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Oracle OCP/DBA 10G Certification

Oracle Certified Associate
Oracle Certified Professional

Exam #1Z0-042 Oracle Database 10g: Administration I

Course Objectives:

- Installing Oracle Database 10g Software
- Creating an Oracle Database
- Managing the Oracle instance
- Managing Schema Objects
- Managing Data Storage Structures
- SQL and PL/SQL
- Undo Management
- Monitoring and Resolving Lock Conflicts
- Database Interfaces
- Controlling the Database
- Oracle Database Security
- Oracle Net Services
- Backup and Recovery Concepts
- Administering Users
- Oracle Shared Servers
- Performance Monitoring
- Proactive Maintenance
- Database Backups
- Database Recovery
- Moving data between databases and files

Course Content

Architecture

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

Installing the Oracle Database Software

Identify common database administrative tools available to a DBA
Use optimal flexible architecture
Install software with Oracle Universal Installer
Identify and configure commonly used environment variables
Use Installer Log

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 Data and Concurrency

- 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

Managing Undo Data

- Monitor and administer undo
- Configure undo retention
- Describe the relationship between undo and transactions
- Size the undo tablespace

Implementing Oracle Database Security

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

Configuring the Oracle Network Environment

- Use Database Control to Create additional listeners
- Use Database Control to Create Oracle Net service aliases
- Control Oracle Net Listeners
- Identify when to use shared servers versus dedicated servers

Proactive Maintenance

- 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 Concepts

- 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 Database Backup

- Create consistent database backups
- Back up your database without shutting it down
- Create incremental backups
- Automate database backups
- Backup a control file to trace

Monitor flash recovery area

Performing Database Recovery

- Recover from loss of a Control file
- Recover from loss of a Redo log file
- Recover from loss of a system-critical data file
- Recover from loss of a non system-critical data file

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

Exam #1Z0-043 Oracle Database 10g: Administration II

Course Objectives:

- Use RMAN to create and manage backup sets and image copies
- Recover the database to a previous point in time
- Use Oracle Secure Backup to backup and recover a database
- Use Oracle's Flashback technology to recover your database
- Detect block corruptions and take appropriate measures to correct them
- Use the various Database advisors and views to monitor and improve database performance
- Control database resource usage with the Resource Manager
- Simplify management tasks by using the Scheduler
- Review database log files for diagnostic purposes
- Customize language-dependent behavior for the database and individual sessions
- Administer a VLDB
- Implement a secure database
- Transport data across platforms

Course Content

Using Globalization Support Objectives

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

Securing the Oracle Listener

Secure the listener
Remove default EXTPROC entry and add a separate listener to handle external procedure calls

Configuring Recovery Manager

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

Recovering from User Errors

Recover a dropped table using Flashback technology
Perform Flashback table operation
Manage the recycle bin
Recover from user errors using Flashback versions query
Perform transaction level recovery using Flashback Transaction query

Dealing with Database Corruption

- Define block corruption and list its causes and symptoms
- Detect database corruptions using the following utilities: ANALYZE
DBVERIFY
- Detect database corruptions using the dbms_repair package
- Implement the DB_BLOCK_CHECKING parameter to detect corruptions
- Repair corruptions using RMAN

Automatic Database 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

Diagnostic Sources

- 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

Recovering from Non-Critical Losses

- Recover temporary tablespaces
- Recover a redo log group member
- Recover index tablespaces
- Recover read-only tablespaces
- Recreate the password file

Monitoring and Managing Storage

- Tune redo writing and archiving operations
- Issue statements that can be suspended upon encountering space condition errors
- Reduce space-related error conditions by proactively managing tablespace usage
- Reclaim 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

Automatic Storage 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

Monitoring and Managing Memory

- Implement Automatic Shared Memory Management
- Manually configure SGA parameters for various memory components in the SGA
- Use Automatic PGA Memory Management

Database Recovery

- 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

Flashback Database

- 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

Managing Resources

- Configure the Resource Manager
- Assign users to Resource Manager groups
- Create resource plans within groups
- Specify directives for allocating resources to consumer groups

Automating Tasks with the 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