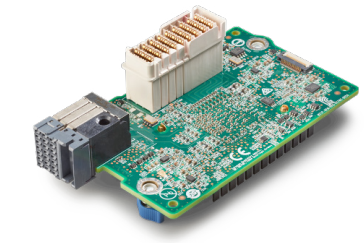
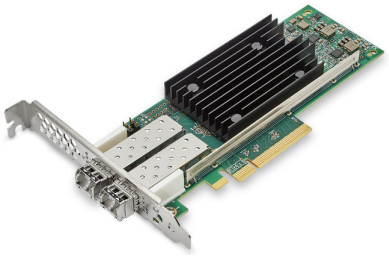
HPE Adapters from Marvell

Marvell® QLogic® Fibre Channel Adapters Power HPE ProLiant/Apollo/Synergy Servers





- Marvell is a leading supplier to Hewlett Packard Enterprise (HPE) for Fibre Channel Adapters.
- Proven, robust FC stacks and unified drivers provide *install it and forget it* reliability.
- Fibre Channel HBAs support concurent FC-SCSI and FC-NVMe storage communications.
- Adapters that offer exceptional real-world application performance and are optimized for virtual server environments.
- Full hardware offload delivers faster application performance and improves server virtualization density.

With the advances in server technology and the rapid growth in server virtualization, networks need more reliability, bandwidth, and security to keep up with current workloads. In addition, the emergence of cloud computing is forcing networks to support a broad ecosystem of applications, hypervisors, and OSes. These requirements force administrators to optimize network infrastructure and reduce costs.

Marvell offers a portfolio of industry-standard Fibre Channel (FC) 64Gb (64GFC), 32Gb (32GFC), and 16Gb (16GFC) adapters for HPE's ProLiant, Apollo, Integrity, and Synergy servers.

Fibre Channel Host Bus Adapters

Overview

The HPE SN1700Q 64GFC and SN1610Q Enhanced 32GFC HBAs are designed to provide secure and predictable storage networking performance, supporting the most demanding virtualized and mission-critical workloads in the data center. While fully leveraging the high performance 64GFC and 32GFC capability, these adapters also support root of trust (RoT) security and automatic congestion controls. Marvell 64GFC, 32GFC, and 16GFC HBAs for HPE are ideal for shared storage environments requiring high bandwidth for I/O intensive applications such as server virtualization, media streaming, backup and recovery, data warehousing, and online transaction processing (OLTP). All of these adapters also fully support HPE Network Orchestrator and HPE Smart SAN for 3PAR®.

These HPE FC adapters support StorFusion™ technology, which means they integrate with HPE B-Series and C-Series 16GFC, 32GFC, and 64GFC fabrics to address the needs of IT organizations that require reliability, security, and guaranteed network performance. Key benefits of StorFusion technology include rapid deployment and orchestration, advanced diagnostics, and improved resiliency and quality of service (QoS).

NVMe® Over Fibre Channel (FC-NVME)

Workloads that demand higher throughput, IOPS, and lower latency are moving to flash. The NVMe protocol has been designed from the ground up for flash and features deep parallelism, random access, and flash access over PCI Express® (PCIe®) to maximize bandwidth.

NVMe works best when coupled with a network that can provide lossless, low-latency, and high-performing transport. FC-NVMe extends these benefits over a Fibre Channel fabric.

The HPE Fibre Channel Adapters support low-latency access to scale out with full support for the FC-NVMe-2 protocol. The HPE Fibre Channel Adapters can simultaneously support FC-NVMe and FCP-SCSI storage traffic on the same physical port, enabling customers to migrate to NVMe at their own pace.

The HPE Fibre Channel Adapters bring the best of both worlds by offering up to 2 million IOPS and line rate 64GFC performance, while delivering low-latency access to NVMe and SCSI storage over a Fibre Channel network.

Reliability

Per Port Functionality	Marvell	Comp.
Independent CPU	✓	✗
Isolated Memory	✓	✗
Independent Firmware Image	✓	✗

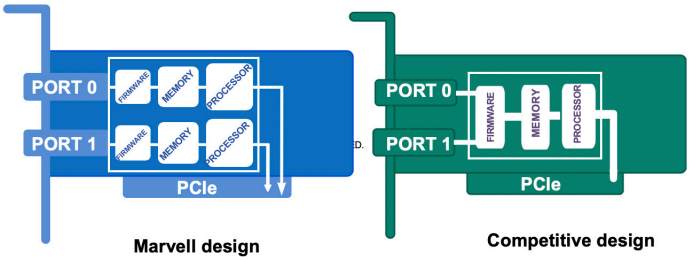


Figure 1. Marvell Design Provides Reliable Full-port Isolation

Marvell QLogic FC Adapters are legendary for reliability, ease of use, and interoperability. All HPE-branded Marvell QLogic adapters offer full port isolation for enterprise-class reliability (Figure 1).

