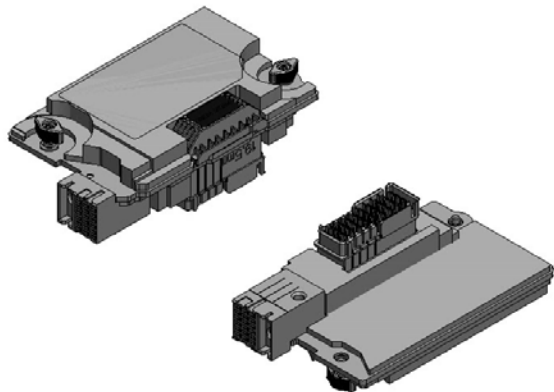


Overview

HPE Synergy 3820C 10/20Gb Converged Network Adapter

The HPE Synergy 3820C 10/20Gb Converged Network Adapter is a key element in HPE composable fabric connecting pools of compute resources to networks with reliable, high-performing converged 10 or 20Gb Ethernet connectivity. With Flex-20 Technology, the Synergy 3820C converges Ethernet, iSCSI and FCoE onto a single connection simplifying hardware and reducing Costs. Each adapter replaces a 10 Gb NIC and 8 Gb Fibre Channel HBA simplifying I/O hardware by 50% and reducing costs up To 60%. The Synergy 3820C is an ideal choice for any virtualized or converged data center.

Provisioning and updating Synergy 3820C are simple, reliable and fast using HPE Synergy's software-defined template-driven, frictionless operation. The HPE Synergy Composer automatically delivers proper firmware and driver coordination including staging updates for execution to avoid workload disruption.



HPE Synergy 3820C 10/20Gb Converged Network Adapter

Models

HPE Synergy 3820C 10/20Gb Converged Network Adapter

NOTE: The HPE 3820C requires a minimum of 2 GB of server memory.

NOTE: The HPE 3820C supports linking at 10000Mbps when not connected to a Flex-20 device.

Kit Contents

- HPE Synergy 3820C 10/20Gb Converged Network Adapter
- Quick install card
- Product warranty statement

Compatibility

HPE ProLiant Server Support

- HPE Synergy 480 Gen9 Configure-to-order Compute Module
 - HPE Synergy 480 Gen9 Configure-to-order w/o Drive Bays Compute Module
 - HPE Synergy 480 Gen9 Configure-to-order Expanded Storage Compute Module
 - HPE Synergy 660 Gen9 Configure-to-order SAS Compute Module
 - HPE Synergy 660 Gen9 Configure-to-order SATA Compute Module
 - HPE Synergy 660 Gen9 Configure-to-order Expanded Storage Compute Module
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Supported Interconnect Modules

- HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy
- HPE Synergy 40G F8 Switch Module
- HPE Synergy 20Gb Interconnect Link Module
- HPE Synergy 10Gb Interconnect Link Module
- HPE Synergy 10/40Gb Pass Thru Module

Standard Features

Product Features

- Delivers flexibility to compose multiple network flows including Ethernet, DPDK and FCoE or iSCSI within each connection
- Full hardware offload of FCoE and iSCSI storage protocol processing for highest performance converged Ethernet data and storage networks.
- Flex-20 Technology allows you to fine tune bandwidth for up to four partitioned FlexNIC's and FlexHBA's to optimize connectivity for different application needs. From 100Mb/s to 20Gb/s up to four "Physical Function" NICs per port, in increments of 100Mb/s for NIC. The combined bandwidth of NICs cannot exceed port bandwidth i.e. 20 Gb.
- A single Type C mezzanine form factor provides flexible network and storage I/O for any HPE Synergy Compute Module.
- Provides up to 80 Gb/s of converged bi-directional Ethernet bandwidth
- Industry-leading throughput and latency performance
- Supports Tunnel Offload with NVGRE and VxLAN
- Hardware acceleration and offloads for stateless TCP/IP, TCP Offload Engine (TOE)
- Orchestrates reliable adapter firmware updates with an entire HPE Synergy infrastructure from a single tool, HPE Synergy Composer.
- Integrated PHY and MAC
- Support for Preboot eXecution Environment (PXE)
- Support for SR-IOV (Windows, Linux, VMware)
- Support for Network Partitioning (NPAR) when using Pass-thru modules.

Dual-port 20 Gigabit Ethernet Throughput (theoretical bandwidth) The HPE 3820C adapter delivers 40,000 Mbps full duplex Ethernet transfer rate per port (80 Gbps aggregate full duplex), providing the network performance needed to improve response times and alleviate bottlenecks that impact performance of next generation data centers. 20Gb Ethernet bandwidth is ideal for high performance computing, database clusters and virtualization.

