Oracle DBA Course Content

Overview of the Architecture

- ❖ Defining an Oracle server
- ❖ Database, Instance
- ❖ Understanding Physical structure.
- ❖ Memory structure, process structure
- ❖ logical structure, execution of SQL statements
- ❖ User sessions

Installing oracle database

- ❖ System requirements
- ❖ Pre-install steps – checking certification
- ❖ software compatibility, hardware compatibility
- ❖ creating Unix logins, setting kernel parameter
- ❖ applying OS level patches
- ❖ Installing the software ,post install steps
- ❖ Creating a New Database
- ❖ Identifying the application
- ❖ no. of applications the DB will support.
- ❖ Understanding TS
- ❖ changing initialization parameters- SGA size
- ❖ Processes, TS Naming conventions, Block sizes, Type of DB
- ❖ No. of Users the DB has to support etc.
- ❖ Dropping a Database, sysaux, Tablespace
- ❖ Default tablespace.

Managing an Oracle Database

- ❖ Creating and Managing initialization files- PFILE
- ❖ SPFILE , Adv.Of SPFILE over PFILE.
- ❖ Identifying the various states
- ❖ options of instance startup/shutdown DB mount
- ❖ open stages.
- ❖ Monitoring Alert
- ❖ Trace files in udump, bdump
- ❖ cdump for DB troubleshooting
- ❖ Configuring System Global Area (SGA) – DB buffer Cache
- ❖ Log buffer and shared pool.
- ❖ Understanding Back ground processes- Mandatory
- ❖ Optional and the jobs performed by them using the data dictionary to retrieve information about the database- V$, DBA_views

Managing Tablespaces and datafiles

- ❖ Creating and Altering Tablespaces, adding, resizing, renaming a Datafile, renaming Tablespace.
- ❖ Tablespace- offline, online, read only, read write, temporary Tablespace groups multiple blocks.
- ❖ Creating and managing a Tablespace when using OMF and advantages of OMF feature.
- ❖ Extent Management – Dictionary managed and locally managed Tablespaces AUTOALLOCATE./UNIFORM)and advantages of locally managed over dictionary managed Tablespace.
- ❖ Big file Tablespace, temporary Tablespace group

Storage Management

- ❖ Creating, maintaining tables using appropriate storage settings- initial, minextents pctfree etc.
- ❖ Obtaining table information like avg row length, chained rows, etc. after analyzing the tables.
- ❖ Managing, listing diff types of indexes and their uses, creating B-tree and Bitmap indexes, Maintaining indexes, identifying unused indexes, obtaining index information..

Oracle Data Pump

- ❖ Introduction, Benefits of Data pump export and import.
- ❖ Data pump export and import modes.
- ❖ Transport of Tablespace across different platform's

Maintaining the control file, redo log files and archive log files

- ❖ Importance role, sizing contents, multiplexing and backing up of the control file.
- ❖ Purpose of and how online redo log file work with their associated background processes.
- ❖ Controlling log switches and check points, multiplexing and archiving online redo log files.

Database patching

- ❖ Applying RDBMS patches using OPatch utility, applying PATCHSET ,analyzing the readme file , applying multiple patches with napply option
- ❖ Overview of oraInventory – central inventory and local inventory
- ❖ Removing applied rdbms patches using rollback option

Networking Overview

- ❖ Explaining solution included with oracle for managing complex networks
- ❖ Oracle net Architecture – Explaining the key components Role in client/Server connections
- ❖ Oracle Net Services Server side configuration. Oracle Net services client-side configuration.
- ❖ Configuring and maintaining distributed DB's by creating DB links, Materialized views.
- ❖ Usage and configuring of oracle shared server components of the Oracle shared server, configuring shared servers and dispatchers, identifying useful data dictionary view.

Backup and Recovery

- ❖ Describing the basics of DB backup, Restore and Recovery, Listing the types of Failures that may occur in an oracle environment. Defining Backup and Recovery Strategies.
- ❖ Instance and media Recovery structures- Describing the Oracle Processes, memory structure and files related to recovery, identifying the importance of check points, redo log files and archived log files.
- ❖ User Managed Backups and Recoveries – Backup and recovery operations closed and open DB backups(hot and Cold). Complete Recovery identifying the situations which require incomplete recovery from loss of online redo logs, creating clone DB's
- ❖ Oracle Recovery Manager (RMAN) – Features and components, Repository. channel allocation, configuring RMAN environment, complete and incomplete Recovery and Full/Incremental compressed backups, incremental backups with block change tracking RMAN compressed Backups.

Database cloning

- ❖ Pre-clone steps on the target(dev server)--backup the key config and environment files ,export any schemas if needed
- ❖ Cloning the database using cold backup and hot backup(partial clone/full clone)
- ❖ Copying the files to the target , configure the instance on the target, post clone steps

Database upgrade

- ❖ Db upgrade from 9i to 10g(10.2.0.3) applying the bug fixers of 10.2.0.3 , running pre-upgrade tool(utlu102i.sql)
- ❖ Analyzing the obsolete/deprecated parameter ,backing up connect role ,checking for invalid objects if any
- ❖ Compiling invalid objects and gather sys statistics as post upgrade steps

Performance Tuning

- ❖ Overview of Tuning phases , Goals , Methodology and common performance problems.
- ❖ DB conf. and I/O issues file striping, optimizing /tuning sorting operations, Diagnosing partitioning Redo log files configuration, online segment shrinking.

Managing Undo Segments ❖ Understanding Oracle Undo Segments, Retention Policy, retention guarantee/no guarantee, switching undo Tablespaces.	**Enabling Oracle's parallel query option , multiple DB writers Log writers table caching** ❖ Gather statistics of database ,schema ,table ,index ❖ Overview of reorganization of database ,schema ❖ Sizing SGA – Shared pool(reuse stmts, etc) buffer Cache, Redo log Buffers cache. ❖ Tuning Rollback /Undo segments – Usage , configuration, detecting and resolving problem. Diagnostic and Tuning Tools – Alert Log files, Tkprof, Explain plan, Dynamic performance view, STATASTICS_LEVEL parameter to collect statistics AWR, ADDM