Oracle RAC 19c(19.4) on SUSE Linux Enterprise Server 15 SP1 - x86_64

http://www.suse.com

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Introduction

This documentation provides the details for install Oracle RAC 19c on SUSE Linux Enterprise Server 15 SP1 OS. Here, x86_64 version of both Oracle Database 19c Enterprise and SUSE Linux Enterprise Server is used. Similar steps applies to other platforms(x86, ia64, etc.). If you encounter any problem or have general question, please post your query to suse-oracle@listx.novell.com.

The oracle offical product documentation available at: http://docs.oracle.com/en/

Hardware and Software Requirements

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 SP1 (x86_64)
(http://download.suse.de/install)

Oracle

• Oracle Grid Infrastructure 19c (19.3) (x86_64)
• Oracle Database 19c (19.3) (x86_64)
(https://www.oracle.com/database/technologies/oracle-database-software-downloads.html#19c)

• Grid Infrastructure Release Update 19.4.0.0.190716 - Patch 29708769 (Includes DB Patch) (x86_64)
(https://support.oracle.com)

Cluster(4-node) Information

HP DL360 Gen9 Server (Intel Xeon 2x12 core ~ 48 CPU), 96GB RAM
4 NIC per server (two bonded as active/passive) + Static IP Address
Local HDD (2x600 GB)
Shared SAN Partition (2TB)
SUSE Linux Enterprise Server 15 SP1(x86_64)
Kernel version: 4.12.14-197.21-default

Prerequisites

1. Install SUSE Linux Enterprise Server 15 SP1 on each cluster node.

Follow the official document (URL:https://documentation.suse.com/sles/15-SP1/) to Install SLES 15 SP1(x86_64) on each node of the cluster.

2. Cluster Network configuration

Public
137.65.135.90 c1n1 c1n1.provo.novell.com // Node1
137.65.135.91 c1n2 c1n2.provo.novell.com // Node2
137.65.135.92 c1n3 c1n3.provo.novell.com // Node3
137.65.135.93 c1n4 c1n4.provo.novell.com // Node4

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
137.65.135.94 c1n1-vip c1n1-vip.provo.novell.com
137.65.135.95 c1n2-vip c1n2-vip.provo.novell.com
137.65.135.96 c1n3-vip c1n3-vip.provo.novell.com
137.65.135.97 c1n4-vip c1n4-vip.provo.novell.com

SCAN
c1c1-scan.provo.novell.com (137.65.135.89)

Oracle RAC Installation

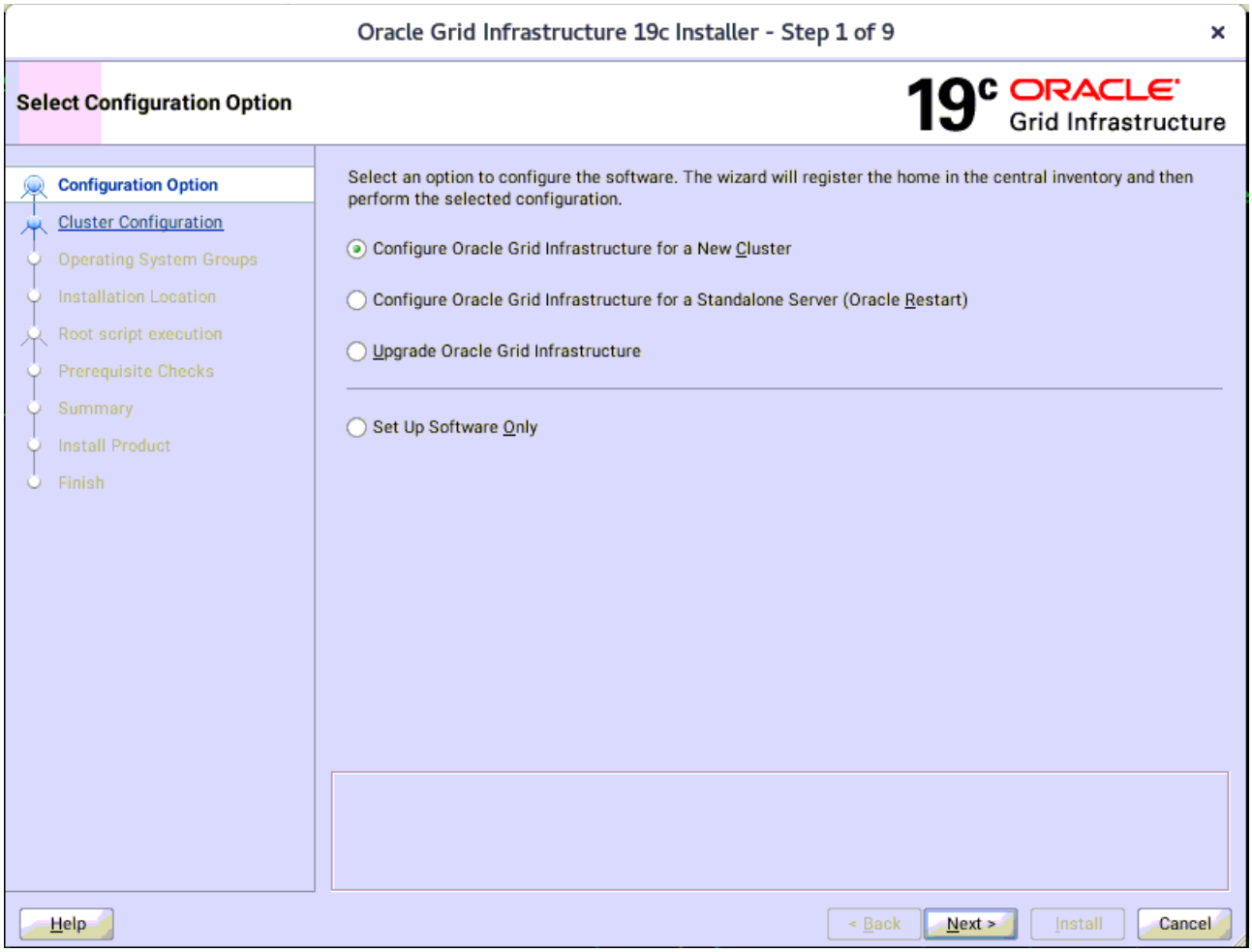
1. Installing Oracle Grid Infrastructure.

1-1. Login to the SLES 15 SP1 64-bit OS as a non-admin user. Download the Oracle Database 19c Grid Infrastructure (19.3) for Linux x86-64 from https://www.oracle.com/database/technologies/oracle-database-software-downloads.html#19c.

1-2. Extract LINUX.X64_193000_grid_home.zip and run the installer '**./gridSetup.sh**' from Gird ShipHome.

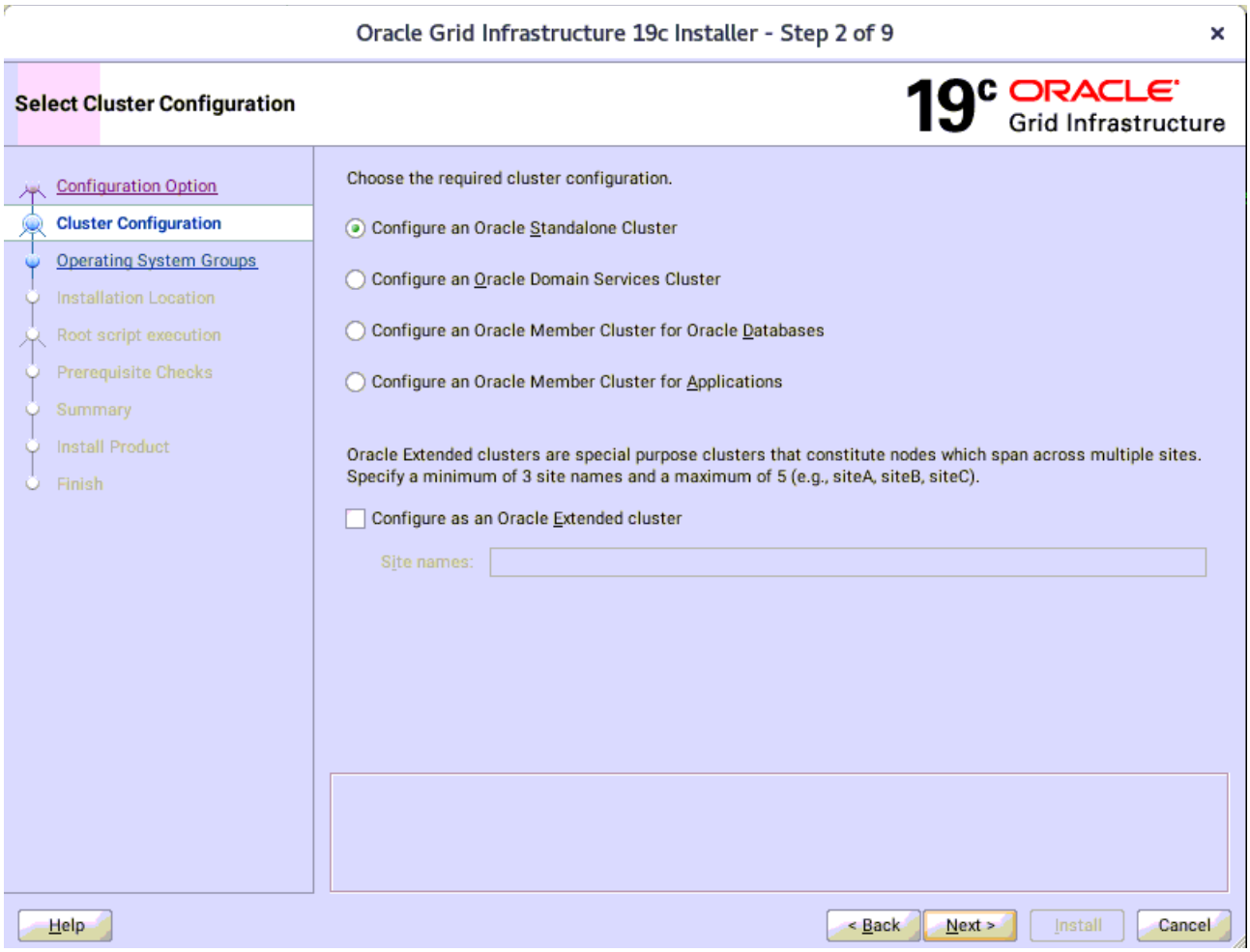
Install Flow:

1). Select Configuration Option.



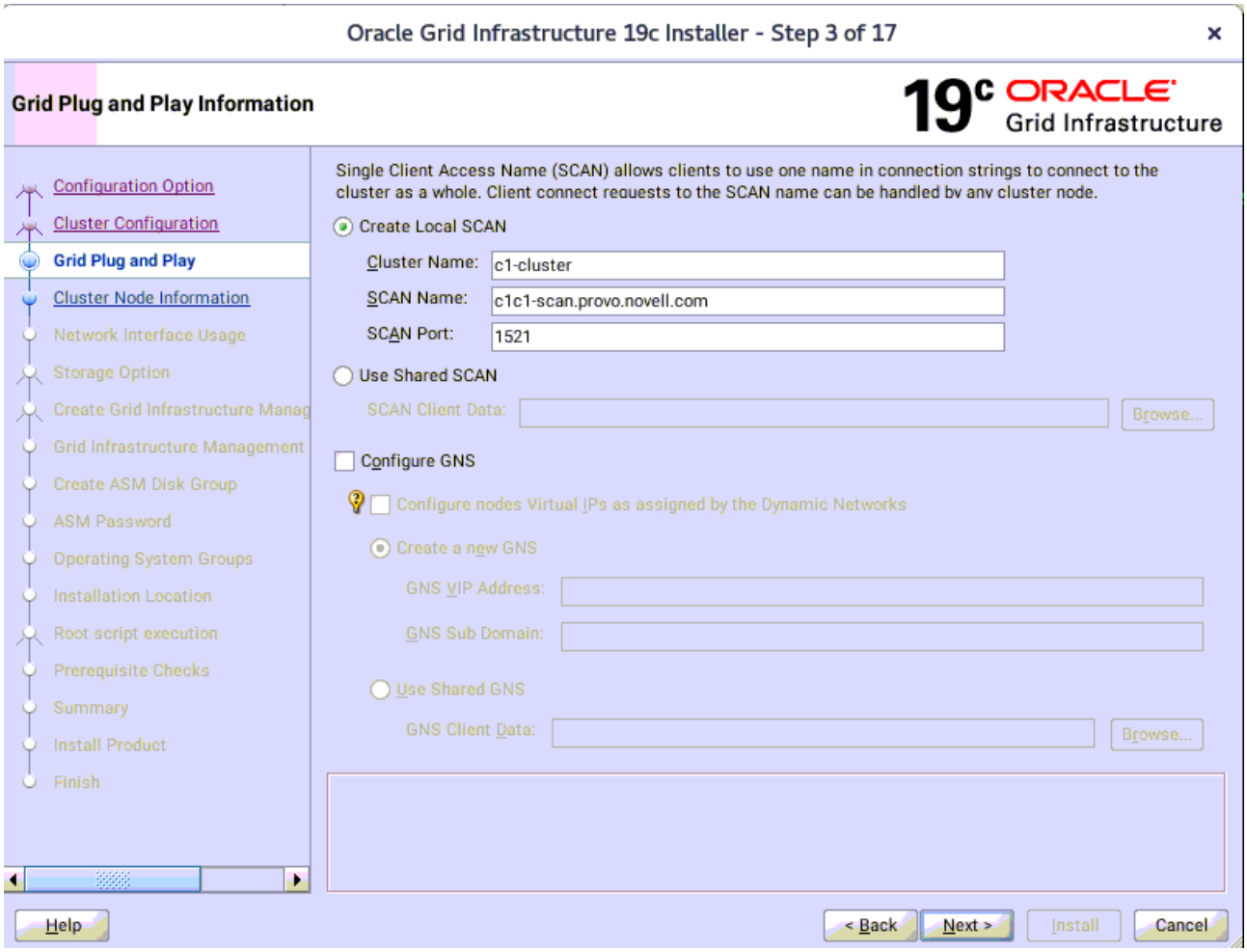
Choose option "**Configure Oracle Grid Infrastructure for a New Cluster**", then click **Next** to continue.

2). Select Cluster Configuration.



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

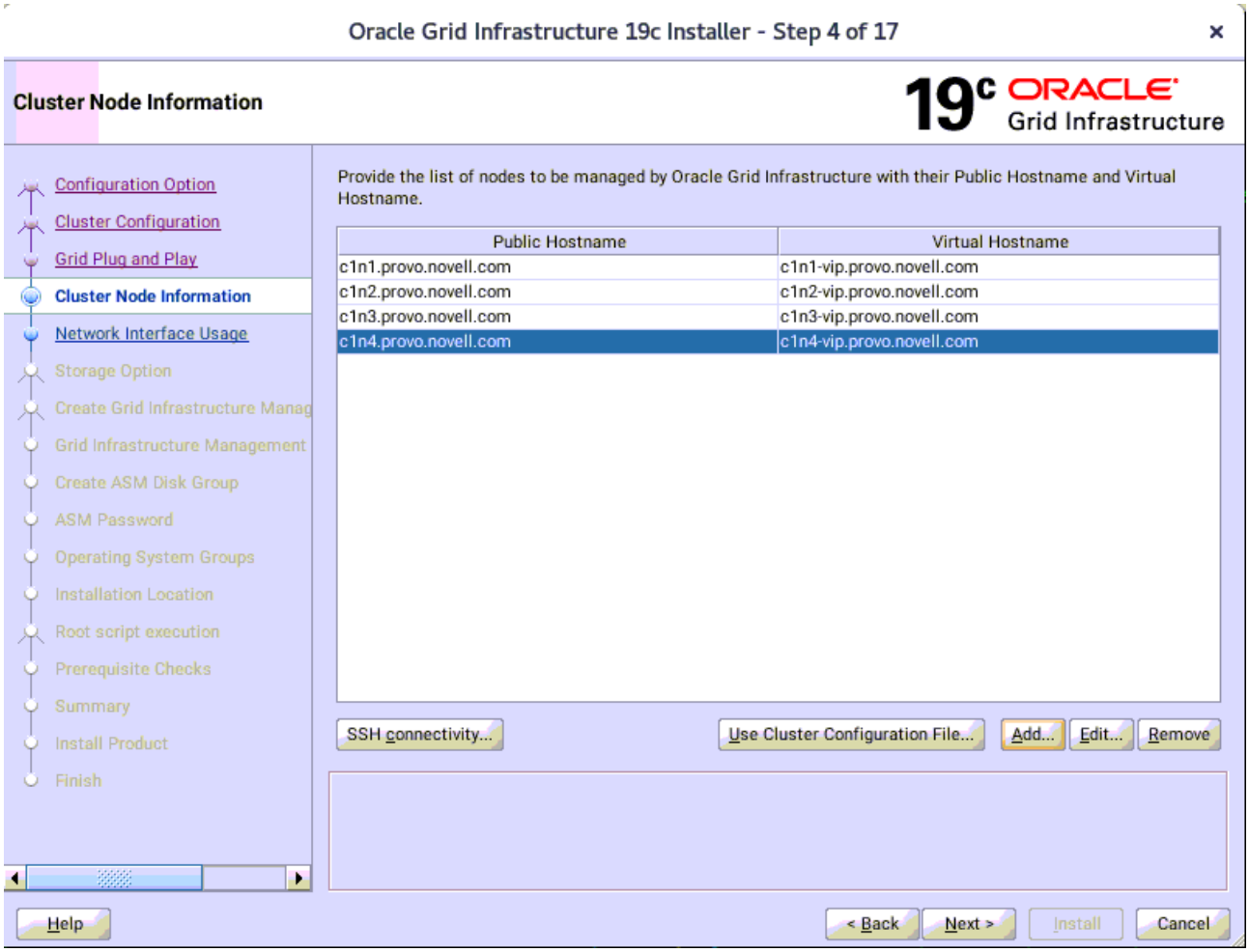
3). Grid Plug and Play Information.



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.

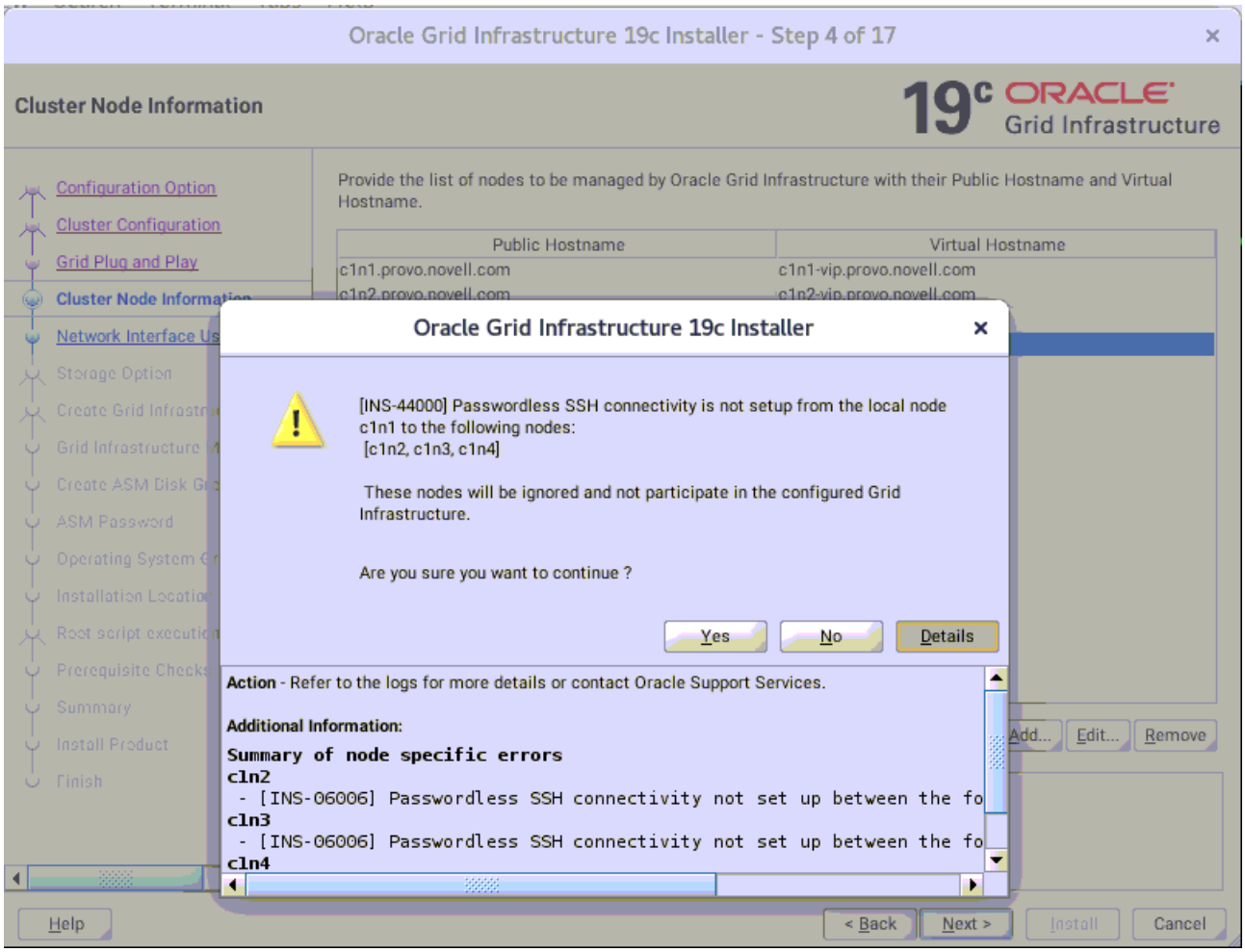
(More details for GNS configuration please see Oracle official document.)

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.

(**Note:** Passwordless SSH connectivity check will be failed as shown below, although you have configured it correctly.

