

### Overview

### Cisco MDS 9000 Enterprise Package

Cisco's NX-OS is the underlying system software that powers the award winning Cisco MDS 9000 Family of multilayer switches. The standard NX-OS software package is bundled at no charge with the Cisco MDS 9000 series switches and includes a base set of features. Cisco Systems believes the standard features are required by most customers to build storage area networks (SAN). The Cisco MDS switch also has a set of additional advanced traffic engineering and advanced security features recommended for all Enterprise SANs. The additional features are bundled together in the Cisco MDS 9000 Enterprise Package.

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### Feature List

- FC Port security
- VSAN-based access control
- Fibre Channel Security Protocol (FC-SP) authentication
- Advanced traffic engineering-quality of service (QoS)
- IP security (IPsec) protocol for iSCSI and FCIP using the MPS-14/2 module or Cisco MDS 9216i Switch
- IPsec and IKE for IPv4
- IKE digital certificates
- Extended credits using the MPS-14/2 module or the Cisco MDS 9216i Switch
- Enhanced VSAN routing inter-VSAN routing (IVR) over Fibre Channel
- IVR Network Address Translation (NAT) over Fibre Channel
- Zone-based traffic prioritizing
- Zone-based FC QoS
- Extended BB\_Credits
- Fibre Channel write acceleration
- SCSI flow statistics
- FCIP encryption
- Fabric binding for Fibre Channel
- SAN device virtualization
- Cisco TrustSec Fibre Channel Link Encryption

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### Customer Benefits

- Inter-VSAN Routing enables sharing of resources across VSANs without compromising the VSAN benefits of scalability, reliability, availability and security.
- Inter-VSAN Routing can be used in conjunction with FCIP to create more efficient business continuity and disaster recovery solutions.
- The QoS feature in Cisco NX-OS allows for data traffic to be classified into distinct levels for service differentiation.
- Switch to switch and host to switch authentication helps to eliminate disruptions that may occur due to unauthorized devices connecting to a large enterprise fabric.
- LUN Zoning provides a single point of control for managing secure access to LUNs across heterogeneous storage subsystems.
- Read only zoning is especially useful for sharing volumes across servers for read-only operations for backup, data-warehousing etc.
- Individual port security assures SAN security is not compromised due to unauthorized devices connecting to a switch port.
- VSAN-based access control adds a layer of security where only administrators can configure switches within specified VSANs.

## Features/Functionality

<b>Inter VSAN Routing</b>	Inter-VSAN routing enables selective transfer of data traffic between specific initiators and targets on different virtual SANs (VSANs) without merging VSANs into a single logical fabric. Fibre Channel control traffic does not flow between VSANs, nor can initiators access resources except for the ones designated with Inter-VSAN Routing.	
<b>Quality of Service (QoS)</b>	The QoS feature allows for data traffic to be classified into distinct levels for service differentiation.	
<b>Switch-Switch and Host-Switch Authentication</b>	Fibre Channel Security Protocol (FC-SP) capabilities in Cisco NX-OS provide switch-switch and host-switch authentication.	
<b>LUN Zoning</b>	Cisco NX-OS hardware enforced LUN Zoning ensures LUNs (Logical Unit Numbers) are accessible only by specified hosts.	
<b>Read-Only Zones</b>	Cisco MDS switches support a type of Small Computer System Interface (SCSI) command as a zoning attribute. In conjunction with other zoning attributes, when a SCSI command type attribute is restricted to SCSI read commands, read-only zones can be created.	
<b>Port Security</b>	Locks down the mapping of an entity to a switch port. The entity can be a host, target, or switch and is identified by its Worldwide Number (WWN).	
<b>VSAN Based Access Control</b>	Enables customers to define roles where the scope of the roles is limited to certain VSANs. For example, a network administrator role can be set up to allow configuration of all platform-specific capabilities, while VSAN-administrator roles can be set up to only allow configuration and management of specific VSANs.	
	Cisco MDS 9100 Enterprise Package RTU	A7515A
	Cisco MDS 9200 Enterprise Package RTU	A7516A
	MDS 9500 Enterprise Package license for 1 Cisco MDS 9500 series switch (SN8000C)	A7517A TC459A
	HPE StoreFabric SN8500C Enterprise Package License (for MDS 9700 series directors)	
<b>Software Prerequisites</b>	Cisco Prime Data Center Network Manager	Refer to Cisco Prime Data Center Network Manager release notes <a href="http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-data-center-network-manager/products-release-notes-list.html">http://www.cisco.com/c/en/us/support/cloud-systems-management/prime-data-center-network-manager/products-release-notes-list.html</a>
	Java Virtual Machine	Refer to Cisco Enterprise Package release notes <a href="http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html</a>
	Windows®	Refer to Cisco Enterprise Package release notes <a href="http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html</a>
	Solaris	Refer to Cisco Enterprise Package release notes <a href="http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html</a>
	Red Hat Linux	Refer to Cisco Enterprise Package release notes <a href="http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html</a>
<b>Hardware Prerequisites</b>	<ul style="list-style-type: none"> <li>Refer to Cisco Enterprise Package Release Notes <a href="http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.html</a></li> </ul>	
<b>Distribution Media</b>	Cisco MDS 9000 Enterprise Package is a firmware resident Java based application within an MDS 9000 series switch.	

