

Oracle Database 12c: RAC Administration Ed 1

Duration: 4 Days

What you will learn

This Oracle Database 12c: RAC Administration training will teach you about Oracle RAC database architecture. Expert Oracle University instructors will deep dive into Global Resources and Cache Fusion. In this course, you will be introduced to Oracle Database Exadata Cloud Service.

Learn To:

Install Oracle RAC software.

Create cluster databases.

Administer both administrator and policy-managed Oracle RAC databases.

Monitor and address performance issues.

Learn about services in a RAC environment as well as highly available connection features including Application Continuity and Transaction Guard.

Create and administer a RAC One Node Database.

Create and manage multitenant RAC databases.

Gain an understanding of the Oracle Database Exadata Cloud Service.

Benefits to You

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

Audience

Administrator

Database Administrators

Related Training

Required Prerequisites

Oracle Database 12c: Oracle Automatic Storage Management Administration

Oracle Database 12c: Grid Infrastructure Administration

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

Oracle Database 12c: ASM Administration

Oracle Database 12c: Clusterware Administration

Suggested Prerequisites

Oracle Database 12c: ASM Administration

Course Objectives

Explain the principles and purposes of clusters

Install the Oracle Database software

Modify initialization parameters in a RAC environment

Perform post-database-creation tasks

Configure RMAN for the RAC environment

Describe the benefits of Oracle RAC

Explain the necessity of global resources

Configure the RAC database to use ARCHIVELOG mode and the fast recovery area

Convert a single-instance Oracle Database to RACs

Create a cluster database

Gain an understanding of the Oracle Database Exadata Cloud Service

Define redo log files in a RAC environment

Define undo tablespaces in a RAC environment

Describe global cache coordination

Describe how Grid Plug and Play affects Clusterware

Describe the Oracle Clusterware architecture

Course Topics

Grid Infrastructure Overview and Review

What is a Cluster?

What is a Flex Cluster

Clusterware Characteristics

Oracle Clusterware

Hardware and Software Concepts (High level)

RAC Databases Overview & Architecture

Overview of Oracle RAC

RAC One Node

- Cluster-Aware Storage Solutions
- Benefits of Using RAC
- Scaleup and Speedup
- I/O Throughput Balanced
- Global Resources
- RAC and Flex ASM

Installing and Configuring Oracle RAC

- Installing the Oracle Database Software
- Installation options
- Creating the Cluster Database
- Post-installation Tasks
- Single Instance to RAC Conversion
- Cleaning Up Unsuccessful Installs

Oracle RAC Administration

- Parameters and RAC - SPFILE, Identical and Unique Parameters
- Instance Startup, Shutdown and Quiesce
- Undo Tablespace
- Redo Threads
- Use Enterprise Manager Cluster Database Pages
- RAC Alerts
- RAC Metrics

Managing Backup and Recovery for RAC

- Overview of Upgrades and Patching
- Release and Patch Set Upgrades
- PSU, CPU and Interim Patches
- Merge Patches
- Performing Out Of Place Database Upgrades
- Planning and Preparing for Upgrade
- Performing Out of Place Release Install or Upgrade
- Post Upgrade Tasks

RAC Backup and Recovery

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

RAC Global Resource Management and Cache Fusion

- Globally Managed Resources and Management
- Library Cache Management
- Row cache management
- Buffer cache fusion
- Buffer Cache Management Requirements
- Accessing single blocks in RAC
- Multi-block read considerations in RAC

Undo and read consistency considerations in RAC

RAC Database Monitoring and Tuning

OCPU and Wait Time Latencies

Wait Events for RAC

Common RAC Tuning

Session and System Statistics

RAC specific V\$ Views

Automatic Database Diagnostic Monitor for RAC

Managing High Availability of Services in a RAC Environment

Oracle Services

Services for Policy - and Administrator-Managed Databases

Creating Services

Managing Services

Use Services with Client Applications

Services and Connection Load Balancing

Services and Transparent Application Failover

Services and the Resource Manager

Managing High Availability of Connections

Types of Workload Distribution

Client-Side Load Balancing

Server-Side Load Balancing

Runtime Connection Load Balancing and Connection Pools

Fast Application Notification

The Load Balancing Advisory FAN Event

Server-Side Callouts

Configuring the Server-Side ONS

Application Continuity

What is AC?

What problem does it solve?

Benefits of AC

How AC works

AC Architecture

Side Effects

Restrictions

Application requirements

RAC One Node

RAC One Node Concepts

Online database migration

Adding Oracle RAC One Node Database to an Existing Cluster

Convert an Oracle RAC One Node database to a RAC database

Convert an Oracle RAC database to a RAC One Node database

Use DBCA to convert a single instance database to a RAC One Node database

Multitenant Architecture and RAC

Non-CDB Architecture

Multitenant Architecture: Benefits

CDB in a Non-RAC Environment

Containers

Terminology and Data Dictionary Views

Connection to a Non-RAC CDB

Oracle RAC and Multitenant Configuration

Oracle RAC and Multitenant Architecture

Quality of Service Management

QoS Management concepts

Describe the benefits of using QoS Management

QoS Management components

QoS Management functionality

Oracle Database Exadata Cloud Service Overview

Introducing Exadata Cloud Service

Service Configuration Options & Service Connection Options

Service Architecture & Availability

Management Responsibilities

Storage Configuration & Management Details

Simple Web-Based Provisioning & Management

REST APIs

Migrating to Exadata Cloud Service