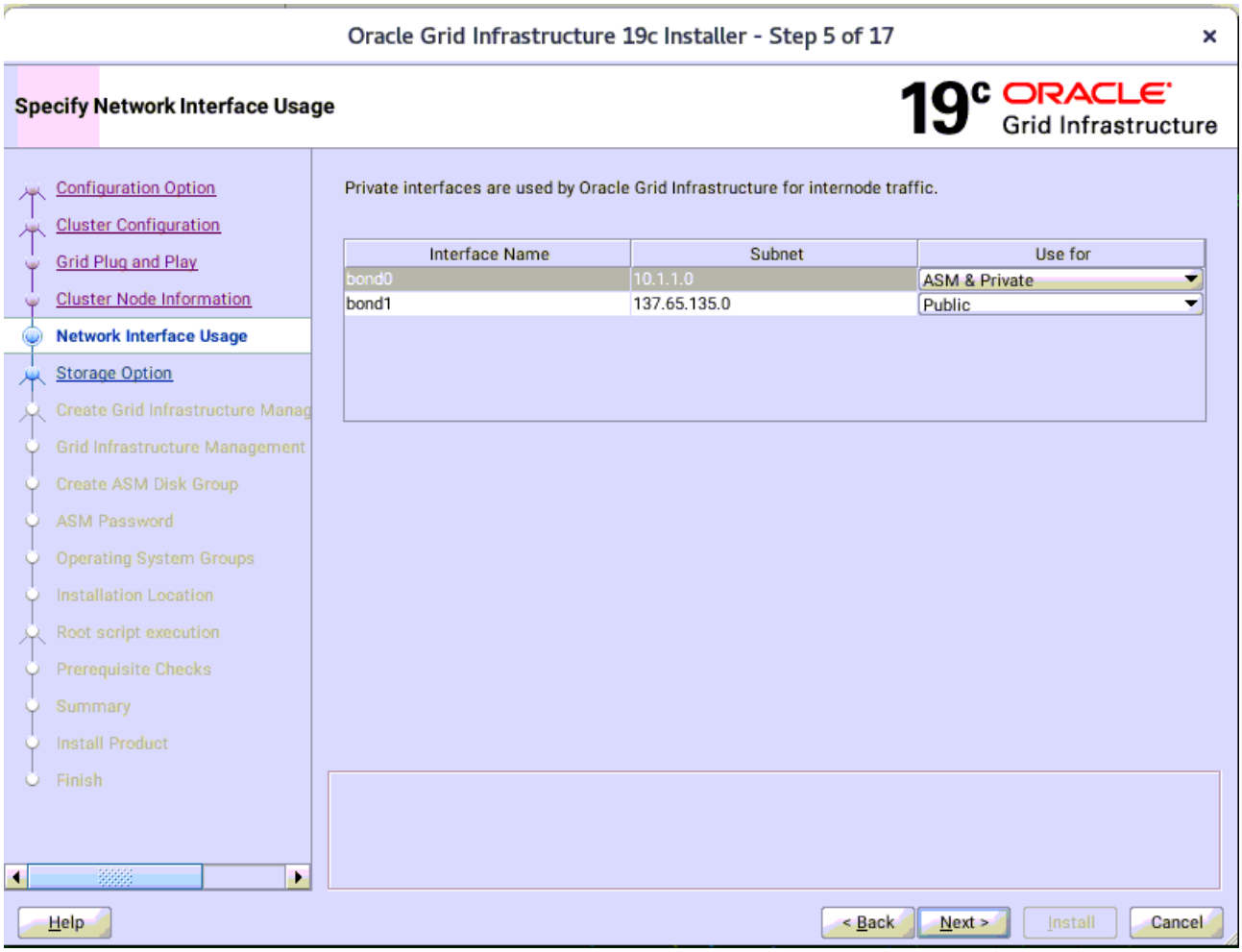


Work-around: A temporary solution is by downgrading openssh to earlier version(openssh-7.6p1-7.8.x86_64) on the node(c1n1), then retry.

```
c1n1:/opt/oracle # rpm -qa | grep openssh
openssh-7.6p1-7.8.x86_64
openssh-helpers-7.6p1-7.8.x86_64
openssh-askpass-gnome-7.6p1-7.13.x86_64
c1n1:/opt/oracle #
```

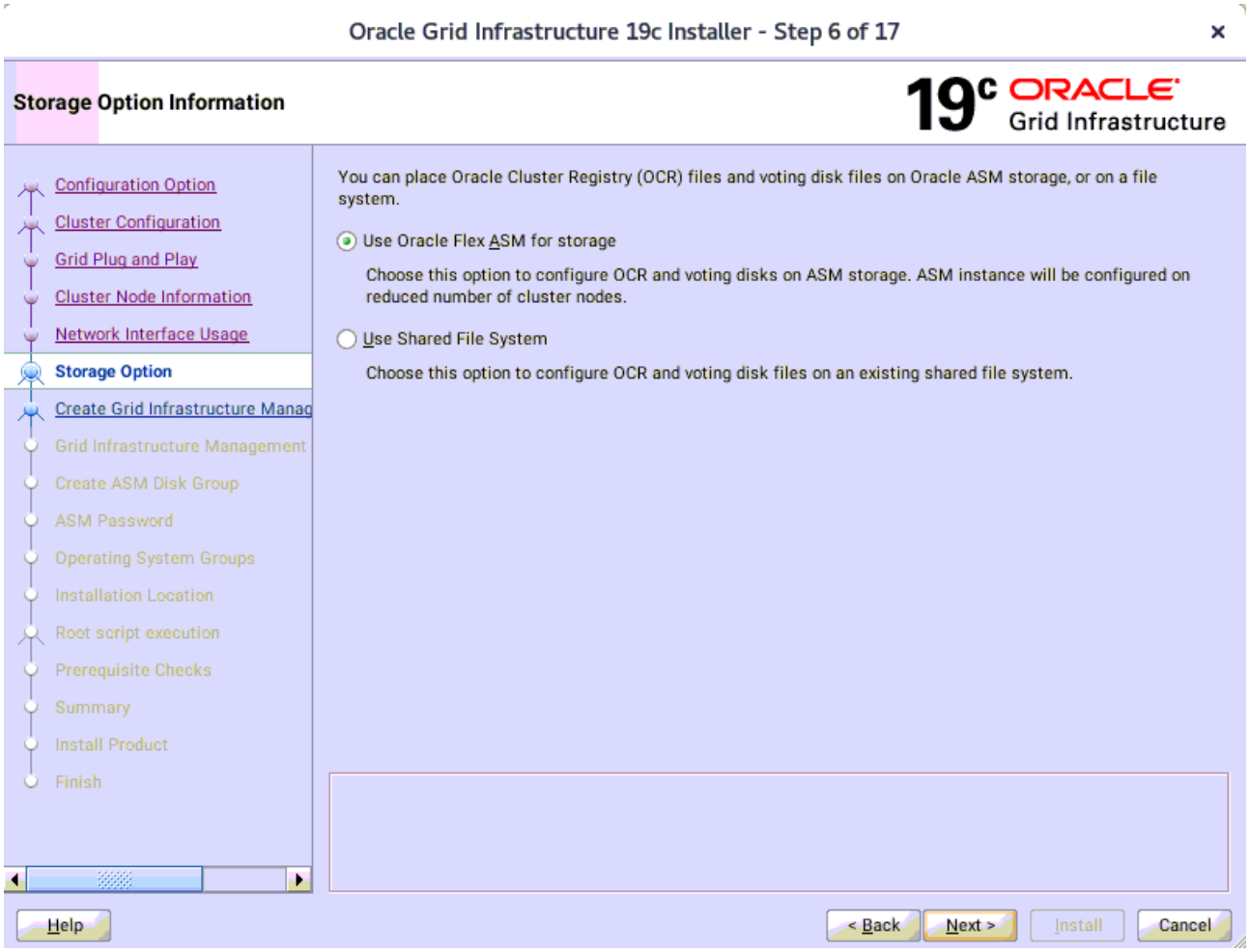
)

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.

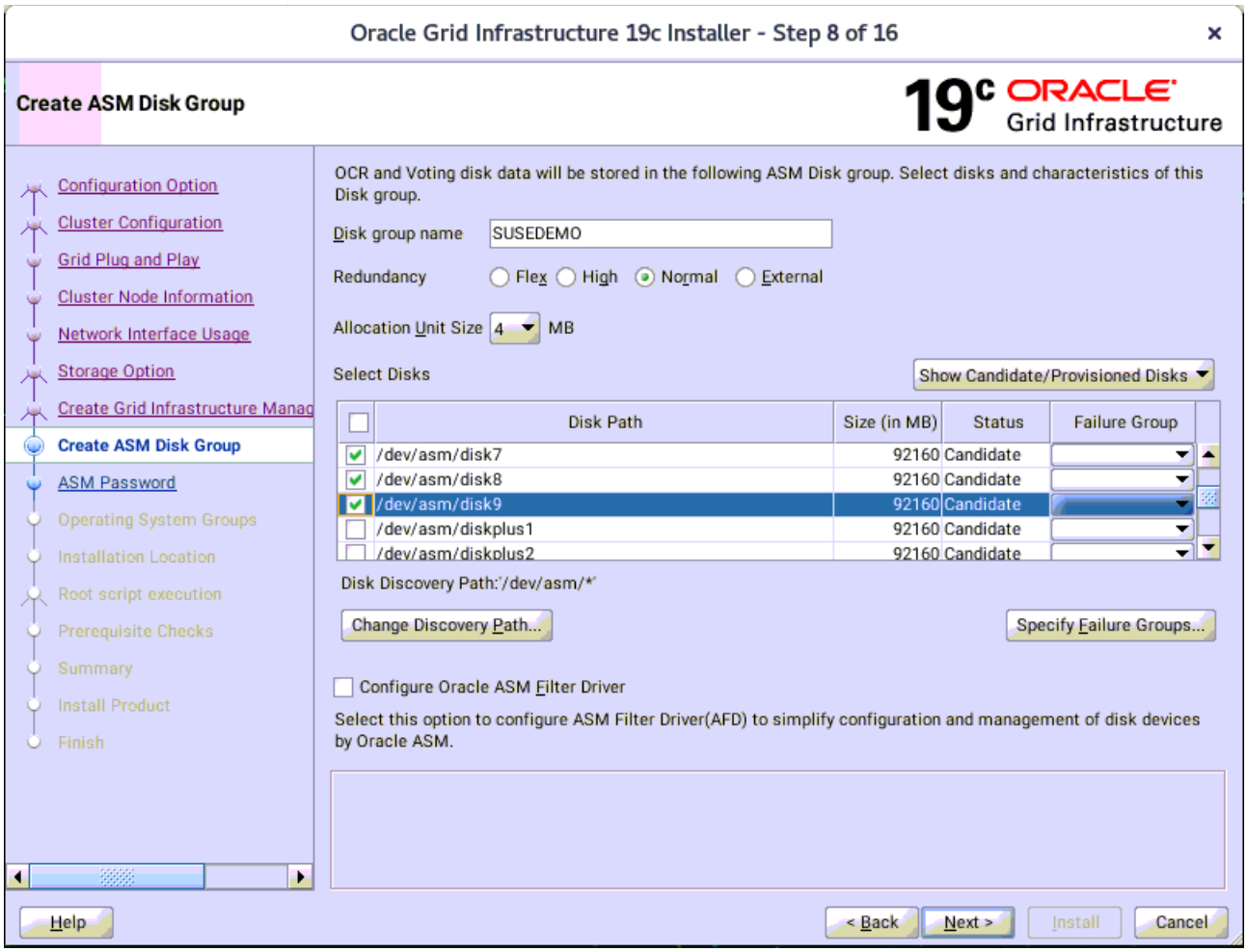


Choose option "**Use Oracle Flex ASM for storage**", then click **Next** to continue.

7). Grid Infrastructure Management Repository Option.

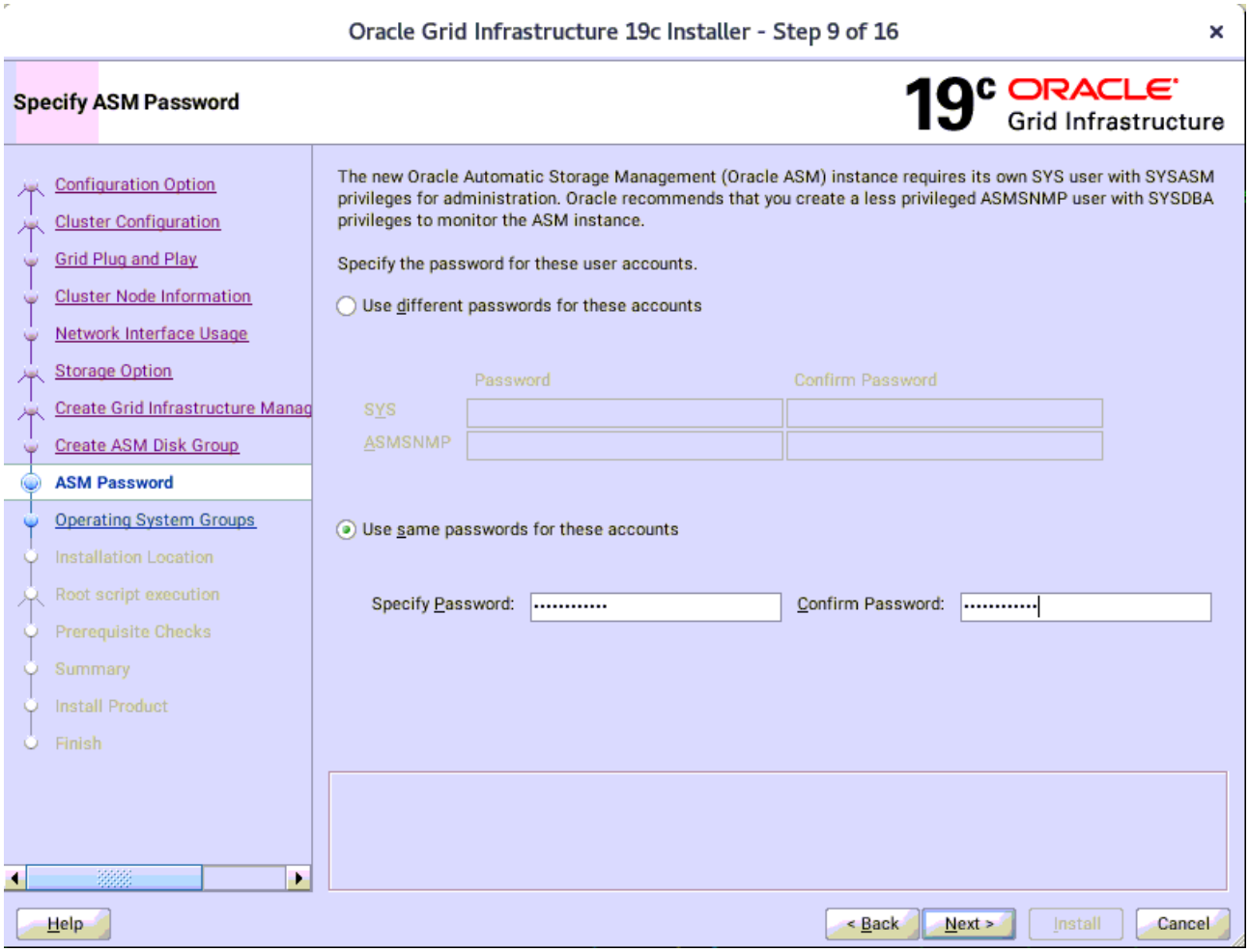
Choose whether you want to store the Grid Infrastructure Management Repository in a separate Oracle ASM disk group, then click **Next** to continue.

8). Create ASM Disk Group.



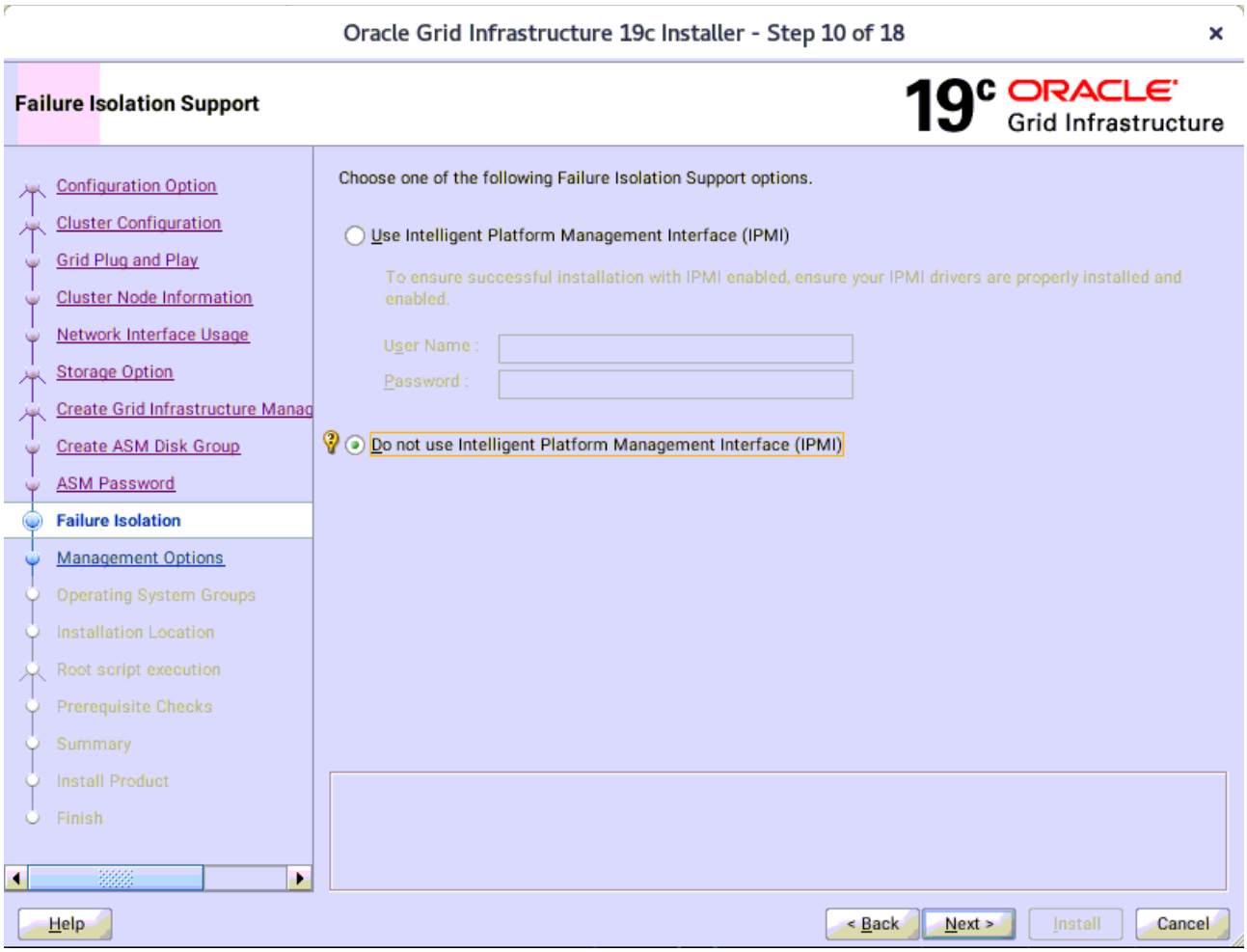
Depending on your needs to creat ASM Disk Group, then click **Next** to continue.

9). Specify ASM Password.



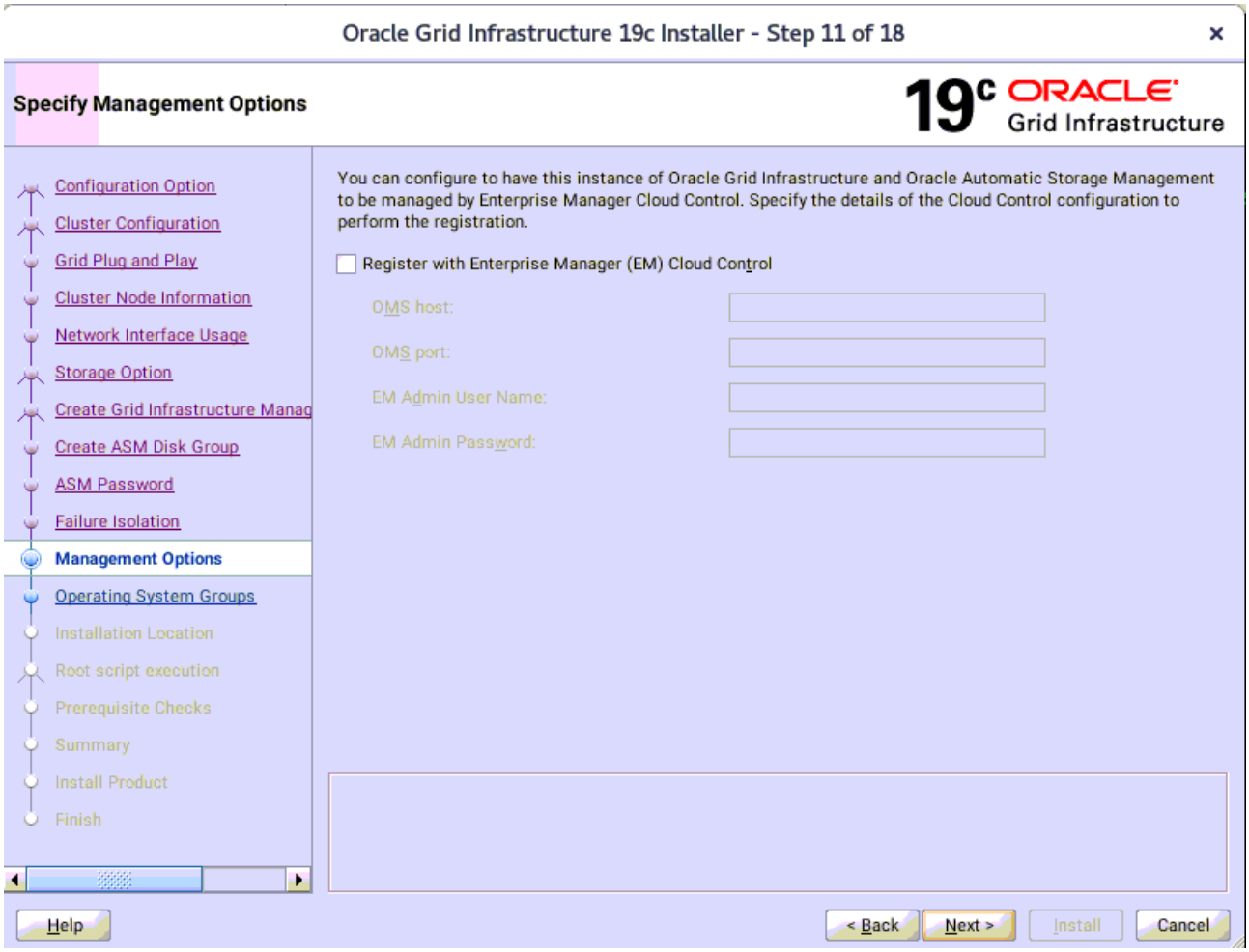
Choose the same password for the Oracle ASM SYS and ASMSNMP account, or specify different passwords for each account, then click **Next** to continue.

10). Failure Isolation Support.



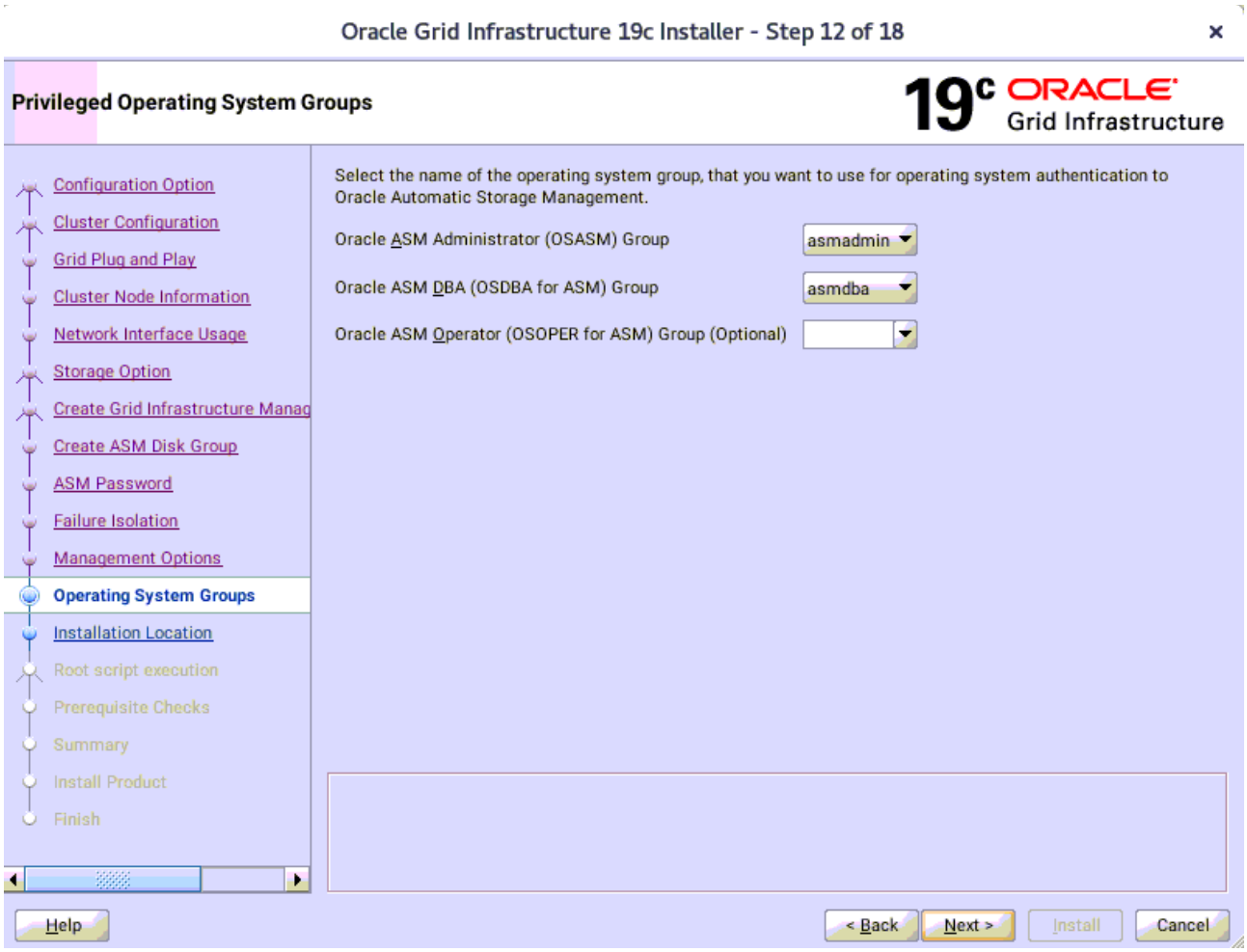
Select the option "**Do not use Intelligent Platform Management Interface** (IPMI)", then click **Next** to continue.

