

**Oracle RAC 12cR2(12.2.0.1.0) on SUSE  
Linux Enterprise Server 15 - x86\_64**



<http://www.suse.com>

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## Introduction

This documentation provides the details for install Oracle RAC 12cR2 on SUSE Linux Enterprise Server 15 OS. Here, x86\_64 version of both Oracle Database 12c 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](mailto:suse-oracle@listx.novell.com).

The oracle official 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 GA (x86\_64)  
(<http://download.suse.de/install>)

#### Oracle

- Oracle Grid Infrastructure 12cR2 (12.2.0.1.0) (x86\_64)
- Oracle Database 12cR2 (12.2.0.1.0) (x86\_64)  
(<http://www.oracle.com/technetwork/indexes/downloads/index.html#database>)

## Cluster(4-node) Information

HP DL360 Gen9 Server (Intel Xeon 2x12 core ~ 48 CPU), 64GB RAM  
4 NIC per server (two bonded as active/passive) + Static IP Address  
Local HDD (500 GB)  
Shared SAN Partition ( 1TB)  
SUSE Linux Enterprise Server 15 GA(x86\_64)  
Kernel version: 4.12.14-25.25-default

# Prerequisites

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

Follow the official document (URL: <https://www.suse.com/documentation/sles-15/>) to Install SLES 15 GA (x86\_64) on each node of the cluster.

## 2. Cluster Network configuration

#Private:

```
10.1.1.1    c2n1-priv
10.1.1.2    c2n2-priv
10.1.1.3    c2n3-priv
10.1.1.4    c2n4-priv
```

#Public:

```
137.65.135.72 c2n1.provo.novell.com c2n1
137.65.135.73 c2n2.provo.novell.com c2n2
137.65.135.74 c2n3.provo.novell.com c2n3
137.65.135.75 c2n4.provo.novell.com c2n4
```

# Virtual

```
137.65.135.76      c2n1-vip      c2n1-vip.provo.novell.com
137.65.135.77      c2n2-vip      c2n2-vip.provo.novell.com
137.65.135.78      c2n3-vip      c2n3-vip.provo.novell.com
137.65.135.79      c2n4-vip      c2n4-vip.provo.novell.com
```

#SCAN:

```
c2-scan.provo.novell.com (137.65.135.87)
c2-scan.provo.novell.com (137.65.135.148)
c2-scan.provo.novell.com (137.65.135.149)
```

# Oracle RAC Installation

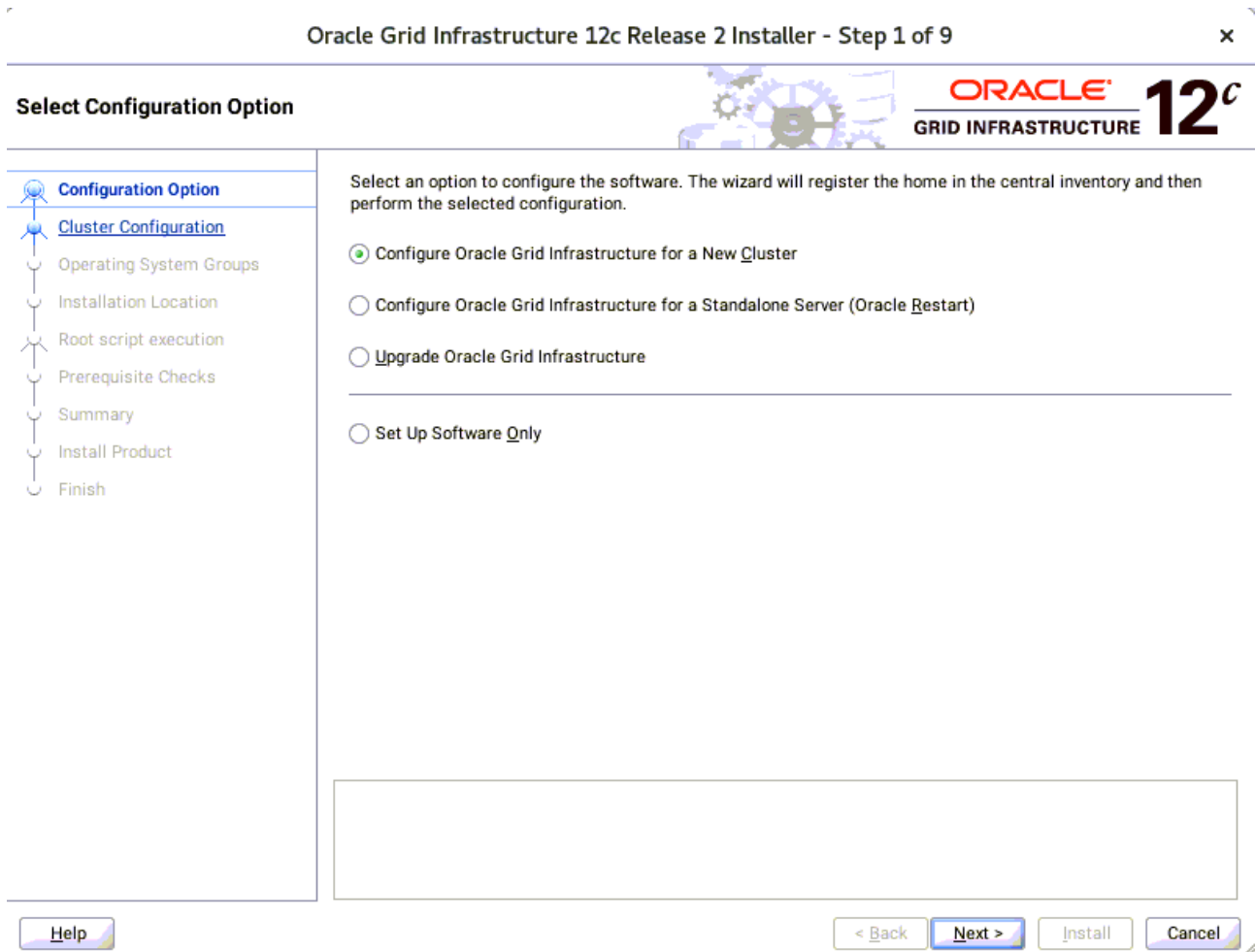
## 1. Installing Oracle Grid Infrastructure.

1-1. Login to the SLES 15 64-bit OS as a non-admin user. Download the Oracle Database 12c Release 2 Grid Infrastructure (12.2.0.1.0) for Linux x86-64.

1-2. Extract linuxx64\_12201\_grid\_home.zip and run the installer './gridSetup.sh' from Grid ShipHome.

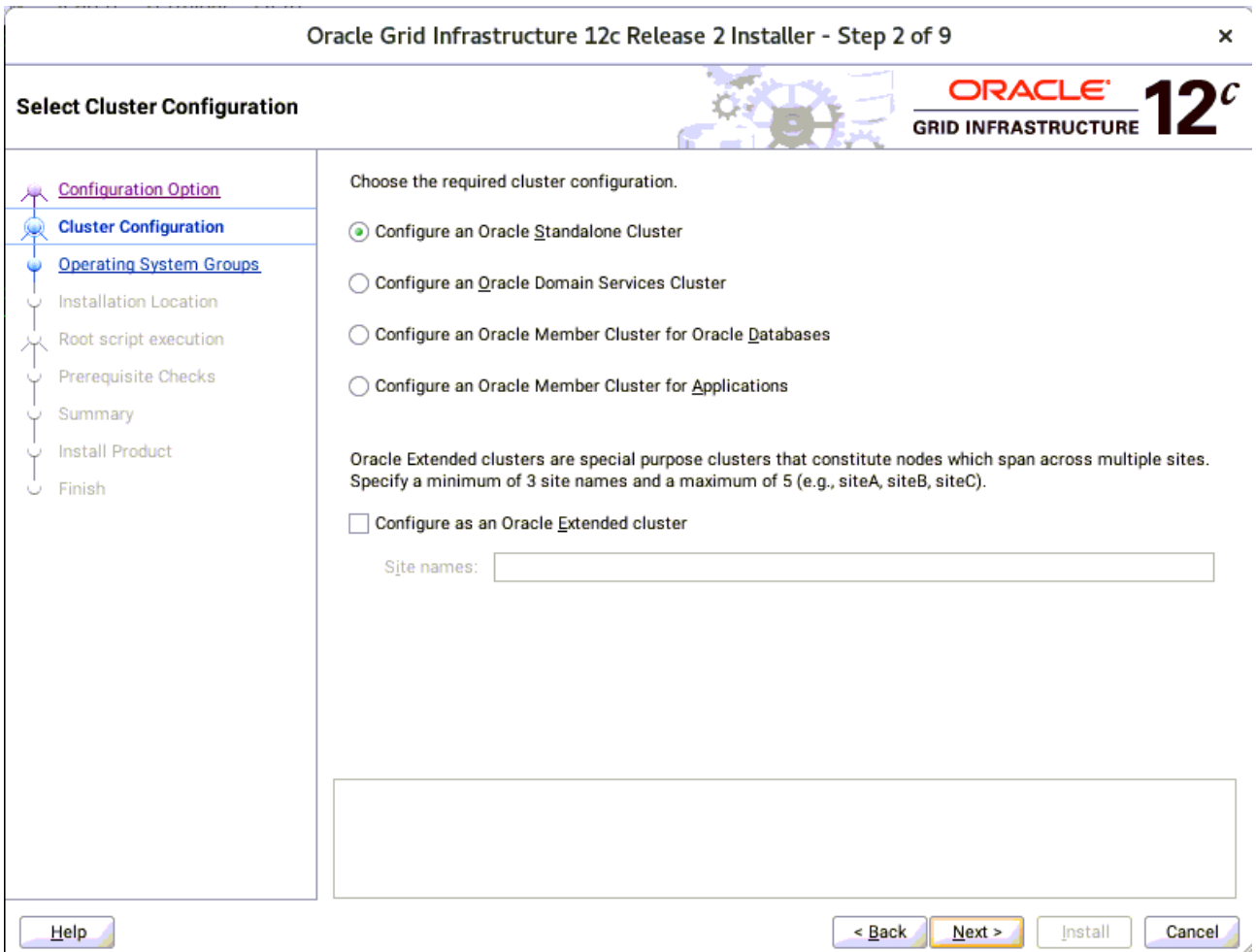
### Install Flow:

1). Select Installation 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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 3 of 16 x

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**Grid Plug and Play Information**

- [Configuration Option](#)
- [Cluster Configuration](#)
- [Grid Plug and Play](#)
- [Cluster Node Information](#)
- [Network Interface Usage](#)
- [Storage Option](#)
- [Grid Infrastructure Management](#)
- [Create ASM Disk Group](#)
- [ASM Password](#)
- [Operating System Groups](#)
- [Installation Location](#)
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- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

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

**C**luster Name:

**S**CAN Name:

**S**CAN Port:

**C**onfigure GNS

Configure nodes Virtual IPs as assigned by the Dynamic Networks

Create a new GNS

GNS VIP Address:

GNS Sub Domain:

Use Shared GNS

GNS Client Data:

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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 4 of 16

### Cluster Node Information

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

Public Hostname	Role	Virtual Hostname
c2n1.provo.novell.com	HUB	c2n1-vip.provo.novell.com
c2n2.provo.novell.com	HUB	c2n2-vip.provo.novell.com
c2n3.provo.novell.com	HUB	c2n3-vip.provo.novell.com
c2n4.provo.novell.com	HUB	c2n4-vip.provo.novell.com

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

Help < Back Next > Install Cancel


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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 5 of 16

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**Specify Network Interface Usage** 

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

Interface Name	Subnet	Use for
bond1	137.65.135.0	Public
bond0	10.1.1.0	ASM & Private

Navigation: [Help](#) [< Back](#) [Next >](#) [Install](#) [Cancel](#)

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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 6 of 16 x

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### Storage Option Information

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

Oracle Cluster Registry (OCR) files, voting disk files and other clusterware data will be configured with Oracle ASM. You can choose to configure Oracle ASM on block devices or on a NFS location.

Configure **A**SM using block devices

Configure ASM on NFS

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

Choose option "**Configure ASM using block devices**", then click **Next** to continue.

7). Grid Infrastructure Management Repository Option.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 7 of 16

**Grid Infrastructure Management Repository Option**

ORACLE  
GRID INFRASTRUCTURE 12c

Do you want to create a separate Automatic Storage Management (ASM) disk group for the Grid Infrastructure Management Repository (GIMR) data?

