Oracle 11g and 12c: DBA

Duration: 60 Hours
Prerequisites
- Candidate should have good hand on Oracle SQL

Module I:

1. **Oracle 11g Installation**
   - Pre-Installation Tasks
     - Logging In to the System as root
     - Checking Hardware Requirement
     - Checking Software Requirement
     - Checking Network Setup
     - Creating Operating System Groups and Users
     - Configuring kernel parameters
     - Identifying Required Software Directories
     - Identifying or Creating ORACLE_BASE directory
     - Installation screens
2. **Oracle Database Architect**
   - System Global Area (SGA)
     - Shared Pool, Database Buffer Cache
     - The Redo Log Buffer
     - Java Pool, Large pool, Stream Pool
   - Fixed SGA
     - Automatic Shared Memory Management
     - The Oracle Background Process
3. **Oracle Data Block Management**
   - Data block Overview
     - Header (Common and Variable)
     - Table Directory, Row Directory
     - Overhead, Row Data
     - Free Space
   - Free Space Management
     - Availability and Optimization of Free Space in a Data Block
     - Row Chaining and Migrating
     - PCTFREE, PCTUSED, and Row Chaining
     - The PCTFREE & PCTUSED Parameter
     - How PCTFREE and PCTUSED Work Together
   - Extent Overview
     - When Extents Are Allocated
     - Determine the Number and Size of Extents
     - How Extents Are Allocated
     - When Extents Are Deallocated
     - Extents in Nonclustered Tables
     - Extents in Clustered Tables
     - Extents in Materialized Views and Their Logs
     - Extents in Indexes,in Temporary Segments & in Rollback Segments
   - Segment Overview
     - Introduction to Data Segments
     - Introduction to Index Segments
     - Introduction to Temporary Segments
     - Operations that Require Temporary Segments
     - Segments in Temporary Tables and Their Indexes
     - How Temporary Segments Are Allocated
     - Allocation of Temporary Segments for Queries
     - Allocation of Temporary Segments for Temporary Tables and Indexes
   - Undo Management
     - Undo Quota
     - Automatic Undo Retention
     - External Views
4. **Managing Tablespaces**
   - Using Multiple Tablespaces
   - Creating Tablespaces
   - Locally Managed Tablespace
     - Creating a Locally Managed Tablespace
     - Segment Space management in locally managed tablespace
   - Big File tablespace
     - Creating big file Tablespace
     - Altering a Bigfile Tablespace
     - Identifying a Bigfile Tablespace
   - Dictionary Managed Tablespace
     - Creating Dictionary Managed Tablespace
     - Specifying Tablespace Default Storage Parameters
     - Specifying Tablespace Default Storage Parameters

- Coalescing Free Space in Dictionary-Managed Tablespaces
- Manually Coalescing Free Space

5. **Managing User Privileges And Roles**
   - Understanding User Privileges and Roles

- System Privileges
- Accessing Objects in the SYS Schema
- Object Privileges
- User Roles,Creating Role
- Granting Privileges and Roles
- Grant With Admin Option

Module II

1. Oracle Data Pump

- Data Pump Component
- Data Pump New Features
- How Does Data Pump Access Data?
  - Direct Path Loads and Unloads
  - Situations in Which Direct Path Load / Unload Is Not Used
  - External Tables
- Accessing Data Over a Database Link
- What Happens During Execution of a Data Pump Job?
  - Coordination of a Job
  - Tracking Progress within a Job
  - Filtering Data & Metadata During Job
  - Transforming Metadata during a Job
  - Maximizing Job Performance
  - Loading and Unloading of Data
  - Monitoring Job Status
  - Monitoring the Progress of Executing Jobs
- File Allocation
  - Specifying Files and Adding Additional Dump Files
  - Default Locations for Dump, Log, and SQL Files
- Moving Data Between Different Database Versions
- Original Export and Import Versus Data Pump Export and Import
- How Data Pump Export Parameters Map to Those of the Original Export Utility
- How Data Pump Import Parameters Map to Those of the Original Import Utility

2. RMAN Concepts

- Configuring the Environment for RMAN Backups
  - Showing and Clearing Persistent RMAN Configurations
  - Configuring the Default Device for Backups: Disk or SBT
  - Configuring the Default Type for Backups: Backup Sets or Copies
  - Configuring Channels
  - Configuring Control File and Server Parameter File Autobackups
  - Configuring RMAN to Make Backups to a Media Manager
  - Configuring the Backup Retention Policy
  - Configuring Backup Optimization
  - Configuring Oracle Flashback Database and Restore Points
- About RMAN Channels
  - Channel Control Options for Manual and Automatic Channels
  - Channel Failover
- About RMAN Backups
  - About Image Copies
- RMAN Backup Types
  - Incremental Backups
  - RMAN Backup Errors
  - Tests and Integrity Checks for Backups
  - Detecting Physical and Logical Block Corruption
  - Backup Validation with RMAN
- Restoring Files with RMAN
  - Mechanics of Restore Operations
  - File Selection in Restore Operations
  - Datafile Media Recovery with RMAN
  - Mechanics of Recovery: Incremental Backups and Redo Logs

- ▪ Incomplete Recovery
- ▪ Tablespace Point-in-Time Recovery
- ▪ Block Media Recovery with RMAN
- Database Duplication with RMAN (CLONING)

3. **User-Managed Backups**
   - Cold Backup (consistent Backup)
     - ▪ Take details of database Files& proceed with backup
   - Cold Backup (inconsistent Backup)
     - ▪ Querying V$ Views to Obtain Backup Information
     - ▪ Listing Database Files Before a Backup
     - ▪ Determining Datafile Status for Online Tablespace Backups
     - ▪ Making User-Managed Backups of the Whole Database
     - ▪ Backing Up the Control File to a Binary File
     - ▪ Backing Up the Control File to a Trace File
   - Running the DBVERIFY Utility