Oracle Clustering: Oracle 19c Real Application Clusters for Administrators

Oracle 19c Clustering Overview

Introduction to Oracle 19c Clusters for Administrators training teaches students all aspects of Oracle 19c RAC administration. Students begin with a solid foundation in Oracle Clusterware and RAC architecture. Students then install and configure both Clusterware and the database software, as well as cover the administration of both pieces of software using command line utilities. Important topics such as Installation, failover, backup and recovery are all covered in detail.
Students get hands-on experience with RAC Configuration. The course ends with troubleshooting and upgrade a RAC system.

Oracle 19c Clustering Prerequisites

Audience: Database Administrators
Prerequisites: Worked on Oracle Database 19c on standalone machine

Oracle 19c Clustering Training Objectives

All attendees will learn how to:

- Install Grid Infrastructure
- Create a RAC database
- Manage Oracle Clusterware
- Manage ASM instances and Diskgroups
- Manage RAC instances
- Use RAC utilities
- Set up failover
- Set up backup and recovery
- Manage clusters
- Implement automatic storage management
- Troubleshoot RAC
- Tune RAC

Oracle 19c Clustering Training Outline

- Cluster Architecture
    - o Cluster Architecture
    - o Shared Storage
    - o Nodes and Interconnects
    - o Oracle Cluster Registry (OCR)
    - o The RAC Voting Disk

- Grid Infrastructure
    - o What is Oracle Grid Infrastructure?
    - o What is a Cluster?
    - o What is a Flex Cluster?
    - o Clusterware Characteristics
    - o Oracle Clusterware
    - o Hardware and Software Concepts (High level)
    - o RAC and Flex ASM
    - o Grid Infrastructure Components
    - o Grid Infrastructure Processes
    - o Grid Infrastructure Pre-installation Steps
    - o Configuring DNS and DHCP Configuration
    - o Node Preparation
    - o Configuring the OS Environment
    - o Installing Grid Infrastructure
    - o cluvfy – The Grid Infrastructure Verification Utility
    - o Grid Infrastructure Post-installation Steps
    - o Continuation of Grid Infrastructure Installation
    - o Installing DB Software and Creating a RAC Database
    - o Installation Overview
    - o Verifying System Readiness with the CVU
    - o Installing the Database Software
    - o Troubleshooting Installation Setup

- o Recommended Post-installation Tasks
- o Database Pre-Creation Tasks
- o Initialization Parameters
- o Creating a Cluster Database Using DBCA

- RAC Database Architecture

  - o Oracle Single-Instance Architecture
  - o Overview of RAC
  - o RAC Architecture
  - o Multitenant Architecture and RAC
  - o RAC Instances and Parameter Files
  - o RAC Database Components
  - o RAC Instance Background Processes
  - o Global Resource Directory
  - o Overview of Cache Fusion
  - o Cache Fusion Components – GES and GCS
  - o Cache Fusion Components – Resource Master and GRD
  - o Cache Fusion Background Processes
  - o Application Connection to RAC

- Managing Oracle Clusterware

  - o Determining the Location of the Oracle Clusterware Configuration Files
  - o Managing SCAN and Local Listener
  - o Troubleshooting Grid Infrastructure CRS issues
  - o Troubleshoot grid node eviction issues
  - o Backing Up and Recovering Voting Disks
  - o Changing the OCR Configuration
  - o Backing Up and Recovering the OCR
  - o Restoring from Automatic OCR Backups

