

Oracle Database 12c: OCM Exam Preparation Workshop (D94327)

ID D94327 Preis 3.350,- € (exkl. MwSt.) Dauer 5 Tage

Kursüberblick

The Oracle Database 12c: OCM Exam Preparation Workshop is designed for those candidates who are preparing to take the Oracle Database 12c: Oracle Certified Master (OCM) Exam. This workshop has extensive hands-on practices to enable students to:

- Create a Multitenant Container Database and Pluggable Databases
- Perform Backup, Recovery and Flashback of CDB and PDBs
- Load and unload data
- Implement partitioning
- Configure Dataguard
- Configure clusterware
- Install RAC

Zielgruppe

- Database Administrators
- Data Center Manager
- Database Designers
- Technical Consultant
- Data Warehouse Developer
- Technical Administrator
- Systems Architects
- Data Warehouse Administrator

Kursziele

- Describe the multitenant architecture
- Establish connections to CDB / PDB
- Implement fine-grained auditing (FGA)
- Describe operations that can be parallelized
- Describe ways to move data
- Describe the architecture, uses, and advantages of partitioning
- Describe how to optimize a star query using star transformation
- Use the SQL Access Advisor
- Explain the goals, benefits, and architecture

- of the inmemory column store
- Explain the differences between physical and logical standby databases
- Use real-time query to access data on a physical standby database
- Create a snapshot standby database to meet the requirement for a temporary, updatable snapshot of a physical standby database
- Explain the principles and purposes of clusters
- Explain and apply Automatic Storage Management (ASM) initialization parameters
- Describe the benefits of Oracle RAC
- Modify initialization parameters in a RAC environment

Kursinhalt

- Basics of Multitenant Container Database and Pluggable Databases
- Managing Tablespaces and Users in CDB and PDBs
- Basics of Parallel Execution
- In-Memory Parallel Execution & Multi-Threaded architecture
- Moving Data
- Working with Indexes
- Partitioning Concepts
- Data Warehouse Tuning and Partitioning Workloads
- Using Flashback Technologies
- Influencing the Optimizer
- SQL Performance Management and SQL Data Compression
- In-Memory Column Store
- Introduction to Oracle Data Guard
- Using Oracle Active Data Guard
- Creating a Logical Standby Database
- Enabling Fast-Start Failover
- Introduction to Clusterware
- ASM Overview
- Flex Clusters
- Flex ASM

- RAC Databases Overview and Architecture
- Upgrading and Patching Oracle RAC

Detaillierter Kursinhalt

Basics of Multitenant Container Database and Pluggable Databases

- New Multitenant Architecture: Benefits
- Multitenant Container Database
- Separating SYSTEM and User Data
- Provisioning a Pluggable Database
- Interacting Within Multitenant Container Database
- Multitenant Container Database Architecture
- Common and Local Users
- Common and Local Privileges and Roles

Managing Tablespaces and Users in CDB and PDBs

- Tablespaces in PDBs
- Creating Permanent Tablespaces in a CDB
- Creating Local Temporary Tablespaces
- Tablespace Encryption: Advantages
- Creating an Encrypted Tablespace
- Common and Local Schemas/Users
- Granting and Revoking Privileges
- Granting Common or Local Privileges/Roles to Roles

Basics of Parallel Execution

- Parallelizable Operations
- Previewing Execution Plans
- Understanding Parallel Execution: Query Coordinator (QC) and Parallel (PX) Servers
- Parallel Execution Plans: Identifying the Producers and Consumers
- Parallel Execution Plans: Understanding Granules
- Example PX Parameters
- PX Parameters for Auto DOP
- Parameters for PX Messaging: Shared and Large Pools

In-Memory Parallel Execution & Multi-Threaded architecture

- Direct Reads Versus Buffer Cache Reads
- Parallel Execution and the Buffer Cache
- In-Memory Parallel Execution
- When In-Memory Parallel Execution Works

- Controlling In-Memory Parallel Execution
- Enhance In-Memory PX Using Server Pools
- Enhance In-Memory PX: Automatic Big Table Caching
- Using PARALLEL_FORCE_LOCAL Parameter

Moving Data

- Oracle Data Pump: Overview
- Directory Objects for Data Pump
- Data Pump Export and Import Clients: Overview
- External Tables
- Data Pump Import: Transformations
- SQL*Loader: Overview
- Loading Methods
- Transportable Tablespaces

Working with Indexes

- Normal B*-tree Indexes
- Index Scans
- Index Range Scan
- Index Range Scan: Function-Based
- Index Fast Full Scan
- B*-tree Indexes and Nulls
- Index-Organized Tables
- Bitmap Indexes

Partitioning Concepts

- Partitioned Tables and Indexes
- Partitioning Strategies: Single-Level Partitioning
- Oracle Partitioning History
- Partition Key Extensions
- Benefits of Partitioning: Table Availability
- Manageability: Relocate Table Data
- Benefits of Partitioning: Performance Considerations
- Verifying Partition Use

Dataware House Tuning and Partitioning Workloads

- Characteristics of a Data Warehouse
- OLTP Systems Versus Data Warehouses
- Data Warehouse Architectures: Basic Data Warehouse with Staging Area
- Data Warehousing Objects
- Optimizing Star Queries: Star Transformation
- Execution Plan Without Star Transformation

