

Oracle Database 12c: RAC Administration Ed 1

Duration: 4 Days

What you will learn

This Oracle Database 12c: Real Application Cluster (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: 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 multitennant 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.

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 Ed 1

Suggested Prerequisites

Oracle Database 12c: ASM Administration Ed 1

Course Objectives

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

Explain the principles and purposes of clusters

Install the Oracle Database software

Modify initialization parameters in a RAC environment

Perform post-database-creation tasks

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