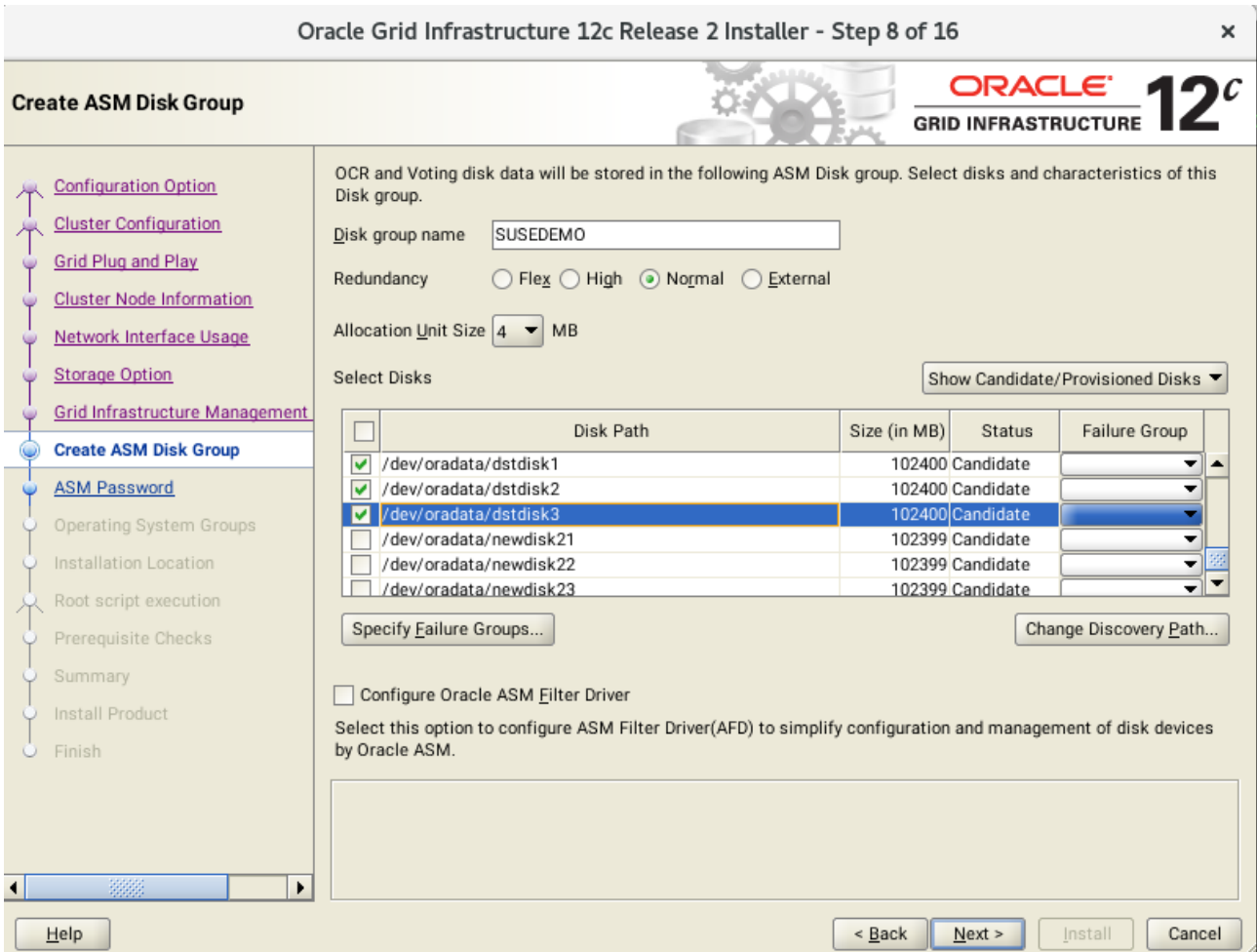
Yes

No

Help < Back Next > Install Cancel

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 create ASM Disk Group, then click **Next** to continue.

9). Specify ASM Password.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 9 of 16 x

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**Specify ASM Password** 

- [Configuration Option](#)
- [Cluster Configuration](#)
- [Grid Plug and Play](#)
- [Cluster Node Information](#)
- [Network Interface Usage](#)
- [Storage Option](#)
- [Grid Infrastructure Management](#)
- [Create ASM Disk Group](#)
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- [Summary](#)
- [Install Product](#)
- [Finish](#)

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

Specify the password for these user accounts.

Use different passwords for these accounts

	Password	Confirm Password
SYS	<input type="text"/>	<input type="text"/>
ASMSNMP	<input type="text"/>	<input type="text"/>

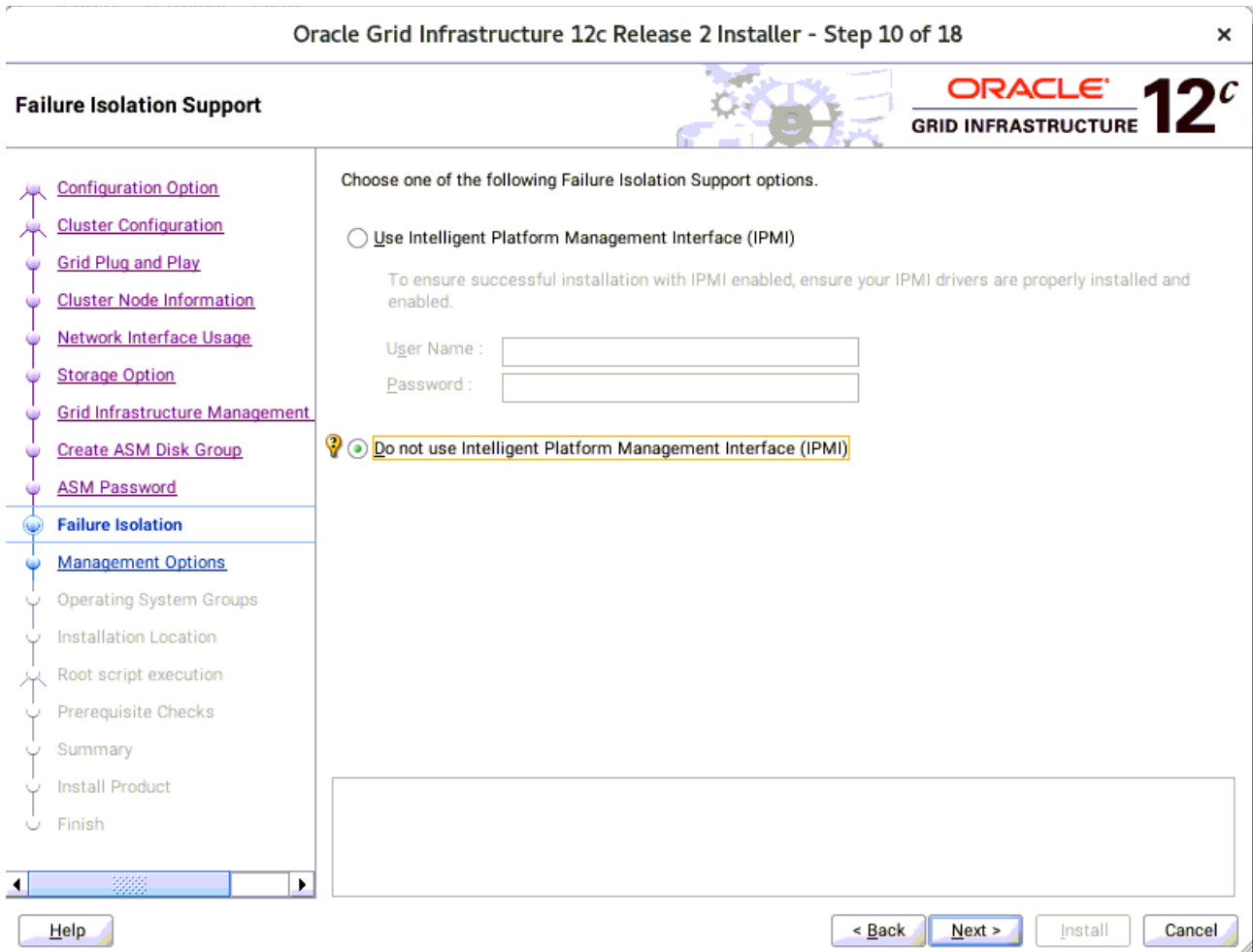
Use same passwords for these accounts

Specify Password:  Confirm Password:

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

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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 11 of 18

### Specify Management Options

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:

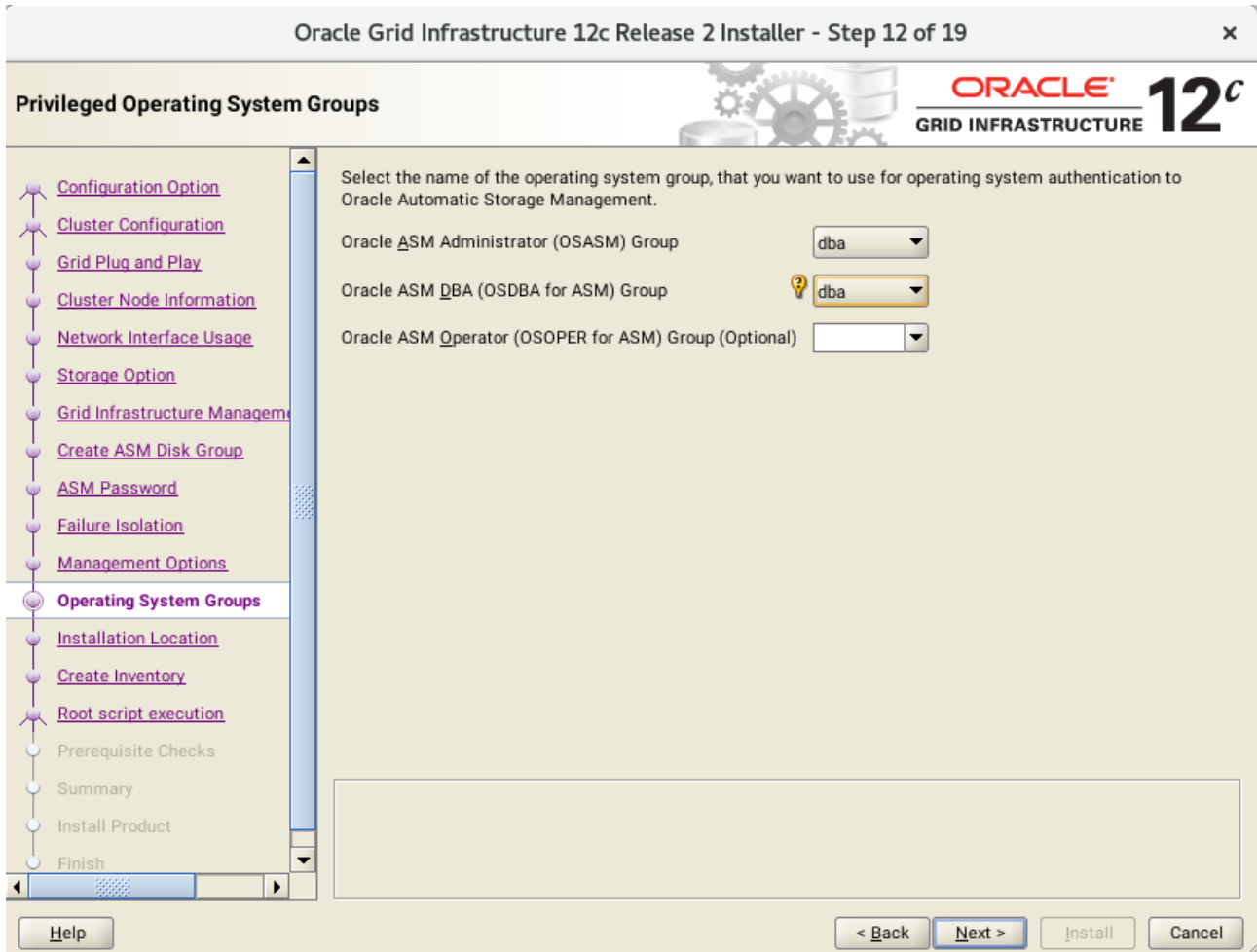
EM Admin User Name:

EM Admin Password:

Help      < Back      Next >      Install      Cancel

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.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 13 of 18 x

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**Specify Installation Location** 

- [Configuration Option](#)
- [Cluster Configuration](#)
- [Grid Plug and Play](#)
- [Cluster Node Information](#)
- [Network Interface Usage](#)
- [Storage Option](#)
- [Grid Infrastructure Management](#)
- [Create ASM Disk Group](#)
- [ASM Password](#)
- [Failure Isolation](#)
- [Management Options](#)
- [Operating System Groups](#)
- [Installation Location](#)
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- [Summary](#)
- [Install Product](#)
- [Finish](#)

Specify the Oracle Grid Infrastructure for a Cluster Oracle base. By default, Oracle Grid Infrastructure is installed in a path indicating the Oracle Grid Infrastructure release and grid infrastructure software owner.

