



NANDANA Educational Training Center

NetApp Storage Training

Course Objectives

By the end of this course, you should be able to:

- Identify the components of a Data ONTAP storage environment
- Install and set up a Data ONTAP cluster
- Perform basic administration on a storage system
- Configure physical and logical storage
- Configure client protocols for a simple environment
- Describe Snapshot copies and space consumption in Data ONTAP
- Discuss backup methods that are available in Data ONTAP
- Describe the process of upgrading Data ONTAP

Course Content

This course uses lecture and hands-on exercises to teach basic administration of clustered Data ONTAP. In this course you configure and manage a Data ONTAP cluster. You practice working with Data ONTAP features and managing your storage systems with the CLI and GUI interfaces. This course also discusses network management fundamentals, basic protocols that are used to access your data, and how to protect, manage, and monitor your clustered storage environment. Data ONTAP 7-Mode administrators will benefit from comparisons to earlier Data ONTAP versions to help them master the basics of clustered Data ONTAP.

Additional Values:-

- ✚ **Basics of SAN, NAS, DAS and ISCSI technologies and exploring knowledge on SAN**
- ✚ **Backup types basics and educating on technologies**
- ✚ **Providing skills for Datacenter awareness & operations overview**
- ✚ **Giving knowledge on other domains (Windows, VMWARE, LINUX, and Networking)**



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Detailed Course Outline

Module 1: Exploring Data ONTAP Storage Fundamentals

- ❖ Overview of clustered Data ONTAP and Data ONTAP 8.3 enhancements
- ❖ Scaling Methods
- ❖ Administrative User Interfaces

Module 2: Hardware and Initial Setup

- ❖ FAS Hardware
- ❖ Setting up the Cluster

Module 3: Initial Storage System Configuration

- ❖ Role-Based Access Control
- ❖ Licensing
- ❖ Policies and Schedules
- ❖ Network Time Protocol
- ❖ The AutoSupport Tool

Module 4: Storage Management

- ❖ Data ONTAP Storage Architecture
- ❖ Data ONTAP File System
- ❖ Virtual Storage Tier
- ❖ Data ONTAP Physical Storage Configuration
- ❖ Data ONTAP FlexVol Configuration

Module 5: Network Management

- ❖ Network Ports
- ❖ IPSpaces
- ❖ Network Interfaces
- ❖ Non-disruptive LIF Configuration
- ❖ Network Management
- ❖ Network Load Balancing

Module 6: Implementing NAS Protocols

- ❖ File System Structure
- ❖ Deploying NFS
- ❖ Windows File Services

Module 7: Implementing SAN Protocols

- ❖ Basic SAN Implementation
- ❖ SAN Configuration and Multi-pathing
- ❖ LUN Access

Module 8: Snapshot Copies

- ❖ Defining Snapshot Technology
- ❖ Managing Snapshot Space Usage
- ❖ Creating Snapshot Copies
- ❖ Restoring Data from a Snapshot Copy



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Module 9: Managing Storage Space

- ❖ Thin Provisioning
- ❖ FlexClone Volumes
- ❖ Quotas
- ❖ Volume Moves in Clustered Data ONTAP
- ❖ Growing Aggregates
- ❖ Automatic Space Management

Module 10: Data Protection

- ❖ Storage Failover Management
- ❖ Snap Mirror
- ❖ Snap Vault
- ❖ Metro Cluster
- ❖ NetApp Data Protection Interfaces

Module 11: Monitoring Your Storage System

- ❖ Monitor Your Cluster
- ❖ Event Management
- ❖ Determine System Health
- ❖ Display Utilization and Performance Information
- ❖ Performance and Statistics Collector
- ❖ Manage Logs and Core Files

Module 12: Upgrading and Transitioning to Clustered Data ONTAP

- ❖ Non-Disruptive Upgrades
- ❖ Transition Fundamentals

Lab Exercises

- Connect to the Cluster Shell
- Connect to the command shell and explore the command hierarchy
- Review Command options
- Compare privilege levels
- Use partial commands and complete commands with the tab key
- Log in to the Cluster with OnCommand System Manager
- Explore the resources in the OnCommand System Manager
- Explore package licensing
- Configure time and time zone
- Create a new aggregate
- Add disks to the aggregate
- Use System Manager to create an aggregate
- Create a flexible volume
- Use System Manager to create a flexible volume
- Explore network resources and create an interface group
- Create a VLAN
- Create a new IPspace
- Create a subnet for the default IPspace



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- Explore failover groups and policies
- Configure an SVM to serve CIFS and NFS
- Create a NAS data LIF
- Migrate and rehome a NAS data LIF
- Create an export policy
- Export a volume
- Verify and create CIFS shares
- Access your CIFS share from a Windows client
- Access your data volume from an NFS client
- Verify MPIO configuration
- Check the iSCSI software initiator name
- Use NetApp System Manager to create an SVM for iSCSI
- Configure the iSCSI software initiator (in Windows)
- Access the iSCSI-attached LUN on the Windows host
- Explore Snapshot configuration in System Manager
- Explore thin provisioning and storage efficiency
- Perform a volume move
- Create and initialize snapmirror replications
- Compare data-protection mirror replication times
- Add volumes and files to a replicated namespace
- Schedule periodic snapmirror replications
- Promote a load-sharing mirror
- Access system logs with a web browser