

## Course Outline

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# Oracle Database 12c: Admin, Install and Upgrade Accelerated

**Duration:** 5 days (30 hours)

### Learning Objectives:

- Use Oracle Restart to manage components
- Upgrade database to Oracle Database 12c
- Install Oracle Grid Infrastructure for a Standalone Server
- Create a container database
- Create an Oracle Database
- Install Oracle Database 12c software
- Monitor the Database
- Manage Database Performance
- Implement Database Auditing
- Configure the Database Instance Such That Resources Are Appropriately Allocated Among Sessions and Tasks
- Schedule Jobs to Run Inside or Outside of the Database
- Configure Oracle Net Services
- Configure your Database For Backup and Recovery Operations
- Describe Oracle Database Architecture
- Manage the Oracle Database Instance
- Manage Oracle Database Storage structures

### Target Audience

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

### Prerequisites:

- Working knowledge of SQL and use of PL/SQL packages
- Basic knowledge of Linux Operating System

### Topics Covered:

- Oracle Database 12c Overview
  - Oracle Database 12c Introduction
  - Oracle Database Architecture Overview
  - Oracle Database Instance Configurations
  - Oracle Database Memory Structures
  - Process Structures
  - Database Storage Architecture
  - Logical and Physical Database Structures
  - Container and Pluggable Database Overview

- Installing Oracle Grid Infrastructure for a Standalone Server
  - Overview of Oracle Grid Infrastructure for a Standalone Server
  - System Requirements for Oracle Grid Infrastructure
  - Configuring Storage for Oracle Automatic Storage Management (ASM)
  - Installing Oracle Grid Infrastructure for a Standalone Server
  - Upgrading Oracle Grid Infrastructure for a Standalone Server
- Installing Oracle Database Software
  - Planning Your Installation
  - System Requirements for Oracle Database
  - Preparing the Operating System
  - Using 4 KB Sector Disks
  - Setting Environment Variables
  - Checking the System Requirements
  - Using the Oracle Universal Installer (OUI)
  - Performing a Silent Mode Installation
- Creating an Oracle Database by Using DBCA
  - Planning the Database Storage Structure
  - Choosing non-CDB or CDB
  - Types of Databases (based on workload)
  - Choosing the Appropriate Character Set
  - Understanding How Character Sets are Used
  - Setting the NLS\_LANG Initialization Parameter
  - Using the Database Configuration Assistant (DBCA)
- Using Oracle Restart
  - Oracle Restart Overview
  - Oracle Restart Process startup
  - Controlling Oracle Restart
  - Choosing the Correct SRVCTL Utility
  - Oracle Restart Configuration
  - Using the SRVCTL Utility
  - Obtaining Help for the SRVCTL Utility
  - Starting Components by Using the SRVCTL Utility
- Introduction to Upgrading to Oracle Database 12c
  - Upgrade Methods
  - Data Migration Methods
  - Supported Releases for Direct Upgrade
  - Overview of Upgrade Process
  - Performing a Rolling Upgrade
  - Upgrading a CDB
- Preparing to Upgrade to Oracle Database 12c
  - Developing a Test Plan
  - Performance Testing
  - Requirements for Databases Using Oracle Label Security or Oracle Database Vault
  - Requirement for Databases Using Oracle Warehouse Builder
  - Using the Pre-Upgrade Information Tool
  - Backing Up the Database
  - Installing the Oracle Database 12c Software
  - Preparing the New Oracle Home
- Upgrading to Oracle Database 12c
  - Upgrading by Using the Database Upgrade Assistant (DBUA)
  - Manually Upgrading to Oracle Database 12c
  - Migrating a non-CDB to a CDB
- Performing Post-Upgrade Tasks
  - Migrating to Unified Auditing
  - Performing Post-Upgrade Tasks Following a Manual Upgrade
- Migrating Data by Using Oracle Data Pump
  - Data Pump Overview
  - Migrating by Using Data Pump
  - Importing by Using a Network Link
- Exploring the Oracle Database Architecture
  - Oracle Database Architecture: Overview
  - Oracle Database Instance Configurations

- Connecting to the Oracle Database Instance
- Oracle Database Memory Structures
- Process Architecture
- Process Structures
- Process Startup Sequence
- Database Storage Architecture
- Managing the Database Instance
  - Introducing Oracle Database Management Tools
  - Understanding the Enterprise Manager Management Framework
  - Logging in to Oracle Enterprise Manager Database Express
  - Using the Enterprise Manager Database Express Home Page
  - Using Enterprise Manager Cloud Control
  - Using SQL\*Plus
  - Using SQL Developer
  - Initialization Parameter Files
- Configuring the Oracle Network Environment
  - Oracle Net Services Overview
  - Oracle Net Listener Overview
  - Establishing Oracle Network Connections
  - Tools for Configuring and Managing the Oracle Network
  - Using the Listener Control Utility
  - Using Oracle Net Configuration Assistant
  - Using Oracle Net Manager
  - Using Enterprise Manager Cloud Control
- Managing Database Storage Structures
  - Understanding Storage of Data
  - Database Block Contents
  - Exploring the Storage Structure
  - Creating a New Tablespace
  - Overview of Tablespaces Created by Default
  - Managing Tablespaces
  - Viewing Tablespace Information
  - Using Oracle Managed Files
- Administering User Security
  - Database User Accounts
  - Predefined Administrative Accounts
  - Creating a User
  - Authentication
  - Unlocking a User Account and Resetting the Password
  - Privileges
  - Roles
  - Profiles
- Managing Data Concurrency
  - Overview of Locks
  - Locking Mechanism
  - Data Concurrency
  - DML Locks
  - Enqueue Mechanism
  - Lock Conflicts
- Managing Undo Data
  - Undo Data Overview
  - Transactions and Undo Data
  - Storing Undo Information
  - Comparing Undo Data and Redo Data
  - Managing Undo
  - Configuring Undo Retention
  - Guaranteeing Undo Retention
  - Changing an Undo Tablespace to a Fixed Size
- Implementing Oracle Database Auditing
  - Separation of Responsibilities
  - Database Security
  - Monitoring for Compliance
  - Standard Database Auditing
  - Unified Audit Data Trail

- Separation for Duties for Audit Administration (AUDIT\_ADMIN and AUDIT\_VIEWER roles)
- Configuring the Audit trail
- Specifying Audit Options
- Performing Database Maintenance
  - Database Maintenance
  - Viewing the Alert History
  - Terminology
  - Automatic Workload Repository (AWR)
  - Statistic Levels
  - Automatic Database Diagnostic Monitor (ADDM)
  - Advisory Framework
  - Enterprise Manager and Advisors
- Managing Performance
  - Performance Monitoring
  - Tuning Activities
  - Performance Planning
  - Instance Tuning
  - Performance Tuning Methodology
  - Performance Tuning Data
  - Monitoring Performance
  - Managing Memory
- Managing Performance: SQL Tuning
  - SQL Tuning
  - Oracle Optimizer
  - SQL Plan Directives
  - Adaptive Execution Plans
  - SQL Advisors
  - Automatic SQL Tuning Results
  - Implement Automatic Tuning Recommendations
  - SQL Tuning Advisor
- Managing Resources by Using Database Resource Manager
  - Database Resource Manager Overview
  - Database Resource Manager Concepts
  - Using the Resource Manager
  - Default Maintenance Resource Manager Plan
  - Default Plan Example
  - Resource Manager Workflow
  - Specifying Resource Plan Directives
  - Resource Allocation Methods for Resource Plans