

Oracle Database 19c: ASM Administration Workshop LVC

Oracle Database

DURATION

2 Days

MODULES

9 Lectures

COURSE CODE

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Course Overview

Learn To: Administer ASM Instances Perform Client Database Failover with Flex ASM Administer ASM Disk Groups Rename the ASM Disk Groups Manage ASM Disk Group Space Perform Miscellaneous Administration Activities Manage Flex Disk Groups Administer ASM Files, Directories, and Templates Manage ACFS Perform ACFS Automatic Resizing Perform ACFS Defragmentation Perform ACFS Compression

What You Will Learn

ASM Overview

- Objectives
- What Is Oracle ASM?
- Oracle ACFS
- ASM: Features and Benefits
- ASM: Software Installation
- Oracle ASM Components
- ASM Components: ASM Instance
- ASM Instance Primary Processes
- ASM Instance Designs
- ASM Components: ASM Disk Group
- ASM Components: Failure Groups
- ASM Components: ASM Disks
- ASM Components: ASM Files
- ASM Files: Extents and Striping
- ASM Files: ASM File Mirroring
- ASM Clients
- ASM Utilities
- Quiz
- Summary

Administering ASM Instances

- Objectives
- Operating with Different Releases of Oracle ASM and Database Instances Simultaneously
- Managing ASM with ASMCA
- Starting and Stopping ASM Instances by Using ASMCA
- Starting and Stopping ASM Instances by Using ASMCMD
- Starting and Stopping ASM Instances by Using srvctl
- Starting and Stopping ASM Instances By Using SQL*Plus
- Starting and Stopping ASM Instances
- ASM Initialization Parameters
- ASM_DISKGROUPS
- Disk Groups Mounted at Startup
- ASM_DISKSTRING
- ASM_POWER_LIMIT
- INSTANCE_TYPE
- MEMORY_TARGET
- Adjusting ASM Instance Parameters in SPFILES
- Starting and Stopping the Node Listener
- ASM System Privileges
- Using Separate OS Groups for Oracle ASM users
- Authentication for Accessing ASM Instances
- ASMCMD and Authentication
- Password-Based Authentication for ASM
- Managing the ASM Password File
- Managing a Shared Password File in a Disk Group
- ASM Dynamic Performance Views
- ASM Dynamic Performance Views Diagram
- Quiz
- Summary
- Practice 2: Overview

Flex ASM

- Objectives
- Flex ASM: Overview
- Oracle ASM Flex Configurations
- ASM Instance Changes
- ASM Network
- Configuring ASM Network: Example
- ASM Listeners
- ADVN Proxy
- Managing Flex ASM Instances
- Stopping, Starting, and Relocating Flex ASM Instances
- Setting the Cardinality for Flex ASM Instances
- Monitoring Flex ASM Connections

- Relocating an ASM Client
- Flex ASM Deployment: Example
- Oracle Cluster Domain: Overview
- The IOS Instance
- The ASM_IO_PROCESSES Initialization Parameter
- Managing IOserver
- Quiz
- Summary
- Practice 3: Overview

Administering ASM Disk Groups Part I

- Objectives
- Disk Group: Overview
- Creating a New Disk Group with ASMCMD
- Creating an ASM Disk Group with ASMCA
- Creating an ASM Disk Group: Advanced Options
- Creating a Disk Group with Enterprise Manager
- Creating a Disk Group with SQL*Plus
- Disk Group Attributes
- Viewing Disk Group Attributes
- Compatibility Attributes
- Features Enabled by Disk Group Compatibility Attributes
- Specifying Content Type for a Disk Group
- Support for 4 KB Sector Disk Drives
- Supporting 4 KB Sector Disks
- ASM Support for 4 KB Sector Disks
- Sector Size Validations
- Using the SECTOR_SIZE Clause
- ASM Extended Support for 4K Sector Size
- Specifying Disk Logical and Sector Sizes in a Disk Group
- Possible Sector Size/Logical Sector Size Combinations
- Disk Group Sector Size Guidelines
- Viewing ASM Disk Groups
- Viewing ASM Disk Information
- Extending an Existing Disk Group
- Dropping Disks from an Existing Disk Group
- REBALANCE POWER 0
- V\$ASM_OPERATION
- Adding and Dropping in the Same Command
- Undropping Disks in Disk Groups
- Replacing Disks in Disk Groups
- Renaming Disk Groups
- Renaming Disks in Disk Groups
- Resizing Disks in Disk Groups
- Mounting and Dismounting Disk Groups

- Viewing Connected Clients
- Dropping Disk Groups
- ASM Disk Group Rebalance: Review
- Priority Ordered Rebalance
- Tuning Rebalance Operations
- Quiz
- Summary
- Practice 4: Overview

Administering ASM Disk Groups Part II

- Objectives
- Managing Capacity in Disk Groups
- Capacity Calculation: Example
- Partner Status Table
- Partner Disks
- ASM Recovery from Read I/O Errors
- ASM Recovery from Write I/O Errors
- Proactively Validating Data Integrity
- Proactive Content Checking During Rebalance
- On-Demand Scrubbing
- Errors During Scrubbing
- Checking the Consistency of Disk Group Metadata
- ASM Fast Mirror Resync
- Controlling the Resources Used by Resync
- Resync Checkpoint and Auto-Restart
- Resync Time Estimate
- Dealing with Transient Failure on a Failure Group
- Even Read
- Preferred Read Failure Groups: Best Practice
- Viewing ASM Disk Statistics
- Performance, Scalability, and Manageability Considerations for Disk Groups
- Quiz
- Summary
- Practice 5: Overview

