

DB-2146

Oracle9i Database Administration

Length

5 Days

Audience

Database and System Administrators.

Prerequisites

Oracle SQL, SQL*Plus and PL/SQL experience. This can be obtained in [DB-2132: Introduction to Oracle9i for Developers](#) class.

Overview

This course provides you with the foundation skills necessary to create, maintain and manage an Oracle9i database. In this class we will focus on the techniques and skills necessary for day-to-day database administration tasks such as security, creating users, creating object (tables, tablespaces) and backup and recovery. An in-depth discussion of database architecture is provided.

This course has been completely updated for Oracle9i. Working examples are included throughout the course book and students have access to electronic versions of all examples and lab solutions. Approximately 50% of class time is spent on hands-on exercises.

This class will help prepare you for Oracle Certified Professional exam "Oracle9i Database: Fundamentals I Exam #1Z0-031". It also covers some of the material required for the next test, "Oracle9i Database: Fundamentals II Exam #1Z0-032". This course provides the foundation of knowledge for but does *not* cover database tuning.

Topics Covered

- **A DBAs Introduction to the Oracle Data Dictionary**
 - Intro to Data Dictionary
 - Static Views
 - Common Static DBA Views
 - Example: DBA_USERS
 - Example: DBA_SYS_PRIVS
 - Dynamic Performance Views
 - Example: V\$PARAMETER
 - Miscellaneous Views
 - DICTIONARY View
 - Data Dictionary Workshop

- **Oracle9i Architecture Part 1: Files**
 - Database and Instance

The Big Picture
Data Files
Redo Log Files
Control Files
Temp Files
Parameter Files
Password Files
Architecture - Files Workshop

- **Oracle9i Architecture Part 2: Processes**

The Big Picture
The Processes
Background Processes
Database Block Writer
Log Writer - LGWR
System Monitor - SMON
Process Monitor - PMON
Checkpoint - CKPT
Archiver - ARCn
Miscellaneous Processes
Architecture - Processes Workshop

- **Oracle9i Architecture Part 3: Memory**

The Big Picture
PGA and UGA
The Oracle9i SGA
SGA Areas
Shared Pool
Library Cache
SQL Statement Processing
Data Dictionary Cache
Buffer Cache
Database Block Size
Keep and Recycle Caches
Redo Log Buffer
Large Pool / Java Pool
Summary
Architecture - Memory Workshop

- **Creating Administrative Users**

The SYS User
The SYSTEM User
SYSDBA
DBA Role
Local Connections

Remote Connections
Creating a Password File
Password File Entries
Create New Administrators
Administrative Users Workshop

- **Starting and Stopping an Oracle Instance**

- STARTUP Procedures
- SQL*Plus for Startup
- Connecting for STARTUP
- Startup/Shutdown Basics
- Startup Basics Workshop
- Stages Of STARTUP
- STARTUP Command
- STARTUP Examples
- STARTUP Examples
- ALTER DATABASE
- Startup MOUNT Workshop
- Restricted Access
- Shutting Down
- Shutdown Workshop

- **Initialization Parameter Files**

- Review: Parameter Files
- Text Parameter File
- Introduction to SPFILE
- Benefits of SPFILE
- Creating an SPFILE
- Using SPFILE
- Monitoring Parameter Values
- V\$PARAMETER View
- SPFILE – Exporting
- Persistent Parameters
- Summary
- Server Parameter Files Workshop

- **Creating and Managing Users**

- Creating New Users
- Intro to User Privileges
- Default and Temporary Parameters
- Querying the Data Dictionary
- Altering a User
- Dropping a User
- Killing a User Session
- User Basics Workshop

Quota Concepts
Providing Quota
Unlimited and Zero Quota
Query Existing Quotas
User Space Used
User Quota Workshop
Installation Users
Secure Installation Users
User Account Status Workshop

- **Password Management**

- Password Aging
- Manual Password Expiration
- Account Locking
- Password History
- Password Complexity
- User Passwords Workshop

- **Introduction to Auditing**

- Lesson Objectives
- Auditing Concepts
- Enabling Auditing
- Monitoring Logins
- Audit GRANT/REVOKE
- Object-Level Audits
- Displaying Object Audit Activity
- The SYSAUD\$ Table
- Auditing with Triggers
- Auditing Summary
- Auditing Workshop

- **Managing Security**

- Security Basics
- Privilege Types
- System Privileges
- ANY-Level Privileges
- The PUBLIC Keyword
- ADMIN Option
- Revoking System Privileges
- Data Dictionary
- System Privileges Workshop
- Object Privileges
- GRANT Object-level Privileges
- INSERT Privilege
- UPDATE Privilege

The ALL Option
WITH GRANT OPTION
Object Privileges Workshop
Role Concepts
Predefined Roles
Giving System And Object Privileges To Roles
Granting Roles
Enabling and Disabling
SET ROLE Command
SET ROLE Options
The ADMIN OPTION
Granting Roles to Roles
Password Protected Roles
Dropping A Role
Revoking Roles
Roles Workshop

