Oracle Database 11gR2: RAC for Administrators

Course Summary

Description

Students will learn how Oracle RAC works, the components necessary to create the RAC cluster, and RAC database administration in the Oracle Grid Infrastructure environment. Students will learn to administer cluster databases using Enterprise Manager and command-line utilities like SRVCTL, CRSCTL, and SQL*Plus. Students will study the new connection architecture and how to make those connections highly available. Backup and recovery issues relative to cluster database environments will also be studied. The primary focus of this course is on architecture, installation, maintenance, and administration of Oracle 11gR2 RAC. This course is also available for Oracle 10g RAC.

Objectives

At the end of this course, students will be able to:

- Prerequisits for creating an Oracle RAC database
- Configuring hardware and OS for RAC
- Administer the RAC database using Oracle Enterprise Manager
- Administer ASM Cluster File Systems
- Administer both Policy and Administrator managed RAC databases
- Describe Oracle Database 11g RAC enhancements and new features
- Configure and manage services in a RAC environment

Topics

- Grid Infrastructure and RAC Concepts
- Managing Oracle Grid Infrastructure, ASM and RAC Databases
- Real Application Clusters Database Installation
- Oracle RAC Administration
- Managing Backup and Recovery for RAC
- Services
- Design for High Availability

Audience

This course is designed for administrators.

Prerequisites

Before taking this course, students should take ProTech's Oracle Database 11gR2: Grid Infrstructure and ASM for Administrators.

Duration

2.5days

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... to Your Success!"

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Course Outline

I. RAC Concepts
- A. Understanding RAC
- B. RAC Solutions
- C. RAC Architecture
- D. RAC Global Resources
- E. Cache Fusion
- F. RAC Configuration
- G. RAC Installation Overview
- H. Oracle Optimal Flexible Architecture (OFA) and 11g

II. Administering ASM Cluster File Systems
- A. Real Application Clusters Database Installation
- B. Installing The Oracle Database Software
- C. Creating A Cluster Database
- D. Post–database Creation Tasks
- E. Background Processes Specific to Oracle RAC
- F. Oracle RAC Administration
- G. Enterprise Manager Cluster Database Pages
- H. Redo Log Files In A RAC Environment
- I. Undo Tablespaces In A RAC Environment
- J. Starting And Stopping RAC Databases And Instances
- K. Initialization Parameters In A RAC Environment
- L. Transparent Data Encryption and Wallets in RAC
- M. Quiescing RAC Databases
- N. Administration using Grid Control

III. Managing Backup and Recovery for RAC
- A. Protecting Against Media Failure
- B. Parallel Recovery in RAC
- C. Archived Log File Configurations
- D. RAC Backup and Recovery Using EM
- E. Archived Redo File Conventions in RAC
- F. Database Backup and Recovery with RMAN
- G. Distribution of Backups
- H. Flashback Technology

IV. Services
- A. RAC Service Architecture
- B. RAC Fast Connection Failover and the Load Balancing Advisory
- C. Configure and Manage Services in a RAC environment
- D. Using Services with Client Applications
- E. Using Services with the Database Resource Manager
- F. Managing Services From the Command Line
- G. Managing Services With Enterprise Manager

V. Administering 11g RAC Databases
- A. Administration Tools
- B. Starting, Stopping and Checking the Database Status
- C. Configuration Overview
- D. Oracle Parameters for RAC

VI. RMAN, the Recovery Manager
- A. RMAN Overview
- B. The Recovery Catalog
- C. Accessing RMAN
- D. RMAN Configuration
- E. Performing backups in a RAC environment

VII. Backup OCR and Voting Disk
- A. Overview of Cluster Files
- B. Backing up the OCR
- C. Backing up the Voting Disk
- D. Restoring

VIII. RAC TAF and Load Balancing
- A. Oracle Net Overview
- B. Failover Modes
- C. TAF
- D. Load Balancing

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Course Outline (cont'd)

IX. RAC FAN and the Load Balancing Advisor

A. Overview of FAN
B. Load Balancing Advisor
C. ONS
D. Differences between FCF and TAF

X. Troubleshooting

A. Identify RAC components
B. Identify Log Files
C. Tools
D. Common Issues
E. Debugging Tips

XI. Design for High Availability

A. Designing a Maximum Availability Architecture
B. RAC Best Practices
C. Determine the Best RAC and Data Guard Topologies
D. Data Guard Broker Configuration files in a RAC Environment
E. Identifying Successful Disk I/O strategies

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