## Features/Functionality

### Software Licensing

Cisco MDS 9000 Enterprise package and the StoreFabric SN8500C Enterprise License are licensed per MDS 9000 series switch

## Service and Support, HPE Care Pack and Warranty Information

**Software Warranty** Hewlett Packard Enterprise warrants that the software media will be free of physical defects for a period of 90 days from delivery.

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### Service and Support **Services to accelerate time to results**

HPE Storage Services bring you a rich portfolio of consulting and support services designed to add value to our core storage products and solutions. We have the know-how and experience to put storage technology to work for you. We work closely with you as your strategic partner, leveraging our full services portfolio to make sure that everything works to optimize your enterprise.

Choose from services aligned to our storage product offerings and lifecycle. From mission-critical onsite services to innovative web-based remote support, you choose the precise level of attention and support your business demands.

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### Discover, plan, and design

Choose from a rich portfolio of services to make the most of HPE SN8000C Directors so you can efficiently and affordably consolidate, manage, and extract value from unstructured data.

#### **HPE Services can help you discover needs and create a plan for simplifying the environment, reducing risk, and maximizing your storage investments**

**HPE Storage Efficiency Analysis:** The HPE Storage Efficiency Analysis provides customers with a view of their storage infrastructure and operating environment; highlighting recommendations for improvements. The report provides extensive insight about the existing storage environment, opportunities for efficiency gains, asset aging and replacement through interaction with key decision makers.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-6727enw.pdf>

**HPE Storage Impact Analysis (SIA):** The HPE Storage Impact Analysis service provides a 2-4 week discovery engagement with executive summary presentation. The goal of this service is to help provide customers guidance on storage related issues and develop remediation plans.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa4-1174enw.pdf>

**HPE Storage Modernization Service:** The HPE Storage Modernization service is a 4-6 week service that defines the customer's envisioned target storage environment based on a proven solution design methodology. Hewlett Packard Enterprise architects will quickly perform tool-assisted automatic discovery and facilitate a two-day strategy workshop with all key stakeholders involved in the storage infrastructure initiative.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-4620enw.pdf>

**Deploy and integrate** We can help you configure, set up, and efficiently use your HPE SN8000C Directors, as well as help migrate data, improve capacity utilization, and establish information management standards used across backup, replication, and archiving needs.

**HPE SAN Deployment Service** – Select this service for complete design and implementation support for Fibre Channel, FCoE, FCIP, SAS, and iSCSI SAN connectivity components.

<https://www.hpe.com/h20195/v2/getpdf.aspx/5981-8527en.pdf>

**HPE Storage Data Migration Services** – End-to-end data migration service providing seamless discovery, assessment, planning, and design, completely customizable to your organization's storage area network or network attached storage environment and using innovative software to help you migrate to HPE storage quickly and efficiently.