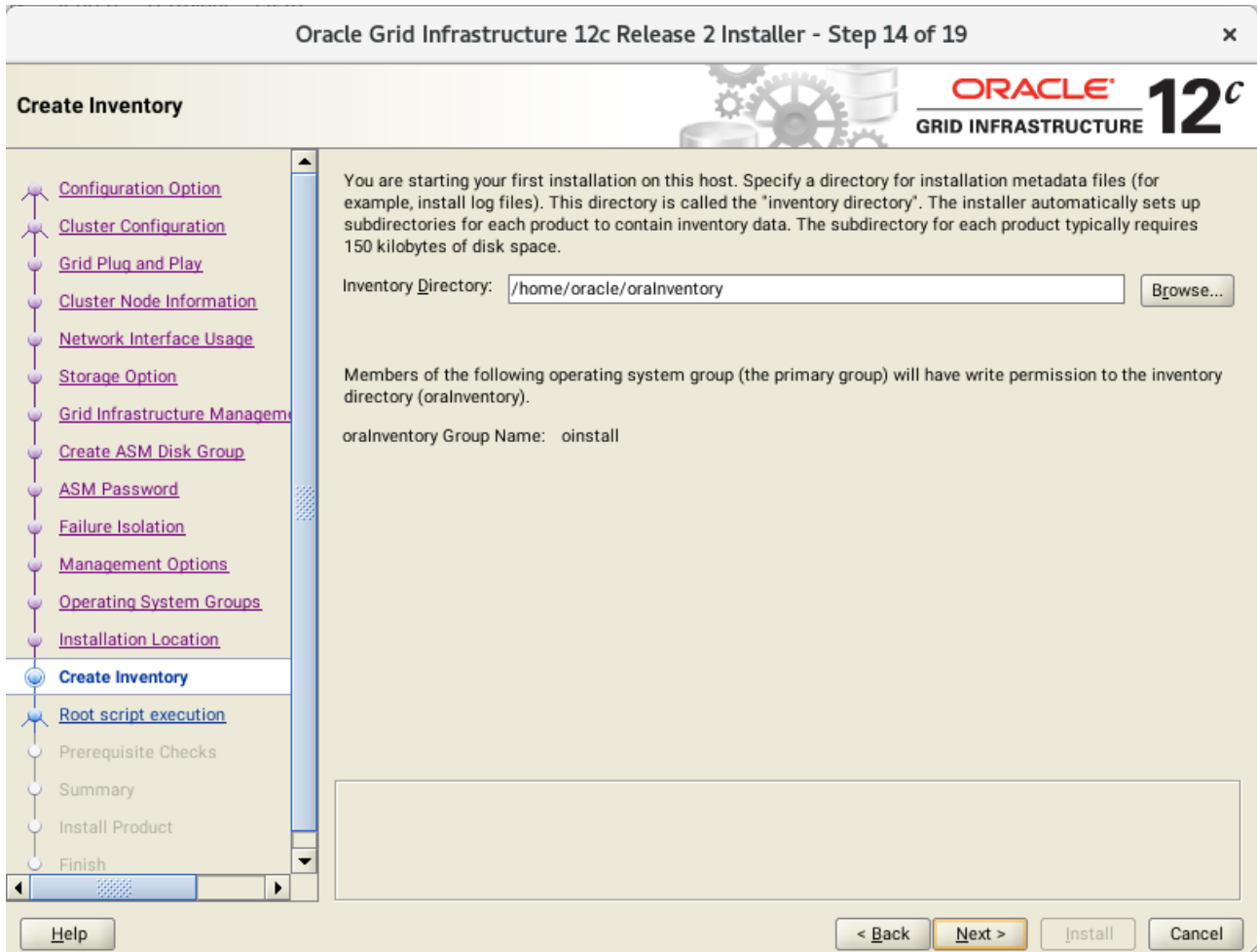
Oracle base:

This software directory is the Oracle Grid Infrastructure home directory.

Software location: /home/oracle/grid

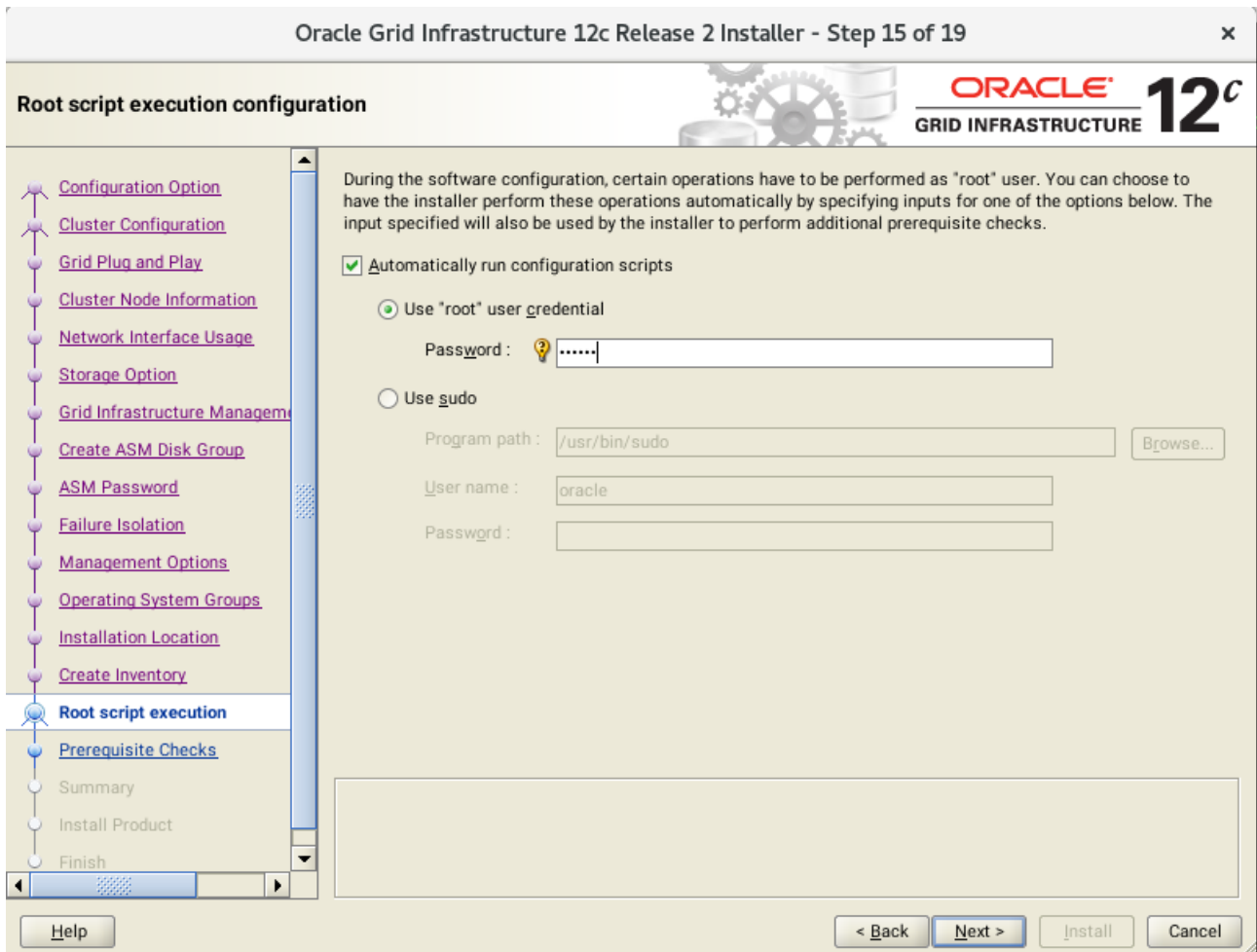
Specify the directory to use for the Oracle base for the Oracle Grid Infrastructure installation, then click **Next** to continue. The Oracle base directory must be different from the Oracle home directory.

14). Create Inventory.



Change the path for the inventory directory, if required. Then, click **Next** to continue.

15). 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.

16). Perform Prerequisite Checks.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 16 of 19

### Perform Prerequisite Checks

Verification Result

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

Ignore All

Checks	Status	Fixable
Checks		
zeroconf check	Warning	Yes
I/O scheduler		
I/O scheduler	Warning	No

Checks that OS network parameter NOZEROCONF is set to yes or the parameter LINKLOCAL\_INTERFACES is not set in case of SUSE Linux. [more details](#)

Check Failed on Nodes: [c2n4, c2n3, c2n2, c2n1]

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

## Perform Prerequisite Checks


**ORACLE**  
 GRID INFRASTRUCTURE **12c**

**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.

**Fixup Script**

Some of the prerequisites have failed on the following nodes. Installer has generated a fixup script that needs to be run as a privileged user (root). Installer will run the fixup script (/tmp/GridSetupActions2018-08-21\_00-56-27AM/CVU\_12.2.0.1.0\_oracle/runfixup.sh) on the listed nodes using the privileged user credentials provided earlier. Click "OK" to proceed.

Nodes:

```
c2n4
c2n3
c2n2
c2n1
```

OK Cancel

Check	Fixable
Checks that OS network parameter NOZEROCONF is set to yes or the parameter LINKLOCAL_INTERFACES is not set in case of SUSE Linux. <a href="#">(more details)</a>	Yes
Check Failed on Nodes: [c2n4, c2n3, c2n2, c2n1]	No

Help < Back Next > Install Cancel

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

```
c2n1:/home # /tmp/GridSetupActions2018-08-21_00-56-27AM/CVU_12.2.0.1.0_oracle/runfixup.sh
All Fix-up operations were completed successfully.
c2n1:/home #
```

(Note: CVU checks are working as expected with exception of zeroconf check; a fix will be in the next distributed CVU.)

Oracle Grid Infrastructure 12c Release 2 Installer - Step 16 of 19

### Perform Prerequisite Checks

Verification Result **Fixup 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**

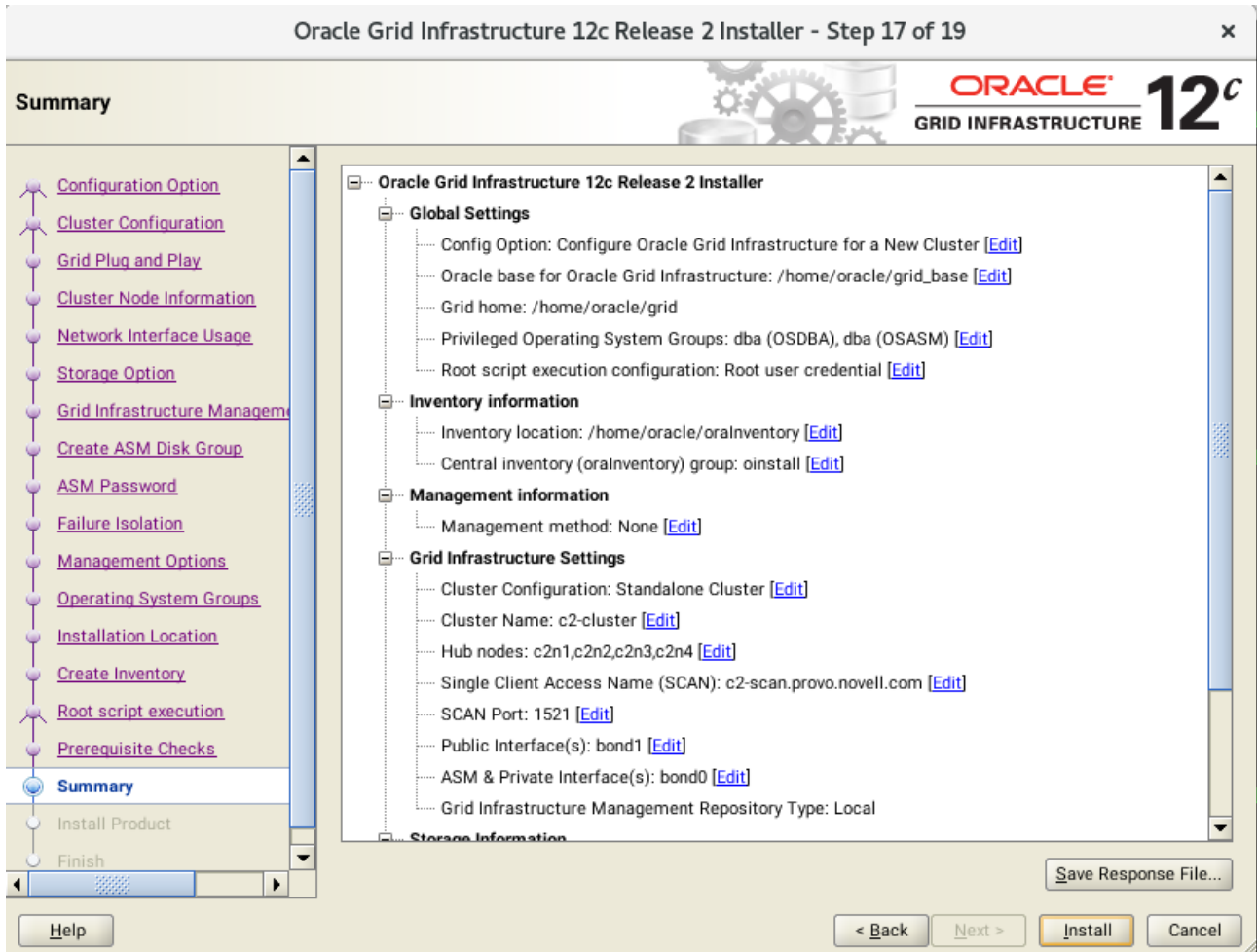
Checks	Status	Fixable
zeroconf check	Ignored	Yes

Checks that OS network parameter NOZEROCONF is set to yes or the parameter LINKLOCAL\_INTERFACES is not set in case of SUSE Linux. [\(more details\)](#)

Check Failed on Nodes: [c2n4, c2n3, c2n2, c2n1]

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

17). Summary.



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

18). Install Product.

