



## Accelerated NCDA Boot Camp Data ONTAP 7-Mode

**Cursusduur: 4 Dagen**    **Cursuscode: ANCDABC87**

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### Beschrijving:

This course is a 5-day boot camp with extended hours. The course is designed to assist students in preparing for the NetApp Certified Data Administrator (NCDA) exam. The course covers the administration of Data ONTAP® Version 8.2 operating in 7-Mode.

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### Doelgroep:

This course is intended for NetApp customers, partners and employees who provide basic support and perform administrative functions of the Data ONTAP 8.2 operating system or those looking to get certified.

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### Doelstelling:

- By the end of this course, you should be able to:
  - Configure a Data ONTAP storage system in an NFS environment
  - Configure and administer a storage system for CIFS functionality
  - Discuss how to configure a storage system for a SAN FC environment
  - Configure and administer a storage system in a SAN iSCSI environment
  - Explain and implement the backup and recovery methods that are available in the Data ONTAP operating system
  - Describe and implement the business continuance methods that are available in the Data ONTAP operating system
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### Vereiste kennis en vaardigheden:

- Three years of experience in a storage related function, such as storage administrator or field engineer
- Six months experience with NetApp storage solutions
- Data ONTAP 7-Mode Administration (D7ADM)

### Examens en certificering

This course is part of the following Certifications:

- NetApp Certified Data Administrator, Data ONTAP 7-Mode (NCDA 7-MODE)
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## Cursusinhoud:

This course is a 5-day boot camp with extended hours. The course is designed to assist students in preparing for the NetApp Certified Data Administrator (NCDCA) exam. The course covers the administration of Data ONTAP® Version 8.2 operating in 7-Mode.

### Module 1 NCDCA Overview

- Identify the skills and knowledge that NetApp Certified Data Management Administrator (NCDCA) certification verifies
- Describe the benefits of certification
- Explain the key concepts of Data ONTAP operating in 7-mode

### Module 2 NFS Overview

- Define NFS
- Differentiate between NFS protocol versions
- Recognize the differences between stateless and stateful protocols
- Describe how the storage system acts as an NFS file server
- List the requirements of NFS

### Module 3 NFS Setup

- Configure NFS on a NetApp® storage system
- Configure a storage system to perform IP to host-name resolution
- Add Network Information Server (NIS) to manage users, groups, and name-to-IP resolution
- Configure a storage system to centrally manage users and groups
- Configure PC-NFS and WebNFS environments to extend the reach of NFS

### Module 4 Exports and Mounts

- Identify exportable resources
- Export and unexport resources to clients, subnets, and netgroups
- Manage exports with the exportfs command
- Create mount points and mount exported resources on a client
- Monitor the usage of exported resources
- Explain how to monitor exports with access cache

### Module 5 CIFS Overview

- Describe basic CIFS terminology and CIFS versions
- Describe the role of the Data ONTAP storage system within Windows environments:
- Microsoft® Windows® workgroup
- Non-Windows workgroup
- Windows domains
- Describe host name resolution

Lab 3-4 Designate a unix host as an administrative host

Lab 3-5 Designate a unix host as an administrative host

Lab 4-1 Change the permissions for the root volume export

Lab 4-2 Mount exported volumes on a unix administration host

Lab 4-3 Use system manager to export a Qtree to a subnet

Lab 4-4 Use a unix admin host to export a Qtree to a netgroup  
Lab 5-1 Investigate the status of the CIFS protocol on your storage systems