In addition, a single common driver per OS for multiple generations of FC Adapters (64GFC, 32GFC, 16GFC, 8GFC, and 4GFC) simplifies deployment and upgrading existing FC infrastructure. Marvell drivers are supported across all major OSes and hypervisors.

To augment new deployments with faster and lower latency NVMe storage, concurrent FC-NVMe (NVMe over Fabrics support for Fibre Channel) is supported on 16GFC, 32GFC, and 64GFC adapters (see Table 1).

Marvell Universal SAN Congestion Mitigation Technology (USCM)

Implementing industry standard Fabric Performance Impact Notifications (FPINs), HPE Fibre Channel Adapters with USCM Technology work both independently and in coordination with Brocade® and Cisco® FC fabrics to avoid SAN congestion by enabling congestion detection, notification, and mitigation.

Firmware Integrity Protection With Hardware Root of Trust

Security threats continue to evolve and increase, driving Chief Information Officers towards securing the server all the way down to the firmware at the lowest layers of the server platform, where attacks are the most difficult to detect. To address this issue, select HPE Fibre Channel Adapters incorporate a hardware RoT that prevents malicious firmware from hijacking the FC HBA. HPE Fibre Channel Adapters with RoT enable both integrity and authenticity during adapter firmware updates by both validating firmware embedded signatures with hardware embedded keys to ensure that only trusted firmware executes, and protecting firmware updates that are applied over public networks.

Table 1. HPE FC Adapters from Marvell

	SN1100Q	SN1610Q	SN1700Q	HPE Synergy 5830C
Physical Specifications				
Port Count	1/2	1/2	1/2	2
Port Connector	SFP+	SFP+	SFP+	N/A
Host Bus Interface Specifications				
Bus Type	PCIe 3.0, x8	PCIe 4.0, x8	PCIe 4.0, x8	PCIe 3.0, x8
Data Path	FC	FC	FC	FC
Port Speed	16GFC	32GFC	64GFC	32GFC
FC Specifications				
Auto-negotiation	16/8/4GFC	32/16/8GFC	64/32/16GFC	32/16/8GFC
IOPS (per port)	650,000	1,000,000	1,000,000	650,000
Topology	FC-AL, FC-AL-2, point to point, switched fabric			
Protocols	FCP-3-SCSI, FC-Tape (FCP-2), FC-NVMe™ over Fabrics			
Advanced Features				
HPE Smart SAN-optimized Support	D_Port, FC ping, FC traceroute, enhanced FDMI, RDP, LCB, FEC, CS_CTL, FA-WWN, F-BLD, BB-CR			
Virtualization	VM-ID and Tagless VM-ID[1]			
Universal SAN Congestion Mitigation (USCM)	FPIN			
Support and Management				
Management	HPE SIM[2], HPE SUM[3], QCC[4]			
Secure FW Update with Silicon RoT	N/A	Yes	Yes	N/A
OS Support[5]	Microsoft Windows, RHEL, SLES, Oracle UEK, VMware, Citrix XenServer	Microsoft Windows, RHEL, SLES, VMware	Microsoft Windows, RHEL, SLES, VMware	Microsoft Windows, RHEL, SLES, VMware
Server Support	ProLiant/Apollo/Integrity Gen10/Gen10 Plus	ProLiant/Apollo/Integrity Gen10 Plus/Gen11	ProLiant/Apollo/Integrity Gen11	HPE Synergy Gen10, Gen10 Plus
Ordering Information				
Part Number	P9D93A/P9D94A	R2E08A/R2E09A	R7N86A/R7N87A	777456-B21

1. Brocade FC switches only for tagless VM-ID
2. SIM = System Insight Manager
3. SUM = Smart Update Manager
4. QCC = QConvergeConsole® management tools: VMware vSphere GUI QCC plug-in, VMware ESX CLI QCC plug-in, Linux/VMware/Windows PowerKit CLI QCC extensions, Windows Admin Center QCC extensions, and Linux/Windows QCC CLI). Available from the download pages on www.marvell.com.
5. For more Linux OS support and certification information, see HPE's Single Point of Connectivity Knowledge (SPOCK) Web site, www.hpe.com/storage/spock

Resources

See the following Web site for more information:

www.marvell.com/hpe

For questions or enquiries, e-mail hpesolutions@marvell.com

MARVELL

To deliver the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies over 25 years, we move, store, process and secure the world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better.

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