NETAPP UNIVERSITY

NETAPP CERTIFICATION PROGRAM

Reference Document List

- Version: 5.0
- Date: May 1, 2019
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Thank you for your understanding and please contact ncp@netapp.com if you have any questions.

Shortcuts

- NetApp Certified Hybrid Cloud Architect (NS0-602)
- NetApp Certified Hybrid Cloud Administrator (NS0-302)
- Cisco and NetApp FlexPod Design (NS0-173)
- Cisco and NetApp FlexPod Implementation and Administration (NS0-174)
- NetApp Certified Data Administrator, ONTAP (NS0-160)
- NetApp Certified Implementation Engineer, Data Protection (NS0-513)
- NetApp Certified Implementation Engineer - SAN Specialist, E-Series (NS0-515)
- NetApp Certified Implementation Engineer – SAN, ONTAP (NS0-509)
- NetApp Certified Technology Associate (NS0-002) (replaced NCSA-Hybrid Cloud NS0-146)
- NetApp Certified Storage Installation Engineer, ONTAP (NS0-181)
- NetApp Certified Support Engineer (NS0-193)
- NetApp Certified Support Engineer - ONTAP Specialist (NS0-591)
NetApp Certified Hybrid Cloud Architect (NS0-602)

- A Refresher on Net Present Value
- AWS Docs
- Cloud Assessment Page
- Cloud Central, My Services
- Cloud Computing Benefits and Risks
- Cloud Insights Documentation
- Cloud Manager 3.6 for Docs, High-availability pairs in AWS
- Cloud Manager Documentation
- Cloud Manager Release Notes
- Cloud Secure Product Page
- Cloud Sync Documentation
- Cloud Tiering Product Page
- Cloud Volumes ONTAP
- Cloud Volumes ONTAP AWS TCO Calculator
- Cloud Volumes ONTAP Azure TCO Calculator
- Cloud Volumes ONTAP Managing Encryption Keys
- Cloud Volumes ONTAP Storage Limitation
- ConfigBuilder
- Data Governance
- Data Sovereignty
- Disks and Aggregates Power Guide
- IBM- Microservices for fast time to market and improved app quality
- Industry/ Product Knowledge
- ISO/IEC 17788: Information Technology—Cloud Computing—Overview and Vocabulary
- Load Balancer
- NetApp Cloud Volumes Service for AWS documentation
- NetApp Cloud Volumes Service for AWS Product Page
- NetApp Data Fabric Architecture Fundamentals
- NetApp HCI Private Cloud
- NetApp HCI SnapMirror Blog
- NetApp In-Place Analysis: Solution Brief
- NetApp In-Place Analytics Module TR-4715
- NetApp Kubernetes Service
- NetApp Private Storage for Cloud
- NetApp StorageGRID Webscale Object-Based Storage Software Data Sheet
- OnCommand Insight Monitoring Product Page
- ONTAP Data Security
- Right to Erasure
- SB-3949
- Storage Tiering with Cloud Volumes ONTAP
- StorageGRID 11.2 Documentation Center
- StorageGRID Webscale 11.1 S3 (Simple Storage Service) Implementation Guide
- StorageGRID Webscale 11.2 Documentation Center
- TCO Azure Calculator
- The Importance of IO Density in Delivering Storage as a Service
- TR4383 Performance Characterization of ONTAP Cloud in Amazon Web Services with Application Workloads
• TR-4598 FabricPool Best Practices
• TR-4641
• TR4654 Storage as a Service Blueprint for IT Providers
• TR-4664- Implementing NetApp Service Level Manager
• Trident Documentation
• WP-7264
• WP-7271: Edge to Core to Cloud Architecture for AI
NetApp Certified Hybrid Cloud Administrator (NS0-302)

- Industry/Product Knowledge
- AWS Documentation Website (docs.aws.amazon.com)
- Azure NetApp Files Documentation (Microsoft)
- Azure NetApp Files Blog Entry (Andrew Chen)
- Cloud Manager and Cloud Volumes ONTAP Documentation
- Cloud Volumes Service for AWS user documentation
- Cloud Docs 1.1
- Cloud Central website for Cloud Volumes
- Cloud Manager Setup Guide
- Cloud Volumes ONTAP Getting Started Guide
- Cloud Volumes 9.4 Known Limitations
- Choosing a Replication Policy
- Database Storage Tiering with NetApp FabricPool TR-4695
- Fabric Pool Best Practices in ONTAP 9
- Group and bucket access policies
- HCI File Services Powered by ONTAP Select
- Managing workloads and apps with NetApp Cloud Volumes Service
- NetApp Product Documentation Website (https://docs.netapp.com)
- NetApp Cloud Docs, Cloud Manager, Cloud Manager FAQ
- NetApp Cloud Volume Services for AWS
- NetApp Community Website (community.netapp.com)
- NetApp Cloud Docs, Granting permissions when Cloud Manager is not launched from Cloud Central
- NetApp Element Software User Guide v. 11
- NetApp Support Site
- NetApp SANtricity Cloud Connector TR-4658
- NDAS Brief
- ONTAP 9.4 Data Protection Power Guide
- ONTAP 9.4 Logical Storage Management Guide
- OCCM Documentation
- Performance Characterization of ONTAP Cloud in Amazon Web Services with Application Workloads
- Performance Characterization of ONTAP Cloud in Azure with Application Workloads
- Provisioning and Mounting NFS Volumes
- Private Storage for Amazon Web Services (AWS)
- StorageGRID Webscale 11.2 Administrator Guide
- Selecting the service level and the quota
- Scheduling Cloud Volumes ONTAP
Cisco and NetApp FlexPod Design (NS0-173)