11). Specify Management Options.



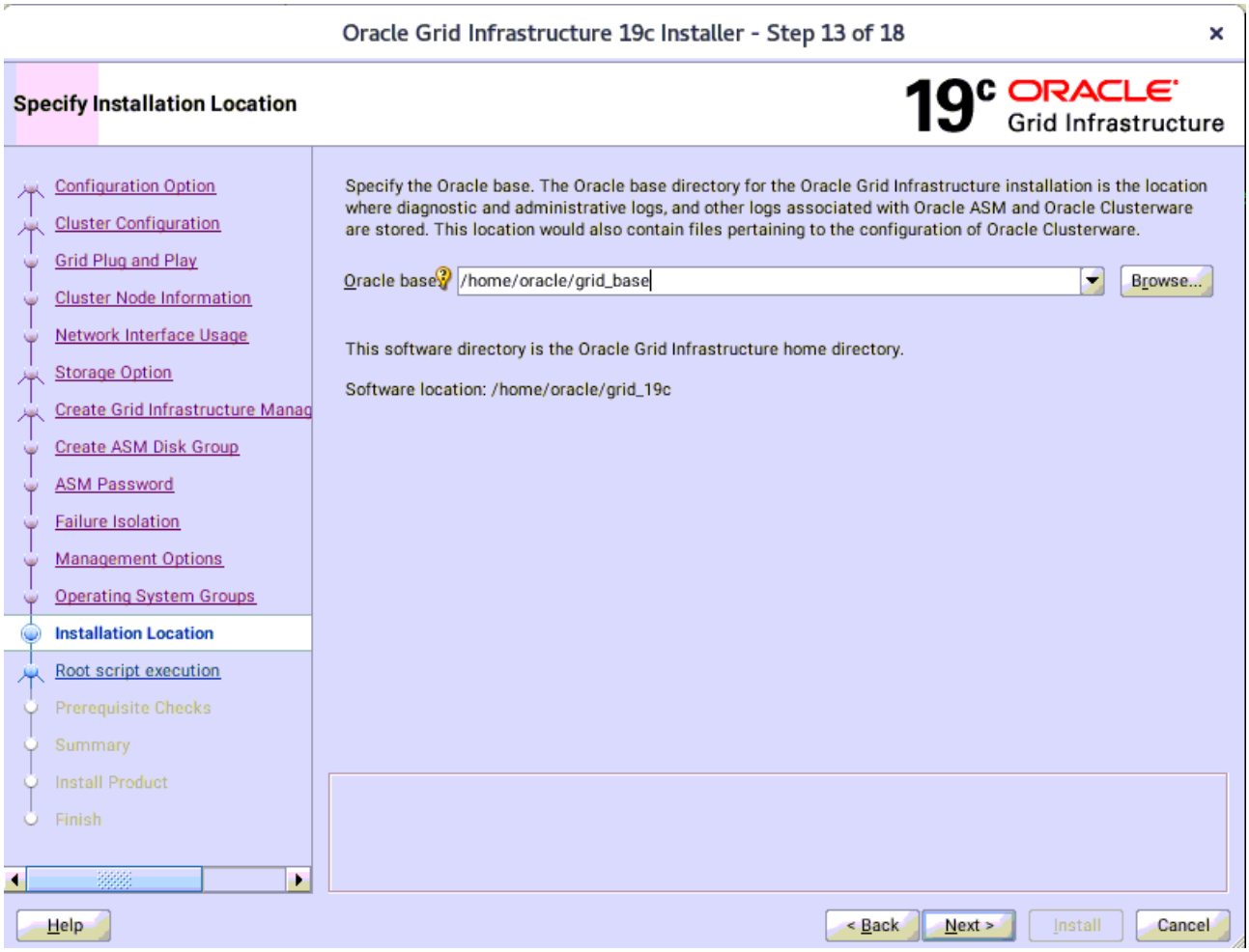
Selected/Deselected the option "**Register with EM...**", then click **Next** to continue.

12). Privileged Operating System Groups.



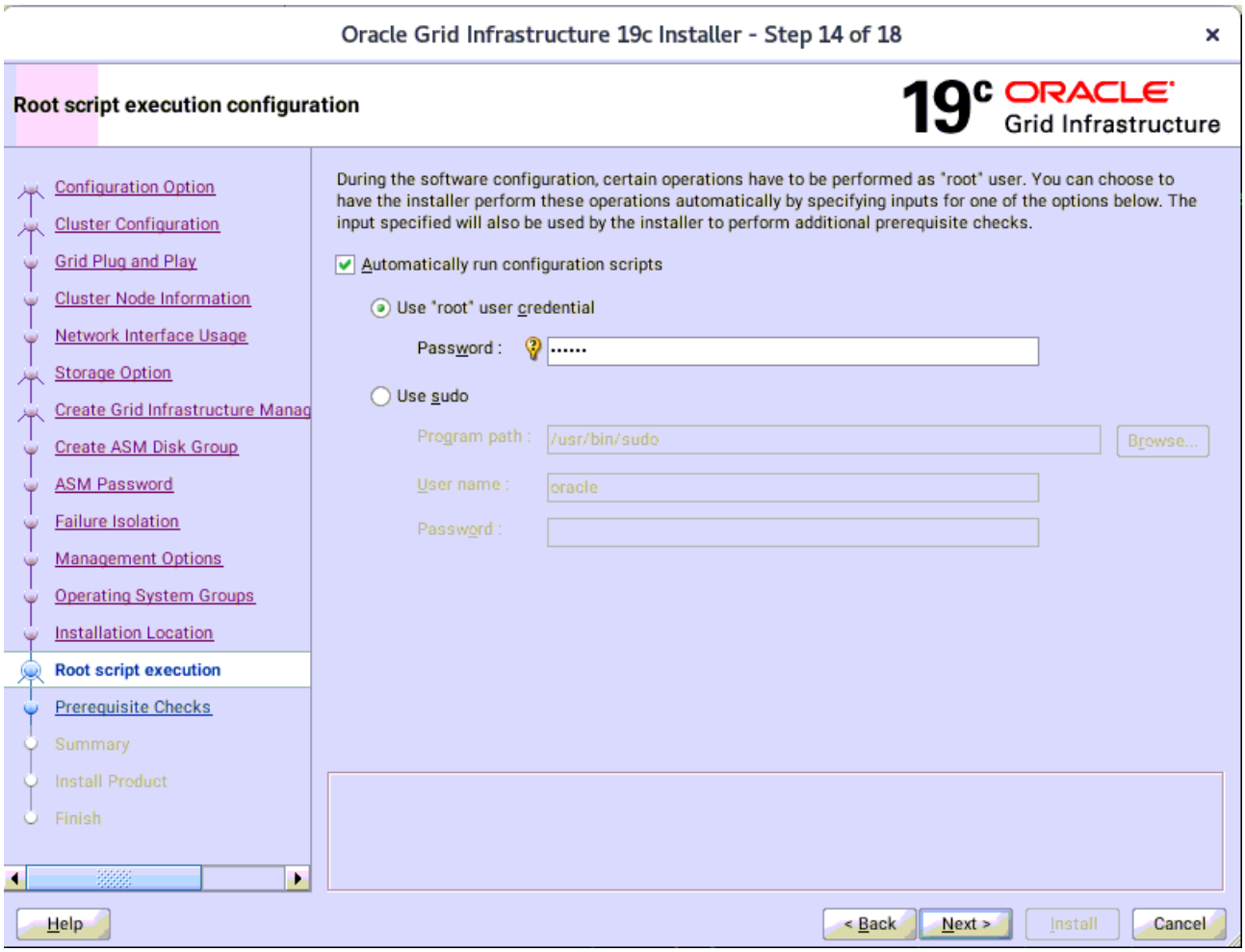
Accept the default operating system group names for Oracle ASM administration, then click **Next** to continue.

13). Specify Installation Location.



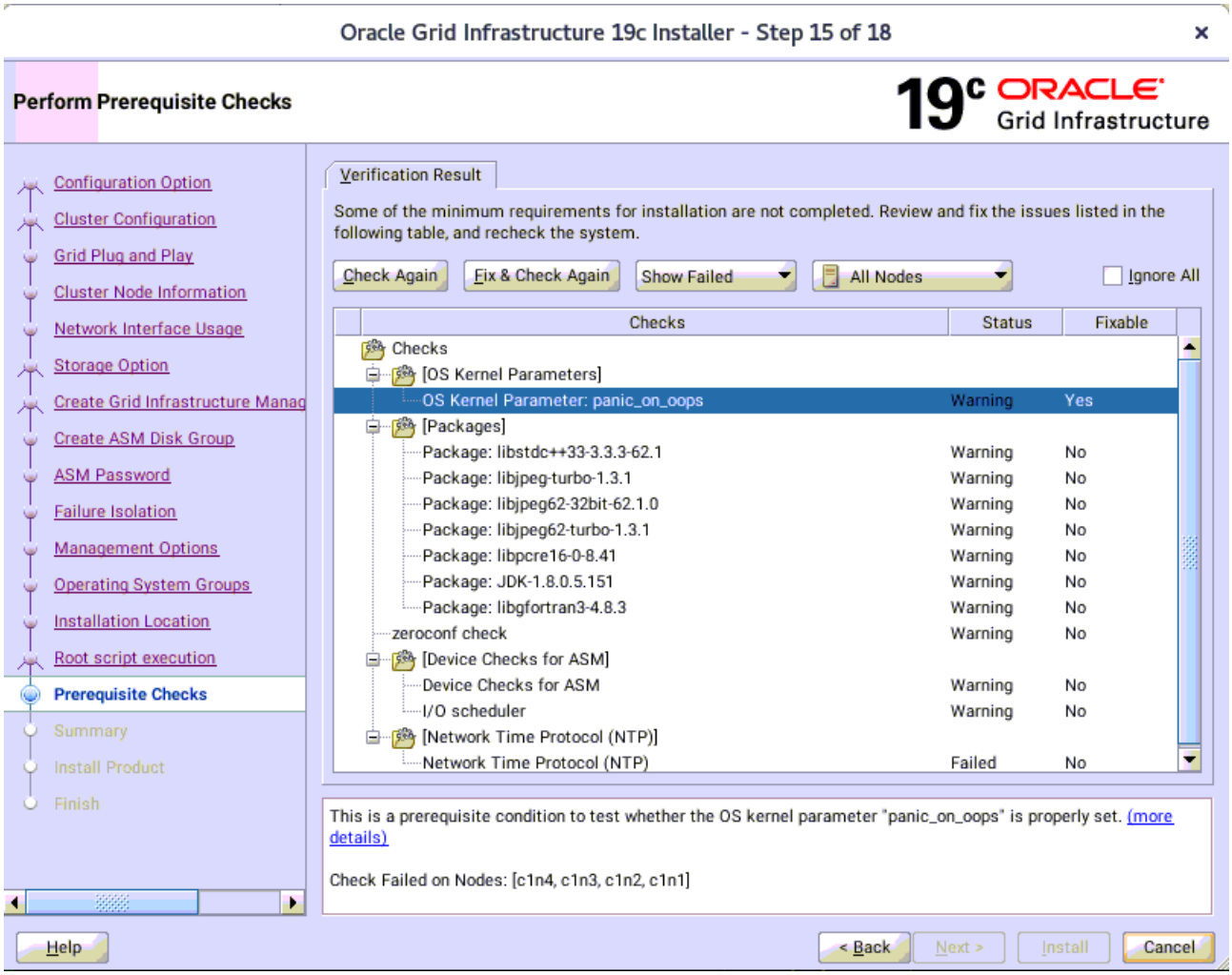
Specify the directory to use for the Oracle base for the Oracle Grid Infrastructure installation, then click **Next** to continue. The Oracle base directory must be different from the Oracle home directory.

14). Root script execution configuration.

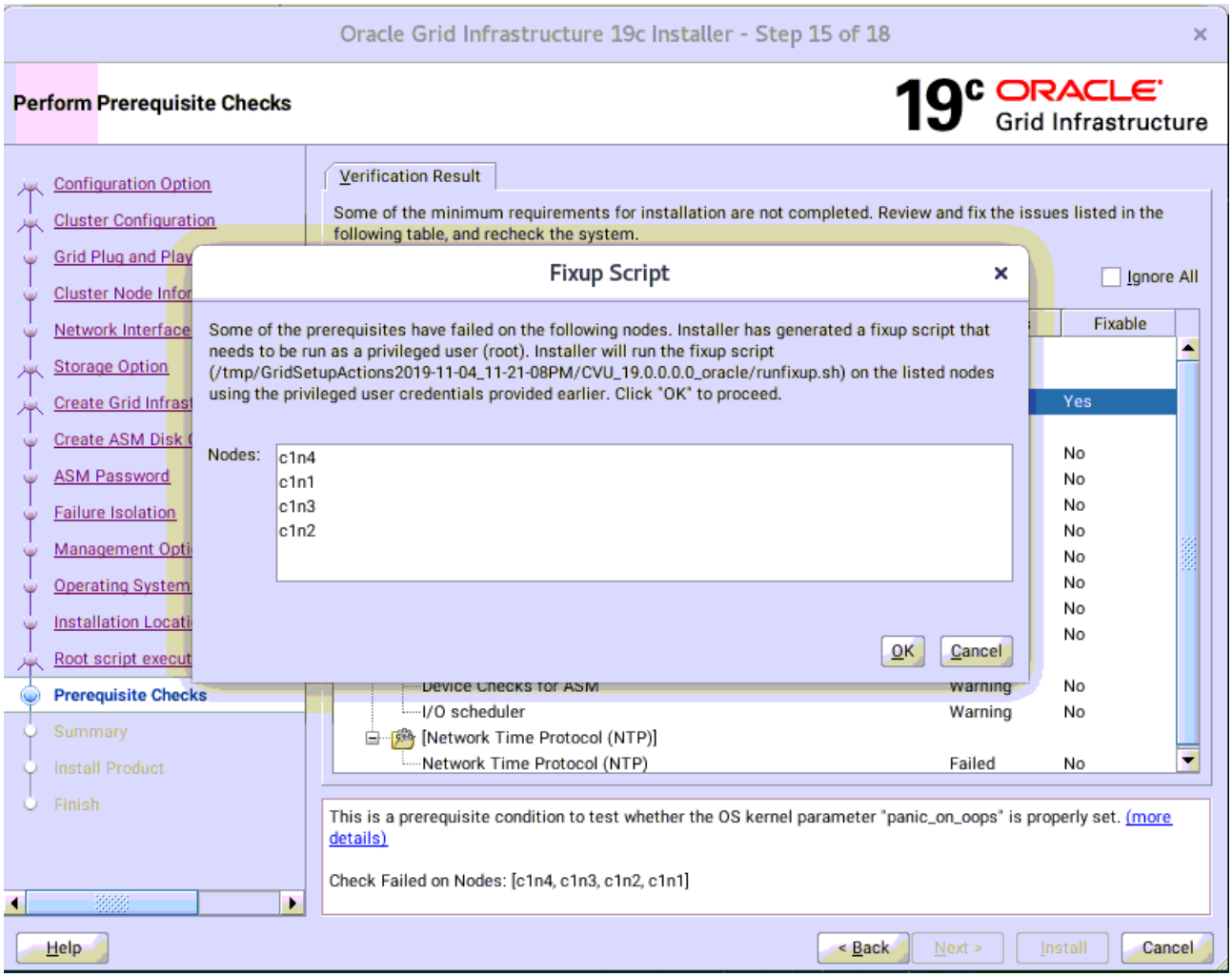


Select the option to **Automatically run configuration scripts**. Enter the credentials for the root user or a sudo account,then click **Next** to continue.
Alternatively, you can Run the scripts manually as the root user at the end of the installation process when prompted by the installer.

15). Perform Prerequisite Checks.

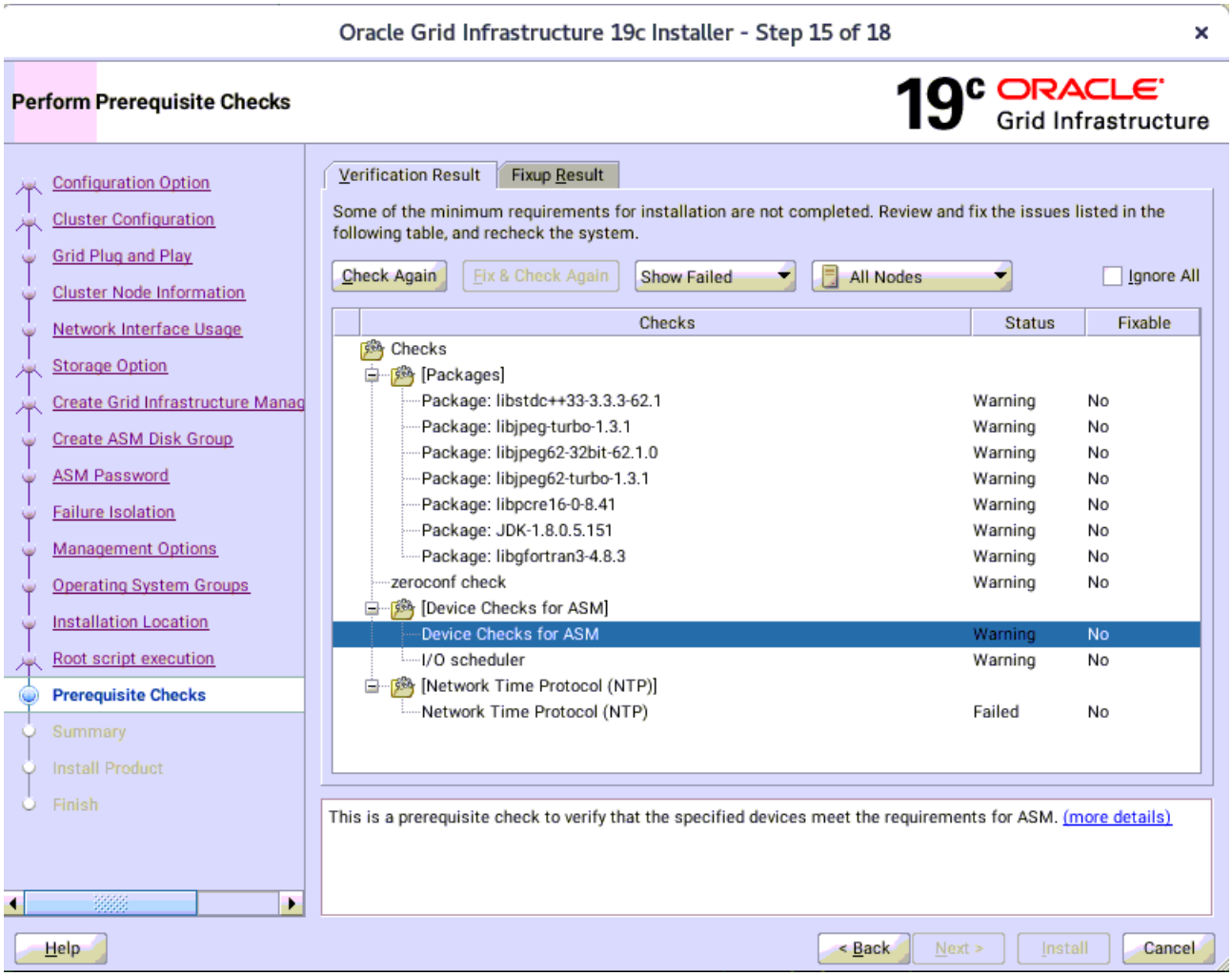


Perform Pre-Check as shown above; Click **Fix&Check Again** to recheck the system.