- Automatic Storage Management

  - o ASM Overview
  - o ASM Initialization Parameters

- o Accessing an ASM Instance
- o ASM Startup and Shutdown
- o Creating a Disk Group
- o Changing a Disk Group
- o Creating and Managing a Database
- o Using Oracle-Managed Files
- o Creating and Managing a Tablespace on ASM
- o Creating and Managing Redo Logs
- o Creating and Managing Control Files
- o Creating and Managing Archive Logs
- ☐ Administering ASM Cluster File System
  - o ASM Dynamic Volume Manager
  - o Managing ASM Volumes
  - o Implementing ASM Cluster File System
  - o Managing ASM Cluster File System (ACFS)
  - o Using Command Line Tools To Manage ACFS
- ☐ RAC Instance Management
  - o Overview of RAC Instance Management
  - o Starting and Stopping a RAC Database
  - o Starting and Stopping a RAC Instance
  - o RAC Database Identical Parameters
  - o RAC Database Unique Parameters
  - o Changing Parameter Values
  - o Administering Undo Tablespaces in RAC
  - o Administering Redo Logs in RAC
- ☐ RAC Utilities
  - o The crsctl Utility
  - o The ocrcheck Utility
  - o The ocrdump Utility
  - o The oifcfg Utility

- o The Server Control (SRVCTL) Utility
- o SRVCTL ADD
- o SRVCTL CONFIG
- o SRVCTL ENABLE and DISABLE
- o SRVCTL MODIFY
- o SRVCTL RELOCATE
- o SRVCTL STATUS
- o SRVCTL REMOVE
- o SRVCTL START
- o SRVCTL STOP
- ☐ RAC Backup and Recovery
  - o Backup and Recovery in case of RAC
  - o Configuration of Recovery Manager (RMAN) on RAC
  - o Migrating Tablespaces and Database from Non ASM to ASM
  - o Log Archiving in RAC
  - o Undo Tablespaces in RAC
  - o Performing RMAN Backups of a RAC Database
  - o Recover the RAC Database with RMAN
- ☐ Services
  - o Overview of Services
  - o Types of Services
  - o Creating Services with SRVCTL
  - o Preferred and Available Instances for Services
  - o Using Services
  - o Managing Services
  - o Service Views
- ☐ TAF
  - o Transparent Application Failover (TAF)
  - o Client-Side vs. Server-Side Load Balancing
  - o Configuring TAF on the Client

Head Office : No. 602, 6th Floor, Meridian Business Centre Premises Co-Op Soc. , Plot No-27, Sector-30, Landmark Opposite Sanpada Station(Behind G-Square Business Park) Vashi Navi Mumbai – 400705

Tel.: +022-68067087 | +022-68830638 **Mobile/Whatsapp :** +91 86550 15955

Email: training@aalokinstitute.com | **Website:** www.aalokinstitute.com

- o Configuring TAF on the Server
- o Using OEM to Configure TAF
- o Using SRVCTL to Configure TAF
- o Connecting to the Database with TAF
- o Monitoring TAF Connections
- o Adding and Deleting Node
  - ☐ Application Continuity

    - o What is AC?
    - o What problem does it solve?
    - o Benefits of AC
    - o How AC works
    - o AC Architecture
    - o Side Effects
    - o Restrictions
    - o Application requirements

  - ☐ Adding and Deleting Node
    - o Adding and Deleting node with all details steps
  - ☐ Converting Non RAC to RAC
  - ☐ RAC Tuning
    - o RAC Tuning Methodology
    - o Using Performance Views in RAC
    - o Monitoring Cache Fusion
    - o Global Cache Latencies
    - o Monitoring Cache Transfers
    - o OEM – Cluster Database Performance
    - o OEM – RAC-Related Reports
    - o Using AWR in the RAC Environment
    - o Generating AWR Reports

- o Analyzing AWR Reports

- o Using ADDM in the RAC Environment

- o Analyzing ADDM Reports

- o RAC Tuning Tips

  RAC Troubleshooting

- o The Oracle Clusterware Alert Log

- o Clusterware Component Log Files

- o Using crsctl to Diagnose Cluster Issues

- o Troubleshooting the OCR

- o RAC Database Alerts

RAC Installation one more time from the scratch if time permits

How to clean up after a Failed Grid Infrastructure Installation

Or Cleaning up GI for Re-Installation

For Any Clarification please feel free to contact @ +91 9867328291.

Cheers,
Ambasa S. Ladwa
Ph# +91 9867328291
Ambasa.Ladwa@aalokinstitute.com