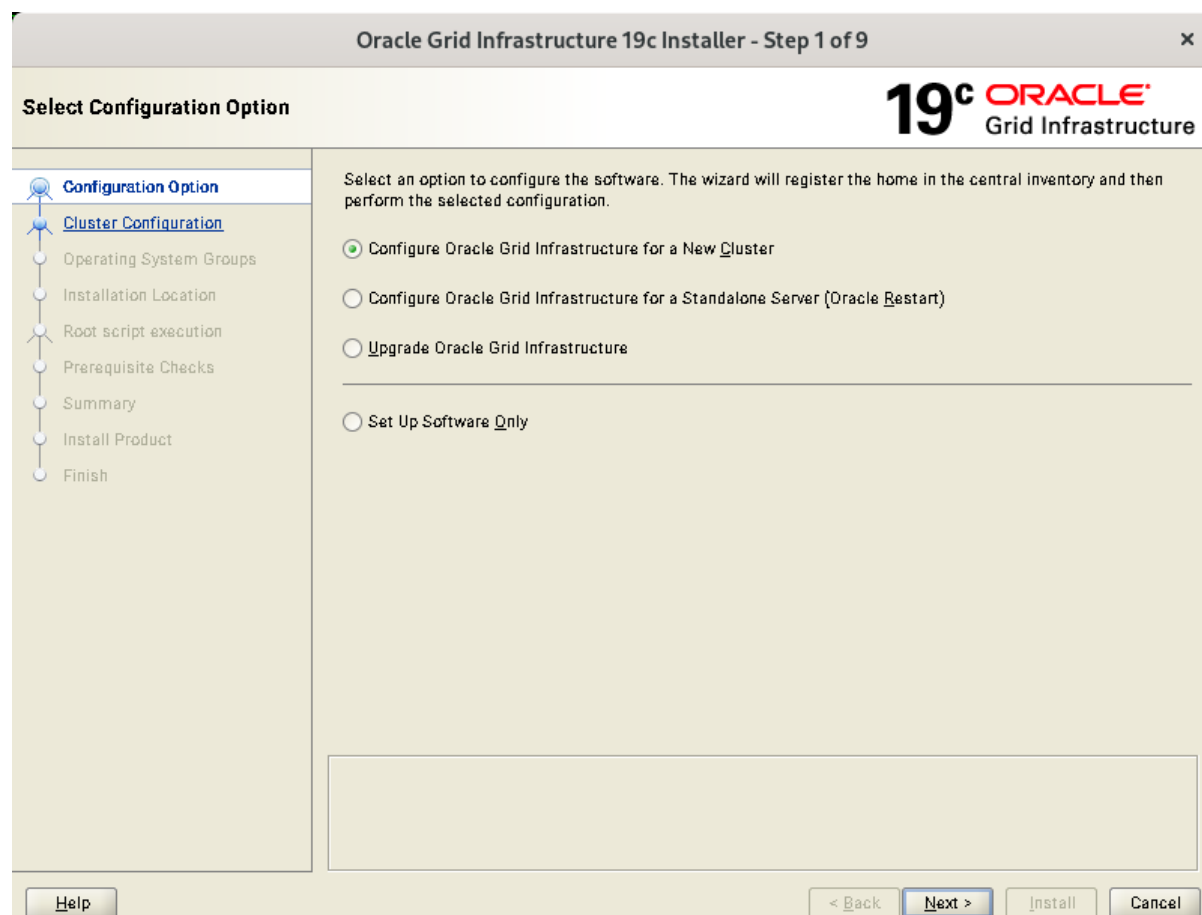
Oracle RAC Installation

1. Installing Oracle Grid Infrastructure.

1-1. Run Oracle Grid installer './gridSetup.sh' from Grid ShipHome.

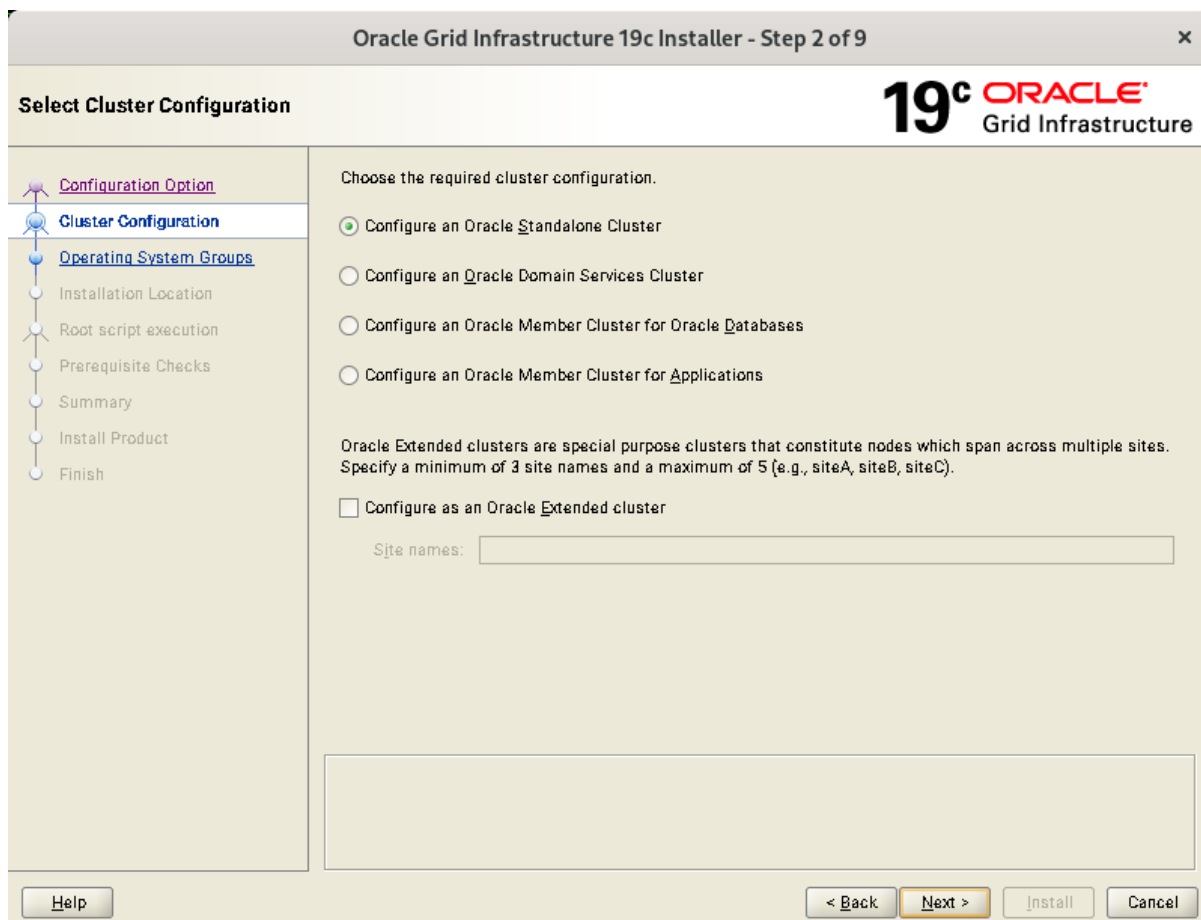
Install Flow:

1). Select Configuration Option.



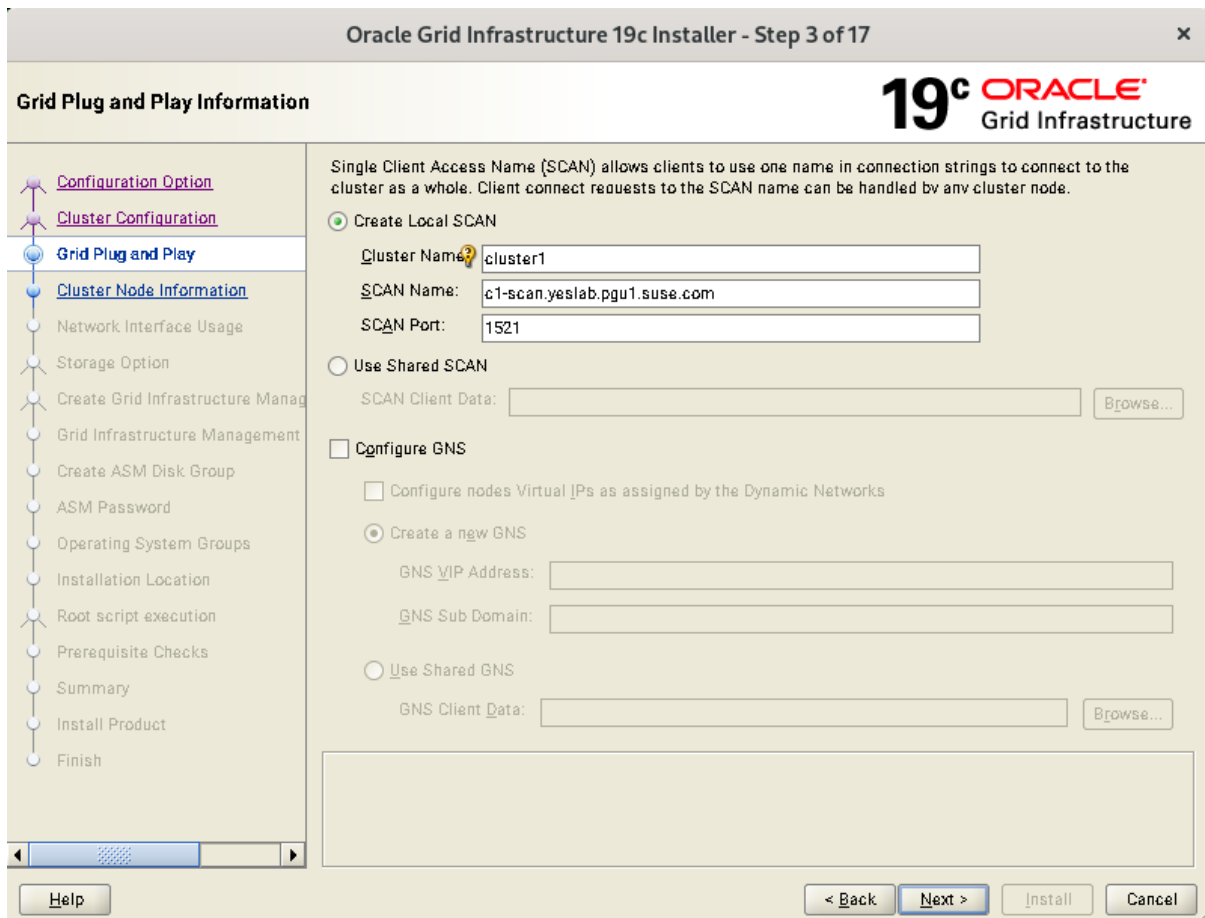
Choose option "Configure Oracle Grid Infrastructure for a New Cluster", then click **Next** to continue.

2). Select Cluster Configuration.



Choose option "Configure an Oracle Standalone Cluster", then click **Next** to continue.

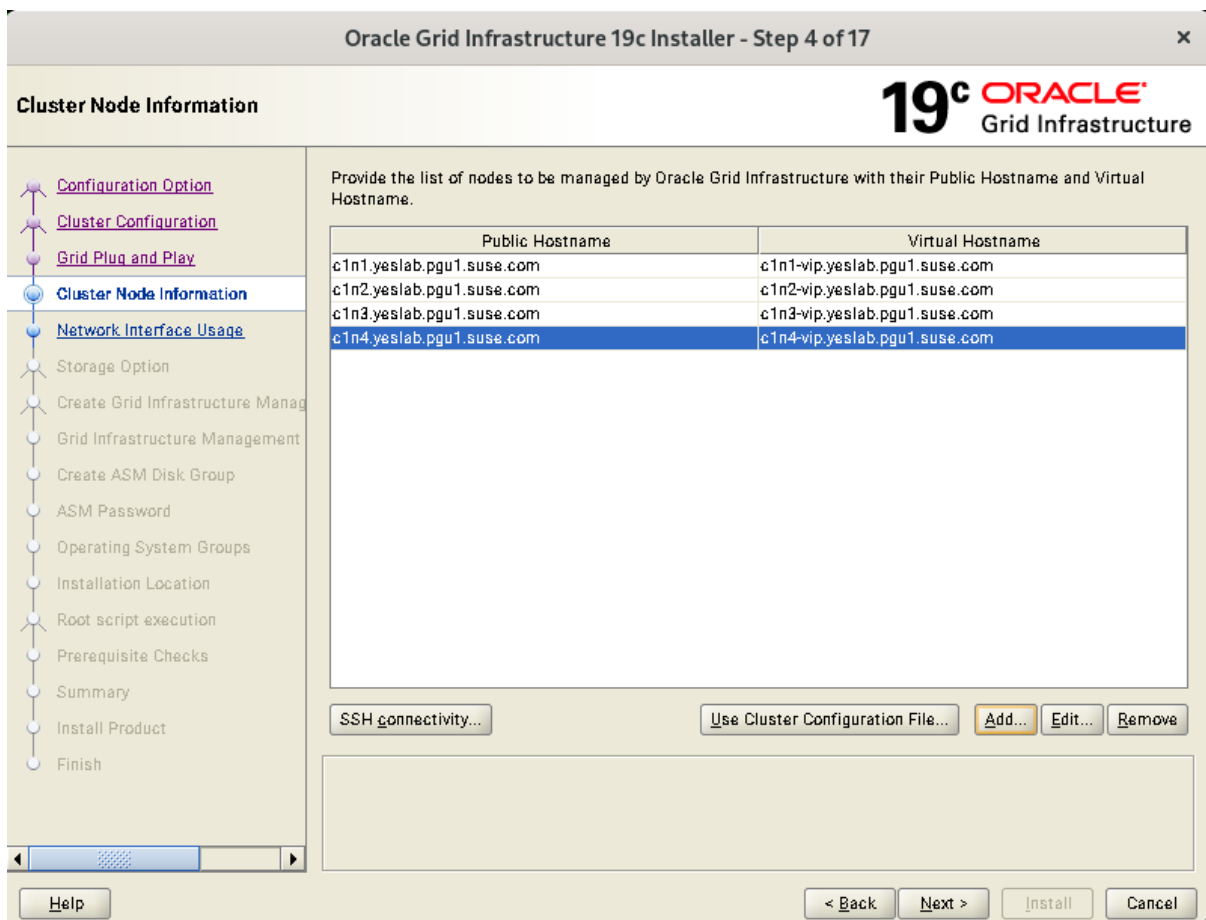
3). Grid Plug and Play Information.



In the **Cluster Name** and **SCAN Name** fields, enter the names for your cluster and cluster scan that are unique throughout your entire enterprise network, then click **Next** to continue.

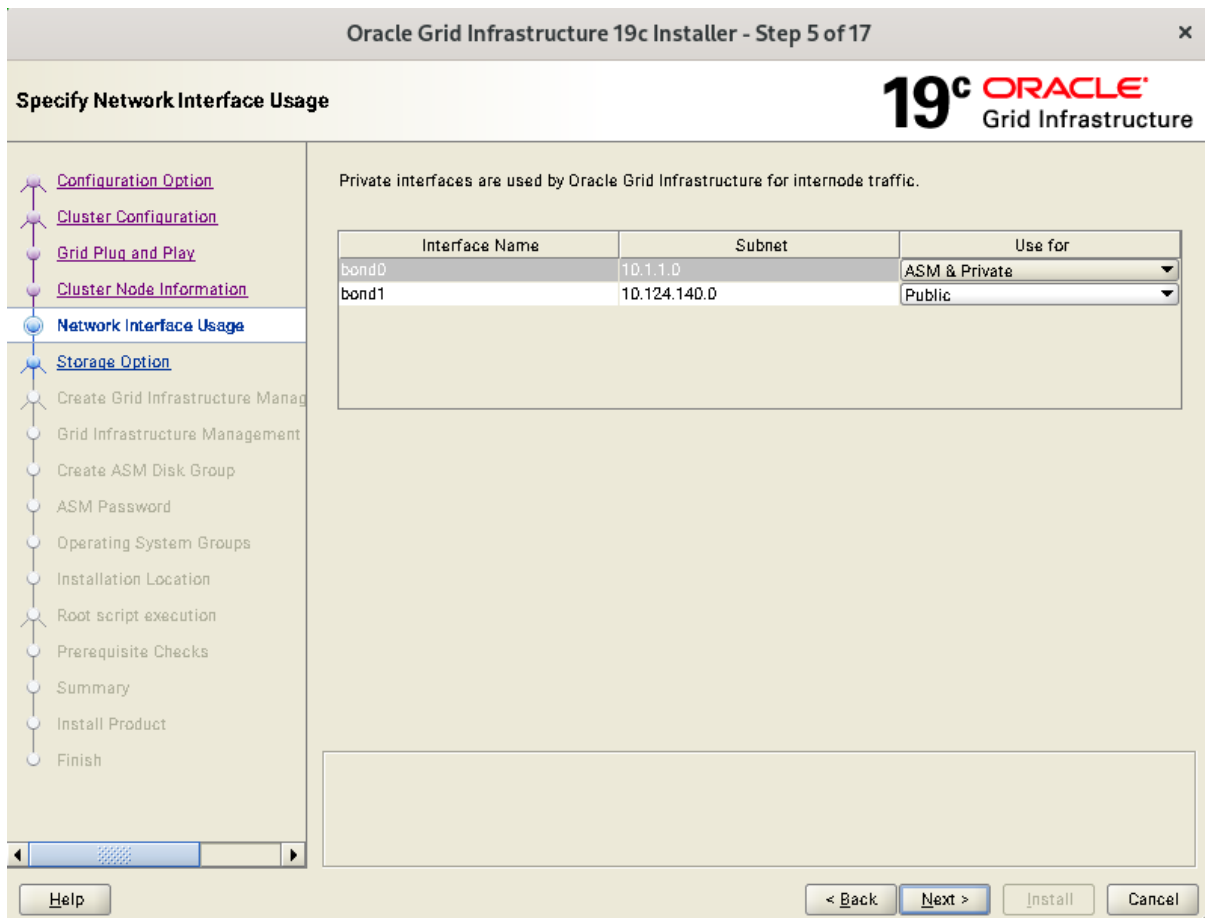
(More details for GNS configuration please see Oracle official document.)

