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# Oracle Database 11g DBA - Part I

**5 days**

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## Oracle Database 11g DBA - Part I Course Overview

The Oracle Database 11g DBA - Part I course is designed to give the Oracle database administrator practical experience in setting up, administering and troubleshooting an Oracle 11g database. Database administrators will gain an understanding of the architecture and processes of the Oracle database server. They will be able to ensure the integrity and availability of a company's data within the Oracle environment. They will be able to monitor the performance of the database and perform basic backup and recovery of the database.

## Skills Gained

The delegate will practise:

- Installing and Configuring Oracle
- Creating and Managing an Oracle Database
- Administering an Oracle Database
- Configuring the Oracle Network Environment
- Configuring Shared Servers
- Creating and Managing Database Storage Structures
- Managing Redo Log Files and Control Files
- Managing Schema Objects
- Managing Users, Profiles, Privileges and Roles
- Managing Undo Data and Temporary Segments
- Monitoring and Resolving Lock Conflicts
- Maintaining Database Security
- Monitoring the Performance of the Database
- Loading and Unloading Data
- Backing Up and Recovering the Database

## Who will the Course Benefit?

Anyone who needs to administer, monitor and support an Oracle 11g database.

## Course Objectives

This Oracle Database 11g DBA - Part I course is designed to give database administrators the knowledge and skills needed to maintain successful and efficient day-to-day operations of an Oracle database. The Oracle database administrator will gain practical experience in setting up, administering and troubleshooting an Oracle 11g database. Database administrators will gain an understanding of the architecture and processes of the Oracle server. They will be able to ensure the integrity and availability of a company's data within the Oracle environment.

## Examinations

This course covers the main topics of the [Oracle exam #1Z0-052 Oracle Database 11g: Administration I](#).

Exams are not included as part of the course.

Before taking any exam, ensure you have the recommended experience. The Oracle website lists all exam requirements and these are updated regularly.

## Requirements

Delegates should have an understanding of relational database concepts and basic operating system knowledge. They should have attended the "Oracle SQL" course or have a good working knowledge of Oracle SQL\*Plus. Knowledge of PL/SQL would be beneficial.

## Pre-Requisite Courses

- Oracle SQL

## Follow-On Courses

- Oracle Database 11g DBA - Part II
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# Oracle Database 11g DBA - Part I Training Course

## Course Contents - DAY 1

### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

### Session 1: INTRODUCTION TO ORACLE DATABASE 11g

- Relational database concepts
- Database administration tasks
- DBA responsibilities

### Session 2: ORACLE DATABASE 11g ARCHITECTURE

- Oracle architecture
- The Oracle instance
- Memory structures
- Background processes
- Server and client processes
- The Oracle database

## **Session 3: INSTALLATION & CONFIGURATION OF AN ORACLE DATABASE**

- System Hardware Requirements
- Optimal Flexible Architecture
- Authentication methods for a database
- Oracle environment variables
- Install Oracle software using the Oracle Universal Installer (OUI)
- Use the database Configuration Assistant (DBCA)
- Create a database with DBCA
- Manage a database with DBCA
- Delete a database with DBCA
- Manage Templates using DBCA
- Upgrade a database using Database Upgrade Assistant (DBUA)

## **Session 4: ADMINISTER A DATABASE**

- Administrative tools available to a DBA
- Using SQL\*Plus in Oracle to manage a database
- Administer the database using Enterprise Manager (EM)
- Start and stop the agent
- Start and stop the EM Database Console
- Access EM
- EM navigation
- Grant EM administrative privileges to a user

## **Session 5: CONFIGURE THE ORACLE NETWORK ENVIRONMENT**

- Overview of network configuration
- Oracle Net Listener configuration and management
- Oracle Net Naming methods
- Tools for configuring and managing the Oracle network
- Configure client connections with Net Manager
- View listener configuration
- Start and stop the Oracle listener
- Use TNSPING to test Oracle Net connectivity
- Connect to the database
- Configure Net Services with Enterprise Manager

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# **Oracle Database 11g DBA - Part I Training Course**

## **Course Contents - DAY 2**

### **Session 6: MANAGE AN ORACLE INSTANCE**

- Access an Oracle database
- Database authentication methods
- Password file

- The Startup Process
- The Shutdown Process
- Initialization parameters
- SHUTDOWN a database and instance using SQL
- STARTUP a database and instance using SQL
- View alert log and trace files
- View or modify initialization parameters with EM
- Shutdown a database using EM
- Startup a database using EM

## **Session 7: TABLESPACE AND DATAFILE MANAGEMENT**

- Overview of tablespaces and datafiles
- Use EM to view the storage structure of the database
- Create and alter tablespace commands
- Locally managed tablespaces
- Dictionary managed tablespaces
- Bigfile tablespaces
- Temporary tablespaces
- Multiple temporary tablespaces
- Create tablespaces
- Manage tablespaces
- Use standard and non-standard block sizes
- Create and manage tablespaces using OMF
- Drop tablespace command
- Overview of Automatic Storage Management (ASM)

