

# Oracle Database 12c R2: Clusterware Administration

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **4 Gün**

## **Overview**

**This Oracle Database 12c: Clusterware Administration training will explore general cluster concepts and Oracle Clusterware architecture. Work with expert Oracle University instructors through interactive instruction and hands-on exercises to reinforce your learning.**

### **Learn To:**

- Perform Grid Infrastructure pre-installation tasks.
- Install both Standard and Flex clusters.
- Add and remove nodes from a cluster in addition to upgrading and patching existing Grid Homes.
- Manage and administer both Standard Clusters and Policy-Managed Clusters.
- Use Oracle Clusterware to make applications highly available.

### **Target Audience:**

- Administrator
- Database Administrators

## **Prerequisites**

- Working knowledge of Oracle Database 11g: Release 2, including Clusterware, ASM and RAC

## **What You Will Learn**

At the end of this course you will be able to:

- Understand Flex Clusters architecture and components
- Understand effect of node failure in Flex Clusters
- Understand the scope and capabilities of what-if command evaluation
- Perform the different types of what-if command evaluation
- Install Grid Infrastructure for Standard and Flex clusters
- Verify the installation
- Configure ASM disk groups
- Perform the prerequisite steps for extending a cluster
- Add a Leaf node and a Hub node to a Flex cluster
- Delete a node from a cluster
- Explain the principles and purposes of clusters
- Describe Cluster hardware best practices
- Describe the Oracle Clusterware architecture
- Describe Clusterware architecture
- Install and configure Flex Clusters
- Understand effect of node failure in Flex Clusters

## **Outline**

### **Introduction to Grid Infrastructure**

- What is a Cluster?
- What is a Flex Cluster?
- Clusterware Characteristics
- Oracle Clusterware
- Hardware and Software Concepts (High level)
- Shared Storage Overview

## Oracle Clusterware Architecture

- Cluster Storage Requirements
- Clusterware Initialization and OHASD
- Clusterware Process Architecture
- Location Independent Names, Addresses and Name Resolution (GNS, SCAN, VIP..)
- Shared GNS Background and Architecture
- Configuring shared GNS
- Migrating to shared GNS
- Moving GNS to Another Cluster

## Flex Cluster Architecture

- Flex Cluster Architecture
- Configuring Flex Cluster
- Flex Clusters and Node Failure

## Grid Infrastructure Pre-Installation Tasks

- Shared Storage for Oracle Clusterware
- Checking System Requirements
- Single Client Access Name for the Cluster
- Redundant Interconnect Usage
- Kernel Requirements
- Groups and Users
- Shell Settings
- Oracle Validated Configuration

## Installing Grid Infrastructure

- Installing Oracle Grid Infrastructure
- Installing Flex Cluster
- Verifying the Oracle Clusterware Installation

## Managing Cluster Nodes

- Adding Oracle Clusterware Homes
- Prerequisites for Running addNode.sh
- Adding a Node with addNode.sh
- Configuring the node role
- Removing a Node from the Cluster

## Traditional Clusterware Management

- Oracle Clusterware startup and shutdown
- Administering the Voting Disk file
- Administering the Oracle Cluster Registry Disk file
- Network Administration
- What-If Command Evaluation
- Clusterware Admin Tools Review

## Policy-Based Cluster Management

- Policy-Based Cluster Management Overview
- Server Categorization
- Policy Set

## Patching Grid Infrastructure

- Out-of-Place Oracle Clusterware Upgrade
- Types of Patches
- Obtaining Oracle Clusterware Patches
- Rolling Patches
- Installing a Rolling Patchset with OUI
- OPatch Overview
- Installing a Rolling Patch with OPatch
- OPatch Automation

## Troubleshooting Oracle Clusterware

- Diagnostic Framework Support for CRS
- Cluster Health Monitor Enhancements Overview
- Component level checks - cluvfy with -comp
- Resource Debugging - Java Tools and Dynamic Debugging
- Troubleshooting Node Evictions

- Log files and Diagnostic Collection
- The oclumon Utility

## **Making Applications Highly Available**

- Overview of Using Oracle Clusterware to Enable HA
- Oracle Clusterware HA Components
- Resource Management Options
- Server Pools
- Overall flow diagram of HA lifecycle (crs\_profile, crs\_register, crs\_start....)
- Clusterware Resource Modeling
- Creating an Application VIP
- ONS and FAN overviews