4). The 'Cluster Node Information' screen appears.



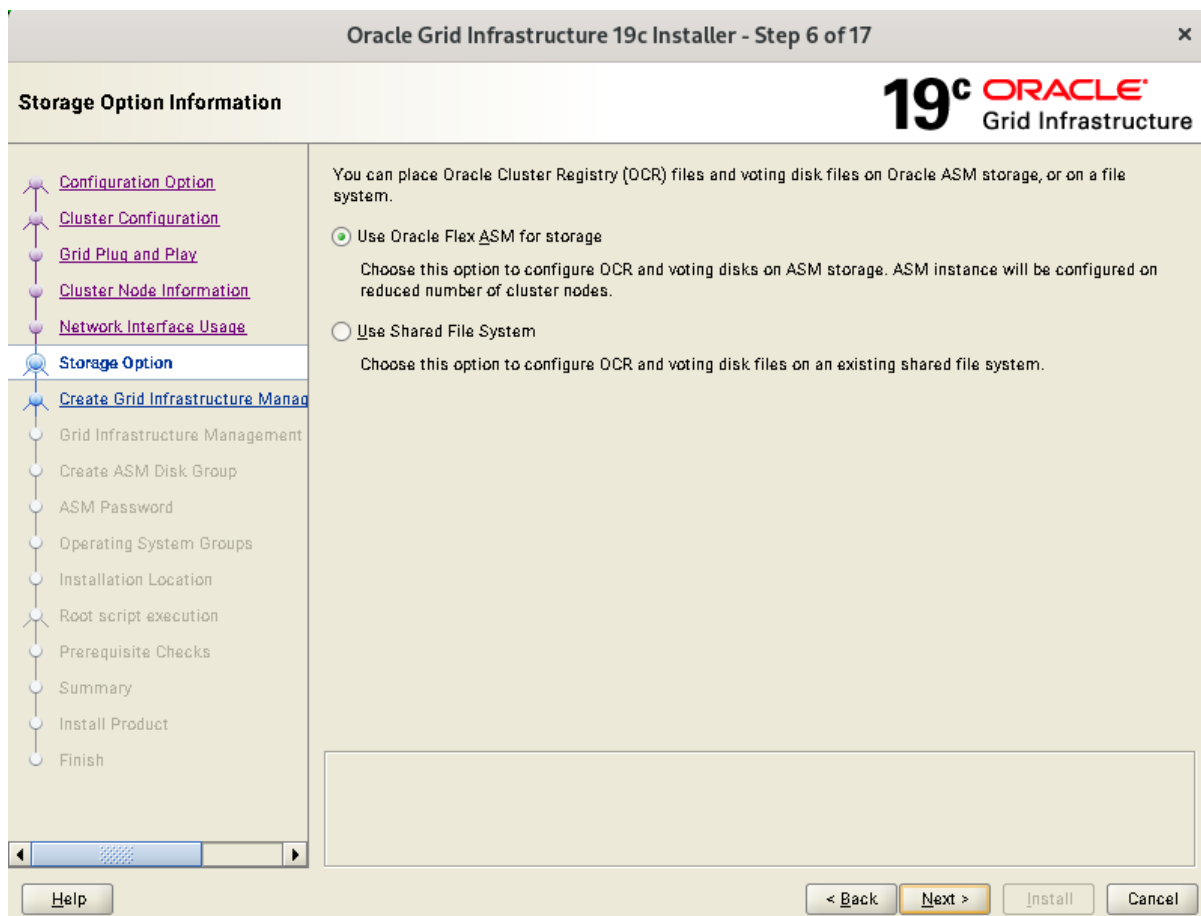
In the Public Hostname column of the table of cluster nodes, you should see your local node. Click **Add** to add another node to the cluster. Enter the second node's public name (node2), and virtual IP name (node2-vip), then click OK. Make sure all nodes are selected, then click the SSH Connectivity button at the bottom of the window. After a short period, another message window appears indicating that passwordless SSH connectivity has been established between the cluster nodes. Click **OK** to continue. When returned to the Cluster Node Information window, click **Next** to continue.

5). Specify Network Interface Usage.



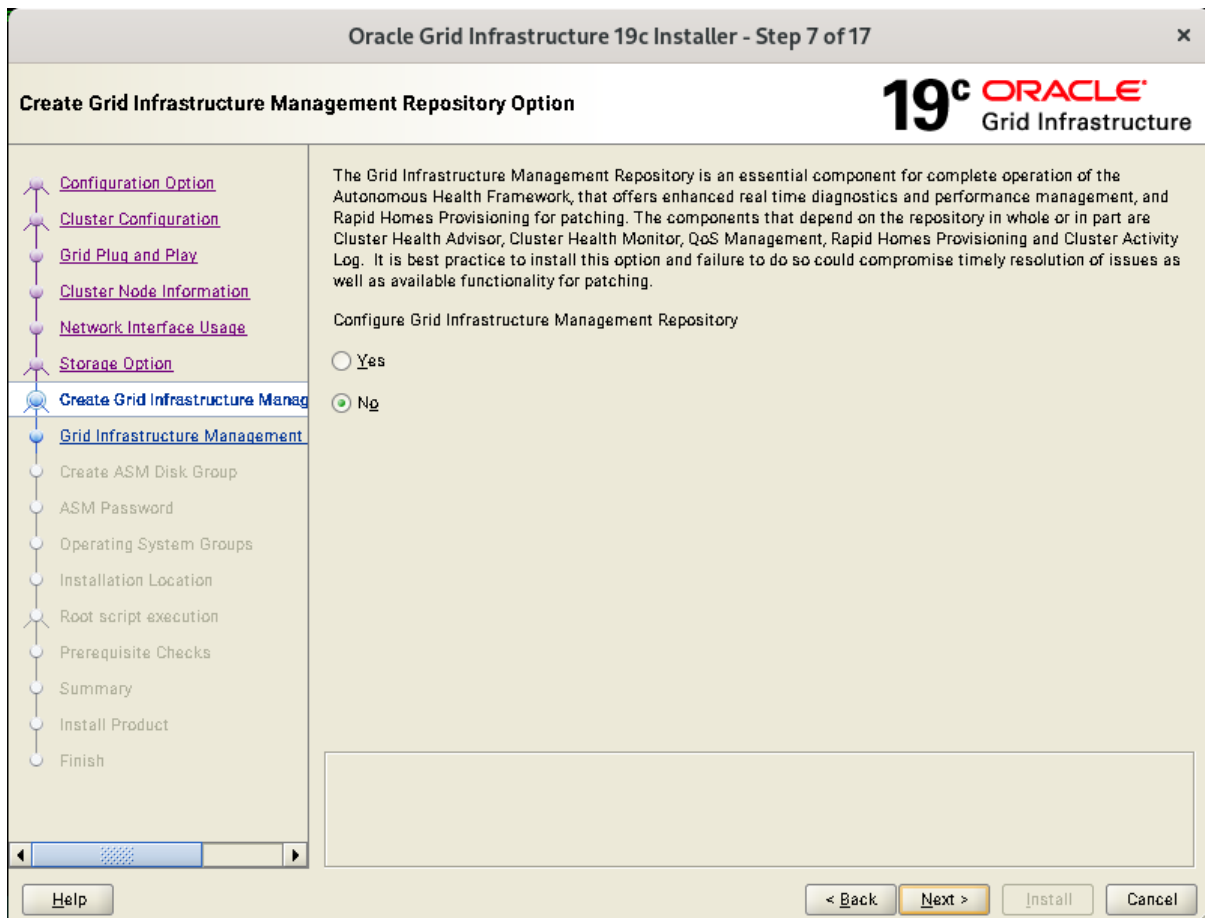
Verify that each interface has the correct interface type associated with it. If you have network interfaces that should not be used by Oracle Clusterware, then set the network interface type to **Do Not Use**. For example, if you have only two network interfaces, then set the public interface to have a Use For value of **Public** and set the private network interface to have a Use For value of **ASM & Private**, then click **Next** to continue.

6). Storage Option Information.



Choose option "**Use Oracle Flex ASM for storage**", then click **Next** to continue.

7). Grid Infrastructure Management Repository Option.



Choose whether you want to store the Grid Infrastructure Management Repository in a separate Oracle ASM disk group, then click **Next** to continue.

8). Create ASM Disk Group.

Oracle Grid Infrastructure 19c Installer - Step 8 of 16

Create ASM Disk Group

OCR and Voting disk data will be stored in the following ASM Disk group. Select disks and characteristics of this Disk group.

Disk group name:

Redundancy: Flex High Normal External

Allocation Unit Size: MB

Select Disks:

<input type="checkbox"/>	Disk Path	Size (in MB)	Status	Failure Group
<input checked="" type="checkbox"/>	/dev/asm/disk1	10240	Candidate	
<input checked="" type="checkbox"/>	/dev/asm/disk2	10240	Candidate	
<input checked="" type="checkbox"/>	/dev/asm/disk3	10240	Candidate	
<input type="checkbox"/>	/dev/asm/disk4	97280	Candidate	
<input type="checkbox"/>	/dev/asm/disk6	102400	Candidate	

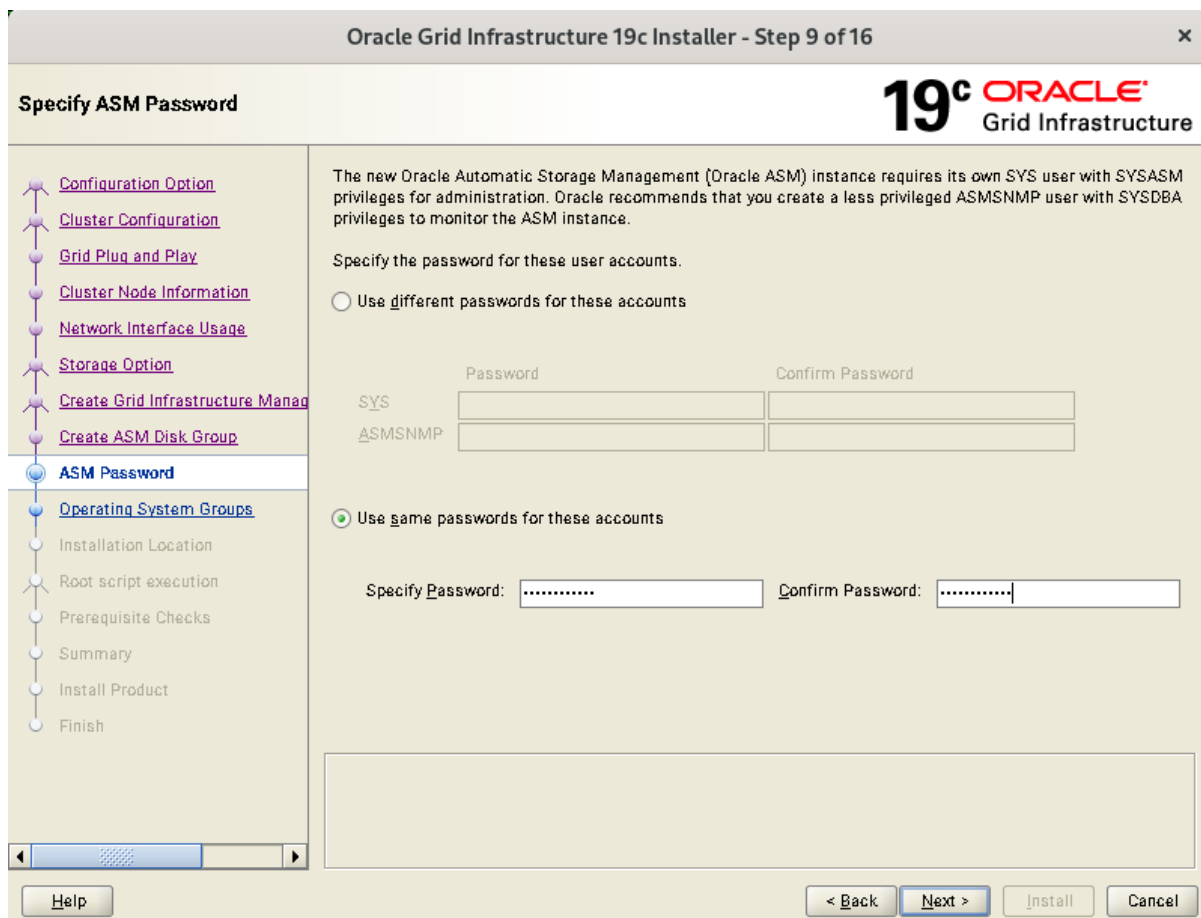
Disk Discovery Path: /dev/asm/**

Configure Oracle ASM Filter Driver

Select this option to configure ASM Filter Driver (AFD) to simplify configuration and management of disk devices by Oracle ASM.

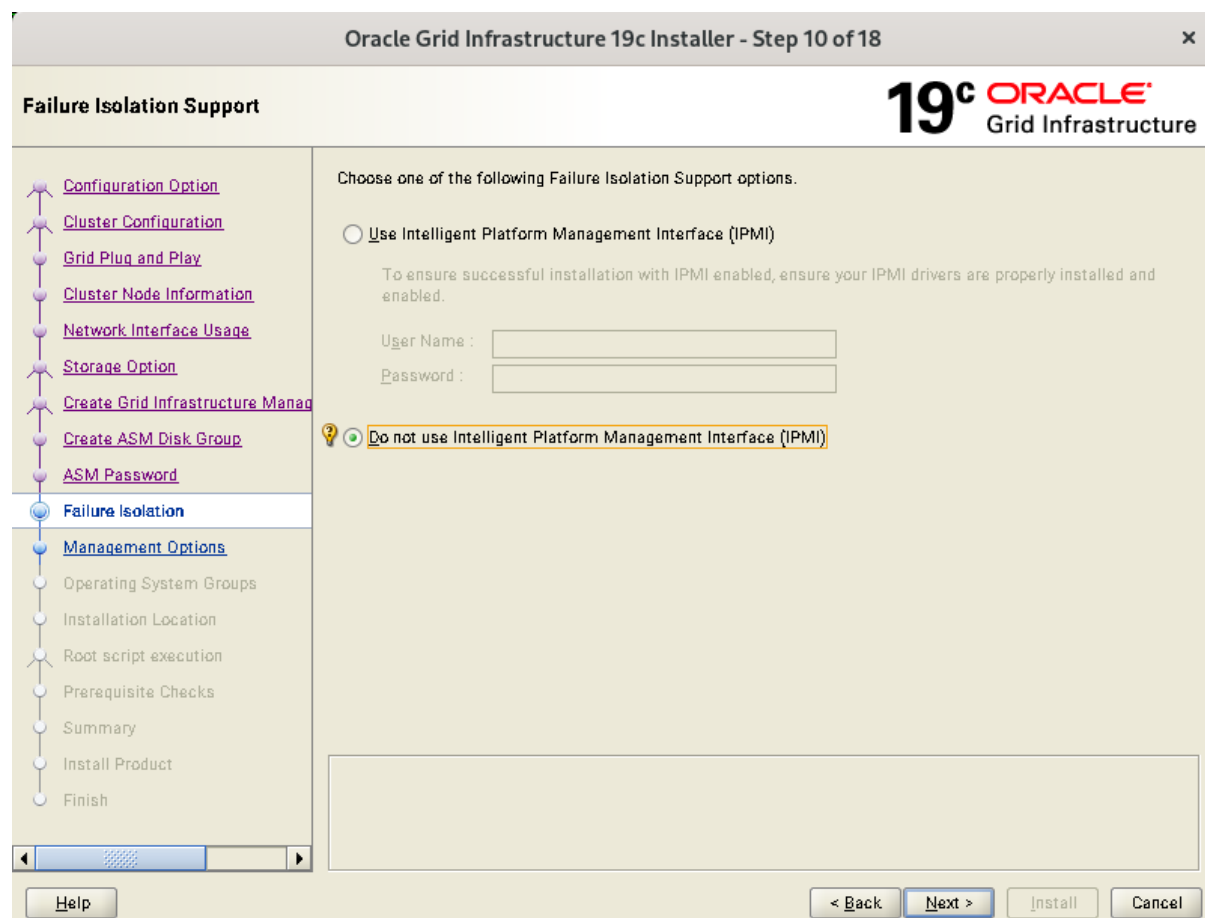
Depending on your needs to create ASM Disk Group, then click **Next** to continue.

9). Specify ASM Password.



Choose the same password for the Oracle ASM SYS and ASMSNMP account, or specify different passwords for each account, then click **Next** to continue.

10). Failure Isolation Support.



The screenshot shows the Oracle Grid Infrastructure 19c Installer window at Step 10 of 18. The title bar reads "Oracle Grid Infrastructure 19c Installer - Step 10 of 18". The main window has a header with the "19c ORACLE Grid Infrastructure" logo. Below the header, the title "Failure Isolation Support" is displayed. On the left side, there is a vertical navigation pane with a list of configuration steps: Configuration Option, Cluster Configuration, Grid Plug and Play, Cluster Node Information, Network Interface Usage, Storage Option, Create Grid Infrastructure Manag, Create ASM Disk Group, ASM Password, Failure Isolation (highlighted with a blue circle), Management Options, Operating System Groups, Installation Location, Root script execution, Prerequisite Checks, Summary, Install Product, and Finish. The main content area contains the following text: "Choose one of the following Failure Isolation Support options." Below this, there are two radio button options. The first option is "Use Intelligent Platform Management Interface (IPMI)", which is currently unselected. Below it, there is a note: "To ensure successful installation with IPMI enabled, ensure your IPMI drivers are properly installed and enabled." This is followed by two input fields: "User Name :" and "Password :". The second option is "Do not use Intelligent Platform Management Interface (IPMI)", which is selected and highlighted with a yellow border. At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", "Install", and "Cancel".

Select the option "**Do not use Intelligent Platform Management Interface (IPMI)**", then click **Next** to continue.

11). Specify Management Options.

