Oracle Exadata Machine Administration

Course Summary

Description

This 5-Day course introduces the Oracle Exadata Database Machine. In this course students will learn the features and functionality of the Exadata Storage Server. The installation initial configuration process is covered, along with migrating to Database Machines.

Objectives

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

- Describe key capabilities of Exadata & Database Machines.
- Migration Approaches.
- Monitoring Exadata.
- Optimize Performance.
- Exadata I/O Process Management.
- Clustering & ASM.
- Initial Configuration of Database Machine.

Topics

- Exadata Database Machine Overview
- Extended Storage Server
- Exadata Database Machine Configuration
- Exadata Storage Server Security
- Query Execution Plans
- Exadata Smart Scan
- How Exadata differs from traditional storage
- Recommendations for Consolidation on Exadata Database Machines

Audience

This 5-Day course introduces the Oracle Exadata Database Machine. In this course students will learn the features and functionality of the Exadata Storage Server. The installation initial configuration process is covered, along with migrating to Database Machines.

Prerequisites

There are no prerequisites for this course.

Duration

Five days

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

Oracle Exadata Machine Administration

Course Outline

I. EXADATA DATABASE MACHINE OVERVIEW
- A. Database Machine
- B. Exadata Storage Server
- C. Storage Server Architecture
- D. Storage Server Features
- E. Storage Expansion Racks
- F. InfiniBand Network
- G. Database Machine Support

II. EXADATA ARCHITECTURE
- A. Database Machine Architecture
- B. Network Architecture
- C. InfiniBand Network Architecture
- D. X2-2 RAC Switch Topology
- E. Spine & Leaf Topology
- F. Disk Storage Entities

III. EXADATA CAPABILITIES
- A. Database I/0
- B. SQL Processing Model
- C. Exadata Smart Scan
- D. Exadata Smart Storage
- E. Hybrid Columnar Compression
- F. Smart Flash Cache

IV. EXADATA INITIAL CONFIGURATION
- A. Implementation
- B. General Configuation
- C. Protection Levels
- D. OEM & Grid Control
- E. Hardware Installation
- F. Exadata Configuration
- G. Selecting the DB Server OS
- H. Deploying Solaris

V. STORAGE CONFIGURATION
- A. Storage Server Admin Overview
- B. Testing Performance
- C. Cell Server Software
- D. Flash Based GRID Disks
- E. Smart Flash Log
- F. Configuring ASM
- G. Security Overview

VI. I/O RESOURCE MANAGEMENT
- A. Resource Management Overview
- B. IORM
- C. Setting I/0 Limits
- D. Plans & DB Roles
- E. Database I/O Metrics
- F. Flash Memory

VII. DATABASE PERFORMANCE
- A. Optimizing Performance
- B. Flash Memory Usage
- C. Compression Usage
- D. Index Usage
- E. ASM
- F. Minimum Extent Size
- G. Optimizing Performance

VIII. SMART SCAN
- A. Smart Scan Overview
- B. Monitoring Smart Scan
- C. Bloom Filters
- D. Extended Storage Server Statistics
- E. Wait Events
- F. Using Smart Scan

IX. CONSOLIDATION OPTIONS
- A. Overview
- B. Consolidation Types
- C. Storage Configuration
- D. Cluster Configuration Options
- E. Management Roles
- F. Schema Recommendations

X. MIGRATION
- A. Capacity Planning
- B. Migration Considerations
- C. Migration Path
- D. Logical Approaches
- E. Physical Approaches
- F. Post-Migration
- G. Migrating Using Transportable

XI. DBFS
- A. Bulk Data Loading

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically

B. Preparing Data Files
C. Staging
D. Preparing the Staging Area
E. Loading the Target Database
F. Bulk Data Loading

XII. EXADATA PERFORMANCE MONITORING

A. Monitoring Technologies
B. SNMP
C. IMPI
D. ILOM
E. Metrics, Thresholds, Alerts
F. Event Manager Grid Control
G. Enterprise Manager DB Control

XIII. ENTERPRISE MANAGER

A. GRID CONTROL
B. Grid Control Architecture
C. Grid Control Monitoring
D. Configuring Grid Control
E. Deploying OMA
F. Configuring ASM
G. System Monitoring Plug-ins

XIV. MONITORING EXTENDED STORAGE SERVERS

A. Metrics & Alerts
B. Monitoring Storage Servers
C. Grid Control Overview
D. Monitoring Hardware
E. Monitoring Server Availability
F. Comparing Metrics

XV. MONITORING EXADATA DATABASE MACHINE DATABASE SERVERS

A. Monitoring Database Servers
B. Monitoring Hardware
C. Monitoring the OS
D. Monitoring GRID Infrastructure
E. Monitoring Oracle Database
F. Monitoring OMA

XVI. MONITORING INFINIBAND NETWORK

A. InfiniBand Network Monitoring
B. InfiniBand Grid Control
C. InfiniBand Switches
D. InfiniBand Switch Ports
E. Ports on DB Machine Servers
F. Subnet Manager
G. Network Topology

XVII. MONITORING TOOLS

A. Exachk
B. Exachk Output
C. DiagTools Overview
D. ADRCI-Extended Storage Servers
E. Imageinfo
F. Imagehistory
G. OSWatcher

XVIII. BACKUP & RECOVERY

A. RMAN & Database Machine
B. Disk Recovery Backup Strategy
C. Recommendations
D. Tape-Based Backup Strategy
E. Tape-Based Backup Architecture
F. Media server using Ethernet
G. Backup & Recovery of Database Machine Software

XIX. EXADATA DATABASE MACHINE MAINTENANCE TASKS

A. Database Machine Maintenance
B. Powering Database Machine On
C. Single Exadata Storage Server
D. Replacing a Damaged Disk
E. Replacing a Damaged Flash Card
F. Exadata Cell Software Rescue

XX. PATCHES

A. Updating
B. Maintaining Storage Server Software
C. Maintaining Database Software
D. OPLAN
E. Test System Procedures

Due to the nature of this material, this document refers to numerous hardware and software products by their trade names. References to other companies and their products are for informational purposes only, and all trademarks are the properties of their respective companies. It is not the intent of ProTech Professional Technical Services, Inc. to use any of these names generically