

Oracle Database 19c: Multitenant Architecture

Duration:
4 days

This course covers all aspects of the multitenant architecture, providing detailed information on the components of an Oracle multitenant container database and its regular and application pluggable databases. You learn why and how to create and manage a multitenant container database and its regular and application pluggable databases, with storage structures appropriate for the business applications. You practice cold and hot cloning, plugging unplugged pluggable databases in multitenant container databases using various methods.

In addition, you learn how to create common and local users and administer database security to meet your business requirements by using encryption, Database Vault and auditing and you will learn how to create a database deployment in the Cloud.

Course Objectives

Upon completion of this course, the student should be able to:

- Understand the multitenant architecture.
- Create and manage a multitenant container database and pluggable databases.
- Understand regular and application pluggable databases.
- Manage storage within a multitenant container database and pluggable databases.
- Manage security within a multitenant container database and regular and application pluggable databases.
- Monitor performance and manage resources within a multitenant container database and pluggable databases.
- Perform backup, recover and flashback operations on a multitenant container database and regular and application pluggable databases.
- Perform particular operations like Oracle Data Pump transportation, loading, encrypting, auditing.
- Manage the CDB and PDBs in specific configurations like Data Guard, Database Vault.

Benefits To You

To provide an acceptable response time to users and manage resources effectively, you learn how to monitor performance and manage resources within the multitenant container database and its pluggable databases, and within each pluggable database.

Another important aspect is the data movement between non-CDBs and pluggable databases, and between pluggable databases.

It is also important to understand the procedures of upgrading an Oracle Database multitenant container database or an Oracle Database pluggable database.

Finally, students discover the way multitenant container database and pluggable databases are created and monitored in the Cloud.

Prerequisites

Oracle Database 19c: Administration Workshop

Audience

- Administrator
- Architect
- Database Administrator

Course Topics

1. CDB Basics

- Practice 1-1: Discovering Practices Environment
- Practice 1-2: Setting and Validating OEMCC Named Credentials
- Practice 1-3: Exploring CDB and PDB using Enterprise Manager Cloud Control
- Practice 1-4: Using Enterprise Manager Express

2. CDB and Regular PDBs

- Practice 2-1: Exploring CDB Architecture and Structures
- Practice 2-2: Creating a New CDB
- Practice 2-3: Creating a New PDB

3. Application PDBs and Application Installation

- Practice 3-1: Installing an Application in an Application Container
- Practice 3-2: Upgrading an Application in an Application Container
- Practice 3-3: Querying Data Across Application PDBs in CDB

4. PDB Creation

- Practice 4-1: Cloning Remote PDBs in Hot Mode
- Practice 4-2: Cloning an Application Container
- Practice 4-3: Unplugging and Plugging Application Containers
- Practice 4-4: Converting a Regular PDB to an Application PDB
- Practice 4-5: Relocating PDBs
- Practice 4-6: Querying Data Across CDBs by Using Proxy PDBs
- Practice 4-7: Dropping Unnecessary PDBs

5. CDB and PDB Management

- Practice 5-1: Starting Up and Shutting Down a CDB
- Practice 5-2: Opening and Closing PDBs
- Practice 5-3: Renaming a PDB
- Practice 5-4: Setting Parameter Values for PDBs
- Practice 5-5: Renaming PDB Services

6. Storage

- Practice 6-1: Managing Permanent and Temporary Tablespaces
- Practice 6-2: Managing UNDO Tablespaces

7. Security

- Practice 7-1: Managing Common and Local Users, Privileges, and Roles
- Practice 7-2: Managing Common and Local Objects in Application Containers
- Practice 7-3: Enabling Common Users to View Information About PDB Objects
- Practice 7-4: Managing PDB Lockdown Profiles
- Practice 7-5: Auditing Operations in PDBs
- Practice 7-6: Managing PDB Keystores
- Practice 7-7: Unplugging and Plugging Encrypted PDBs

8. Backup and Duplicate

- Practice 8-1: RMAN Whole CDB Backup
- Practice 8-2: RMAN PDB Backup

- Practice 8-3: Duplicating a PDB into an Existing CDB
- Practice 8-4: Duplicating an On-Premises CDB for Cloud

9. Recovery and Flashback

- Practice 9-1: RMAN Recovery from SYSTEM PDB Data File Loss
- Practice 9-2: RMAN Recovery from Nonessential PDB Data File Loss
- Practice 9-3: PDB PITR
- Practice 9-4: Recovering a Plugged PDB by Using Preplug-in Backups
- Practice 9-5: Flashing Back an Application Upgrade by Using Restore Points

10. Performance

- Practice 10-1: Monitoring Performance at the CDB and PDB Levels
- Practice 10-2: Getting Performance ADDM Recommendations at CDB and PDB Levels
- Practice 10-3: Monitoring SQL Executions at PDB Level

11. Resources Allocation

- Practice 11-1: Managing PDB Performance Profiles
- Practice 11-2: Managing Resource Allocation Between PDBs
- Practice 11-3: Avoiding Excessive Session PGA Memory Usage in PDBs

12. Data Movement

- Practice 12-1: Performing a Full Transportable Export/Import from a 12c Non-CDB into an 18c
- Practice 12-2: Performing a Full Transportable Export/Import from a 18c PDB into an 19c PDB

13. Upgrade Methods

- Practice 13-1: Upgrading an 18c Regular PDB to a 19c Application PDB
- Practice 13-2: Plugging Remote PDBs Through XTTS
- Practice 13-3: Upgrading an 18c CDB to a 19c CDB

14. Miscellaneous

15. Consolidated Database Replay Procedures