- Industry/Product Knowledge
- ONTAP 90 SAN Configuration Guide
- ONTAP 90 SAN Administration Guide
- ONTAP 90 Logical Storage Management Guide
- High-Availability Configuration Guide
- ONTAP 90 Network Management Guide
- Interoperability Matrix Tool – IMT
- Best Practices for Scalable SAN
- Datasheet NetApp Converged Systems Advisor
- FlexPod Express with Cisco UCS C-Series and NetApp FAS2500 Series
- FlexPod Datacenter with Microsoft Applications and NetApp AFF A-Series
- FlexPod Express with Microsoft Windows 2016 Hyper-V and FAS2600
- FlexPod Express Technical Specifications
- FlexPod Datacenter Technical Specifications
- Configuring the Fabric Interconnects (Cisco)
- ONTAP 9 Data Protection Power Guide
- FlexPod Datacenter with Docker Enterprise Edition for Container Management (Cisco)
- Design FlexPod Datacenter with NetApp MetroCluster NVA Design Guide
- Cisco UCS Manager Infrastructure Management Guide, Release 3.1 (Cisco)
- NetApp Harware Universe
- FlexPod Datacenter with VMware vSphere 6.5 NetApp AFF A-Series, and IP-Based Storage
- Assessing Your Converged Infrastructure Options: Five Criterias for Making an Informed Investment
- MDS Command Reference Guide (Cisco)
- ONTAP 9 System Administration Reference
- Configuring iSPaces
- Cisco Nexus 5000 NX-OS Software Configuration Guide (Cisco)
- VMware vSphere Virtual Machine Encryption (white paper, December 2017)
- Cisco UCS Manager (Cisco)
- ONTAP 9 SMB/CIFS Configuration
- Cisco UCS Manager Administration Management Guide 3.1 (Cisco)
- Cisco UCS Manager Troubleshooting Reference Guide (Cisco)
- ONTAP 9 Release Notes
- FlexPod Datacenter with VMware vSphere 6.5 Update 1 and NetApp AFF A-series with Cisco UCS Manager 3.2 Design Guide (Cisco)
- Cisco UCS 6200, 6332, and 6324 Series Configuration Limits for Cisco UCS Manager (Cisco)
- Virtual PortChannel Quick Configuration Guide (Cisco)
- UCS Appliance Port Connectivity and Troubleshooting (Cisco)
- Cisco Nexus 9000 Series NX-OS VXLAN (Cisco)
- Cisco UCS Manager Network Management Guide, Release 3.2 (Cisco)
- vCenter Server and Host Management VMware vSphere 6.5 (VMware)
- FlexPod Datacenter with VMware vSphere 6.5, NetApp AFF A-Series and Fibre Channel
- Cisco UCS Manager Server Management Guide, Release 3.1
- SANtricity Storage Manager 11.42, SANtricity OS 8.40 and SANtricity OS 11.40
- Cisco UCS Manager Getting Started Guide, Release 3.2 (Cisco)
- Cisco UCS Director Data Sheet (Cisco)
- Small Computer System Interface over IP and Fibre Channel over Ethernet: A Comparison (Cisco)
- UCS B-series Teaming< Conding Options with Cisco VIC Card (Cisco)
- Designing and Deploying a Cisco Unified Computing System SAN Using Cisco MDS 9000 Family Switches (Cisco)
- Cisco UCS 6300 Series Fabric Interconnect Hardware Installation Guide (Cisco)
- All Flash FAS SAN-optimized Configuration
- FlexPod Datacenter with Cisco UCS Mini and VMware vSphere 6.0 with IP-Based Storage (Cisco)
- Red Hat OpenStack Platform 10 Product Guide (OpenStack Team)
- MetroCluster for Clustered Data (Nabile Fares)
- Cisco UCS Central Software
- Clustered Data ONTAP 8.3
- Cisco UCS 5100 Series Blade Server Chassis Data Sheet (Cisco)
- Classic Network Design Using Cisco Nexus 9000 Series Switches (Cisco)
- Cisco UCS Manager Storage Management Guide, Release 3.2 (Cisco)
- Cisco Unified Computing System Ethernet Switching Modes (Cisco)
- SnapCenter Software 4.0 Installation and Setup Guide
- FlexPod Datacenter FedRAMP Readiness with VMware vSphere 6.0 HyTrust
- Host requirements for link aggregation for ESXi and ESX (VMware)
- Getting Started with Cisco Application Centric Infrastructure (ACI) in the Small-to-Midsize Commercial Data Center
- Cisco UCS C-Series Server Integration with Cisco UCS Manager 3.1 (Cisco)
- Cisco UCS 6300 Series Fabric Interconnects Data Sheet (Cisco)
- Managing Licenses (Cisco)
Cisco and NetApp FlexPod Implementation and Administration (NS0-174)