Oracle Grid Infrastructure 12c Release 2 Installer - Step 18 of 19

### Install Product

Progress: 15%  
Copying /home/oracle/grid to remote nodes

Status:

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

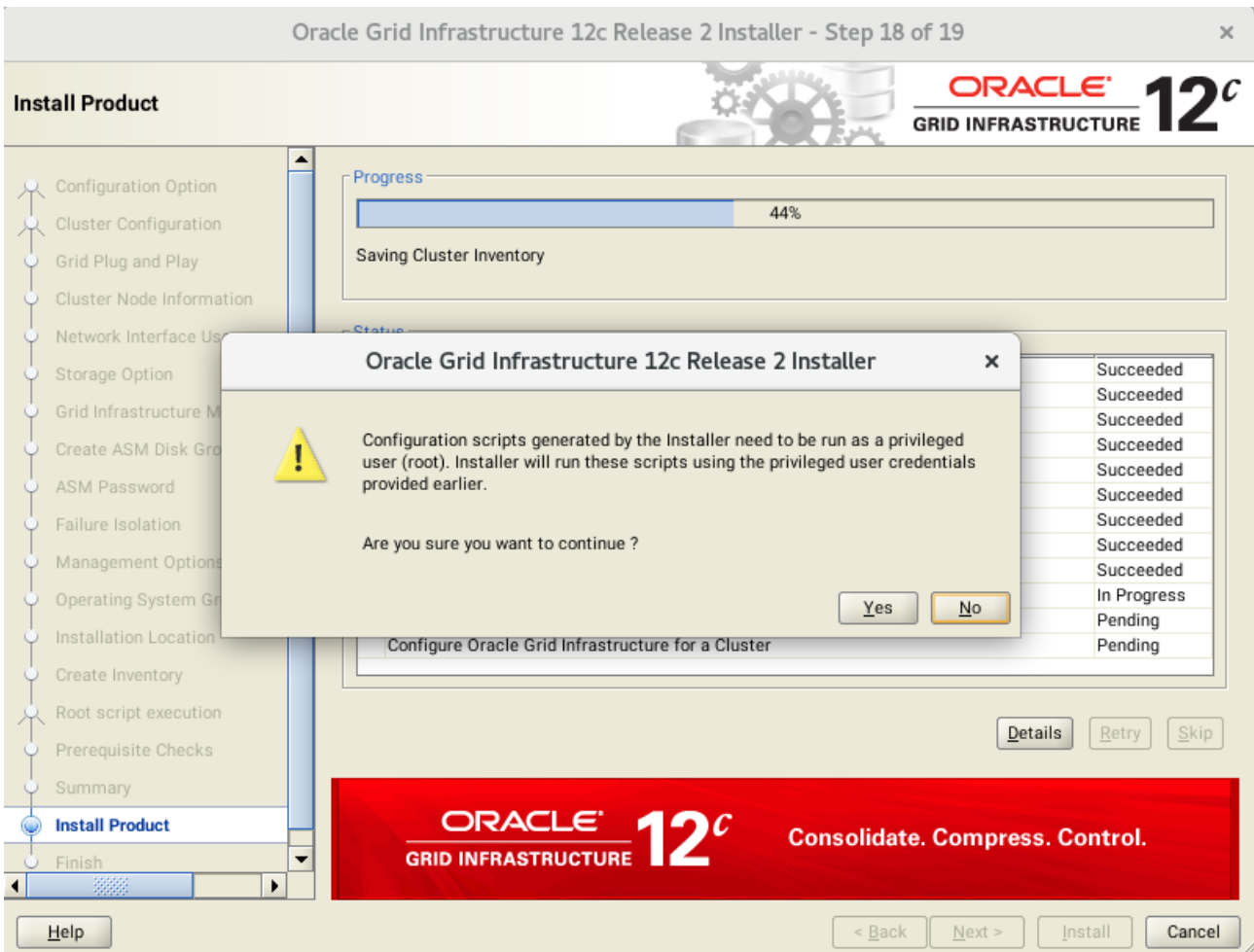
Details Retry Skip

**ORACLE 12c** Maximum Availability  
GRID INFRASTRUCTURE Eliminate Downtime and Idle Redundancy

Help < Back Next > Install Cancel

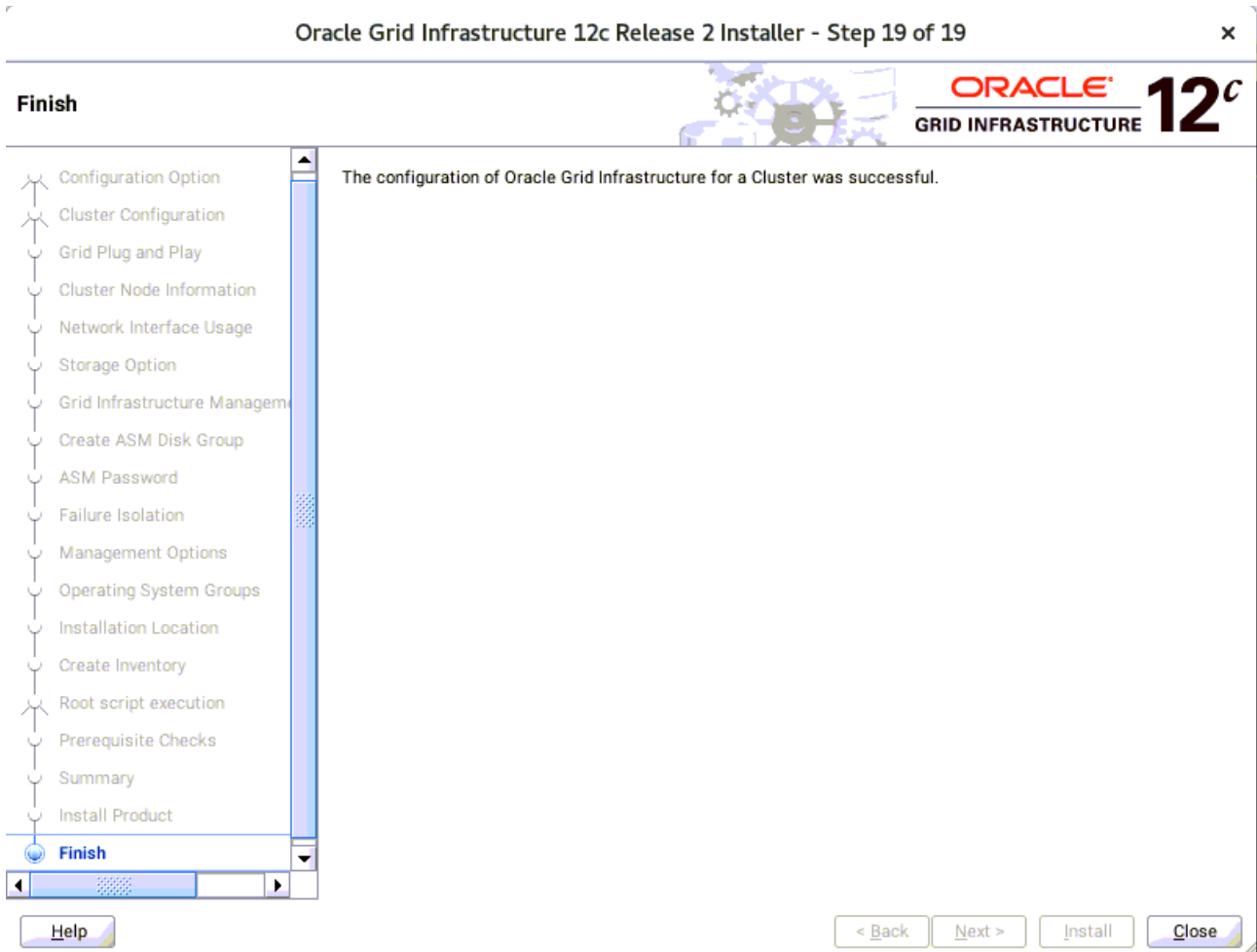


Installer prompted you to run the orainstRoot.sh and root.sh scripts. Click **Yes**.



Continue monitoring the installation until the Finish window appears.

19). Finish.



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

1-3. Post-Install Checks.

1). Check Oracle Clusterware health.

```
oracle@c2n1:/home/oracle> /home/oracle/grid/bin/crsctl check cluster -all
```

```
*****  
c2n1:  
CRS-4537: Cluster Ready Services is online  
CRS-4529: Cluster Synchronization Services is online  
CRS-4533: Event Manager is online  
*****  
c2n2:  
CRS-4537: Cluster Ready Services is online  
CRS-4529: Cluster Synchronization Services is online  
CRS-4533: Event Manager is online  
*****  
c2n3:  
CRS-4537: Cluster Ready Services is online  
CRS-4529: Cluster Synchronization Services is online  
CRS-4533: Event Manager is online  
*****  
c2n4:  
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@c2n1:/home/oracle> /home/oracle/grid/bin/srvctl status nodeapps  
VIP 137.65.135.76 is enabled  
VIP 137.65.135.76 is running on node: c2n1  
VIP 137.65.135.77 is enabled  
VIP 137.65.135.77 is running on node: c2n2  
VIP 137.65.135.78 is enabled  
VIP 137.65.135.78 is running on node: c2n3  
VIP 137.65.135.79 is enabled  
VIP 137.65.135.79 is running on node: c2n4  
Network is enabled  
Network is running on node: c2n1  
Network is running on node: c2n2  
Network is running on node: c2n4  
Network is running on node: c2n3  
ONS is enabled  
ONS daemon is running on node: c2n1  
ONS daemon is running on node: c2n2  
ONS daemon is running on node: c2n4  
ONS daemon is running on node: c2n3
```

3). Check status of designated resources.

```
/home/oracle/grid/bin/crsctl stat res -t
```

Name	Target	State	Server	State details
-----				
Local Resources				
-----				
ora.ASMNET1LSNR_ASM.lsnr				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	OFFLINE	OFFLINE	c2n4	STABLE
ora.LISTENER.lsnr				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.SUSEDEMO.dg				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	OFFLINE	OFFLINE	c2n4	STABLE
ora.chad				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.net1.network				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.ons				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
-----				
Cluster Resources				
-----				
ora.LISTENER_SCAN1.lsnr				
1	ONLINE	ONLINE	c2n2	STABLE
ora.LISTENER_SCAN2.lsnr				
1	ONLINE	ONLINE	c2n3	STABLE
ora.LISTENER_SCAN3.lsnr				
1	ONLINE	ONLINE	c2n4	STABLE
ora.MGMTLSNR				
1	ONLINE	ONLINE	c2n1	169.254.207.176 10.1
				.1.1,STABLE
ora.asm				
1	ONLINE	ONLINE	c2n1	Started,STABLE
2	ONLINE	ONLINE	c2n2	Started,STABLE
3	ONLINE	ONLINE	c2n3	Started,STABLE
ora.c2n1.vip				
1	ONLINE	ONLINE	c2n1	STABLE
ora.c2n2.vip				
1	ONLINE	ONLINE	c2n2	STABLE

ora.c2n3.vip	1	ONLINE	ONLINE	c2n3	STABLE
ora.c2n4.vip	1	ONLINE	ONLINE	c2n4	STABLE
ora.cvu	1	ONLINE	ONLINE	c2n1	STABLE
ora.mgmtdb	1	ONLINE	ONLINE	c2n1	Open,STABLE
ora.qosmsserver	1	ONLINE	ONLINE	c2n1	STABLE
ora.scan1.vip	1	ONLINE	ONLINE	c2n2	STABLE
ora.scan2.vip	1	ONLINE	ONLINE	c2n3	STABLE
ora.scan3.vip	1	ONLINE	ONLINE	c2n4	STABLE

---

#### 4). Check OCR and Voting disk files.

```
oracle@c2n1:/home/oracle> /home/oracle/grid/bin/ocrcheck
Status of Oracle Cluster Registry is as follows :
```

```
Version          :          4
Total space (kbytes) :    409568
Used space (kbytes)  :     2324
Available space (kbytes) :  407244
ID                : 1244818092
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@c2n1:/home/oracle> /home/oracle/grid/bin/crsctl query css votedisk
```

```
## STATE   File Universal Id               File Name Disk group
```

```
---  ---
1. ONLINE  c4a0b2f390724f49bf04e44f4ccff587 (/dev/oradata/dstdisk1) [SUSEDEMO]
2. ONLINE  862c261278274f80bf4c028766cc69f0 (/dev/oradata/dstdisk3) [SUSEDEMO]
3. ONLINE  4288e19357cf4f92bf7d6f6c19b7261b (/dev/oradata/dstdisk2) [SUSEDEMO]
```

```
Located 3 voting disk(s).
```

## 2. Installing Oracle Database.

1-1. Login to the SLES 15 64-bit OS as a non-admin user. Download the Oracle Database 12c Release 2 (12.2.0.1.0) for Linux x86-64.

1-2. Extract linuxx64\_12201\_database.zip and run the installer './runInstaller' from Database ShipHome.

### Install Flow:

1). Configure Security Updates.

