Oracle RAC 12cR2(12.2.0.1.0) on SUSE Linux Enterprise Server 15 - x86_64

http://www.suse.com
# Table of Contents

- Introduction ..........................................................................................................................3
- Hardware and Software Requirements ..................................................................................3
  - Hardware Requirements .......................................................................................................3
  - Software Requirements .......................................................................................................3
- Cluster(4-node) Information ..................................................................................................3
- Prerequisites ..........................................................................................................................4
  - Install SUSE Linux Enterprise Server 15 on each cluster node ........................................4
  - Cluster Network configuration ............................................................................................4
- Oracle RAC Installation ........................................................................................................5
  - Installing Oracle Grid Infrastructure ..................................................................................5
  - Installing Oracle Database ................................................................................................30
- Additional Comments ..........................................................................................................51
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.

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

Hardware and Software Requirements

Hardware Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM</td>
<td>32 GB</td>
</tr>
<tr>
<td>Swap space</td>
<td>Approx. twice the size of RAM</td>
</tr>
<tr>
<td>Disk space in /tmp</td>
<td>8 GB</td>
</tr>
<tr>
<td>Disk space for software files</td>
<td>8 GB</td>
</tr>
<tr>
<td>Disk space for database files</td>
<td>8 GB</td>
</tr>
</tbody>
</table>

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)
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.

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.

<table>
<thead>
<tr>
<th>Public Hostname</th>
<th>Role</th>
<th>Virtual Hostname</th>
</tr>
</thead>
<tbody>
<tr>
<td>node1.provo.movell.com</td>
<td>HUB</td>
<td>node1-vip.provo.movell.com</td>
</tr>
<tr>
<td>node2.provo.movell.com</td>
<td>HUB</td>
<td>node2-vip.provo.movell.com</td>
</tr>
<tr>
<td>node3.provo.movell.com</td>
<td>HUB</td>
<td>node3-vip.provo.movell.com</td>
</tr>
<tr>
<td>node4.provo.movell.com</td>
<td>HUB</td>
<td>node4-vip.provo.movell.com</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Interface Name</th>
<th>Subnet</th>
<th>Use For</th>
</tr>
</thead>
<tbody>
<tr>
<td>bond1</td>
<td>137.65.135.0</td>
<td>Public</td>
</tr>
<tr>
<td>bond0</td>
<td>10.1.1.0</td>
<td>ASM &amp; Private</td>
</tr>
</tbody>
</table>
6). Storage Option Information.

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

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.

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.
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.

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.

c2n1:/home # /tmp/GridSetupActions2018-08-21_00-06-27AM/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.)

Select option "Ignore All", then click Next to continue.
17). Summary.

Installation Summary as shown above, click **Install** to continue.
18). 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.
19). Finish.

The configuration of Oracle Grid Infrastructure for a Cluster was successful.

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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Target</th>
<th>State</th>
<th>Server</th>
<th>State details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ora.ASMNET1LSNR_ASM.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>OFFLINE</td>
<td>OFFLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.SUSEDEMO.dg</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>OFFLINE</td>
<td>OFFLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.chad</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.net1.network</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.ons</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>Cluster Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ora.LISTENER_SCAN1.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER_SCAN2.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER_SCAN3.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.MGMTLSNR</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>169.254.207.176 10.1</td>
</tr>
<tr>
<td>ora.asm</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td>ora.c2n1.vip</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.c2n2.vip</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
</tbody>
</table>
ora.c2n3.vip
  1 ONLINE ONLINE  c2n3 STABLE
ora.c2n4.vip
  1 ONLINE ONLINE  c2n4 STABLE
ora.cvul
  1 ONLINE ONLINE  c2n1 STABLE
ora.mgmtb
  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

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.

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.

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.

Checking verification result, click **Next** to continue.
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.
11). Finish

The installation of Oracle Database was successful.

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.

Select option "Typical configuration" and fill in administrator password. Then, click Next to continue.
3). Perform Prerequisite Checks.

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 creating progress as shown above, waiting until the creation is complete.
6). Finish.

Database configuration complete. For details check the log files at:
/home/oracle/grid_base/oracle_log/dbos/susedb.

Database Information:
Global Database Name: susedb
System Identifier/serial# Prefix: susedb
Server Parameter file name: $ORACLE_HOME/$ORACLE_BASE/PARAME

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

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Target</th>
<th>State</th>
<th>Server</th>
<th>State details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ora.ASMNET1LSNR_ASM.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER.lsnr</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.SUSEDEMO.dg</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>OFFLINE</td>
<td>OFFLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.chad</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.net1.network</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.ons</td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td></td>
<td>ONLINE</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td><strong>Cluster Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ora.LISTENER_SCAN1.lsnr</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER_SCAN2.lsnr</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.LISTENER_SCAN3.lsnr</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n4</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.MGMTLSNR</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>169.254.207.176 10.1.1,STABLE</td>
</tr>
<tr>
<td>ora.asm</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>ONLINE</td>
<td>c2n2</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>ONLINE</td>
<td>c2n3</td>
<td>Started,STABLE</td>
</tr>
<tr>
<td>ora.c2n1.vip</td>
<td>1</td>
<td>ONLINE</td>
<td>c2n1</td>
<td>STABLE</td>
</tr>
<tr>
<td>ora.c2n2.vip</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.
ORACLE Enterprise Manager Database Express 12c

User Name: sys
Password: **********

Login

Check "as sysdba"

Login
## Database Home

### Status
- **Up Time**: 3 hours, 8 minutes
- **Type**: RAC - 4 instance(s) up
- **Version**: 12.2.0.1.6 Enterprise Edition
- **Database Name**: SUSEDB
- **Platform Name**: Linux x86 64-bit
- **Instance**: Stopped

### Incidents - Last 24 Hours
- No Incidents

### Running Jobs
- No Running Jobs

### Performance
- **Activity Class**
- **Services**
- **Instances**

### Resources
- **Host CPU**
- **Active Sessions**
- **Memory**
- **Data Storage**

### SQL Monitor - Last Hour (20 max)
- **Status**
- **Duration**
- **Type**
- **Instance ID**
- **ID**
- **User Name**
- **Parallel**
- **Database Time**
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.