

Data ONTAP 7-Mode Administration (D7ADM)

COURSE OVERVIEW:

Welcome to the NetApp® Data ONTAP® 7-Mode Administration course. Data ONTAP 8 is the next generation data storage operating system from NetApp. Data ONTAP 8.1 builds on the stability and reliability of the Data ONTAP 8 operating system and provides new functionality that sets it apart from all of the competition. This five-day instructor-led course enables you to perform basic support and administrative functions on a NetApp storage system running the Data ONTAP system operating in 7-Mode.

WHO WILL BENEFIT FROM THIS COURSE?

Customers, employees, and partners

PREREQUISITES:

Students who attend this course should have a background in system administration for UNIX® or Microsoft® Windows® operating systems and/or Data ONTAP 7-Mode Fundamentals (WBT)

COURSE OBJECTIVES:

- Identify the various components of a NetApp storage environment
- Install and perform the setup configuration of Data ONTAP
- Perform basic administration on a storage system
- Explain and configure physical and logical storage
- Identify and configure client protocols
- State virtualization techniques available in Data ONTAP
- Describe Snapshot copies and space consumption in Data ONTAP
- Discuss backup methods available in Data ONTAP

COURSE OUTLINE:

Module 1: The NetApp Storage Environment

- Identify the key features and functions of NetApp storage systems
- Describe the advantages that a NetApp storage system provides
- Distinguish between network-attached storage (NAS) and SAN topologies
- Describe NetApp Unified Storage Architecture
- Access the NetApp Support site to obtain software and hardware documentation

Module 2: WAFL Simplified

- Describe how data is written to and read from WAFL (Write Anywhere File Layout) file system on a volume
- Explain the WAFL file system concepts, including consistency points (CPs), RAID management, and storage levels
- Describe how RAID is used to protect disk data
- Explain how the WAFL file system processes write and read requests

Module 3: Basic Administration

- Connect remotely to a FAS system by using the console and a remote host
- Access NetApp System Manager to administrator a storage system
- Execute commands by using the console, a remote host and NetApp System Manager
- Use commands to analyze a FAS system
- Configure and manage the NetApp AutoSupport tool for a FAS system

Module 4: Physical Storage

- Describe Data ONTAP RAID technology
- Identify a disk in a disk shelf based on its ID
- Execute commands to determine a disk ID
- Identify a hot-spark disk in a FAS system
- Describe the effects of using multiple disk types
- Create a 32-bit aggregate and a 64-bit aggregate
- Execute aggregate commands in the Data ONTAP operating system
- Calculate usable disk space

Module 5: Logical Storage

- Explain the concepts related to volumes in the Data ONTAP operating system
- Define and create a flexible volume
- Execute vol commands
- Define and create qtrees

Module 6: Administration Security

- Restrict administrative access
- Restrict console and NetApp System Manager access
- Configure a client machine as an administration host to manage a storage system

Module 7: Networking

- Identify the configuration of network settings and components in the Data ONTAP operating system
- Explain and configure name resolution services
- Configure routing tables in the Data ONTAP operating system
- Define and create interface groups
- Discuss the operation of virtual LANs (VLANs) and how to route them

Module 8: NFS

- Explain NFS implementation in the Data ONTAP operating system
- License NFS on a storage system
- Explain the purpose and format of /etc/ exports
- List and define the export specification options
- Describe the use of the exportfs command
- Mount an export on a UNIX host

Module 9: CIFS

- Describe the CIFS environment
- Configure the storage system to participate in the CIFS environment
- Share a resource on the storage system
- Map a drive from a client to the shared resource on the storage system

Module 10: NAS Management

- List some security methods for protecting data
- Explain and configure a security style setting for a volume and a qtree
- Describe methods of tracking and restricting storage usage
- Explain, create, and manage quotas
- Explain and configure the Data ONTAP FPolicy file-screening policy

Module 11: SAN

- Explain the purpose of a SAN
- Identify supported SAN configurations
- Distinguish between Fibre Channel (FC), Fibre Channel over Ethernet (FCoE) and iSCSI protocols
- Define a LUN and explain LUN attributes
- Use the LUN setup command and NetApp System Manager to create iSCSI-attached LUNs
- Access and manage a LUN from a Windows host
- Define SnapDrive data management software and its feature

Module 12: Snapshot Copies

- Describe the function of Snapshot copies
- Explain the benefits of Snapshot copies
- Identify and execute Snapshot commands
- Create and delete Snapshot copies
- Configure and modify Snapshot options
- Explain the importance of the snapshot directory
- Describe how Snapshot technology allocates disk space for volumes and aggregates
- Schedule Snapshot copies
- Configure and manage the Snapshot copy reserve

Module 13: Space Management

- List the storage efficiency techniques that are available within the Data ONTAP operating system
- Identify the factors that impact space consumption in the Data ONTAP operating system
- Describe how and when a volume consumes space from the aggregate that contains it
- Explain how to guarantee writes for a file
- Explain how the Data ONTAP operating system can provide space to a full volume
- Identify the deduplication and compression techniques that are available in the Data ONTAP operating system

Module 14: High-Availability

- Describe high-availability (HA) solutions
- Discuss how HA increases the reliability of storage
- Define HA controller configuration
- Describe the three modes of HA operation with an HA pair
- Analyze how HA affects clients protocols during failover and giveback operations

Module 15: Virtualization Solutions

- Describe how to virtualize a storage controller by using MultiStore software
- Configure MultiStore software
- Assign client protocols on MultiStore software

Module 16: Backup and Recovery Methods

- List the methods available to back up and recover data
- Use ndmcopy to process full and incremental data transfers
- Discuss dump and restore
- Describe, enable, and configure Network Data Management Protocol (NDMP) on a storage system

Module 17: Data Collection Tools

- Use the sysstat, stats, and statit commands
- Describe the factors that affect RAID performance
- Execute commands to collect data about write and read throughputs
- Execute commands to verify the operation of hardware, software, and network components
- Identify commands and options that are used to obtain configuration and status

Module 18: Data ONTAP Upgrades

- Access the NetApp Support site for the following documents:
- Data ONTAP Upgrade Guide
- Data ONTAP Release Notes
- Use a configuration worksheet to collect data for installation
- Describe how to perform Data ONTAP software upgrades and reboots
- Use the setup command to configure a storage system

Lab Exercises**SUNSET LEARNING INSTITUTE (SLI) DIFFERENTIATORS:**

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Enhanced Learning Experience

- The goal of our instructors during class is ensure students understand the material, guide them through our labs and encourage questions and interactive discussions.



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