Lab 6-1 Execute the CIFS setup script

Lab 6-2 Determine the CIFS protocol status

Lab 6-3 Map a drive to the root volume of the storage system

Lab 7-1 View CIFS shares from the CLI, system manager, or computer management

Lab 7-2 Use the CLI to create shares

Lab 7-3 Use system manager to create shares

Lab 7-4 Use Windows Computer Management to create shares

Lab 7-5 View file and folder properties from the windows host

Lab 7-6 Display CIFS session information from the storage system CLI

Lab 8-1 Add a local user account on the storage system

Lab 8-2 Add a local group to a storage

Lab 13-4 Configure iSCSI on Window

Lab 13-5 Confirm an iSCSI session on a storage system

Lab 13-6 Confirm a second iSCSI session on Windows

Lab 15-1 Create a Flexvol volume to contain LUNs

Lab 15-2 Create a LUN that is mapped to an igroup

Lab 15-3 Initialize a LUN with disk management

Lab 15-4 Provision a LUN with disk management

Lab 15-5 Make the mounting of a LUN persistent

Lab 15-6 Move a volume

Lab 17-1 Manage Snapshot copies on the storage system CLI and System Manager

Lab 17-2 Ensure that Snapshot directories are visible to CIFS and NFS users

Lab 17-3 Restore a windows file from a Snapshot copy

Lab 17-4 Create a data-loss test scenario

Lab 17-5 Use SnapRestore technology to restore a volume

Lab 17-6 Use SnapRestore technology to restore a file

Lab 18-1 Identify the source and destination systems

Lab 18-2 Set up SnapMirror on the source storage system

<ul style="list-style-type: none"> <li>Describe user authentication and authorization</li> </ul>	system	Lab 18-3 Set up SnapMirror on the destination storage system
Module 6 CIFS Workgroups	Lab 8-3 Grant share access to the new group	
<ul style="list-style-type: none"> <li>License CIFS on a storage system</li> <li>Join a storage system to a Microsoft® Windows® workgroup environment using the CIFS setup command</li> <li>Review the results of CIFS setup</li> <li>Manage newly created configuration files for a CIFS workgroup environment</li> </ul>	<p>Lab 9-1 Determine whether CIFS configuration prerequisites are met</p> <p>Lab 9-2 Set up the prerequisites for CIFS configuration</p>	<p>Lab 18-4 Initiate a baseline transfer and schedule updates</p> <p>Lab 18-5 Update the SnapMirror relationship</p> <p>Lab 18-6 Break the SnapMirror relationship</p>
Module 7 CIFS Shares and Sessions	Lab 9-3 Use system manager to terminate CIFS services	Lab 18-7 Resynchronize the relationship from the source storage system
<ul style="list-style-type: none"> <li>Display the list of shared resources available on the storage system</li> <li>Configure a client machine to access a storage system share</li> <li>Identify users and hosts that are connected to the storage system in CIFS sessions</li> <li>Add, modify, and delete shares</li> </ul>	<p>Lab 9-4 Use the CIFS setup wizard to join a storage system to a Windows domain</p> <p>Lab 9-5 Use the storage system CLI to join a storage system to a Windows domain</p>	<p>Lab 18-8 Reinststate the original SnapMirror relationship</p> <p>Lab 18-9 Configure synchronous SnapMirror mode</p>
Module 8 CIFS Access Control	Lab 9-6 Create a domain user as a member of the built-in administrators group	Lab 19-1 Identify primary and secondary systems
<ul style="list-style-type: none"> <li>Create and manage local users for a storage system</li> <li>Create and manage local users for a storage system</li> <li>Create local group and local users for that group</li> <li>Use the CLI (command-line interface), NetApp® System Manager, and Microsoft® tools to add, delete, and modify access permissions for shares</li> <li>Use Microsoft tools to add, delete, and modify access permissions for files and folders</li> </ul>	<p>Lab 9-7 Use Windows Computer Management to manage storage system shares</p> <p>Lab 9-8 Display CIFS session</p> <p>Lab 10-1 Configure multiprotocol access</p>	<p>Lab 19-2 Configure SnapVault software on the primary system</p> <p>Lab 19-3 Configure SnapVault software on the secondary system</p>
Module 9 CIFS Domains	Lab 10-2 Use the WCC to view the mapping of unix to Windows users	Lab 19-4 Initialize the transfer
<ul style="list-style-type: none"> <li>Terminate the CIFS service to prepare for CIFS domain configuration</li> <li>Reconfigure the CIFS service for a Windows® domain</li> <li>Identify the resulting files</li> <li>Create domain users and add the domain users to a local storage system group</li> <li>Configure preferred domain controllers (DCs)</li> </ul>	<p>Lab 10-3 Create, share, and export unix, NTFS, and mixed-style Qtrees</p> <p>Lab 10-4 Access a unix-style volume as a Window server</p>	<p>Lab 19-5 Perform a restore</p> <p>Lab 19-6 Restart the backup relationship</p>
Module 10 NAS Multiprotocol	Lab 10-5 Access NTFS security-style volumes as a unix user	Lab 20-1 Install Open Systems SnapVault for Windows server
<ul style="list-style-type: none"> <li>Describe security styles and how they affect file permissions</li> <li>Determine and verify user mappings for CIFS users that access UNIX® volumes and qtrees and mixed volumes and qtrees</li> <li>Determine and verify user mappings for UNIX users that are access New Technology File System (NTFS) volumes and qtrees and mixed volumes and qtrees</li> <li>Describe the WAFL (Write Anywhere File Layout) Credential Cache</li> </ul>	<p>Lab 10-6 Troubleshoot multiprotocol access</p> <p>Lab 11-1 Send an autosupport message</p> <p>Lab 11-2 Locate storage system diagnostic log files</p>	<p>Lab 20-2 Configure the SnapVault secondary system</p> <p>Lab 20-3 Configure Windows Server 2012 firewall settings</p> <p>Lab 20-4 Establish the Open Systems SnapVault baseline</p> <p>Lab 20-5 Perform a restore and resume SnapVault operations</p>
Module 11 NAS Troubleshooting		

- Locate options and configuration files that might be misconfigured on the storage system
- Test for Domain Name System (DNS) resolution on both the storage system and the client
- Use client-side tools to test the client configuration
- Use storage system and client tools to isolate network system blockages
- Recognize typical error messages and list the commands to identify their sources

#### Module 12 SAN Overview

- Describe the differences between network-attached storage (NAS) and storage area network (SAN)
- List the protocols to implement a SAN environment
- Define a LUN, initiator, and target
- Describe ports, worldwide node names (WWNNs), and worldwide port names (WWPNs)
- Implement a SAN