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

OMS host:

OMS port:

EM Admin User Name:

EM Admin Password:

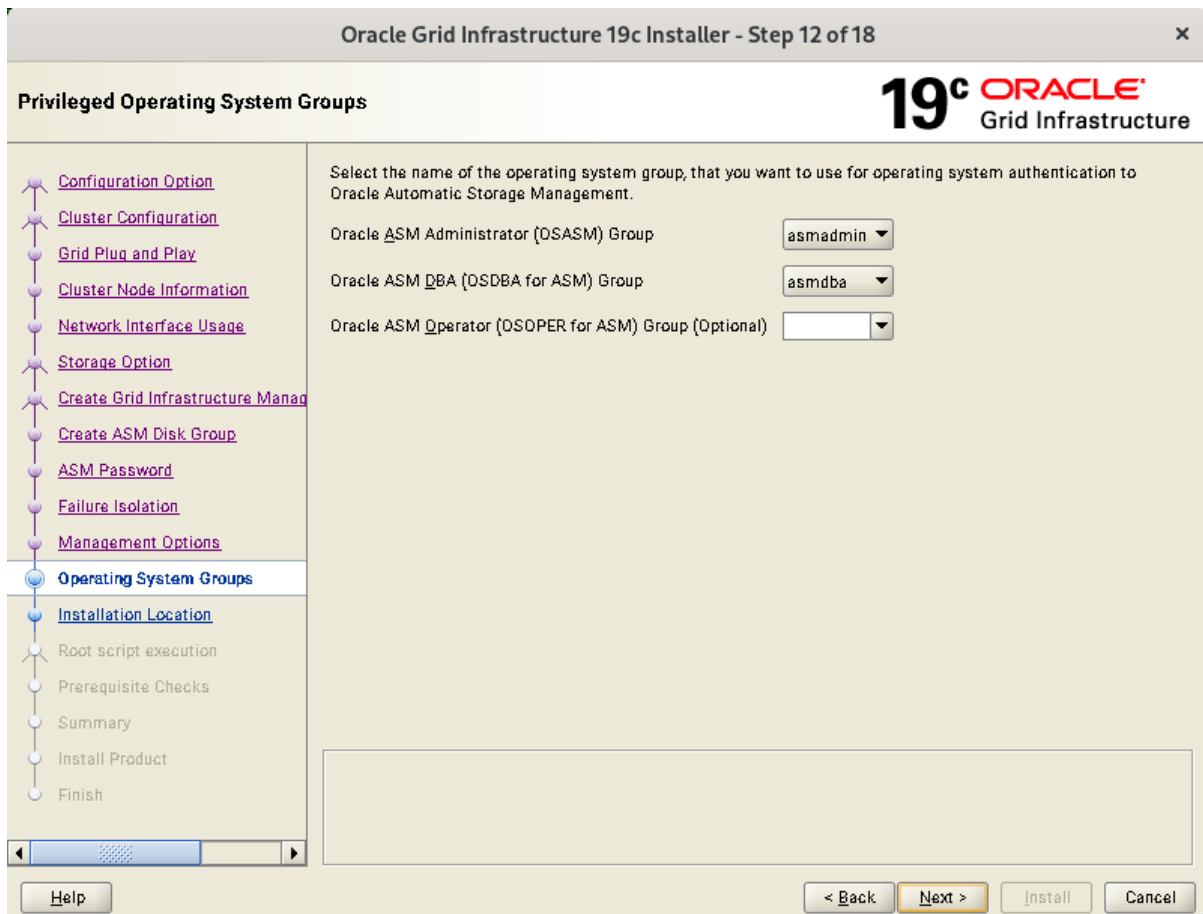
Management Options

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

Help < Back Next > Install Cancel

Selected/Deselected the option "Register with EM...", then click **Next** to continue.

12). Privileged Operating System Groups.



The screenshot shows the Oracle Grid Infrastructure 19c Installer window at Step 12 of 18. The title bar reads "Oracle Grid Infrastructure 19c Installer - Step 12 of 18". The main window has a header with the "19c ORACLE Grid Infrastructure" logo. Below the header, the title "Privileged Operating System Groups" is displayed. The main content area contains the following text: "Select the name of the operating system group, that you want to use for operating system authentication to Oracle Automatic Storage Management." Below this text are three configuration items, each with a dropdown menu:

- Oracle ASM Administrator (OSASM) Group:
- Oracle ASM DBA (OSDBA for ASM) Group:
- Oracle ASM Operator (OSOPER for ASM) Group (Optional):

On the left side, there is a vertical navigation pane with a list of steps: Configuration Option, Cluster Configuration, Grid Plug and Play, Cluster Node Information, Network Interface Usage, Storage Option, Create Grid Infrastructure Manag, Create ASM Disk Group, ASM Password, Failure Isolation, Management Options, Operating System Groups (highlighted with a blue circle), Installation Location, Root script execution, Prerequisite Checks, Summary, Install Product, and Finish. At the bottom of the window, there are four buttons: Help, < Back, Next > (highlighted in yellow), Install, and Cancel.

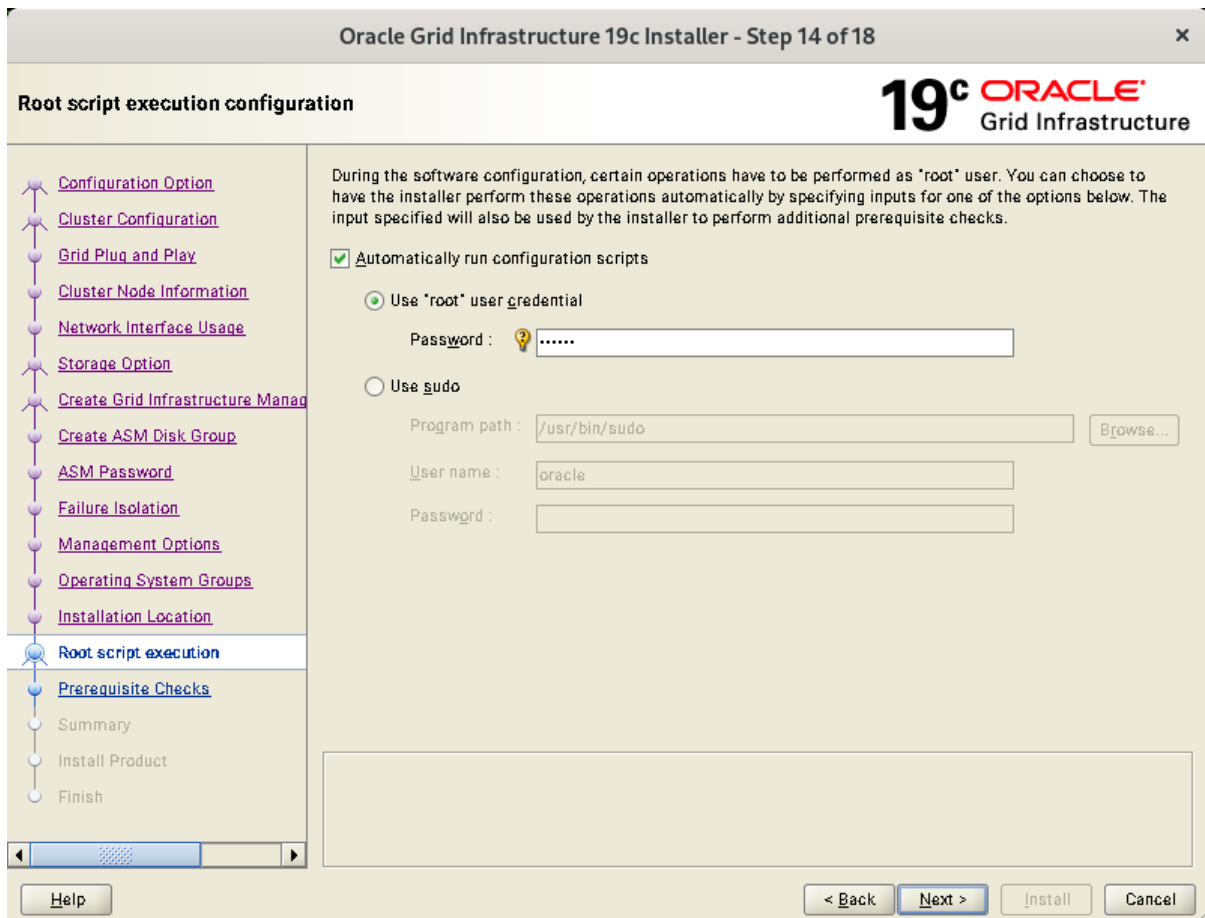
Accept the default operating system group names for Oracle ASM administration, then click **Next** to continue.

13). Specify Installation Location.



Specify the directory to use for the Oracle base for the Oracle Grid Infrastructure installation, then click **Next** to continue. The Oracle base directory must be different from the Oracle home directory.

14). Root script execution configuration.



Select the option to **Automatically run configuration scripts**. Enter the credentials for the root user or a sudo account, then click **Next** to continue.

Alternatively, you can Run the scripts manually as the root user at the end of the installation process when prompted by the installer.

15). Perform Prerequisite Checks.

Oracle Grid Infrastructure 19c Installer - Step 15 of 18

Perform Prerequisite Checks

19c ORACLE Grid Infrastructure

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 All

Checks	Status	Fixable
Checks		
[Packages]		
Package: libstdc++3.3.3-62.1	Warning	No
Package: libjpeg-turbo-1.3.1	Warning	No
Package: libjpeg62-32bit-62.1.0	Warning	No
Package: libjpeg62-turbo-1.3.1	Warning	No
Package: libpcre16-0-8.41	Warning	No
Package: gcc-c++-32bit-7-1.563	Warning	No
Package: gcc-32bit-7-1.563	Warning	No
Package: JDK-1.8.0.5.151	Warning	No
Package: libgfortran3-4.8.3	Warning	No
zeroconf check	Warning	No

This is a prerequisite condition to test whether the package "libstdc++3.3.3-62.1" is available on the system. [\(more details\)](#)

Check Failed on Nodes: [c1n4, c1n3, c1n2, c1n1]

Resolve all the errors and warnings on all nodes in the cluster & run “Fix & Check Again”. If the “Fix & check again” button is not available, try to fix manually.

Once verified, select option "Ignore All", then click **Next** to continue.

Oracle Grid Infrastructure 19c Installer - Step 15 of 18

19c ORACLE
Grid Infrastructure

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.

Check Again Fix & Check Again Show Failed All Nodes Ignore All

Checks	Status	Fixable
Package: libstdc++33-3.3.3-62.1	Ignored	No
Package: libjpeg-turbo-1.3.1	Ignored	No
Package: libjpeg62-32bit-62.1.0	Ignored	No
Package: libjpeg62-turbo-1.3.1	Ignored	No
Package: libpcre16-0-8.41	Ignored	No
Package: gcc-c++-32bit-7-1.563	Ignored	No
Package: gcc-32bit-7-1.563	Ignored	No
Package: JDK-1.8.0.5.151	Ignored	No
Package: libgfortran3-4.8.3	Ignored	No
zeroconf check	Ignored	No

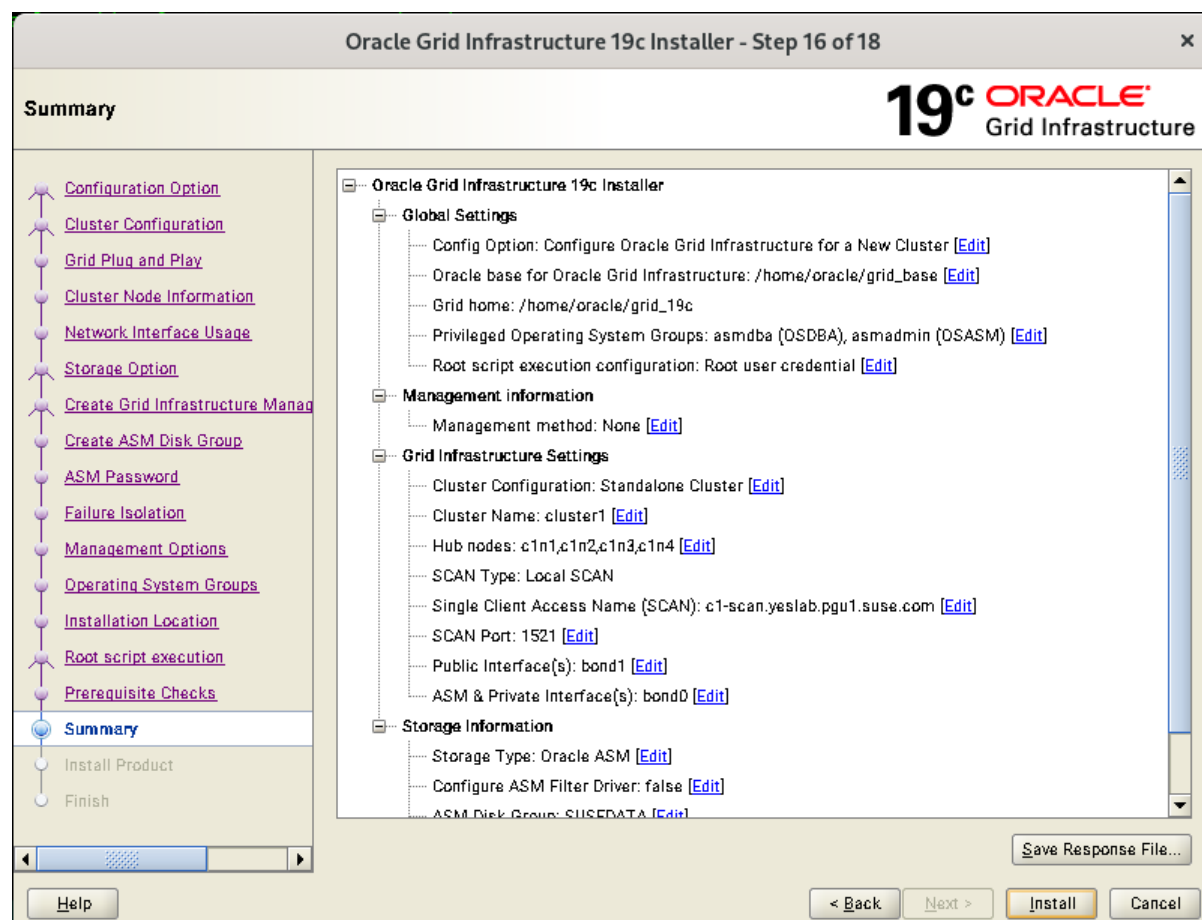
This is a prerequisite condition to test whether the package 'libstdc++33-3.3.3-62.1' is available on the system. [\(more details\)](#)

Check Failed on Nodes: [c1n4, c1n3, c1n2, c1n1]

Help < Back Next > Install Cancel

(Note: There are still some warning messages, please refer to the details of **Additional Comments** in the last section of the document.)

16). Summary.



Installation Summary as shown above, click **Install** to continue.

17). Install Product.

Oracle Grid Infrastructure 19c Installer - Step 17 of 18

19^c ORACLE[®] Grid Infrastructure

Install Product

Progress: 5%
Linking RDBMS Executables

Status:

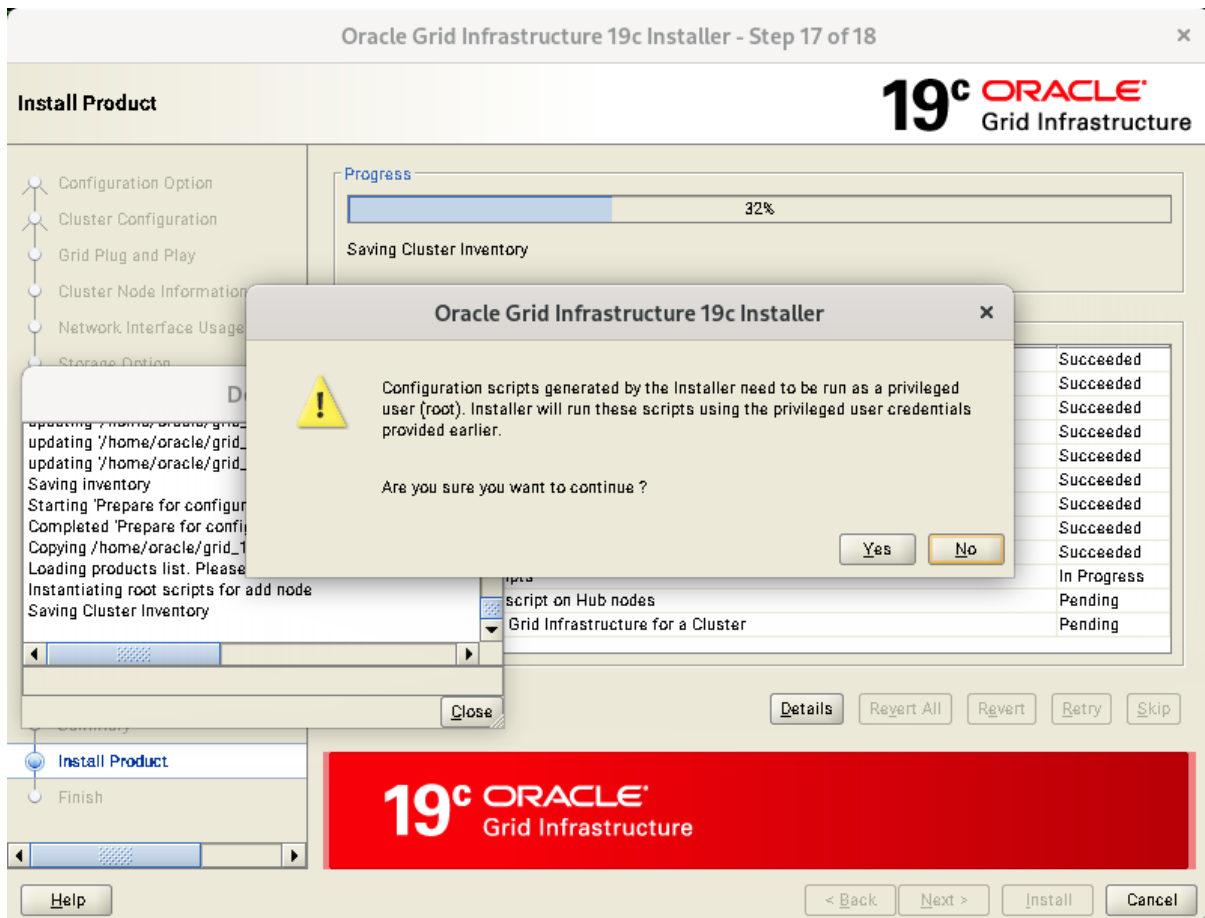
➔ Configure Local Node	In Progress
• Prepare	Succeeded
➔ • Link binaries	In Progress
• Setup	Pending
Copy Files to Remote Nodes	Pending
Configure Remote Nodes	Pending
• Prepare	Pending
• Setup	Pending
Setup Oracle Base	Pending
Execute Root Scripts	Pending
Configure Oracle Grid Infrastructure for a Cluster	Pending

