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.

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 R2: ASM Administration Ed 2

Oracle Database 12c: ASM Administration

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

ain 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 Tablespaces
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