



**Enterprise Computing Solutions - Education Services**

## **TRAINING OFFERING**

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## ONTAP 9.9.1 Cluster Administration and Data Protection Bundle

**CODE:**

NEP\_OT-CLU-DPA 9.9.1

**LENGTH:**

40 Hours (5 days)

**PRICE:**

£4,125.00

### Description

This 5 day course comprises the following 2 courses.

The 3 day OT-CLU-A 9.9.1 - Cluster Administration plus the 2 day OT-DPA 9.9.1 - Data Protection Administration

The first 3 days uses lecture and hands-on exercises to teach the basic administration tasks of an ONTAP 9.9 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

### Objectives

- 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 ONTAP software
- Configure SnapMirror® relationships for data replication
- Demonstrate storage virtual machine disaster recovery (SVM DR)
- Explain MetroCluster™ components and configuration
- Configure the SnapVault® feature for disk-to-disk backup and recovery
- Describe NDMP-enabled operations to back up NAS data to tape storage
- Describe the NetApp SnapCenter® software that is used for ONTAP data protection management
- Explain cloud-based data protection with NetApp Cloud Volumes ONTAP

### Audience

- Network Engineers
- Channel Partners
- System Engineers
- NetApp Customers

### Prerequisites

Completion of the following web based training modules on the NetApp site:

- NA-OCFWBT
- NA-ONFWBT
- NA-OSFWBT
- NA-ODPFWBT

Please note that these free of charge courses are accessed via the NetApp Learning Centre. A NetApp id will be required to access this site. See link below..

[NetApp Learning Centre](#)

## Programme

### ONTAP9ADM: Module 1: NetApp ONTAP 9 Clusters

- ONTAP deployment options
- The Cluster
- Storage Virtual Machine's (SVMs)

### Module 2: Cluster Setup

- Supported All Flash FAS and FAS configurations
- Setting up a Cluster
- Administration Interfaces

### Module 3: Cluster Management

- Access control
- Date and Time
- Licenses
- Policies, Jobs and Schedules

### Module 4: Network Management

- NetApp ONTAP Network Review
- Network Ports
- Network Traffic Segregation
- LIFs
- Nondisruptive LIF configuration
- 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
- Provisioning Storage Resources
- Moving Storage Resources

### Module 7: Data Access

- Using NAS Protocols to Access Data
- Use SAN Protocols to Access Data

### Module 8: Data Protection

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

### Module 9: Storage Efficiency

- Thin Provisioning
- Deduplication and Compression
- Flash Efficiency
- FlexClone Volumes

#### Module 10: Cluster Maintenance

- Data collection, Monitoring and Automation Tools
- Backing up and Restore Cluster Configuration
- Upgrading your Cluster
- Performance Recommended Practices
- Technical Support
- Documentation

#### Module 11: Course Review **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
- 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

- Data Fabric and ONTAP Software
- ONTAP Data Protection Solutions
- Data Protection Management Solutions

#### Module 2: SnapMirror Fundamentals

- SnapMirror Overview
- Configuring SnapMirror Relationships
- Additional SnapMirror Configuration Considerations
- Guidelines for Intercluster Networking
- Cluster and SVM Peering

#### Module 3: SnapMirror Operation

- SnapMirror Asynchronous
- Using SnapMirror for Disaster Recovery
- SnapMirror Synchronous
- SnapMirror and ONTAP Feature Interaction

#### Module 4: Storage Virtual Machine Disaster Recovery

- SVM Disaster Recovery (SVM DR) Overview
- Prepare a SVM for Data Protection
- Perform a SVM Initial Data Transfer
- SVM Manual Update

#### Module 5: MetroCluster

- MetroCluster Fundamentals
- MetroCluster Operations

## Module 6: SnapVault

- Implementing a SnapVault Relationship
- Using SnapVault Software to Restore Data

## Module 7: NDMP and Tape Backup

- NDMP Fundamentals
- NDMP Management

## Module 8: SnapCenter

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

## Module 9: Cloud Volumes ONTAP

- Cloud Volumes ONTAP Environment
- Data Protection Capabilities of Cloud Volumes ONTAP

## Module 10: Course Review **ONTAP Data Protection 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

## Test and Certification

This course is part of the following certifications:

- NetApp Certified Data Administrator ONTAP (NCDA)
- NetApp Certified Implementation Engineer – Data Protection Specialist (NCIE)

Further details of NetApp certification can be found in the link below.. [NetApp Certification Details](#)

## Session Dates

On request. Please [Contact Us](#)

## Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)