- Industry/Product Knowledge
- NVA FlexPod Express with VMware 6.0 Large Configuration (Karthick Radhakrishnan, Arvind Ramakrishnan)
- FAS26xx Series Systems Installation and Setup Instructions
- Cisco UCS Manager GUI Configuration Guide, Release 1.3 (Cisco)
- FlexPod Express with Microsoft Windows 2016 Hyper-V and FAS2600 (Melissa Palmer, Lindsey Street)
- Technical Overview of FlexPod Solutions
- FlexPod Datacenter with VMware vSphere 6.5 UI and Cisco ACI 3.1 (John George, Dave Derry)
- FlexPod Datacenter Technical Specifications TR-4036 (Lindsey Street, Melissa Palmer, Karthick Radhakrishnan)
- Cisco UCS Manager GUI Configuration Guide, Release 2.2 (Cisco)
- Specsheet B200mx (Cisco)
- Testing VMkernel network connectivity with the vmkping command (vmware)
- FlexPod Datacenter with VMware vSphere 6.5 Update 1 and NetApp AFF A-series with Cisco UCS Manager 3.2 Design Guide (Cisco)
- FlexPod Datacenter with VMware vSphere 6.5 Update 1 and NetApp AFF A-series with Cisco UCS Manager 3.2 Design Guide (Cisco)
- Installation and Setup Instructions AFF A300 System
- Cisco Application Centric Infrastructure Data Sheet (Cisco)
- FlexPod Datacenter with IP-Based Storage using VMware vSphere 6.5 Update1, NetApp AFF A-Series, and Cisco UCS Manager 3.2 (Ramesh Isaac, Melissa Palmer, John George, Aaron Kirk)
- Software Download by Cisco (Cisco)
- Cisco ACI Multi-Site Hardware Requirements Guide (Cisco)
- ACI Reference Design RD-03, Rev. 1 (Cisco)
- FAQ: Vservers/SVMs
- FlexPod Datacenter with Fibre Channel Storage using VMware vSphere 6.5 Update1, NetApp AFF A-series, and Cisco UCS Manager 3.2 (Cisco)
- FlexPod SolidFire with Red Hat OpenStack Platform Design Guide (Cisco)
- Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide (Cisco)
- Cisco UCS Manager Server Management Guide, Release 3.2 (Cisco)
- FlexPod Express Technical Specifications – TR-4293
- FlexPod Datacenter Technical Specifications – TR-4036
- ONTAP 9 Network Management Guide
- Cisco UCS Fabric Interconnect 6454 Data Sheet (Cisco)
- UCS Hardware and Software Compatibility (Cisco)
- Cisco Unified Computing System Adapters (Cisco)
- FlexPod Datacenter with IP-Based Storage using VMware vSphere 6.5 Update1, NetApp AFF A-Series, and Cisco UCS Manager 3.2
- NetApp Converged Systems Advisor
- ONTAP 9 SAN Administration Guide
- Installing the NetApp NFS Plug-in 1.1.2 for VMware VAAI
- How to modify the home port and/or home node of an existing clustered ONTAP logical interface serving a SAN/block protocol
- Cisco UCS Power Tool Suite (Cisco Community)
- VMware vSphere with ONTAP (Karl L. Konnerth)
- FlexPod Datacenter with IP-Based Storage using VMware vSphere 6.5 Update1, NetApp AFF A-Series, and Cisco UCS Manager 3.2
- FlexPod Datacenter with VMware vSphere 6.5, NetApp AFF A-Series and IP-Based Storage (Cisco)
- NetApp Hardware University
• Workflow Automation 4.2 Documentation Center
• ONTAP 9 High Availability Configuration Guide
• FlexPod Datacenter with Microsoft Hyper-V Windows Server 2016 Arvind Ramakrishnan
• FlexPod Express with VMware vSphere 6.0U2, NetApp E-Series and Cisco UCS Mini (Arvind Ramakrishnan)
• Virtual Storage Console, VASA Provider, and Storage Replication Adapter for VMware vSphere Deployment and Setup Guide for 7.2 Release
• Cludter Management Using OnCommand System Manager
• Cisco UCS 6324 Fabric Interconnect Data Sheet (Cisco)
• NetApp Converged Systems Advisor
• vSphere Virtual Machine Administration (VMware)
• UCS B-Series Blad Server Software (Cisco)
• Best Practives for Scalable SAN (Michael Peppers)
NetApp Certified Data Administrator, ONTAP (NS0-160)

