

ITSW 2071 Course Syllabus

1. Name of Course: Oracle 11g RAC Administration

2. Number of Clock Hours: 60 hours

3. Course Description:

This course offers students an introduction to the general features and capabilities of Oracle Database 11g Release 1 for Oracle Real Application Clusters (RAC). Students learn how to install and administer Oracle Clusterware, Real Application Clusters, and Automatic Storage Management. Students also learn how to administer their Database in a Real Application Clusters environment using Enterprise Manager Grid Control. Increase your efficiency by learning how to configure and use database services as well as the Load Balancing Advisory in a RAC environment. Learn how to add and remove nodes in clusters and how to patch both Oracle Clusterware and Real Application Clusters software in a rolling fashion.

This course counts toward the Hands-on course requirement for the following certifications

- Oracle Database 11g Administrator Certification
- Oracle Database 10g: Real Application Clusters Administrator Certified Expert

4. Prerequisites

Oracle Database 11g: Administration Workshop I or equivalent knowledge/experience.

4. Course Objectives

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

- Install Oracle Clusterware and Real Application Clusters
- Administer a RAC Database
- Administer Database Services in a RAC environment
- Administer Oracle Clusterware
- Add/Remove a node to/from a cluster
- Patch Oracle Clusterware and RAC software

5. Rationale:

Upon completion of this course, students will have a better understanding of Oracle 11g, a powerful and popular database system.

6. Required Materials:

Oracle Official Curriculum included.

7. Evaluation

Those who participate in class discussions, complete course lab work, and miss no more than three class meetings will be awarded 6.0 continuing education units.

8. Course Outline

Oracle Clusterware Installation

- Oracle RAC 11g Installation
- Cluster Setup Tasks
- Using Raw Partitions
- Cluster Configuration

RAC Installation

- Installing Automatic Storage Management
- Configure ASM Storage
- Install the Database Software

Database Creation

- Management Agent Installation

- Storage Options for Database Files
- Create the Database
- Single Instance to RAC Conversion

RAC DB Administration

- Cluster Database Instance Administration
- Topology Viewer
- Automatic Undo Management and RAC
- Quiescing RAC Databases
- Transparent Data Encryption and Wallets in RAC
- ASM Instance and Crash Recovery in RAC

Backup and Recover a RAC DB

- Protecting Against Media Failure
- Oracle Recovery Manager

RAC DB Monitoring and Tuning

- CPU and Wait Time Tuning Dimensions
- Dynamic Reconfiguration
- ADDM Analysis

Services

- Workload Dispatching
- High Availability of Services in RAC
- Services and Resource Manager with EM
- Change Service Thresholds
- Using Distributed Transactions with RAC

High Availability of Connections

- Fast Application Notification
- Load Balancing Advisory
- Transparent Application Failover

Oracle Clusterware Administration

- Controlling the Oracle Clusterware Stack
- Back Up and Recover Your Voting Disks
- Back Up and Recover Oracle Cluster Registry
- Prevent Automatic Instance Restarts

Diagnosing the Oracle Clusterware components

- Oracle Clusterware Main Log Files
- RAC Diagnostic Infrastructure

Node Addition/Removal

- Add and Delete Nodes and Instances
- Clone Oracle Clusterware

Design for High Availability

- Maximum Availability Architecture
- RAC and Data Guard Topologies
- Extended RAC Connectivity
- Extended RAC disk mirroring
- Patch your RAC system in a rolling fashion

Workshop

- Extend your cluster using Grid Control
- Patch Oracle Clusterware

outside of the database