Oracle Database 12c Release 2 Installer - Step 1 of 9

### Configure Security Updates

Provide your email address to be informed of security issues, install the product and initiate configuration manager. [View details.](#)

Email:

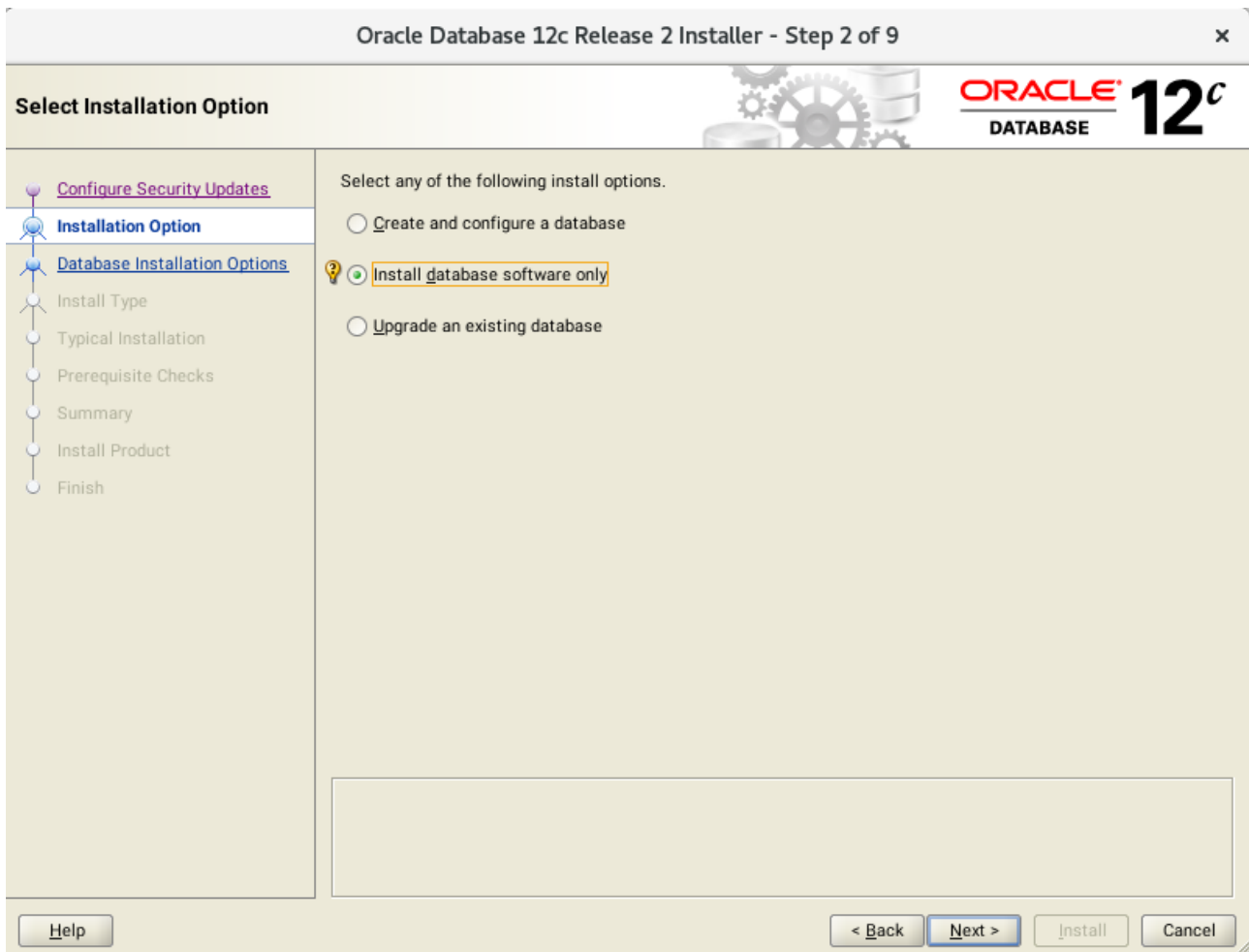
Easier for you if you use your My Oracle Support email address/username.

**I wish to receive security updates via My Oracle Support.**

My Oracle Support Password:

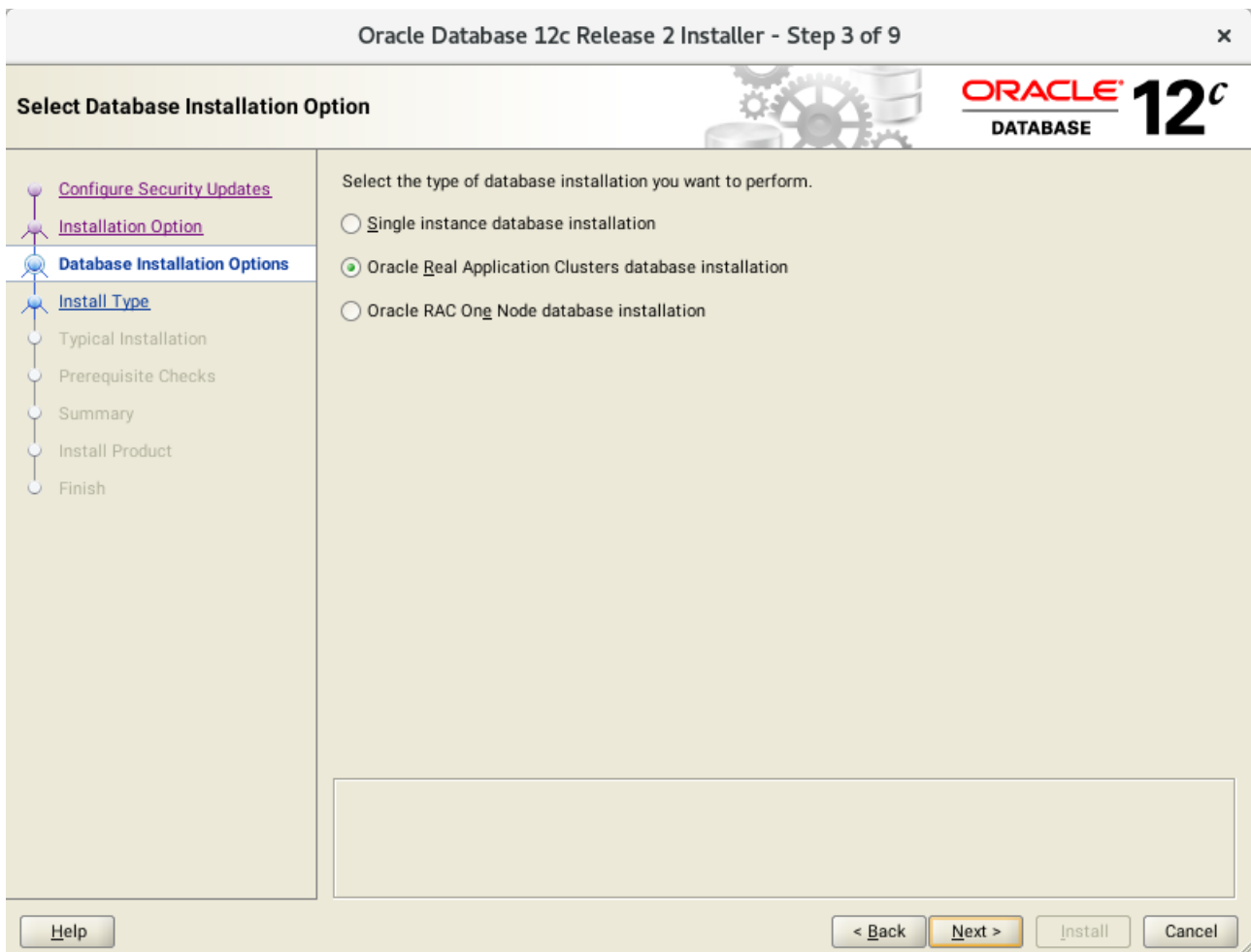
Provide your email address to be informed of security issues, then click **Next** to continue.

2). Select Installation Option.



Select option "Install database software only", then click **Next** to continue.

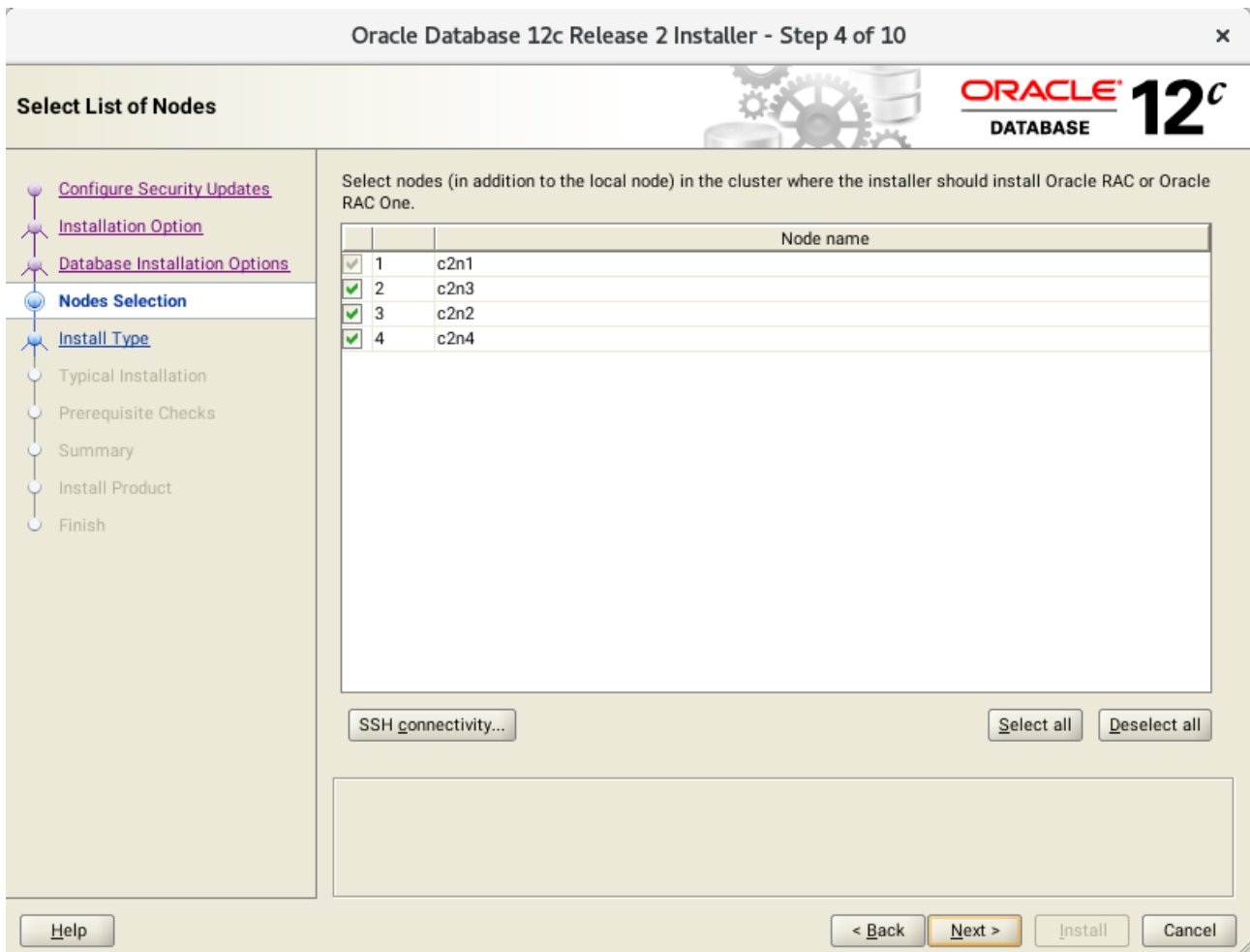
3). Select Database Installation Option.



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

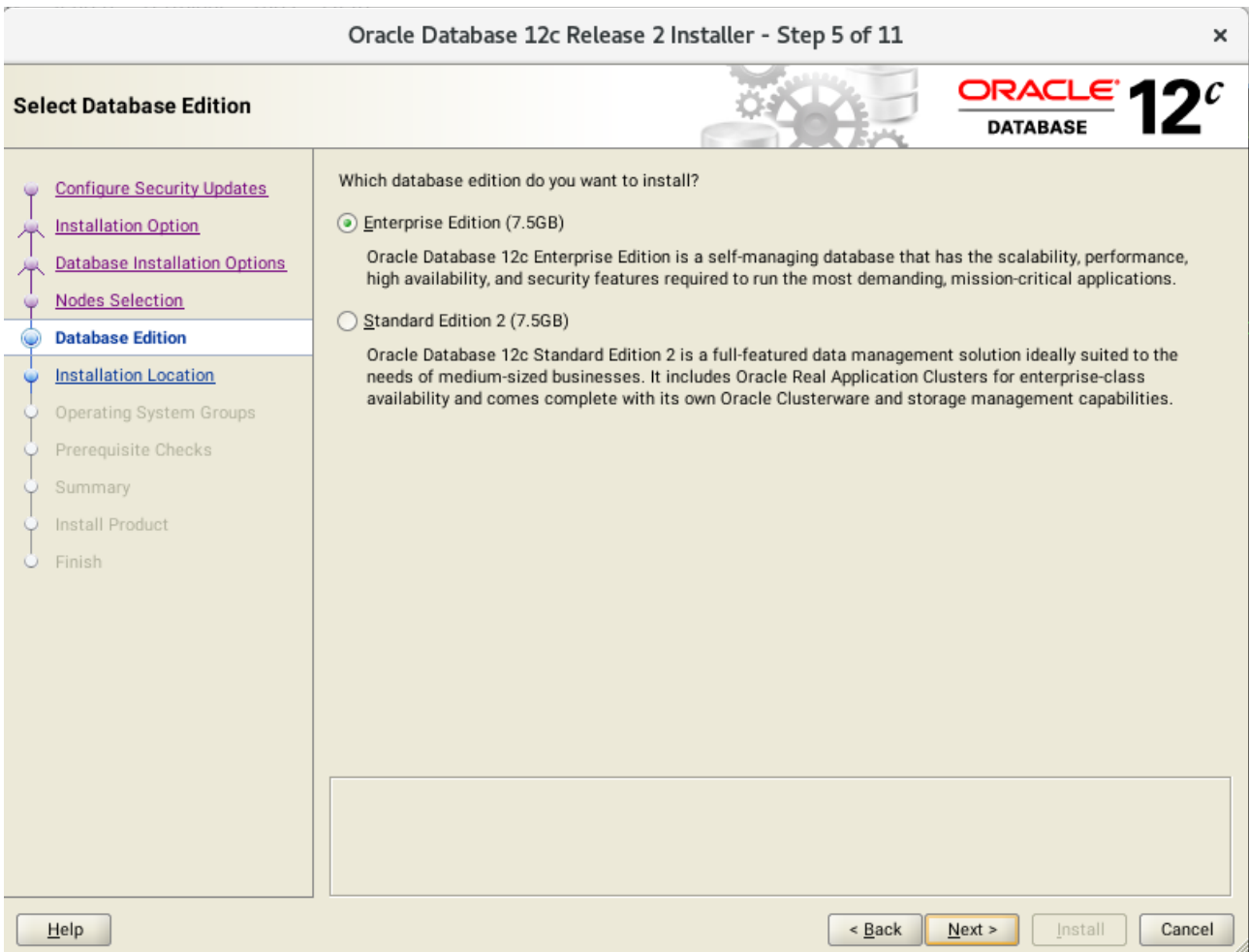


4). Select List of Nodes.