#### Module 13 iSCSI Connectivity

- Describe multiple-path implementation with iSCSI connectivity
- Configure network ports on Windows® and NetApp® systems
- Identify the node name (WWNN) on Windows and NetApp systems
- Configure and verify multiple-path iSCSI connectivity between Windows and NetApp systems

#### Module 14 FC Connectivity

- Implement multiple paths with Fibre Channel (FC) connectivity
- Configure FC ports on Windows® and Data ONTAP systems
- Describe the commands and utilities to identify worldwide node names (WWNNs) and worldwide port names (WWPNs) on Windows® and Data ONTAP systems

#### Module 15 LUN Access

- Describe the steps that are required to enable a Windows® Server initiator to access a LUN on a storage system

#### Module 16 Availability Features

- Describe the features that you can use to ensure system availability
- Explain RAID-DP functionality
- Define SyncMirror
- Define the high-availability controller configuration
- Describe a stretch MetroCluster environment
- List the basic steps to implement a stretch

Lab 11-3 Recall diagnostic commands to enter on the storage system

Lab 11-4 Capture a packet trace

Lab 11-5 Recall diagnostic commands to enter on a unix host

Lab 11-6 Recall diagnostic commands to enter on a windows host

Lab 12-1 Identify the components of your SAN exercise environment

Lab 13-1 Configure iSCSI on a storage system

Lab 13-2 Configure Windows for MPIO

Lab 13-3 Install NetApp Host Utilities

Lab 21-1 Enable, schedule, and run volume deduplication operations

Lab 21-2 Create a FlexClone volume clone

Lab 21-3 Create a FlexClone LUN clone and work with fractional reserve

Lab 22-1 Locate statistics on flash pool performance

Lab 22-2 Set processing priorities with the FlexShare tool

Lab 22-3 Use the sysstat command to collect performance statistics

Lab 22-4 Use the stats command to collect performance statistics

## MetroCluster

- Describe a fabric-attached MetroCluster environment
- List the basic steps to implement a fabric-attached MetroCluster

## Module 17 Managing Snapshot Copies

- Describe the functions and benefits of Snapshot and SnapRestore technologies
- Use the storage system CLI and NetApp System Manager interfaces to manage Snapshot copies
- Manage and reclaim space used by Snapshot copies
- Use Snapshot copies to restore lost data

## Module 18 SnapMirror Technology

- Explain the SnapMirror Async, Sync, and Semi-Sync modes of operation
- Describe how volume SnapMirror and qtrees SnapMirror software replicate data
- Configure SnapMirror software
- Perform advanced SnapMirror operations
- Explain SnapMirror performance impact

## Module 19 Managing SnapVault Technology

- Describe SnapVault® components and benefits
- Configure SnapVault software on primary and secondary systems
- Administer a SnapVault backup on primary and secondary systems
- Describe the application-consistent backup operations
- Restore data from secondary system to primary system

## Module 20 Open Systems SnapVault

- Describe how Open Systems SnapVault® integrates with Data ONTAP® SnapVault
- Describe Open Systems SnapVault advanced features
- Configure and administer Open Systems SnapVault
- Perform Open Systems SnapVault backup and restore operations
- Troubleshoot and resolve Open Systems SnapVault transfer failures

## Module 21 Storage Efficiency

- Utilize FlexClone technology to create efficient copies of volumes, files, and LUNs
- Use deduplication and compression to manage data growth

## Module 22 Performance and Data Collections Tools

- Use Data ONTAP operating system commands and tools to capture performance data

- Describe Data ONTAP tools that can affect performance
- Use the reallocate command to maintain performance
- Use recommended techniques to optimize Data ONTAP configuration for SAN and NAS

## Lab Exercises

Lab 1-1 Log in to the exercise environment

Lab 1-2 Perform a health check on the storage systems and the Linux server

Lab 1-3 Install NetApp OnCommand System Manager

Lab 1-4 Add storage systems to System Manager

Lab 1-5 Use OnCommand System Manager to create aggregates

Lab 1-6 Use OnCommand System Manager to create an aggregate with a flash pool

Lab 1-7 Use the CLI to create aggregates

Lab 1-8 Use the CLI to create an aggregate with a flash pool

Lab 1-9 Destroy an aggregate and initialize its disks

Lab 1-10 Create a Flexvol volumes

Lab 1-11 Resize Flexvol volumes

Lab 1-12 Create Qtrees

Lab 2-1 Use the CLI to investigate the status of the NFS protocol

Lab 2-2 Investigate NIS and LDAP

Lab 2-3 Investigate NFS protocols and configuration files

Lab 3-1 Determine if the storage system is

accessible from a unix or unix host

Lab 3-2 Enable the NFS protocol

Lab 3-3 Create a netgroup on the storage system

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### Nadere informatie:

Neem voor nadere informatie of boekingen contact op met onze Customer Service Desk 030 - 60 89 444

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