Oracle 11g: RAC and Grid Infrastructure Administration Accelerated Release 2

Duration: 5 Days

What you will learn

In this intensive course, you'll learn about the Oracle Grid Infrastructure products. This includes Oracle Automatic Storage Manager (ASM), ASM Cluster File System and Oracle Clusterware.

Learn To:

Describe the Oracle Database 11g Grid Infrastructure.

Administer both Policy and Administrator managed RAC databases.

Install and configure Grid Infrastructure.

Describe Oracle Database 11g RAC enhancements and new features.

Describe Grid Plug and Play.

Use Oracle Clusterware to make applications highly available.

Oracle Clusterware

You'll also learn to administer the Oracle Clusterware and storage products using both command line utilities and graphical tools. Administration of ASM and ACFS will be done using both command line and graphical user interface clients.

Troubleshoot & Debug

This course will help you leverage the Oracle Clusterware to make applications highly available, supporting monitoring and failover to other nodes. You'll learn to troubleshoot the Oracle Clusterware by examining log files, enabling debugging and enabling tracing for various utilities.

RAC Database Administration

Instructors will review RAC database administration in the Oracle Grid Infrastructure environment. Learn to administer cluster databases using Enterprise Manager and command-line utilities like SRVCTL, CRSCTL, and SQL*Plus.

New Connection Architecture

You'll also study the new connection architecture and how to make those connections highly available. Review backup and recovery issues relative to cluster database environments.

This is an accelerated course, covering 7 days worth of content in only 5 days. Because of this extra content, the duration of classes can be slightly longer than usual. This course is based on Oracle Database 11g Release 2.

Audience
Data Warehouse Administrator
Database Administrators
Database Designers
Support Engineer

Technical Administrator

Course Objectives
Understand Oracle Clusterware architecture

Describe how Grid Plug and Play affects Clusterware

Describe Automatic Storage Management (ASM) architecture

Perform Grid Infrastructure installation and create RAC database

Demonstrate Clusterware management proficiency

Manage application resources

Troubleshoot Oracle Clusterware

Administer ASM Instances and disk groups

Administer ASM Cluster File Systems

Install Oracle Database 11gR2 software and create RAC database

Manage RAC databases

Manage backup and recovery for RAC

Determine RAC-specific tuning components

Configure and manage services in a RAC environment

Describe high availability architectures

Course Topics

Grid Infrastructure Concepts
What is a Cluster
Grid Foundation Components
Oracle Clusterware Architecture
Oracle Clusterware Software and Storage
Describe ASM Architecture
Creating and Managing ASM Disk Groups
Creating and Managing ASM Cluster Filesystems
Job Role Separation

Grid Infrastructure Installation and Configuration
Hardware Requirements
Network Requirements
DNS and DHCP Configuration
Grid Plug and Play Considerations
Single Client Access Names
Post installation tasks

Administering Oracle Clusterware
Managing Clusterware with Enterprise Manager
Determining the Location of the Oracle Clusterware Configuration Files
Backing Up and Recovering the Voting Disk
Adding, Deleting, or Migrating Voting Disks
Locating the OCR Automatic Backups
Oracle Local Registry
Migrating OCR Locations to ASM
Managing Network Settings

Managing Oracle Clusterware
Prerequisite Steps for Extending a Cluster
Using addNode.sh to Add a Node to a Cluster
Rolling Patches, And Rolling Upgrades
Comparing Software Versions With the Active Version
Installing A Patchset With the OUI Utility
Installing A Patch With The opatch Utility

Oracle Clusterware High Availability
Oracle Clusterware high availability components
Contrasting policy-managed and administration managed databases
Server pool functionality
The Generic and Free Server Pools
Application placement policies
Application Virtual IPs
Managing application resources
High availability events

Troubleshooting Oracle Clusterware
Oracle Clusterware Log Files
Gathering Log Files Using diagcollection.pl
Resource Debugging
Component-level Debugging
Tracing For Java-based Tools

Troubleshooting the Oracle Cluster Registry

Administering ASM Instances
ASM Initialization Parameters
Adjusting ASM Instance Parameters in SPFILEs
Starting and Stopping ASM Instances Using srvctl
Starting and Stopping ASM Instances Using ASMCA and ASMCMD
Starting and Stopping ASM Instances Containing Cluster Files
Starting and Stopping the ASM Listener

Administering ASM Disk Groups
Creating And Deleting ASM Disk Groups
ASM Disk Group Attributes
ASM Disk Group Maintenance Tasks
Preferred Read Failure Groups
Viewing ASM Disk Statistics
Performance And Scalability Considerations For ASM Disk Groups

ASM Files, Directories, and Templates
Using Different Client Tools to Access ASM Files
Fully Qualified ASM File Name Format
Creating and Managing ASM files, Directories and Aliases
Managing Disk Group Templates
Managing ASM ACL With Command Line Utilities
Managing ASM ACL with Enterprise Manager

Administering ASM Cluster File Systems
ASM Dynamic Volume Manager
Managing ASM Volumes
Implementing ASM Cluster File System
Managing ASM Cluster File System (ACFS)
ACFS Snapshots
Using Command Line Tools To Manage ACFS

Real Application Clusters Database Installation
Installing The Oracle Database Software
Creating A Cluster Database
Post–database Creation Tasks
Single-Instance Conversion Using the DBCA
Single-Instance Conversion Using rconfig
Background Processes Specific to Oracle RAC

Oracle RAC Administration
Enterprise Manager Cluster Database Pages
Redo Log Files In A RAC Environment
Undo Tablespaces In A RAC Environment
Starting And Stopping RAC Databases And Instances
Initialization Parameters In A RAC Environment
Transparent Data Encryption and Wallets in RAC
Quiescing RAC Databases

Managing Backup and Recovery for RAC

Protecting Against Media Failure
Parallel Recovery in RAC
Archived Log File Configurations
RAC Backup and Recovery Using EM
Archived Redo File Conventions in RAC
Channel Connections to Cluster Instances
Distribution of Backups

Monitoring and Tuning the RAC Database
Determining RAC-Specific Tuning Components
Tuning Instance Recovery in RAC
RAC-Specific Wait Events, Global Enqueues, and System Statistics
Implementing the Most Common RAC Tuning Tips
Using the Cluster Database Performance Pages
Using the Automatic Workload Repository in RAC
Using Automatic Database Diagnostic Monitor in RAC

Services
Configure and Manage Services in a RAC environment
Using Services with Client Applications
Using Services with the Database Resource Manager
Use Services with the Scheduler
Configuring Services Aggregation and Tracing
Managing Services From the Command Line
Managing Services With Enterprise Manager

Design for High Availability
Designing a Maximum Availability Architecture
Determine the Best RAC and Data Guard Topologies
Data Guard Broker Configuration files in a RAC Environment
Identifying Successful Disk I/O strategies