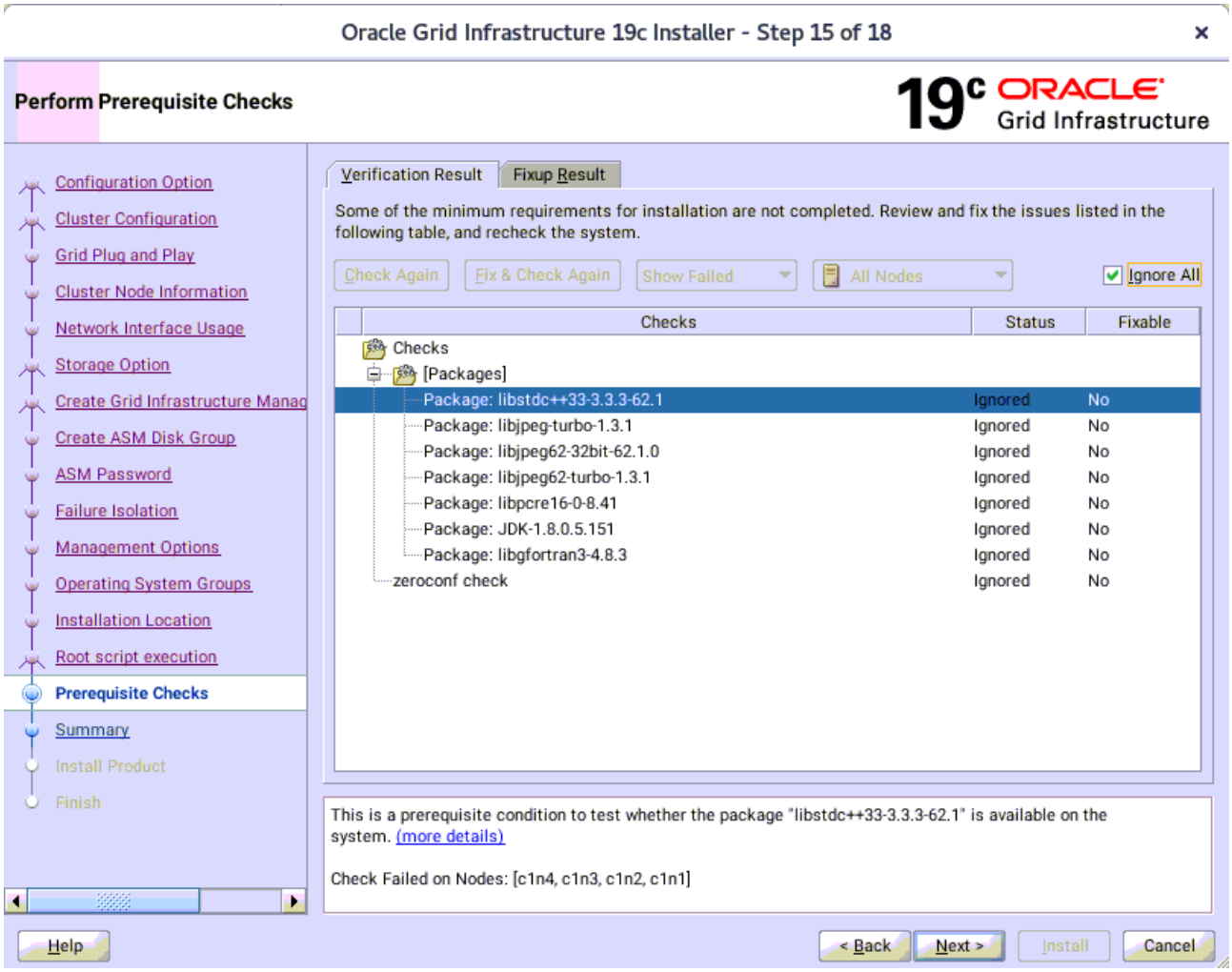


Follow the prompts, manual run Fixup Script as "root" user on each node, then click **OK**.

```
c1n1:/opt/oracle # /tmp/GridSetupActions2019-11-04_11-21-08PM/CVU_19.0.0.0.0_oracle/runfixup.sh
All Fix-up operations were completed successfully.
c1n1:/opt/oracle #
```



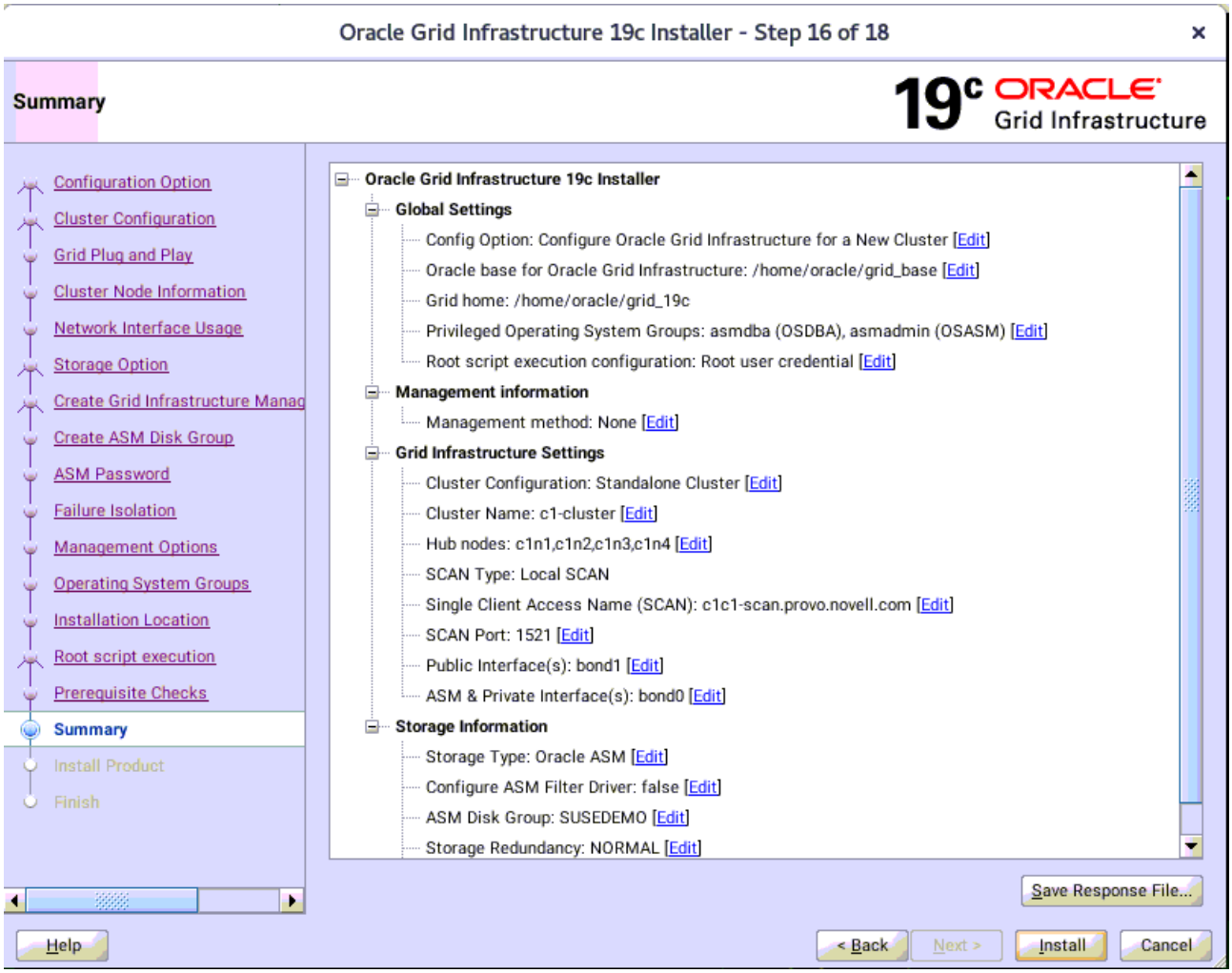
Check each error and warning message, try to fix manually, then click **Check Again**.



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

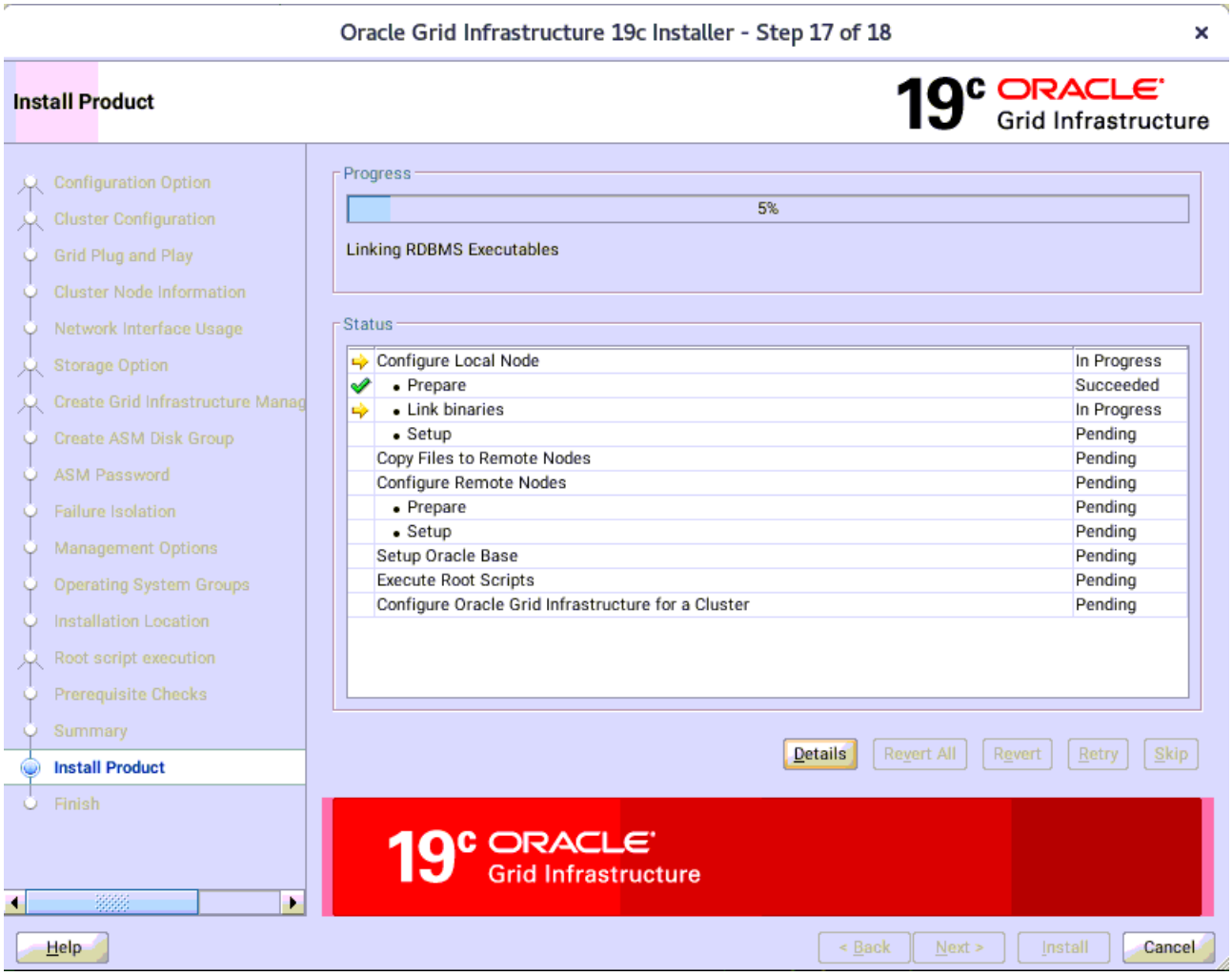
Select option "**Ignore All**", then click **Next** to continue.

16). Summary.

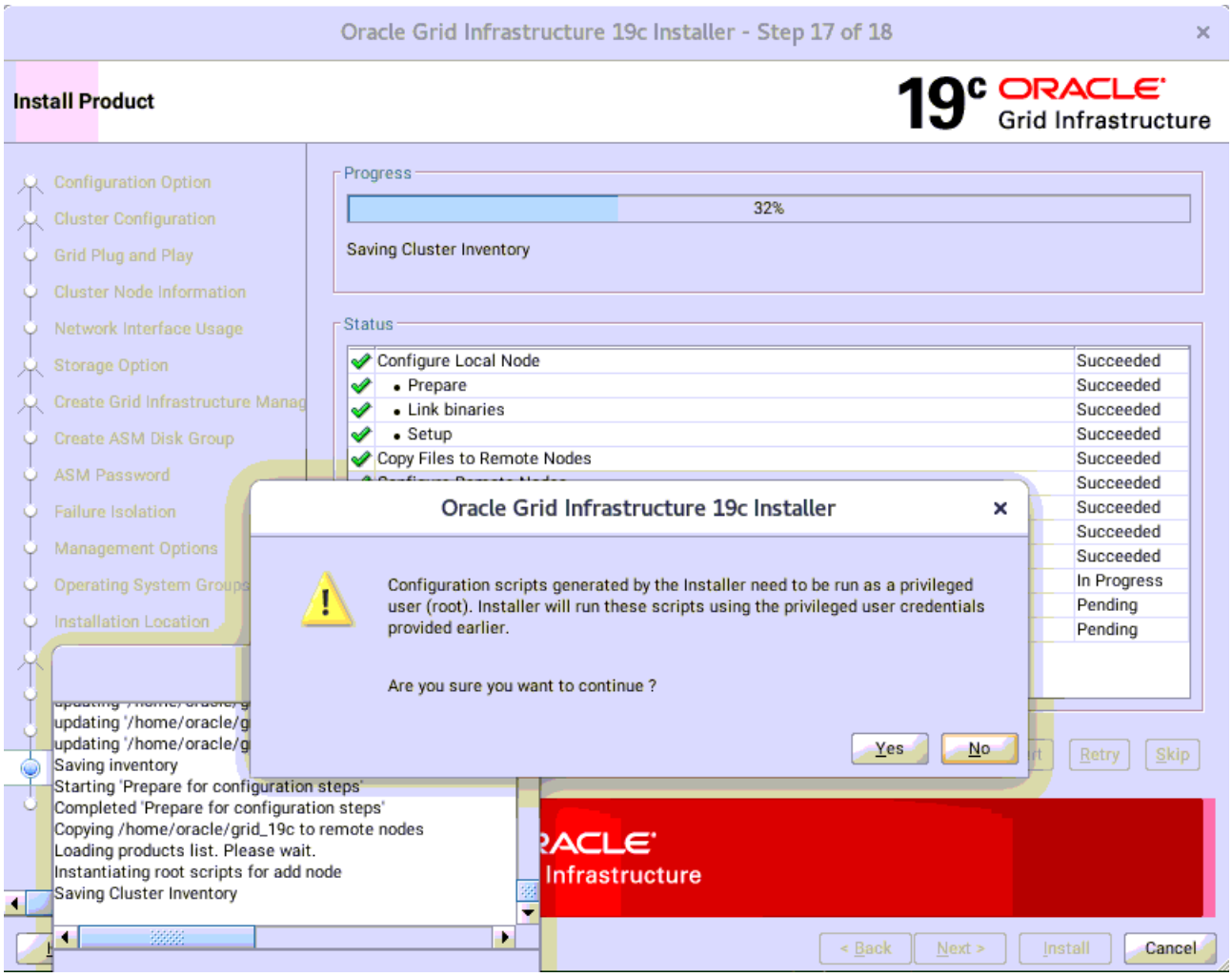


Installation Summary as shown above, click **Install** to continue.

17). Install Product.

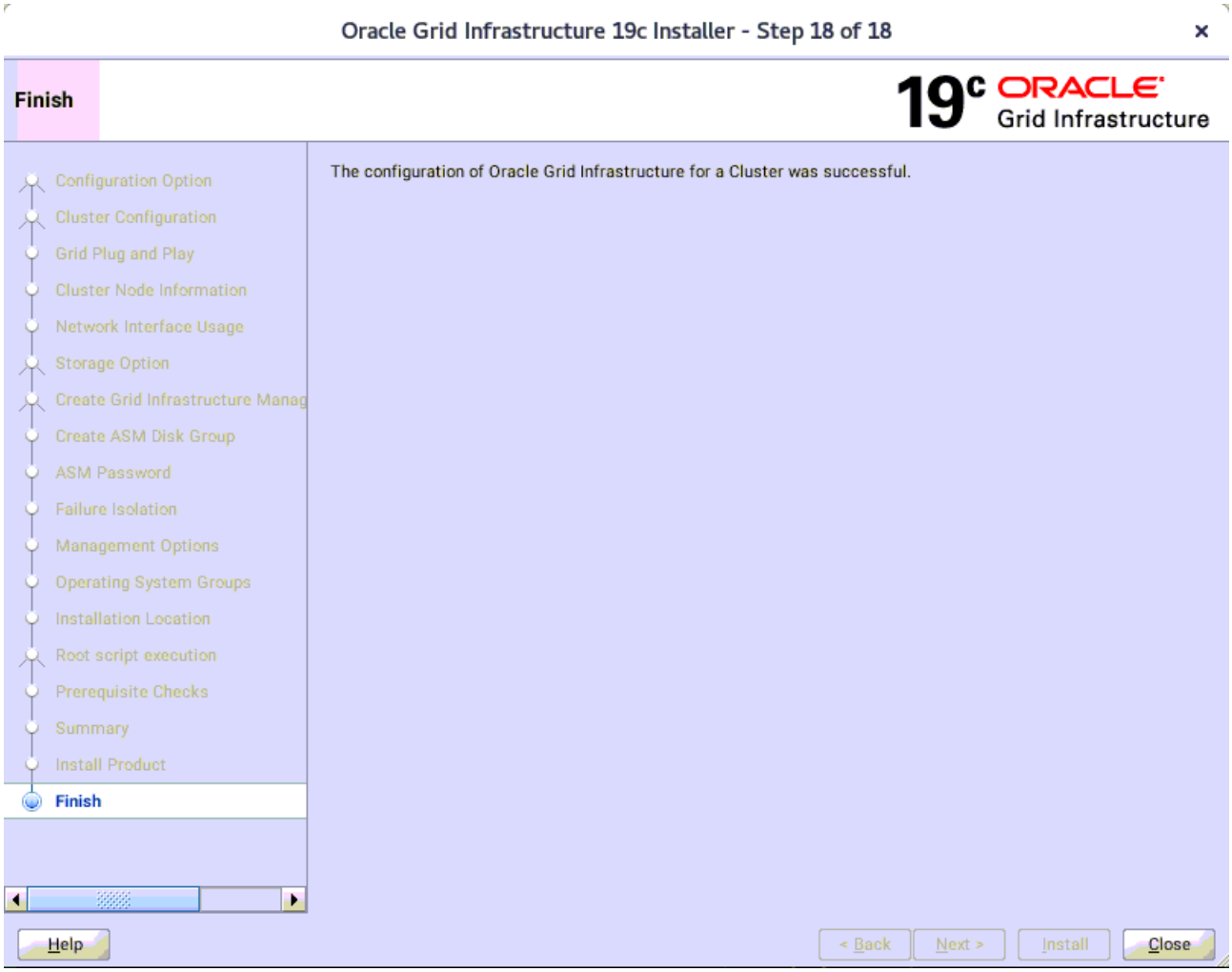


Installer prompted you to run the orainstRoot.sh and root.sh scripts. Click **Yes**.



Continue monitoring the installation until the Finish window appears.

18). Finish.



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

1-3. Oracle Database 19c(19.3) Grid Infrastructure Post-Install Checks.

1).Check Oracle Clusterware health.

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl check cluster -all
**************************************************************
c1n1:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n2:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n3:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n4:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
```

2).Check Oracle Clusterware resources.

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/srvctl status nodeapps
VIP 137.65.135.94 is enabled
VIP 137.65.135.94 is running on node: c1n1
VIP 137.65.135.95 is enabled
VIP 137.65.135.95 is running on node: c1n2
VIP 137.65.135.96 is enabled
VIP 137.65.135.96 is running on node: c1n3
VIP 137.65.135.97 is enabled
VIP 137.65.135.97 is running on node: c1n4
Network is enabled
Network is running on node: c1n1
Network is running on node: c1n2
Network is running on node: c1n3
Network is running on node: c1n4
ONS is enabled
ONS daemon is running on node: c1n1
ONS daemon is running on node: c1n2
ONS daemon is running on node: c1n3
ONS daemon is running on node: c1n4
```

3). Check status of designated resources.

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
--------------------------------------------------------------------------------
Name           Target  State        Server                   State details
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.chad
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.net1.network
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.ons
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
      1        ONLINE  ONLINE       c1n1                     STABLE
      2        ONLINE  ONLINE       c1n2                     STABLE
      3        ONLINE  ONLINE       c1n4                     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.SUSEDEMO.dg(ora.asmgroup)
      1        ONLINE  ONLINE       c1n1                     STABLE
      2        ONLINE  ONLINE       c1n2                     STABLE
      3        ONLINE  ONLINE       c1n4                     STABLE
ora.asm(ora.asmgroup)
      1        ONLINE  ONLINE       c1n1                     Started,STABLE
      2        ONLINE  ONLINE       c1n2                     Started,STABLE
      3        ONLINE  ONLINE       c1n4                     Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
      1        ONLINE  ONLINE       c1n1                     STABLE
      2        ONLINE  ONLINE       c1n2                     STABLE
      3        ONLINE  ONLINE       c1n4                     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
--------------------------------------------------------------------------------
```

4).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                       :  133237046
          Device/File Name         :  +SUSEDEMO
                                     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   8e9f4007ed084febbf4396ad829929b5 (/dev/asm/disk7) [SUSEDEMO]
 2. ONLINE   9939abd8ffe64fb1bf3c6fbb92270e5d (/dev/asm/disk8) [SUSEDEMO]
 3. ONLINE   7acc9906dd504f00bf5e5bd419228808 (/dev/asm/disk9) [SUSEDEMO]
Located 3 voting disk(s).
```

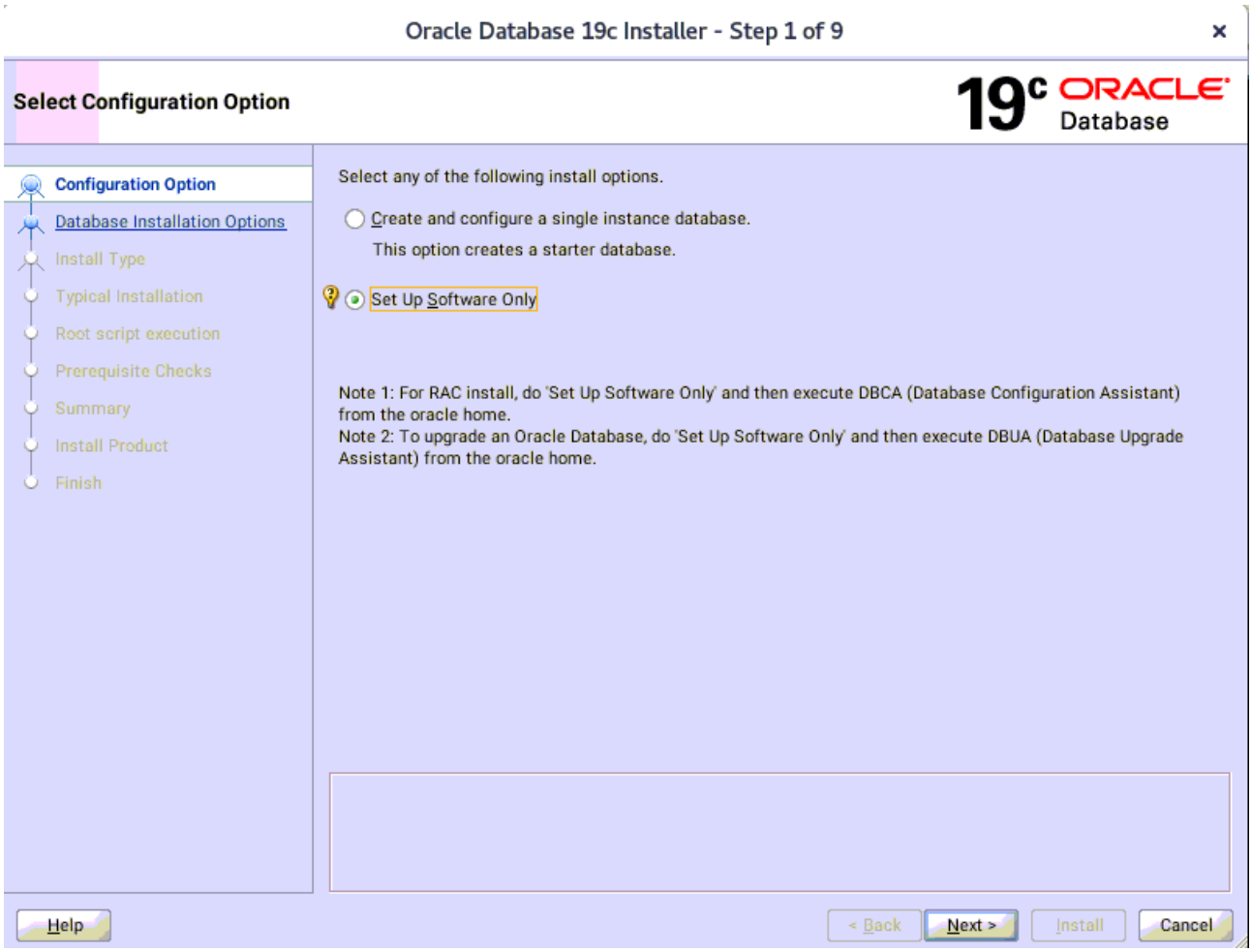
2. Installing Oracle Database.

1-1. Login to the SLES 15 SP1 64-bit OS as a non-admin user. Download the Oracle Database 19c (19.3) for Linux x86-64 from https://www.oracle.com/database/technologies/oracle-database-software-downloads.html#19c.

1-2. Extract LINUX.X64_193000_db_home.zip and run the installer '**./runInstaller**' from Database ShipHome.