20G Ethernet Module for HPE Synergy Composable Fabric Evolve 20Gb at your own speed! When paired with the HPE Virtual Connect SE 40Gb F8 Module for HPE Synergy, take advantage of four Flex NICs, which are PCI Physical Function devices that are OS/ Hypervisor independent. Each physical function is recognized as an individual NIC and speeds can be set for each NIC from 100Mb to 20Gb in increments of 100Mb. Storage offload functionality allows the 2nd function of either port to be configured as either an iSCSI or FCoE adapter. Ideal for virtualized server environment, especially for dedicated bandwidth application like virtual machine migration from one physical server to another physical server.

Jumbo Frames The HPE 3820C adapter supports jumbo frames (also known as extended frames), permitting up to a 9K byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over 5X the size of a standard 1500-byte Ethernet frame. With jumbo frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.

MSI and MSI-X Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

802.1p QoS Tagging IEEE quality of service (QoS) 802.1p tagging allows the adapter to mark or tag frames with a priority level across a QoS-aware network for improved traffic flow.

802.1Q VLANs IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HPE 3820C to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance.

Standard Features

VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance.

TCP/IP Stateless Offloading

TCP, IP, UDP checksum offload, Large Send Offload (LSO), TCP, Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

Tunnel Offload

Minimizes the impact of overlay networking on host performance with tunnel offload support for VXLAN and NVGRE. By offloading packet processing to adapters, customers can use overlay networking to increase VM migration flexibility and network scale with minimal impact to performance. HPE Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption. NVGRE tunnel offload supports Microsoft OS environments and VxLAN supports select VMware and Linux (RHEL and SUSE) environments.

TOE

TCP/IP Offload Engine (TOE) shifts the processing of data in the TCP protocol stack from the server CPU to the adapter's processor, freeing server CPU cycles for other operations.

Single-Root I/O Virtualization

Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device is capable of SR-IOV, and requires Server BIOS support, controller firmware, and OS support.

Optimized for Virtualization

I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads

HPE Sea of Sensors 3D

Support for the HPE Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling.

RDMA

Not Supported

NPAR

When connected to HPE Synergy 10/40Gb Pass Thru Module, allows administrators to configure a 10Gb port as four separate partitions or physical functions. Each PCI function is associated with a different virtual NIC. To the OS and the network, each physical function appears as a separate NIC port.

FCoE

The HPE 3820C supports accelerated FCoE.

Ease of Deployment and Management

PXE Boot Support

The HPE 3820C adapter supports the Preboot eXecution Environment (PXE) allows the server to boot over the network and download software residing in the network.

Compatible with Type C and D Mezzanine Slots

The HPE 3820C adapter is compatible with Type C and D mezzanine slots for greater deployment versatility

Standard Features

Network Adapter Teaming

The HPE 3820C adapter support for NIC teaming helps IT administrators increase network fault tolerance and improve workload balance. These capabilities optimize availability, improve performance and help reduce costs.

Management Support

The HPE 3820C adapter can be administered from HPE Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HPE 3820C adapter can also be managed by other applications with SNMP support.

Warranty

Hewlett Packard Enterprise branded hardware options qualified for HPE Synergy Compute Modules are covered by a global limited warranty and supported by Hewlett Packard Enterprise Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners. The Hewlett Packard Enterprise branded hardware option diagnostic support and repair is available for one year from date of purchase, or the length of the server they are attached to, whichever is greater. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HPE Support Services or customized service agreements.

Additional information regarding worldwide limited warranty and technical support is available at:
<http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html>

Service and Support

Service and Support HPE Technology Services offers you a rich portfolio of consulting and support services designed to add value to our core products and solutions. We have the know-how and experience to put 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 help optimize your enterprise.

Choose from services aligned to our product offerings and lifecycle. From proactive onsite services to innovative support when your products are connected to Hewlett Packard Enterprise, you choose the precise level of attention and support your business demands.

HPE Technology Services for HPE Synergy

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability. Connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Support Services

HPE support services offer complete care and support expertise with committed response choices that are designed to meet your IT and business needs.

HPE Foundation Care services offer scalable reactive support-packages for HPE Synergy and software. You choose the type and level of service that is most suitable for your IT and business needs.

HPE Proactive Care keeps your system stable and reliable helping to prevent problems and reduce outages through proactive service management and enhanced technical response.

NOTE: This option is covered under the HPE Support Service(s) applied to the main product. No separate HPE Support Service(s) need to be purchased.

Advise, transform, integrate, support, automate, and flex

HPE Technology Services helps you get the most out of what you have today and transition to HPE Synergy, a composable infrastructure, at your pace and from wherever you are on the journey.

