

Overview

NVIDIA Ethernet Adapters for HPE

The NVIDIA Ethernet Adapters for HPE are secure and advanced network interface cards with NVMe, RDMA, and cryptographic offload capabilities to secure and accelerate mission-critical data-center applications such as database operations, server virtualization, big data analysis, machine learning operations, and anything else that requires high-performance NVMe-based storage. HPE offers both 100Gb/s and 25Gb/s Ethernet dual port options to fit customer workload requirements. They are paired with best-in-class cryptographic capabilities that accelerate and secure cloud and data center workloads.

Storage accelerating offloads like NVMe for RDMA over Converged Ethernet (RoCE) and for TCP are built into the NVMe-oF Adapters, enabling seamless upgrade paths from existing storage paradigms to next-generation NVMe and persistent memory semantics.

In an era where data privacy is key, the NVMe-oF adapters provide built-in inline encryption and decryption, stateful packet filtering, and other capabilities that bring advanced security down to every node with unprecedented performance and scalability.



NVIDIA Ethernet 100Gb 2-Port NVMe-oF Offload Adapter for HPE (R8M41A)



NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE (S2A69A)

NVIDIA Ethernet Adapters for HPE

Models

Description

SKU

NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE

R8M41A

NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE

S2A69A

Standard Features

Key Features and Benefits

Performance

The NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (R8M41A) provides two ports of 100Gb/s Ethernet connectivity and delivers the highest return on investment (ROI) of any smart network interface card. It auto negotiates to 10/25/40/50/100 Gb. It supports a choice of single-root I/O virtualization (SR-IOV) and VirtIO in hardware, enabling customers to best address their application needs. By offloading cloud networking workloads, the NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE frees up CPU cores for business applications while reducing total cost-of-ownership.

The NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE (S2A69A) provides two ports of 25Gb/s Ethernet connectivity and auto negotiates between 10/25Gb. The NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE supports SR-IOV, VirtIO, and cryptography to ensure the integrity of your data.

Host Interface

NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (R8M41A)

16 lanes of PCIe Gen4 (PCIe 4.0 x16).

NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE (S2A69A)

8 lanes of PCIe Gen4 (PCIe 4.0 x8)

Solutions

NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (R8M41A) is the most ideal adapter for the following solutions

- Cloud-native
- web 2.0, hyperscale
- Enterprise data centers
- Cybersecurity
- Big data analytics
- Scale-out compute and storage infrastructure
- Telco and network function virtualization (NFV)
- Cloud storage
- Machine learning and AI
- Media and entertainment

RDMA over Converged Ethernet (RoCE)

The NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (R8M41A) delivers several innovations including programmable congestion control and selective repeat and zero-touch RoCE, enabling scalable, robust and easy-to-deploy RoCE solutions. The NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (R8M41A) supports RoCE v2.

The NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE (S2A69A) delivers zero-touch RoCE, IPsec in-line acceleration, and Accelerated Switching and Packet Processing.

Standard Features

Data Center Security

Both adapters provide security to every endpoint with their purpose-built inline acceleration engines that offload IPsec and TLS data-in-motion and XTS-AES data-at-rest cryptographic operations. Supports,

- Inline hardware IPsec encryption and decryption
 - AES-GCM 128/256-bit key
- RoCE over IPsec
- Inline hardware TLS encryption and decryption
 - AES-GCM 128/256-bit key

- Secure Boot
- Hardware root-of-trust
- Secure firmware update

Storage Offloads

NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (S2A69A) supports:

- Block-level encryption: XTS-AES 256/512-bit key (future release)
- NVMe over Fabrics offloads for HPE Storage
- T10 DIF signature handover operation at wire speed, for ingress and egress traffic
- Storage protocols: NFS RDMA, SMB Direct, iSCSI, NVMe over RoCE V2
- Supports booting from iSCSI arrays using the HPE UEFI ROM iSCSI Software Initiator

Virtualization/Cloud Native

Both adapters deliver innovative SR-IOV and VirtIO acceleration, offloading Open vSwitch data path forwarding from the host's CPU to the adapter's ASIC, and enabling extreme performance and scalability.

- SR-IOV and VirtIO acceleration
 - Up to 512 virtual functions, variable per port
 - Supported with ESXi, Windows Hyper-V, and KVM in Linux
- Support for tunneling
 - Encapsulation and de-capsulation of VXLAN, NVGRE, and GENEVE protocols, Stateless offloads for overlay tunnels

DPDK

The NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE (S2A69A) supports the Data Plane Development Kit (DPDK), which can accelerate packet processing in Software Defined Networking (SDN), Network Function Virtualization (NFV), IPsec tunneling, and other high-performance networking deployments, .

Standard Features

IPv4/IPv6

IPv6 uses 128-bit addressing allowing for more devices and users on the internet. IPv4 supports 32-bit addressing.

Tunnel Offload

Minimize the impact of overlay networking on host performance with tunnel offload support for VXLAN, NVGRE and GENEVE. By offloading packet processing to adapters, customers can use overlay networking to increase VM migration flexibility and virtualized overlay networks with minimal impact to performance.

HPE Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption.

Tunnel Offload supports VMware's VXLAN, Microsoft's NVGRE solutions and Generic Network

Virtualization Encapsulation (GENEVE) solutions.

Service and Support

Warranty

Maximum: The remaining warranty of the HPE product in which it is installed (to a maximum three-year, limited warranty). Minimum: One-year limited warranty.