Note: These documents and the exam encompass ONTAP up to version 9.5

• Industry/Product Knowledge
• 7-Mode Transition Tool – Copy Based Transition
• 7-Mode Transition Tool – Copy Free Transition
• 7-Mode Transition Tool – SAN Host Transition
• 7-Mode Transition Tool - Installation and Setup Guide
• 7-Mode Data Transition Using SnapMirror Technology
• Administrator Authentication and RBAC Power Guide
• Antivirus Configuration Guide
• Archive and Compliance Using SnapLock Technology Power Guide
• BR8952: Break Fix: Troubleshooting Workflow: DC not responding (CIFS)
• Copy-Based Transition Guide For Transitioning to ONTAP
• Copy-Free Transition Guide For Transitioning to ONTAP
• Commands: Manual Page Reference for ONTAP 9.5
• Cluster Expansion Express Guide
• Cluster Peering Express Guide
• Command Map for 7-Mode Administrators
• Cluster Management Using OnCommand System Manager
• Cluster Management Workflows for OnCommand System Manager
• Cluster and SVM Peering Power Guide
• Cluster Management Using OnCommand System Manager
• Commands: Manual Page Reference for ONTAP 9.3
• Data Protection Power Guide
• Data Protection Tape Backup and Recovery Guide
• Disks and Aggregates Power Guide
• EMS Configuration Express Guide
• FC Configuration for ESXi® using VSC Express Guide
• FC Configuration for Red Hat Enterprise Linux Express Guide
• FC Configuration for Windows Express Guide
• FC SAN Optimized AFF Setup Guide
• Fabric-attached MetroCluster Installation and Configuration Guide
• FlexArray Virtualization Implementation Guide for Third-Party Storage
• FlexArray Virtualization Implementation Guide for NetApp E-Series Storage
• FlexArray Virtualization Installation Requirements and Reference
• Hardware Universe HWU
• High-Availability Configuration Guide
• Interoperability Matrix Tool
• Inventory Collect Tool 3.3.1 Host and Storage Information Collection Guide
• Infinite Volumes Management Guide
• Installation and Cabling Guide For DS460C, DS224C and DS212C
• iSCSI Configuration for ESXi using VSC Express Guide
• iSCSI Configuration for Red Hat Enterprise Linux Express Guide
• iSCSI Configuration for Windows Express Guide
• Logical Storage Management Guide
• Learning About Cloud Manager and ONTAP Cloud
• Migrating to a two-node cluster with Cisco Nexus 3132Q-V
• MetroCluster IP Installation and Configuration Guide
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<td>Migrating to a two node cluster with Cisco Nexus 3132 Q-V</td>
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<td>Multifactor Authentication in ONTAP 9.3: Best Practices and Implementation Guide</td>
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<td>NFS Configuration for ESXi® using VSC Express Guide</td>
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<td>OnCommand Unified Manager 7.2 Workflow Guide for Managing Cluster Performance</td>
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<td>OnTap Select Product Architecture and Best Practices</td>
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<td>ONTAP Select 9 Installation and Cluster Deployment Guide</td>
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<td>SMB/CIFS Configuration Guide for Microsoft Hyper-V and SQL Server</td>
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<td>SVM Disaster Recovery Preparation Express Guide</td>
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<td>Scalability and Performance Using FlexGroup Volumes Power Guide</td>
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<td>Software Setup Guide</td>
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<td>SolidFire to ONTAP Backup Power Guide</td>
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<td>T10.org Thin Provisioning</td>
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<td>TR-4476: NetApp Data Compression, Deduplication and Data Compaction Data ONTAP 8.3.1 and Later</td>
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<td>Tiebreaker Software 1.2 Installation and Configuration Guide</td>
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<td>TR-4598: FabricPool Best Practices</td>
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<td>Upgrade Express Guide</td>
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<td>Upgrade and Revert/Downgrade Guide</td>
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<td>Using All Flash FAS with ONTAP Software</td>
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<td>Volume Disaster Recovery Express Guide</td>
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<td>Volume Restore Using SnapVault Express Guide</td>
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<td>Workflow Guide for Managing Cluster Health</td>
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<td>Workflow Guide for Managing Cluster Performance</td>
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NetApp Certified Implementation Engineer, Data Protection (NS0-525)
Note: These documents and the exam encompass ONTAP up to version 9.5.

- Industry/Product Knowledge
- Data Protection Power Guide
- NDMP Configuration Express Guide
- Archive and Compliance Using SnapLock Technology Power Guide
- ONTAP 9 Concepts
- NetApp Encryption Power Guide
- SolidFire to ONTAP Backup Power Guide
- MetroCluster IP Installation and Configuration Guide
- Disks and Aggregates Power Guide
- TR-4598: FabricPool Best Practices
- Tiebreaker Software 1.21 Installation and Configuration Guide
- Fabric-attached MetroCluster Installation and Configuration Guide
- MetroCluster Management and Disaster Recovery Guide
- ONTAP_9_SVM_Disaster_Recovery_Express_Guide.pdf
- ONTAP_9_SVM_Disaster_Recovery_Preparation.pdf
- Data Protection Guide for VMs and Datastores Using the SnapCenter Plug-in for VMware vSphere
- NetApp Cloud Docs Deploying ONTAP Cloud, Planning Your Configuration, Choosing a License Type
- Logical Storage Management Guide
- SAN Administration Guide
- Data Protection Power Guide
- Cluster Management Using OnCommand System Manager
- TR-3920: CommVault IntelliSnap for NetApp Solution Overview
- Volume Backup Using SnapVault Express Guide
- Infinite Volumes Management Guide
- Scalability and Performance Using FlexGroup Volumes Power Guide
- OnCommand Unified Manager 7.3 Workflow Guide for Managing Cluster Health
- SnapCenter Software 4.0 Administration Guide
- TR-4476: NetApp Data Compression, Deduplication and Data Compaction
- TR-4526: Compliant WORM Storage Using NetApp Snaplock
- FlexPod Datacenter with NetApp MetroCluster NVA Design Guide
- MetroCluster 8.2.1 Best Practices for Implementation
- OnCommand Workflow Automation 4.1 Workflow Developers Guide
- Managing Clustered Data ONTAP Using GUI
- Volume Disaster Recovery Preparation Express Guide
- Hardware Universe
- Interoperability Matrix Tool
- Volume Restore Using SnapVault Express Guide
- Data Fabric Solution for Cloud Backup Workflow Guide
- ONTAP 9 SMB/CIFS Reference
- Virtual Storage Console, VASA Provider, and Storage Replication Adapter for VMware vSphere
- TR-4517: ONTAP Select Product Architecture
- TR-4015: SnapMirror Configuration and Best Practices Guide for ONTAP 9.1, 9.2
- SnapCenter Software 4.0 Data Protection Guide for Microsoft SQL Server
NetApp Certified Implementation Engineer – SAN Specialist, E-Series (NS0-515)