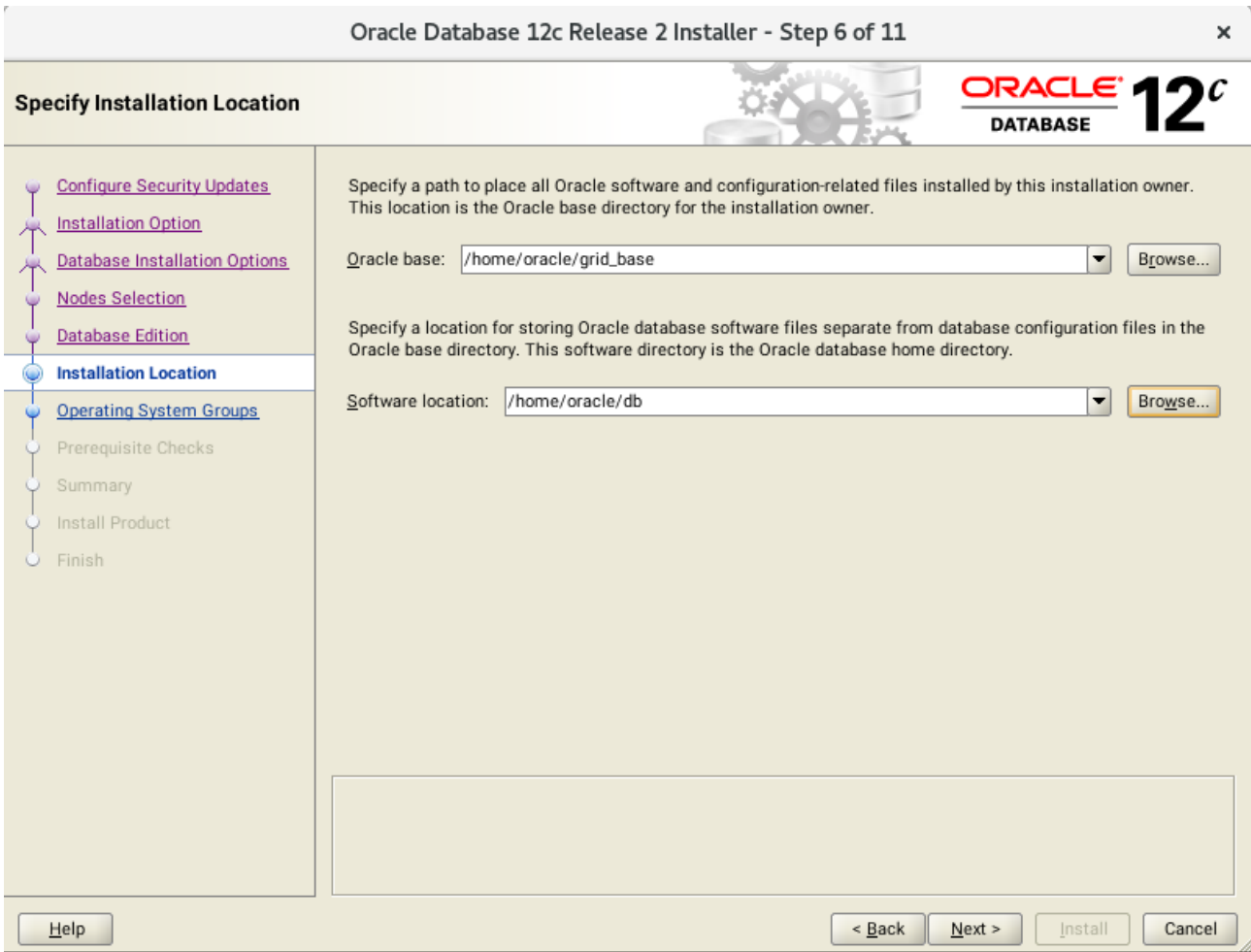
Select all nodes in the cluster, then click **Next** to continue.

5). Select Database Edition.



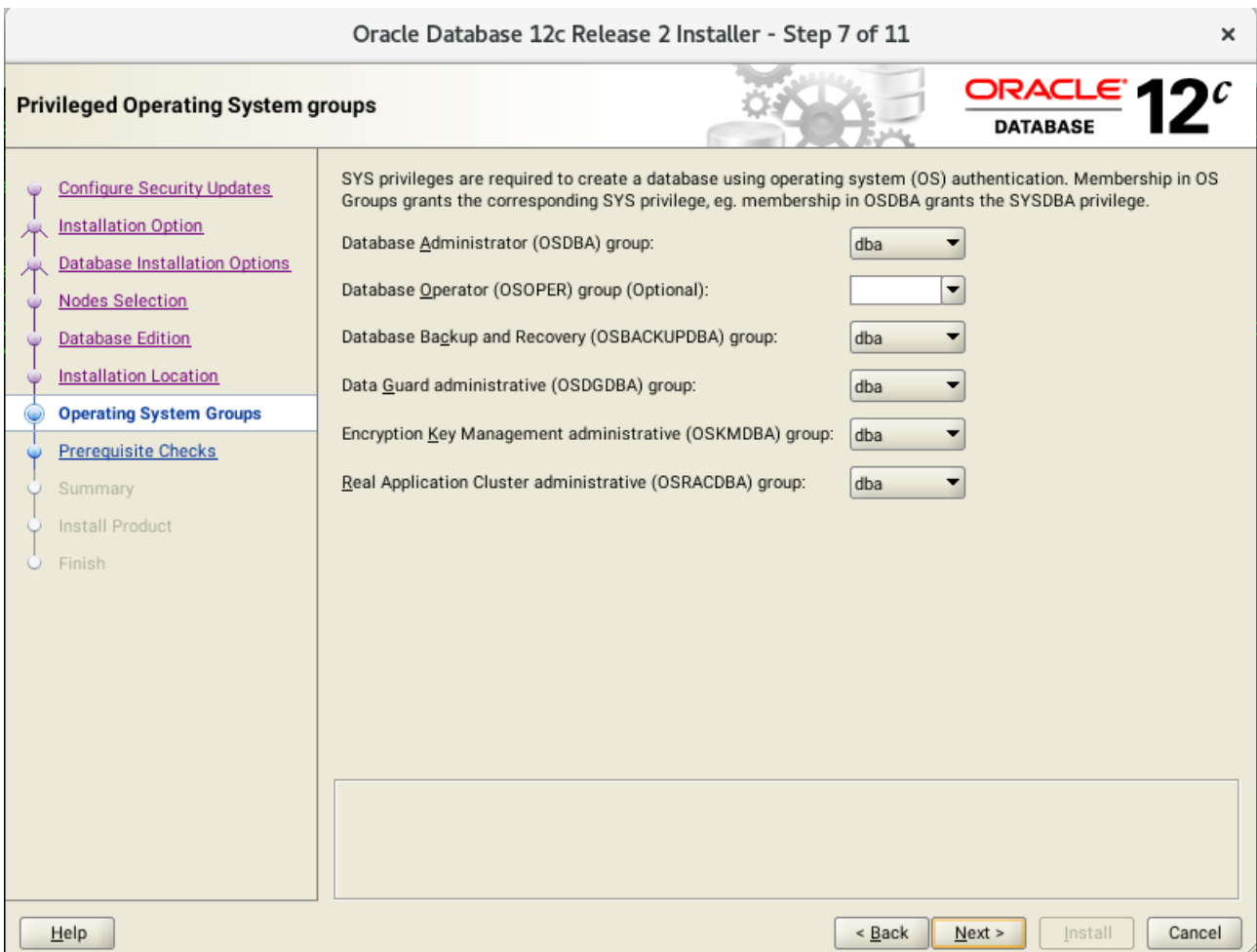
Choose option "**Enterprise Edition**", then click **Next** to continue.

6). Specify Installation Location.



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

7). Privileged Operating System groups.



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

8). Perform Prerequisite Checks.

Oracle Database 12c Release 2 Installer - Step 8 of 11

**Perform Prerequisite Checks**

- [Configure Security Updates](#)
- [Installation Option](#)
- [Database Installation Options](#)
- [Nodes Selection](#)
- [Database Edition](#)
- [Installation Location](#)
- [Operating System Groups](#)
- [Prerequisite Checks](#)
- [Summary](#)
- [Install Product](#)
- [Finish](#)

**Verification Result**

All minimum requirements are satisfied. You may proceed with the installation.

Ignore All

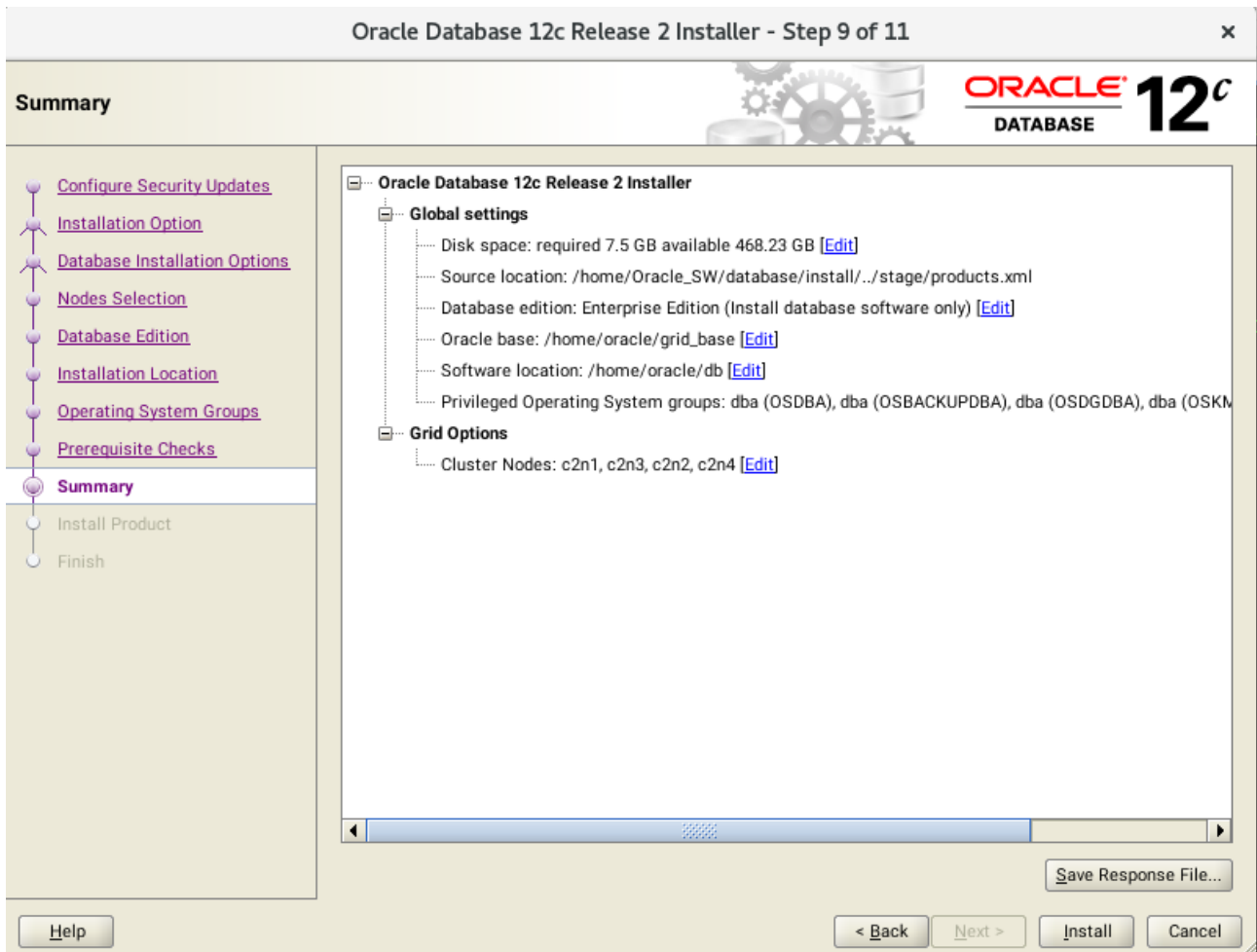
Checks	Status	Fixable
Physical Memory	Succeeded	
Available Physical Memory	Succeeded	
Swap Size	Succeeded	
Free Space		
Free Space: c2n4:/tmp	Succeeded	
Free Space: c2n3:/tmp	Succeeded	
Free Space: c2n2:/tmp	Succeeded	
Free Space: c2n1:/tmp	Succeeded	
User Existence		
User Existence: oracle		
Users With Same UID: 483	Succeeded	
Group Existence		
Group Existence: dba	Succeeded	
Group Existence: oinstall	Succeeded	
Group Membership		
Group Membership: oinstall(Primary)	Succeeded	

This is a prerequisite condition to test whether the system has at least 1GB (1048576.0KB) of total physical memory. [\(more details\)](#)

Checking verification result, click **Next** to continue.