Buttons: Details, Revert All, Revert, Retry, Skip

19^c ORACLE[®] Grid Infrastructure

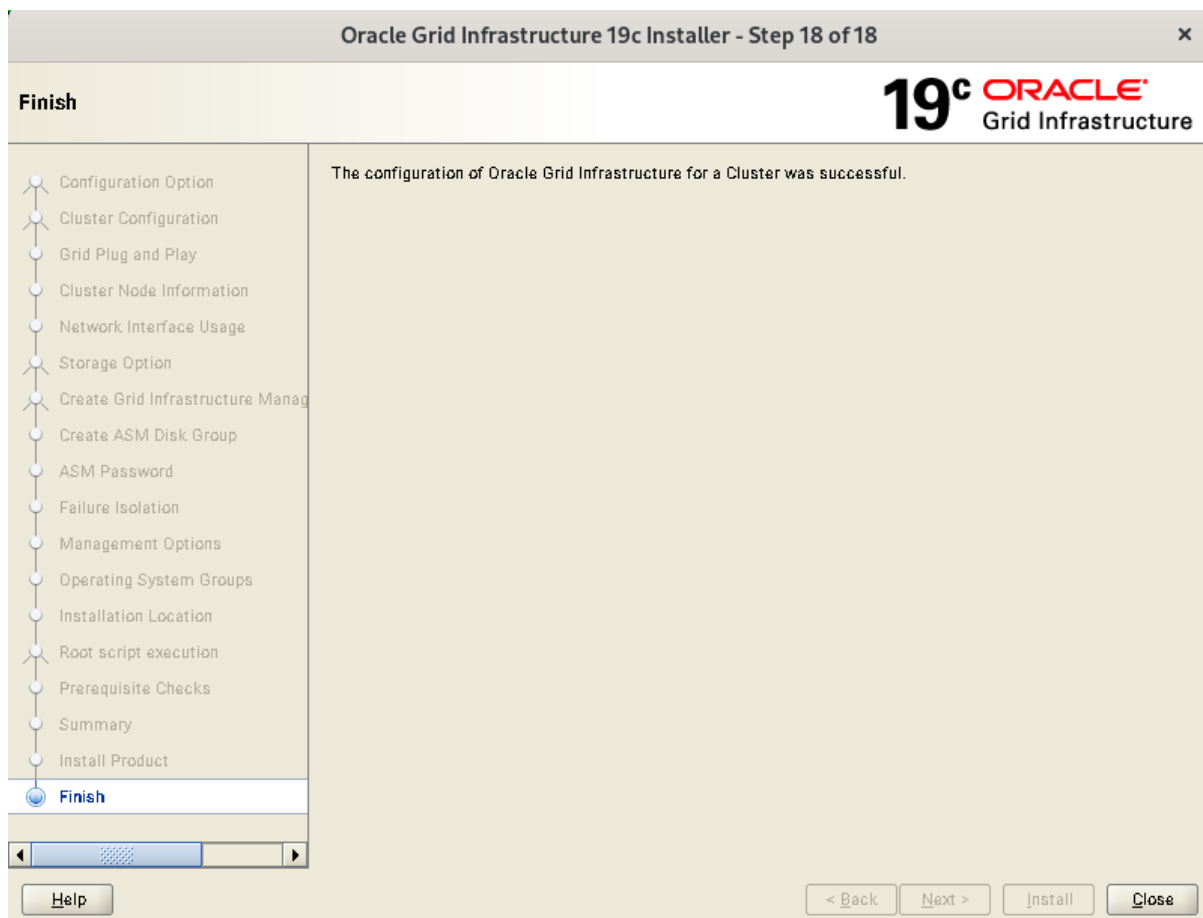
Buttons: Help, < Back, Next >, Install, Cancel

Installer prompted you to run the orainstRoot.sh and root.sh scripts. Click **Yes**.



Continue monitoring the installation until the Finish window appears.

18). Finish.



Click **Close** to complete the installation process and exit the installer.

1-2. Oracle Database 19c(19.3) Grid Infrastructure Post-Install Checks.

1). Check Oracle Clusterware health and resources.

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl check cluster -all
*****
cln1:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln2:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln3:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln4:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
oracle@cln1:~> /home/oracle/grid_19c/bin/srvctl status nodeapps
VIP 10.124.140.25 is enabled
VIP 10.124.140.25 is running on node: cln1
VIP 10.124.140.26 is enabled
VIP 10.124.140.26 is running on node: cln2
VIP 10.124.140.27 is enabled
VIP 10.124.140.27 is running on node: cln3
VIP 10.124.140.28 is enabled
VIP 10.124.140.28 is running on node: cln4
Network is enabled
Network is running on node: cln1
Network is running on node: cln2
Network is running on node: cln3
Network is running on node: cln4
ONS is enabled
ONS daemon is running on node: cln1
ONS daemon is running on node: cln2
ONS daemon is running on node: cln3
ONS daemon is running on node: cln4
oracle@cln1:~> █
```

2). Check status of designated resources.

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
-----
Name                Target  State        Server          State details
-----
Local Resources
-----
ora.LISTENER.lsnr
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.chad
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.net1.network
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.ons
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
-----
```

```

Cluster Resources
-----
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN1.lsnr
  1      ONLINE  ONLINE  c1n2      STABLE
ora.LISTENER_SCAN2.lsnr
  1      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN3.lsnr
  1      ONLINE  ONLINE  c1n4      STABLE
ora.SUSEDATA.dg(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.asm(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      Started,STABLE
  2      ONLINE  ONLINE  c1n2      Started,STABLE
  3      ONLINE  ONLINE  c1n3      Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.c1n1.vip
  1      ONLINE  ONLINE  c1n1      STABLE
ora.c1n2.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.c1n3.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.c1n4.vip
  1      ONLINE  ONLINE  c1n4      STABLE
ora.cvu
  1      ONLINE  ONLINE  c1n1      STABLE
ora.qosmserver
  1      ONLINE  ONLINE  c1n1      STABLE
ora.scan1.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.scan2.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.scan3.vip
  1      ONLINE  ONLINE  c1n4      STABLE
-----

```


3). Check OCR and Voting disk files.

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/ocrcheck
Status of Oracle Cluster Registry is as follows :
  Version                :          4
  Total space (kbytes)   :       491684
  Used space (kbytes)    :         84292
  Available space (kbytes) :       407392
  ID                     : 1237116313
  Device/File Name       : +SUSEDATA
                        Device/File integrity check succeeded