- Star Transformation Considerations
- Retrieving Fact Rows from All Dimensions: Phase 1

Using Flashback Technologies

- Flashback Technologies Error Detection and Correction
- Flashback Technology
- Guaranteeing Undo Retention
- Flashback Query
- Flashback Table: Overview
- Flashback Table: Considerations
- Flashback Transaction Query
- Flashing Back a Transaction

Influencing the Optimizer

- Functions of the Query Optimizer
- Cardinality and Cost
- Changing Optimizer Behavior
- Optimizer Statistics
- Optimizer Parameters
- Enabling Query Optimizer Features
- Dynamic Plans
- Cardinality Feedback: Monitoring Query Executions

SQL Performance Management and SQL Data Compression

- Maintaining SQL Performance
- Maintaining Optimizer Statistics
- Automated Maintenance Tasks
- Setting Statistic Preferences
- Restoring Statistics
- Deferred Statistics Publishing: Example
- Automatic SQL Tuning: Overview
- Plan Tuning Flow and SQL Profile Creation

In-Memory Column Store

- Goals of In-Memory Column Store
- Store Versus Column Store: 2D Vision
- In-Memory Column Unit
- Dual Format In Memory
- Deploying IM Column Store
- Objects Candidates for IM Column Store
- Defining IM Column Store Priority
- Default In-Memory Setting

Introduction to Oracle Data Guard

- What Is Oracle Data Guard?

- Types of Standby Databases
- Role Transitions: Switchover and Failover
- Choosing an Interface for Administering a Data Guard Configuration
- Primary Database Processes
- Standby Database Processes
- Physical Standby Database: Redo Apply Architecture
- Automatic Gap Detection and Resolution

Using Oracle Active Data Guard

- Using Real-Time Query
- Disabling Real-Time Query
- Checking the Standby's Open Mode
- Monitoring Apply Lag: V\$DATAGUARD_STATS
- Allowed Staleness of Standby Query Data
- Setting STANDBY_MAX_DATA_DELAY by Using an AFTER LOGON Trigger
- Forcing Redo Apply Synchronization
- Creating an AFTER LOGON Trigger for Synchronization

Creating a Logical Standby Database

- Benefits of Implementing a Logical Standby Database
- Logical Standby Database: SQL Apply Architecture
- Preparing to Create a Logical Standby Database
- Unsupported Data Types
- Checking for Tables with Unsupported Data Types
- Unsupported PL/SQL-Supplied Packages
- Adding a Disabled Primary Key RELY Constraint
- Creating a Logical Standby Database by Using SQL Commands

Enabling Fast-Start Failover

- When Does Fast-Start Failover Occur?
- Installing the Observer Software
- Fast-Start Failover Prerequisites
- Configuring Fast-Start Failover
- Step 1: Specify the Target Standby Database
- Setting the Lag-Time Limit
- Configuring the Primary Database to Shut Down Automatically
- Configuring Automatic Reinstatement of the Primary Database

Introduction to Clusterware

- Clusterware Architecture and Cluster Services
- Goals for Oracle Clusterware
- Oracle Clusterware Fencing
- Cluster Time Synchronization
- Oracle Clusterware Networking
- Grid Naming Service (GNS)
- Grid Naming Service Configuration Options
- Single-Client Access Name

ASM Overview

- What Is Oracle ASM?
- ASM Features and Benefits
- ASM Instance Designs: Clustered ASM for Clustered Databases
- ASM Components: Software
- ASM Components: ASM Instance Primary Processes
- ASM Components: Configuration Files
- ASM Disk Group: Failure Groups
- ASM Files: Extents and Striping

Flex Clusters

- Flex Clusters: Overview
- Flex Cluster Scalability
- Leaf Node Characteristics
- Cluster Mode: Overview
- Configuring the Cluster Mode
- Configuring Miss Count for Leaf Nodes
- Configuring a Flex Cluster with OUI: Configuring GNS
- Configuring a Flex Cluster with OUI: Selecting the Node Type

Flex ASM

- Flex ASM: Overview
- ASM Instance Changes
- Configuring Flex ASM on a Standard Cluster
- Configuring Flex ASM on a Flex Cluster
- Stopping, Starting, and Relocating Flex ASM Instances
- Setting the Cardinality for Flex ASM Instances
- Monitoring Flex ASM Connections
- Relocating an ASM Client

RAC Databases Overview and Architecture

- Typical Oracle RAC Architecture

- Oracle RAC One Node
- Cluster-Aware Storage Solutions
- Oracle RAC and Network Connectivity
- Clusters and Scalability
- Levels of Scalability
- Speedup/Scaleup and Workloads
- Necessity of Global Resources

Upgrading and Patching Oracle RAC

- Patch and Patch Set: Overview
- Configuring the Software Library
- Reduced Down-Time Patching for Cluster Environments
- Out-of-Place Database Upgrades
- OPatch: Overview
- Before Patching with OPatch
- OPatch Automation: Examples
- OPatch Log and Trace Files