## Service and Support, HPE Care Pack and Warranty Information

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-0774ENW.pdf>

**HPE Storage and Data Consultant Residency Service** – Strategic augmentation of your current environment with HPE resources who become your trusted advisor to provide answers that are right for your storage and backup environment.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-9481enw.pdf>

**HPE Proactive Select** – A flexible way to purchase services to fit your environment with an extensive menu of HPE Proactive Select event and technical services, such as onsite firmware upgrades, health checks, assessments, and education.

<http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENW.pdf>

**Operate and support Choose the right support to maximize uptime, free up your resources, and achieve improved value— as you get the most out of the existing IT assets while accelerating time-to-revenue.**

**HPE Proactive Care Advanced** - Builds and incorporates on Proactive Care and also gives customers personalized technical and operational advice from an Assigned, local Account Support Manager for personalized technical collaboration, flexible access to specialist skills to help optimize business critical IT, and Enhanced Critical Incident Management to help so the business is not affected if there is a system or device outage.

<https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=4aa5-3259enw&404m=secure-erc>

**HPE Proactive Care 24x7** – Hardware and software support services designed specifically for your technology with rapid access to Advanced Solution Center Specialists plus firmware and software management and best practice advice.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa3-8855enw.pdf>

**HPE Foundation Care 24x7** – HPE Foundation Care 24x7 connects you to HPE around the clock for assistance on resolving issues with hardware onsite response within four hours and software call back within two hours after opening your case.

<https://www.hpe.com/h20195/v2/getpdf.aspx/4aa4-0226enw.pdf>

**HPE Education Services** - Comprehensive training for new, as well as experienced, storage administrators designed to expand your skills and keep you up to speed with the latest storage and virtualization technology from HPE Storage. <http://education.hp.com/curr-storsan.htm>

### Choose from three levels of operate and support care

#### Optimized Care -

Delivers the highest levels of performance and stability through deployment and proactive management practices

#### HPE Proactive Care Advanced 24x7

**Additional options** – 3 years or 1 year HPE Proactive Select credits

#### Standard Care -

maintains high level of uptime, along with expert help to cut the cost and complexity of implementation and support

#### HPE Proactive Care 24x7

**Additional options** - 3 years HPE Proactive Care Personalized Support, HPE Personalized Support Additional Days, and 3 years HPE Proactive Select credits

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## Service and Support, HPE Care Pack and Warranty Information

**Basic Care** - Minimum recommended support

**HPE Foundation Care 24x7**

**Additional options** - 3 years or 1 year HPE Proactive Select credits

**For more information**

**<http://www.hp.com/services/storage>**

To learn more on HPE Storage Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner.

HPE Care Pack Services are sold by HPE and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
  - Customers purchasing from a commercial reseller can find HPE Care Pack Services at **<http://www.hp.com/go/lookuptool>**
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## Summary of Changes

Date	Version History	Action	Description of Change
14-Oct-2016	From Version 9 to 10	Changed	Rebranding edition
10-Apr-2015	From Version 8 to 9	Removed	Removed part # TC317A (OBS),
31-Oct-2014	From Version 7 to 8	Changed	The Service and support sections was modified.  The Features section was updated.  SKUs descriptions was updated.
09-May-2014	From Version 6 to 7	Changed	Change was made to Service and Support, HPE Care Pack and Warranty Information section.
05-Oct-2012	From Version 5 to 6	Changed	Change was made to URL in Service and Support, HPE Care Pack and Warranty Information section.
08-Jun-2011	From Version 4 to 5	Removed	Removed "StorageWorks" from the document.
15-Nov-2010	From Version 3 to 4	Changed	SAN-OS was changed to NX-OS in the Overview  Features List and Service and Support, HPE Care Pack and Warranty Information were completely revised  MDS Enterprise Package license for 1 MDS series switch for HPE BladeSystem c-Class and MDS Fabric Manager Server and Enterprise Package license bundle for 1 MDS series switch for HPE BladeSystem c-Class were added to Ordering Information  Refer to Cisco Enterprise Package Release Notes was added to Software and Hardware Prerequisites
08-Jun-2007	From Version 2 to 3	Added	Added EMEA version.
09-Jun-2004	From Version 1 to 2	Changed	The Customer Benefits section was modified.



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