## **Session 8: MANAGE REDO LOGS**

- Redo log overview
- Plan redo logs
- Redo log data dictionary tables
- Log switches and checkpoints
- Log file maintenance
- Add and drop log file members and groups
- Clear a log file
- Move or rename an online redo log file
- Multiplex redo log files
- Use EM to manage redo logs
- Manage online redo log files with OMF
- List redo log information

## **Session 9: MANAGE CONTROL FILES**

- The usage of the control file
- The contents of a control file
- Manage control files
- Replace a lost or damaged control file
- Mirror a control file
- Standby control file
- Manage control files with OMF
- List control file information

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# Oracle Database 11g DBA - Part I Training Course

## Course Contents - DAY 3

### Session 10: MANAGE SCHEMA OBJECTS

- Create a new table
- View the attributes and contents of a table
- Understand data integrity
- Define constraints
- Alter tables
- Create indexes
- View index attributes
- Create views
- Create and use sequences

### Session 11: MANAGE USERS

- Database administration accounts
- User accounts
- Create a user account
- Operating system authentication
- Change a user's password
- Manage a user account
- Drop a user account
- Monitor user information
- Terminate user sessions
- Product user profiles

### Session 12: MANAGE PROFILES AND RESOURCES

- Overview of user profiles
- Profile resource parameters
- Create profile command
- Manage passwords with profiles
- Control resource usage with profiles
- Maintain profiles
- Drop profiles

### Session 13: MANAGING PRIVILEGES

- Database access
- Oracle supplied roles
- System level privileges
- Object level privileges
- The grant and revoke commands
- Create roles
- Modify and drop roles

- Control the availability of roles
- Use predefined roles
- Synonyms
- Listing valid grants

## **Session 14: DATABASE AUDITING**

- Overview of database auditing
  - Auditing SYS statements
  - Auditing end user sessions
  - Statement auditing
  - Privilege auditing
  - Auditing modifications made to database objects
  - Audit table relocation
  - Fine grained auditing
  - Auditing from Enterprise Manager
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# **Oracle Database 11g DBA - Part I Training Course**

## **Course Contents - DAY 4**

### **Session 15: UNDO MANAGEMENT**

- Undo data overview
- Monitor and administer undo
- Configure undo retention
- Switch undo tablespaces
- Specify the retention period
- Guarantee undo retention
- Retention period for flashback queries
- View undo space information
- Use the undo advisor
- Size the undo tablespace
- Manage undo with EM

### **Session 16: MOVING DATA**

- Create directory objects
- Data Pump Export and Import
  - Data Pump architecture
  - Data Pump data dictionary views
  - Data Pump interactive mode
  - Data Pump API
  - Use Data Pump to export data
  - Use Data Pump to import data
- SQL Loader
  - Overview of SQL Loader
  - Command line parameters
  - Record filtering
  - Control file keywords

- Datafiles
- SQL Loader data paths

## **Session 17: ORACLE SHARED SERVER**

- Shared server architecture
- When shared servers should be used
- Configure dispatchers
- Configure shared servers
- Monitor dispatchers and shared servers

## **Session 18: DATA CONCURRENCY AND LOCK CONFLICTS**

- Levels of locking in Oracle
- Methods used to acquire locks
- Possible causes of contention
- Deadlocks
- Prevent locking problems
- Detect lock contention
- Resolve conflicts in an emergency

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# **Oracle Database 11g DBA - Part I Training Course**

## **Course Contents - DAY 5**

### **Session 19: PROACTIVE DATABASE MAINTENANCE**

- Self Monitoring Architecture
- Automatic Workload Repository
- Automatic Database Diagnostic Monitoring
- Monitor an Oracle database
- Use the Advisors
- Set up notification rules

### **Session 20: PERFORMANCE MANAGEMENT**

- Tuning information sources
- Identify unusable objects
- Statistics collection
- Automated statistics collection
- Performance metrics
- Use the advisors
- React to performance issues

### **Session 21: BACKUP AND RECOVERY CONSIDERATIONS**

- Oracle Suggested Backup Strategy
- Database backup, restore and recover

- Types of failure
- Tune instance recovery
- Checkpoints, redo log files and archive log files
- Alter the ARCHIVELOG mode of a database
- Configure a database for recoverability

## **Session 22: DATABASE BACKUPS**

- Types of RMAN backup
- Backup sets and image copies
- Perform backups using EM
- Automate database backups
- Configure backup settings
- Catalog settings
- Monitor the flash recovery area
- Manage backups

## **Session 23: DATABASE RECOVERY**

- Restore and recovery operations
- Recover an entire database from backup
- Recover from the loss of a system critical data file
- Recover from the loss of a control file
- Recover from the loss of a redo log file

## **Session 24: ENHANCING DATABASE CAPABILITIES**

- Enterprise Manager Support Workbench
  - Register for security updates
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## **Pre-Requisite Courses**

- Oracle SQL
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## **Follow-On Courses**

- Oracle Database 11g DBA - Part II
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