

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

COURSE: Oracle 9/10G Database Administrator(DBA)

Fundamentals I:

Oracle Architectural Components

- Describe the Oracle architecture and its main components
- Describe the structures involved in connecting a user to an Oracle instance

Getting Started with the Oracle Server

- Identify common database administrative tools available to a DBA
- Identify the features of Oracle Universal Installer
- Explain the benefits of Optimal Flexible Architecture
- Set up password file authentication
- List the main components of Oracle
- Enterprise Manager and their uses

Managing an Oracle Instance

- Create and manage initialization parameter files
- Configure OMF
- Start up and shut down an instance
- Monitor the use of diagnostic files

Creating a Database

- Describe the prerequisites necessary for database creation
- Create a database by using Oracle Database Configuration Assistant
- Create a database manually

Data Dictionary Content and Usage

- Identify key data dictionary components
- Identify the contents and uses of the data dictionary
- Query the data dictionary



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

Maintaining the Control File

- Explain the uses of the control file
- Describe the contents of the control file
- Multiplex and manage the control files
- Obtain control file information
- Manage the control file with Oracle Managed Files

Maintaining Redo Log Files

- Explain the purpose of online redo log files
- Describe the structure of online redo log files
- Control log switches and checkpoints
- Multiplex and maintain online redo log files
- Manage online redo log files with OMF

Managing Table spaces and Data Files

- Describe the logical structure of the database
- Create table spaces
- Change the size of table spaces
- Allocate space for temporary segments
- Change the status of table spaces
- Change the storage settings of table spaces
- Implement Oracle Managed Files

Storage Structure and Relationships

- Describe the logical structure of table spaces within the database
- List the segment types and their uses
- List the keywords that control block space usage
- Obtain information about storage structures from the data dictionary

Managing Undo Data

- Describe the logical structure of segments within the database
- Describe the purpose of undo data
- Implement Automatic Undo Management



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

Managing Tables

- Identify the various methods of storing data
- Describe Oracle data types
- Describe the structure of a row
- Create regular and temporary tables
- Manage storage structures within a table
- Reorganize, truncate, and drop a table
- Drop a column within a table

Managing Indexes

- Describe the different types of indexes and their uses
- Create various types of indexes
- Reorganize indexes
- Drop indexes
- Get index information from the data dictionary
- Monitor the usage of an index

Maintaining Data Integrity

- Implement data integrity constraints
- Maintain integrity constraints
- Obtain constraint information from the data dictionary

Managing Password Security and Resources

- Manage passwords by using profiles
- Administer profiles
- Control use of resources by using profiles
- Obtain information about profiles, password management, and resources

Managing Users

- Create new database users
- Alter and drop existing database users
- Monitor information about existing users

Managing Privileges

- Identify system and object privileges



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- Grant and revoke privileges
- Identify auditing capabilities

Managing Roles

- Create and modify roles
- Control availability of roles
- Remove roles
- Use predefined roles
- Display role information from the data dictionary

Using Globalization Support

- Choose a database character set and national character set for a database
- Specify the language-dependent behavior by using initialization parameters, environment variables, and the ALTER SESSION command
- Use the different types of National
- Language Support (NLS) parameters
- Explain the influence on language dependent
- Application behavior Obtain information about
- Globalization Support usage

Fundamentals II:

Networking Overview

- Explain solutions included with
- Oracle9i for managing complex networks

Basic Oracle Net Architecture

- Explain the key components of the
- Oracle Net layered architecture
- Explain the Oracle Net Services role in client server connections

Basic Net Server-Side Configuration

- Identify how the listener responds to incoming connections
- Configure the listener by using Oracle Net Manager
- Control the listener by using Listener



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- Control Utility (Isnrctl)

Basic Oracle Net Services Client-Side Configuration

- Describe the difference between host naming and local service name resolution
- Use Oracle Net Configuration Assistant to configure: Host Naming,
- Local naming method, Net service names
- Perform simple connection troubleshooting

Usage and Configuration of Oracle Shared Server

- Identify the components of Oracle Shared Server
- Describe the Oracle Shared Server architecture
- Configure Oracle Shared Server
- Identify and explain the usefulness of related dictionary views

Backup and Recovery Overview

- Describe the basics of database backup, restore, and recovery
- List the types of failure that may occur in an Oracle environment
- Define a backup and recovery strategy

Instance and Media Recovery Structures

- Describe the Oracle processes, memory structures, and files relating to recovery
- Identify the importance of checkpoints, redo log files, and archived log files
- Describe ways to tune instance recovery

Configuring the Database Archiving Mode

- Describe the differences between Archivelog and Noarchivelog modes
- Configure a database for Archivelog mode
- Enable automatic archiving
- Perform manual archiving of logs
- Configure multiple archive processes
- Configure multiple destinations, including remote destinations

Transporting Data between Databases



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- Describe the uses of the Export and Import utilities
- Describe Export and Import concepts and structures
- Perform simple Export and Import operations
- List guidelines for using Export and Import

Oracle Recovery Manager Overview and Configuration

- Identify the features and components of RMAN
- Describe the RMAN repository and control file usage
- Describe channel allocation
- Describe the Media Management Library interface
- Connect to RMAN without the recovery catalog
- Configure the RMAN environment

User-Managed Backups

- Describe user-managed backup and recovery operations
- Discuss backup issues associated with read tablespaces
- Perform closed database backups
- Perform open database backups
- Back up the control file
- Perform cleanup after a failed online backup
- Use the DBVERIFY utility to detect Corruption

RMAN Backups

- Identify types of RMAN-specific backups
- Use the RMAN BACKUP command to create sets Back up the control file
- Back up the archived redo log files
- Use the RMAN COPY command to create image copies

