5 Days | Oracle Database 12c: Clusterware & RAC Admin Accelerated Ed 1

This Oracle Database 12c: Clusterware & RAC Admin Accelerated training is worthwhile 8-day training consolidated in a 5-day training program for participants to provide a comprehensive, rapid and extensive learning environment for the corresponding Clusterware & RAC administration. This five-day program covers the curriculum of the following two programs that are also conducted separately:

1. Oracle Database 12c: Clusterware Administration course (4 days)

2. Oracle RAC database architecture (4 days)

During this training, participants learn the integration of Oracle Clusterware and RAC architectures and how these products work in union with each other.

Completion of this training course will enable candidates to:

- Perform Grid Infrastructure pre-installation tasks.

- Installation of both Standard and Flex clusters.

- Add and remove nodes from a cluster

- Manage and administer both Standard Clusters and Policy-Managed Clusters.

- Deploy Oracle Clusterware to make applications highly available.

- Install Oracle RAC software.

Course Benefits:

Attaining certification of this course will equip individuals with the ability to install, configure, manage and troubleshoot both Oracle Clusterware and Oracle RAC software. Teachings of this course will help participants to optimize database workloads, at lower IT costs and deliver higher quality service by empowering smooth and rapid consolidation within the Data clouds.

Course Details

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Course Outline

1. Introduction to Grid Infrastructure

- Cluster & a Flex Cluster

- Describing Clusterware Characteristics

- Describing Oracle Clusterware

- Describing Hardware and Software Concepts (High level)

- Overview of Shared Storage

2. Oracle Clusterware Architecture

- Requirements of Cluster Storage

- Clusterware Initialization and OHASD

- Location Independent Names, Addresses and Name Resolution (GNS, SCAN, VIP)

- Shared GNS Background and Architecture

- Clusterware Process Architecture

- Configuring & migrating to shared GNS

- Move GNS to Another Cluster

3. Grid Infrastructure Pre-Installation Tasks

- Shared Storage for Oracle Clusterware

- Check System Requirements

- Redundant Interconnect Usage

- Kernel Requirements

- Single Client Access Name for the Cluster

- Shell Settings

- Groups and Users

- Oracle Validated Configuration

4. Managing Cluster Nodes

- Add Oracle Clusterware Homes

- Running addNode.sh Prerequisites

- Add a Node with addNode.sh

- Node Role Configuration

- Remove a Node from the Cluster

5. Traditional Clusterware Management

- Startup and Shutdown of Oracle Clusterware

- Voting Disk File Administration

- Oracle Cluster Registry Disk File Administration

- Network Administration

- Review Clusterware Admin Tools

- What-If Command Evaluation

6. Policy-Based Cluster Management

- Overview of Policy-Based Cluster Management

- Server Categorization & Policy Set

7. Patching Grid Infrastructure

- Out-of-Place Oracle Clusterware Upgrade

- Patches Types

- Obtain Oracle Clusterware Patches

- Roll Patches

- Install a Rolling Patchset with OUI

- Overview of OPatch

- Install a Rolling Patch with OPatch

- OPatch Automation

8. Troubleshooting Oracle Clusterware

- Diagnostic Framework Support for CRS

- Overview of Cluster Health Monitor Enhancements

- Component level checks - cluvfy with -comp

- Java Tools and Dynamic Debugging

- Node Evictions Troubleshooting

- The oclumon Utility

- Log files and Diagnostic Collection

9. Making Applications Highly Available

- Use Oracle Clusterware to Enable HA

- Components of Oracle Clusterware HA

- Options in Resource Management

- Server Pools

- Flow diagram of HA lifecycle (crs_profile, crs_register, crs_start….)

- Clusterware Resource Modeling

- ONS and FAN overviews

- Create an Application VIP

10. RAC Databases Overview & Architecture

- Oracle RAC Overview

- RAC One Node

- Cluster-Aware Storage Solutions

- RAC Benefits

- I/O Throughput Balanced
- Scale up and Speedup
- Global Resources
- RAC and Flex ASM

11. Installing and Configuring Oracle RAC

- Install the Oracle Database Software
- Create the Cluster Database
- Single Instance to RAC Conversion
- Post-installation Tasks
- Clean Up Unsuccessful Installs

12. Oracle RAC Administration

- Instance Startup, Shutdown, and Quiesce
- Parameters and RAC - SPFILE, Identical and Unique Parameters
- Use Enterprise Manager Cluster Database Pages
- Session management on RAC instances
- RAC Alerts & Metrics

13. RAC Backup and Recovery

- Instance Failure and Recovery in RAC - LMON and SMON
- Parameter Settings Affecting Parallel Recovery and MTTR
- RAC and the Fast Recovery Area
- Redo Threads and Archive Log Configurations and Admin
- RMAN Configuration
- RMAN Restore and Recovery RAC Considerations
- RMAN Admin for RAC: Channels, Instances, Backup Distribution

14. RAC Monitoring and Tuning

- Common RAC Tuning
- OCPU and Wait Time Latencies
- Wait Events for RAC
- Session and System Statistics
- Automatic Database Diagnostic Monitoring for RAC

15. Upgrading and Patching RAC

- Upgrades and Patching Overview

- Release and Patch Set Upgrades

- Merge Patches

- PSU, CPU and Interim Patches

- Perform Out of Place Database Upgrades

- Plan and Prepare for Upgrade

- Perform Out of Place Release Install or Upgrade

- Post-Upgrade Tasks

16. Design for High Availability

- RAC and Data Guard

- Maximum Availability Architecture

- Causes of Planned and Unplanned Down Time

- Oracle's Solution to Down Time

- Hardware Assisted Resilient Data

- Fast-Start Failover

- RAID Configuration for High Availability

- Database High Availability Best Practices

17. Oracle Database Exadata Cloud Service Overview

- Introduction to Exadata Cloud Service

- Service Configuration & Connection Options

- Architecture & Availability

- Management Responsibilities

- Simple Web-Based Provisioning & Management

- Storage Configuration & Management Details

- Migrating to Exadata Cloud Service

- REST APIs

Who Should Attend

The Oracle Database 12c Clusterware & RAC Admin Accelerated Ed 1 training course is ideal for:

- Support Engineer

- Database Administrators

- Technical Consultant

- Technical Administrator

- Administrator

Pre Requisite

Required:

- Oracle Database 12c: Oracle Automatic Storage Management Administration

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

- Oracle Database 12c: Grid Infrastructure Administration

Suggested Prerequisites:

- Oracle Database 11g: RAC Administration Release 2

- Oracle Grid Infrastructure 11g: Manage Clusterware and ASM - Release 2

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