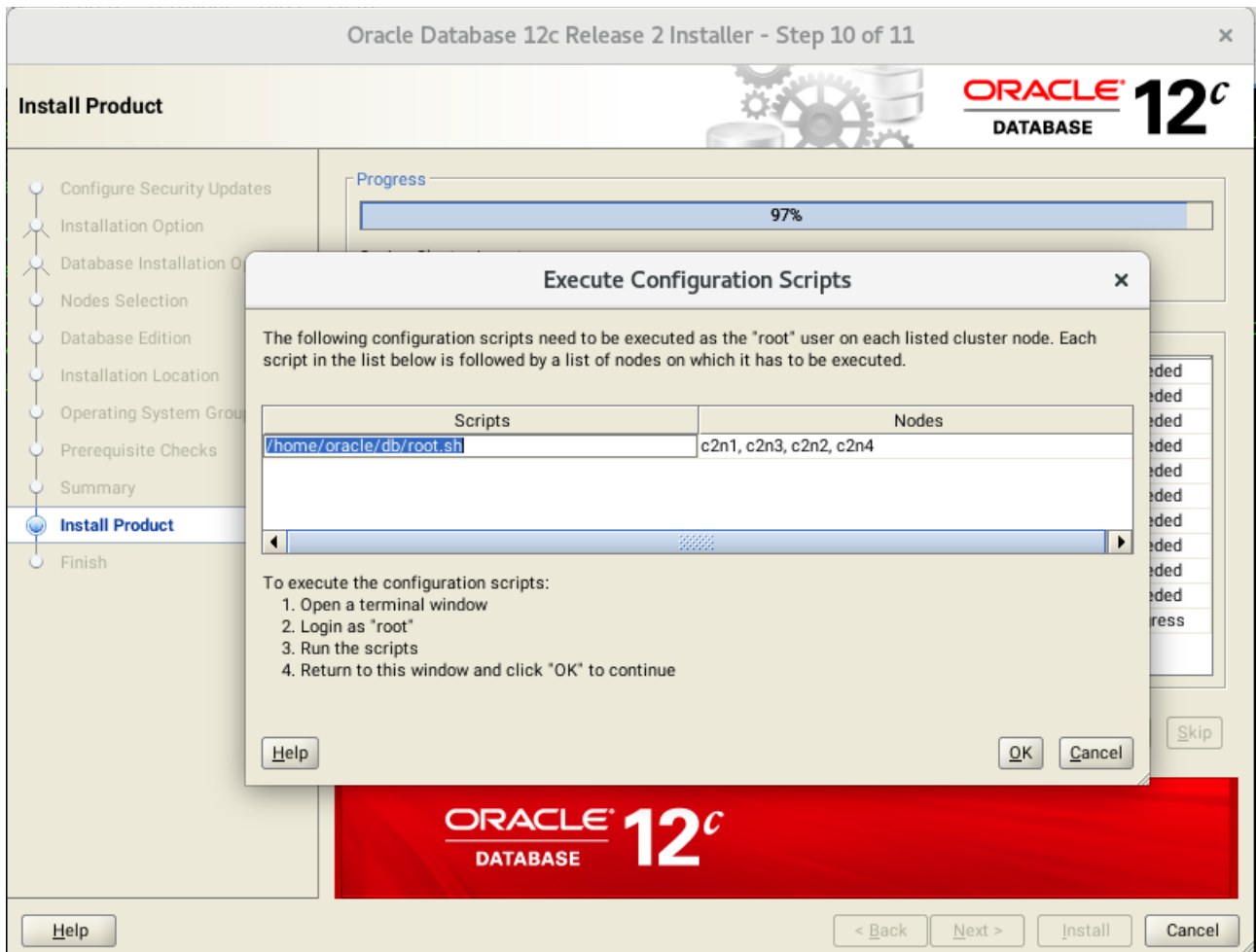
37

9). Summary.



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

10). Install Product.



Execute **root.sh** as the "root" user on each cluster node, then click **OK** to continue.

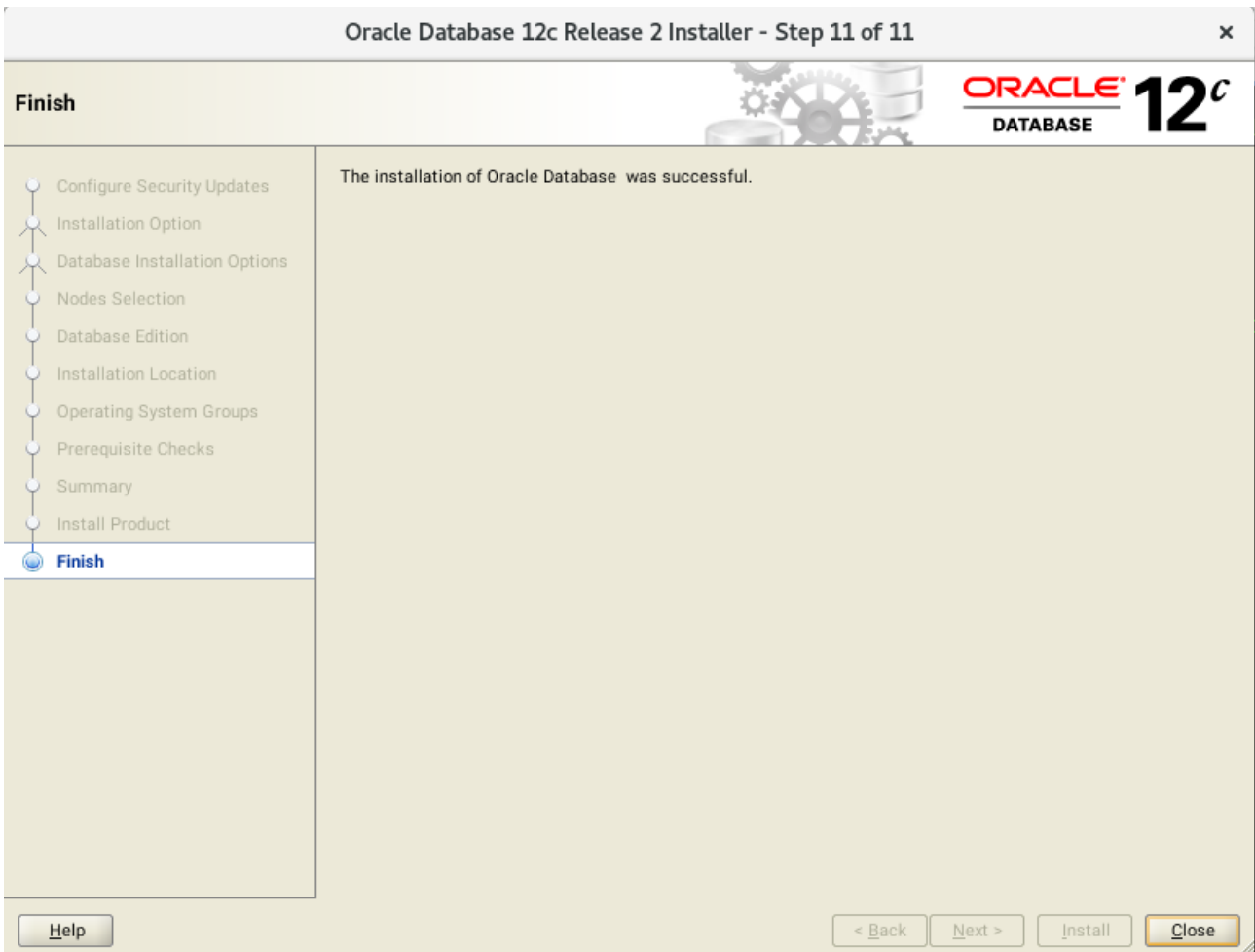
```
c2n1:/home/oracle # /home/oracle/db/root.sh
Performing root user operation.

The following environment variables are set as:
ORACLE_OWNER= oracle
ORACLE_HOME= /home/oracle/db

Enter the full pathname of the local bin directory: [/usr/local/bin]:
The contents of "dbhome" have not changed. No need to overwrite.
The contents of "oraenv" have not changed. No need to overwrite.
The contents of "coraenv" have not changed. No need to overwrite.

Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root script.
Now product-specific root actions will be performed.
```

11). Finish

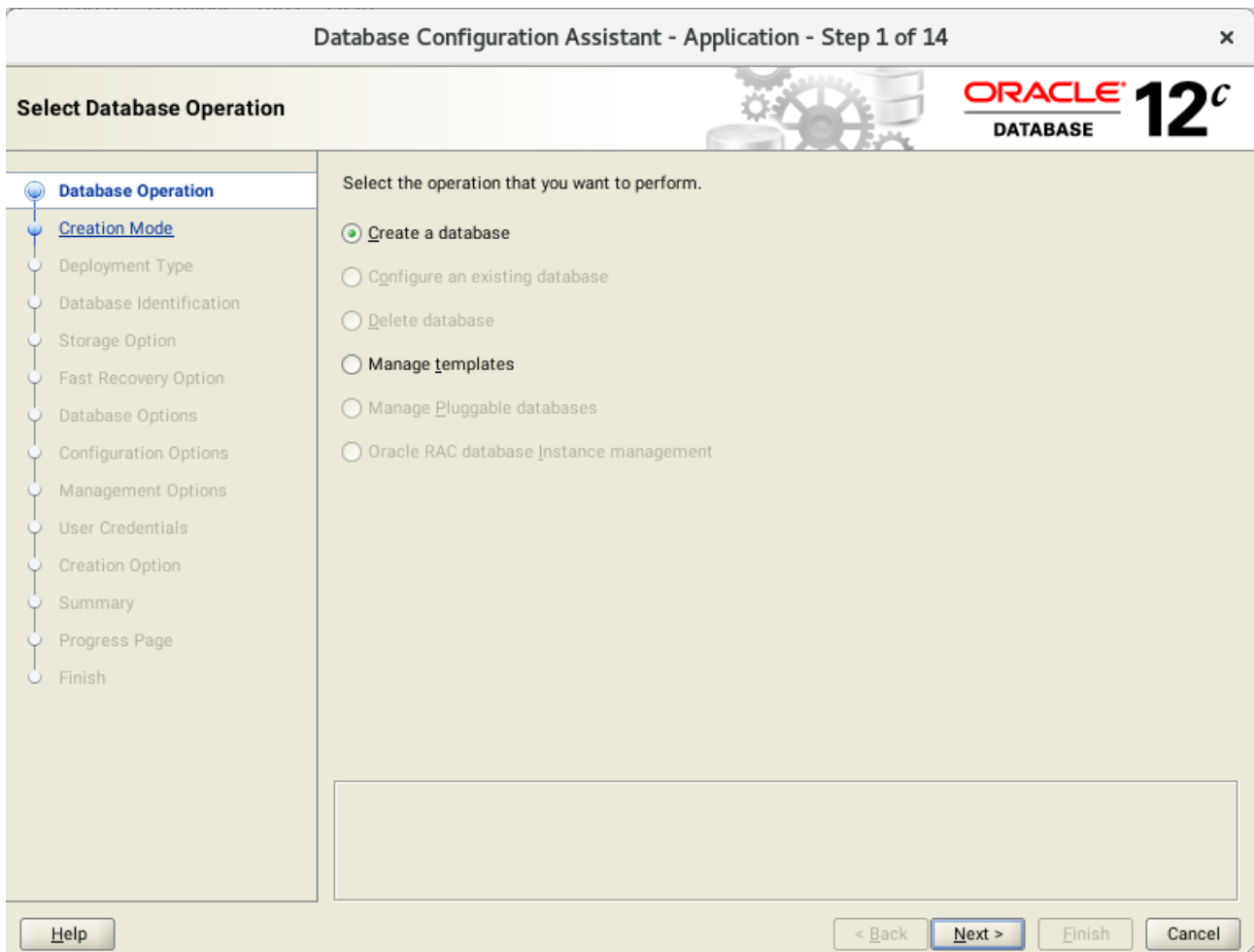


The installation of Oracle Database is finished, click **Close** to dismiss the screen.



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

1). Database Operation.



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

2). Creation Mode.

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

Select Database Creation Mode

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

Typical configuration

Global database name: susedb

Storage type: Automatic Storage Management (ASM)

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

Fast Recovery Area (FRA): +SUSEDEMO Browse...

Database character set: AL32UTF8 - Unicode UTF-8 Universal character set

Administrative password: .....

Confirm password: .....

Create as Container database

Pluggable database name:

Advanced configuration

Help < Back Next > Finish Cancel

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

3). Perform Prerequisite Checks.

