

# Oracle Database 12c R2: RAC Administration Ed 2

This Oracle Database 12c R2: RAC Administration training teaches you about Oracle RAC database architecture. Explore Global Resources and Cache Fusion and more. In this course, you will be introduced to Oracle Database Exadata Cloud Service.

## Learn To

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This Oracle Database 12c R2: 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.
- Configure Oracle RAC Reader Nodes.
- Administer both administrator and policy-managed Oracle RAC databases.
- Explain the benefits of Local Temporary tablespaces.
- 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.

## Prerequisites

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### Suggested Prerequisite

- Oracle Database 12c R2: Clusterware Administration
- Working knowledge of Oracle Database 11g: Release 2, including Clusterware, ASM and RAC
- Working knowledge of Oracle Clusterware, ASM & RAC on Linux

### Required Prerequisite

- Oracle Database 12c R2: Clusterware Administration

## Audience

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- Administrator
- Administrator
- Database Administrators
- Database Administrators

# Course Objectives

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- Configure Oracle RAC Reader Nodes
- Define redo log files in a RAC environment
- Define undo tablespaces in a RAC environment
- Describe the benefits of Oracle RAC
- Convert a single-instance Oracle Database to RACs
- Install the Oracle Database software
- Create a cluster database
- Define local temporary tablespaces in a RAC environment
- Modify initialization parameters in a RAC environment
- Perform post-database-creation tasks
- Configure RMAN for the RAC environment
- Configure the RAC database to use ARCHIVELOG mode and the fast recovery area
- Explain the necessity of global resources
- Describe global cache coordination
- Explain the principles and purposes of clusters
- Describe the Oracle Clusterware architecture

## Course Topics

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### Grid Infrastructure: Overview

- Clusterware Characteristics
- RAC and Flex ASM
- Oracle Clusterware
- What is a Flex Cluster ?
- Hardware and Software Concepts (High level)
- What is a Cluster?

### RAC Databases Overview & Architecture

- Oracle RAC One Node (High level)
- Benefits of Using RAC
- Overview of Oracle RAC
- Global Resources
- Scaleup and Speedup
- I/O Throughput Balanced
- Cluster-Aware Storage Solutions

### Installing and Configuring Oracle RAC

- Post-installation Tasks
- Single Instance to RAC Conversion using DBCA and rconfig
- Creating the Cluster Database
- Installation options
- Configuring Oracle RAC Reader Nodes
- Installing the Oracle Database Software

### Oracle RAC Administration

- Parameters and RAC - SPFILE, Identical and Unique Parameters
- RAC Alerts
- RAC Metrics
- Use Enterprise Manager Cluster Database Pages
- Local Temporary Tablespaces
- Redo Threads
- Separation of Duty for Administering Oracle RAC
- Undo Tablespaces

## **Upgrading and Patching Oracle RAC**

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

## **Managing Backup and Recovery for RAC**

- Redo Threads and Archive Logs 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 Considerations

## **RAC Global Resource Management and Cache Fusion**

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

## **RAC Database Monitoring and Tuning**

- OCPU and Wait Time Latencies
- Common RAC Tuning
- RAC specific V\$ Views
- Wait Events for RAC
- Monitoring RAC with Cluster Health Advisor (CHA)
- Session and System Statistics
- Automatic Database Diagnostic Monitor for RAC

## **Managing High Availability of Services in a RAC Environment**

- Oracle Services

- Managing Services
- Service-Oriented Buffer Cache Access
- Services and Connection Load Balancing
- Creating Services
- Use Services with Client Applications
- Services for Policy - and Administrator-Managed Databases
- Services and Transparent Application Failover

## **Managing High Availability of Connections**

- Client-Side Load Balancing
- Server-Side Load Balancing
- Types of Workload Distribution
- Configuring the Server-Side ONS
- The Load Balancing Advisory FAN Event
- Server-Side Callouts
- Fast Application Notification
- Runtime Connection Load Balancing and Connection Pools

## **Application Continuity**

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

## **RAC One Node**

- Use DBCA to convert a single instance database to a RAC One Node database
- RAC One Node Concepts
- Adding Oracle RAC One Node Database to an Existing Cluster
- Convert an Oracle RAC database to a RAC One Node database
- Online database migration
- Convert an Oracle RAC One Node database to a RAC database

## **Oracle Database In-Memory in RAC**

- Architecture of In-Memory Column Store
- Implementing In-Memory FastStart
- Implementing In-Memory Column Store in RAC

## **Multitenant Architecture and RAC**

- Oracle RAC and Multitenant Configuration
- CDB in a Non-RAC Environment
- Connection to a Non-RAC CDB
- Multitenant Architecture: Benefits
- Non-CDB Architecture

- Oracle RAC and Multitenant Architecture
- Containers
- Terminology and Data Dictionary Views

### **Quality of Service Management**

- QOS Management concepts
- QoS Management components
- QoS Management functionality
- Describe the benefits of using QoS Management

### **Oracle Database Exadata Cloud Service Overview**

- Service Configuration Options & Service Connection Options
- REST APIs
- Management Responsibilities
- Introducing Exadata Cloud Service
- Simple Web-Based Provisioning & Management
- Migrating to Exadata Cloud Service
- Storage Configuration & Management Details
- Service Architecture & Availability