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## Exadata Database Machine Administration Training

This course introduces you to the Oracle Exadata Database Machine. You'll learn about the various Exadata Database Machine features and configurations, with emphasis on the Unique capabilities delivered by Exadata Storage Server.

### Target Audience

- Database Administrators
- Database Designers
- Data Warehouse Administrator
- Technical Administrator
- System Administrator

### What you will learn

- List the key capabilities and features of Exadata Database Machine and Exadata Storage Server.
- Initially configure Exadata Database Machine.
- Implement Exadata Storage Server security.
- Use query execution plans, statistics and wait events to examine Exadata Smart Scan.
- Describe various options and best-practice recommendations for consolidation on Exadata Database Machine.
- Describe what Exadata is and how it's different from traditional database storage.
- Maintain, monitor and optimize Database Machine after initial configuration.

## Course topics to be covered

### Introduction

- Course Objectives
- Audience and Prerequisites
- Course Contents
- Terminology
- Additional Resources
- Introducing the Laboratory Environment

### Required Prerequisites:

- General storage and systems
- Networking (including Infiniband)
- Oracle Enterprise Linux: System Administration
- Oracle RAC/ASM DBA
- Relevant Hardware Training

### Exadata Database Machine Overview

- Introducing Database Machine
- Introducing Exadata Storage Server
- Exadata Storage Server Architecture: Overview
- Exadata Storage Server Features: Overview
- Database Machine Capacity
- Exadata Storage Expansion Racks



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- InfiniBand Network
- Database Machine Support: Overview

## **Exadata Database Machine Architecture**

- Database Machine Architecture: Overview
- Database Machine Network Architecture
- InfiniBand Network Architecture
- X2-2 To X7-2 Full Rack Leaf Switch Topology
- Spine and Leaf Topology
- Scale Performance and Capacity
- Database Machine Software Architecture: Overview
- Disk Storage Entities and Relationships

## **Key Capabilities of Exadata Database Machine**

- Classic Database I/O and SQL Processing Model
- Exadata Smart Scan Model
- Exadata Smart Storage Capabilities
- Exadata Hybrid Columnar Compression Data Organization
- Exadata Smart Flash Cache Intelligent Caching
- Storage Index with Partitions
- Database File System
- I/O Resource Management: Overview

## **Exadata Database Machine Initial Configuration**

- Database Machine Implementation: Overview
- General Configuration
- Choosing the Right Protection Level
- Oracle Enterprise Manager Grid Control Configuration
- Database Machine Hardware Installation: Overview
- Configuring Oracle Exadata Database Machine: Overview
- Selecting the Database Server Operating System
- Deploying Solaris on the Database Servers

## **Exadata Storage Server Configuration**

- Exadata Storage Server Administration: Overview
- Testing Storage Server Performance Using CALIBRATE
- Configuring the Exadata Cell Server Software
- Creating Flash-Based Grid Disks
- Creating Smart Flash Log
- Configuring ASM and Database Instances to Access Exadata Cells
- Exadata Storage Security: Overview
- Exadata Storage Security Implementation

## **Recommendations for Optimizing Database Performance**

- Optimizing Performance
- Flash Memory Usage
- Compression Usage
- Index Usage
- ASM Allocation Unit Size
- Optimizing Database Performance with Exadata



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## Using Smart Scan

- Exadata Smart Scan: Overview
- Smart Scan Requirements
- Monitoring Smart Scan in SQL Execution Plans
- Smart Scan Join Processing with Bloom Filters
- Other Situations Affecting Smart Scan
- Exadata Storage Server Statistics: Overview
- Exadata Storage Server Wait Events: Overview
- Using Smart Scan

## Consolidation Options and Recommendations

- Consolidation: Overview
- Different Consolidation Types
- Recommended Storage Configuration for Consolidation
- Alternative Storage Configurations
- Cluster Configuration Options
- Isolating Management Roles
- Schema Consolidation Recommendations
- Maintenance Considerations

## Migrating Databases to Exadata Database Machine

- Migration Best Practices: Overview
- Performing Capacity Planning
- Database Machine Migration Considerations
- Choosing the Right Migration Path
- Logical Migration Approaches
- Physical Migration Approaches
- Post-Migration Best Practices
- Migrating to Databases Machine Using Transportable

