

# Oracle Database 18c: Administration Workshop

The Oracle Database 18c: Administration Workshop Ed 1 course provides 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

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This course provides detailed information on the architecture of an Oracle Database instance and database, enabling you to manage your database resources effectively. 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. This course provides basic information on backup and recovery techniques. To provide an acceptable response time to users and manage resources effectively, you learn how to monitor your database and manage performance.

### What You Will Learn

The Oracle Database 18c: Administration Workshop course provides 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 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 manage your database resources effectively. 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. This course provides basic information on backup and recovery techniques. To provide an acceptable response time to users and manage resources effectively, you learn how to monitor your database and manage performance.

## Prerequisites

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### Suggested Prerequisite

- A working knowledge of SQL and PL/SQL packages is very helpful in the course.
- Basic knowledge of Linux operating system

## Audience

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

## Course Objectives

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- Describe Oracle Database architecture
- Explain Oracle Database Cloud Service (DBCS) architecture and features
- Create and manage DBCS database deployments
- Configure the database to support your applications
- Manage database security and implement auditing
- Implement basic backup and recovery procedures
- Move data between databases and files
- Employ basic monitoring procedures and manage performance

## Course Topics

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### Introduction

- Sample HR Schema
- Oracle Cloud Overview
- Oracle Database Editions, Options, and Management Packs

### Oracle Database Architecture

- Automatic Storage Management (ASM) Overview
- Oracle Database Instance Configurations
- Oracle Database Memory and Process Structures
- Connecting to the Database Instance
- Logical and Physical Database Structures
- Multitenant Architecture
- Oracle Database Server Architecture

### Introduction to Oracle Database Cloud

- Automated Database Provisioning
- Oracle Database Cloud Service Architecture
- Features and Tooling

### Creating Oracle Database Cloud Service (DBCS) Deployments

- SSH Key Pairs
- Database File Storage
- Input to the Creation Wizard

### Accessing an Oracle Database

- Oracle Database Cloud Service Tools
- Database Configuration Assistant (DBCA)
- Oracle Enterprise Manager Cloud Control
- Oracle Enterprise Manager Database Express
- SQL Developer
- SQL\*Plus

### Managing DBCS Database Deployments

- Managing Network Access to DBCS
- Managing the Compute Node
- Scaling a Database Deployment
- Patching a Database Deployment

### Managing Database Instances

- Starting Up Oracle Database Instances

- Data Dictionary Views
- Shutting Down Oracle Database Instances
- Dynamic Performance Views
- Automatic Diagnostic Repository (ADR)
- Alert Log and Trace Files
- Initialization Parameter Files

## Oracle Net Services

- Oracle Net Services Administration Tools
- Configuring Communication Between Database Instances
- Oracle Net Listener Overview
- Connecting to an Oracle Database Instance
- Comparing Dedicated and Shared Server Configurations
- Naming Methods

## Administering User Security

- Assigning Quotas to Users
- Applying the Principal of Least Privilege
- Managing Oracle Cloud Users, Privileges, and Roles
- Creating and Assigning Profiles
- User Authentication
- Managing Oracle Database Users, Privileges, and Roles

## Creating PDBs

- Dropping PDBs
- Cloning PDBs
- Methods and Tools to Create PDBs
- Creating PDBs from Seed
- Unplugging and Plugging in PDBs

## Creating Master Encryption Keys for PDBs

- Overview of Transparent Data Encryption (TDE)
- Creating and Activating an Encryption Key
- CDB and PDB Master Encryption Keys
- Encryption in Oracle Database Cloud Service

## Creating and Managing Tablespaces

- Viewing Tablespace Information
- Creating, Altering and Dropping Tablespaces
- Table Data Storage
- Tablespace Encryption by Default in DBCS
- Implementing Oracle Managed Files
- Moving and Renaming Online Data Files

## Managing Storage Space

- Resumable Space Allocation
- Shrinkable Segments
- Deferred Segment Creation
- Space-Saving Features
- Oracle Database Space Management Features
- Types of Segments
- Table and Row Compression
- Block Space Management

## Managing Undo Data

- Comparing Local Undo Mode and Shared Undo Mode
- Transactions and Undo Data
- Storing Undo Information
- Configuring Undo Retention
- Comparing Undo Data and Redo Data
- Temporary Undo

## Moving Data

- External Tables
- Oracle Data Pump
- Migrating to Oracle Database Cloud Service
- SQL\*Loader

## Backup and Recovery Concepts

- Point-in-time Recovery
- Complete Recovery
- Categories of Failure
- Flashback Technology
- Instance Recovery

## Backup and Recovery Configuration

- Configuring ARCHIVELOG Mode
- Configuring and Monitoring the Fast Recovery Area
- Multiplexing Control Files
- Multiplexing Redo Log Files
- Archive Redo Log Files

## Creating Database Backups

- RMAN Backup Types
- On-Demand Backups on DBCS
- Using Recovery Manager (RMAN)
- Backup Terminology
- Automatic Backups on Database Cloud Service (DBCS)

## Performing Database Recovery

- Database Recovery Advisor
- Recovering Data Files in ARCHIVELOG Mode
- Recovering Data Files in NOARCHIVELOG Mode
- Recovery Options in Database Cloud Service (DBCS)

## Monitoring and Tuning Database Performance

- Managing Memory Components
- Automatic Workload Repository (AWR)
- Advisory Framework
- Monitoring Wait Events, Sessions, and Services
- Managing Metric Thresholds and Alerts
- Performance Tuning Methodology
- Performance Planning Considerations
- Automatic Database Diagnostic Monitor (ADDM)

## SQL Tuning

- Oracle Optimizer
- SQL Tuning Advisor
- SQL Performance Analyzer
- Optimizer Statistics
- SQL Access Advisor
- SQL Tuning Process