



## Oracle Database 12c: Manage The Multitenant Architecture



ora12c240-ver4

Learning Resources Available From The Sideris Training Portal

2-3 Days

### General Description

The single most important new capability introduced with the Oracle 12c release of the database is the multitenant database feature. With this technology, the Oracle database can be a full participant in a cloud computing-based application architecture. Even a traditional on-premise systems architecture can be dynamically and dramatically transformed as a result of this feature. Many traditional and new database features are enhanced or introduced when a multitenant database configuration is used.

### Target Audience

The primary target audiences for this textbook are:

- Database administrators
- Application designers and developers
- Web server administrators
- System administrators
- Implementation specialists
- Data center support engineers
- Chief Information Officers (CIO) and other information technology (IT) management professionals

The entire Oracle database administrator curriculum, including this textbook that you are now reading, has these prerequisites from the Sideris Textbook Series For Oracle Database Developers. Senior developers reading this text will also need these prerequisites, or equivalent experience.

- Oracle Database 12c: SQL Fundamentals (Levels I & II)
- Oracle Database 12c: PL/SQL Fundamentals (Levels I & II)

### Prerequisites

With regard to this text and its position within the Sideris Textbook Series For Oracle Administrators these are the required prerequisites, or equivalent experience:

- Oracle Database 12c: Install & Upgrade Workshop
- Oracle Database 12c: Architecture & Internals
- Oracle Database 12c: Administration Workshop
- Oracle Database 12c: Administration II - Advanced
- Oracle Database 12c: Resource Manager & Scheduler

### Next Course

Readers may next wish to proceed onto these advanced textbook modules:

- Oracle Enterprise Manager 12c Cloud Control: Administer the Enterprise
- Oracle Database 12c: ASM Administration

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### Certification

This textbook considers subjects helpful for certification as an Oracle Database 12c Administrator Certified Professional (OCP) for

- "Exam: 1Z0-060: Upgrade to Oracle Database 12c", and
- "Exam: 1Z0-063: Oracle Database 12c: Advanced Administration".

### Content Summary

Volumes: 2

Pages: 659

Hands-on Workshops: 7

Exercises: 51

### Objectives

We will devote this textbook to the following multitenant database topics:

- Understanding the multitenant database architecture.
- Review the business challenges, needs and objectives that are addressed with multitenant database technology.
- Creating and connecting to Oracle container databases (cDBs) and pluggable databases (pDBs).
- Managing common and local users along with multiple container management of security objects.
- Creating container databases, provisioning pluggable databases, perform unplug and plug-in and administering multiple database tenants.
- Migrating traditional single tenant databases to pluggable databases.
- Managing temporary and permanent storage within container and pluggable databases.
- Multitenant backup and recovery strategies, including complete and incomplete recovery at either the container or the pluggable database level, Flashback Database and other sophisticated recovery operations.
- Using SQL, RMAN, DBCA and Enterprise Manager Cloud Control for the administration of multiple database tenants.
- Resource management and container caging.

## Contents

### Fundamentals: The Multitenant Database Architecture

- Cloud Computing Principles
- Peering Into The Architecture
- Multitenant Database Instance
- Multitenant Storage Architecture
- Multitenant Data Dictionary
- Benefits Of The Architecture
- Challenges Of The Architecture

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### Fundamentals: Creating & Connecting To Multitenant Databases

- About cDB Capacity Planning
- cDB & pDB Creation
- Using Oracle Installer
- Using DBCA
- cDB & pDB Connections
- Using SQL\*Plus
- EM Cloud Control

### Fundamentals: Multitenant Database Security Management

- Multitenant Security Model
- Multitenant Privileges & Roles
- Common Users
- Local Users
- Common & Local Roles & Privileges
- Commonly & Locally Defined
- Commonly & Locally Granted
- Common & Local Profiles
- Common & Local Dictionary Access
- Multitenant Unified Auditing
- Local Audit Policies
- Querying The Unified Audit Trail
- Common Audit Policies
- Auditing Management With EM CC

### Provisioning: Provisioning pDBs From pdb\$seed

- Provision & Decommission pDBs
- EM CC Provisioning Prerequisites
- pDB File Location Prerequisites
- Provision A pDB From pdb\$seed
- Provision Using SQL

- Provision Using EM CC
- Post Provisioning Checklist
- Drop A pDB
- Querying cDB & pDB Metadata

### Provisioning: Additional pDB Provisioning

- Clone A pDB
- Unplug & Plug-In A pDB
- Migrate A Non-cDB To A pDB
- pDB Provisioning Using EM CC
- pDB Provisioning Using DBCA

### Administration: Administering Multitenant Databases

- About Multitenant Administration
- cDB Administration
- cdb\$root Administration
- pDB Administration

### Administration: Multitenant Storage Management

- Manage Permanent Tablespaces
- Manage Temporary Tablespaces

### Administration: Multitenant Backup & Recovery

- Devising Multitenant Recovery Plan
- RMAN Multitenant Usage
- RMAN Multitenant Backup
- EM CC Multitenant Backup
- RMAN Multitenant Recovery
- Complete Recovery
- Incomplete cDB / pDB Point-in-time Recovery (PITR)
- Incomplete Table Point-in-time Recovery (PITR)
- Multitenant Flashback Database
- EM CC Multitenant Recovery

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- Multitenant Database Duplication
- cDB Duplication
- pDB Duplication

### Administration: Multitenant Resource Management

- About Resource Management
- cDB Resource Plans & Directives
- pDB Resource Plans & Directives