

Exadata Database Machine Administration Workshop

Learn via: **Classroom / Virtual Classroom / Online**

Duration: **5 Days**

Overview

This Exadata Database Machine: 12c Administration Workshop training introduces you to Oracle Exadata Database Machine, covering the features and capabilities of the Exadata Database Machine X6 product family. In this course, you will be introduced to Oracle Database Exadata Cloud Service.

Explore the various Exadata Database Machine features and configurations, with emphasis on the unique capabilities delivered by Exadata Storage Server. This course uses a virtualized environment for the hands-on component.

Prerequisites

There are no prerequisites for this course.

Who Should Attend

- Database Administrators
- Sales Consultants
- System Administrator
- Technical Administrator
- Technical Consultant

What You Will Learn

- Configure I/O Resource Management
- Monitor Exadata Database Machine health and optimize performance
- Describe the key capabilities of Exadata Database Machine
- Identify the benefits of using Exadata Database Machine for different application classes
- Describe the architecture of Exadata Database Machine and its integration with Oracle Database, Clusterware and ASM
- Complete the initial configuration of Exadata Database Machine
- Describe various recommended approaches for migrating to Exadata Database Machine

Outline

Introduction

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

Exadata Database Machine Overview

- Introducing Database Machine
- Introducing Exadata Storage Server
- Exadata Storage Server Architecture: Overview

Exadata Storage Server Features: Overview

- Exadata Storage Expansion Racks
- InfiniBand Network

- Database Machine Support: Overview

Exadata Database Machine Architecture

- Database Machine Architecture: Overview
- Database Machine Network Architecture
- InfiniBand Network Architecture
- InfiniBand Network Topology
- Interconnecting Multiple Racks
- 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
- Exadata Smart Flash Cache
- Exadata Storage Index
- Database File System
- I/O Resource Management

Exadata Database Machine Initial Configuration

- Database Machine Implementation: Overview
- Database Machine Site Preparation
- Using Oracle Exadata Deployment Assistant
- Choosing the Right Disk Redundancy Setting
- Configuring Oracle Exadata Database Machine
- The Result After Installation and Configuration
- Supported Additional Configuration Activities

Exadata Storage Server Configuration

- Exadata Storage Server Administration: Overview
- Testing Storage Server Performance Using CALIBRATE
- Configuring the Exadata Cell Server Software
- Starting and Stopping Exadata Cell Server Software
- Configuring Cell Disks and Grid Disks
- Configuring ASM and Database Instances to Access Exadata Cells
- Reconfiguring Exadata Storage
- Exadata Storage Security Implementation

I/O Resource Management

- I/O Resource Management Concepts
- 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

Recommendations for Optimizing Database Performance

- Flash Memory Usage
- Influencing Caching Priorities
- Choosing the Flash Cache Mode
- Compression Usage
- Index Usage
- ASM Allocation Unit Size
- Minimum Extent Size
- Exadata Specific System Statistics

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

Consolidation Options and Recommendation

- 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 Database Machine Using Transportable Tablespaces

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

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 Cloud Control 12c
- Enterprise Manager Database Control

Configuring Enterprise Manager Cloud Control 12c to Monitor Exadata Database Machine

- Enterprise Manager Cloud Control 12c Architecture: Overview
- Cloud Control Monitoring Architecture for Exadata Database Machine
- Configuring Cloud Control to Monitor Exadata Database Machine
- Pre-discovery Configuration and Verification
- Deploying the Oracle Management Agent
- Discovering Exadata Database Machine
- Discovering Additional Targets
- Post-discovery Configuration and Verification

Monitoring Exadata Storage Servers

- Exadata Metrics and Alerts Architecture
- Monitoring Exadata Storage Server with Metrics and Alerts
- Isolating Faults with
- Monitoring Exadata Storage Server with Enterprise Manager: Overview
- 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
- Database Monitoring with Enterprise Manager Cloud Control 12c

Monitoring the InfiniBand Network

- InfiniBand Network Monitoring: Overview

- InfiniBand Network Monitoring with
- Monitoring the InfiniBand Switches
- Monitoring the InfiniBand Switch Ports
- Monitoring the InfiniBand Ports
- Monitoring the InfiniBand Fabric:
- Monitoring the InfiniBand Fabric:

Monitoring Other Exadata Database Machine Components

- Monitoring the Cisco Ethernet Switch
- Monitoring the Sun Power Distribution Units
- Monitoring the KVM Switch

Other Useful Monitoring Tools

- Exachk: Overview
- Running Exachk
- Exachk Daemon
- 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
- Disk-Based Backup on
- Tape-Based Backup Strategy
- Tape-Based Backup Architecture and Recommendations
- 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
- 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

Patching Exadata Database Machine

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