

On-Premise Oracle Exadata X7 Training.

Oracle-Exadata Database Machine X7: 12c Administration Workshop Ed2 Training

Who Can take this training?

Eligibility Criteria: - Any Grade with Oracle DBA 2 years of Experience

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 X7 product family. 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.

Learn To:

Describe Exadata Storage Server and how it's different from traditional database storage.

- List the key capabilities and features of Exadata Database Machine and Exadata Storage Server.
- Initially configure Exadata Database Machine and make appropriate up-front configuration decisions.
- 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 various options for migrating to Database Machine and how to select the best approach.
- Perform various maintenance tasks on Exadata Database Machine.
- Configure Enterprise Manager Cloud Control 12c in conjunction with Exadata Database Machine.
- Monitor Exadata Database Machine using the monitoring infrastructure inherently within Exadata Database Machine, along with the monitoring capabilities exposed through Enterprise Manager Cloud Control 12c.
- Use other utilities for monitoring Exadata Database Machine, which are supplied by Oracle.

Benefits to You

- Maximize the efficiency and effectiveness of your Exadata Database Machines. Develop an understanding of implementing the best practices taught in the course.

Hands-On Experience

- Best-practice recommendations are highlighted throughout; and, where possible, the topics are reinforced through participation in structured hands-on lab exercises.

Skills Gained

Identify the benefits of using Exadata Database Machine for different application classes

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

Who Can Benefit

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

Prerequisites

- A working knowledge of Unix/Linux along with an understand of general networking, storage and system administration concepts.
- Prior knowledge of Oracle Database 11g R2 or 12c RAC
- Prior knowledge and understanding of Oracle Database 11g Release 2 or 12c, including Oracle Clusterware and
- Automatic Storage Management (ASM).

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

Labs on Capabilities

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

Labs Real time scenario on OEDA and Deployment on real machine

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

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

Labs on DBFS

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

Labs on details monitoring

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:

Labs on details monitoring

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

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

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

Labs on IORM Plan- Interdatabase and Intradatabase

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

Labs on Flashdisk/HDD/Celldisk/Griddisk on real machine

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

Labs on- Smart Scan

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

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 Hardware Failure and Sensor State
- Monitoring Exadata Storage Server Availability
- Comparing Metrics Across Multiple Storage Servers

Labs on Monitoring Cell servers + Various Metrics etc

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

Labs on Live Patch on-off/Rolling Patch+OPlan

ASR Installation and configuration