

# NetApp - Accelerated NCDA Boot Camp Data ONTAP 7-Mode

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| <b>Code:</b>   | NA-ANCDABC87                |
| <b>Length:</b> | 5 days                      |
| <b>URL:</b>    | <a href="#">View Online</a> |

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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. To help you prepare for exam NSO-155, please watch the FREE self-paced, web-based courses referenced above in our Special Offers.

## Skills Gained

- 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
- Additional Fast Lane-developed content you will learn to:
- Perform administrative tasks on FC target ports
  - Perform administrative tasks on LUNs
  - Perform administrative tasks on initiator groups (igroups)
  - Describe how and when a LUN consumes space from its containing volume
  - Discuss backup guarantees through NetApp Snapshot reserve
  - Discuss the overwrite guarantee for space-?reserved LUNs
  - Analyze the default LUN configuration and two thin-?provisioning configurations
  - Discuss Flash Pool Design and Implementation
  - Easily implement SnapVault
  - Utilize Provisioning and Protection manager workflows with OnCommand Unified Manager

## Who Can Benefit

- 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 running in 7-mode and those seeking NCDA

certification.

## Prerequisites

- 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)
- NOTE: It is strongly recommended that you have attended the instructor-led D7ADM course or have the equivalent practical experience with the NetApp ONTAP operating system before attending this advanced boot camp. The web-based version of Data ONTAP 7-Mode will not provide sufficient preparation for those seeking NCDA certification upon completion of this course.

## Course Details

### Accelerated NCDA Boot Camp Data ONTAP 7-Mode

- Module 1 NCDA OverviewIdentify the skills and knowledge that NetApp Certified Data Management Administrator (NCDA) certification verifies
- Describe the benefits of certification
- Explain the key concepts of Data ONTAP operating in 7-mode Module 2 NFS OverviewDefine 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 NFSModule 3 NFS SetupConfigure 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 NFSModule 4 Exports and MountsIdentify 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 cacheModule 5 CIFS OverviewDescribe 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
- Describe user authentication and authorization Module 6 CIFS WorkgroupsLicense CIFS on a storage system
- Join a storage system to a Microsoft Windows workgroup environment using the CIFS setup command

- Review the results of CIFS setup
- Manage newly created configuration files for a CIFS workgroup environment  
Module 7 CIFS Shares and Sessions  
Display the list of shared resources available on the storage system
- Configure a client machine to access a storage system share
- Identify users and hosts that are connected to the storage system in CIFS sessions
- Add, modify, and delete shares  
Module 8 CIFS Access Control  
Create and manage local users for a storage system
- Create and manage local users for a storage system
- Create local group and local users for that group
- Use the CLI (command-line interface), NetApp System Manager, and Microsoft tools to add, delete, and modify access permissions for shares
- Use Microsoft tools to add, delete, and modify access permissions for files and folders  
Module 9 CIFS Domains  
Terminate the CIFS service to prepare for CIFS domain configuration
- Reconfigure the CIFS service for a Windows domain
- Identify the resulting files
- Create domain users and add the domain users to a local storage system group
- Configure preferred domain controllers (DCs)  
Module 10 NAS Multiprotocol  
Describe security styles and how they affect file permissions
- Determine and verify user mappings for CIFS users that access UNIX volumes and qtrees and mixed volumes and qtrees
- Determine and verify user mappings for UNIX users that are access New Technology File System (NTFS) volumes and qtrees and mixed volumes and qtrees
- Describe the WAFL (Write Anywhere File Layout) Credential Cache  
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 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 qtree SnapMirror software replicate data
  - Configure SnapMirror software
  - Perform advanced SnapMirror operations
- 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
- 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 netgroupbr]
- 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 system
- Lab 8-3 Grant share access to the new group
- Lab 9-1 Determine whether CIFS configuration prerequisites are met
- Lab 9-2 Set up the prerequisites for CIFS configuration
- Lab 9-3 Use system manager to terminate CIFS services
- Lab 9-4 Use the CIFS setup wizard to join a storage system to a Windows domain
- Lab 9-5 Use the storage system CLI to join a storage system to a Windows domain
- Lab 9-6 Create a domain user as a member of the built-in administrators group
- Lab 9-7 Use Windows Computer Management to manage storage system shares
- Lab 9-8 Display CIFS session
- Lab 10-1 Configure multiprotocol access
- Lab10-2 Use the WCC to view the mapping of unix to Windows users
- Lab 10-3 Create, share, and export unix, NTFS, and mixed-style Qtrees
- Lab 10-4 Access a unix-style volume as a Window server
- Lab 10-5 Access NTFS security-style volumes as a unix user

- Lab 10-6 Troubleshoot multiprotocol access
- Lab 11-1 Send an autosupport message
- Lab 11-2 Locate storage system diagnostic log files
- 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 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
- Lab 18-3 Set up SnapMirror on the destination storage system
- Lab 18-4 Initiate a baseline transfer and schedule updates
- Lab 18-5 Update the SnapMirror relationship
- Lab 18-6 Break the SnapMirror relationship
- Lab 18-7 Resynchronize the relationship from the source storage system
- Lab 18-8 Reinststate the original SnapMirror relationship
- Lab 18-9 Configure synchronous SnapMirror mode
- Lab 19-1 Identify primary and secondary systems
- Lab 19-2 Configure SnapVault software on the primary system
- Lab 19-3 Configure SnapVault software on the secondary system
- Lab 19-4 Initialize the transfer
- Lab 19-5 Perform a restore

- Lab 19-6 Restart the backup relationship
- Lab 20-1 Install Open Systems SnapVault for Windows server
- Lab 20-2 Configure the SnapVault secondary system
- Lab 20-3 Configure Windows Server 2012 firewall settings
- Lab 20-4 Establish the Open Systems SnapVault baseline
- Lab 20-5 Perform a restore and resume SnapVault operations
- 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

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## Schedule (as of 3 )

| Date | Location |
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