

## Oracle Core DBA Course Content

### Overview of the Oracle Core DBA

- ❖ Introduction (Database Architecture)
- ❖ Describe course objectives
- ❖ Explore the Oracle 10g database architecture
- ❖ Installing the Oracle Database Software
- ❖ Explain core DBA tasks and tools
- ❖ Plan an Oracle installation
- ❖ Use optimal flexible architecture
- ❖ Install software with the Oracle Universal Installer (OUI)
- ❖ Creating an Oracle Database
- ❖ Create a database with the Database Configuration Assistant (DBCA)
- ❖ Create a database design template with the DBCA
- ❖ Generate database creation scripts with the DBCA
- ❖ Managing the Oracle Instance
- ❖ Start and stop the Oracle database and components
- ❖ Use Enterprise Manager (EM)
- ❖ Access a database with SQL\*Plus and iSQL\*Plus
- ❖ Modify database initialization parameters
- ❖ Understand the stages of database startup
- ❖ View the Alert log
- ❖ Use the Data Dictionary
- ❖ Managing Database Storage Structures
- ❖ Describe table data storage (in blocks)
- ❖ Define the purpose of tablespaces and data files
- ❖ Understand and utilize Oracle Managed Files (OMF)
- ❖ Create and manage tablespaces
- ❖ Obtain tablespace information
- ❖ Describe the main concepts and functionality of Automatic Storage Management (ASM)
- ❖ Administering User Security
- ❖ Create and manage database user accounts
- ❖ Authenticate users
- ❖ Assign default storage areas (tablespaces)
- ❖ Grant and revoke privileges
- ❖ Create and manage roles
- ❖ Create and manage profiles
- ❖ Implement standard password security features
- ❖ Control resource usage by users

### Managing Schema Objects

- ❖ Define schema objects and data types
- ❖ Create and modify tables
- ❖ Define constraints
- ❖ View the columns and contents of a table
- ❖ Create indexes, views and sequences
- ❖ Explain the use of temporary tables
- ❖ Use the Data Dictionary
- ❖ Manage data through SQL
- ❖ Monitor and resolve locking conflicts

### Managing Undo Data

- ❖ Explain DML and undo data generation
- ❖ Monitor and administer undo
- ❖ Describe the difference between undo and redo data
- ❖ Configure undo retention
- ❖ Guarantee undo retention
- ❖ Use the undo advisor
- ❖ Implementing Oracle Database Security
- ❖ Describe DBA responsibilities for security
- ❖ Apply the principal of least privilege
- ❖ Enable standard database auditing
- ❖ Specify audit options
- ❖ Review audit information
- ❖ Maintain the audit trail

### Incomplete Recovery

- ❖ Recovery Steps
- ❖ Server and User Managed Recovery commands
- ❖ Recovering a Control File Autobackup
- ❖ Creating a New Control File
- ❖ Incomplete Recovery Overview
- ❖ Incomplete Recovery Best Practices
- ❖ Simplified Recovery Through RESETLOGS
- ❖ Point-in-time recovery using RMAN

### Flashback

- ❖ Flashback Database Architecture
- ❖ Configuring and Monitoring Flashback Database
- ❖ Backing Up the Flash Recovery Area
- ❖ Using V\$FLASH\_RECOVERY\_AREA\_USAGE
- ❖ Flashback Database Considerations
- ❖ Using the Flashback Database RMAN interface
- ❖ Using Flashback Database EM Interface