User-Managed Complete Recovery

- Describe media recovery
- Perform recovery in Noarchivelog mode
- Perform complete recovery in Archivelog mode
- Restore data files to different locations
- Relocate and recover a tablespace by using archived redo log files
- Describe read-only tablespace recovery



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

RMAN Complete Recovery

- Describe the use of RMAN for restoration and recovery
- Perform recovery in Noarchivelog mode
- Perform complete recovery in Archivelog mode
- Restore data files to different locations
- Relocate and recover a tablespace by using archived redo log files
- Describe the steps of incomplete recovery
- Perform an incomplete database recovery
- Identify the loss of current online redo log files

RMAN Incomplete Recovery

- Perform an incomplete database recovery by using UNTIL TIME
- Perform an incomplete database recovery by using UNTIL SEQUENCE

RMAN Maintenance

- Perform cross-checking of backups and copies
- Update the repository when backups have been deleted
- Change the availability status of backups and copies
- Make a backup or copy exempt from the retention policy
- Catalog backups made with operating system commands

Recovery Catalog Creation and Maintenance

- Describe the contents of the recovery catalog
- Create the recovery catalog
- Maintain the recovery catalog by using RMAN commands
- Use RMAN to register, resynchronize, and reset a database
- Query the recovery catalog to generate reports and lists
- Create, store, and run scripts
- Describe methods for backing up and recovering the recovery catalog

Loading Data into a Database

- Demonstrate the usage of direct-load insert operations
- Describe the usage of SQL*Loader
- Perform basic SQL*Loader operations



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- List guidelines for using SQL*Loader and direct-load insert

Performance Tuning Fundamentals III:

Overview of Oracle9i Performance Tuning

- Describe the roles associated with the database tuning process
- Describe the dependency between tuning in different development phases
- Describe service-level agreements
- Describe the tuning goals
- Describe the most common tuning problems
- Describe the tuning considerations during development and production
- Describe performance and safety tradeoffs

Diagnostic and Tuning Tools

- Explain how the alert.log file is used
- Explain how background trace files are used
- Explain how user trace files are used
- Describe the statistics kept in the dynamic performance views
- Explain how Stats Pack collects statistics
- Collect statistics by using STATSPACK

Sizing the Shared Pool

- Measure and tune the library cache hit ratio
- Measure and tune the dictionary cache hit ratio
- Size and pin objects in the shared pool
- Tune the shared pool reserve space
- Describe the UGA and session memory considerations
- Explain other tuning issues related to the shared pool
- Set the large pool

Sizing the Buffer Cache

- Describe how the buffer cache is used by different Oracle processes
- Describe the tuning issues related to the buffer cache



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- Monitor the use of the buffer cache, also use of the different pools within the buffer cache
- Implement dynamic SGA allocation
- Set the DB_CACHE_ADVICE parameter
- Create and size multiple buffer pools
- Detect and resolve free list contention

Sizing Other SGA Structures

- Monitor and size the redo log buffer
- Monitor and size the java pool
- Control the amount of Java session memory used by a session
- Configure the instance to use I/O Slaves
- Configure and use multiple DBWR processors
- Explain the advantages of distributing different Oracle file types
- Describe reasons for partitioning data in tablespaces
- Diagnose tablespace usage problems
- Describe how checkpoints work
- Monitor and tune checkpoints
- Monitor and tune redo logs

Optimize Sort Operations

- Describe how sorts are performed
- Identify the SQL operations that require sorting
- Differentiate between disk and memory sorts
- Create and monitor temporary tablespaces
- Reduce total sorts and disk sorts
- Determine the number of sorts performed in memory
- Set old and new sort parameters

Diagnosing Contention for Latches

- Describe the purpose of latches
- Describe the different types of latch request
- Describe contention for latches
- Tune the appropriate resources to minimize latch contention

Monitoring and Detecting Lock Contention



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

- Define levels of locking
- Describe possible causes of contention
- Use Oracle utilities to detect lock contention
- Resolve contention in an emergency
- Prevent locking problems
- Recognize Oracle errors arising from deadlocks

Tuning Oracle Shared Server

- Identify issues associated with managing users in Oracle Shared Server processes
- Diagnose and resolve performance issues with Oracle Shared Server processes
- Configure the Oracle Shared Server environment to optimize performance

Application Tuning

- Describe the role of the DBA in tuning Applications
- Explain different storage structures, and why one storage structure may be preferred over another
- Explain the different types of indexes
- Explain Index Organized Tables
- Describe partitioning methods
- Explain the use of the DBMS_STATS procedure
- Describe Materialized Views and the use of Query Rewrites

Using Oracle Blocks Efficiently

- Describe the correct usage of extents and Oracle blocks
- Explain space usage and the high water mark
- Determine the high water mark
- Describe the use of Oracle Block parameters
- Recover space from sparsely populated segments
- Describe and detect chaining and migration of Oracle blocks
- Perform Index Reorganization
- Monitor indexes to determine usage



Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com

Edusoft

Development | Training | Consultancy

An ISO : 9001 - 2008 Company

SQL Statement Tuning

- Describe how the Optimizer is used
- Explain the concept of plan stability
- Use Stored Outlines
- Describe how hints are used
- Use SQL Trace and TKPROF
- Collect statistics on indexes and tables

Tuning the Operating System and Using Resources

- Describe different system architectures
- Describe the primary steps of OS tuning
- Identify similarities between OS and DB tuning
- Understand virtual memory and paging
- Explain the difference between a process and a thread
- Set up Database Resource Manager
- Assign users to Resource Manager Group
- Create resource plans within groups

6
Months
Project Training

Main Road, Sector – 11 Noida (U.P.)

Call @ 0120-4271576, 3290576, website : www.edusoftindia.com, Mail:Edusoft@edusoftindia.com