Oracle Multitenant Administration

Duration: 4 Days **Course Code: OMA**

Overview:

Oracle Multitenant Administration Course Overview

English - Please note this course is only available in English.
Nederlands - Let op: deze training is alleen in het Engels beschikbaar.
Français - Veuillez noter que ce cours est uniquement disponible en anglais.
Prior to 19c,Oracle only allowed a single user-defined pluggable database (without having to license the full multitenant option).

Target Audience:

Who will the Course Benefit

This Oracle Multitenant Administration course is designed for Oracle professionals who need to gain an in-depth understanding of Oracle's Multitenant Architecture features and functionality and then implement these at their own site.

Objectives:

- Course Objectives
- The course aims to provide the delegate with practical experience of implementing and managing Container and Pluggable Databases.

Prerequisites:

Delegates who wish to attend this Oracle Multitenant Administration course should have administration experience of Oracle Database. This knowledge can be gained by attendance on the pre-requisite Oracle Database 19c Administration course. Knowledge of using PL/SQL packages is strongly recommended.

This course is run on a Linux operating system,therefore a good working knowledge of UNIX/Linux is required. This knowledge can be gained by attendance on the pre-requisite Linux Introduction course.

Where Oracle 19c courses are listed in the Pre-requisite Courses section equivalent Oracle 18c or Oracle 12c courses would also suffice.

Follow-on-Courses:

Further Learning

- Oracle Database 12cR2,18c and 19c New Features for Administrators
- Oracle Database 19c DBA Performance Tuning & Management
- Oracle Database 19c Backup and Recovery with RMAN
- Oracle Database 19c Install & Upgrade

Content:

Oracle Multitenant Administration Training Course Course Contents - DAY 1

Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

Session 1: ORACLE DATABASE MULTITENANT ARCHITECTURE

- Overview of the Oracle Database architecture
- Change of MTA licencing at 19c
- An overview of a container Database (CDB)
- The benefits of Multitenant Architecture
- The Root container and pluggable database containers
- The structure of the root Container
- The structure of a pluggable Database (PDB)
- CDB_xxx and DBA_xxx Views
- Multitenant Administrators Guide
- System requirements and operating system prerequisites
- Install the Oracle Database 19c software with the OUI
- The Oracle Inventory
- Workshop Exercises

Session 2: CREATE A CDB AND PDBs WITH THE DBCA

- Create a Container and Pluggable databases with the DBCA
- Create a database using DBCA Silent Mode
- Create a database using a response file with DBCA Silent Mode
- Create a demonstration database using the Pre-Install RPM
- Create a database using a response File with DBCA Silent Mode
- Create a duplicate database with DBCA Silent Mode
- Delete a Database with the DBCA Silent Mode
- Post database creation tasks
- Workshop Exercises

Session 3: MANAGE A CDB AND PDBs

- Connect to a CDB as an administrator
- Connect to a CDB using a service name
- Connect to a pluggable database
- Display the current container
- Switch between containers
- Startup and shutdown a CDB
- Open and close a PDB
- Open and close all PDBs
- Automatic startup of pluggable databases
- Preserve or discard the PDB open mode

Session 5: MANAGE COMMON AND LOCAL USERS,ROLES AND PRIVILEGES

- Overview of common and local user management
- Create and manage common users
- Create and manage local users
- Create common roles
- Create local roles
- Grant roles and privileges to common and local users
- Use profiles with common and local users
- Use the PDB CONTAINERS clause with common and local users
- Use the CONTAINER_DATA attribute of a common user
- Audit users in a CDB and PDBs
- Block common users from accessing local data with Oracle Database Vault
- Workshop Exercises Oracle Multitenant Administration Training Course Course Contents - DAY 2

Session 6: CREATE AND CLONE PLUGGABLE DATABASES

- Create a new PDB from PDB$SEED
- Create a New PDB from an existing PDB using Hot Cloning
- Parallel PDB creation
- Create a PDB with a default tablespace
- Create a metadata only PDB
- Clone a PDB subset
- Upgrade a non-container database to a 19c PDB using DBMS_PDB
- Use Data Pump to move PDB within or between CDBs
- Unplug a PDB using an XML metadata file
- Unplug a PDB using a PDB archive file
- Check that a PDB is compatible with a CDB
- Plug in a PDB
- Drop a PDB
- Clone a PDB into the same CDB
- Clone a PDB into the same CDB using database links
- Clone a remote PDB
- Clone a remote non-CDB
- Clone a remote PDB using DBCA Silent mode
- Use local UNDO mode with a PDB
- Automatically refresh a read only PDB
- Refreshable PDB Switchover
- Relocate a PDB to a new container
- Relocate a PDB from a remote CDB to a local CDB
- Remote proxy PDBs
- Workshop Exercises

