Enterprise Computing Solutions - Education Services

# TRAINING OFFERING

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# Cluster Administration & Data Protection

| CODE: | LENGTH: | PRICE: |
|---|---|---|
| NEP_OT-CLU-DPA | 40 Hours (5 days) | kr62,500.00 |

## Description

This 5 day class is a combination of the 3 day Cluster Administration Class and the 2 day Data Protection Administration Class.
**Cluster Administration**
Learn how to perform the basic administration tasks of a NetApp® ONTAP® 9.16 cluster. Use the clustershell and NetApp ONTAP System Manager to manage cluster storage and network resources. Discover how to configure basic data protection and data efficiency functions and common cluster maintenance tasks.
**Data Protection Administration**
Explore key concepts and techniques for protecting data on NetApp® ONTAP® based storage systems. Learn about the data protection solutions that are integrated in ONTAP software and examine the tools to manage ONTAP data protection features. In the hands-on exercises, use NetApp ONTAP System Manager and the ONTAP CLI to perform key data protection tasks. This course is updated for ONTAP 9.16.1 software.

## Objectives

**ONTAP Cluster Administration**

- 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 both networking and storage 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
- Manage NetApp storage systems

**ONTAP Data Protection Administration**

- 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 storage VM disaster recovery (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 SnapMirror active sync components and functionality

## Audience

Administrator, architect, and operator

## Prerequisites

**ONTAP Cluster Administration**

- ONTAP Cluster Fundamentals (web-based training [WBT]) or ONTAP Cluster Foundation (ILT)
- ONTAP NAS Fundamentals (WBT)
- ONTAP SAN Fundamentals (WBT)

**ONTAP Data Protection Administration**

- ONTAP Cluster Administration
- ONTAP NAS Fundamentals
- ONTAP SAN Fundamentals
- ONTAP Data Protection Fundamentals

## Programme

**ONTAP Cluster Administration**

**Module 1: ONTAP 9 clusters**

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

**Module 2: Cluster setup**

- Supported ONTAP cluster configurations
- Setting up a cluster
- Administration interfaces
- ONTAP licenses
- Policies and schedules

Exercises

- Deploying an ONTAP cluster
- Exploring ONTAP management UIs

**Module 3: Physical storage management**

- Drives, RAID, and aggregates
- Advanced Disk Partitioning
- Flash Cache and Flash Pool features
- FabricPool aggregates
- Managing physical storage

Exercises

- Exploring RAID-TEC

**Module 4: Logical storage management**

- Flexible volumes
- Moving storage resources
- FlexGroup volumes
- FlexCache volumes

Exercises

- Managing data volumes
- Creating a FlexGroup volume

**Module 5: Storage efficiency**

- Thin provisioning
- Deduplication and compression
- Flash efficiency
- Volume and file clones

Exercises

- Managing storage efficiency
- Managing FlexClone volumes

**Module 6: Network management**

- ONTAP network review
- Network ports
- Network traffic segregation
- Logical network interfaces
- Nondisruptive LIF configuration
- Routing management

Exercises

- Managing physical and logical network resources
- Managing virtual network resources

**Module 7: NAS data access**

- Use NAS protocols to access data
- Use the NFS protocol to access data
- Use the SMB protocol to access data
- Use the S3 protocol to access data

Exercises

- Monitoring with ONTAP File System Analytics
- Configuring the NFS protocol in a storage VM
- Configuring the SMB protocol in a storage VM
- Configuring the S3 protocol in a storage VM

**Module 8: SAN data access**

- Use SAN protocols to access data
- Use the iSCSI protocol to access data
- Use the FC protocol to access data
- Use the NVMe protocol to access data

Exercises

- Configuring iSCSI in a storage VM
- Configuring NVMe in a storage VM

**Module 9: Data protection**

- Manage Snapshot copies
- Restore data from a Snapshot copy
- Back up and replicate data
- Compliance

Exercises

- Managing Snapshot copies

**Module 10: ONTAP security**

- Access control
- Storage encryption
- Ransomware protection

Exercises:

- Managing ONTAP administrators

**Module 11: Cluster maintenance**

- Data collection, monitoring, and automation tools
- Upgrading your cluster
- Technical support

Exercises

- Installing and configuring Active IQ Config Advisor

**ONTAP Data Protection Administration**

**Module 1: SnapMirror fundamentals**

- Introduction to SnapMirror
- Configuring SnapMirror relationships
- Guidelines for intercluster networking
- Cluster and storage VM peering

Exercises
Configuring cluster peering and storage VM peering

**Module 2: SnapMirror for disaster recovery and backup**

- SnapMirror for FlexVol volumes
- SnapMirror configuration considerations
- SnapMirror for disaster recovery
- SnapMirror for backup
- Interaction between SnapMirror and other ONTAP features
- S3 SnapMirror
- FabricPool

Exercises

- Using SnapMirror to mirror FlexVol volumes
- Performing SnapMirror disaster recovery
- Configuring SnapMirror for unified replication
- Restoring data from a Snapshot copy
- Configuring cluster and storage VM peering for a cascade relationship (optional)
- Configuring a cascade relationship (optional)

**Module 3: SnapMirror synchronous for disaster recovery**

- SnapMirror synchronous
- Configuring SnapMirror synchronous for disaster recovery
- Additional SnapMirror synchronous configuration

Exercises

- Configuring a SnapMirror synchronous relationship

**Module 4: SVM DR**

- Introduction to SVM DR
- SVM DR requirements and configuration
- SVM data mobility

Exercises

- Configuring SVM DR

**Module 5: ONTAP backup and archive solutions**

- NDMP fundamentals
- NDMP topologies
- NDMP management

**Module 6: Cloud-based data protection**

- SnapMirror cloud
- Cloud Volumes ONTAP
- Data protection with NetApp BlueXP

**Module 7: ONTAP business continuity solutions**

- Consistency group management
- Introduction to SnapMirror active sync
- SnapMirror active sync configurations
- Failover operations and failure scenarios
- MetroCluster fundamentals

## Session Dates

| Date | Location | Time Zone | Language | Type | Guaranteed | PRICE |
|---|---|---|---|---|---|---|
| 23 Nov 2026 | Virtual Classroom (GMT) | GMT | English | Instructor Led Online | Yes | kr57,900.00 |
| 14 Dec 2026 | Virtual Classroom (GMT) | GMT | English | Instructor Led Online | | kr57,900.00 |
| 25 Jan 2027 | Virtual Classroom (CET) | CET | English | Instructor Led Online | | kr57,900.00 |
| 22 Feb 2027 | Virtual Classroom (CET) | CET | English | Instructor Led Online | | kr57,900.00 |
| 15 Mar 2027 | Virtual Classroom (CET) | CET | English | Instructor Led Online | | kr57,900.00 |
| 19 Apr 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 17 May 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 21 Jun 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 05 Jul 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 02 Aug 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 20 Sep 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 25 Oct 2027 | Virtual Classroom (CET) | CEDT | English | Instructor Led Online | | kr57,900.00 |
| 22 Nov 2027 | Virtual Classroom (CET) | CET | English | Instructor Led Online | | kr57,900.00 |
| 06 Dec 2027 | Virtual Classroom (CET) | CET | English | Instructor Led Online | | kr57,900.00 |

## Ytterligare information

Denna utbildning finns också som utbildning på plats. Kontakta oss för mer information.