Oracle Database 10g: RAC Basic Concepts & Architecture Seminar

Varighed: 1 Day

What you will learn

This one day seminar introduces the most important concepts of Oracle Database 10g Real Application Clusters. Learn about the architecture that supports Grid Computing in a RAC environment including the Oracle Clusterware and RAC database.

These concepts are illustrated with demos that allow for better understanding of Oracle Clusterware and RAC database capabilities.

This seminar is a vital for people interested in the functionality of RAC technology, and does not require any previous experience with RAC. Beginners with minimal single-instance Oracle experience are introduced to RAC Curriculum and Grid Technology.

Learn To:

Understand what is Oracle Clusterware

Understand what is Real Application Clusters

Position Oracle Clusterware and Real Application Clusters in the Oracle Grid vision

Audience

Business Analysts
Data Warehouse Administrator
Data Warehouse-administrator
Database Administrators
Database Designers
Databaseadministrator
Project Manager
Sales Consultants

Prerequisites

Required Prerequisites

Oracle Database 10g: Administration Workshop I Release 2

Suggested Prerequisites

Oracle Database 10g single-instance experience

Course Objectives

Understand RAC Software and Storage Principles
Understand the Enterprise Manager Cluster Database Home Page
Understand RAC Specific Tuning Activities
Understand Automatic Workload Management
Understand Oracle Clusterware Basic Administration Tasks

Course Topics

Introduction to RAC and Grid Computing

Implement One from Many
Manage Many as One
Oracle Enterprise Manager 10g Grid Control
Oracle Database 10g: The Database for the Grid
What Is Oracle Real Application Clusters?
Clusters and Scalability
Typical Cluster Stack with RAC
Speedup/Scaleup and Workloads

RAC Architecture
The Necessity of Global Resources
Global Dynamic Performance Views
Additional Memory Requirement for RAC
Parallel Execution with RAC
RAC Software Storage Principles & Database Storage Principles
Global Resources Coordination
Object Affinity and Dynamic Remastering
RAC and Instance/Crash Recovery

RAC and Shared Storage
Oracle Cluster File System
Automatic Storage Management: General Architecture, Disk Group, Key Features, Benefits and New Concepts
Disk Group: Mirroring & Dynamic Rebalancing
Database Storage Consolidation
ASM Instance and Crash Recovery in RAC
ASM: Administration Page
ASM Scalability
Demos: Install ASM in its own home directory in a RAC

Installation and Administration Basics
Oracle RAC 10g Installation: Outline
Pre-installation Tasks
Verifying Cluster Setup With cluvfy
Installing Oracle Clusterware & Automatic Storage Management
Verifying the Oracle Clusterware Installation
Create a RAC Database
Cloning
Conversion from single-instance to RAC

RAC Performance Tuning
RAC-Specific Tuning
Most Common RAC Tuning Tips
Cluster Database Performance Page
Cluster Cache Coherency Page
Cluster Interconnects Page
RAC-Specific ADDM Findings
ADDM Analysis Results
Demos: Use ADDM to identify issues with free list segments and sequences

Services
Traditional Workload Dispatching
Grid Workload Dispatching

Data Warehouse Example
RAC and Data Warehouse: An Optimal Solution
High Availability of Services in RAC
Possible Service Configuration with RAC
Service Aggregation and Tracing
Connection Load Balancing in RAC

Oracle Clusterware
Oracle Clusterware Runtime View
Virtual IP Addresses and RAC
OCR Architecture
OCR Contents and Organization
Automatic OCR Backups
OCR Considerations
The One Golden Rule in RAC Debugging
Diagnostics Collection Script

Design for High Availability
Causes of Planned & Unplanned Down Time
Oracle's Solution to Down Time
RAC and Data Guard Complementarity
Maximum Availability Architecture
RAC and Data Guard: Topologies & Architecture
Data Guard Broker (DGB) and Oracle Clusterware (OC) Integration
Hardware Assisted Resilient Data
Which RAID Configuration for Best Availability?