

# **NETAPP-ORACLE Implementing Oracle on NetApp Storage Systems (NETAPP-ORACLE)**

**Modality: Multi-Location Classroom**

**Duration: 3 Days**

## **About this course:**

This course provides instruction and hands-on practice to help you to learn how to implement an Oracle Database solution in a NetApp clustered Data ONTAP storage environment. In this class you practice discovering, planning, designing and provisioning an Oracle environment; install and configure an Oracle server; create an Oracle database; and use NetApp data management solutions to backup and restore your Oracle database.

The average salary for NetApp Storage Administrator is **\$128,000** per year.

## **Course Objectives:**

- Describe key customer problems attending Oracle solutions and the advantages of implementing Oracle solutions on NetApp technology to solve these problems
- Describe key architecture decisions for planning the deployment of Oracle on NetApp Storage systems operating in 7-Mode or Cluster-Mode
- Set up NetApp storage systems for Oracle databases
- Install, configure and set up Oracle servers and Oracle databases on NetApp storage systems
- Use NetApp technology for backing up, recovering, and cloning of Oracle databases

## **Audience:**

- Anyone familiar with Oracle database servers and NetApp storage systems is considered a typical student of this course.

## **Prerequisites:**

- Familiar with Data ONTAP 7-Mode administration
- Familiar with Data ONTAP Cluster Mode Administration

## **Course Outline:**

### **Module 1: Implementing Oracle on NetApp Storage Systems Overview**

- Describe components of Oracle databases
- Describe key issues that are often experienced with Oracle deployments
- Describe the advantages of implementing Oracle solutions on NetApp technology

## **Module 2: Designing and Planning an Oracle Implementation**

- Describe key design considerations for an Oracle deployment on NetApp storage systems
- Create the storage design to implement Oracle databases on NetApp storage systems

## **Module 3: Setting Up NetApp Storage Systems of Oracle Databases**

- Configure clustered Data ONTAP network interface groups, logical interfaces (LIFs), and interface failover
- Configure clustered Data ONTAP virtual storage servers (Vservers)
- Provision storage for a Vserver
- Access a Data ONTAP cluster
- Configure export policies
- Implement and validate a storage design on the clustered Data ONTAP operating system

## **Module 4: Installing an Oracle Server and Oracle Databases**

- Describe requirements and prerequisites for installing an Oracle server and databases
- Install an Oracle database

## **Module 5: Oracle dNFS and NetApp Storage**

- Enable direct NFS (dNFS) for an Oracle database
- Explain what dNFS is and how it differs from kernel Network File Systems (kNFS)
- List the database objects that show you the dNFS database traffic
- Configure multiple paths for dNFS

## **Module 6: Using Oracle ASM with NetApp Storage**

- Define Automatic Storage Management (ASM) for an Oracle database on NetApp storage
- Define the Oracle ASM Library (ASMLib)
- Describe how to install and configure ASM and ASMLib to provision and configure storage and LUNs
- Create an ASM database
- Use ASM to create an application database

## **Module 7: Backup and Recovery Methods for Oracle**

- Describe specific storage design requirements for the backup and recovery of Oracle databases
- Back up and recover an Oracle database by using SnapManager for Oracle (SMO)
- Back up and recover an Oracle database by using Snap Creator Framework

## **Module 8: Cloning Oracle Databases**

- Describe use cases for cloning Oracle databases
- Identify the components that are needed for a clone creation
- Identify which objects to clone

- Use NetApp SnapManager for Oracle (SMO) to clone an Oracle database

## **Module 9: Disaster Recovery for Oracle Databases**

- Describe disaster recovery plans and issues for Oracle databases
- Describe NetApp SnapMirror technology for Oracle databases
- Describe a SnapMirror disaster recovery scenario
- Implement recovery options
- Leverage Oracle Data Guard when implementing Oracle on NetApp storage

### **Lab Exercises**

Lab 1-1 Use login credentials for the Linux host

Lab 1-2 Verify the necessary file systems

Lab 1-3 Verify that initial databases are available

Lab 1-4 Identify NetApp cluster components

Lab 2-1 Identify the components of the Oracle database

Lab 2-2 Describe the use case that is associated with the storage design

Lab 3-1 Log in to cluster1\_01 VSIM

Lab 3-2 Create a Vserver

Lab 3-3 Modify the Vserver to enable the NFS protocol, assign the default aggregates and add the appropriate

### **DNS**

Lab 3-4 Add the appropriate LIFS for your Vserver

Lab 3-5 Define the export policy for the Vserver

Lab 3-6 Modify the Vserver vsadmin user

Lab 3-7 Provision storage on the Vserver for the Oracle database server

Lab 4-1 Validate and prepare parameters for the Linux host

Lab 4-2 Validate and prepare parameters for the Data ONTAP host

Lab 4-3 Define the file systems for the Oracle database

Lab 4-4 Create an Oracle database

Lab 5-1 Enable dNFS for an Oracle database

Lab 5-2 Verify that the database is using dNFS

Lab 5-3 Disable dNFS for a database (optional)

Lab 6-1 Create a Vserver

Lab 6-2 Modify the Vserver to enable iSCSI protocol, assign the default aggregates and add the appropriate

DNS information

Lab 6-3 Add the appropriate LIFs for your Vserver

Lab 6-4 Create groups, create users, and modify the Vserver vsadmin user

Lab 6-5 Start the iSCSI service for this Vserver

Lab 6-6 Provision storage for the database

Lab 6-7 Configure and validate iSCSI service on the Linux host

Lab 6-8 Prepare the Linux host for Device Mapper and discovery of LUNs

Lab 6-9 Start the Oracle Grid Infrastructure

Lab 6-10 Prepare the LUNs on the Linux host for use by ASM

Lab 6-11 Create ASM disk groups with iSCSI LUNs

Lab 6-12 Create the oraicsci database through DBCA

Lab 6-13 Move the clustered Data ONTAP operating system and LUNs

Lab 7-1 Start the grid infrastructure

Lab 7-2 Install SnapDrive for UNIX

Lab 7-3 Install and configure SMO

Lab 7-4 Configure a SMO repository

Lab 7-5 Create an SMO profile for oraclass

Lab 7-6 Create an SMO backup for oraclass

Lab 7-7 Restore an Oracle database

Lab 7-8 Install Snap Creator Framework for Oracle database servers

Lab 7-9 Set up the Snap Creator configuration file to back up your database

Lab 7-10 Restore the Oracle database using Snap Creator Framework

Lab 8-1 Create a SMO profile for oraclass

Lab 8-2 Delete a clone

Lab 8-3 Define the Snap Creator configuration for a clone workflow

Lab 8-4 Prepare a host for the new cloned database

Lab 8-5 Configure the Oracle database using Snap Creator Framework