- **Creating and Managing Tablespaces**

- Review: Tablespace Concepts
- Storage Fundamentals
- Creating Tablespaces
- Creating OMF Tablespaces
- OMF Key Points
- Configuration and File Location
- Multiple Blocksize Support
- Why Non-Standard Block Size?
- Free Space
- Adding Space
- Online/Offline Tablespace
- Read/Write Tablespace
- Dropping Tablespaces
- Managing SYSTEM TS
- Tablespaces Workshop

- **Managing Tables**

- Types of Tables
- CREATE TABLE Statement
- Character and Numeric Datatypes
- Date and Time Datatypes
- Binary Datatypes
- Other Datatypes
- Table Create Workshop
- NOLOGGING Parameter
- Table Compression
- Table Compression Workshop

Create Table as Subquery
CTAS Options
Moving a Table
MOVE Table
ONLINE Option
DROP Column
DROP Column Syntax
Immediate DROP Column
Deferred DROP Column
DROP Restrictions
Renaming Tables and Columns
Statistics Collection and Management
DBMS_STATS
DBMS_STATS Workshop
Summary

- **Creating and Managing Constraints**

- Intro to Constraints
- Violating a Constraint
- Constraint States
- Identifying Exceptions
- Deferred Constraint Checking
- Dropping a Constraint
- Renaming a Constraint
- Data Dictionary and Constraints
- Summary
- Constraints Workshop

- **Creating Indexes**

- Index Concepts
- B-Tree Concepts
- B-Tree Effect on Query Performance
- Creating an Index
- Nologging Option
- Statistics Collection
- Choosing Index Columns
- Calculating Selectivity
- When to Avoid Indexing
- Multi-Column Indexes
- Which Column First?
- Index Monitoring
- When to Create
- Where to Create
- Indexes Workshop

- **Managing Storage**
 - Managing Storage
 - PCTFREE & PCTUSED
 - FREELISTS & PCTUSED
 - PCTFREE/PCTUSED Scenarios
 - PCTFREE/PCTUSED Summary
 - INITRANS & MAXTRANS
 - INITRANS/MAXTRANS Example
 - Storage Workshop

- **Managing Undo**
 - What is Undo?
 - Where is Undo Kept?
 - Why Not Rollback Segments?
 - Why AUM?
 - Implementing AUM
 - Find Undo Tablespace
 - Create Undo Tablespace
 - Initialization Parameters
 - Switching Undo Tablespace
 - Dropping Undo Tablespace
 - Data Dictionary Views
 - Tuning AUM
 - Adding Space
 - Resources
 - Summary
 - Automatic Undo Management Workshop

- **Managing Redo Logs**
 - Review: Concepts
 - DBA's Responsibilities
 - Archiving Status
 - Enabling Archiving
 - Archiving Workshop
 - Multiplexing Archive Logs
 - Multiplex Archive Logs Workshop
 - Log Switch Delays
 - Adding Log Files
 - Introduction to OMF
 - Adding Log Files - OMF
 - Multiplexing Online Logs
 - Add Redo Log Workshop

- **Managing Control Files**
 - Control File Review

DBA Responsibilities
Adding Control Files
Add Control File Workshop
Backing Up Control File
Recreating Control File
Optional Create Control File Workshop

- **Introduction to RMAN**

- What is RMAN?
- RMAN Components
- Starting and Connecting
- Common RMAN Commands
- Backup Concepts
- Full Backup
- Full Tablespace Backup
- Datafile Backup
- Incremental Backup
- Backups – Where to go from here
- RESTORE Command
- RECOVER Command
- Complete Recovery – Database
- Recover Tablespace
- Summary: Restore and Recovery
- Reporting
- Report Need Backup
- Show Stored Settings
- What Else is There?
- RMAN Workshop

- **Logical Backups**

- Introduction
- Export Modes
- User-Mode Export
- Export Features
- Import
- Using Import
- Import Tips
- Logical Backups Workshop

- **SQL*Loader**

- Introduction
- Executing SQL*Loader
- The Control File
- Variable Format Data
- Fixed Format Data

LOG File
Conditional Loads
SQL*Loader Workshop

- **Introduction to Oracle Networking**

- Introduction to Oracle Net
- Configuration Files
- tnsnames.ora
- Introduction to the Listener
- Listener Control Utility
- Listener Started?
- Stopping the Listener
- Listener Password
- listener.ora
- Oracle Net Workshop

- **Create the DataBase**

- Major Steps
- What We Need to Know
- The Oracle SID
- Windows Services
- Seeing the Active Threads
- Listing Active Instances
- Stopping Active Instances
- Database Configuration Assistant
- Select Operation
- Select Template
- Database ID
- Database Features
- Database Connection Options
- Init Parameters
- Database Storage
- Create Options
- The .BAT File
- ORADIM
- CreateDB Script
- Create DB Workshop

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... exceeding the expectation*