

Dell PowerEdge Systems
Oracle Database on
Enterprise Linux x86_64

Troubleshooting Guide

Version 1.5



Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your computer.



CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Overview

This document applies to Oracle Database 11g R2 running on Red Hat Enterprise Linux 5.5 AS x86_64 or Oracle Enterprise Linux 5.5 AS x86_64.

Required Documentation for Deploying the Dell|Oracle 11g R2 Database

The Dell|Oracle Database Installation documentation set includes the following guides:

- *Dell PowerEdge Systems Oracle Database on Enterprise Linux x86_64-Operating System and Hardware Installation Guide*—Describes the required minimum hardware and software versions, how to install and configure the operating system, how to verify the hardware and software configurations, and how to obtain open source files.
- *Dell PowerEdge Systems Oracle Database on Enterprise Linux x86_64-Storage and Network Guide*—Describes how to install and configure the network and storage solutions.
- *Dell PowerEdge Systems Oracle Database on Enterprise Linux x86_64-Database Setup and Installation Guide*—Describes how to install and configure the Oracle database.



NOTE: All modules provide information on how to receive technical assistance from Dell.

Terminology Used in This Document

- This document uses the terms logical unit number (LUN) and virtual disk. These terms are synonymous and can be used interchangeably. The term LUN is commonly used in a Dell/EMC Fibre Channel storage system environment and virtual disk is commonly used in a Dell PowerVault SAS and iSCSI (Dell PowerVault MD3000 and Dell PowerVault MD3000i with Dell PowerVault MD1000 expansion) storage environment.
- This document uses the term Enterprise Linux that applies to both Red Hat Enterprise Linux and Oracle Enterprise Linux unless stated specifically.

Getting Help

Dell Support

- For detailed information about using your system, see the documentation that was shipped with your system components.
- For whitepapers, Dell-supported configurations, and general information, see dell.com/oracle.
- For Dell technical support for your hardware and operating system software, and to download the latest updates for your system, see support.dell.com.
- For information on Dell enterprise training services, see dell.com/training.



NOTE: The training service may not be offered in all locations.

Oracle Support

- For training information on your Oracle software and application clusterware, and for information about contacting Oracle, see oracle.com or see your Oracle documentation.
- Technical support, downloads, and other technical information is available at support.oracle.com.
- For information on installing and configuring Oracle, see the *Oracle Dell PowerEdge Systems Oracle Database on Enterprise Linux x86_64-Database Setup and Installation Guide* at support.dell.com/manuals.

Troubleshooting

This section provides recommended solutions for issues that you may encounter while deploying and using your Enterprise Linux and Oracle software.

Performance and Stability

Enterprise Linux Exhibits Poor Performance and Instability

Poor performance and instability occurs when the size of the Oracle System Global Area (SGA) exceeds the recommended size.



NOTE: Ensure that the SGA size does not exceed 65 percent of the total system RAM.

To decrease the SGA size:

Enter `free` at the command prompt to determine the total RAM and reduce the values of `db_cache_size` and `shared_pool_size` parameters in the Oracle parameter file accordingly.

Unknown Interface-Type Warning is Displayed in the Oracle Alert File

The issue occurs when the public interface is configured as cluster communications (private interface). This leads to poor system performance.

To resolve this issue, perform the following steps on one node to force cluster communications to the private interface:

- 1 Log in as `oracle`.
- 2 Enter `sqlplus "/ as sysdba"` at the command prompt. The `SQL>` prompt appears.

- 3 Enter the following lines at the SQL> prompt:

```
alter system set cluster_interconnects=<private
IP address node1>' scope=spfile sid='<SID1>'
alter system set cluster_interconnects =
'<private IP address node2>' scope=spfile sid=
'<SID2>'
```

- 4 Repeat step 3 for each cluster node.
- 5 Restart the database on all nodes by entering the following commands:

```
srvctl stop database -d <dbname>
srvctl start database -d <dbname>
```
- 6 Open the /opt/oracle/admin/<dbname>/bdump/alert_<SID>.log file, and verify that the private IP addresses are being used for all instances.

Enterprise Manager

The Enterprise Manager Fails to Start

The Enterprise Manager fails to start if the environment variable `ORACLE_UNQNAME` is not defined.

To start the Database Console, set the environment variable `ORACLE_UNQNAME` to the unique name of the database. To verify that the environment variable is set to the unique name of the database, execute the following command as Oracle user: `emctl status dbconsole`.