- Industry/Product Knowledge
- Automatic Load Balancing NetApp SANtricity Feature Description and Implementation, TR4737
- Brocade Fabric OS Troubleshooting and Diagnostics User Guide, 8.2.1
- Brocade SUPPORT DOCUMENTS AND DOWNLOADS page
- E-Series Site Preparation Guide
- Fiber Cables
- Hardware Universe
- Introduction to NetApp EF-Series EF280, TR4727
- Introduction to NetApp EF-Series EF570, TR4726
- Introduction to NetApp EF-Series EF5700, TR4724
- Introduction to NetApp EF-Series E2800 Arrays, TR4725
- Interoperability Matrix Tool – IMT
- Knowledgebase
- NetApp Documentation Site
- NetApp SANtricity Cloud Connector 3.1, TR4658
- SANtricity Web Services API Built-In and Central Management Capabilities, TR4658
- SANtricity OS 11.40.1 Dynamic Disk Pools Feature Description and Best Practices, TR4652
- SANtricity Snapshot Feature Overview and Deployment Guide, TR4747
NetApp Certified Implementation Engineer – SAN, ONTAP (NS0-509)

Note: These documents and the exam encompass ONTAP up to version 9.5.

- Industry/Product Knowledge
- Active IQ... But Wait, There’s More!
- Active IQ User Guide
- Best Practices for Scalable SAN – TR4080 v8
- Brocade SAN Health
- Brocade SAN Design and Best Practices Guides
- Config Advisor V5.5
- Cluster Management Using OnCommand System Manager
- Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide Release 6.2
- Cloud Manager and ONTAP Cloud Documentation
- Disks and Aggregates Power Guide
- Data Protection Power Guide
- Ethernet Storage Best Practices
- FlexArray Virtualization Implementation Guide for Third-Party Storage
- FC Configuration for ESXi® using VSC Express Guide
- FC Configuration for Red Hat Enterprise Linux Express Guide
- FC Configuration for Windows Express Guide
- FC SAN Optimized AFF Setup Guide
- High-Availability Configuration Guide
- Hardware Universe
- IMT FAQ
- iSCSI Configuration for ESXi using VSC Express Guide
- iSCSI Configuration for Red Hat Enterprise Linux Express Guide
- iSCSI Configuration for Windows Express Guide
- Implementing and Configuring Modern SANs with NVMe/FC TR-4684
- IMT FAQ
- Logical Storage Management Guide
- Linux Unified Host Utilities 7.1 Release Notes
- Linux® Unified Host Utilities 7.1. Installation Guide
- Network Management Guide
- NetApp Interoperability Matrix Tool
- NetApp Memory Accelerated Data ds-3953
- ONTAP 9 docs.netapp.com
- ONTAP 9 Protection Power Guide
- ONTAP 9 SAN Administration – Provisioning
- ONTAP 9 SAN Configuration – Provisioning
- ONTAP 9 FlexArray Virtualization – FlexArray Virtualization Implementation for Third-Party Storage
- ONTAP 9 FC Express Configuration for ESXi – Provisioning for SAN protocols
- ONTAP 9 Express FC Configuration for Red Hat Enterprise Linux – Provisioning for SAN protocols
- ONTAP 9 Cluster Administration
- ONTAP 90 FC Configuration for Windows Express
- ONTAP 90 Logical Storage Management Guide
- Performance Management Power Guide
- Performance Monitoring Express Guide
- Planning your ONTAP Cloud configuration

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• SnapCenter Software 4.1 Installation and Setup Guide
• System Administration Reference
• SAN Migration Using Foreign LUN Import
• SAN Administration Guide
• SAN Configuration Guide
• SAS Disk Shelves Installation and Cabling Guide For DS460C, DS224C, and DS212C
• T11 – Fiber Channel Interfaces
• TR-4684 Version 2.0: Implementing and Configuring Modern SANs with NVMe/FC
• TR-4476 - NetApp Data Compression, Deduplication and Data Compaction Data
• TR-4517 - ONTAP Select Product Architecture and Best Practices
• Upgrade Advisor in ActiveIQ
• Volume Move Express Guide
• Windows HUK
NetApp Certified Technology Associate (NS0-002)

- Industry/Product Knowledge
- AWS website https://aws.amazon.com
- Build your Data Fabric with NetApp HCI, ONTAP and Converged Infrastructure TR-4748
- Docker website
- Google Cloud website
- Kubernetes Documentation site https://kubernetes.io/docs/
- National Institute of Standards and Technology (NIST)
- NetApp Product Documentation
- NetApp Knowledgebase
- NetApp Blog
- NetApp website
- NetApp Information Center
- NetApp Datasheet
- NetApp Technical Report
- NetApp Product Page
- NetApp Cloud Blog
- NetApp Solution Brief
- NetApp Cloud Documentation
- NetApp StorageGRID Documentation
- NetApp White Paper
- NetApp Cloud Central
- NetApp Kubernetes Hub
- NetApp IO
- NetApp Library
- NetApp MySupport
- NetApp Forums
- VMware
NetApp Certified Storage Installation Engineer, ONTAP (NS0-182)