Start with the HPE Transformation Workshop to ensure that your business and IT organizations collaborate, define the topline strategy for composable, software-defined, cloud-ready infrastructure and kick-start your projects confidently. This workshop clarifies your business requirements and the issues that IT and operations teams must resolve in order to meet these requirements. A detailed executive briefing or high-level report summarizes the strategies, high-level plan and functional requirements.

HPE Modernization and Migration Services helps you choose the right platform for the right workload at the right cost and evolve your IT infrastructure, processes and organization taking advantage of “on-hybrid infrastructure” innovations such as composable, converged, software-defined, technologies. Hewlett Packard Enterprise experts advise, transform, integrate and implement for platform refresh, datacenter consolidation virtualization, migration and automation projects.

HPE Flexible Capacity is a pay per use model for on premise infrastructure. This offers needed HPE Synergy capacity in the datacenter, plus a buffer of additional capacity. As HPE Synergy will be a dynamic environment, this provides enough room to grow your environment, but only pay for actual metered use. Technology transitions and refresh can be built in, infrastructure and services are billed monthly, enabling you to align costs to business use.

HPE Datacenter Care-Infrastructure Automation (DC-IA) is an extension to HPE Datacenter Care and delivers enterprise-grade support, advice, guidance and best practices for infrastructure automation. The service also includes Enterprise editions of automation tools including Enterprise Chef and selected others. The DC-IA Center of Excellence (CoE) is staffed with highly trained experts who have specific expertise on integrating Chef with HPE OneView.

Technical Specifications

Deploy and integrate

HPE Synergy First Frame Installation and Startup - Provides for hardware installation (HPE Synergy compute modules, Storage Modules, Virtual Connect modules, Interconnect Link Modules, Fibre Channel Modules, Frame Link Modules, and HPE Synergy D3940 Storage Modules) and software startup for the first frame of your HPE Synergy deployment. Additional frames can be added using the HPE Synergy Additional Frame Installation and Startup Service.

HPE Synergy Additional Frame Installation and Startup Service - Add additional frames to your HPE Synergy First Frame Startup service or expand your existing HPE Synergy Infrastructure.

HPE Education

Training your IT staff is critical to help drive the value of HPE Synergy with increased efficiencies and better business outcomes. Training is key to the transformation and management of HPE Synergy.

Parts and Materials

Hewlett Packard Enterprise 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.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Technical Specifications

General Specifications	Network processor	QLogic BCM 57840S with integrated MAC/PHY	
	Data rate	Two ports, each at 40 Gbps full duplex; 80 Gbps aggregate full duplex theoretical bandwidth.	
	Onboard memory	900MB (distributed memory)	
	Bus type	PCI Express v3.0 (Gen 3) x8	
	Form factor	The HPE 3820C is a Type C mezzanine adapter	
	IEEE Compliance	802.3, 802.3ab, 802.3u, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.3ap	
Power and Environmental Specifications	Operating Temperature	0°C to 55°C / 32°F to 131°F	
	Humidity	10% to 90% non-condensing	
	Power requirement	max<12W	
	Emissions classification	FCC Class A	
	Agency approvals	USA: FCC Part 15 Class A Canada: ICES---3, Issue 4 Japan: VCCI V3 (2010.04) Class A International: EN55022:2006 + A1:2007 Class A International: EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008 Taiwan: BSMI, CNS13438 (2006) Class A Australia/New Zealand (AS/NZS): EN55022:2006+A12007 class A Korea: KN22 Class A, KN24	
	RoHS Compliance	6 of 6	
	Safety	UL Mark (USA and Canada) CE Mark EN 60590	
Operating System Support	Microsoft:	Microsoft Windows Server 2012 and 2012 R2 Microsoft Hyper-V Server 2012 and 2012 R2	
	Linux:	Red Hat Enterprise Linux x64 6.7, 6.8 Red Hat Enterprise Linux x64 7.2 SUSE Linux Enterprise Server 11SP4 x64 SUSE Linux Enterprise Server 12 & 12SP1 x64 Ubuntu 14.04.3 (only supported with HPE Synergy 480 Gen9 Compute Module)	
	Virtualization:	Citrix XenServer 7.0 (only supported with HPE Synergy 480 Gen9 Compute Module) VMware ESXi 5.5 U3, 6.0 U1	
	NOTE:	For more operating system support & certification information, please visit: http://h10018.www1.hp.com/wwsolutions/index.html .	

Environment-friendly Products and Approach

End-of-life Management and Recycling

Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www.hp.com/go/green>. To recycle your product,

Technical Specifications

please go to: <http://www.hp.com/go/green> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www.hp.com/go/green>. These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
17-Dec-2015	From Version 1 to 2	Changed	Sections were updated.
1-Dec-2015	Version 1	Created	New QuickSpecs



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