

**OD-12cR2-NFAP1: Oracle Database 12c R2:
New Features for Administrators Part 1 Ed 1**

Course Code: OD-12cR2-NFAP1

Duration: 5 days

Instructor-led Training (ILT) | Virtual Instructor-
led Training (VILT)**OVERVIEW**

The Oracle Database 12c R2: New Features for Administrators Part 1 Ed 1 training course will give you a detailed overview of following modules, the Using SQL New Features and Tools, the Understanding DB Architectures, and the Diagnosing Database Problems. During the training, you will be skilled with the knowledge about on-premises Multitenant databases and various other new features in different areas of database administration.

SKILLS COVERED

Upon completion of this course, you will know:

- Creating and managing pluggable databases
- Understand the challenges and benefits of a sharded database
- Handling ADR automatic file space
- Using the Trace File Analyzer collector for diagnosing database issues
- Using the new SQL Plus history commands, SQL enhancements & SQLcl new utility as the new SQL command line interface
- Creating and managing a multitenant container database

WHO SHOULD ATTEND?

- End Users
- Database Administrators
- System Administrator

PREREQUISITES

- Knowledge of Oracle Database 11g R2

Following is suggested but not mandatory:

- Oracle Database 12c R2: Install and Upgrade Workshop
- Using Oracle Enterprise Manager Cloud Control 13c Ed 2

MODULES**Module 1: Introduction**

- Global objectives of the course
- Lessons grouped by modules
- Using SQL new features and tools
- Understanding DB architectures
- Diagnosing database problems
- Schedule of the week

Module 2: Using SQL New Features and SQLcl

- Use new 128 bytes identifier length for database objects
- Increase length limits of data types
- Use SQL row-limiting clause
- Describe the support for invisible and hidden columns
- Use the new VALIDATE_CONVERSION function
- Recall SQL*Plus commands in the same session from history
- Describe the new SQLcl utility

Module 3: Understanding CDB Basics

- Challenges
- New Multitenant Architecture: Benefits
- Non-CDB Architecture vs Oracle Multitenant Container Database
- Configurations
- A pristine installation
- SYSTEM objects in the USER container

- Provisioning a pluggable database
- CDB root and pluggable database containers

Module 4: Creating CDB and Regular PDBs

- Create a CDB using new clauses
- What's new in CDB after CDB creation
- Data dictionary views
- What to do in CDB after CDB creation
- ADR
- Provisioning new PDBs: overview
- Tools

Module 5: Creating Application PDBs and Installing Applications

- Regular PDBs vs application PDBs
- PDBs and applications
- Application containers
- Types of containers
- Create and manage an application container
- Install applications
- Patch and upgrade applications
- Application common objects

Module 6: Creating PDBs

- Configure and use local UNDO mode
- Cloning regular and application containers PDBs
- Plugging unplugged regular and application PDBs into CDB
- Cross-Platform transportable PDB
- Plugging or cloning a non-CDB into a CDB
- Perform hot cloning and relocation
- Converting regular PDBs to application root or PDBs
- Plugging unplugged PDBs with encrypted data

Module 7: Managing CDB and PDBs

- Managing CDB and PDBs

- Switching Connection
- Creating and renaming Services
- Starting Up a CDB Instance
- Mounting a CDB
- Opening CDBs and PDBs
- Changing the different modes and settings of PDBs
- Evaluating the impact of parameter value changes

Module 8: Managing Storage

- Creating Permanent Tablespaces in a CDB
- Objects in Tablespaces
- Tablespaces Created During PDB Creation
- Defining Default Permanent Tablespaces
- Temporary Tablespaces
- UNDO Tablespaces

Module 9: Managing Security

- Creating common users, roles and profiles in CDB and PDBs
- Granting privileges commonly in CDB and PDBs
- Common objects in Application PDBs and operations on Data-Linked objects
- Enabling Common Users to Access Data in PDBs
- Managing PDB lockdown profiles
- Auditing users in CDB and PDBs
- Protecting data with Database Vault policies in CDB and PDBs
- Encrypting data in PDBs

Module 10: Backing up, Recovering and Flashing Back

- New syntax and clauses in RMAN
- CDB and PDB backups
- Using RMAN backup to plug an unplugged PDB
- Instance failure and instance recovery

- PDB tempfile, essential and non-SYSTEM tablespaces recovery
- PDB point-in-time recovery
- Duplicating PDBs
- CDB and PDB flashback

Module 11: Managing Performance

- Tuning a CDB
- Sizing the CDB
- Managing SGA and PGA for PDBs
- Monitoring PDB memory usage
- AWR and ADDM behaviour at CDB and PDB levels
- PDB-Level snapshot views
- AWR report
- Controlling the Degree of Parallelism of Queries

Module 12: Managing Resources Allocation

- Allocating resources in the CDB and PDBs
- Managing resources between PDBs
- CDB Resource plan basics: Limits + cpu_count init parm per PDB
- Controlling PDB IO rate limit
- Managing resources within a PDB
- Creating and setting PDB performance profiles

Module 13: Moving and Migrating Data

- Using Oracle Data Pump with PDBs
- Exporting non-CDB data and importing non-CDB data into PDB
- Exporting and importing between PDBs
- Exporting from PDB and importing into a non-CDB
- Full Transportable export/import
- Transporting a database over the network
- Using SQL*Loader with PDBs

Module 14: Performing Miscellaneous Operations

- Using catcon.pl utility to install/remove options from CDB/PDB
- Using Xstreams with a CDB and PDB
- Creating a standby of a CDB
- Scheduling operations in a PDB
- Jobs coordinator and resources
- Mining statements of a PDB using LogMiner

Module 15: Understanding Database Sharding

- What Is Database Sharding?
- Benefits of Sharding
- Advantages of Oracle Sharding over NoSQL
- Application Considerations for Sharding
- Components of Database Sharding
- Complete Deployment of a System-Managed SDB
- Creating Sharded Tables
- Sharded Table Family

Module 16: Diagnosing Database Problems

- Automatic Diagnostic Repository
- New ADRCI Command
- ADR Retention
- Network Performance
- Trace File Analyzer (TFA) Collector process and repository
- TFA Collector utility
- Tracing Data Pump
- MVs refreshed statistics history

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