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

Perform Prerequisite Checks

ORACLE 12c 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 All All Nodes  Ignore All

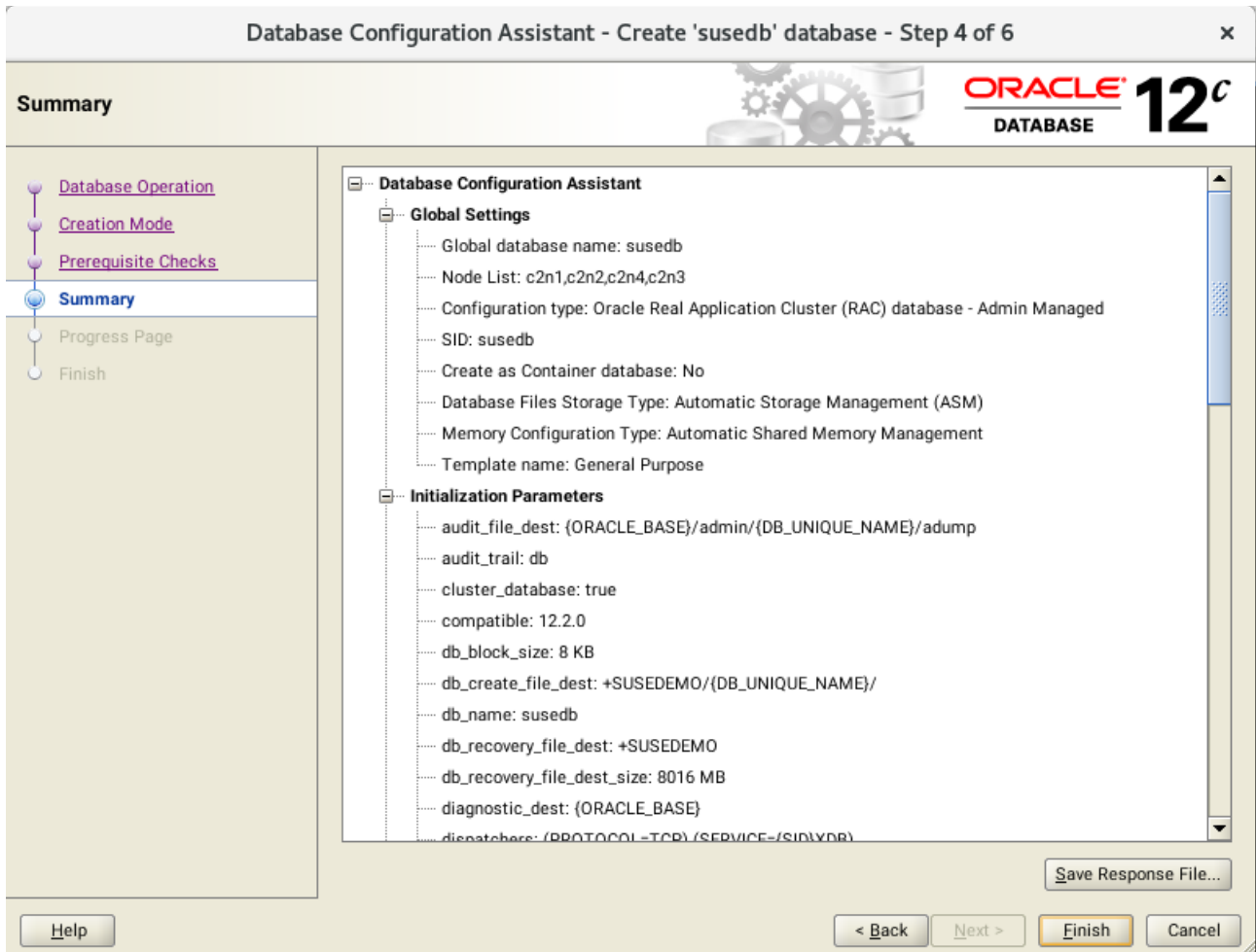
Checks	Status	Fixable
Physical Memory	Succeeded	
Available Physical Memory	Succeeded	
Swap Size	Succeeded	
Free Space		
Free Space: c2n4:/tmp	Succeeded	
Free Space: c2n3:/tmp	Succeeded	
Free Space: c2n2:/tmp	Succeeded	
Free Space: c2n1:/tmp	Succeeded	
User Existence		
User Existence: oracle		
Users With Same UID: 483	Succeeded	
Group Existence		
Group Existence: dba	Succeeded	
Group Membership		
Group Membership: dba	Succeeded	

This is a prerequisite condition to test whether the system has at least 1GB (1048576.0KB) of total physical memory. [\(more details\)](#)

Help < Back Next > Finish Cancel

Checking verification result, 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 Configuration Assistant - Create 'susedb' database - Step 5 of 6**

**Progress Page**

Progress  
Clone database "susedb" creation in progress...

68%

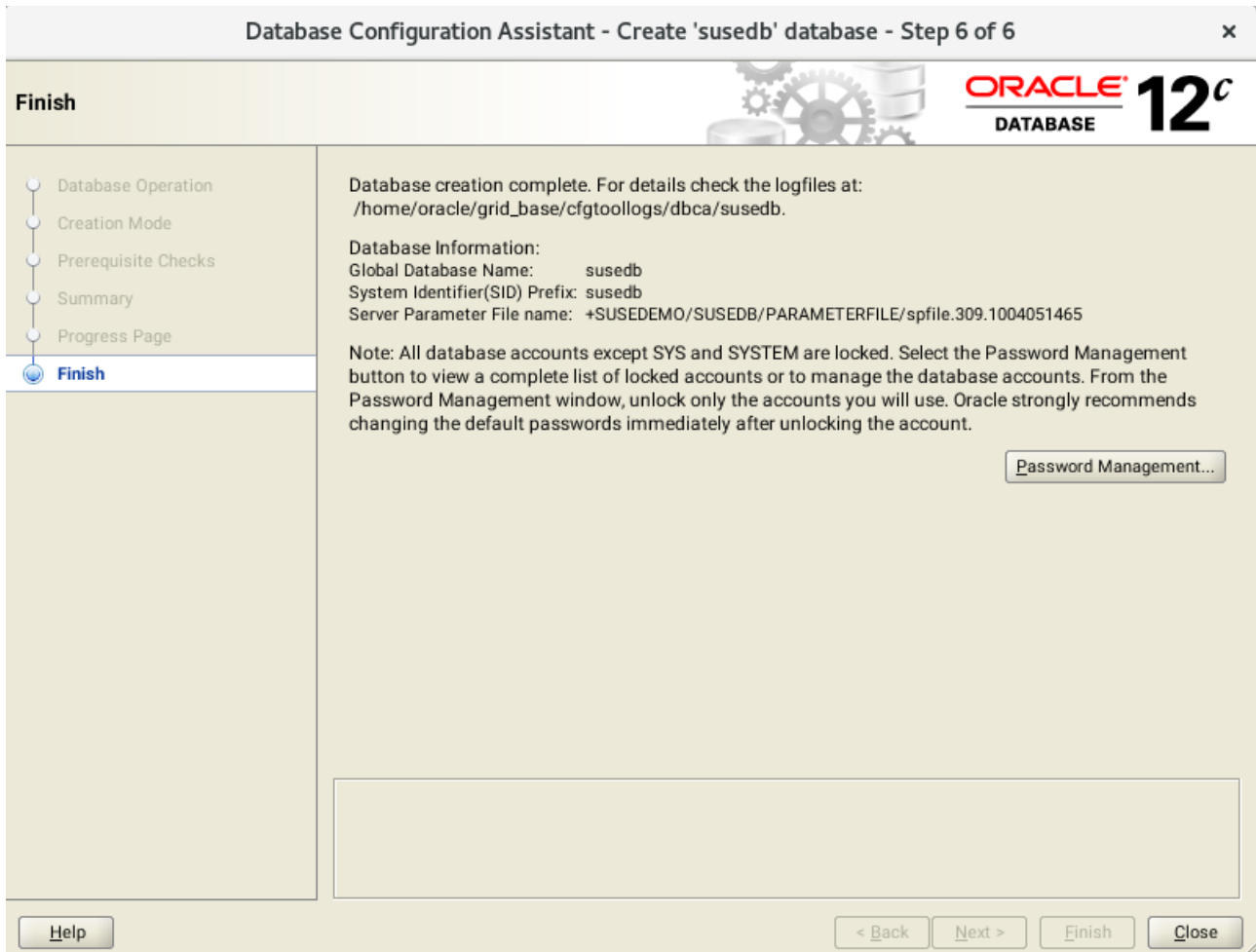
	Steps	Status
✓	Copying database files	Finished
✓	Creating and starting Oracle instance	Finished
✓	Creating cluster database views	Finished
🕒	Completing Database Creation	In Progress
	Executing Post Configuration Actions	

DBCA Log Location: /home/oracle/grid\_base/cfgtoollogs/dbca/susedb/trace.log\_2019-03-27\_10-55-11-PM  
Alert Log Location: /home/oracle/grid\_base/diag/rdbms/susedb/susedb1/trace/alert\_susedb1.log

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

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. Post-Install Checks.

##### 1). *Verify database status and configuration.*

```
oracle@c2n1:~> export ORACLE_HOME=/home/oracle/db
oracle@c2n1:~> /home/oracle/db/bin/srvctl status database -d susedb
Instance susedb1 is running on node c2n1
Instance susedb2 is running on node c2n2
Instance susedb3 is running on node c2n4
Instance susedb4 is running on node c2n3
```

```
oracle@c2n1:~> /home/oracle/db/bin/srvctl status database -d susedb -a
Instance susedb1 is running on node c2n1
Instance susedb1 is connected to ASM instance +ASM1
Instance susedb2 is running on node c2n2
Instance susedb2 is connected to ASM instance +ASM2
Instance susedb3 is running on node c2n4
Instance susedb3 is connected to ASM instance +ASM2
Instance susedb4 is running on node c2n3
Instance susedb4 is connected to ASM instance +ASM4
```

```
oracle@c2n1:~> /home/oracle/db/bin/srvctl config database -d susedb -a
Database unique name: susedb
Database name: susedb
Oracle home: /home/oracle/db
Oracle user: oracle
Spfile: +SUSEDEMO/SUSEDDB/PARAMETERFILE/spfile.309.1004051465
Password file: +SUSEDEMO/SUSEDDB/PASSWORD/pwdsusedb.282.1004050937
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:
Database instances: susedb1,susedb2,susedb3,susedb4
Configured nodes: c2n1,c2n2,c2n4,c2n3
CSS critical: no
CPU count: 0
Memory target: 0
Maximum memory: 0
Default network number for database services:
Database is administrator managed
```

```
oracle@c2n1:~> /home/oracle/grid/bin/crsctl stat res -t
```

Name	Target	State	Server	State details
-----				
Local Resources				
-----				
ora.ASMNET1LSNR_ASM.lsnr				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.LISTENER.lsnr				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.SUSEDEMO.dg				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	OFFLINE	OFFLINE	c2n4	STABLE
ora.chad				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.net1.network				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
ora.ons				
	ONLINE	ONLINE	c2n1	STABLE
	ONLINE	ONLINE	c2n2	STABLE
	ONLINE	ONLINE	c2n3	STABLE
	ONLINE	ONLINE	c2n4	STABLE
-----				
Cluster Resources				
-----				
ora.LISTENER_SCAN1.lsnr				
1	ONLINE	ONLINE	c2n2	STABLE
ora.LISTENER_SCAN2.lsnr				
1	ONLINE	ONLINE	c2n3	STABLE
ora.LISTENER_SCAN3.lsnr				
1	ONLINE	ONLINE	c2n4	STABLE
ora.MGMTLSNR				
1	ONLINE	ONLINE	c2n1	169.254.207.176 10.1
				.1.1,STABLE
ora.asm				
1	ONLINE	ONLINE	c2n1	Started,STABLE
2	ONLINE	ONLINE	c2n2	Started,STABLE
3	ONLINE	ONLINE	c2n3	Started,STABLE
ora.c2n1.vip				
1	ONLINE	ONLINE	c2n1	STABLE
ora.c2n2.vip				



1	ONLINE	ONLINE	c2n2	STABLE
ora.c2n3.vip				
1	ONLINE	ONLINE	c2n3	STABLE
ora.c2n4.vip				
1	ONLINE	ONLINE	c2n4	STABLE
ora.cvu				
1	ONLINE	ONLINE	c2n1	STABLE
ora.mgmtdb				
1	ONLINE	ONLINE	c2n1	Open,STABLE
ora.qosmserver				
1	ONLINE	ONLINE	c2n1	STABLE
ora.scan1.vip				
1	ONLINE	ONLINE	c2n2	STABLE
ora.scan2.vip				
1	ONLINE	ONLINE	c2n3	STABLE
ora.scan3.vip				
1	ONLINE	ONLINE	c2n4	STABLE
ora.susedb.db				
1	ONLINE	ONLINE	c2n1	Open,HOME=/home/oracle/db,STABLE
2	ONLINE	ONLINE	c2n2	Open,HOME=/home/oracle/db,STABLE
3	ONLINE	ONLINE	c2n4	Open,HOME=/home/oracle/db,STABLE
4	ONLINE	ONLINE	c2n3	Open,HOME=/home/oracle/db,STABLE

---

2). *Verify Oracle Enterprise Manager.*



EM Express Login - Mozilla Firefox

EM Express Login x +

http://c2-scan.provo.novell.com:5501/em/login

ORACLE Enterprise Manager Database Express 12c

12c

Login

User Name

Password

as sysdba

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EM Express - Database Home - Mozilla Firefox

EM Express - Database Home

http://c2-scan.provo.novell.com:5501/em/shell#/dbhc

ORACLE Enterprise Manager Database Express 12c

SUSEDB (12.2.0.1.0 RAC) Configuration Storage Security Performance

### Database Home

Page Refreshed 2:21:46 AM GMT-0600 Auto Refresh 1 Minute

**Status**

Up Time 3 hours, 8 minutes

Type RAC - 4 instance(s) up

Version 12.2.0.1.0 Enterprise Edition

Database Name SUSEDB

Platform Name Linux x86 64-bit

Archiver Stopped

**Incidents - Last 24 Hours**

Inst...	Time	Inci...	Pro...	Error
No Incidents				

**Running Jobs**

Inst...	Owner	Name	Ela...	Started
No Running Jobs				

**Performance**

Activity Class Services Instances

**Resources**

**Host CPU**

**Active Sessions**

**Memory**

**Data Storage**

**SQL Monitor - Last Hour (20 max)**

Status	Duration	Ty...	Instance ID	ID	User Name	Parallel	Database Time
No SQL Monitor Data							

## Additional Comments

*This document provides some temporary solutions and brief instructions for Oracle Database 12cR2 on SLES 15 GA.*

- *Add "CV\_ASSUME\_DISTID=SUSE12" parameter in database/stage/cvu/cv/admin/cvu\_config & grid/cv/admin/cvu\_config*
- *Apply the Oracle RU of Oct 2018(p28507711\_122010\_Linux-x86-64.zip)*
- *CVU Pre-installation Check Issue - "Verifying zeroconf check ...FAILED". Please ignore this error, a fix will be in the next distributed CVU.*
- *Oracle Prerequisite Checks Fixup Script is workaround for some CVU check failures.*
- *ACFS is not supported on this platform.*

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**SuSE ISV Engineering Team**  
<https://www.suse.com>