

Course Outline: Oracle Database 12c R2: Administration Workshop Ed 3

Duration: 5 Days

What you will learn

The Oracle Database 12c R2: Administration Workshop Ed 3 course is designed to provide you with a firm foundation in administration of an Oracle Database. In this course you will gain a conceptual understanding of Oracle Database architecture and learn how to manage an Oracle Database in an effective and efficient manner.

Learn To:

- Manage an Oracle Database instance.
- Configure the Oracle Network environment.
- Create and manage storage structures.
- Manage and move data.
- Create and manage users.
- Monitor the database and manage performance.
- Create and manage Database as a Cloud Service database deployments.

Benefits To You

You will benefit from this course as you learn detailed information on the architecture of an Oracle Database instance and database, enabling you to effectively manage your database resources. You learn how to create database storage structures appropriate for the business applications supported by your database. In addition you learn how to create users and administer database security to meet your business requirements. Basic information on backup and recovery techniques is presented in this course.

To provide an acceptable response time to users and manage resources effectively, you learn how to monitor your database and manage performance.

Audience

- Data Warehouse Administrator
- Database Administrators
- Database Designers
- Support Engineer
- Technical Administrator

Course Objectives

- Back up, restore, and patch DBCS database deployments
- Describe the DBaaS and on-premises Oracle Database architectures
- Manage database instances
- Manage UNDO data
- Move data between databases
- Implement basic backup and recovery procedures
- Monitor and tune database performance
- Tune SQL to improve performance
- Manage resources with Oracle Database Resource Manager
- Create pluggable databases (PDBs)
- Configure the Oracle network environment
- Administer user security and implement auditing
- Create and manage tablespaces
- Manage storage space
- Create and manage Database as a Cloud Service (DBCS) database deployments
- Register databases and manage performance with Enterprise Manager Cloud Control

Course Topics

Getting Started

- Course Objectives

Exploring Oracle Database Architecture

- Introducing Oracle Database
- Relation Database Models
- Oracle SQL and PL/SQL
- Oracle Database Server Architecture
- Connecting to Oracle Databases
- Oracle Database Tools
- Oracle-Supplied User Accounts
- Querying the Oracle Data Dictionary

Managing Database Instances

- Initialization Parameter Files
- Starting Up Oracle Databases
- Shutting Down Oracle Databases
- Opening and Closing PDBs
- Working with the Automatic Diagnostic Repository (ADR)
- Querying Dynamic Performance Views

Creating PDBs

- Methods and Tools to Create PDBs
- Creating PDBs from Seed with SQL*Plus
- Cloning PDBs with SQL*Plus
- Unplugging and Pluggin In PDBs with SQL*Plus
- Dropping PDBs with SQL*Plus

Configuring the Oracle Network Environment

- Oracle Net Services

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How Listeners Work

- Configuring Listeners for Dynamic Service Registration
- Configuring Listeners for Static Service Registration
- Configuring Local Naming for Connections
- Testing Oracle Net Connectivity with tnsping
- Configuring Communication Between Databases
- Dedicated Versus Shared Server Configurations

Administering User Security

- Creating Users
- Granting Privileges
- Creating and Granting Roles
- Revoking Privileges and Roles
- Creating and Assigning Profiles
- Authenticating Users
- Assigning Quotas to Users
- Applying the Principal of Least Privilege

Creating and Managing Tablespaces

- How Table Data is Stored
- Creating Tablespaces in SQL*Plus
- Altering and Dropping Tablespaces in SQL*Plus
- Viewing Tablespace Information in SQL*Plus
- Implementing Oracle Managed Files
- Moving and Renaming Online Data Files in SQL*Plus

Managing Storage Space

- Oracle Database Space Management Features
- Block Space Management
- Row Chaining and Migration
- Free Space Management Within Segments
- Types of Segments
- Allocating Extents

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- Understanding Deferred Segment Creation
Space-Saving Features

Managing UNDO Data

- Undo Data: Overview
- Transactions and Undo Data
- Storing Undo Information
- Comparing Undo Data and Redo Data
- Managing Undo
- Local Undo Mode Versus Shared Undo Mode
- Configuring Undo Retention
- Categories of Undo

Moving Data

- Moving Data: General Architecture
- Oracle Data Pump: Overview
- Oracle Data Pump: Benefits
- Data Pump Export and Import Clients
- Data Pump Utility: Interfaces and Modes
- Data Pump Import: Transformations
- SQL*Loader Overview
- Loading Methods

Backup and Recovery Concepts

- DBA Responsibilities
- Categories of Failure
- Understanding Instance Recovery
- Understanding Types of Backups
- Comparing Complete and Incomplete Recovery
- Oracle Data Protection Solutions
- Flashback Technology

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Monitoring and Tuning Database Performance

- Managing Performance Activities
Performance Planning Considerations
- Database Maintenance
- Automatic Workload Repository (AWR)
- Automatic Database Diagnostic Monitor
- Performance Monitoring
- Performance Tuning Methodology
- Database Server Statistics and Metrics

SQL Tuning

- SQL Tuning Process
- Oracle Optimizer
- Optimizer Statistics
- SQL Plan Directives
- Adaptive Execution Plans
- SQL Tuning Advisor
- SQL Access Advisor
- SQL Performance Analyzer

Oracle Database Resource Manager

- Oracle Database Resource Manager: Overview
- Resource Manager Elements
- Using Resource Manager to Allocate Resources
- Creating a Simple Resource Plan
- Creating a Complex Resource Plan
- Using the Active Session Pool Feature
- Limiting CPU Utilization at the Database Level
- Limiting CPU Utilization at the Server Level

Enterprise Manager Cloud Control

- Controlling the Enterprise Manager Cloud Control Framework

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- Starting the Enterprise Manager Cloud Control Framework
- Stopping the Enterprise Manager Cloud Control Framework

Introduction to Oracle Database Cloud Service

- Oracle Cloud: Overview
- Database Cloud Service Offerings
- DBCS Architecture
- Features and Tooling
- Additional Database Configuration Options

Creating DBCS Database Deployments

- Automated Database Provisioning
- Creating a Database Deployment
- How SSH Key Pairs are Used
- Creating an SSH Key Pair
- Storage Used for Database Files

Managing DBCS Database Deployments

- Cloud Tooling
- Accessing Tools and Features from the DBCS Console
- Managing the Compute Node Associated With a Database Deployment
- Managing Network Access to DBCS
- Enabling Access to a Compute Node Port
- Scaling a Database Deployment

Backing Up and Restoring DBCS Database Deployments

- Backing Up and Recovering Databases on DBCS
- Backup Destination Choices
- Backup Configuration
- Creating an On-Demand Backup
- Customizing the Backup Configuration
- Performing Recovery by Using the Console

- Performing Recovery by Using the dbascli Utility

Patching DBCS Database Deployments

- Patching DBCS
- Using the DBCS Console to Manage Patches
- Using the dbascli Utility to Manage Patches

Creating Master Encryption Keys for PDBs

- CDB and PDB Master Encryption Keys
- Determining Whether You Need to Create and Activate an Encryption Key for a PDB
- Creating and Activating an Encryption Key

Tablespace Encryption by Default

- Tablespace Encryption by Default in DBCS
- Transparent Data Encryption (TDE) Overview
- Components of TDE
- Using TDE
- Defining the Keystore Location
- Controlling Tablespace Encryption by Default
- Managing the Software Keystore and Master Encryption Key
- Managing the Keystore in CDBs and PDBs