

Course overview:

Oracle8i Database Architecture and Administration - DBA I

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Overview and objectives

This 5-day course provides a starting point for administration of the Oracle database. The first 2-day segment considers an in-depth discussion of the database architecture, including the Oracle instance, background processes, the SGA and memory structures, data files, tablespaces, extents, blocks and rows. Common administration tasks are also considered such as security, backup & recovery, physical storage of indexes and tables and many others. On course completion, students will be able to:

- Install, startup and shutdown an Oracle database
- Explain the internal architecture of data, memory and process structures
- Administer a security policy for the database
- Configure a basic backup & recovery strategy
- Control physical storage of tables and indexes
- Build efficient databases with clusters and bitmap

Who should attend?

This course has been developed for Oracle Database Administrators. Students are recommended to have attended the following course or have the equivalent knowledge and experience:

- Introduction To Oracle8i SQL & SQL*Plus
- Introduction To Oracle8i PL/SQL Language
- Introduction To Oracle8i Advanced SQL & SQL*Plus

Oracle database server architecture

- About the administration tools • Application architectures • The Oracle database server • Oracle server options • What is the data dictionary? • Database users and schema

Understanding database objects

- Which database objects exist? • About tables • About constraints • About sequences

Instance and user memory structures

- What is a database instance? • System Global Area (SGA)

Instance and user processes

- Which processes are executing? • Instance background processes • SQL execution processes

Data files, data segments

- Which files are used by the database? • Data files and the physical storage hierarchy • Understanding tablespaces • Understanding data file • Understanding segments • Understanding extents • Understanding database blocks • Understanding the row structure • Understanding ROWID

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Data files, non-data segments

- The non-data segments • Indexes and Index segment • Temporary segments • Rollback segments • DBA_SEGMENTS • DBA_ROLLBACK_SEGS

Non-data files

- Redo log files • Control file • Trace and alert files

Installation and database creation

- Database administrator authentication • UNIX Roles • Before database instance • After database installation • About Oracle JSERVER

Instance startup and shutdown

- OEM Instance Manager • Database startup • Database shutdown • Restricted sessions

Database maintenance, tablespaces

- About database maintenance • About tablespace maintenance • CREATE, ALTER, DROP

Database maintenance, other structures

- Rollback segment maintenance • Redo log maintenance • ALTER SYSTEM (log file switch) • ALTER DATABASE (archive mode) • Dynamic changes with ALTER SYSTEM • ALTER SYSTEM Options • The optimal flexible architecture

Managing security

- Managing users • PRIVILEGES • SET ROLE • Data dictionary storage • Profiles • ALTER PROFILE • DROP PROFILE • Monitor user sessions

Auditing database usage

- Auditing users and objects • Audit actions (statements or system privileges) • Maintain the audit trail

An introduction to backup and recovery

- About backup and recovery • Archiving • BACKUP • RECOVERY

Utilities, loading

- Using the loader • Understanding the Loader process • Control file options • Direct path loads • OEM Data Manager

Utilities, exporting and importing data

Managing physical storage of tables

- Table physical storage • Finding chained rows

Managing indexes

- Index physical storage • CREATE INDEX • ALTER INDEX • DROP INDEX

Managing clusters and indexed organized tables

- Clusters • Index-organized tables

National Language Support (NLS)

- What is NLS? • Using NLS features

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