Automatic Storage Management (ASM)

ASM Disk Creation Issue With EMC PowerPath

The issue occurs when EMC PowerPath version 5.0.1-5.3 does not support the input/output calls made by `oracleasm`. The `oracleasm createdisk` command fails and displays the following error message:

```
marking disk "/dev/emcpowera11" as an ASM disk:
asmtool: Device "/dev/emcpowera11" is not a partition
[FAILED].
```


To resolve the issue, perform the following steps:

- 1 Perform the `/etc/init.d/oracleasm createdisk` operation using the following command:

```
/usr/sbin/asmtool -C -l /dev/oracleasm -n <volume name> -s /dev/<emc device> -a force=yes
```

The following message is displayed:

```
asmtool: Device "/dev/<emc device>" is not a partition
asmtool: Continue anyway.
```

- 2 The permissions of the volume under `/dev/oracleasm/disks/` will be `root: root`. Reboot the system to correct it.
- 3 You can now use the device using the PowerPath device name.

For detailed instructions, see the Oracle Note # 469163.1 at support.oracle.com.

Miscellaneous

Oracle Clusterware Verification Utility Fails After the Grid Infrastructure Installation

The issue occurs when the Grid Naming Service (GNS) Virtual IP (VIP) entry is not present in the `/etc/resolv.conf` file.

After the successful grid infrastructure installation, `runInstaller` (GUI) displays the following error message: `INS-20802: Oracle Clusterware Verification Utility failed.`

Also, the following error messages are logged in the `oraInventory` log files:

```
INFO: PRVF-4664: Found inconsistent name resolution entries for SCAN name "scancluster"
```

```
INFO: PRVF-4657: Name resolution setup check for "scancluster" (IP address: 190.10.1.101) failed.
```

To resolve this issue, add the GNS VIP IP into the `/etc/resolv.conf` file.

ERROR INS-32026 is Displayed While Specifying Grid Home Location

Error INS-32026 is displayed when the Grid software location is specified under Oracle base directory.

grid infrastructure for cluster installation assigns root ownership to all the parent directories of the clusterware software location. Consequently, all the named directories in the Grid software location path acquires root ownership. This may interrupt subsequent installations into the same Oracle base directory.

To resolve this issue, specify the Grid software location outside the Oracle base directory.

Linux Error 13 and ORA01034 Error Messages are Displayed While Connecting to the Oracle Database

When you connect to the Oracle Database as a user other than Oracle, the following error messages are displayed: ORA01034: ORACLE Not Available, and Linux Error 13: Permission Denied.

This issue occurs because the required permissions are not set on the remote node.

To resolve this issue, type the following command as the Root user on all the remote nodes: `chmod 6751 $ORACLE_HOME`.

Grid Infrastructure Installation Fails and Error PRCR-1079 is Displayed

The `root.sh` script file of grid infrastructure installation fails and the following error message is displayed:

```
PRCR-1079: Fails to Start Resource ora.gns
```

To resolve the issue:

- 1 Uninstall the Grid installation.
- 2 Set the gateway address for the public interface.
- 3 Install the grid infrastructure.

Database Restart While Pulling one of the Storage Paths on Dell PowerVault MD3000i and Equallogic iSCSI Array

Change the following syntax:

```
/etc/iscsi/iscsid.conf  
node.session.timeo.replacement_timeout = 144
```

to

```
node.session.timeo.replacement_timeout = 30
```

Log out from the existing iscsi sessions and rediscover and re-login to make the above timeout setting effective.

To log out, run the command:

```
iscsiadm -m session --logout
```

To rediscover and re-login, run the command:

```
iscsiadm -m discovery -t st -p <target IP> --  
interface=<first iface> --interface=<second iface>
```

```
iscsiadm -m discovery -t st -p <target IP> --  
interface <first Iface> --login
```

```
iscsiadm -m discovery -t st -p <target IP> --  
interface <Second Iface> --login
```

You can check the above settings under

```
/var/lib/iscsi/nodes/iqn*/<any target_port_ip>/default
```

Uninstallation

To uninstall the Oracle Database and Database binary, log in as Oracle user and execute the following command:

```
<ORACLE_HOME>/deinstall/deinstall
```

To uninstall the grid infrastructure binary, log in as grid user and execute the following command:

```
<GRID HOME>/deinstall/deinstall
```

Networking

Cluster Verification Utility (Cluvfy) Fails Displaying ERROR: PRVF-6020

When you enable a jumbo frame for the Ethernet interface used for iSCSI storage connection with different Maximum Transmission Unit (MTU) values compared to public and private network interface, and then you execute Cluvfy, the node connectivity prerequisite check fails and the following error message is displayed: `Different MTU values used across network interfaces in subnet address.`

Ignore the PRVF-6020 error message and proceed with the installation.