                        Device/File not configured

                        Device/File not configured

                        Device/File not configured

                        Device/File not configured

Cluster registry integrity check succeeded

Logical corruption check bypassed due to non-privileged user

oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl query css votedisk
## STATE      File Universal Id                File Name Disk group
--  -
 1. ONLINE   eadfbbbl1a114f23bf1790ccalee3159 (/dev/asm/disk1) [SUSEDATA]
 2. ONLINE   208ee23d497c4f1abf03f4f2fb7ca86e (/dev/asm/disk2) [SUSEDATA]
 3. ONLINE   e29687a5673e4f9dbf4bed7d4239deb4 (/dev/asm/disk3) [SUSEDATA]
Located 3 voting disk(s).
oracle@c1n1:~> █
```

2. Installing Oracle Database.

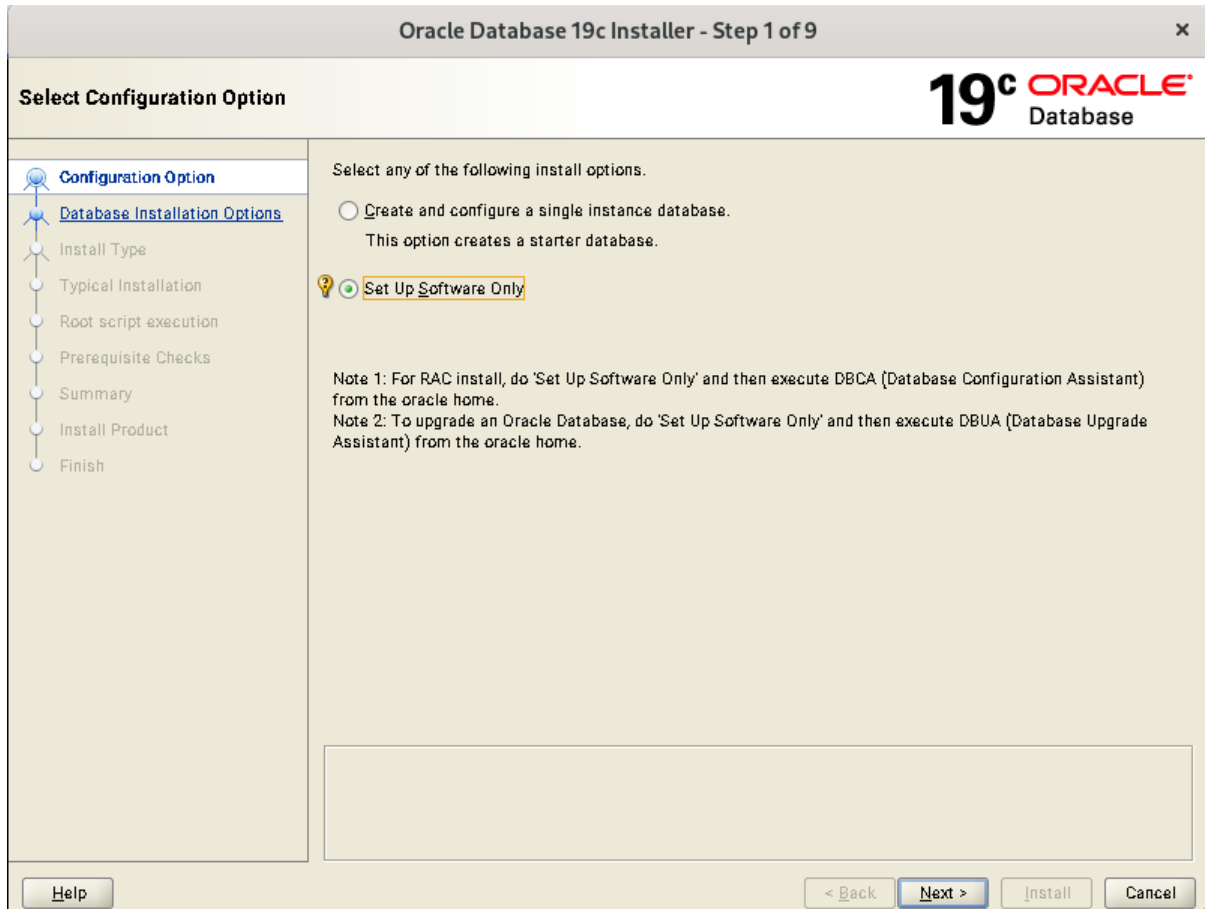
2-1. Login to the SLES 15 SP5 64-bit OS as a non-admin user. Download Oracle Database 19c (19.3) for Linux x86-64 from:

<https://www.oracle.com/database/technologies/oracle19c-linux-downloads.html>.

2-2. Extract LINUX.X64_193000_db_home.zip and run Oracle DB installer 'runInstaller' from Database ShipHome.

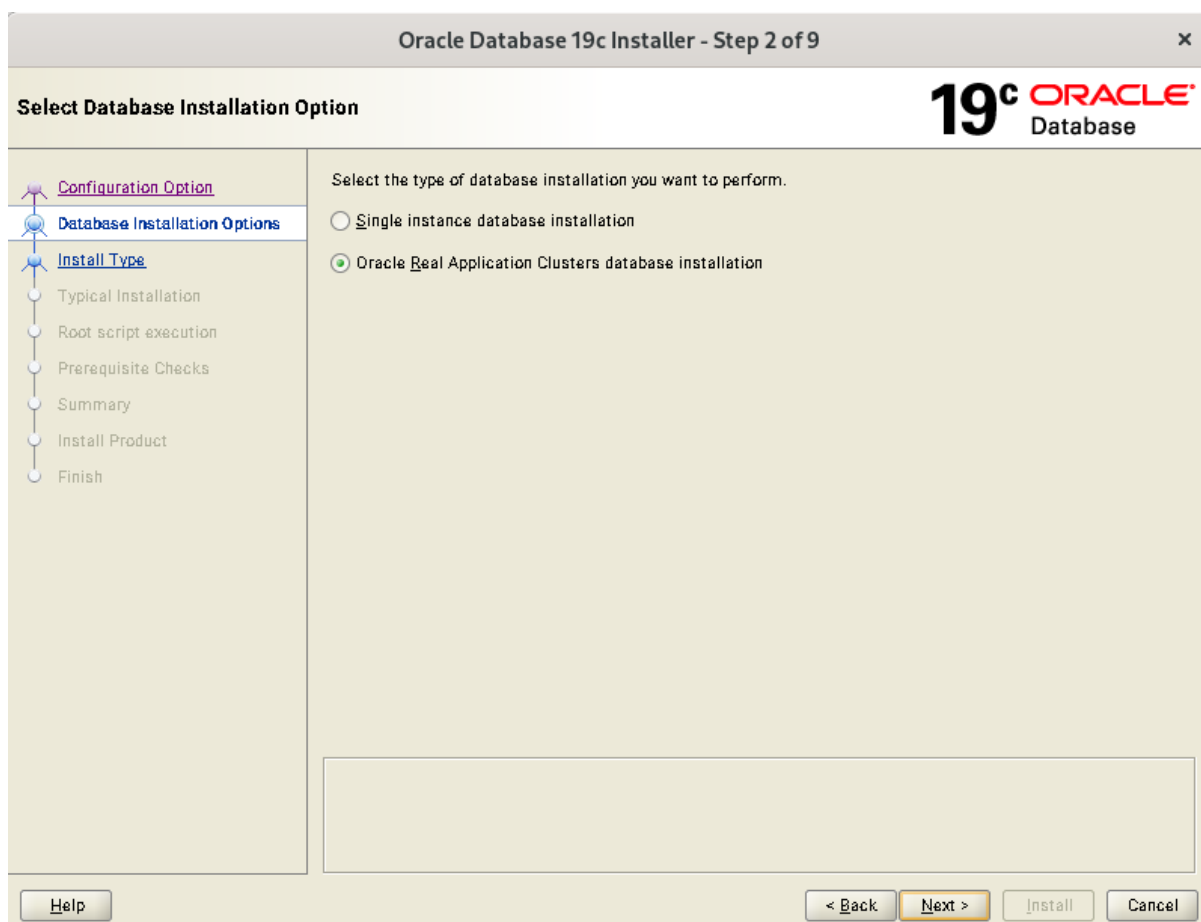
Install Flow:

1). Select Configuration Option.



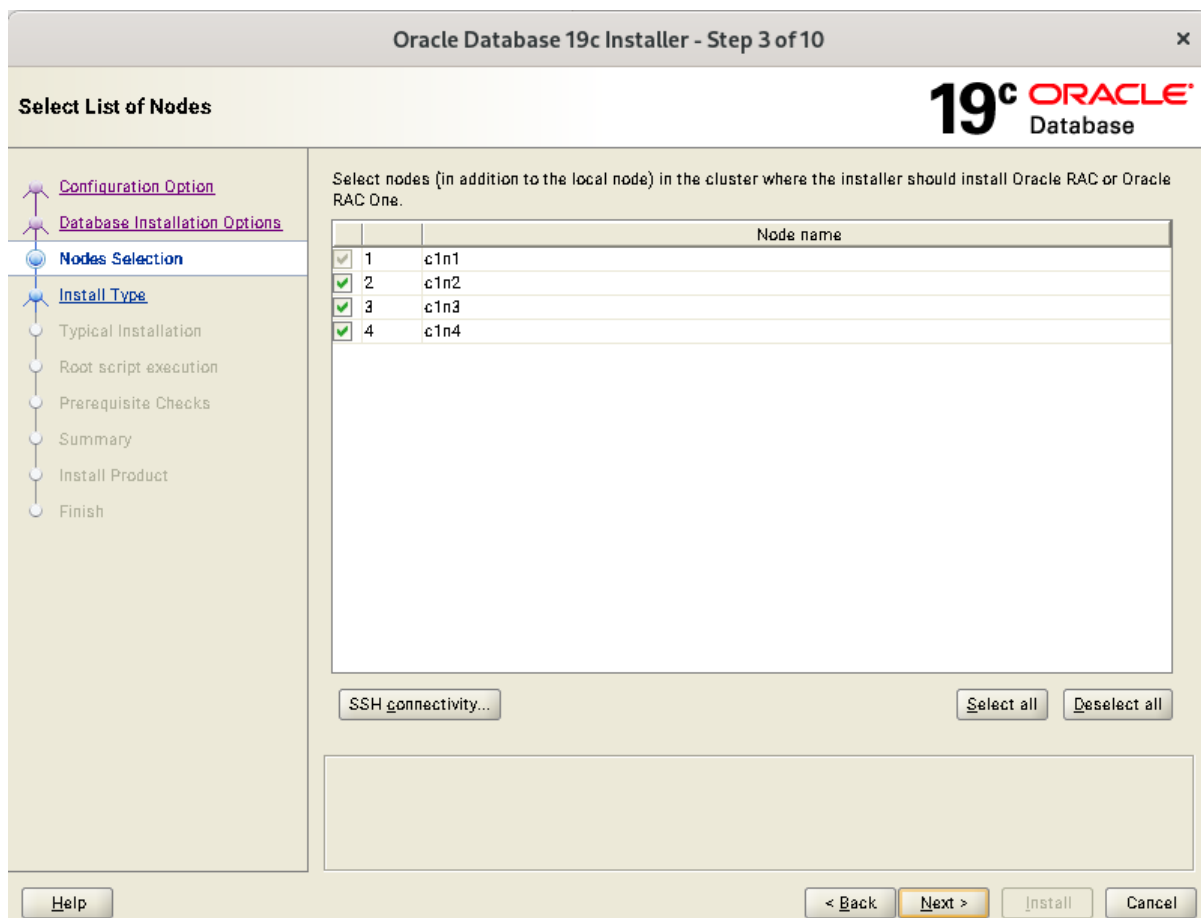
Select option "**Set Up Software Only**", then click **Next** to continue.

2). Select Database Installation Option.



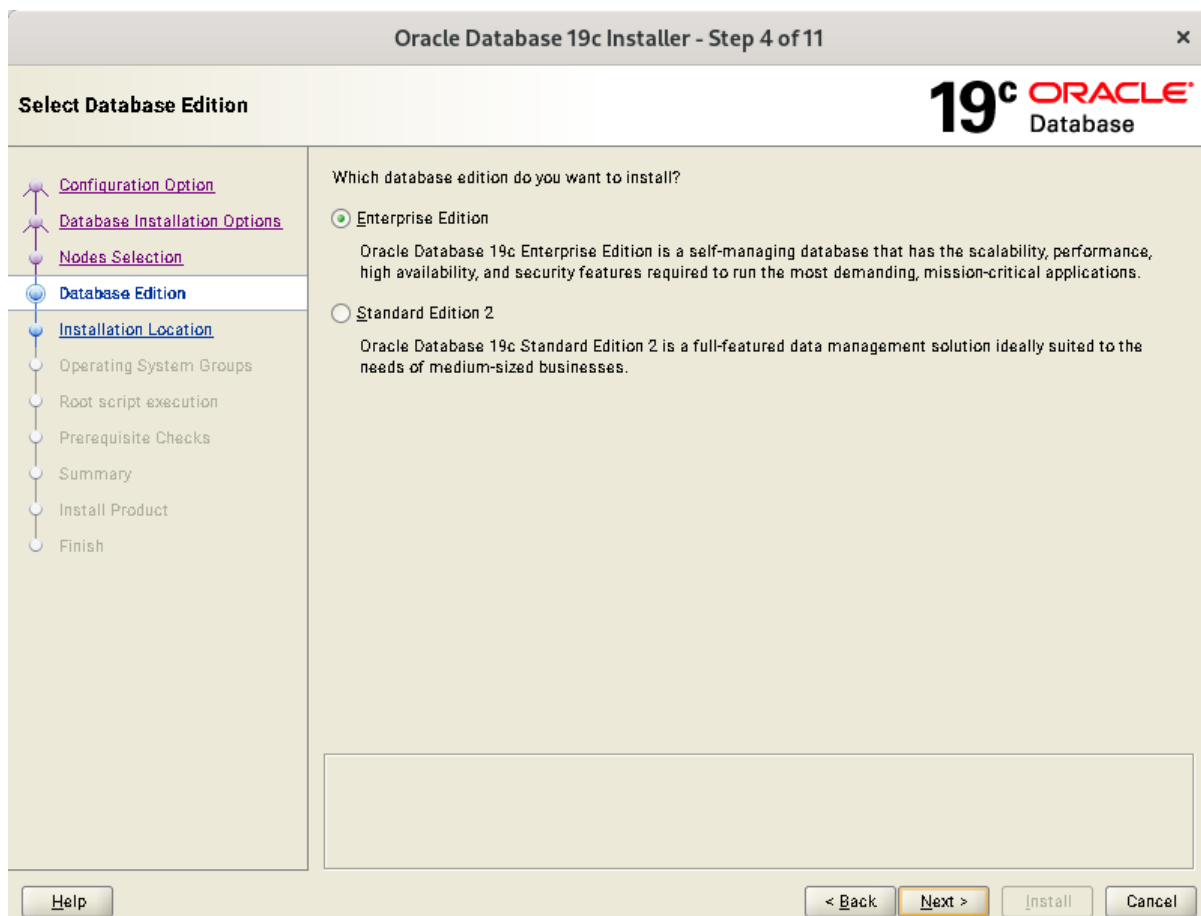
Choose option "**Oracle Real Application Clusters database installation**", then click **Next** to continue.

3). Select List of Nodes.



Select all nodes in the cluster, then click **Next** to continue.

4). Select Database Edition.



Choose option "**Enterprise Edition**", then click **Next** to continue.

5). Specify Installation Location.

Oracle Database 19c Installer - Step 5 of 11

Specify Installation Location

19^c 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:

This software directory is the Oracle Database home directory.

Software location: /home/oracle/db_19c

Help < Back Next > Install Cancel

Fill in **Oracle base** as shown above, then click **Next** to continue.

6). Privileged Operating System groups.

Oracle Database 19c Installer - Step 6 of 11

Privileged Operating System groups **19^c 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 <u>A</u> ddministrator (OSDBA) group:	dba
Database <u>O</u> perator (OSOPER) group (Optional):	oper
Database <u>B</u> ackup and Recovery (OSBACKUPDBA) group:	dba
Data <u>G</u> uard administrative (OSDGDBA) group:	dba
Encryption <u>K</u> ey Management administrative (OSKMDBA) group:	dba
<u>R</u> eal Application Cluster administrative (OSRACDBA) group:	dba

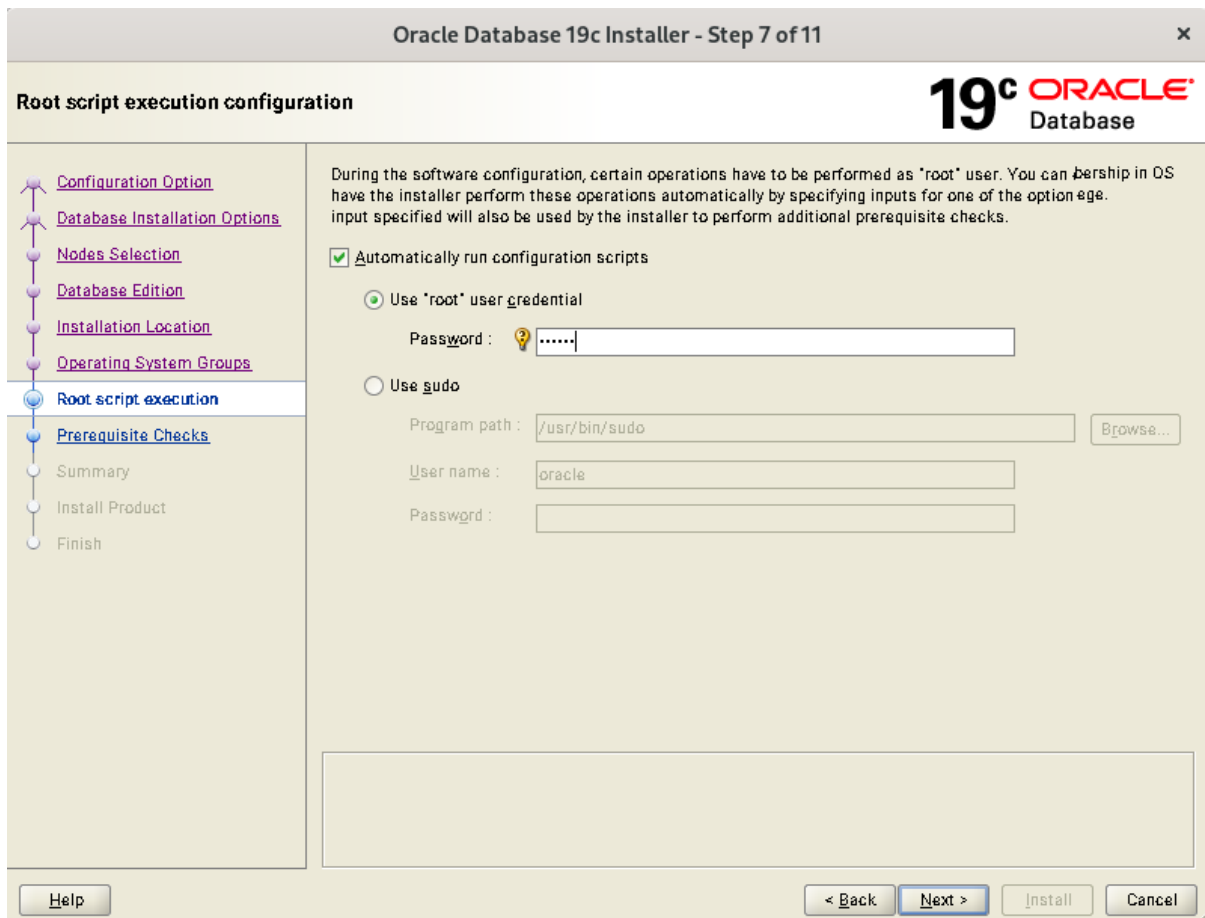
Navigation pane (left):

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

Buttons: Help, < Back, **Next >**, Install, Cancel

Selected by default, then click **Next** to continue.

7). Root script execution configuration.



Select the option to **Automatically run configuration scripts**. Enter the credentials for the root user or a sudo account, then click **Next** to continue. Alternatively, you can Run the scripts manually as the root user at the end of the installation process when prompted by the installer.

8). Perform Prerequisite Checks.

Oracle Database 19c Installer - Step 8 of 11

Perform Prerequisite Checks

19c ORACLE Database

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 All

Checks	Status	Fixable
<ul style="list-style-type: none"> Package: libstdc++33-3.3.3-62.1 Package: libjpeg-turbo-1.3.1 Package: libjpeg62-32bit-62.1.0 Package: libjpeg62-turbo-1.3.1 Package: libpcr16-0-8.41 Package: gcc-c++32bit-7-1.563 Package: gcc-32bit-7-1.563 Package: JDK-1.8.0.5.151 Package: libgfortran3-4.8.3 	<ul style="list-style-type: none"> Failed Warning Warning Warning Warning Warning Warning Warning Warning 	<ul style="list-style-type: none"> No No No No No No No No No

This is a prerequisite condition to test whether the package "libstdc++33-3.3.3-62.1" is available on the system. [\(more details\)](#)

Check Failed on Nodes: [c1n4, c1n3, c1n2, c1n1]

Perform Pre-Check as shown above. Resolve all the errors and warnings on all nodes in the cluster & run **“Fix & Check Again”**. If the **“Fix & check again”** button is not available, try to fix manually.

Select option "Ignore All", then click **Next** to continue.

Oracle Database 19c Installer - Step 8 of 11

Perform Prerequisite Checks

19c ORACLE Database

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 All

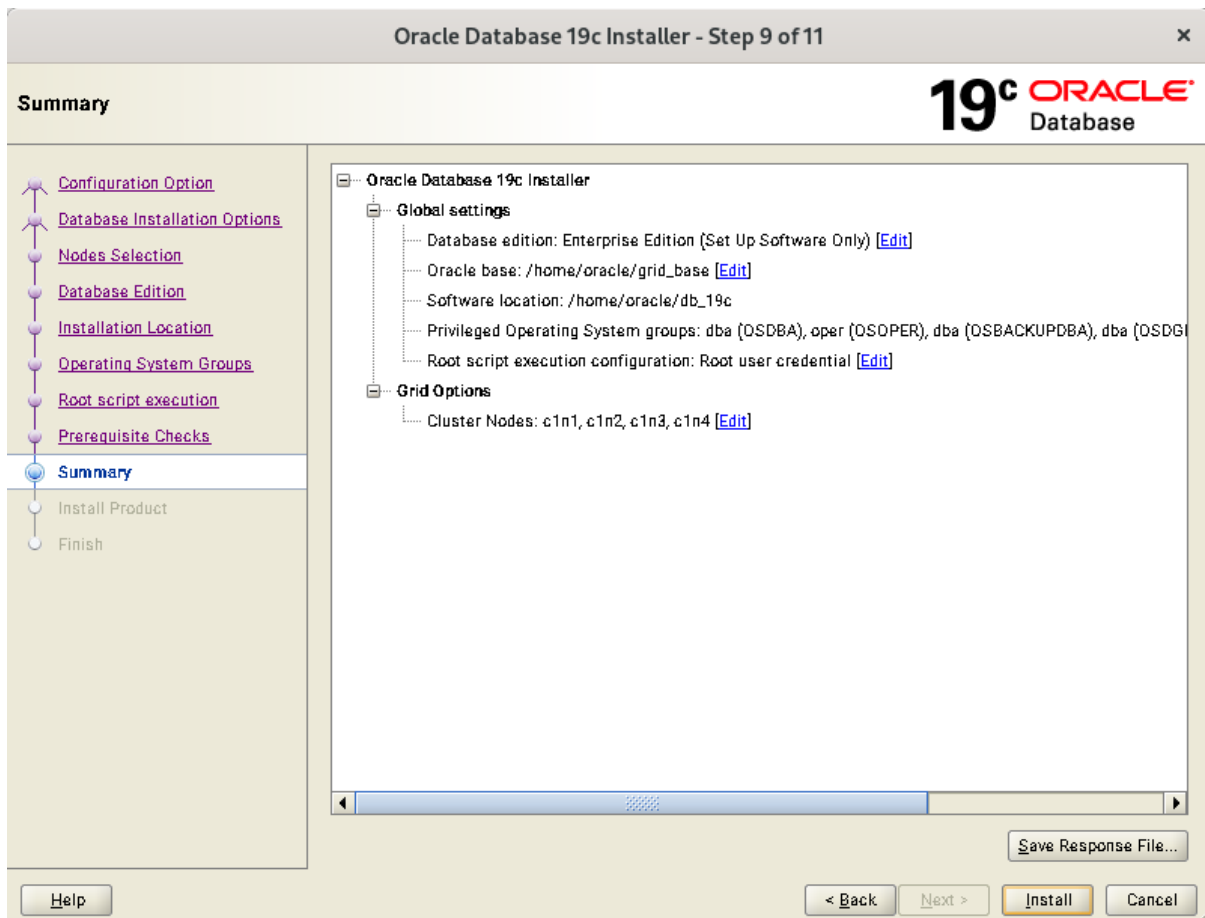
Checks	Status	Fixable
Checks		
[Packages]		
Package: libstdc++33-3.3.3-62.1	Ignored	No
Package: libjpeg-turbo-1.3.1	Ignored	No
Package: libjpeg62-32bit-62.1.0	Ignored	No
Package: libjpeg62-turbo-1.3.1	Ignored	No
Package: libpcr16-0-8.41	Ignored	No
Package: gcc-c++32bit-7-1.563	Ignored	No
Package: gcc-32bit-7-1.563	Ignored	No
Package: JDK-1.8.0.5.151	Ignored	No
Package: libgfortran3-4.8.3	Ignored	No

This is a prerequisite condition to test whether the package "libstdc++33-3.3.3-62.1" is available on the system. [\(more details\)](#)

Check Failed on Nodes: [c1n4, c1n3, c1n2, c1n1]

(Note: There are still some unsatisfied items, please refer to the details of **Additional Comments** in the last section of the document.)

9). Summary.



Installation Summary as shown above, click **Install** to continue.

10). Install Product.

Oracle Database 19c Installer - Step 10 of 11

19^c ORACLE[®] Database

Install Product

Progress: 12%

Linking ldflags Executables

Status:

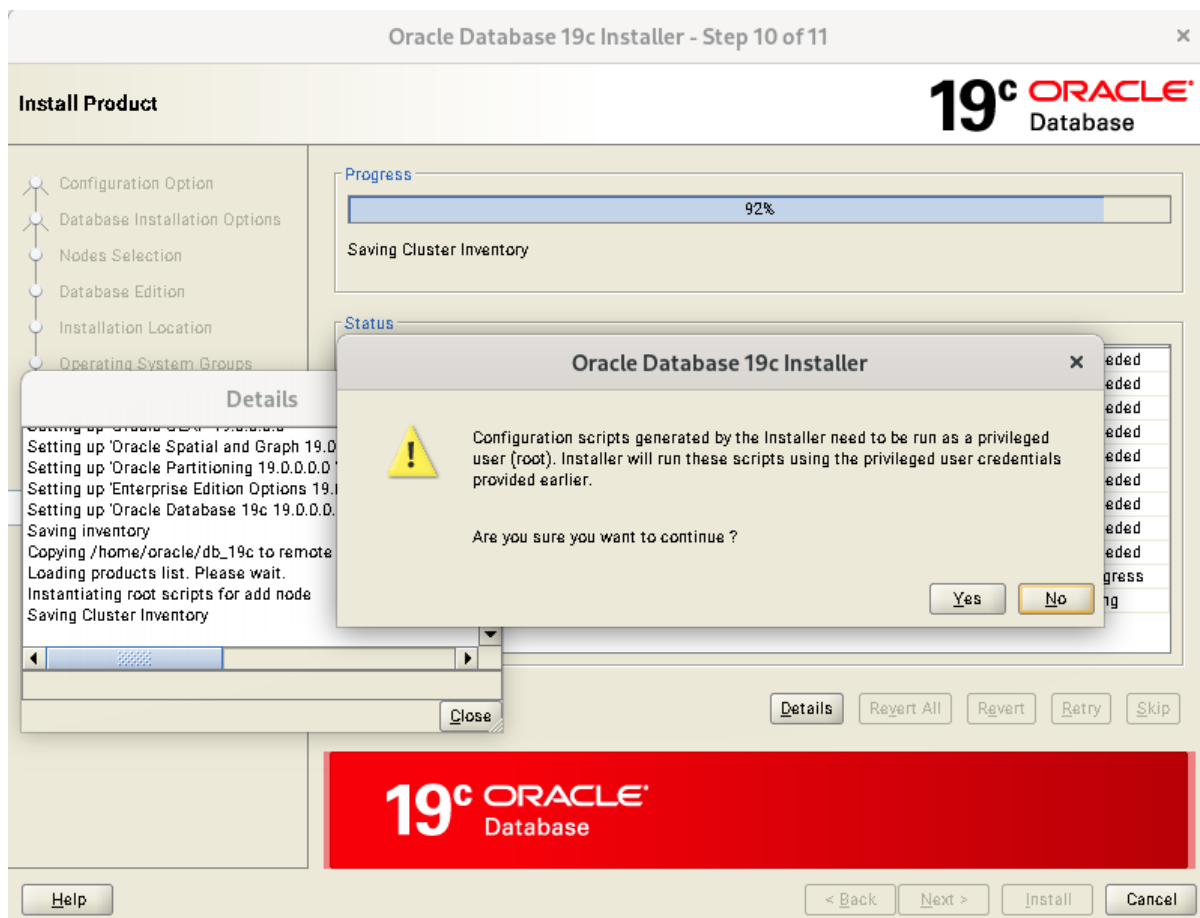
➔ Configure Local Node	In Progress
• Prepare	Succeeded
• Link binaries	In Progress
• Setup	Pending
Copy Files to Remote Nodes	Pending
Configure Remote Nodes	Pending
• Prepare	Pending
• Setup	Pending
Setup Oracle Base	Pending
Execute Root Scripts	Pending

Buttons: Details, Revert All, Revert, Retry, Skip

19^c ORACLE[®] Database

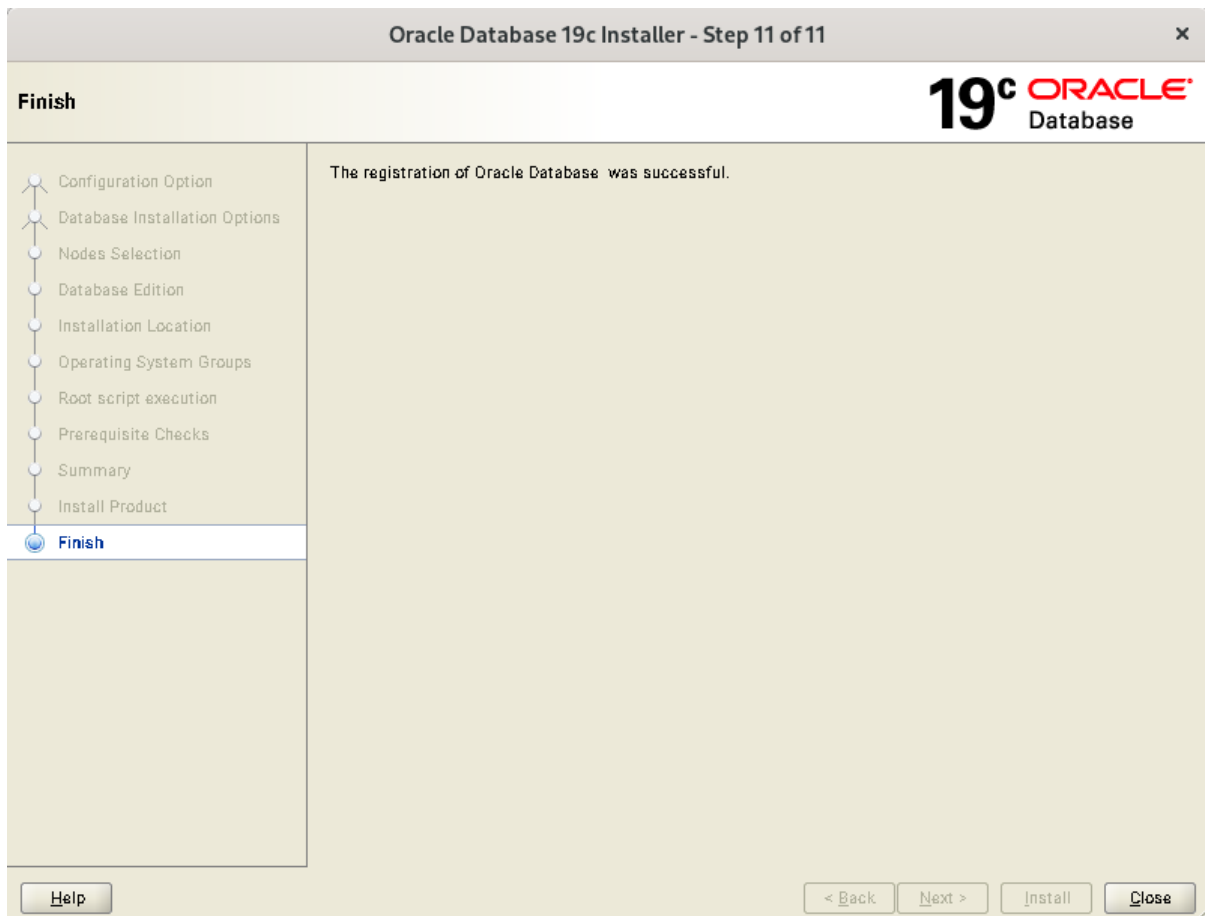
Buttons: Help, < Back, Next >, Install, Cancel

Installer prompted you to run the orainstRoot.sh and root.sh scripts. Click **Yes**.



Continue monitoring the installation until the Finish window appears.

11). Finish



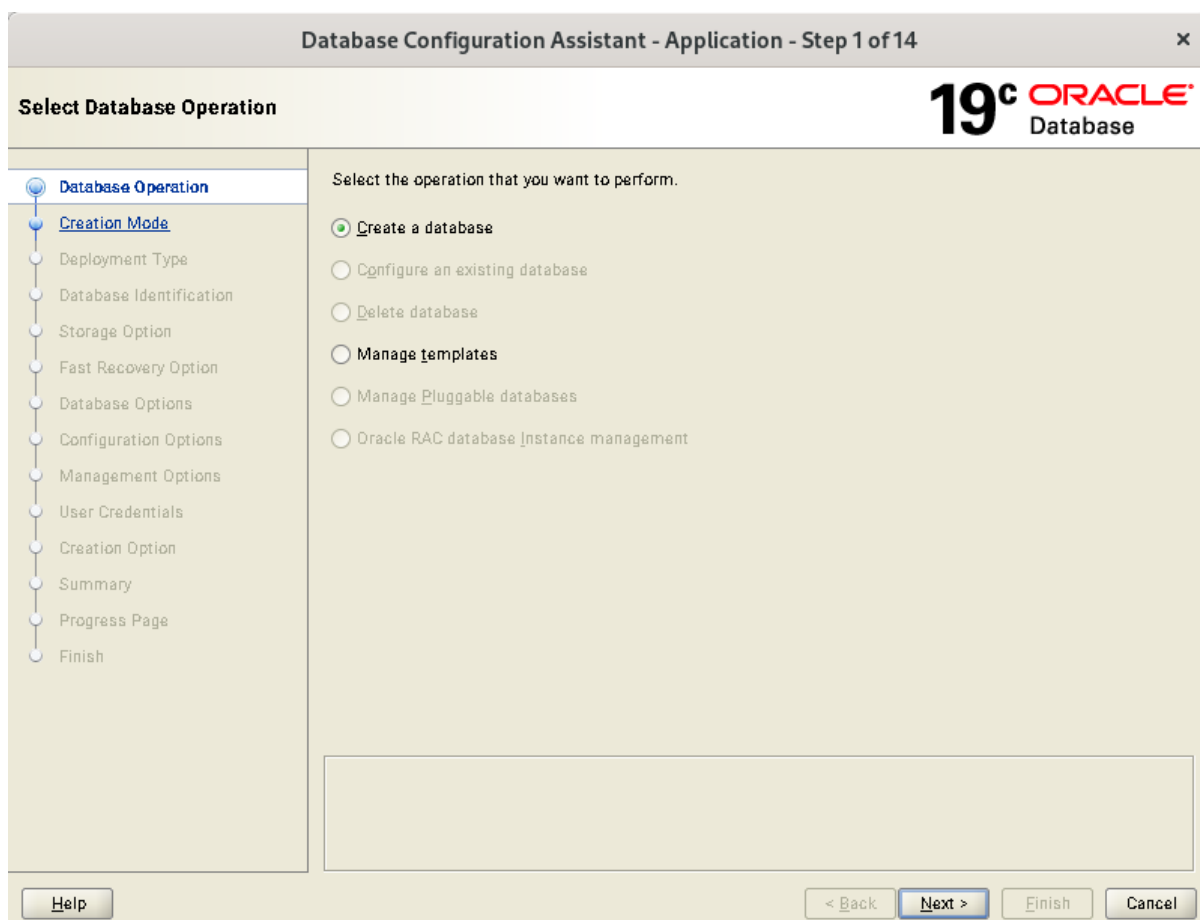
The installation of Oracle Database is finished, click **Close** to dismiss the screen.

2-3. Using ASM Configuration Assistant to create ASM Disk Group for Database files.

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
SUSEDEMO	180.00	179.62	89.81	NORMAL	MOUNTED(3 of 4)
SUSEDATA	30.00	28.98	9.49	NORMAL	MOUNTED(3 of 4)

2-4. Using DBCA to create Oracle RAC DataBase.

1). Select Database Operation.



Select option "**Create a database**", then click **Next** to continue.

2). Select Database Creation Mode.

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

Select Database Creation Mode

19^c ORACLE[®] Database

- 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

Select option "Typical configuration" and fill in administrator password. Then, click **Next** to continue.

3). Perform Prerequisite Checks.

Database Configuration Assistant - Create 'sles' database - Step 3 of 6

Perform Prerequisite Checks

19^c ORACLE[®] Database

Database Operation
Creation Mode
Prerequisite Checks
Summary
Progress Page
Finish

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.

Check Again Fix & Check Again Show Failed All Nodes Ignore All

Checks	Status	Fixable
[Packages]		
Package: libstdc++3.3.3-62.1	Failed	No
Package: libjpeg-turbo-1.3.1	Warning	No
Package: libjpeg62-32bit-62.1.0	Warning	No
Package: libjpeg62-turbo-1.3.1	Warning	No
Package: libpcre16-0-8.41	Warning	No
Package: gcc-c++32bit-7-1.563	Warning	No
Package: gcc-32bit-7-1.563	Warning	No
Package: JDK-1.8.0.5.151	Warning	No
Package: libgfortran3-4.8.3	Warning	No

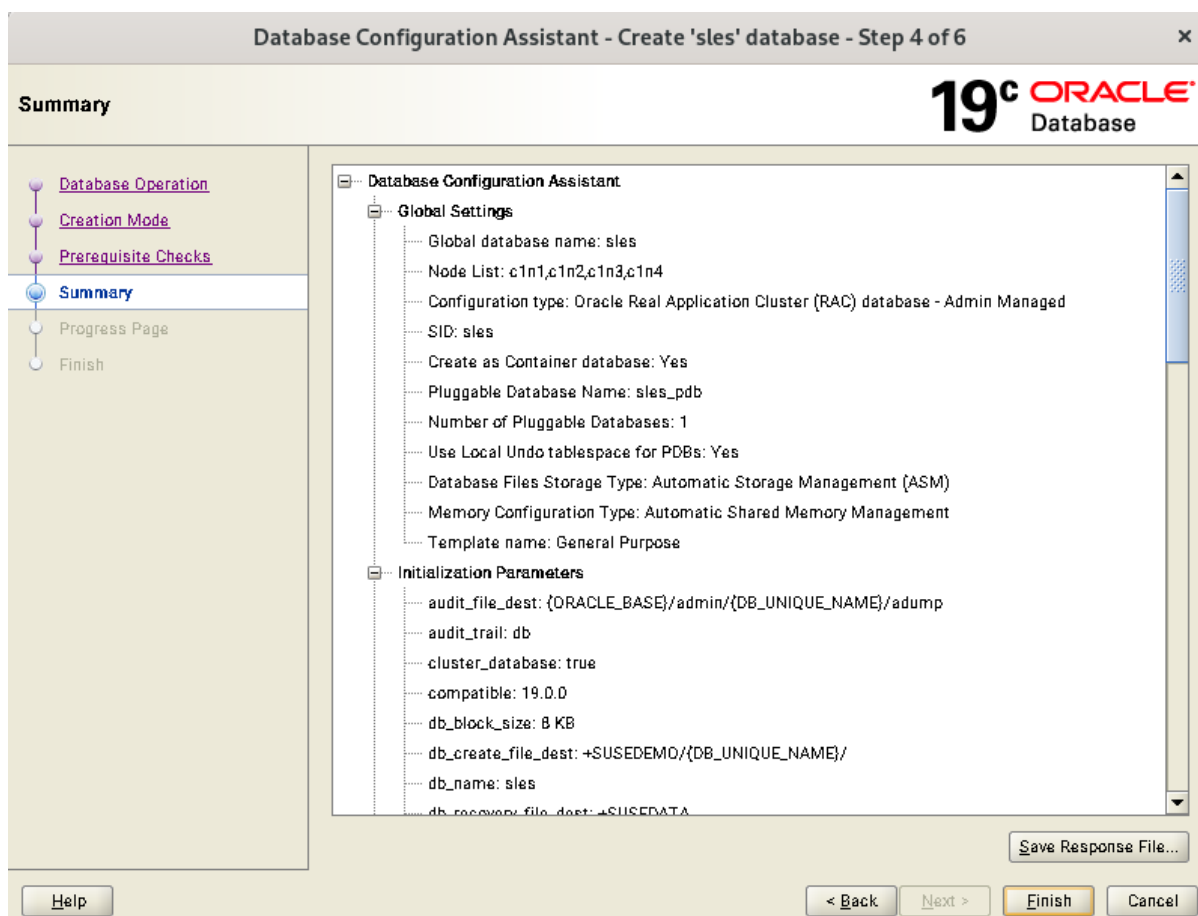
This is a prerequisite condition to test whether the package 'libstdc++3.3.3-62.1' is available on the system. [\(more details\)](#)

Check Failed on Nodes: [c1n4, c1n3, c1n2, c1n1]

Help < Back Next > Finish Cancel

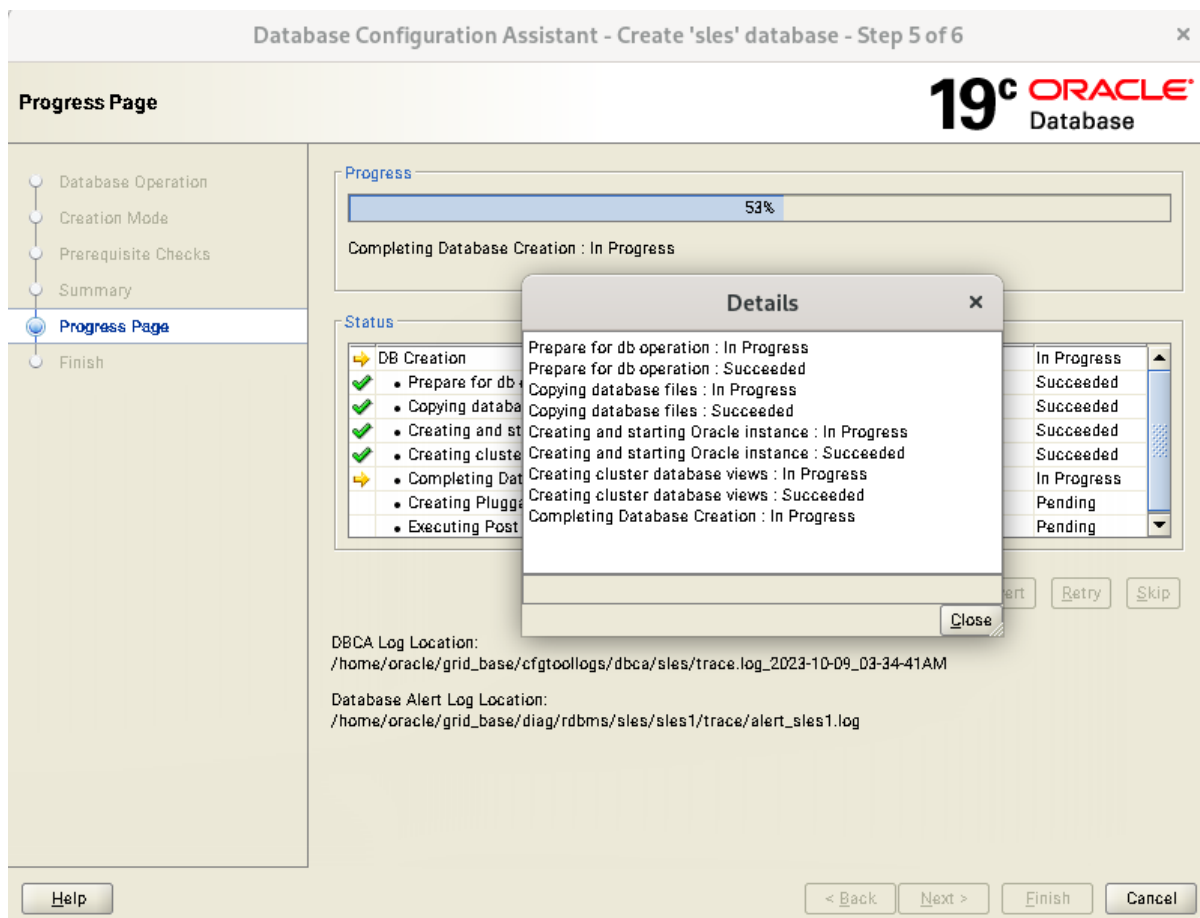
Perform Pre-Check as shown above. Select option "Ignore All", then click **Next** to continue.

4). Summary.



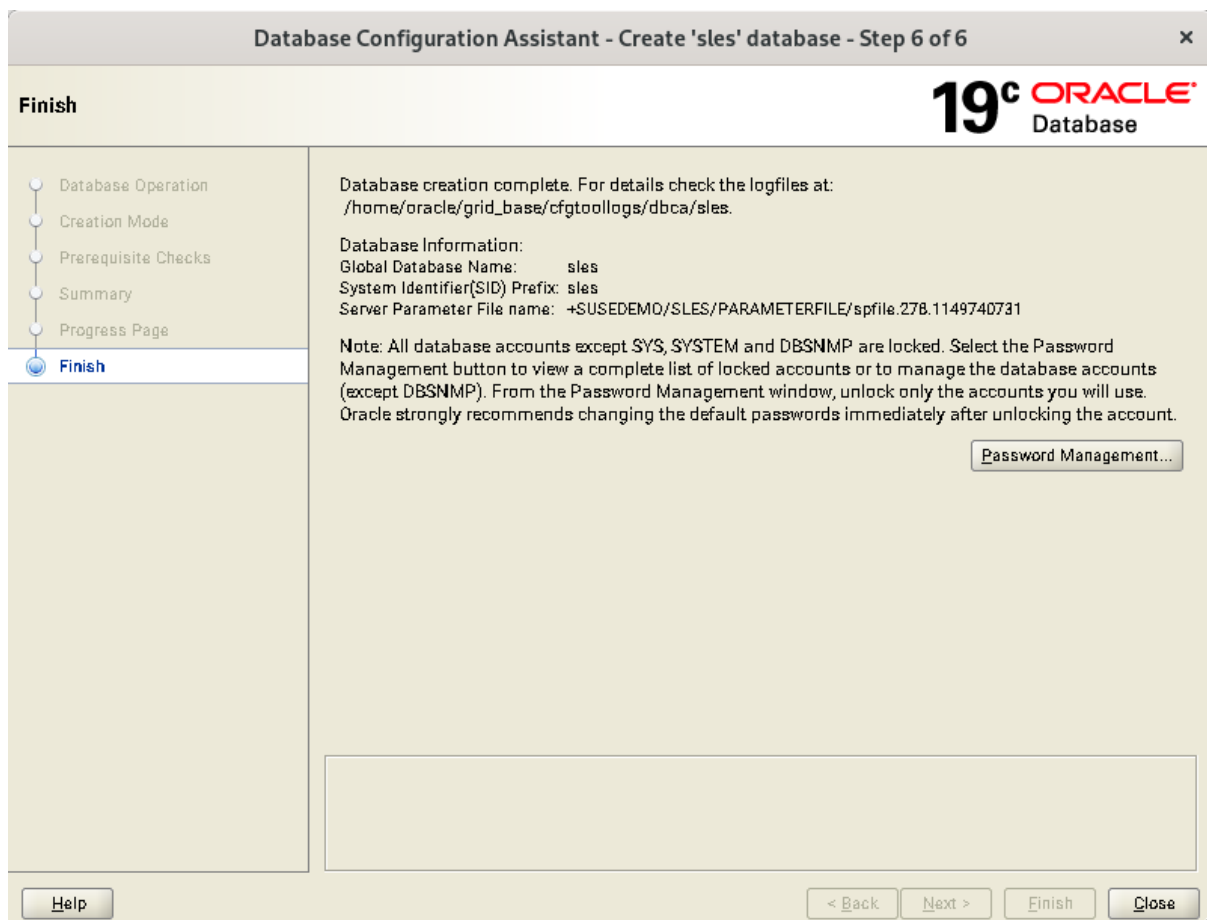
Database Configuration Summary as shown above, review the information, then click **Finish** to continue.

5). Progress Page.



Database creating progress as shown above, waiting until the creation is complete.

6). Finish.



Database creation complete, some details as shown above. Click **Close** to dismiss the screen.

2-5. Oracle Database 19c(19.3) Post-Install Checks.

1). *Checking database status and configuration.*