- Additional tasks after installing and testing an ONTAP configuration with array LUNs
- Advanced Drive Partitioning FAQ
- AFF A300 Systems: Installation and Setup Instructions
- AFF and FAS System Documentation Center
- Broadcast-domain configured with ports from multiple VLANs
- BUG Tool
- Clustered Data ONTAP 8.3: Express Setup Guide for 80xx Systems
- Cluster Installation Workshop
- CN1601 and CN1610 Switch Setup and Configuration Guide
- Completing the cluster setup worksheet
- Config Advisor 5.0: Quick Start Guide
- Configuring failover settings on a LIF
- Configuring iSCSI protocol on SVMs
- Converting from RAID-DP to RAID-TEC
- Creating a cluster
- DataMotion for Volumes: NetApp clustered Data ONTAP 8.2 and 8.3
- Decommissioning the old system
- Evaluation Licenses
- Factory configuration default values
- FAS26xx Series Systems Installation and Setup Instructions
- Hardware Universe
- How to modify flow control on cluster LIF in clustered Data ONTAP
- How to perform a disruptive head upgrade (head swap) for clustered Data ONTAP
- How to run diagnostics using the sldiag command on the interconnect for FAS32xx and FAS62xx
- http://npulse.netapp.com/npulse/cdp.xwic
- In-Band ACP Setup and Support
- Industry/Product Knowledge
- Installation and Cabling Guide: For DS460C, DS224C, and DS212C
- Installation and Setup Instructions FAS2552 Systems
- Installing FASTPATH software and RCFs on a NetApp cluster switch
- Installing NX-OS software and RCFs on Cisco® Nexus 3132Q-V cluster switches
- Installing the 16-port Cisco unified port expansion module in Nexus 5596 cluster switches
- Interface group types
- License types and licensed method
- Managing AutoSupport
- Managing clusters
- Managing the cluster time (cluster administrators only)
- Migrating to a two-node switched cluster with NetApp CN1610 cluster switches
- NetApp Community Site
- NetApp Knowledgebase
- NetApp KB 1033620
- NetApp Fusion
- NetApp 10G Cluster-Mode Switch Installation Guide
- NetApp CN1610 Cluster Switch Software Download Instructions
- NetApp CN1610 Switch Administrator’s Guide
- NetApp Global Services Contacts
- NetApp ONTAP 9 Documentation Center
- NetAppDocs 3.1P1
- Netbooting and setting up ONTAP on the new controller module
- Network Interfaces on your storage system
- ONTAP 9 Concepts
- ONTAP 9 Release Notes
- ONTAP 9: System Administration Reference
• ONTAP® 9: EMS Configuration Express Guide
• Recommended Data ONTAP releases on the NetApp Support Site
• Requirements for cabling HA pair
• Requirements for using AutoSupport
• SAS cabling issue: Both SAS connections from one controller go to the same shelf
• SAS Disk Shelves- Installation and Cabling Guide: For DS460C, DS224C, and DS212C
• SAS Disk Shelves- SAS and ACP Cabling Guide: For DS4243, DS2246, DS4486, and DS4246
• Software Licenses
• Software Version Support
• Step-by-step guide to configuring new NetApp installations using the ConfigBuilder tool
• Storage Subsystem Configuration Guide
• Storage Virtual Machines
• Support Case Submittal Process Quick Reference Guide
• Support for triple parity RAID protection
• Using aggregate relocation to upgrade controller hardware on a pair of nodes running ONTAP 9.x
• What is a Service Processor and how do I use it?
NetApp Certified Support Engineer (NS0-193)

Note: These documents and the exam encompass ONTAP up to version 9.3.

- Industry/Product Knowledge
- Copy-Based Transition Guide For Transitioning to ONTAP
- Copy-Free Transition Guide For Transitioning to ONTAP
- Installation and Setup Guide
- SAN Host Transition and Remediation Guide
- FlexArray Virtualization Implementation Guide for NetApp E-Series Storage
- FlexArray Virtualization Implementation Guide for Third-Party Storage
- FlexArray Virtualization Installation Requirements and Reference
- Host and Storage Information Collection Guide
- MetroCluster IP Installation and Configuration Guide
- MetroCluster Service and Expansion Guide
- Tiebreaker Software 1.2 Installation and Configuration Guide
- 7-Mode Data Transition Using SnapMirror Technology
- Administrator Authentication and RBAC Power Guide
- Antivirus Configuration Guide
- Archive and Compliance Using SnapLock Technology Power Guide
- Cluster Expansion Express Guide
- Cluster Peering Express Guide
- Command Map for 7-Mode Administrators
- Data Protection Tape Backup and Recovery Guide
- Disks and Aggregates Power Guide
- EMS Configuration Express Guide
- FC Configuration for ESXi® using VSC Express Guide
- FC Configuration for Red Hat Enterprise Linux Express Guide
- FC Configuration for Windows Express Guide
- FC SAN Optimized AFF Setup Guide
- Fabric-attached MetroCluster Installation and Configuration Guide
- High-Availability Configuration Guide
- Infinite Volumes Management Guide
- Logical Storage Management Guide
- MetroCluster Management and Disaster Recovery Guide
- NFS Client Configuration for ESX Express Guide
- NFS Client Configuration with VAAI for ESX Express Guide
- NFS Configuration Express Guide
- NFS Configuration Power Guide
- NFS Reference
- Network Management Guide
- Performance Management Power Guide
- Performance Monitoring Express Guide
- SAN Administration Guide
- SAN Configuration Guide
- SMB/CIFS Configuration Express Guide
- SMB/CIFS Configuration Guide for Microsoft Hyper-V and SQL Server
- SMB/CIFS Reference
- SMB/CIFS and NFS Auditing and Security Tracing Guide
- SMB/CIFS and NFS Multiprotocol Configuration Express Guide
- SVM Disaster Recovery Express Guide
- SVM Disaster Recovery Preparation
- SVM Root Volume Protection Express Guide
- Stretch MetroCluster Installation and Configuration Guide
- System Administration Reference
- Upgrade Express Guide
- Upgrade and Revert/Downgrade Guide