## Bulk Data Loading Using Oracle DBFS

- Bulk Data Loading Using Oracle DBFS: Overview
- Preparing the Data Files
- Staging the Data Files
- Configuring the Staging Area
- Configuring the Target Database
- Loading the Target Database
- Bulk Data Loading Using Oracle DBFS

## Exadata Database Machine Platform Monitoring Introduction

- Monitoring Technologies and Standards
- Simple Network Management Protocol (SNMP)
- Intelligent Platform Management Interface (IPMI)
- Integrated Lights Out Manager (ILOM)
- Exadata Storage Server Metrics, Thresholds, and Alerts
- Automatic Diagnostic Repository (ADR)
- Enterprise Manager Grid Control
- Enterprise Manager Database Control

## Monitoring Exadata Storage Servers

- Exadata Metrics and Alerts Architecture
- Monitoring Exadata Storage Server with Metrics



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- Monitoring Exadata Storage Server with Alerts
- Monitoring Exadata with Active Requests
- Monitoring Exadata Storage Server with Grid Control: Overview
- Monitoring Hardware Failure and Sensor State
- Monitoring Exadata Storage Server Availability
- Comparing Metrics Across Multiple Storage Servers

## **Monitoring Exadata Database Machine Database Servers**

- Monitoring Database Servers: Overview
- Monitoring Hardware
- Monitoring the Operating System
- Monitoring Oracle Grid Infrastructure
- Monitoring Oracle Database
- Monitoring Oracle Management Agent

## **Monitoring the InfiniBand Network**

- InfiniBand Network Monitoring: Overview
- Manually Monitoring the InfiniBand Switches
- Monitoring the InfiniBand Switches with Grid Control
- Monitoring the InfiniBand Switch Ports
- Monitoring the InfiniBand Ports on Database Machine Servers
- Monitoring the InfiniBand Fabric: Subnet Manager Master Location
- Monitoring the InfiniBand Fabric: Network Topology and Link Status

## **Monitoring Other Exadata Database Machine Components**

- Monitoring the Cisco Catalyst Ethernet Switch
- Monitoring the Sun Power Distribution Units
- Monitoring the Avocent MergePoint Unity KVM Switch

## **Other Useful Monitoring Tools**

- Exachk: Overview
- Running Exachk
- Exachk Output
- DiagTools: Overview
- Using ADRCI on Exadata Storage Servers
- Imageinfo: Overview
- Imagehistory: Overview
- OSWatcher: Overview

## **Backup and Recovery**

- Using RMAN with Database Machine
- General Recommendations for RMAN
- Disk-Based Backup Strategy
- Disk-Based Backup Recommendations
- Tape-Based Backup Strategy
- Tape-Based Backup Architecture
- Connecting the Media Server Using Ethernet
- Backup and Recovery of Database Machine Software

## **Exadata Database Machine Maintenance Tasks**

- Database Machine Maintenance: Overview
- Powering Database Machine Off and On
- Safely Shutting Down a Single Exadata Storage Server



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- Replacing a Damaged Physical Disk
- Replacing a Damaged Flash Card
- Moving All Disks from One Cell to Another
- Using the Exadata Cell Software Rescue Procedure

## **I/O Resource Management**

- I/O Resource Management: Overview
- IORM Architecture
- Getting Started with IORM
- Enabling Intradatabase Resource Management
- Setting Database I/O Utilization Limits
- Interdatabase Plans and Database Roles
- Using Database I/O Metrics
- IORM and Exadata Storage Server Flash Memory

## **Patching Exadata Database Machine**

- Patching and Updating: Overview
- Maintaining Exadata Storage Server Software
- Maintaining Database Server Software
- Assisted Patching Using OPlan
- Maintaining Other Software
- Recommended Patching Process
- Test System Recommendations

**For Any Clarification please feel free to contact @ +91 9867328291.**

Cheers,

**Ambasa S. Ladwa**

**Ph# +91 9867328291**

**Ambasa.Ladwa@aalokinstitute.com**