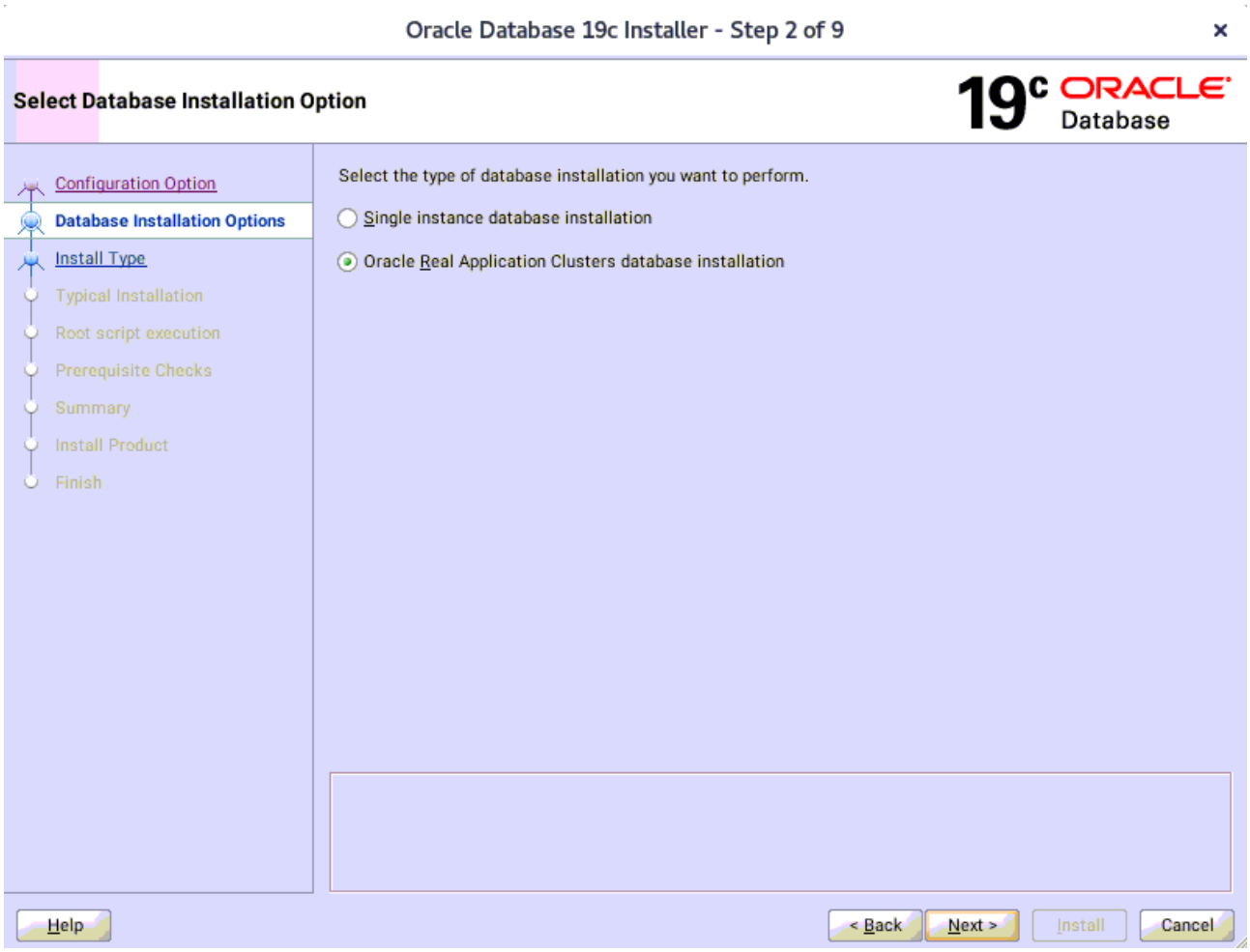
Install Flow:

1). Select Configuration Option.



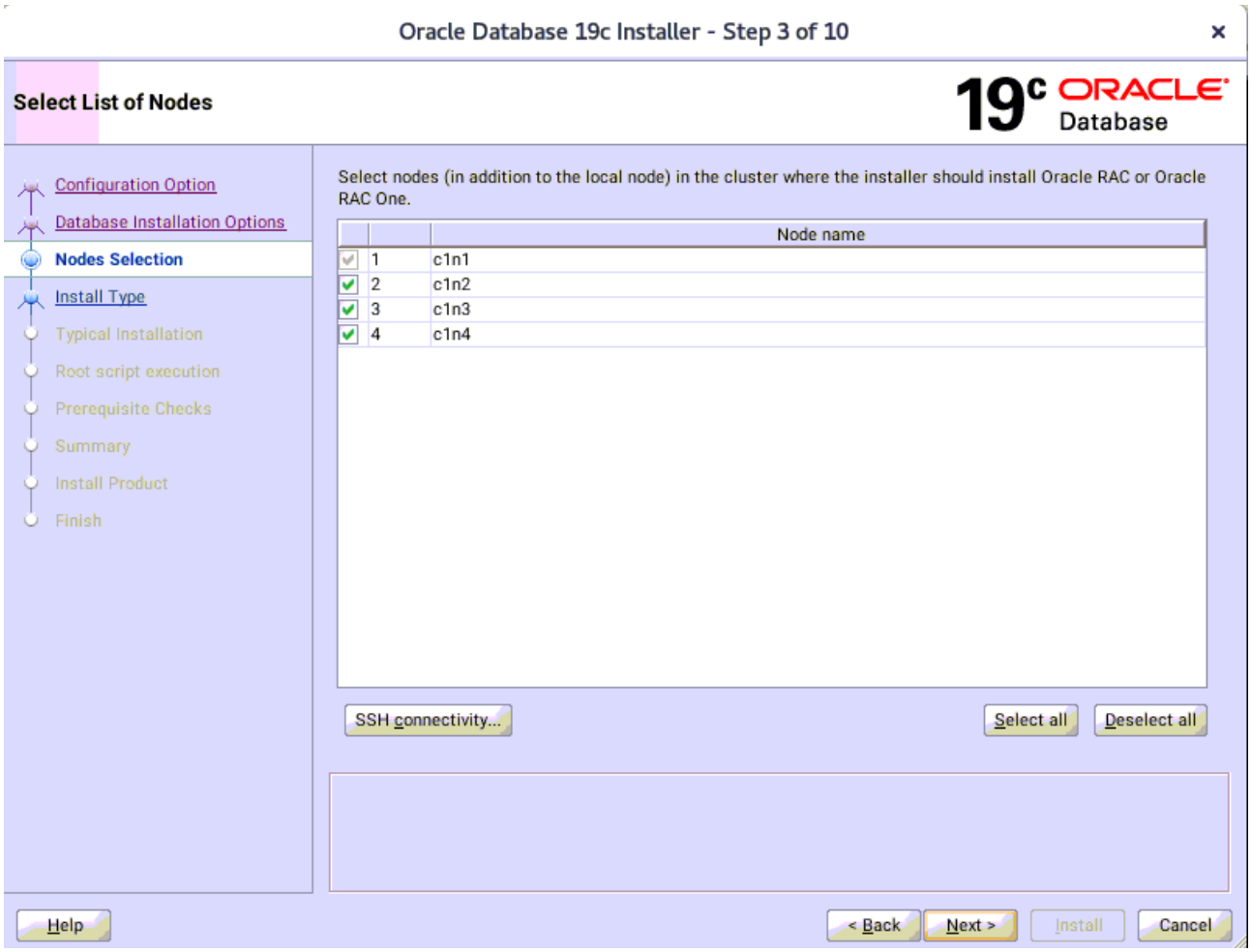
Select option "**Set Up Software Only**", then click **Next** to continue.

2). Select Database Installation Option.



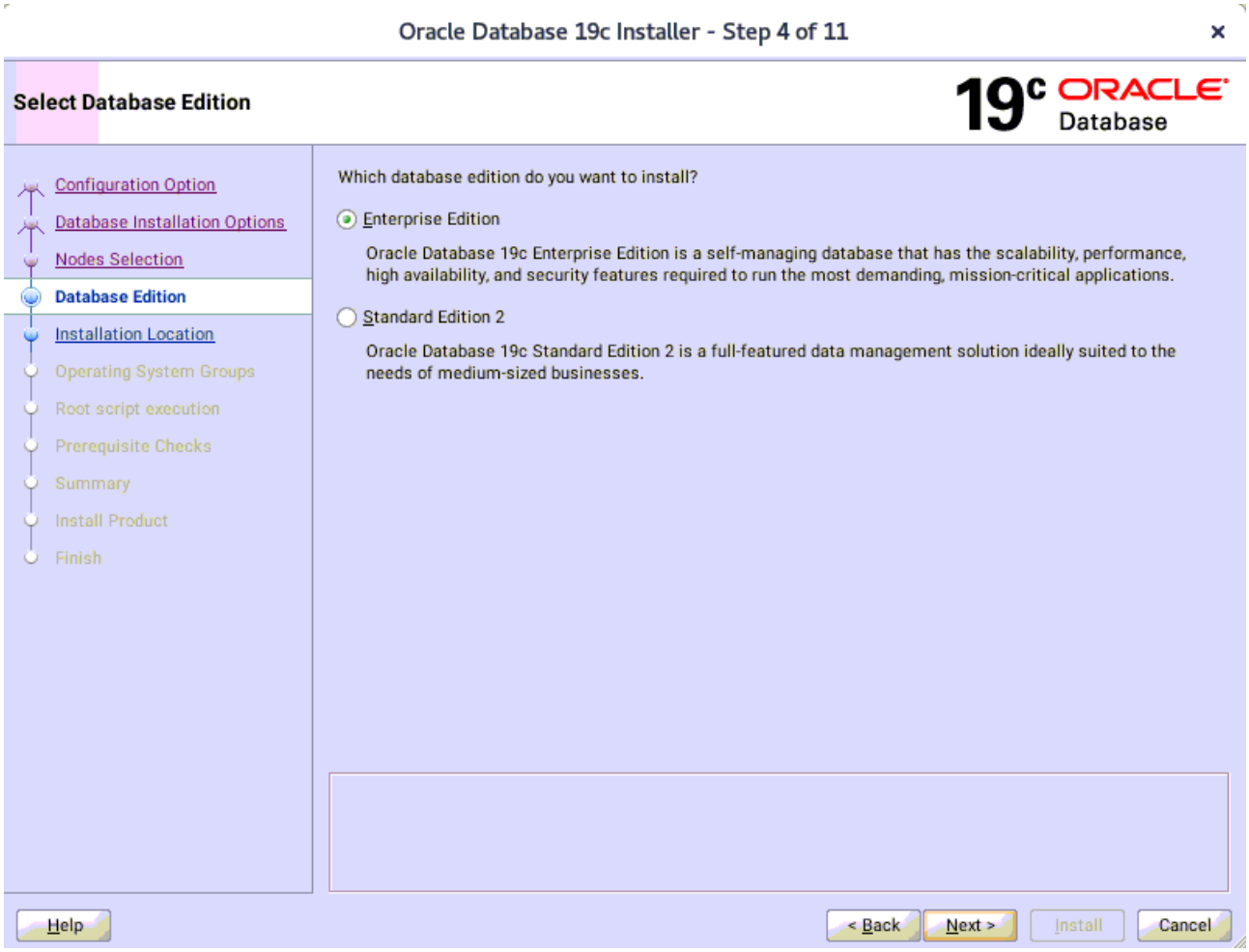
Choose option "**Oracle Real Application Clusters database installation**", then click **Next** to continue.

3). Select List of Nodes.



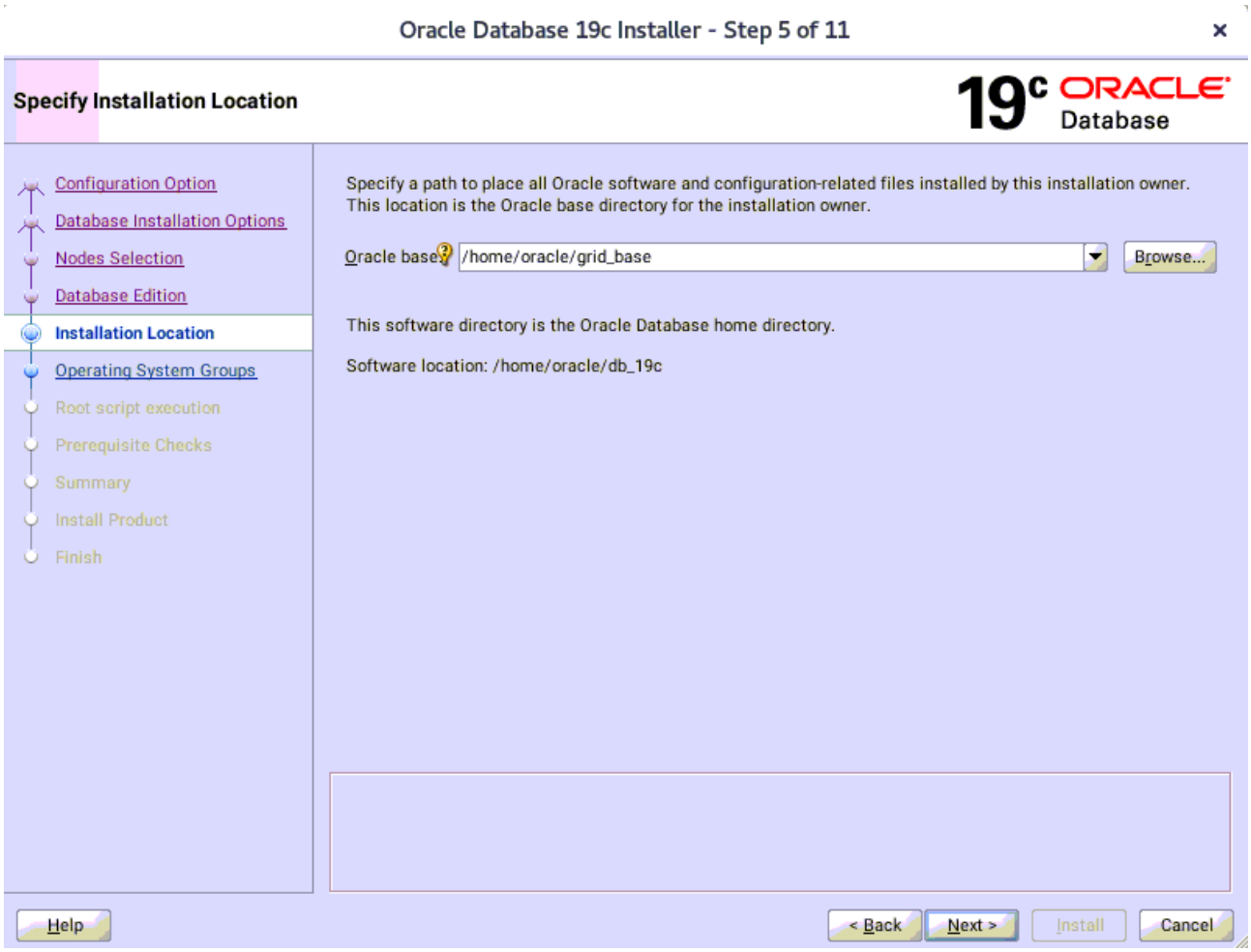
Select all nodes in the cluster, then click **Next** to continue.

4). Select Database Edition.



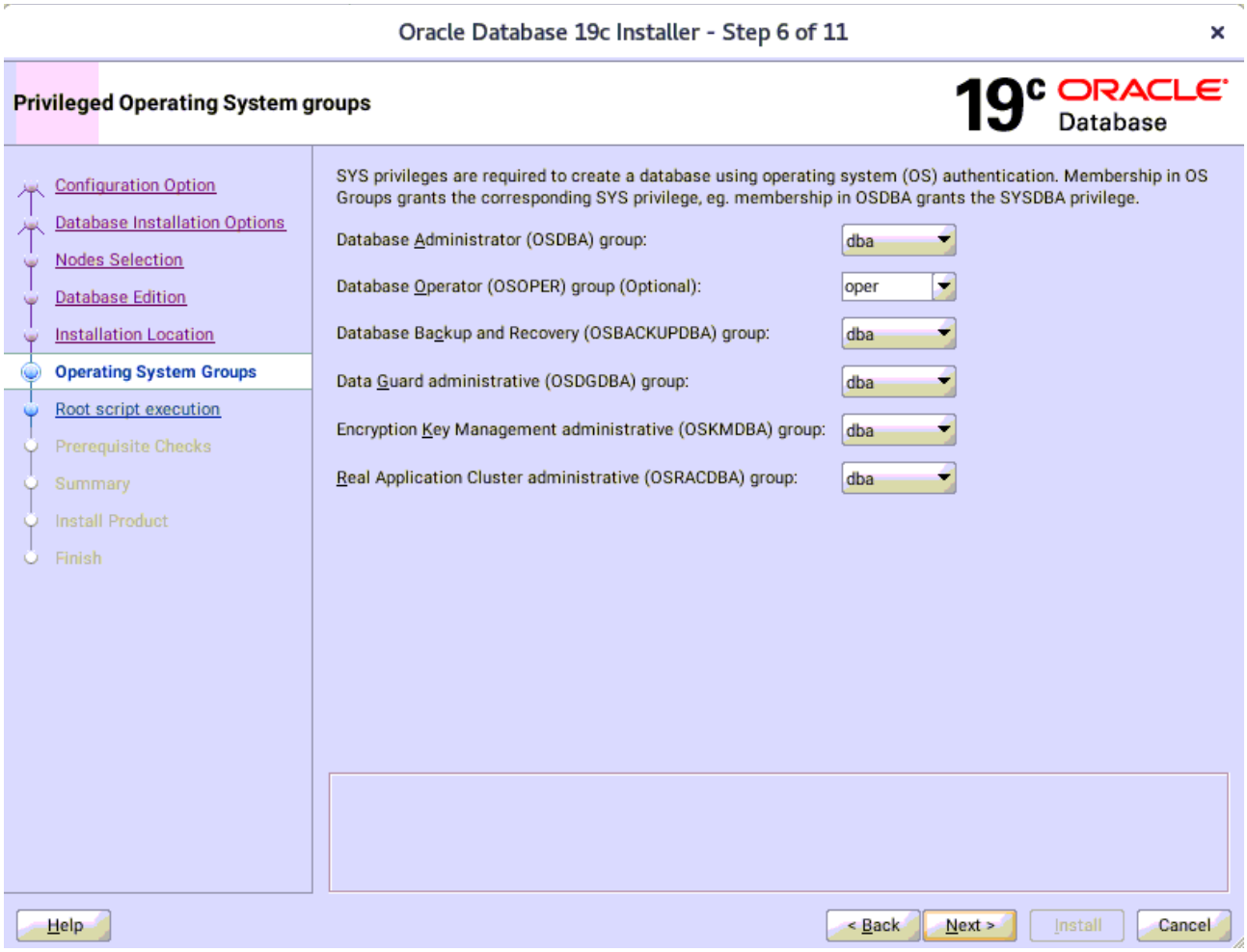
Choose option "**Enterprise Edition**", then click **Next** to continue.

5). Specify Installation Location.



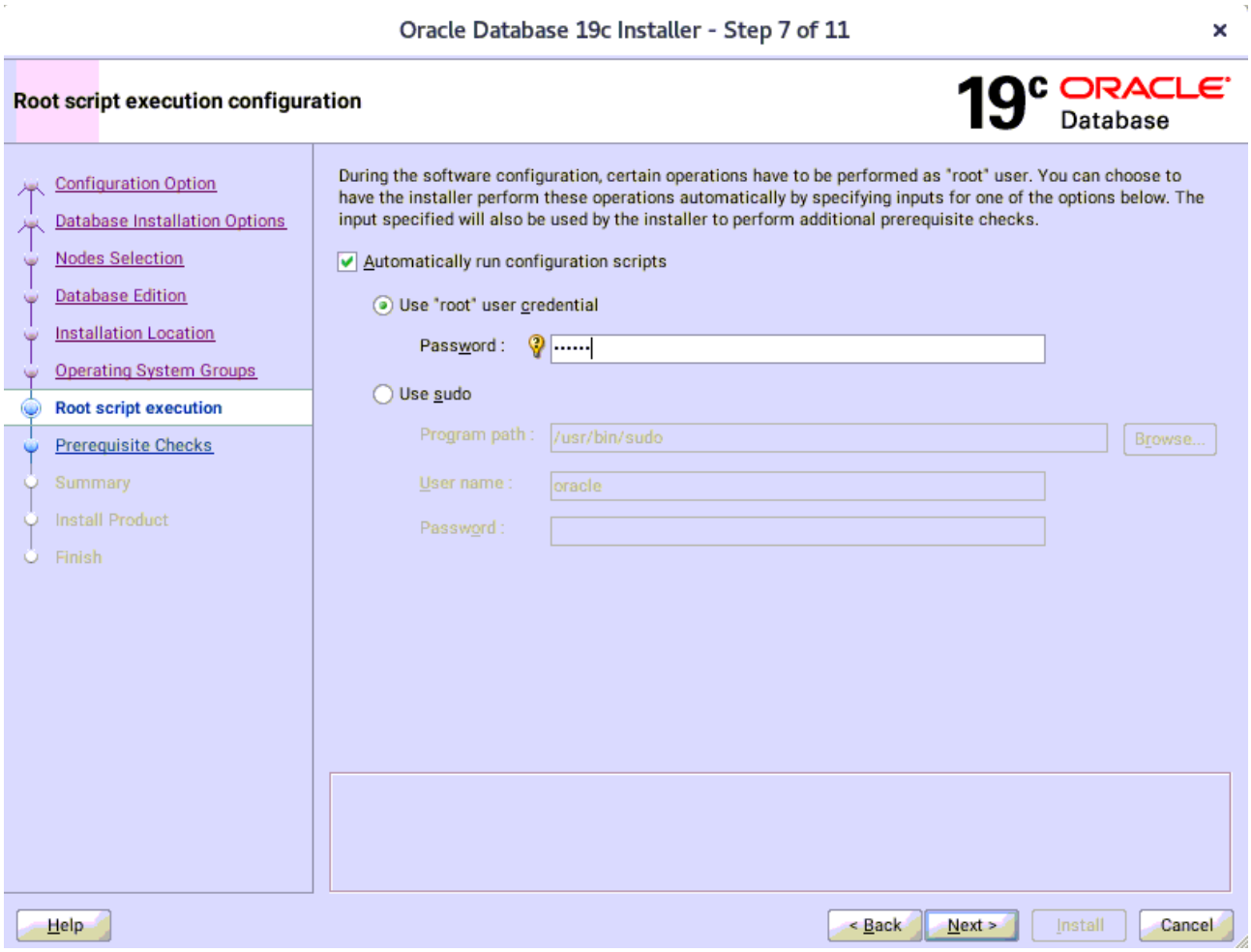
Fill in **Oracle base** and **Software location** as shown above, then click **Next** to continue.

6). Privileged Operating System groups.



