ONTAP Cluster Administration and Data Protection Bundle (CDOTDP9)

Modality: Virtual Classroom

Duration: 5 Days

NATU: 60 Units

About the course:

This 5 day course comprises the ONTAP Cluster Administration (ONTAP9ADM) followed by the 2 day ONTAP Data Protection Administration (DATAPROT9) courses.

The first 3 days uses lecture and hands-on exercises to teach the basic administration tasks of an ONTAP 9.11 cluster. You use the cluster shell and OnCommand System Manager to manage storage and network resources. ONTAP Cluster Administration is an intermediate course in a comprehensive learning path for NetApp customers, partners and employees.

Students spend the final 2 days learning about the different data protection solutions that are integrated into ONTAP software, including the SyncMirror, SnapMirror, storage virtual machine (SVM) disaster recovery, and SnapVault solutions. The course also provides an overview of ONTAP MetroCluster configuration, NDMP, and cloud-based data protection with NetApp Cloud Volumes ONTAP and NetApp Data Availability Services. You also learn about the tools for managing ONTAP data protection features. In the hands-on exercises, you use NetApp OnCommand System Manager and the CLI to complete key data protection tasks.

The course also provides an overview of the ONTAP MetroCluster high-availability and disaster recovery software solution.

A NetApp Software Engineer, can earn up to **$99,827/-** on average, per annum.

Course Objectives:

Once the course is completed and you take the exam, you will be able to;

- Define NetApp ONTAP cluster components
- Describe the role of a storage VM (storage virtual machine, also known as SVM) in the NetApp storage architecture
- Configure an ONTAP cluster
- Configure and manage storage resources
- Configure and manage networking resources
- Create and configure a storage VM
- Create, manage, and protect NetApp FlexVol® volumes
- Implement storage efficiency features
- Manage ONTAP administrator access and user accounts
- Maintain NetApp storage systems

- Identify the data protection features in NetApp ONTAP software
- Configure SnapMirror® relationships for disaster recovery and data backup
- Demonstrate SVM DR
- Explain MetroCluster components and functionality
- Describe SnapMirror Business Continuity components and functionality
- Describe NDMP-enabled operations to back up NAS data to tape
- Identify the cloud-based data protection solutions that NetApp offers

Audience:

The course is intended to be undertaken by the following professionals

- System Engineers

- Network Engineers

- NetApp Customers

- Channel Partners

Prerequisites:

Completion of the following web based training modules:

- ONTAP Cluster Fundamentals WBT (OCFWBT)
- NA-ONFWBT
- NA-OSFWBT
- ONTAP Data Protection Fundamentals WBT (ODPFWBT)

Course Outline:

ONTAP9ADM:

Module 1: NetApp ONTAP 9 Clusters

- ONTAP deployment options
- The ONTAP cluster
- Storage VMs
- Software-defined storage

Module 2: Cluster Setup

- Supported ONTAP cluster configurations
- Setting up a Cluster
- Administration Interfaces

Module 3: Cluster Management

- Access control
- ONTAP licensing
- Policies and Schedules

Module 4: Network Management

- NetApp ONTAP Network Review
- Network Ports
- Network Traffic Segregation
- LIFs
- Nondisruptive LIF configuration
- Network security
- Routing Management

Module 5: Physical Storage Management

- Drives, RAID and Aggregates
- Advanced Drive Partitioning
- Flash Cache and Flash Pool
- FabricPool Aggregates

Module 6: Logical Storage Management

- Flexible Volumes
- FlexGroup volumes
- FlexCache volumes
- Moving Storage Resources

Module 7: Data Access

- Using NAS Protocols to Access Data
- Use SAN Protocols to Access Data
- Use object protocols to access data

Module 8: Data Protection

- Manage Snapshot Copies
- Restore Data from a Snapshot Copy
- Backup and Replicate Data
- Compliance
- Storage Encryption
- Ransomware protection

Module 9: Storage Efficiency

- Thin Provisioning

- Deduplication and Compression
- Flash Efficiency
- Logical space reporting
- Volume and file clones

Module 10: Cluster Maintenance

- Data collection, Monitoring and Automation Tools
- Backing up and Restoring your Cluster Configuration
- Upgrading your Cluster
- Performance Recommended Practices

ONTAP9ADM Labs:

- Exploring ONTAP Management UIs
- Managing ONTAP clusters and administrators
- Managing physical and logical network resources
- Managing virtual network resources
- Managing physical storage
- Exploring RAID-TEC and creating a flash pool aggregate
- Creating a FabricPool aggregate
- Managing data volumes
- Configuring the NFS protocol in a storage VM
- Conifguring the SMB protocol in a storage VM
- Configuring iSCSI in an SVM
- Configuring NVMe in a storage VM
- Configuring the S3 protocol in a storage VM
- Managing NAS storage VMs
- Managing Snapshot copies
- Encrypting a volume
- Configuring anti-ransomware protection
- Managing storage efficiency
- Managing FlexClone volumes
- Creating a FlexGroup volume
- Installing and configuring Active IQ Config Advisor

ONTAP Data Protection

Module 1: Overview of ONTAP data protection

- Data protection introduction
- ONTAP Data Protection Solutions
- ONTAP Management Solutions

Module 2: SnapMirror Fundamentals

- SnapMirror Overview

- Configuring SnapMirror Relationships
- Guidelines for Intercluster Networking
- Cluster and Storage VM Peering

Module 3: SnapMirror for disaster recovery and backup

- SnapMirror for FlexVol volumes
- SnapMirror configuration considerations
- Using SnapMirror for volumes
- Interaction between SnapMirror and other ONTAP features
- S3 SnapMirror
- FabricPool
- Load-sharing mirrors
- Addendum: SnapMirror and other data protection feature interaction

Module 4: SnapMirror Synchronous for disaster recovery

- SnapMirror Synchronous
- Configuring SnapMirror Synchronous
- Additional SnapMirror Synchronous configuration

Module 5: Storage VM Disaster Recovery (SVM DR)

- SVM DR Overview
- SVM DR requirements and configuration
- SVM data mmobility

Module 6: ONTAP backup and archive solutions

- NDMP fundamentals
- NDMP topologies
- NDMP management
- Addendum: NetApp SnapCenter

Module 7: Cloud-based data protection

- Cloud Volumes ONTAP
- SnapMirror Cloud
- Cloud Backup Service
- ONTAP data protection with cloud volumes

Module 8: ONTAP business continuity solutions

- MetroCluster funamentals
- Metrocluster operations
- Consistency group management
- SnapMirror Business Continuity introduction
- SnapMirror Business Continuity configuration

- Failover operations and failure scenarios
- Addendum: SyncMirror feature

ONTAP Data Protection Labs:

- Configuring cluster peering and Storage VM peering
- Using SnapMirror software to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring a load-sharing mirror relationship
- Configuring cluster and storage VM peering for a cascade relationship
- Configuring a cascade relationship
- Configuring a SnapMirror synchronous relationship
- Configuring SVM DR