

Installing Oracle RAC Software Stack

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Summary

In this lecture, you will learn how to do the following:

- Install Oracle Grid Infrastructure software
- Install Oracle Database software
- Create Oracle RAC database

Oracle RAC Software Stack Products

- Oracle Grid Infrastructure
 - Reference: Oracle Grid Infrastructure Installation Guide
- Oracle Database
 - Reference: Oracle Real Application Clusters Installation Guide for Linux and UNIX

Oracle Grid Infrastructure Requirements

Daemon/Service	Description
RAM	Minimum 4 GB (12.2 requires 8 GB)
HDD Free space	8 GB for Grid Home, 12 GB for Grid Home owner 1 GB to /tmp
Network Switches	At least 1 GbE (10 GbE recommended for private network)
Operating System Requirements	Check the documentation
OS Groups and Users	At least define the how owner (typically <code>grid</code>) and Oracle installation owner group (typically <code>oinstall</code>) Full list of role separation users and groups in documentation
GNS or DNS	GNS: configure a GNS name and fixed address in DNS DNS: Configure a SCAN name to resolve to three addresses on DNS
Shared storage	Shared storage configuration as described in the previous lecture

Oracle Grid Infrastructure Pre-installation Tasks

- Configure the shared storage. If you are using ASM:
 - You can create a single diskgroup to save the Oracle Clusterware configuration files (OCR and VD), Database data files, and Fast Recovery Area (FRA).
 - Alternatively, you can a diskgroup to each data group mentioned.
- Use a time synchronizing method:
 - Network Time Protocol (NTP)
 - Cluster Time Synchronization Service (CTSS)

Installing Oracle Grid Infrastructure (12.1)

- Use Oracle Universal Installer (OUI)
- Network configuration:
 - GNS with DHCP: GNS VIP names as configured on your DNS
 - Manual cluster configuration: SCAN names for the cluster, and the public names, and VIP names for each cluster member node.
- `root` credential required
- You have the option to install the Trace File Analyzer (TFA)
- Grid home must be **outside** of the Oracle Base directory
- Can be registered in OEM

Installing Oracle Grid Infrastructure (12.2)

1. Create the new Grid home directory with the necessary user group permissions
 2. Extract the installation image file into the Grid home
 3. Run the setup wizard (`gridSetup.sh`) to register the Oracle Grid Infrastructure product
- Same information is required

Checking on the Oracle Clusterware Stack Components

- As `root`, run the following:

```
crsctl check cluster
```

```
CRS-4537 Cluster Ready Services is online
```

```
CRS-4529 Cluster Synchronization Services is online
```

```
CRS-4533 Event Manager is online
```

- To check on ASM, as `grid` run the following:

```
srvctl status asm
```

```
ASM is running on rac1, rac2
```


Oracle Grid Infrastructure Post-installation Tasks

- Check the SCAN configuration, as `grid` use the `cluvfy` utility:

```
cluvfy comp scan
```

- Download and install the ORAchk utility
- Download and install latest patchset updates (PSU)

Oracle RAC Database Pre-installation Tasks

- Clusterware must be installed and configured
- Create OS user owner and group (typically `oracle` and `dba`)
- (optional) Use Cluster Verification Utility (CVU)
 - Checks on the RAC requirements
 - Can generate fixup scripts

```
/u01/app/12.1.0/grid/bin/cluvfy stage -pre dbinst -fixup -n  
rac1, rac2 -osdba dba -verbose
```


Oracle RAC Database Installation

- Two ways:
 - Using Oracle Universal Installer (OUI)
 - Rapid Home Provisioning (it also supports GI installations)
- Extract the installation zip file then run the OUI
- `root` credential required
- Oracle Base is different from the Oracle Base directory defined when you installed Oracle Grid Infrastructure
- Oracle Home should be **under** the Oracle Base directory

Creating Oracle RAC Database

- Using DBCA is recommended
- Decide between a CDB and a non-CDB
- Choose between the two Cluster Database Management types:
 - An administrator-managed database
 - A policy-managed database
- Decide the Global Database Name and SID Prefix
 - Instance names will be SID appended with number.

Oracle RAC Installation Post-installation Tasks

- Set the Oracle user environment variables in owner user profile
- Apply the latest PSU
- Recompile all PL/SQL modules (`utlrp.sql`)
- Implement backup and recovery strategy
- Configure the services

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- Create Oracle RAC database