```
oracle@cln1:~> export ORACLE_HOME=/home/oracle/db_19c/
oracle@cln1:~> /home/oracle/db_19c/bin/srvctl status database -d sles -a
Instance sles1 is running on node cln1
Instance sles1 is connected to ASM instance +ASM1
Instance sles2 is running on node cln2
Instance sles2 is connected to ASM instance +ASM2
Instance sles3 is running on node cln3
Instance sles3 is connected to ASM instance +ASM3
Instance sles4 is running on node cln4
Instance sles4 is connected to ASM instance +ASM3
oracle@cln1:~> /home/oracle/db_19c/bin/srvctl config database -d sles -a
Database unique name: sles
Database name: sles
Oracle home: /home/oracle/db_19c
Oracle user: oracle
Spfile: +SUSEDEMO/SLES/PARAMETERFILE/spfile.278.1149740731
Password file: +SUSEDEMO/SLES/PASSWORD/pwdsles.256.1149738119
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: SUSEDATA,SUSEDEMO
Mount point paths:
Services:
Type: RAC
Start concurrency:
Stop concurrency:
Database is enabled
Database is individually enabled on nodes:
Database is individually disabled on nodes:
OSDBA group: dba
OSOPER group: oper
Database instances: sles1,sles2,sles3,sles4
Configured nodes: cln1,cln2,cln3,cln4
CSS critical: no
CPU count: 0
Memory target: 0
Maximum memory: 0
Default network number for database services:
Database is administrator managed
oracle@cln1:~> █
```

2-6. Oracle RAC 19c(19.3) Post-Install Checks.

1). Checking Oracle RAC status and resources.

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl check cluster -all
*****
cln1:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln2:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln3:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln4:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
oracle@cln1:~> /home/oracle/grid_19c/bin/srvctl status nodeapps
VIP 10.124.140.25 is enabled
VIP 10.124.140.25 is running on node: cln1
VIP 10.124.140.26 is enabled
VIP 10.124.140.26 is running on node: cln2
VIP 10.124.140.27 is enabled
VIP 10.124.140.27 is running on node: cln3
VIP 10.124.140.28 is enabled
VIP 10.124.140.28 is running on node: cln4
Network is enabled
Network is running on node: cln1
Network is running on node: cln2
Network is running on node: cln3
Network is running on node: cln4
ONS is enabled
ONS daemon is running on node: cln1
ONS daemon is running on node: cln2
ONS daemon is running on node: cln3
ONS daemon is running on node: cln4
oracle@cln1:~> █
```