Oracle Grid Infrastructure Installation Fails During Node Connectivity Prerequisite Check

If you set different MTU values for the iSCSI interface than the public and private interface during the Oracle Grid Infrastructure installation, the node connectivity prerequisite check fails and the following error message is displayed: `Different MTU values used across network interfaces in subnet address.`

To resolve this issue, ignore the error message and select **Ignore All** check box present at the top of the Organizational Unit Identifier (OUI) screen, and then proceed with the installation.

The Cluster Verification Check Fails

This issue occurs when the public network IP address is not routable. For example: 192.168.xxx.xxx

To resolve this issue, assign a valid, routable public IP address.

Network Time Protocol (NTP) Prerequisite Check Fails During Oracle 11g R2 Clusterware Installation

When you install Oracle 11g R2 Clusterware by starting NTP daemon without slewing the option `-x`, the NTP prerequisite check fails.

Add the `-x` option in `/etc/sysconfig/ntpd` file as shown below and restart `ntpd`.

```
[root@node1]# cat /etc/sysconfig/ntpd
# Drop root to id 'ntp:ntp' by default.
```

```
OPTIONS="-x -u ntp:ntp -p /var/run/ntp.pid"
# Set to 'yes' to sync hw clock after successful
ntpdate
SYNC_HWCLOCK=no
# Additional options for ntpdate
NTPDATE_OPTIONS=""
[root@node1]#
```

After making the above changes at both the nodes, run the `cluvfy` script and verify if the output related to NTP has passed.

Fibre Channel Storage System

I/O Errors and Warnings are Displayed When You Load the Fibre Channel HBA Driver Module

You must update the HBA driver, BIOS, and firmware for the Fibre Channel module. For the supported versions, see the Solution Deliverable List (SDL) on dell.com/oracle.

Operating System

Operating System Does Not Recognize a New Peripheral Device

When you add a new peripheral device to the Dell PowerEdge system, the operating system does not recognize the device. The issue occurs when Kudzu is disabled.

Run `Kudzu` manually after you add the new peripheral to your system.

Using Dell DKMS Drivers After Upgrading the Kernel

If the kernel is upgraded in a system where the DKMS driver is installed, then after the kernel upgrade, perform the following procedure to ensure that the updated DKMS driver is installed for the latest kernel.

- If the module version of the updated kernel is higher than the DKMS driver version, then continue using the native driver.

- If the module version in the updated kernel is lesser than the DKMS driver version, then use the DKMS driver. Create a file in `/etc/depmod.d` with the file name `dkms_module_name.conf` and the following entry:

```
override module_name kernel_version modules_directory
```

For example, for the `bnx2` driver, create a file `bnx2.conf` in `/etc/depmod.d/` with the below contents:

```
override bnx2 2.6.18-x.el5 weak-updates
```

Run the `depmod -a` command

For more information on DKMS, see the DKMS man page on your system.

Oracle Security Patches and Recommended Patches

Critical Patch Updates

Oracle releases quarterly critical patch updates for fixing potential security vulnerabilities for Oracle products. The patch set update is an alternate patch that includes the critical patch update security bug fixes. These critical patch updates are required to be applied to the production systems. Currently, the latest critical patch updates for the Linux `x86_64` platform is Oracle 11g R2 11.2.0.1: critical patch update 9369797 or patch set update 9352237.

Recommended Patches

It is recommended that you apply the Oracle-recommended database patch sets updates for the Linux `x86_64` platform. For latest Oracle-recommended patches, see the Metalink Note #1060989.1 at support.oracle.com.

The following are the current Oracle recommended patches:

- Oracle 11g R2 11.2.0.1 on Linux `x86_64`:
- 11.2.0.1.1 Generic Recommended Patch 9352237
- 11.2.0.1.1 Grid Infrastructure Patch 9343627