Flex ASM Disk Groups

- Objectives
- ASM Database-Oriented Storage Management
- ASM Flex Disk Group Characteristics
- DB-Oriented Storage Management with ASM File Groups
- ASM File Group Considerations
- Oracle ASM Quota Groups
- ASM File Groups Deployment: Example
- Oracle ASM File Group Properties
- ASM File Group Administration by Using SQL

- Using ASMCMD to Manage File Groups and Quota Groups
- New ASM File Group Dynamic Views
- Prioritized Rebalancing for File Groups
- Summary
- Practice 6: Overview

Administering ASM Files, Directories, and Templates

- Objectives
- ASM Clients
- Interaction Between Database Instances and ASM
- Accessing ASM Files By Using RMAN
- Accessing ASM Files By Using XML DB
- Accessing ASM Files By Using DBMS_FILE_TRANSFER
- Accessing ASM Files By Using ASMCMD
- Fully Qualified ASM File Names
- Other ASM File Names
- Single File Creation: Examples
- Multiple File Creation: Example
- Viewing ASM Aliases, Files, and Directories
- Viewing ASM Files
- ASM Directories
- Managing ASM Directories
- Managing Alias File Names
- Disk Group Templates
- Viewing Templates
- Managing Disk Group Templates
- Managing Disk Group Templates with ASMCMD
- Using Disk Group Templates
- ASM Access Control Lists
- ASM File Access Control Available on Windows
- ASM ACL Prerequisites
- Managing ASM ACL with SQL Commands
- Managing ASM ACL with ASMCMD Commands
- Managing ASM ACL with Enterprise Manager
- ASM ACL Guidelines
- Quiz
- Summary
- Practice 7: Overview

Administering Oracle ACFS

- Objectives
- Oracle ACFS
- ASM Files and Volumes
- ACFS and ADVM Architecture: Overview
- ADVM and ACFS Processes

- Oracle ACFS
- Space Allocation
- Striping Inside the Volume
- Volume Striping: Example
- Creating an ACFS Volume
- Managing Dynamic Volumes with SQL*Plus
- Creating an ACFS Volume with ASMCA
- Creating the ACFS File System with ASMCA
- Using ASMCMD for Dynamic Volumes
- Linux-UNIX Extensions
- ACFS Utilities for Multiple Environments
- Configuration Settings for Database Files
- ACFS Support for Database File Mapping Views
- ACFS Cluster Resources
- Implementing Node-Specific File System Dependencies
- ACFS Snapshots
- Managing ACFS Snapshots
- Snapshots of Snapshots
- ACFS Backups
- ACFS Performance
- ACFS Views
- Summary
- Practice 8: Overview

ACFS/ADVM Enhancements

- Objectives
- Oracle ACFS Automatic Resize
- Oracle ACFS Scrubbing
- Oracle ACFS Fragmentation
- Oracle ACFS Defragger
- Oracle ACFS Metadata Collection
- Oracle ACFS Metadata Acceleration
- Accelerator Volume Considerations
- 4K Sector Support for Oracle ACFS and Metadata
- 4K Sector and Metadata Support Considerations
- Accelerator Volumes and Automatic Resize
- Oracle ACFS Compression
- Oracle ACFS Compression Management
- ACFS Compression Commands
- Oracle ACFS Sparse Files
- Oracle ACFS Loopback Devices
- Quiz
- Summary
- Practice 9: Overview
- A Oracle ASM Advanced Topics
- Objectives A-2

- High Availability NFS A-3
- Configuring High Availability NFS A-4
- Highly Available NAS Enhancements A-5
- ASM Filter Driver: Overview A-6
- Configuring the ASM Filter Driver A-7
- Labeling Disks for ASM Filter Driver A-8
- Migrating from ASMLib to ASMFD A-9
- Unlabeling Disks and Deconfiguring ASMFD A-10
- ACFS Encryption A-11
- Encrypting ACFS File Systems A-14
- Oracle ACFS Snapshot-Based Replication A-15
- Snapshot Replication Basics A-16
- ACFS Snapshot Replication Requirements A-17
- ACFS Snapshot-Based Replication with ACFSUTIL A-19
- Configuring SSH for Use with ACFS Replication A-20
- Host Key Configuration for VIPs A-21
- Configuring the Standby Site A-22
- Configuring the Primary Site A-23
- Snapshot-Based Replication Upgrade Prerequisites A-24
- Snapshot Replication Considerations A-25
- Using Replication in Conjunction with ACFS Security and Encryption A-26
- Quiz A-27
- Summary A-28
- B Point-In-Time Database Clones
- Objectives B-2
- Overview of Creating Point-In-Time Database Clones B-3
- Diagram of Create Point-In-Time Database Clones B-4
- Phase One of Create Point-In-Time Database Clones B-5
- Phase Two of Create Point-In-Time Database Clones B-6
- Prepare Point-In-Time Database Clones: Connect to PDB B-7
- Prepare Point-In-Time Database Clones: Prepare Mirror B-8
- Split and Create Point-In-Time Database Clones B-9
- Check the Status of Point-In-Time Database Clones B-10
- View Information About Point-In-Time Database Clones B-11
- Drop the Point-In-Time Database Clone Mirror Copy B-12
- Cleanup of Point-In-Time Database Clone Process B-13
- Summary B-14