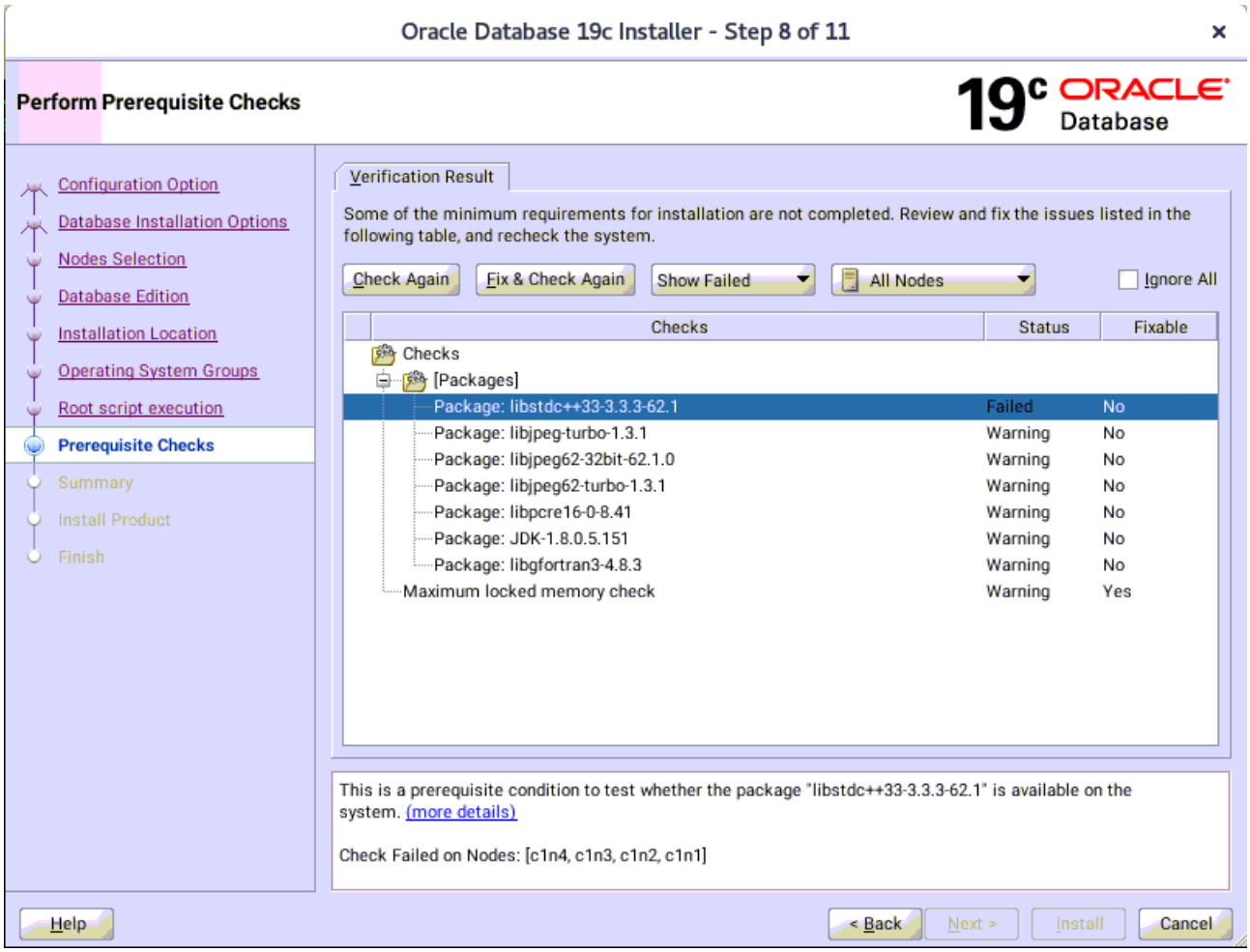
Selected by default, then click **Next** to continue.

7). Root script execution configuration.

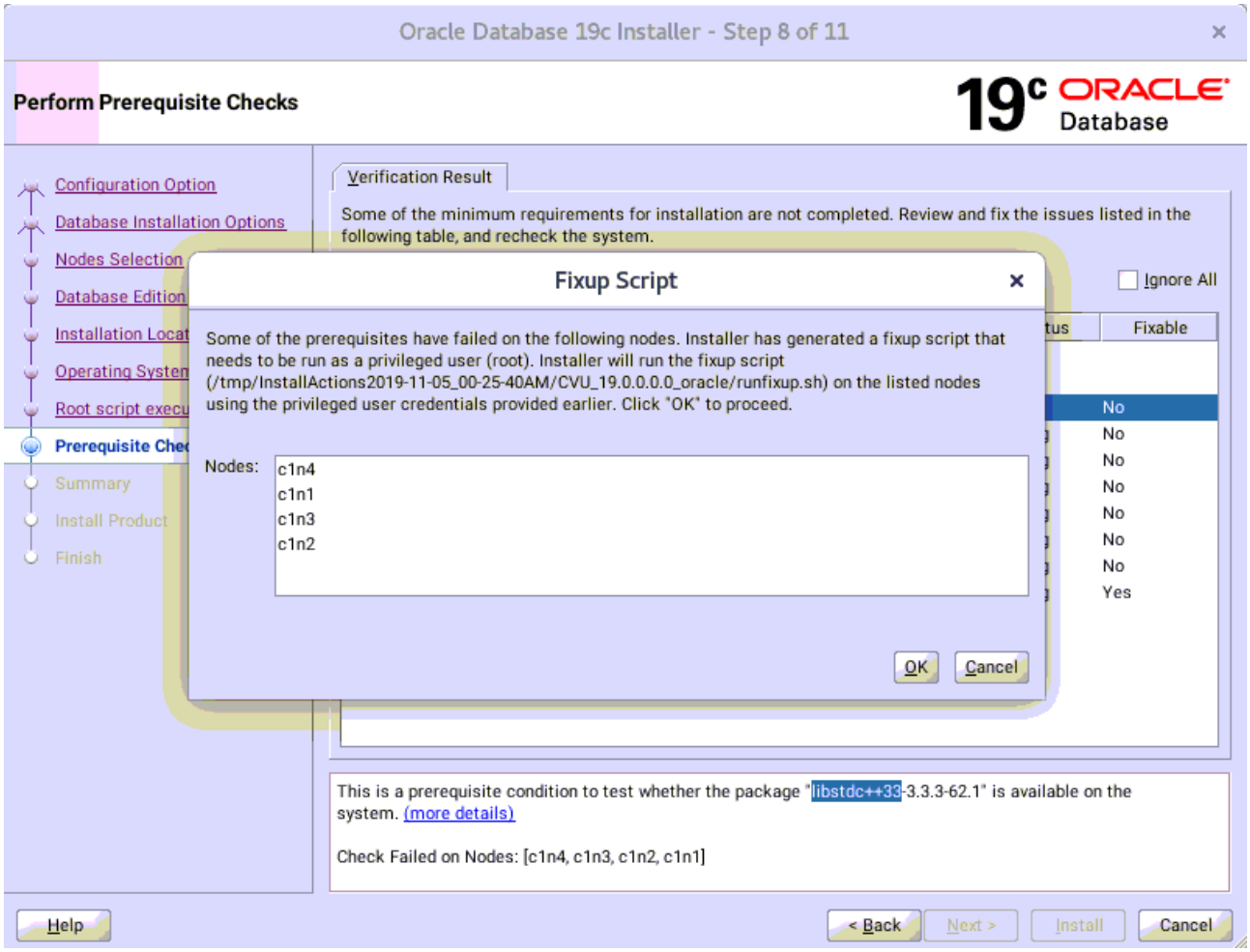


Select the option to **Automatically run configuration scripts**. Enter the credentials for the root user or a sudo account,then click **Next** to continue. Alternatively, you can Run the scripts manually as the root user at the end of the installation process when prompted by the installer.

8). Perform Prerequisite Checks.

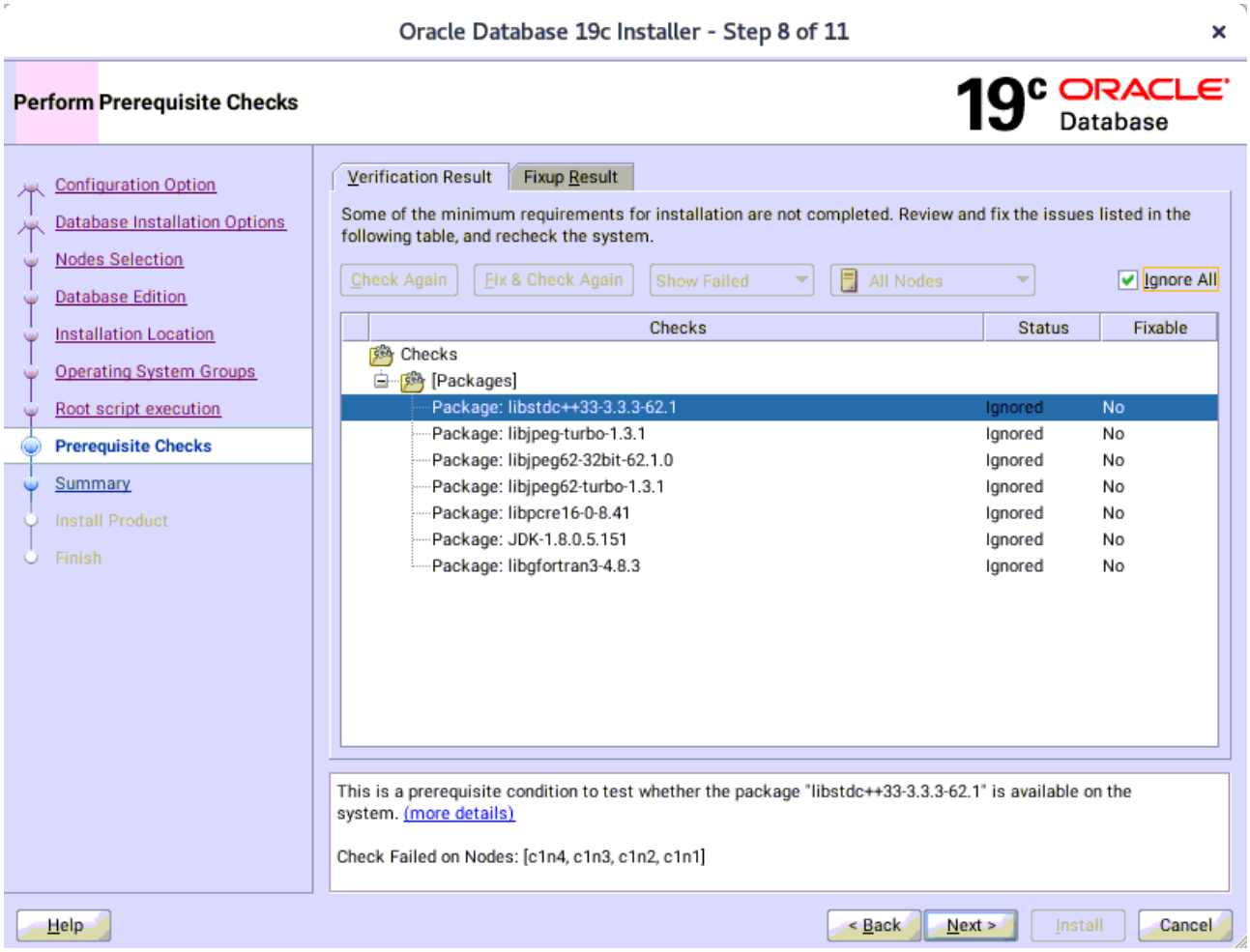


Perform Pre-Check as shown above; Click **Fix&Check Again** to recheck the system.



Follow the prompts, manual run Fixup Script as "root" user on each node, then click **OK**.

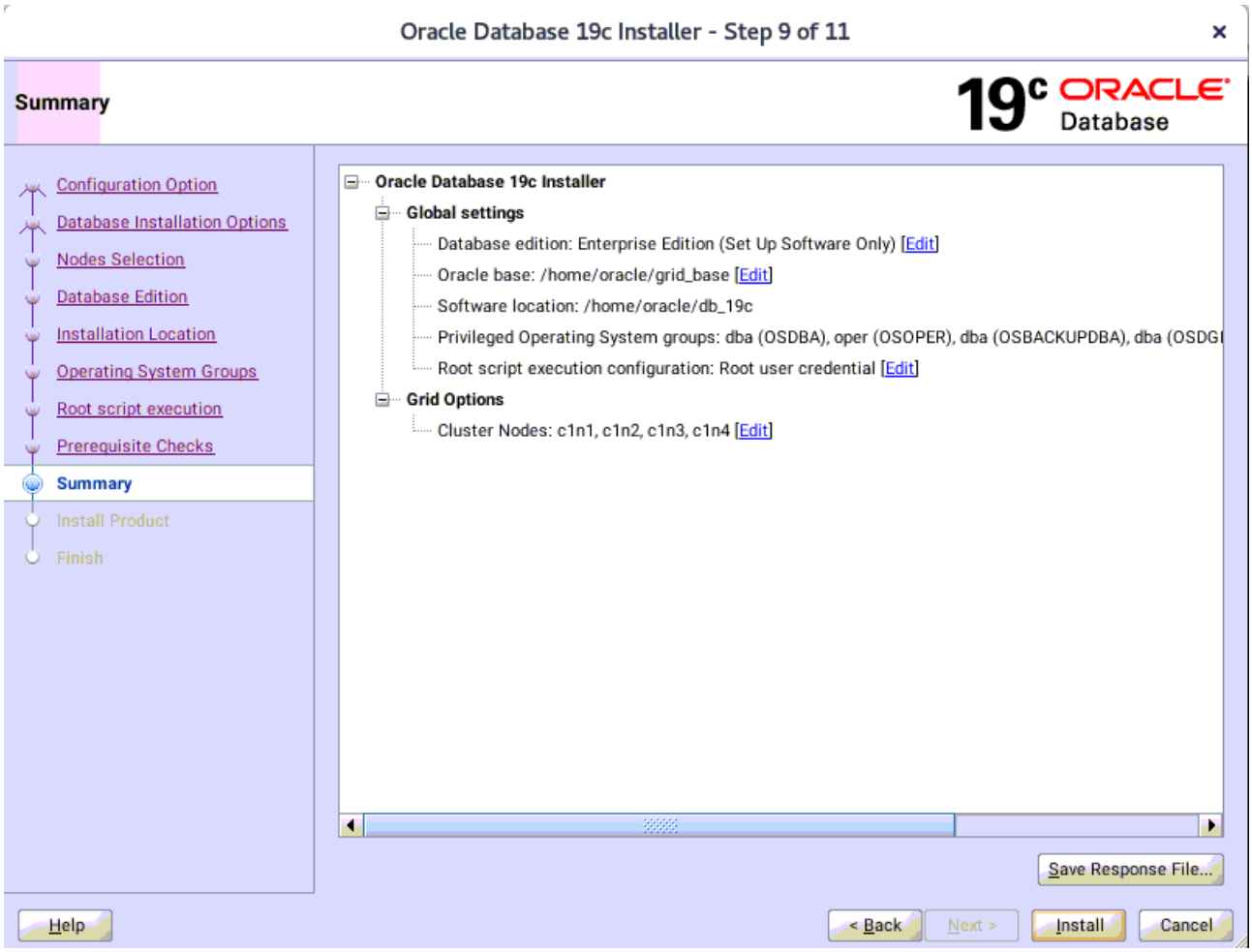
```
c1n1:/home/oracle # /tmp/InstallActions2019-11-05_00-25-40AM/CVU_19.0.0.0.0_oracle/runfixup.sh
All Fix-up operations were completed successfully.
c1n1:/home/oracle #
```



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

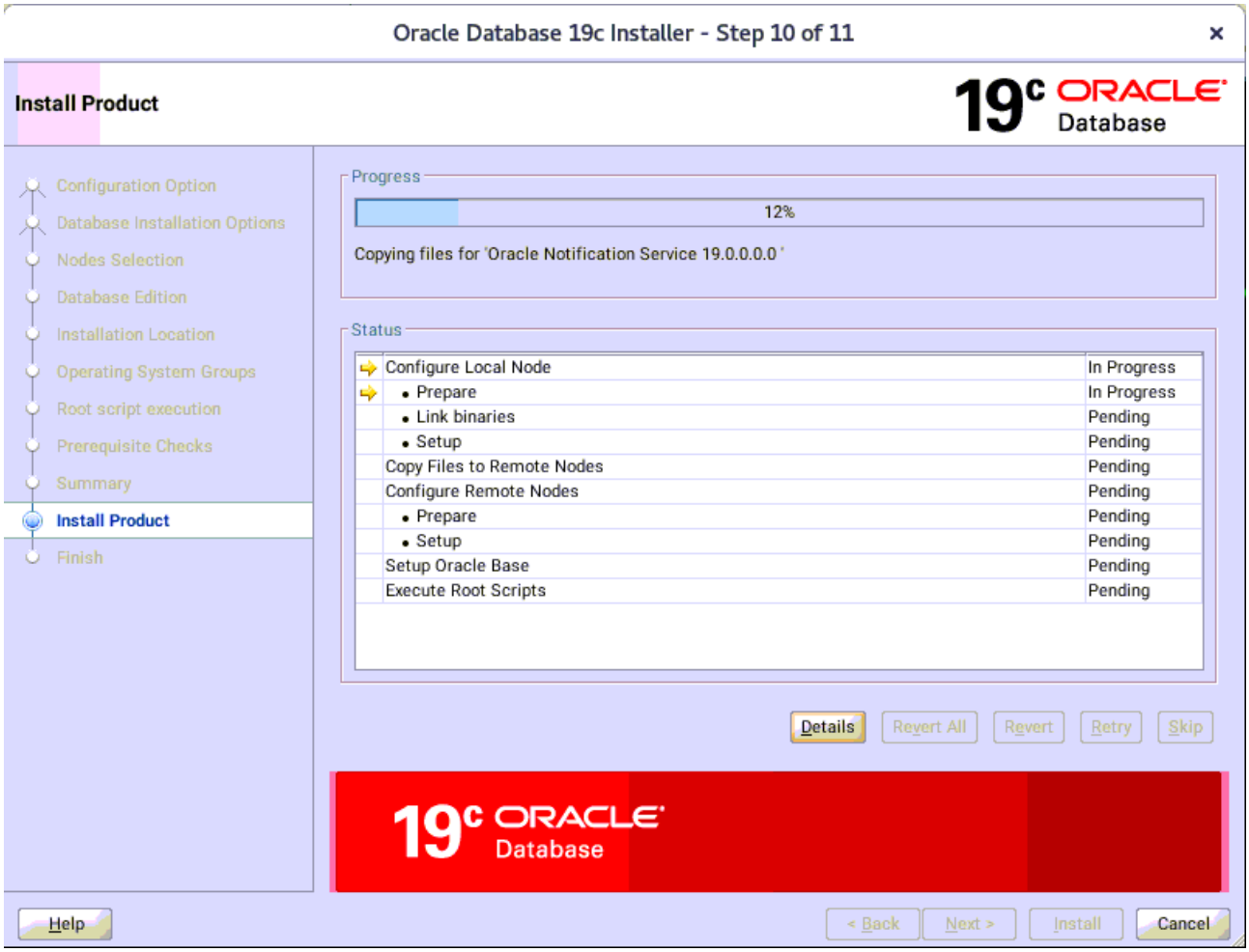
Select option "**Ignore All**", then click **Next** to continue.

9). Summary.

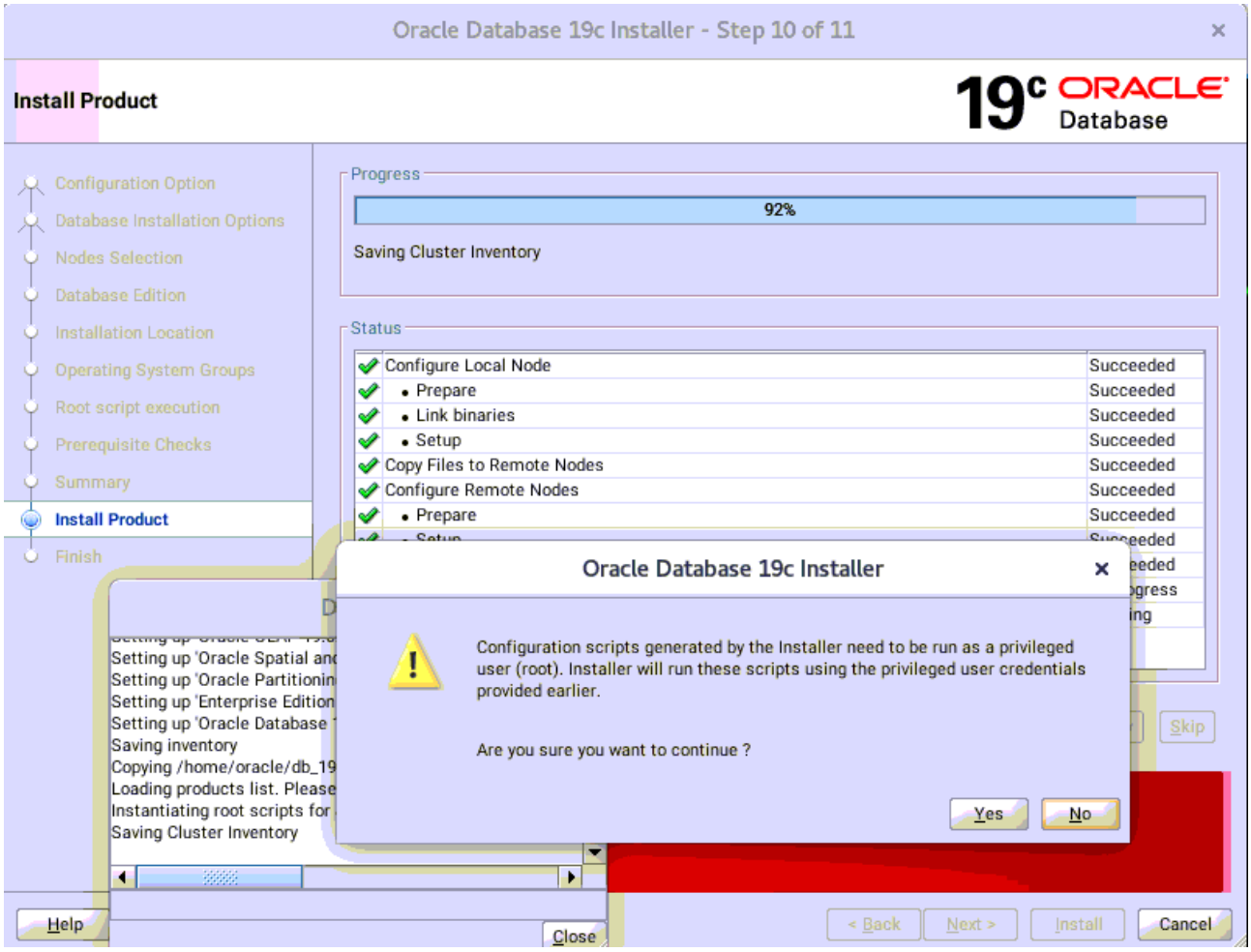


Installation Summary as shown above, click **Install** to continue.

10). Install Product.

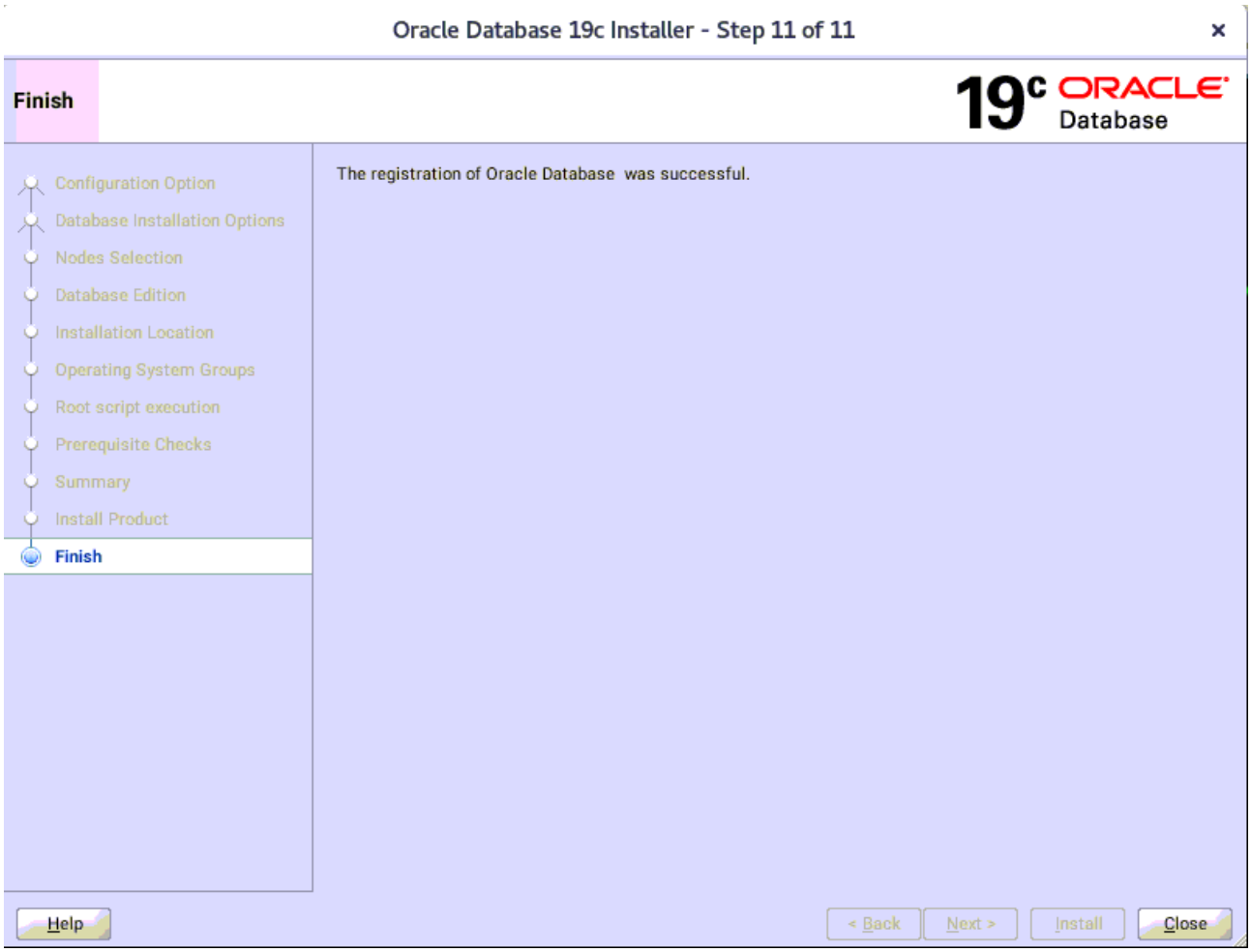


Installer prompted you to run the orainstRoot.sh and root.sh scripts. Click **Yes**.