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
-----
Name                Target  State        Server          State details
-----
Local Resources
-----
ora.LISTENER.lsnr
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.chad
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.net1.network
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.ons
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
-----
```

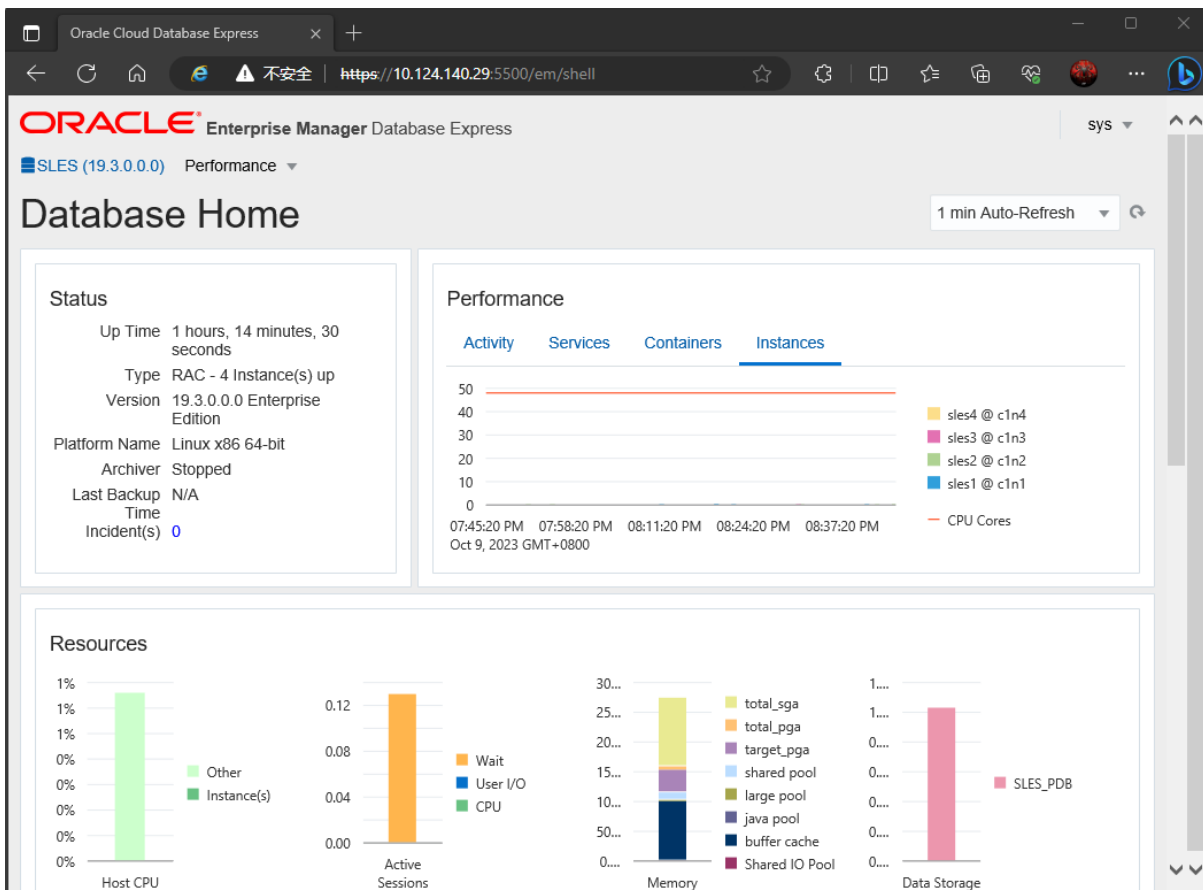
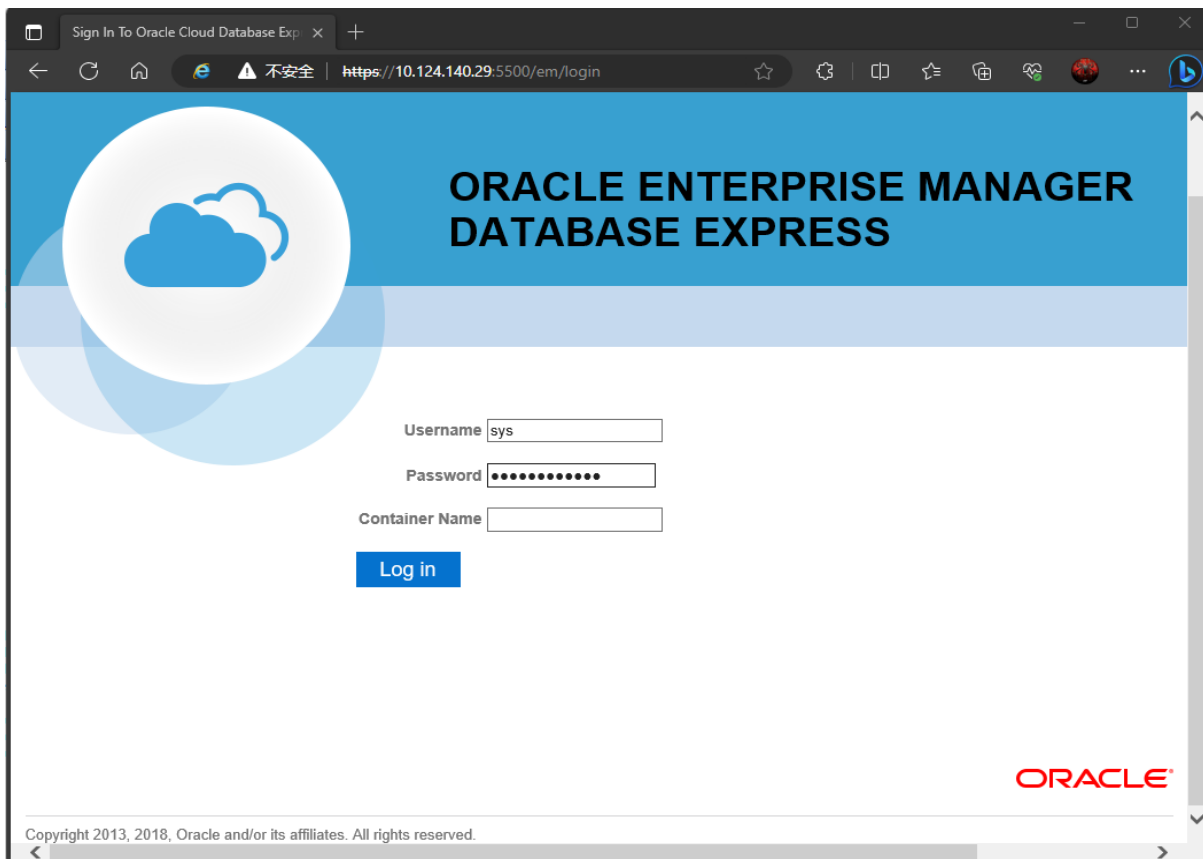


```

Cluster Resources
-----
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN1.lsnr
  1      ONLINE  ONLINE  c1n2      STABLE
ora.LISTENER_SCAN2.lsnr
  1      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN3.lsnr
  1      ONLINE  ONLINE  c1n4      STABLE
ora.SUSEDATA.dg(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.SUSEDEMO.dg(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.asm(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      Started,STABLE
  2      ONLINE  ONLINE  c1n2      Started,STABLE
  3      ONLINE  ONLINE  c1n3      Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
  1      ONLINE  ONLINE  c1n1      STABLE
  2      ONLINE  ONLINE  c1n2      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.c1n1.vip
  1      ONLINE  ONLINE  c1n1      STABLE
ora.c1n2.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.c1n3.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.c1n4.vip
  1      ONLINE  ONLINE  c1n4      STABLE
ora.cvu
  1      ONLINE  ONLINE  c1n1      STABLE
ora.qosmsserver
  1      ONLINE  ONLINE  c1n1      STABLE
ora.scan1.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.scan2.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.scan3.vip
  1      ONLINE  ONLINE  c1n4      STABLE
ora.sles.db
  1      ONLINE  ONLINE  c1n1      Open,HOME=/home/oracle/db_19c,STABLE
  2      ONLINE  ONLINE  c1n2      Open,HOME=/home/oracle/db_19c,STABLE
  3      ONLINE  ONLINE  c1n3      Open,HOME=/home/oracle/db_19c,STABLE
  4      ONLINE  ONLINE  c1n4      Open,HOME=/home/oracle/db_19c,STABLE
-----

```

2). Access to Oracle Enterprise Manager.



3. Installing (Patch 35319490):GI RELEASE UPDATE 19.20.0.0.0

3-1. Patch Installation. You must use the OPatch utility version 12.2.0.1.37 or later to apply this patch.

```
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch version
OPatch Version: 12.2.0.1.39

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> █
```

Run OPatch Conflict Check

```
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir /home/Oracle_SW/RAC_19c_SW/GI_Patch_19.20/35319490/33575402
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory : /home/oracle/oraInventory
  from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location : /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-03-34AM_1.log

Invoking prereq "checkConflictAgainstOHWithDetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir /home/Oracle_SW/RAC_19c_SW/GI_Patch_19.20/35319490/35320081
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory : /home/oracle/oraInventory
  from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location : /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-03-48AM_1.log

Invoking prereq "checkConflictAgainstOHWithDetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir /home/Oracle_SW/RAC_19c_SW/GI_Patch_19.20/35319490/35320149
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory : /home/oracle/oraInventory
  from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location : /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-04-03AM_1.log

Invoking prereq "checkConflictAgainstOHWithDetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir /home/Oracle_SW/RAC_19c_SW/GI_Patch_19.20/35319490/3532537
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory : /home/oracle/oraInventory
  from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location : /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-04-17AM_1.log

Invoking prereq "checkConflictAgainstOHWithDetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
```

```
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckConflictAgainstOHWithDetail -phBaseDir /home/Oracle_SW/RAC_19c_SW/GI_Patch_19.20/35319490/35553096
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory: /home/oracle/oraInventory
   from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location: /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-04-33AM_1.log

Invoking prereq "checkconflictagainstohwithdetail"

Prereq "checkConflictAgainstOHWithDetail" passed.

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> █
```

Run OPatch System Space Check

```
oracle@cn1:/home/oracle/grid_19c/OPatch> ./opatch prereq CheckSystemSpace -phBaseFile /tmp/patch_list_gihome.txt
Oracle Interim Patch Installer version 12.2.0.1.39
Copyright (c) 2023, Oracle Corporation. All rights reserved.

PREREQ session

Oracle Home      : /home/oracle/grid_19c
Central Inventory: /home/oracle/oraInventory
   from           : /home/oracle/grid_19c/oraInst.loc
OPatch version   : 12.2.0.1.39
OUI version      : 12.2.0.7.0
Log file location: /home/oracle/grid_19c/cfgtoollogs/opatch/opatch2023-10-10_04-09-02AM_1.log

Invoking prereq "checksystemspace"

Prereq "checkSystemSpace" passed.

