

# Nutech Computer Training Institute

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## Oracle 11G Upgrade New Features

**Total Hours: 50 hrs**

**Tuition Fee: \$3200.00**

**Registration Fee: \$30.00**

**Starting Date: Mar. 28, 2011 Mon. to Fri. 9am-7pm**

- Database architecture
- Creating an Oracle Database
- Managing the Oracle instance
- Configuring and managing the Oracle network
- Managing database storage structures
- Administering user security
- Managing schema objects, data and concurrency, and undo data
- Implementing Oracle Database security
- Database maintenance and performance management
- Backup and recovery
- Moving data
- Intelligent infrastructure enhancements
- Database structure and Oracle Automatic Storage Management
- Configuring database recoverability
- Oracle Recovery Manager (RMAN)
- Oracle Flashback Memory management techniques
- Database tuning advisors
- Disk space and resource management
- Configuring database diagnostics
- Administering the Oracle Scheduler
- Database globalization

## **Course Content**

### **Database Architecture**

- Outline the Oracle Architecture and its main Components
- Explain the Oracle instance architecture

### **Creating an Oracle Database**

- Use DBCA to Create a database
- Use DBCA to Delete a database
- Use DBCA to manage templates

### **Managing the Oracle Instance**

- Use Enterprise Manager
- Use SQL\*Plus and iSQL\*Plus to access the Oracle Database
- Modify database initialization parameters
- Describe the stages of database startup
- Describe the database shutdown options
- View the database alert log
- Use dynamic performance views

### **Managing Database Storage Structures**

- Describe how table row data is stored in blocks
- Define the purpose of tablespaces and data files
- Explain space management in tablespaces
- Create tablespaces
- Manage tablespaces: alter, drop, take offline, put online, add data files, make read-only or read-write, generate DDL
- Obtain tablespace information
- Explain key features and benefits of ASM

### **Administering User Security**

- Create and manage database user accounts
- Create and manage roles
- Grant and revoke privileges
- Create and manage profiles
- Managing Schema Objects
- Create and modify tables
- Define constraints and states of constraints
- Dropping and truncating tables
- Create and use B-Tree and Bitmap indexes
- Create Views
- Create sequences
- Use data dictionary

### **Managing Schema Objects, Data and Concurrency, and undo data**

- Manipulate data through the use of SQL
- Identify and administer PL/SQL objects
- Describe triggers and triggering events
- Define levels of locking

List possible causes of lock conflict  
Monitor and resolve lock conflicts

### **Implementing Oracle Database Security**

Apply the principle of least privilege  
Audit database activity  
Implement Fine-Grained Auditing

### **Database maintenance and performance management**

Gather optimizer statistics  
Manage the Automatic Workload Repository  
Use the Automatic Database Diagnostic Monitor (ADDM)  
Set warning and critical alert thresholds  
React to performance issues  
Performance Management  
Use enterprise manager to view performance  
Tune SQL by using SQL tuning advisor  
Tune SQL by using SQL access advisor  
Use automatic shared memory management  
Use the memory advisor to size memory buffer

### **Backup and Recovery**

Describe the types of failure that may occur in an Oracle Database  
Identify the importance of checkpoints, redo log files, and archived log files  
Tuning instance recovery  
Configure a database for recoverability  
Configure ARCHIVELOG mode

### **Performing Flashback**

Describe flashback database  
Restore the table contents to a specific point in time  
Recover from a dropped table  
Use Flashback Query to view the contents of the database as of any single point of time  
View transaction history or row with flashback transaction query

### **Moving Data**

Describe the general architecture of Data Pump  
Use Data Pump export and import to move data between Oracle databases  
Load data with SQL Loader  
Use external tables to move data

### **Intelligent infrastructure enhancements**

Use the Enterprise Manager support workbench  
Manage Patches

## **Database structure and Oracle Automatic Storage Management**

- Use the Database Advisors to gather information about your database
- Use the SQL Tuning Advisor to improve database performance
- Use automatic undo retention tuning Using Recovery Manager
- Use the RMAN BACKUP command to create backup sets and image copies
- Enable block change tracking
- Manage the backups and image copies taken with RMAN with the LIST and REPORT Commands

## **Configuring database recoverability**

- Configure database parameters that affect RMAN operations
- Change RMAN default settings with CONFIGURE
- Manage RMAN's persistent settings
- Start RMAN utility and allocate channels

## **Oracle Recovery Manager (RMAN)**

- Recover the control file
- Explain reasons for incomplete recovery
- Perform incomplete recovery using EM
- Perform incomplete recovery using RMAN
- Perform incomplete recovery using SQL
- Perform database recovery following a RESETLOGS operation

## **Oracle Flashback Memory management techniques**

- Determine which flashback technology to use for each recovery situation
- Configure and sue Flashback Database
- Monitor the Flashback Database
- Use the Enterprise Manager Recovery Wizard to flashback database
- Manage (or maintain) the Flash Recovery Area

## **Database tuning advisors**

- Tune redo writing and archiving operations
- Issue statements that can be suspended upon encountering space condition errors
- Tuning space-related error conditions by proactively managing tablespace usage
- Tuning wasted space from tables and indexes using the segment shrink functionality
- Estimate the size of new table and indexes
- Use different storage options to improve the performance of queries
- Rebuild indexes online

## **Disk space and resource management**

- Set up initialization parameter files for ASM and database instances
- Execute SQL commands with ASM file names
- Start up and shut down ASM instances
- Administer ASM disk groups
- Use RMAN to migrate your database to ASM

### **Configuring database diagnostics**

- Use the alert log and database trace files for diagnostic purposes
- View alerts using Enterprise Manager
- Adjust thresholds for tracked metrics
- Control the size and location of trace files

### **Administering the Oracle Scheduler**

- Simplify management tasks by using the Scheduler
- Create a job, program, schedule, and window
- Reuse Scheduler components for similar tasks
- View information about job executions and job instances

### **Database globalization**

- Customize language-dependent behavior for the database and individual sessions
- Specify different linguistic sorts for queries
- Use datetime datatypes
- Query data using case insensitive and accent insensitive searches
- Obtain Globalization support configuration information