Continue monitoring the installation until the Finish window appears.

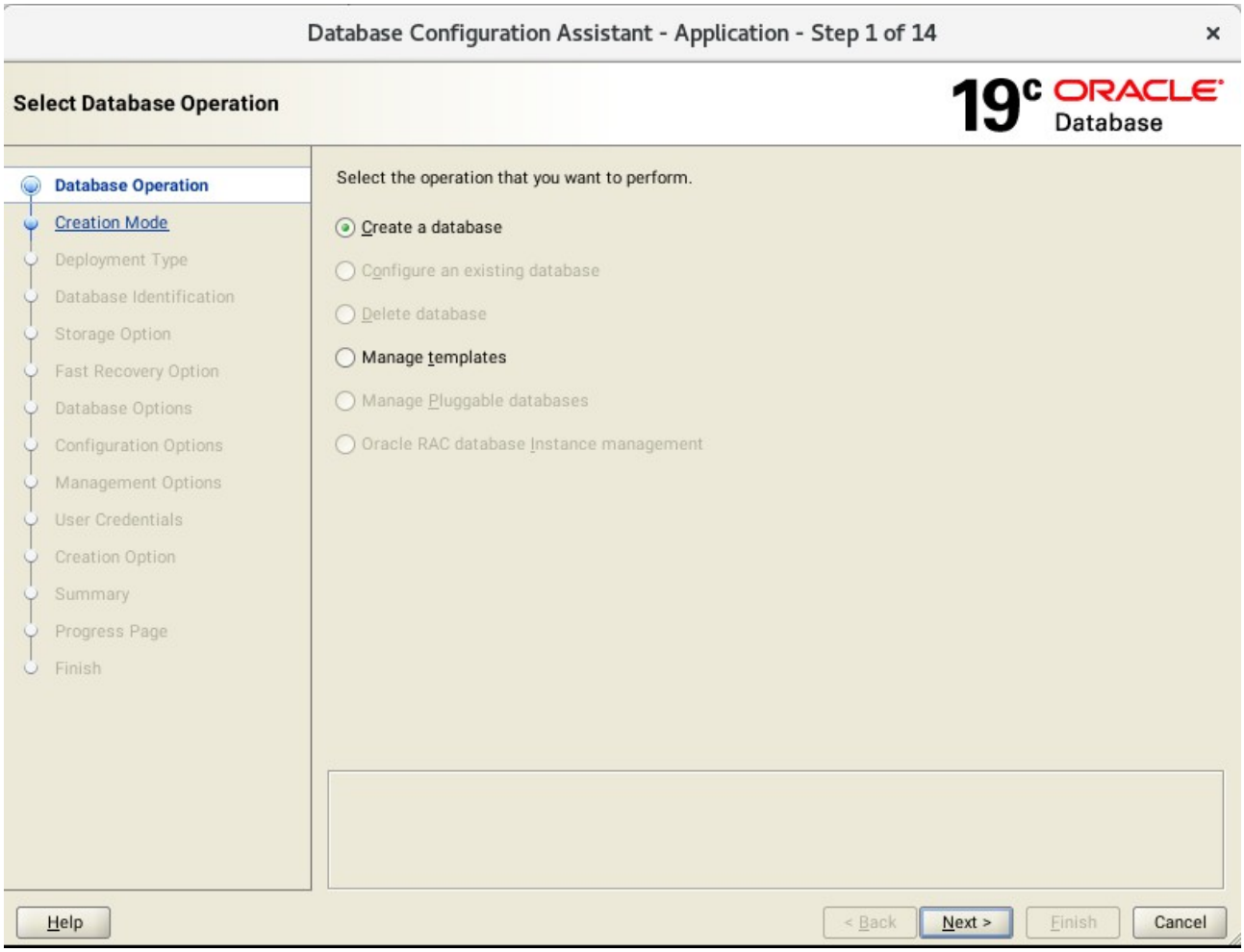
11). Finish



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

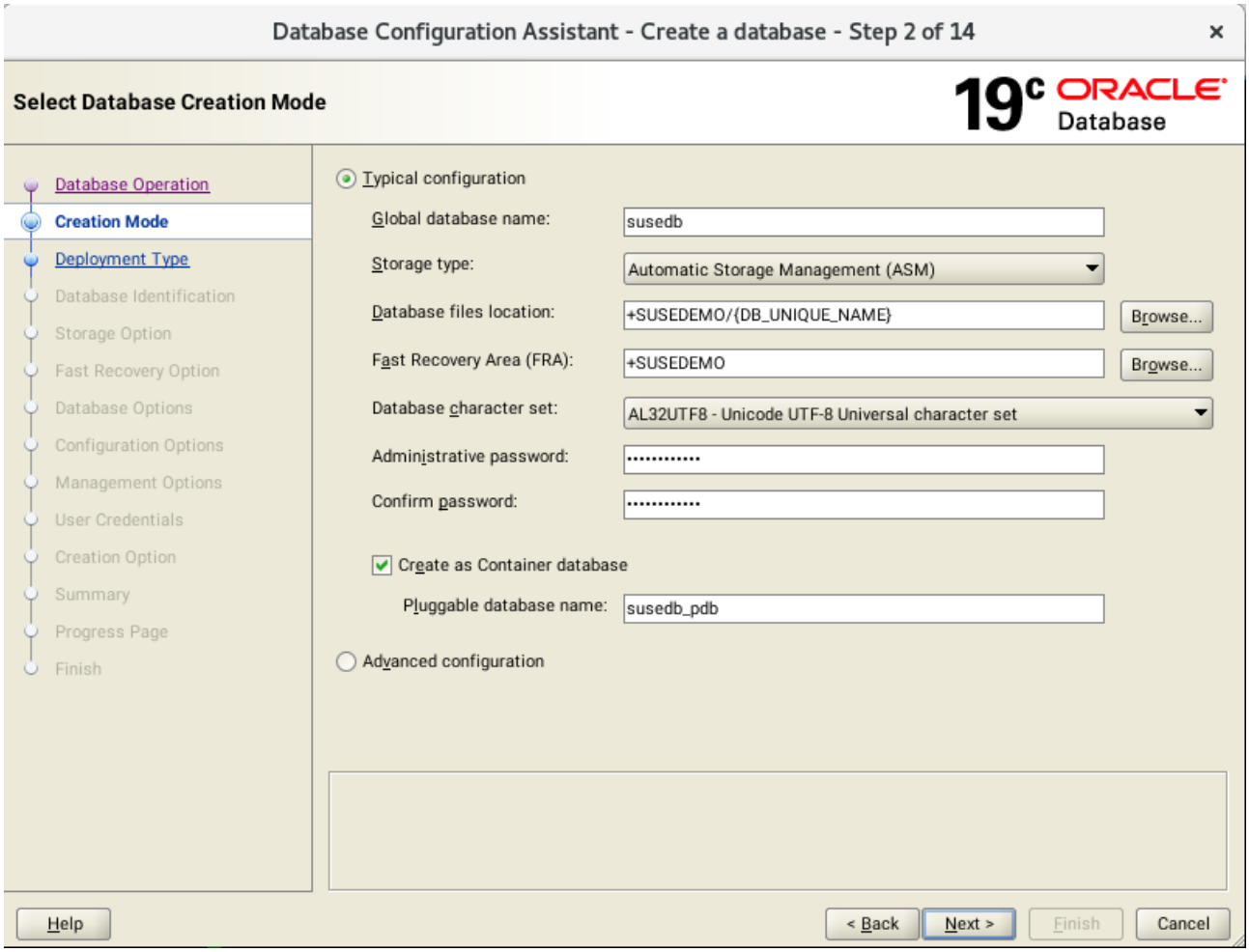
1-3. Using DBCA to create Oracle RAC DataBase.

1). Select Database Operation.



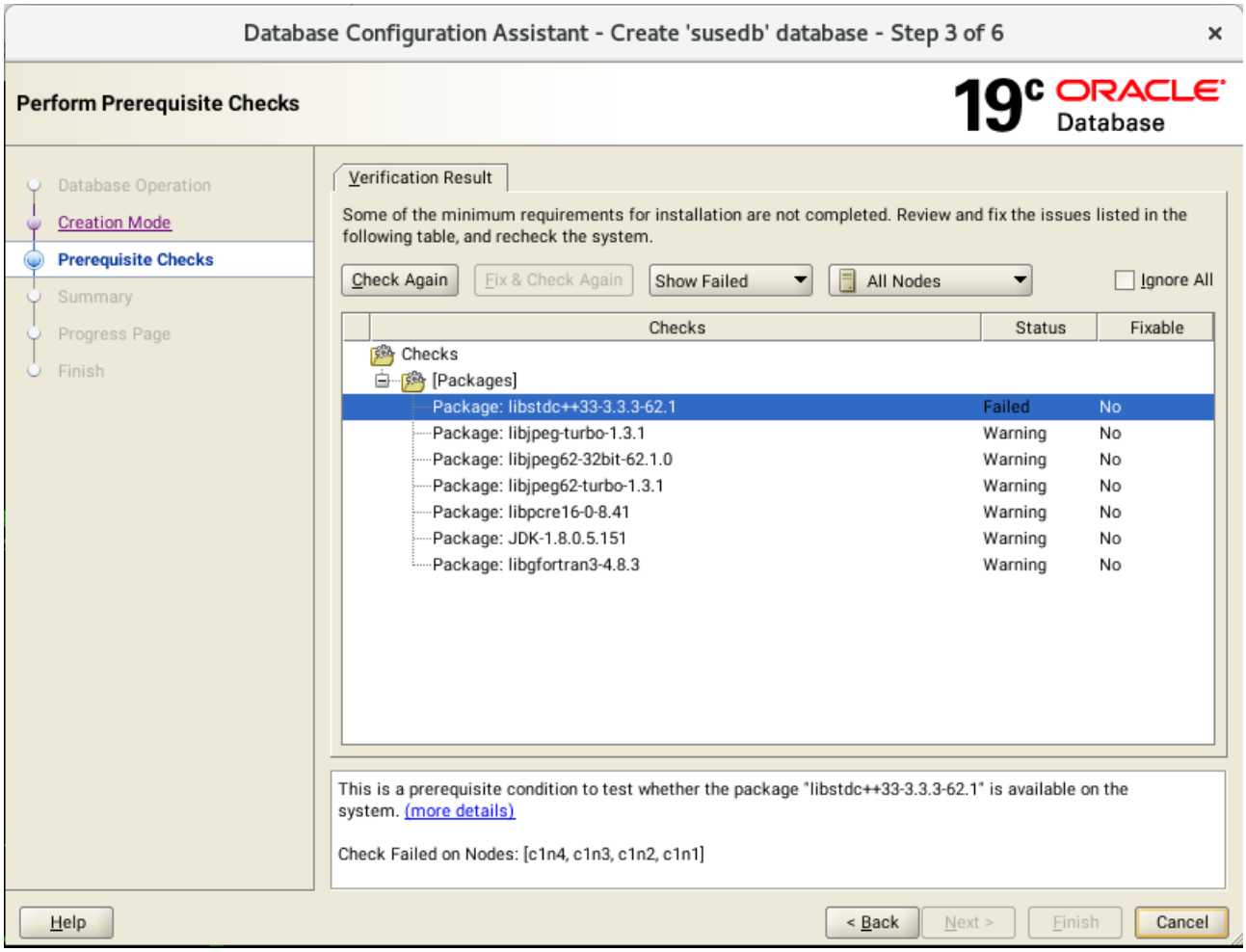
Select option "**Create a database**", then click **Next** to continue.

2). Select Database Creation Mode.



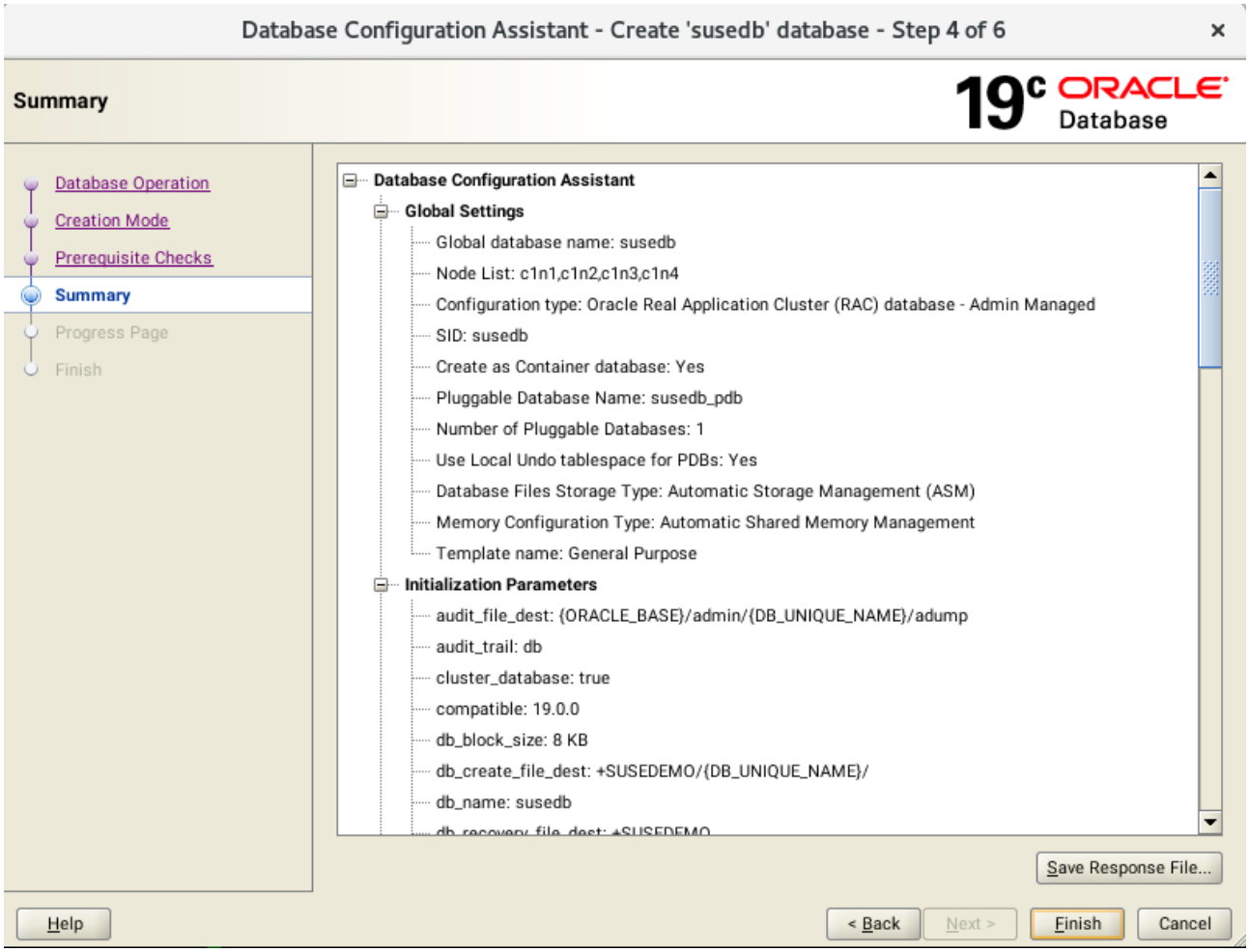
Select option "**Typical configuration**" and fill in administrator password. Then, click **Next** to continue.

3). Perform Prerequisite Checks.



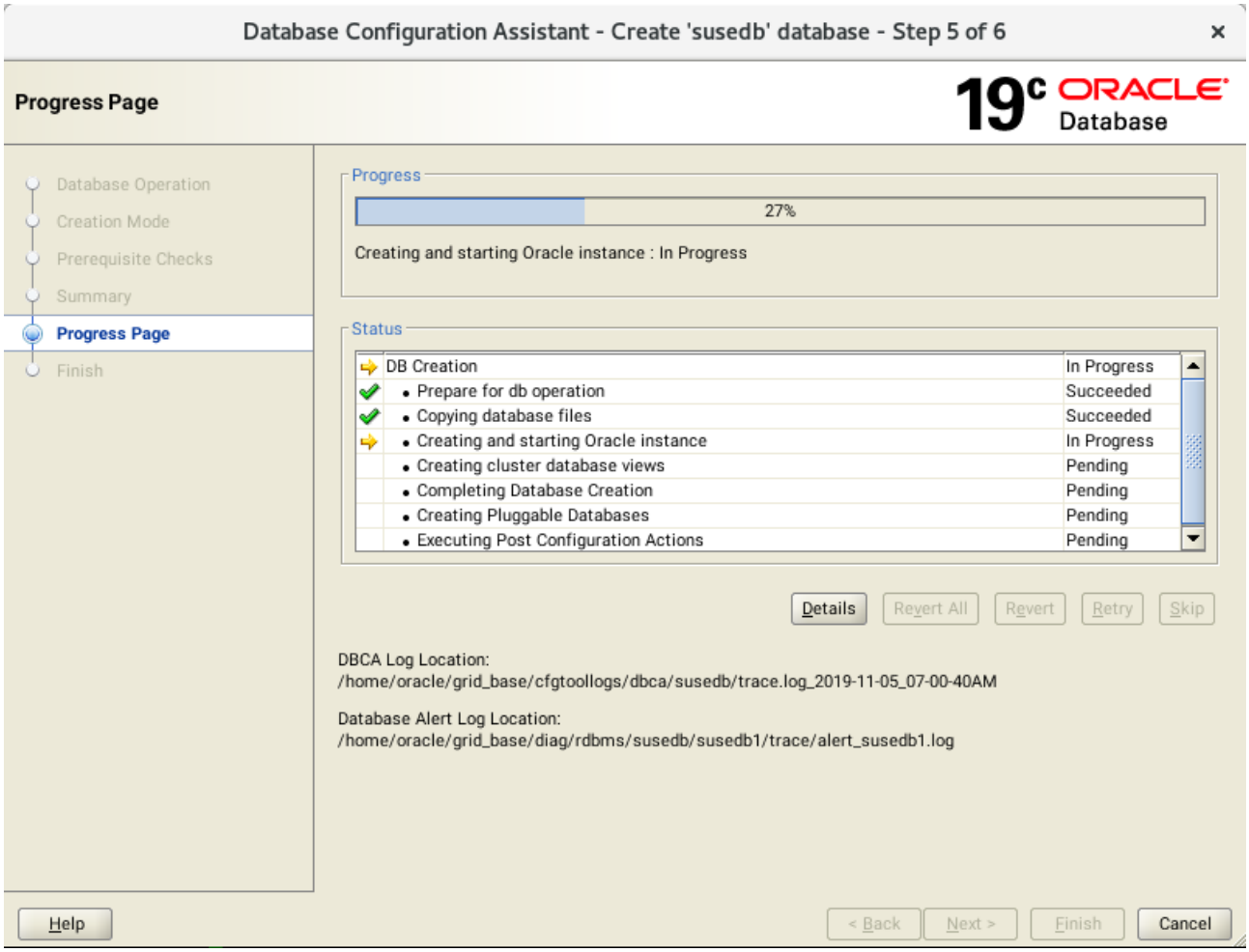
Select option "**Ignore All**", then click **Next** to continue.

4). Summary.



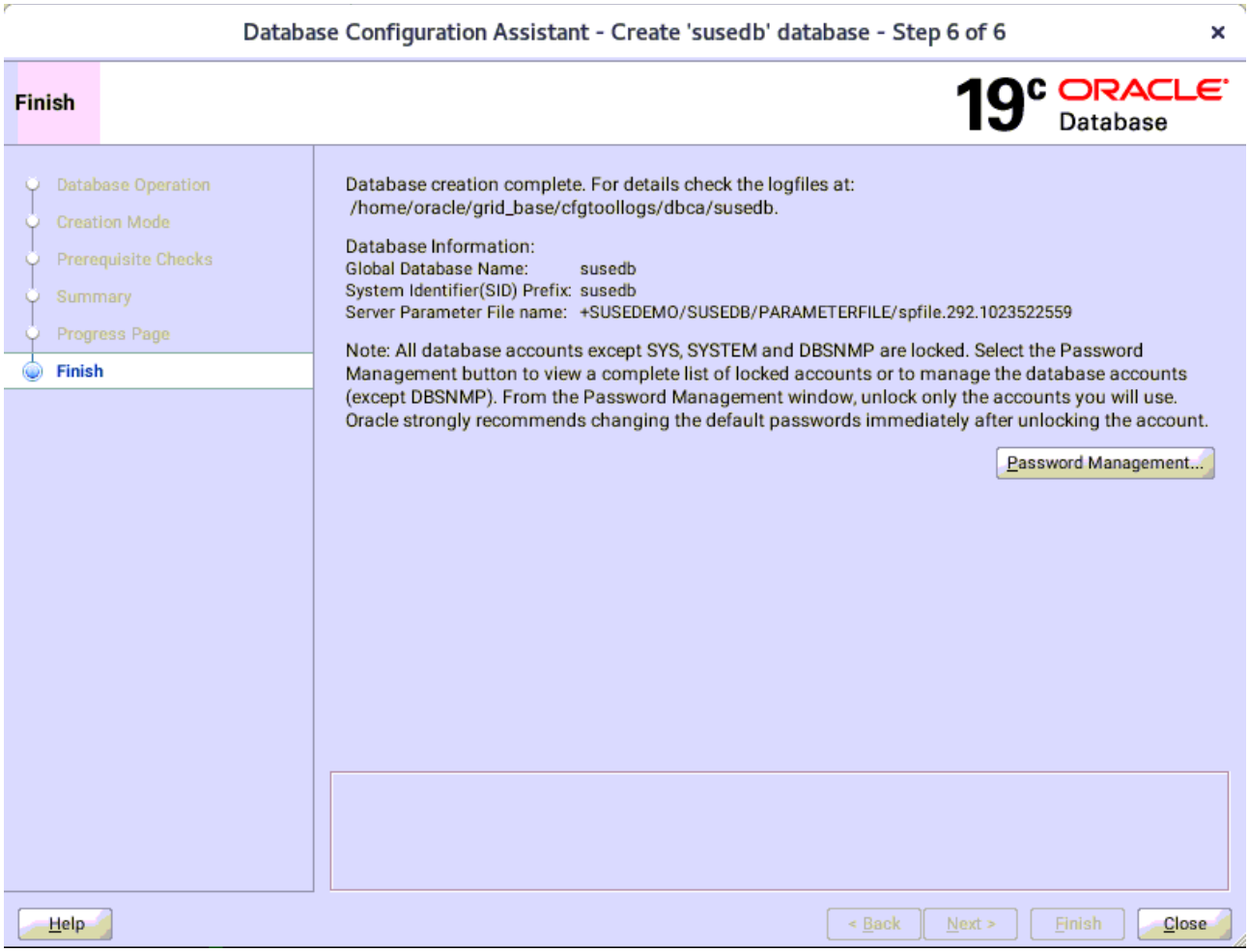
Database Configuration Summary as shown above, review the information, then click **Finish** to continue.

