



Arrow ECS Finland Oy - Education Services

## TRAINING OFFERING

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# ONTAP 9 Cluster and Data Protection Administration

CODE:	LENGTH:	PRICE:
NEP_OT-CLU-DPA	40 Hours (5 days)	€5,100.00

## Description

This 5 day course comprises the ONTAP Cluster Administration followed by the 2 day ONTAP Data Protection Administration 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.

## Objectives

- Define 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
- Describe and distinguish the data protection features in ONTAP software
- Administer the appropriate ONTAP data protection feature to address your data protection concern
- Configure NetApp SnapMirror® relationships for disaster recovery and data backup
- Demonstrate SVM DR
- Illustrate NDMP-enabled operations to back up NAS data to tape
- Integrate the cloud-based data protection solutions that complement your ONTAP based storage systems
- Structure NetApp MetroCluster components and functionality
- Illustrate NetApp SnapMirror Business Continuity components and functionality

## Audience

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

## Prerequisites

Completion of the following web based training modules accessed free of charge via the NetApp Learning Centre

- ONTAP Cluster Fundamentals
- ONTAP NAS Fundamentals
- ONTAP SAN Fundamentals

Please contact us for further support as required.. [Contact Us](#)

## Programme

- ONTAP deployment options
  - The ONTAP cluster
  - Storage VMs
- 3 day Cluster Administration** **Module 1:NetApp ONTAP 9 clusters** • Software-defined storage **Module 2: Cluster setup**
- Module 3: Cluster management**
- Supported ONTAP cluster configurations
  - Setting up a cluster
  - Administration interfaces
  - NetApp ONTAP network review
  - Network ports
  - Network traffic segregation
  - LIFs
  - Nondisruptive LIF configuration
  - Network security
  - Routing management
- Access control
  - ONTAP licensing
  - Policies and schedules
- Module 4:Network management**
- Drives, RAID, and aggregates
  - Advanced Disk Partitioning
  - Flash Cache and Flash Pool features
- Module 5:Physical storage management** • FabricPool aggregates
- Flexible volumes
  - FlexGroup volumes
  - FlexCache volumes
- Module 6: Logical storage management** • Moving storage resources **Module 7: Data access**
- Use NAS protocols to access data
  - Use SAN protocols to access data
  - Use object protocols to access data
- Manage Snapshot copies
  - Restore data from a Snapshot copy
  - Back up and replicate data
  - Compliance
  - Storage encryption
  - Ransomware protection
  - Data collection, monitoring, and automation tools
  - Backing up and restoring your cluster configuration
  - Upgrading your cluster
  - Recommended practices for performance
  - Technical support
- Module 8: Data protection**
- Thin provisioning
  - Deduplication and compression
  - Flash efficiency
  - Logical space reporting
  - Volume and file clones
- Module 9: Storage efficiency** **Module 10: Cluster maintenance** • Documentation
- Module 11:Course review and postclass assessment** **2 day 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 introduction
- SVM DR requirements and configuration
- SVM data mobility

#### 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 fundamentals
- MetroCluster operations
- Consistency group management
- SnapMirror Business Continuity introduction
- SnapMirror Business Continuity configuration
- Failover operations and failure scenarios
- Addendum: SyncMirror feature
- 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

### Test and Certification

This course supports part of the following NetApp certifications:

- NetApp Certified Storage Installation Engineer (NCSIE)
- NetApp Certified Data Administrator (NCDA)

### Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
27 Mar 2023	Virtual Classroom (CET / UTC +1)	CEDT	English	Instructor Led Online		€5,100.00
22 May 2023	Virtual Classroom (CET / UTC +1)	CEDT	English	Instructor Led Online		€5,100.00
05 Jun 2023	Virtual Classroom (CET / UTC +1)	CEDT	English	Instructor Led Online		€5,100.00
10 Jul 2023	Virtual Classroom (CET / UTC +1)	CEDT	English	Instructor Led Online		€5,100.00

## **Additional Information**

This training is also available as onsite training. Please contact us to find out more.