

Oracle Database 12c R2: RAC Administration Ed 2

Duration: 4 Days

What you will learn

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.

Audience

Administrator

Database Administrators

Related Training

Required Prerequisites

Oracle Database 12c R2: Clusterware Administration

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

Oracle Database 12c R2: Clusterware Administration Ed 2

Suggested Prerequisites

Working knowledge of Oracle Clusterware, ASM & RAC on Linux

Course Objectives

Configure Oracle RAC Reader Nodes

Define redo log files in a RAC environment

Define undo tablespaces in a RAC environment

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

Describe the benefits of Oracle RAC

Convert a single-instance Oracle Database to RACs

Install the Oracle Database software

Create a cluster database

Course Topics

Grid Infrastructure: Overview

What is a Cluster?

What is a Flex Cluster ?

Clusterware Characteristics

Oracle Clusterware

Hardware and Software Concepts (High level)

RAC and Flex ASM

RAC Databases Overview & Architecture

Overview of Oracle RAC

Oracle RAC One Node (High level)

Cluster-Aware Storage Solutions

Benefits of Using RAC

Scaleup and Speedup

I/O Throughput Balanced

Global Resources

Installing and Configuring Oracle RAC

Installing the Oracle Database Software

Installation options

Creating the Cluster Database

Configuring Oracle RAC Reader Nodes

Post-installation Tasks

Single Instance to RAC Conversion using DBCA and rconfig

Oracle RAC Administration

Separation of Duty for Administering Oracle RAC

Use Enterprise Manager Cluster Database Pages

RAC Alerts

RAC Metrics

Undo Tablespaces

Local Temporary Tablespaces

Redo Threads

Parameters and RAC - SPFILE, Identical and Unique Parameters

Upgrading and Patching Oracle 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

Post Upgrade Tasks

Managing Backup and Recovery for RAC

Instance Failure And Recovery In RAC - LMON and SMON

Redo Threads and Archive Logs Configurations and Admin

Parameter Settings Affecting Parallel Recovery and MTTR

RAC and the Fast Recovery Area

RMAN Configuration

RMAN Admin for RAC: Channels, Instances, Backup 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
Monitoring RAC with Cluster Health Advisor (CHA)

Managing High Availability of Services in a RAC Environment

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

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

Oracle Database In-Memory in RAC

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

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