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.

1-4. Oracle Database 19c(19.3) Post-Install Checks.

1). Verify database status and configuration.

```
oracle@c1n1:~> export ORACLE_HOME=/home/oracle/db_19c/
oracle@c1n1:~> /home/oracle/db_19c/bin/srvctl status database -d susedb -a
Instance susedb1 is running on node c1n1
Instance susedb1 is connected to ASM instance +ASM1
Instance susedb2 is running on node c1n2
Instance susedb2 is connected to ASM instance +ASM2
Instance susedb3 is running on node c1n3
Instance susedb3 is connected to ASM instance +ASM3
Instance susedb4 is running on node c1n4
Instance susedb4 is connected to ASM instance +ASM3

oracle@c1n1:~> /home/oracle/db_19c/bin/srvctl config database -d susedb -a
Database unique name: susedb
Database name: susedb
Oracle home: /home/oracle/db_19c
Oracle user: oracle
Spfile: +SUSEDEMO/SUSEDB/PARAMETERFILE/spfile.292.1023522559
Password file: +SUSEDEMO/SUSEDB/PASSWORD/pwdsusedb.261.1023519963
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: 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: susedb1,susedb2,susedb3,susedb4
Configured nodes: c1n1,c1n2,c1n3,c1n4
CSS critical: no
CPU count: 0
Memory target: 0
Maximum memory: 0
Default network number for database services:
Database is administrator managed
```

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
--------------------------------------------------------------------------------
Name           Target  State        Server                   State details
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.chad
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.net1.network
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     STABLE
ora.ons
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
               ONLINE  ONLINE       c1n4                     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       c1n1                     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.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       c1n1                  STABLE
ora.susedb.db
      1        ONLINE  ONLINE       c1n1                  Open,HOME=/home/orac
                                                          le/db_19c,STABLE
      2        ONLINE  ONLINE       c1n2                  Open,HOME=/home/orac
                                                          le/db_19c,STABLE
      3        ONLINE  ONLINE       c1n3                  Open,HOME=/home/orac
                                                          le/db_19c,STABLE
      4        ONLINE  ONLINE       c1n4                  Open,HOME=/home/orac
                                                          le/db_19c,STABLE
--------------------------------------------------------------------------------
```

1-5. Installing Grid Infrastructure Release Update 19.4.0.0.190716 (Patch 29708769)

(**Note:** Patch 29708769 includes Database Release Update 19.4.0.0.190716 (Patch 29834717))

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

```
********************************************************************************
c1n1:/home/oracle/grid_19c/OPatch # ./opatchauto apply
/home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/

OPatchauto session is initiated at Tue Nov  5 18:13:06 2019

System initialization log file is /home/oracle/grid_19c/cfgtoollogs/opatchautodb/systemconfig2019-11-
05_06-13-07PM.log.

Session log file is /home/oracle/grid_19c/cfgtoollogs/opatchauto/opatchauto2019-11-05_06-13-
29PM.log
The id for this session is 8CCS

Executing OPatch prereq operations to verify patch applicability on home /home/oracle/grid_19c

Executing OPatch prereq operations to verify patch applicability on home /home/oracle/db_19c
Patch applicability verified successfully on home /home/oracle/db_19c

Patch applicability verified successfully on home /home/oracle/grid_19c


Verifying SQL patch applicability on home /home/oracle/db_19c
SQL patch applicability verified successfully on home /home/oracle/db_19c


Preparing to bring down database service on home /home/oracle/db_19c
Successfully prepared home /home/oracle/db_19c to bring down database service


Bringing down CRS service on home /home/oracle/grid_19c
CRS service brought down successfully on home /home/oracle/grid_19c


Performing prepatch operation on home /home/oracle/db_19c
Perpatch operation completed successfully on home /home/oracle/db_19c


Start applying binary patch on home /home/oracle/db_19c
Binary patch applied successfully on home /home/oracle/db_19c


Performing postpatch operation on home /home/oracle/db_19c
Postpatch operation completed successfully on home /home/oracle/db_19c


Start applying binary patch on home /home/oracle/grid_19c
Binary patch applied successfully on home /home/oracle/grid_19c


Starting CRS service on home /home/oracle/grid_19c
CRS service started successfully on home /home/oracle/grid_19c
```

Preparing home /home/oracle/db_19c after database service restarted
No step execution required.....

Trying to apply SQL patch on home /home/oracle/db_19c
SQL patch applied successfully on home /home/oracle/db_19c

OPatchAuto successful.

----------Summary----------

Patching is completed successfully. Please find the summary as follows:

Host:c1n1
RAC Home:/home/oracle/db_19c
Version:19.0.0.0.0
Summary:

==Following patches were SKIPPED:

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29851014
Reason: This patch is not applicable to this specified target type - "rac_database"

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29401763
Reason: This patch is not applicable to this specified target type - "rac_database"

==Following patches were SUCCESSFULLY applied:

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29834717
Log: /home/oracle/db_19c/cfgtoollogs/opatchauto/core/opatch/opatch2019-11-05_18-17-56PM_1.log

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29850993
Log: /home/oracle/db_19c/cfgtoollogs/opatchauto/core/opatch/opatch2019-11-05_18-17-56PM_1.log

Host:c1n1
CRS Home:/home/oracle/grid_19c
Version:19.0.0.0.0
Summary:

==Following patches were SKIPPED:

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29401763
Reason: This patch is already been applied, so not going to apply again.

==Following patches were SUCCESSFULLY applied:

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29834717
Log: /home/oracle/grid_19c/cfgtoollogs/opatchauto/core/opatch/opatch2019-11-05_18-19-37PM_1.log

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29850993
Log: /home/oracle/grid_19c/cfgtoollogs/opatchauto/core/opatch/opatch2019-11-05_18-19-37PM_1.log

Patch: /home/Oracle_SW/RAC_19c_SW/GI_Patch/29708769/29851014
Log: /home/oracle/grid_19c/cfgtoollogs/opatchauto/core/opatch/opatch2019-11-05_18-19-37PM_1.log

OPatchauto session completed at Tue Nov 5 18:44:04 2019
Time taken to complete the session 30 minutes, 58 seconds
****
For details, please refer to the 'Read Me' file included in the patch package, make sure the installation is successful.

1-6. Installing other patches.

The following patches are also required on top of 19.4.0:

Patch 30083976 - all Database installations
Patch 28321248 - all GI/ACFS installations
Patch 30171454 - all GI/OCW installations
Patch 29875565 - all Client installations where pro*C cobol demos are required

Ensure that the above patches are successfully installed.

```
oracle@c1n1:/home/oracle/grid_19c/OPatch> ./opatch lspatches
29875565;PL19.3PORTSPECEFIC: PRO*C DEMOS FAIL ON SLES15
28321248;ACFS Interim patch for 28321248
30171454;OCW Interim patch for 30171454
29834717;Database Release Update : 19.4.0.0.190716 (29834717)
29401763;TOMCAT RELEASE UPDATE 19.0.0.0.0 (29401763)

OPatch succeeded.
oracle@c1n1:/home/oracle/grid_19c/OPatch>
```

1-7. Oracle RAC 19c(19.4) Post-Install Checks.

1). Restart all the services (database, ASM, listeners, nodeapps, and CRS daemons),then check Oracle RAC status.

```
oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl check cluster -all
**************************************************************
c1n1:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n2:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n3:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************
c1n4:
CRS-4537: Cluster Ready Services is online
CRS-4529: Cluster Synchronization Services is online
CRS-4533: Event Manager is online
**************************************************************

oracle@c1n1:/home/oracle/grid_19c/OPatch> /home/oracle/grid_19c/bin/srvctl status nodeapps
VIP 137.65.135.94 is enabled
VIP 137.65.135.94 is running on node: c1n1
VIP 137.65.135.95 is enabled
VIP 137.65.135.95 is running on node: c1n2
VIP 137.65.135.96 is enabled
VIP 137.65.135.96 is running on node: c1n3
VIP 137.65.135.97 is enabled
VIP 137.65.135.97 is running on node: c1n4
Network is enabled
Network is running on node: c1n1
Network is running on node: c1n2
Network is running on node: c1n3
Network is running on node: c1n4
ONS is enabled
ONS daemon is running on node: c1n1
ONS daemon is running on node: c1n2
ONS daemon is running on node: c1n3
ONS daemon is running on node: c1n4

oracle@c1n1:~> /home/oracle/grid_19c/bin/crsctl stat res -t
--------------------------------------------------------------------------------
Name           Target  State        Server                   State details
--------------------------------------------------------------------------------
Local Resources
--------------------------------------------------------------------------------
ora.LISTENER.lsnr
               ONLINE  ONLINE       c1n1                     STABLE
               ONLINE  ONLINE       c1n2                     STABLE
               ONLINE  ONLINE       c1n3                     STABLE
```

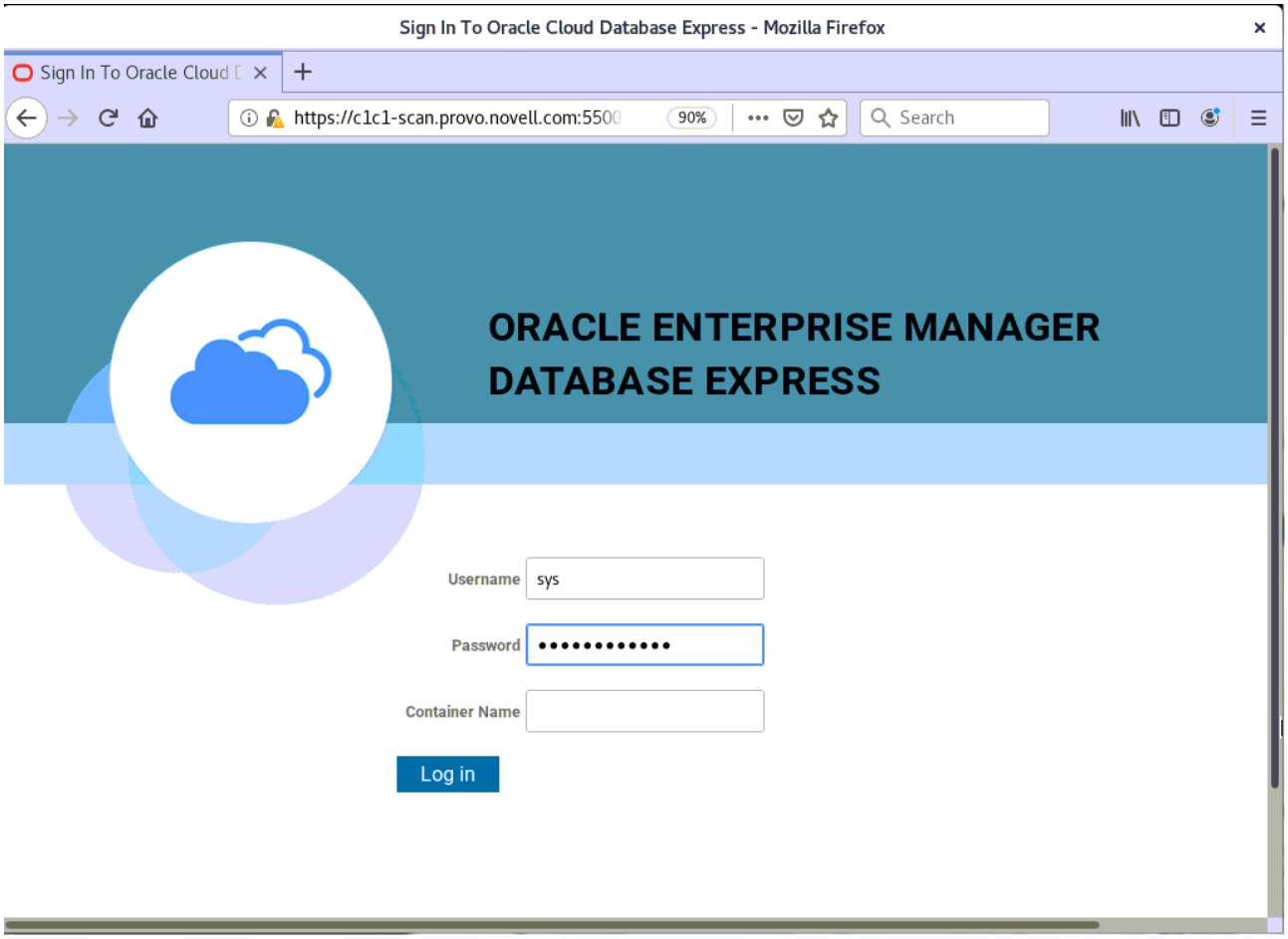
```
               ONLINE  ONLINE       c1n4                STABLE
ora.chad
               ONLINE  ONLINE       c1n1                STABLE
               ONLINE  ONLINE       c1n2                STABLE
               ONLINE  ONLINE       c1n3                STABLE
               ONLINE  ONLINE       c1n4                STABLE
ora.net1.network
               ONLINE  ONLINE       c1n1                STABLE
               ONLINE  ONLINE       c1n2                STABLE
               ONLINE  ONLINE       c1n3                STABLE
               ONLINE  ONLINE       c1n4                STABLE
ora.ons
               ONLINE  ONLINE       c1n1                STABLE
               ONLINE  ONLINE       c1n2                STABLE
               ONLINE  ONLINE       c1n3                STABLE
               ONLINE  ONLINE       c1n4                STABLE
--------------------------------------------------------------------------------
Cluster Resources
--------------------------------------------------------------------------------
ora.ASMNET1LSNR_ASM.lsnr(ora.asmgroup)
      1        ONLINE  ONLINE       c1n3                STABLE
      2        ONLINE  ONLINE       c1n1                STABLE
      3        ONLINE  ONLINE       c1n2                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       c1n1                STABLE
ora.SUSEDEMO.dg(ora.asmgroup)
      1        ONLINE  ONLINE       c1n3                STABLE
      2        ONLINE  ONLINE       c1n1                STABLE
      3        ONLINE  ONLINE       c1n2                STABLE
ora.asm(ora.asmgroup)
      1        ONLINE  ONLINE       c1n3                Started,STABLE
      2        ONLINE  ONLINE       c1n1                Started,STABLE
      3        ONLINE  ONLINE       c1n2                Started,STABLE
ora.asmnet1.asmnetwork(ora.asmgroup)
      1        ONLINE  ONLINE       c1n3                STABLE
      2        ONLINE  ONLINE       c1n1                STABLE
      3        ONLINE  ONLINE       c1n2                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
```

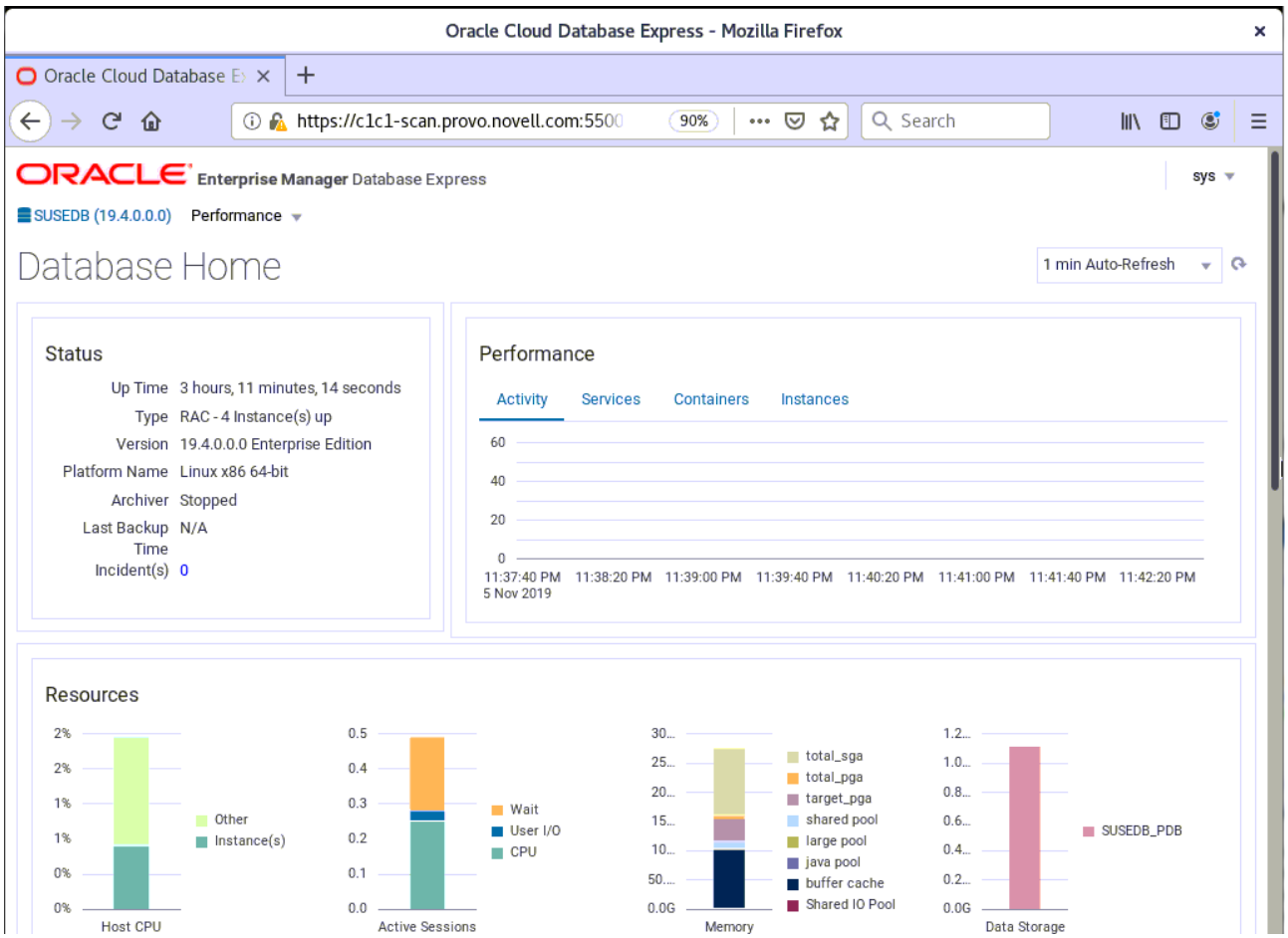
```
     1        ONLINE  ONLINE       c1n1                  STABLE
ora.susedb.db
     1        ONLINE  ONLINE       c1n1                  Open,HOME=/home/orac
                                                         le/db_19c,STABLE
     2        ONLINE  ONLINE       c1n2                  Open,HOME=/home/orac
                                                         le/db_19c,STABLE
     3        ONLINE  ONLINE       c1n3                  Open,HOME=/home/orac
                                                         le/db_19c,STABLE
     4        ONLINE  ONLINE       c1n4                  Open,HOME=/home/orac
                                                         le/db_19c,STABLE
--------------------------------------------------------------------------------

oracle@c1n1:/home/oracle/grid_19c/OPatch> export ORACLE_HOME=/home/oracle/db_19c/
oracle@c1n1:/home/oracle/grid_19c/OPatch> /home/oracle/db_19c/bin/srvctl status database -d
susedb -a
Instance susedb1 is running on node c1n1
Instance susedb1 is connected to ASM instance +ASM1
Instance susedb2 is running on node c1n2
Instance susedb2 is connected to ASM instance +ASM2
Instance susedb3 is running on node c1n3
Instance susedb3 is connected to ASM instance +ASM3
Instance susedb4 is running on node c1n4
Instance susedb4 is connected to ASM instance +ASM3

oracle@c1n1:/home/oracle/grid_19c/OPatch> /home/oracle/db_19c/bin/srvctl config database -d
susedb -a
Database unique name: susedb
Database name: susedb
Oracle home: /home/oracle/db_19c
Oracle user: oracle
Spfile: +SUSEDEMO/SUSEDB/PARAMETERFILE/spfile.292.1023522559
Password file: +SUSEDEMO/SUSEDB/PASSWORD/pwdsusedb.261.1023519963
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: 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: susedb1,susedb2,susedb3,susedb4
Configured nodes: c1n1,c1n2,c1n3,c1n4
CSS critical: no
CPU count: 0
Memory target: 0
Maximum memory: 0
Default network number for database services:
Database is administrator managed
```

2). Access to Oracle Enterprise Manager.




Oracle Cloud Database Express - Mozilla Firefox
Oracle Cloud Database Ex
https://c1c1-scan.provo.novell.com:5500
90%
Search
ORACLE Enterprise Manager Database Express
sys
SUSEDB (19.4.0.0.0)
Performance
Database Home
1 min Auto-Refresh
Status
Up Time 3 hours, 11 minutes, 14 seconds
Type RAC - 4 Instance(s) up
Version 19.4.0.0.0 Enterprise Edition
Platform Name Linux x86 64-bit
Archiver Stopped
Last Backup Time N/A
Incident(s) 0
Performance
Activity
Services
Containers
Instances
60
40
20
0
11:37:40 PM 5 Nov 2019
11:38:20 PM
11:39:00 PM
11:39:40 PM
11:40:20 PM
11:41:00 PM
11:41:40 PM
11:42:20 PM
Resources
2%
2%
1%
1%
0%
0%
Other
Instance(s)
Host CPU
0.5
0.4
0.3
0.2
0.1
0.0
Wait
User I/O
CPU
Active Sessions
30...
25...
20...
15...
10...
50....
0.0G
total_sga
total_pga
target_pga
shared pool
large pool
java pool
buffer cache
Shared IO Pool
Memory
1.2...
1.0...
0.8...
0.6...
0.4...
0.2...
0.0G
SUSEDB_PDB
Data Storage

Additional Comments

This document provides some temporary solutions and brief instructions for Oracle Database 19c on SLES 15 SP1.

- *GI 19c(19.3) Installer checking Passwordless SSH connectivity failed. Actually, the Passwordless SSH connectivity is work normal on the Cluster.*

  Work-around: A temporary solution is by downgrading openssh to earlier version(openssh-7.6p1-7.8.x86_64) on the node(c1n1), then retry.

- *Oracle Prerequisite Checks Fixup Script is workaround for some CVU check failures.*

- *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 SP1*

  Work-around: Manually ensure updated packages are installed.

  libstdc++33-3.3.3-62.1 (Deprecated on SLES15 SP1)
  libjpeg-turbo-1.3.1, libjpeg62-32bit-62.1.0, libjpeg62-turbo-1.3.1 (Replaced by: libjpeg8. E.g. libjpeg8-8.1.2-5.7.1.x86_64 and libjpeg8-32bit-8.1.2-5.7.1.x86_64)
  libpcre16-0-8.41 (New name is libpcre16-0-8.41-4.20.x86_64)
  JDK-1.8.0.5.151 (New name is java-1_8_0-openjdk-1.8.0.222-3.24.2.x86_64)
  libgfortran3-4.8.3 (Replaced by: libgfortran4-7.4.1+r275405-4.9.2.x86_64 or libgfortran5-8.2.1+r264010-1.3.7.x86_64)

- *Apply the Oracle RU 19.4.0.0.190716 (Patch 29708769 - Includes Database Patch)*

- *The following patches are also required on top of 19.4.0:*
  Patch 30083976 - all Database installations
  Patch 28321248 - all GI/ACFS installations
  Patch 30171454 - all GI/OCW installations
  *Patch 29875565 - all Client installations where pro*C cobol demos are required*

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