OPatch succeeded.
oracle@cn1:/home/oracle/grid_19c/OPatch> █
```

Then, as root user, execute the following command on each node of the cluster:

```
# opatchauto apply <UNZIPPED_PATCH_LOCATION>/35319490
```

For more details, please refer to the 'Read Me' file included in the patch package. Choose the upgrade method that is appropriate for your environment, make sure the installation is successful.

On c1n1:

```
oracle@c1n1:/home/oracle/grid_19c/OPatch> ./opatch lspatches
35553096;TOMCAT RELEASE UPDATE 19.0.0.0.0 (35553096)
35332537;ACFS RELEASE UPDATE 19.20.0.0.0 (35332537)
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)
33575402;DBWLM RELEASE UPDATE 19.0.0.0.0 (33575402)

OPatch succeeded.
oracle@c1n1:/home/oracle/grid_19c/OPatch> cd /home/oracle/db_19c/OPatch
oracle@c1n1:/home/oracle/db_19c/OPatch> ./opatch lspatches
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)

OPatch succeeded.
oracle@c1n1:/home/oracle/db_19c/OPatch> █
```

On c1n2:

```
oracle@c1n2:/home/oracle/grid_19c/OPatch> ./opatch lspatches
35553096;TOMCAT RELEASE UPDATE 19.0.0.0.0 (35553096)
35332537;ACFS RELEASE UPDATE 19.20.0.0.0 (35332537)
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)
33575402;DBWLM RELEASE UPDATE 19.0.0.0.0 (33575402)

OPatch succeeded.
oracle@c1n2:/home/oracle/grid_19c/OPatch> cd /home/oracle/db_19c/OPatch
oracle@c1n2:/home/oracle/db_19c/OPatch> ./opatch lspatches
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)

OPatch succeeded.
oracle@c1n2:/home/oracle/db_19c/OPatch> █
```

On c1n3:

```
oracle@c1n3:/home/oracle/grid_19c/OPatch> ./opatch lspatches
35553096;TOMCAT RELEASE UPDATE 19.0.0.0.0 (35553096)
35332537;ACFS RELEASE UPDATE 19.20.0.0.0 (35332537)
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)
33575402;DBWLM RELEASE UPDATE 19.0.0.0.0 (33575402)

OPatch succeeded.
oracle@c1n3:/home/oracle/grid_19c/OPatch> cd /home/oracle/db_19c/OPatch
oracle@c1n3:/home/oracle/db_19c/OPatch> ./opatch lspatches
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)

OPatch succeeded.
oracle@c1n3:/home/oracle/db_19c/OPatch> █
```

On c1n4:

```
oracle@c1n4:/home/oracle/grid_19c/OPatch> ./opatch lspatches
35553096;TOMCAT RELEASE UPDATE 19.0.0.0.0 (35553096)
35332537;ACFS RELEASE UPDATE 19.20.0.0.0 (35332537)
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)
33575402;DBWLM RELEASE UPDATE 19.0.0.0.0 (33575402)

OPatch succeeded.
oracle@c1n4:/home/oracle/grid_19c/OPatch> cd /home/oracle/db_19c/OPatch
oracle@c1n4:/home/oracle/db_19c/OPatch> ./opatch lspatches
35320149;OCW RELEASE UPDATE 19.20.0.0.0 (35320149)
35320081;Database Release Update : 19.20.0.0.230718 (35320081)

OPatch succeeded.
oracle@c1n4:/home/oracle/db_19c/OPatch> █
```

3-2. Patch 35319490: GI RELEASE UPDATE 19.20.0.0.0 Post-Install Checks.

1). Checking Oracle RAC status and resources.

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl check cluster -all
*****
cln1:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln2:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln3:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
cln4:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
*****
oracle@cln1:~> /home/oracle/grid_19c/bin/srvctl status nodeapps
VIP 10.124.140.25 is enabled
VIP 10.124.140.25 is running on node: cln1
VIP 10.124.140.26 is enabled
VIP 10.124.140.26 is running on node: cln2
VIP 10.124.140.27 is enabled
VIP 10.124.140.27 is running on node: cln3
VIP 10.124.140.28 is enabled
VIP 10.124.140.28 is running on node: cln4
Network is enabled
Network is running on node: cln1
Network is running on node: cln2
Network is running on node: cln3
Network is running on node: cln4
ONS is enabled
ONS daemon is running on node: cln1
ONS daemon is running on node: cln2
ONS daemon is running on node: cln3
ONS daemon is running on node: cln4
oracle@cln1:~> █
```

```
oracle@cln1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
-----
Name                Target  State        Server          State details
-----
Local Resources
-----
ora.LISTENER.lsnr
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.chad
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.net1.network
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
ora.ons
    ONLINE  ONLINE      cln1            STABLE
    ONLINE  ONLINE      cln2            STABLE
    ONLINE  ONLINE      cln3            STABLE
    ONLINE  ONLINE      cln4            STABLE
-----
```



```

Cluster Resources
-----
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
  1      ONLINE  ONLINE  c1n2      STABLE
  2      ONLINE  ONLINE  c1n1      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN1.lsnr
  1      ONLINE  ONLINE  c1n3      STABLE
ora.LISTENER_SCAN2.lsnr
  1      ONLINE  ONLINE  c1n2      STABLE
ora.LISTENER_SCAN3.lsnr
  1      ONLINE  ONLINE  c1n1      STABLE
ora.SUSEDATA.dg(ora.asmgroup)
  1      ONLINE  ONLINE  c1n2      STABLE
  2      ONLINE  ONLINE  c1n1      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.SUSEDEMO.dg(ora.asmgroup)
  1      ONLINE  ONLINE  c1n2      STABLE
  2      ONLINE  ONLINE  c1n1      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.asm(ora.asmgroup)
  1      ONLINE  ONLINE  c1n2      Started,STABLE
  2      ONLINE  ONLINE  c1n1      Started,STABLE
  3      ONLINE  ONLINE  c1n3      Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
  1      ONLINE  ONLINE  c1n2      STABLE
  2      ONLINE  ONLINE  c1n1      STABLE
  3      ONLINE  ONLINE  c1n3      STABLE
ora.cln1.vip
  1      ONLINE  ONLINE  c1n1      STABLE
ora.cln2.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.cln3.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.cln4.vip
  1      ONLINE  ONLINE  c1n4      STABLE
ora.cvu
  1      ONLINE  ONLINE  c1n1      STABLE
ora.qosmserver
  1      ONLINE  ONLINE  c1n1      STABLE
ora.scan1.vip
  1      ONLINE  ONLINE  c1n3      STABLE
ora.scan2.vip
  1      ONLINE  ONLINE  c1n2      STABLE
ora.scan3.vip
  1      ONLINE  ONLINE  c1n1      STABLE
ora.sles.db
  1      ONLINE  ONLINE  c1n1      Open,HOME=/home/oracle/db_19c,STABLE
  2      ONLINE  ONLINE  c1n2      Open,HOME=/home/oracle/db_19c,STABLE
  3      ONLINE  ONLINE  c1n3      Open,HOME=/home/oracle/db_19c,STABLE
  4      ONLINE  ONLINE  c1n4      Open,HOME=/home/oracle/db_19c,STABLE
-----
oracle@c1n1:~> █

```

2). Checking database status and configuration.

```
oracle@cln1:~> export ORACLE_HOME=/home/oracle/db_19c/
oracle@cln1:~> /home/oracle/db_19c/bin/srvctl status database -d sles -a
Instance sles1 is running on node cln1
Instance sles1 is connected to ASM instance +ASM1
Instance sles2 is running on node cln2
Instance sles2 is connected to ASM instance +ASM2
Instance sles3 is running on node cln3
Instance sles3 is connected to ASM instance +ASM3
Instance sles4 is running on node cln4
Instance sles4 is connected to ASM instance +ASM3
oracle@cln1:~> /home/oracle/db_19c/bin/srvctl config database -d sles -a
Database unique name: sles
Database name: sles
Oracle home: /home/oracle/db_19c
Oracle user: oracle
Spfile: +SUSEDEMO/SLES/PARAMETERFILE/spfile.278.1149740731
Password file: +SUSEDEMO/SLES/PASSWORD/pwdsles.256.1149738119
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: SUSEDATA,SUSEDEMO
Mount point paths:
Services:
Type: RAC
Start concurrency:
Stop concurrency:
Database is enabled
Database is individually enabled on nodes:
Database is individually disabled on nodes:
OSDBA group: dba
OSOPER group: oper
Database instances: sles1,sles2,sles3,sles4
Configured nodes: cln1,cln2,cln3,cln4
CSS critical: no
CPU count: 0
Memory target: 0
Maximum memory: 0
Default network number for database services:
Database is administrator managed
oracle@cln1:~> █
```

```
oracle@c1n1:~> export ORACLE_SID=sles
oracle@c1n1:~> /home/oracle/db_19c/bin/sqlplus /nolog

SQL*Plus: Release 19.0.0.0.0 - Production on Wed Oct 11 02:22:45 2023
Version 19.20.0.0.0

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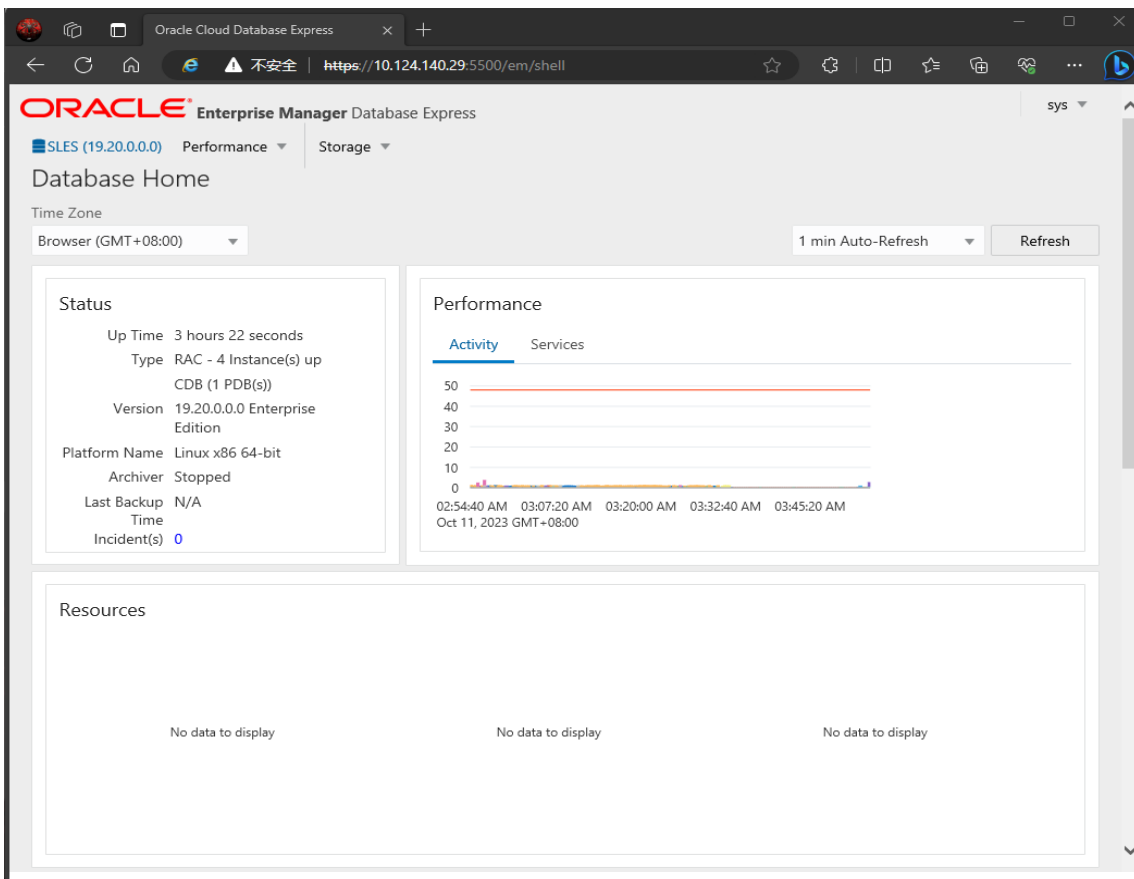
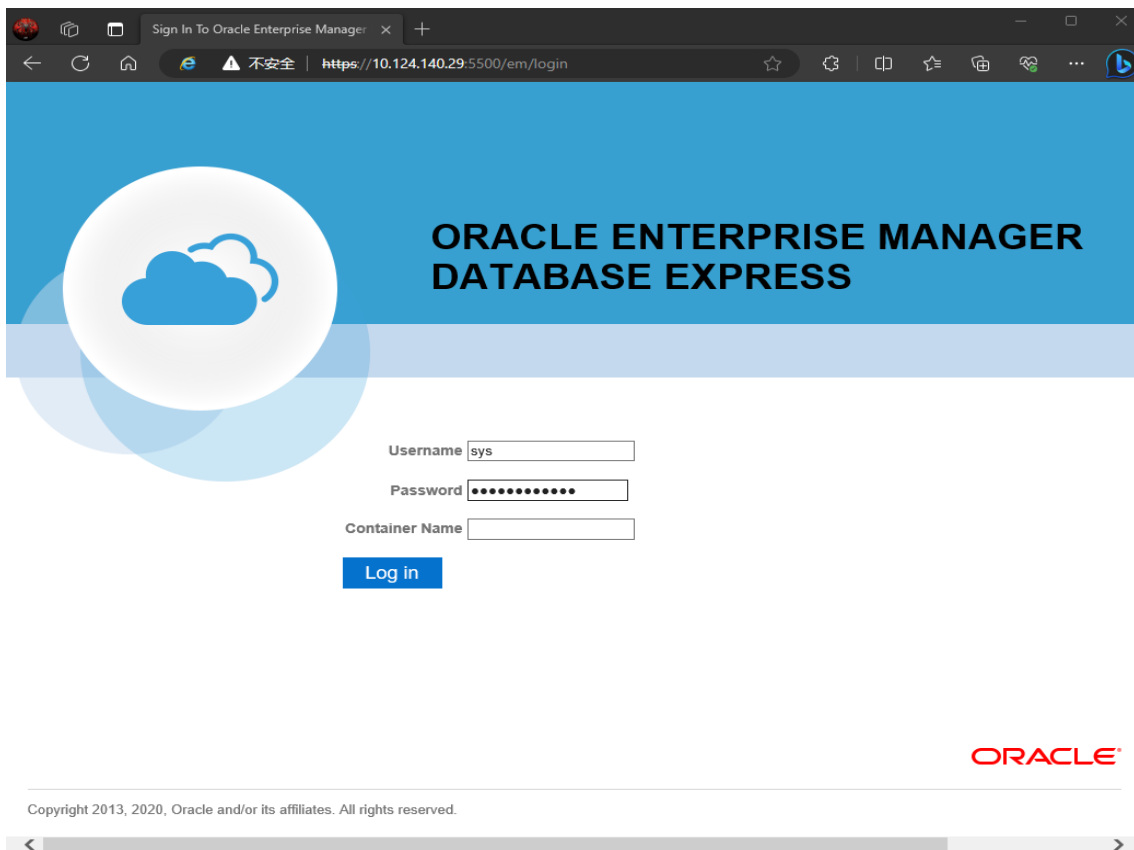
SQL> conn sys/[REDACTED]@c1n1:1521/sles as sysdba
Connected.
SQL> show sga

Total System Global Area 3.0266E+10 bytes
Fixed Size 32777264 bytes
Variable Size 4294967296 bytes
Database Buffers 2.5904E+10 bytes
Redo Buffers 34328576 bytes
SQL> show pdbs

-----
CON_ID CON_NAME OPEN MODE RESTRICTED
-----
2 PDB$SEED READ ONLY NO
3 SLES_PDB READ WRITE NO
SQL> █
```



3). Access to Oracle Enterprise Manager.



Additional Comments

This document provides a brief instruction to install Oracle RAC Database 19c on SLES 15 SP5. You can extend this topology to make it highly available and secure so it is suitable for a production system.

- *GI&DB 19c(19.3) - GI RunInstaller Fails If OpenSSH Is Upgraded to 8.x. Actually, the Passwordless SSH connectivity is work normal on the Cluster.*

Workaround: Before installation, as root user: (please change the path if the location of your "scp" is not the same with below)

```
# Rename the original scp.
mv /usr/bin/scp /usr/bin/scp.orig
```

```
# Create a new file </usr/bin/scp>.
vi /usr/bin/scp
```

```
# Add the below line to the new created file </usr/bin/scp>.
/usr/bin/scp.orig -T $*
```

```
# Change the file permission.
chmod 555 /usr/bin/scp
```

After installation:

```
mv /usr/bin/scp.orig /usr/bin/scp
```

- *GI&DB 19c(19.3) - [INS-10113] Installer encountered errors while copying...*

Workaround:

```
# export SRVM_DISABLE_MTTRANS=true
# ./gridSetup.sh
```

- *GI&DB 19c(19.3) - Installation/relink fails with : "Error in invoking target 'libasmclntsh19.ohso libasmperl19.ohso client_sharedlib' of makefile ins_rdbms.mk"*

Workaround: Install 'compat-libpthread-nonshared' package.

- *CVU Pre-installation Check Issue - "Verifying zeroconf check ...Warning". Please ignore this error, a fix will be in the next distributed CVU.*
- *CVU Pre-installation Check Issue - Some packages are not applicable to sles15 SP5*

Workaround: Manually ensure updated packages are installed.

```
libstdc++33-3.3.3-62.1 ( Deprecated on SLES15 SP5 )
libjpeg-turbo-1.3.1, libjpeg62-32bit-62.1.0, libjpeg62-turbo-1.3.1 ( Replaced by: libjpeg62-62.3.0-150400.15.7.x86_64, libjpeg8-8.2.2-150400.15.9.x86_64 and libjpeg8-32bit-8.2.2-150400.15.9.x86_64 )
libpcre16-0-8.41 ( New name is libpcre16-0-8.45-150000.20.13.1.x86_64 )
JDK-1.8.0.5.151 ( New name is java-1_8_0-openjdk-1.8.0.382-150000.3.82.1.x86_64 )
libgfortran3-4.8.3 ( Replaced by: libgfortran4-7.5.0+r278197-150000.4.35.1.x86_64 or libgfortran5-12.3.0+git1204-150000.1.16.1.x86_64 )
gcc-c++32bit-7-1.563 ( Deprecated on SLES15 SP5 )
gcc-32bit-7-1.563 ( Deprecated on SLES15 SP5 )
```



- *If you are using ASMLib please Install insserv-compat-0.1-4.6.1.noarch. The package insserv-compat adds compatibility with System V init scripts to system.*

Error Resolved:

```
# systemctl enable oracleasm
```

```
Synchronizing state of oracleasm.service with SysV service script with  
/usr/lib/systemd/systemd-sysv-install.
```

```
Executing: /usr/lib/systemd/systemd-sysv-install enable oracleasm
```

```
In -sf ../oracleasm /etc/init.d/rc2.d/S50oracleasm
```

```
In: failed to create symbolic link '/etc/init.d/rc2.d/S50oracleasm': No such file or directory
```

- *Apply Patch 35319490:GI RELEASE UPDATE 19.20.0.0.0 (Including Database patches)*

*Thanks for selecting **SUSE Linux Enterprise Server** as your Linux platform of choice!*