Notes: Additional information regarding worldwide limited warranty and technical support is available at:

<http://h17007.www1.hpe.com/us/en/enterprise/servers/warranty/index.aspx#.V4e3tPkrJhE>

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

<https://www.hpe.com/services>

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

<https://www.hpe.com/services/consulting>

HPE Managed Services

HPE runs your IT operations, providing services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

[HPE Managed Services | HPE](https://www.hpe.com/services/managed)

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

<https://www.hpe.com/services/operational>

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service provides:

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

<https://www.hpe.com/services/completec>

Service and Support

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service is available in three response levels. Basic, which provides 9x5 business hour availability and a 2-hour response time. Essential which provides a 15-minute response time 24x7 for most enterprise level customers, and Critical which includes a 6-hour repair commitment where available and outage management response for severity 1 incidents.

<https://www.hpe.com/services/techcare>

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:

<https://www.hpe.com/services/lifecycle>

For a list of the most frequently purchased services using service credits, see the [HPE Service Credits Menu](#)

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.

<https://www.hpe.com/services/training>

Service and Support

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.

Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise 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 services at
<https://ssc.hpe.com/portal/site/ssc/>

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience.

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.

<https://support.hpe.com/hpesc/public/home/signin>

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform brings the cloud experience directly to your apps and data wherever they arethe edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake edge-to-cloud platform accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE" <https://www.hpe.com/us/en/contact-hpe.html>

For more information

<http://www.hpe.com/services>

Technical Specifications

Family Information

NVIDIA Ethernet 100Gb 2-port NVMe-oF Offload Adapter for HPE	R8M41A
Number of channels	Dual
Port Speed	100Gb
Auto-negotiation	10/25/40/50/100 Gb
PCIe Connector	PCIe 4.0 x16
IC	ConnectX®-6DX
OS Supported	Windows 2019 and later RHEL 8.4 and later SLES 15 SP3 and later ESXi 7.0 U2 and later Notes: Always refer to the HPE Single Point of Connectivity Knowledge for HPE Storage Products at: http://www.hpe.com/storage/spock for specific product support information and specific OS versions supported.
Servers Supported	Select HPE ProLiant and Apollo Gen10 servers Notes: Refer to server Quick Specs for details regarding supported options.
Array Platforms Supported	Refer to http://www.hpe.com/storage/spock for specific product support information
What's Included in the Box?	100Gb card with standard bracket, spare tall bracket, documentation
Optics Supported	100Gb PSM4, SR4. Qualified with Q8J73A - HPE 100GbE QSFP28 PSM4 500m XCVR and Q2F19A - HPE 100GbE QSFP28 SR4 100m XCVR Q9S71A Supports NRZ and PAM4
Environmental Operating Temperature	32°F to 158°F (0°C to 70°C)
Environmental Storage Temperature	-4°F to 185°F (-40°C to 85°C)
Environmental Relative Humidity Operating	5% to 85%, noncondensing
Product Dimensions (W x L x H)	142 x 69 x 22 mm (5.6 x 2.71 x 0.87 in.)
Product Net weight Kg	0.23 (0.51 lbs)

Technical Specifications

NVIDIA Ethernet 10/25Gb 2-port SFP28 NVMe-oF Crypto Adapter for HPE	S2A69A
Number of channels	Dual
Port Speed	25Gb
Auto-negotiation	10/25 Gb
PCIe Connector	PCIe 4.0 x8
IC	ConnectX®-6LX
OS Supported	Microsoft Windows 2019 LTSC & HyperV Microsoft Windows 2022 LTSC & HyperV OOB RHEL 8.8 OOB RHEL 9.2 OOB SLES 15 SP5 Vmware Vsphere 7.0 U3 P08 Vmware Vsphere 8.0 U1
Servers Supported	Select HPE ProLiant and Apollo Gen 10+ and Gen 11 servers Notes: Refer to server Quick Specs for details regarding supported options.
Array Platforms Supported	Refer to http://www.hpe.com/storage/spock for specific product support information
What's Included in the Box?	25Gb card with standard bracket, spare tall bracket, documentation
Optics Supported	25Gb SR. Qualified with Q2P64B - HPE 25GbE SFP28 SW E Temp 1-pack PT XCVR Q9S67A - HPE 25GbE SFP28 to SFP28 3M Smart AOC Q9S68A - HPE 25GbE SFP28 to SFP28 5M Smart AOC Q9S69A - HPE 25GbE SFP28 to SFP28 10M Smart AOC Q9S70A - HPE 25GbE SFP28 to SFP28 15M Smart AOC 10Gb SR Qualified with Q6M30A - HPE 10GbE SFP+ SR 300m XCVR Q2P65A - HPE 10Gb SFP+ SW E-Temp 1-pack PT XCVR
Environmental Operating Temperature	32°F to 131°F (0°C to 55°C)
Environmental Storage Temperature	-40°F to 158°F (-40°C to 70°C)
Environmental Relative Humidity Operating	10% to 85%, relative humidity
Product Dimensions (W x L x H)	96.3 x 69 x 22 mm (3.79 x 2.71 x 0.87 in.)
Product Net weight Kg	0.9 (0.2 lbs)

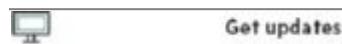
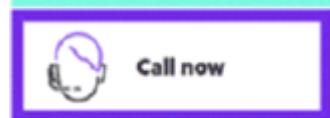
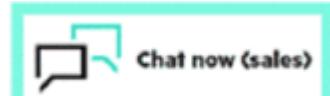
Technical Specifications

Summary of Changes

Date	Version History	Action	Description of Change
27-May-2025	Version 4	Changed	Overview, Standard Features, Service and Support and Technical Specifications sections were updated. Series name updated Description changes and general maintenance
04-Mar-2024	Version 3	Changed	Overview, Standard Features and Technical Specifications sections were updated. Added 10/25Gb Secure Network Adapter
04-Dec-2023	Version 2	Changed	HPE Services Rebranding
02-May-2022	Version 1	New	New QuickSpecs

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