### Managing and monitoring Flashback Database operations

- ❖ Dealing with Database Corruption
- ❖ Block Corruption Symptoms: ORA-1578
- ❖ DBVERIFY Utility and the ANALYZE command
- ❖ Initialization parameter DB\_BLOCK\_CHECKING
- ❖ Segment Metadata Dump and Verification
- ❖ Using Flashback for Logical Corruption and using DBMS\_REPAIR
- ❖ Block Media Recovery
- ❖ RMAN BMR Interface
- ❖ Dumping and Verifying Segment Metadata
- ❖ Monitoring and Managing Storage I
- ❖ Database Storage Structures
- ❖ Space Management Overview
- ❖ Oracle-Managed Files (OMF)
- ❖ Row Chaining and Migrating
- ❖ Proactive Tablespace Monitoring
- ❖ Managing Resumable Space Allocation
- ❖ SYSAUX Tablespace
- ❖ Monitoring table and index space usage
- ❖ Monitoring and Managing Storage II
- ❖ Automatic Undo Management
- ❖ Redo Log Files
- ❖ Table Types
- ❖ Partitioned Tables
- ❖ Index-Organized Tables (IOT)
- ❖ Managing index space with SQL
- ❖ Configure optimal redo log file size
- ❖ View "Automatic Tuning of Undo Retention"
- ❖ VLDB Support
- ❖ Creating Big file Table spaces
- ❖ Packages and data dictionary changes to support VLDB
- ❖ Creating and maintaining temporary table space groups (TTG)
- ❖ Partitioning and Partitioned Indexes
- ❖ Skipping unusable indexes
- ❖ DML Error Logging
- ❖ Interpreting Big file ROWIDs
- ❖ Automating Tasks with the Scheduler
- ❖ Scheduler Concepts
- ❖ Creating a Job Class and a Window
- ❖ Managing Jobs, Programs, Chains, Events, Schedules, priority
- ❖ Viewing and Purging Job Logs
- ❖ Creating a program and a schedule
- ❖ Creating a job that uses a program and a schedule

## Configuring the Oracle Network Environment

- ❖ Create additional listeners
- ❖ Create Net Service aliases
- ❖ Configure connect-time failover
- ❖ Control the Oracle Net Listener
- ❖ Test Oracle Net connectivity
- ❖ Identify when to use shared versus dedicated servers
- ❖ Backup and Recovery Concepts
- ❖ Identify the types of failure that may occur in an Oracle Database
- ❖ Describe ways to tune instance recovery
- ❖ Identify the importance of checkpoints, redo log files, and archived log files
- ❖ Configure ARCHIVELOG mode
- ❖ Performing Database Backups
- ❖ Create consistent database backups
- ❖ Back your database up without shutting it down
- ❖ Create incremental backups
- ❖ Automate database backups
- ❖ Monitor the flash recovery area
- ❖ Performing Database Recovery
- ❖ Recover from loss of a control file
- ❖ Recover from loss of a redo log file
- ❖ Perform complete recovery following the loss of a data file
- ❖ Performing Flashback
- ❖ Describe Flashback database
- ❖ Restore the table content to a specific point in the past with Flashback Table
- ❖ Recover from a dropped table
- ❖ View the contents of the database as of any single point in time with Flashback Query
- ❖ See versions of a row over time with Flashback Versions Query
- ❖ View the transaction history of a row with Flashback Transaction Query
- ❖ Moving Data
- ❖ Describe available ways for moving data
- ❖ Create and use directory objects
- ❖ Use SQL\*Loader to load data from a non-Oracle database (or user files)
- ❖ Explain the general architecture of Data Pump
- ❖ Use Data Pump Export and Import to move data between Oracle databases
- ❖ Use external tables to move data via platform-independent files
- ❖ Configuring Recovery Manager
- ❖ Recovery Manager Features and Components
- ❖ Using a Flash Recovery Area with RMAN
- ❖ Configuring RMAN
- ❖ Control File Autobackups
- ❖ Retention Policies and Channel Allocation
- ❖ Using Recovery Manager to connect to a target database in default NOCATALOG mode
- ❖ Displaying the current RMAN configuration settings
- ❖ Altering the backup retention policy for a database

- ❖ Altering the program and schedule for the job and observing the behavior change of the job
- ❖ Monitoring job runs

## Using Recovery Manager

- ❖ RMAN Command Overview
- ❖ Parallelization of Backup Sets
- ❖ Compressed Backups
- ❖ Image Copy
- ❖ Whole Database and Incremental Backups
- ❖ LIST and REPORT commands
- ❖ Enable ARCHIVELOG mode for the database
- ❖ Use Recovery Manager
- ❖ Recovering from Non-critical Losses
- ❖ Recovery of Non-Critical Files
- ❖ Creating New Temporary Tablespace
- ❖ Recreating Redo Log Files, Index Tablespaces, and Indexes
- ❖ Read-Only Tablespace Recovery
- ❖ Authentication Methods for Database Administrators
- ❖ Loss of Password Authentication File
- ❖ Creating a new temporary tablespace
- ❖ Altering the default temporary tablespace for a database