

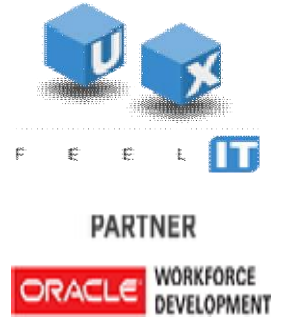
# Oracle Database 12c: Admin, Install and Upgrade Accelerated

**Target Audience:** DBA /Developers/Technical Consultants/Support Engineers

**Pre-Requisites:** Working Knowledge of Oracle 11g

**Course Duration:** 5 Days

**Day 1:**



## Introduction

- Course Objectives
- Course Schedule
- Overview of Oracle Database 12c
- Overview of Oracle Cloud
- Overview of the HR Schema
- Oracle Database 12c Introduction

## Exploring the Oracle Database Architecture

- Oracle Database Architecture: Overview
- Oracle Database Instance Configurations
- Connecting to the Oracle Database Instance
- Oracle Database memory Structures (overview)
- Process Architecture
- Process Structures
- Process Startup Sequence
- Database Storage Architecture

## Oracle Software Installation Basics

- Planning Your Installation
- Configuring Oracle Linux with Oracle RDBMS Pre-Install RPM
- Operating System Groups and Users
- Environment Variables
- Configuring the Oracle Software Owner Environment
- Using Oracle Universal Installer (OUI)
- Installation Option: Silent Mode

## **Installing and Upgrading Oracle Database Software**

- System Requirements for Oracle Database
- Creating Operating System Groups and Users
- Types of Installations
- Upgrade from 11gR2 to 12cR1

## **Creating an Oracle Database by Using DBCA**

- Planning the Database Storage Structure
- 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)

## **Day 2:**

### **Oracle Database Management Tools**

- Introducing Oracle Database Management Tools
- Using SQL\*Plus
- Using SQL Developer
- Logging in to Oracle Enterprise Manager Database Express
- Using the Enterprise Manager Database Express Home Page
- Understanding the Enterprise Manager Cloud Control Framework
- Using Enterprise Manager Cloud Control

### **Managing the Database Instance**

- Initialization Parameter Files
- Starting an Oracle Database Instance
- Shutting Down an Oracle Database Instance
- Viewing Log Files
- Using Trace Files
- Using the Dynamic Performance Views
- Data Dictionary

## **Configuring the Oracle Network Environment**

- Oracle Net Services Overview
- Oracle Net Listener Overview
- Establishing Oracle Network Connections
- Connecting to a Server
- Tools for Configuring and Managing the Oracle Network
- Using the Listener Control Utility
- Using Oracle Net Configuration Assistant
- Using Oracle Net Manager

## **Administering User Security**

- Database User Accounts (overview)
- Predefined Administrative Accounts
- Creating a User
- Authentication
- Unlocking a User Account and Resetting the Password
- Privileges
- Roles
- Profiles

## **Day 3:**

### **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

### **Managing Space**

- Space Management Overview
- Block Space Management
- Row Chaining and Migration
- Free Space Management Within Segments
- Types of Segments

- Allocating Extents
- Allocating Space
- Creating Tables Without Segments

## **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

## **Day 4:**

### **Managing Data Concurrency**

- Overview of Locks
- Locking Mechanism
- Data Concurrency
- DML Locks
- Enqueue Mechanism
- Lock Conflicts

### **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

## **Backup and Recovery Configuration**

- Configuring for Recoverability
- Configuring the Fast Recovery Area
- Multiplexing the Control File
- Online Redo Log File
- Multiplexing the Online Redo Log File
- Archived Redo Log Files
- Archiver Process
- Archived Redo Log File Naming and Destinations

## **Performing Database Backups**

- Backup Solutions Overview
- Oracle Secure Backup (overview)
- User Managed Backup (overview)
- Backup Terminology and Types of Backups
- Using Recovery Manager (RMAN)
- Configuring Backup Settings
- Oracle-Suggested Backup
- Backing Up the Control File to a Trace File

## **Day 5:**

### **Performing Database Recovery**

- Data Recovery Advisor
- Loss of a Control File
- Loss of a Redo Log File
- Loss of a Datafile in NOARCHIVELOG Mode
- Loss of a Noncritical Datafile in ARCHIVELOG Mode
- Loss of a System-Critical Datafile in ARCHIVELOG Mode

### **Performing Database Maintenance**

- Database Maintenance (overview)
- 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