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• Using All Flash FAS with ONTAP Software
• Volume Backup Using SnapVault Express Guide
• Volume Disaster Recovery Express Guide
• Volume Disaster Recovery Preparation Express Guide
• Volume Move Express Guide
• Volume Restore Using SnapVault Express Guide
• iSCSI Configuration for ESXi using VSC Express Guide
• iSCSI Configuration for Red Hat Enterprise Linux Express Guide
• iSCSI Configuration for Windows Express Guide
• Cluster Management Using OnCommand System Manager
• Cluster Management Workflows for OnCommand System Manager
• Cluster and SVM Peering Power Guide
• Commands: Manual Page Reference for ONTAP 9.0
• Commands: Manual Page Reference for ONTAP 9.1
• Commands: Manual Page Reference for ONTAP 9.2
• Commands: Manual Page Reference for ONTAP 9.3
• Concepts
• Data Protection Power Guide
• NDMP Configuration Express Guide
• NetApp Encryption Power Guide
• Release Notes
• SMB/CIFS Configuration Power Guide
• SMB/CIFS Configuration Express Guide
• Scalability and Performance Using FlexGroup Volumes Power Guide
• Software Setup Guide
• SolidFireONTAP Backup Power Guide
• T10.org Thin Provisioning
• ONTAP Select 9 Installation and Cluster Deployment Guide
• NFS Reference
• TR-4476: NetApp Data Compression, Deduplication and Data Compaction Data ONTAP 8.3.1 and Later
• Ontap Select Product Architecture and Best Practices
• Hardware Universe HWU
• Workflow Guide for Managing Cluster Health
• Installation and Cabling Guide For DS460C, DS224C and DS212C
• Migrating to a twonode cluster with Cisco Nexus 3132Q-V
• BR8952: Break Fix: Troubleshooting Workflow: DC not responding (CIFS)
• TR-4598: FabricPool Best Practices
• OnCommand Unified Manager 7.2 Workflow Guide for Managing Cluster Performance
• Learning About Cloud Manager and ONTAP Cloud
• Multifactor Authentication in ONTAP 9.3: Best Practices and Implementation Guide
• Workflow Guide for Managing Cluster Performance
• Interoperability Matrix Tool
• Migrating from a switchless cluster to a switched Cisco® Nexus 5596, Nexus 5020, or Nexus 5010 cluster environment
• NetApp Knowledge Base
• Physical Storage Management Guide
• OnCommand Unified Manager Performance Advisor Administration Guide
• TR-4080: Best Practices for Scalable SAN
• TR-4211: Storage Performance Primer
• Using Aggregate Relocation to Upgrade Controller Hardware
• SnapDrive® 7.1 for Windows® Administration Guide
• Snap Drive 7.1 for Windows Installation Guide
• SnapDrive for Windows for Clustered Data ONTAP Used in SAN Environments, December 2015
• SnapDrive for Windows for Clustered Data ONTAP Used in SAN Environments, December 2014
• System Administration Reference
• SnapCenter Software 4.0 Concepts Guide
• SnapManager® 7.2.2 for Microsoft® SQL Server® Installation and Setup Guide
• SnapCenter Software 4.0 Data Protection Guide For Microsoft SQL Server
• NetApp KB: How to collect performance data when Perfstat8 fails by using preset files and manual data collection
• TR-3966: NetApp Data Compression and Deduplication Deployment and Implementation Guide
• KB: What is deswizzler or deswizzling?
• OnCommand Workflow Automation 4.1 Workflow Developer’s Guide
• Service Guide for DS460C, DS224C and DS212C
• TR-3832: Flash Cache Best Practice Guide
• ONTAP 9.2 EMS Event Catalog
• System-Level Diagnostics Guide
• Data ONTAP 8.2 System Administration Guide For 7-Mode
• Datasheet: OnCommand Unified Manager and Performance Manager
• Unsupported ONTAP 9 Features
NetApp Certified Support Engineer – ONTAP Specialist (NS0-591)

