

## **ONTAP Cluster Administration and Data Protection Bundle (ONTAP 9.7) (CDOTDP9)**

**Modality: Virtual Classroom**

**Duration: 5 Days**

**SATV Value:**

**CLC:**

**NATU: 60 Units**

**SUBSCRIPTION: No**

### **About the course:**

This course is a 5-day training course, in which three days are dedicated to ONTAP 9.7 Cluster Administration (ONTAP9ADM), whereas, the remaining two days are dedicated to ONTAP 9.7 Data Protection Administration (DATAPROT9).

The initial three days are dedicated to providing in depth knowledge, via hands on practical experience and labs, of ONTAP® cluster and its basic administration. Through these three day classes, you will learn how the process of configuring and maintaining a cluster, while practicing working with ONTAP® features. Resources are managed, stored, and networked using the ONTAP System Manager and cluster shell. It is an all-inclusive learning path, in which the ONTAP® Cluster Administration is considered an intermediate course for NetApp employees, partners and customers.

The remaining two days are spend learning about the ONTAP Data protection administration along with the core technologies available for it. This will help you in developing your skills to proficiently use ONTAP® SnapVault, SnapMirror, SyncMirror, SVM DR, and NDMP technologies, which are typically utilized for restoring, replicating and protecting mission critical data in the enterprise. The OnCommand System Manager and NetApp storage system CLI is used to teach the backup and restoration of operations.

Additionally, the course also offers an overview of the ONTAP ® MetroCluster disaster recovery and high availability software solution.

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

### **Course Objective:**

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

- Manage ONTAP administrators
- Configure and manage storage resources
- Configure and manage networking resources
- Create and configure a storage virtual machine (SVM)
- Create and manage FlexVol volumes

- Implement storage efficiency features
- Create protocol servers within an SVM
- Configure basic data protection features
- Perform administrative and preventive maintenance tasks
- Describe the data protection features in NetApp ONTAP software
- Explain the components and configuration of SyncMirror software
- Describe data mirroring relationships in ONTAP software
- Configure SnapMirror relationships for data replication
- Demonstrate storage virtual machine disaster recovery (SVM DR)
- Explain the components and configuration of MetroCluster software
- Configure SnapVault software for disk-to-disk backup and recovery
- Describe NDMP operation to back up data to tape
- Explain cloud-based data protection with NetApp Cloud Volumes ONTAP and NetApp Data Availability Services
- Describe the NetApp and third-party software that is used for ONTAP data protection management

## **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
- ONTAP NAS Fundamentals WBT
- ONTAP SAN Fundamentals WBT
- ONTAP Data Protection Fundamentals WBT

## **Course Outline:**

### **ONTAP Cluster Administration**

#### **Module 1: NetApp ONTAP 9 Clusters**

- ONTAP deployment options
- The cluster

- SVMs
- ONTAP select learning resources
- NetApp cloud volumes learning resources

## **Module 2: Cluster Setup**

- Supported FAS and AFF configurations
- Cluster setup
- Administration interfaces
- OnCommand System Manager: Guided cluster setup

## **Module 3: Cluster Management**

- Manage access control
- Cluster node date and time
- ONTAP software licenses
- Manage jobs and schedules

## **Module 4: Network Management**

- NetApp ONTAP Network Review
- Network ports
- Network traffic segregation
- LIFs
- Nondisruptive LIF configuration
- Routing management
- Failover group commands
- Routing management commands
- BGP and VIP LIFs

## **Module 5: Physical Storage Management**

- Drives, RAID and aggregates
- Advanced drive portioning
- Flash cache and flash pool features
- FabricPool aggregates
- FabricPool in OnCommand System Manager

## **Module 6: Logical Storage Management**

- Flexible volumes
- Provisioning storage resources
- Moving storage resources
- FlexGroup and FlexCache volumes
- Autobalance aggregate

## **Module 7: Data Access**

- Use NAS protocols to access data
- Use SAN protocols to access data
- NVMe and NVMe/FC

## **Module 8: Data Protection**

- Manage Snapshot copies
- Restore data from a Snapshot copy
- Backup and replicate data
- Compliance
- Storage encryption
- Secure purge and secure boot

## **Module 9: Storage Efficiency**

- Thin provisioning
- Deduplication and compression
- Flash efficiency
- Volume and file clones
- Inline deduplication status
- Inline data compaction

## **Module 10: Cluster Maintenance**

- Data collection, monitoring and automation tools
- Backing up and restoring your cluster configuration
- Upgrading your cluster
- Performance recommended practices
- Technical support
- Documentation
- ONTAP software upgrades

## **Module 11: Course Review**

### **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
- Managing data volumes
- Configuring NAS protocols in an SVM
- Configuring iSCSI in an SVM
- Managing Snapshot copies
- Encrypting a volume
- Managing storage efficiency

- Managing FlexClone volumes
- Bonus Exercise: creating a FlexGroup volume
- Installing and configuring Config Advisor

## **ONTAP Data Protection**

### **Module 1: ONTAP Integrated Data Protection**

- ONTAP Data Protection Solutions
- Data protection management solutions
- Managing and monitoring tool

### **Module 2: SyncMirror Software**

- SyncMirror software for high availability
- Mirrored aggregates
- SyncMirror plex failure

### **Module 3: ONTAP Mirroring Fundamentals**

- Components of a mirror relationship
- Configuration guidelines for intercluster SanpMirror software
- Cluster and firewall requirements
- DPO systems
- FabricPool
- Cluster and SVM Peering

### **Module 4: SnapMirror Software**

- Creating and initializing the SnapMirror relationship
- Disaster recovery using SnapMirror software
- SnapMirror and ONTAP feature interaction

### **Module 5: Storage Virtual Machine Disaster Recovery**

- Replicating configurations in SVM disaster recovery
- SVM initial data transfer
- SVM disaster-recovery relationship
- Scheduled SVM updates

### **Module 6: MetroCluster Configuration**

- Fundamentals
- Operations

### **Module 7: SnapVault Software**

- Implementing a SnapVault relationship

- Using SnapVault software to restore data

## **Module 8: NDMP and Tape Backup**

- NDMP fundamentals
- NDMP management

## **Module 9: Cloud Volumes ONTAP and Data Availability Services**

- NetApp cloud volumes ONTAP
- NetApp data availability services

## **Module 10: SnapCenter and Third-Party Management Software**

- NetApp SnapCenter software
- Integration with third-party management software

## **Module 11: Course Review**

### **Labs:**

- Configuring a load-sharing mirror relationship
- Configuring cluster peering and SVM peering
- Using SnapMirror software to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring a SnapMirror synchronous relationship
- Using FlexClone technology to clone a SnapMirror volume
- Configuring storage virtual machine disaster recovery
- Configuring the SnapVault relationship
- Using SnapVault to restore data