Session 7: BACKUP AND RECOVER AT CDB AND PDB LEVEL

Session 11: PDB PERFORMANCE MANAGEMENT

- Monitor memory usage for PDBs
- PDB Memory Parameters
- Control memory usage for PDBs
- Manage PGA limit for PDBs with the SESSION_PGA_LIMIT parameter
- Limit session PGA with a resource plan
- Limit Share Resource between PDBs
- Share Based Instance Caging
- Limit I/O rates for PDBs
- Automated Maintenance Tasks
- Dynamic CPU Scaling for PDBs
- PDB Profile Directives
- Resource Manager PDB Performance Profiles
- Use PDB Resource Plans
- Automatic Workload Repository Data at CDB and PDB Level
- Enable PDB snapshots
- Analyse AWR data in a PDB
- Disable AWR for a PDB with a Lockdown profile
- Automatic ADDM analysis for PDBs Oracle Multitenant Administration Training Course Course Contents - DAY 4

Session 12: PREPARATION FOR UPGRADE TO 19c MULTITENANT

- Overview of the upgrade to 19c process
- Methods used to perform upgrade
- Methods of data migration
- Direct upgrade supported releases
- The Database Upgrade Assistant (dbua)
- Upgrade process overview
- Create an upgrade test plan
- Carry out performance testing
- Run the Pre-Upgrade Information tool
- Backup the database
- Install the Oracle Database software
- Create the new Oracle home

Session 13: UPGRADE TO ORACLE DATABASE 19c MULTITENANT

- Prepare to upgrade a database to 19c
- Execute preupgrade.jar
- Upgrade a database with the Database Upgrade Assistant (DBUA)
- Run the DBUA in Silent mode
- Upgrade a database manually
- Manually restart a failed upgrade
- Post upgrade tasks
- Deprecated database features and parameters
- Carry out post upgrade tasks
- Upgrade a PDB

Session 14: MIGRATE DATA TO AND FROM A PDB WITH DATA PUMP

after a CDB restart
- Change the state of a PDB
- Workshop Exercises

Session 4: CDB AND PDB ADMINISTRATION

- Administer a CDB and PDBs using SQL Developer
- Multitenant data storage overview
- Create and manage tablespaces in the CDB and PDBs
- Online rename and relocation of an active datafile
- Configure instance parameters in a CDB and a PDB
- The PDB LOGGING and NOLOGGING clauses
- Manage Undo tablespaces in a PDB
- Upgrade a PDB from shared undo mode to local undo mode
- Query temporary undo information
- Set the default tablespaces in a PDB
- Query container data objects (CONTAINER_DATA)
- Enable Unified Auditing for a Container and Pluggable Databases
- Workshop Exercises
- The SYSBACKUP privilege
- Container and pluggable database backups
- The RMAN VALIDATE command
- Backup a container database
- Backup the Root container
- Backup a Pluggable database
- Tablespace and datafile backups
- The enhanced REPAIR FAILURE command
- Container and pluggable database recovery
- Container database complete recovery
- Root container complete recovery
- Pluggable database complete recovery
- Tablespace and datafile complete recovery
- Point in time recovery
- Container database point in time recovery
- Pluggable database point in time recovery
- Table point in time recovery
- Recover a CDB from the loss of redo logs or control files
- Clone an active PDB into another CDB using DUPLICATE
- Create usable backups of non-CDB databases and relocated PDBs
- Recover from a preplugin backup
- Workshop Exercises

Session 8: RECOVERY AND FLASHBACK AT PDB LEVEL

- Local and Shared UNDO mode
- Enable and disable flashback database
- Create a restore point at CDB and PDB level
- Create a clean restore point
- Flashback a container database
- Flashback a pluggable database
- Flashback a PDB in local and shared undo mode
- Flashback a PDB without influencing a CDB
- Restrictions on point in time recovery of a pluggable database
- Workshop Exercises Oracle Multitenant Administration Training Course Course Contents - DAY 3

Session 9: APPLICATIONS AND APPLICATION CONTAINERS

- The Structure of an Application Container
- Application Root and Application Container PDBs
- Create an Application Container
- Open an Application Container
- Drop an Application Container
- Manage Applications
- Install and uninstall an Application
- Upgrade an Application
- Drop an Application Container
- Manage an Application seed
- Migrate data to and from a PDB with Data Pump
- Transport a database
- Import data using a Data Pump network link

- Application common objects
- Application Container views
- Create common and local users in an application
- Grant common and local privileges in an application
- Create and grant common and local roles in application containers
- Use common and local objects and profiles in an application

Session 10: PDB SECURITY

- Lockdown Policy Overview
- Implement Lockdown Policies
- Create and assign a lockdown profile to a PDB
- Create and assign a lockdown profile to an Application root Container
- Lockdown profile inheritance
- Create and use static and dynamic lockdown profiles
- Isolate PDB Keystores

Further Information:

For More information, or to book your course, please call us on 0800/84.009

info@globalknowledge.be

www.globalknowledge.com/en-be/