- Advanced Performance Analysis
- After re-seating or replacing an IOM shelf module shelf serial numbers are displayed instead of shelf IDs in `sysconfig -a`
- Alert LED turned ON on a shelf without any other observed fault or DC UNDER VOLTAGE messages
- AutoSupport Message: Health Monitor Process CSHM
- AutoSupport Message: MAXIMUM EXITS THRESHOLD OF A PROCESS MANAGED BY SPM IS REACHED
- AutoSupport Message: ROOT VOLUME NOT WORKING PROPERLY: RECOVERY REQUIRED
- Broadcast-domain configured with ports from multiple VLANs
- Can I upgrade a controller without moving its volumes?
- Clustered Data ONTAP 8.3: Network Management Guide
- Clustered Data ONTAP cluster interconnect issues between HA pairs
- Clustered Data ONTAP® 8.3 File Access Management Guide for NFS
- Clustered Data ONTAP® CIFS Auditing Quick Start Guide
- Creating an infinite volume with small constituents
- `df` reports incorrect information while running Infinite Volume Space Accounting
- DS4243, DS2246, DS4486, and DS4246 Disk Shelf SAS and ACP Cabling Guide
- Enabling or disabling pNFS
- Enabling Storage Efficiency on transitioned volumes from 7MTT
- FAQ: Handling watchdog resets
- FAQ: Troubleshooting LACP port channel/ interface groups
- FAQ: Consistency Point
- FCP/FCoE LIF reports operationally down
- File Access Management Guide for CIFS
- FlexVol: Flexible, Efficient File Volume Virtualization in WAFL
- General HA issues in clustered Data ONTAP
- High Protocol Latency on FAS 25xx with clustered Data ONTAP for remote LIF traffic
- How to collect additional information from FAS22xx/ FAS32xx/ FAS62xx/FAS8xxx series storage systems for panics related to NMI/ Watchdog/ Uncorrectable Machine Check events
- How to collect data for an RCA of a SAN event that occurred in the past
- How to collect rolling pktt trace files (from clustered Data ONTAP 8.3.2 )
- How to configure DNS per SVM for versions later than clustered Data ONTAP 8.2.1
- How to give a client full control to a junctioned volume over NFS, but no access (not even read access) to the root volume of a vserver
- How to replace a disk drive in AFF configurations
- How to troubleshoot network issues in clustered Data ONTAP
- How to troubleshoot the 'Autolocation' feature in Clustered Data ONTAP
- How to verify Windows fibre channel configurations with multipathing I/O (MPIO)
- How a two-node MetroCluster configuration provides nondisruptive operations
- Identifying CIFS latency in clustered Data ONTAP due to a client’s vscan server
- INTERNAL: Troubleshooting Workflow: Mroot recovery process
- List of supported privileges
- MCC Config Advisor FCVI port setting errors
- MetroCluster fabric FCVI port reset
- MetroCluster® Management and Disaster Recovery Guide
- Name Services Best Practices Guide
- Name services fail due to multiple default gateways with the same metric
- New Cluster Filer is being set up The Root Volume is Damaged
- NetApp FlexGroup Best Practice and Implementation Guide
- NFS Best Practice and Implementation Guide
- NFSv4 Enhancements and Best Practices Guide: Data ONTAP Implementation
- OEM: A node is out of quorum
- OEM: Cannot log into the Cluster Mode node using admin as the user ID
- OEM: Network interface show reports: This table is currently empty
- OEM: RAID Error Propagation in Data ONTAP 7.3.1- FAQ

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• OEM: What protocol errors are given to clients by RAID Error Propagation?
• ONTAP 9.3: Command Man Page
• ONTAP 9 CIFS and NFS Multiprotocol Configuration Express Guide
• ONTAP 9 Release Notes
• ONTAP 9 Volume Move Express Guide
• ONTAP 9 Documentation: Improving client response time by providing SMB automatic node referrals with Auto Location
• ONTAP 9 SMB/CIFS reference
• ONTAP 9 CIFS/SMB Configuration guide for Hyper-V and SQL Server
• ONTAP 9: Logical Storage Management Guide
• Overflow of wafliron
• Restoring databases from other SQL Server backups
• SAN configuration guide
• SAN Administration Guide
• SAS adapter connected to misconfigured SAS domain
• SAS ACP Cabling Guide
• SAS Disk Shelves Installation and Service Guide
• SAS: Shelf ID is not set or is in conflict with an existing shelf
• scsiblade.out.of.quorum error seen immediately after giveback completes
• Services Partners: CLAM Functionality in clustered Data ONTAP and how it determines nodes to be out of CLAM quorum
• SERVICES PARTNERS: Host performs excessive Active Non-Optimized Path IO in Data ONTAP 8.3
• Services Partners: PANIC: nested machine check exception detected on CPU #, no coredump will be generated PCI NMI
• Services Partners: RAID Error Propagation and RAID Error Propagation Tools - FAQ
• Services Partners: WAFL inconsistent: volume xxxx has a corrupted user data block
• Simultaneous loss of both node mailbox disks causes system disruption
• Snapshot autodelete fails on deduped volumes when dedupe is running
• Storage auto-reclamation does not occur
• Storage Performance Primer Clustered Data ONTAP 9.2
• TCP Congestion Control
• The Write-Anywhere-File-LAYOUT (WAFL)
• Troubleshooting CIFS or SMB Access Denied
• Troubleshooting Workflow: Aggregate relocation in clustered Data ONTAP
• Troubleshooting Workflow: CIFS Authentication failures
• Troubleshooting Workflow: Most common issues with multi-domain search for usermapping
• Troubleshooting Workflow: Not enough aggregates to create an Infinite Volume
• Troubleshooting Workflow: Staging volume full for onbox CIFS auditing
• Troubleshooting Workflow: Stale file handle error (NFSv3 and NFSv4)
• Troubleshooting Workflow: Takeover not possible
• Troubleshooting Workflow: User and the user group displayed as 'nobody' in NFS v4
• Troubleshooting Workflow: vol move command failure
• Troubleshooting Workflow: vol move start command failure
• Unable to join a second node to cluster with error: Remote ping test failed
• VPD mismatch on DS4243, DS4246, and DS2246
• What is a Mailbox disk?
• What is CIFS Max Multiplex and how to increase maximum number of simultaneous outstanding Windows client requests that a controller allows?
• Why do NFSv4 and NFSv4.1 I/O stop while a takeover/giveback, an aggregate relocation occur, or a VFiler Migration?
• Why is a warning displayed when attempting to create one or more data volumes in the root aggregate in Data ONTAP Cluster-Mode?