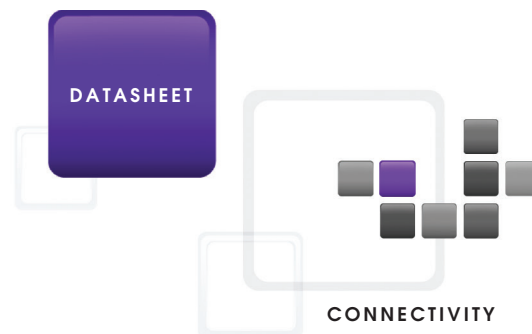




## Dual Port 10GbE Mezzanine FlexFabric Adapters

HP NC551m FlexFabric Adapter for HP ProLiant BladeSystem servers  
HP NC553m FlexFabric Adapter for HP ProLiant BladeSystem servers



### SIMPLIFIED

### NETWORKING,

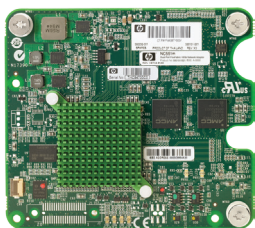
### TRUSTED SAN

### INTEROPERABILITY

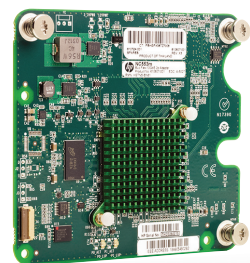
### AND INCREASED

### BUSINESS

### AGILITY



HP NC551m



HP NC553m

### Overview

The HP NC551m and NC553m 10Gb Ethernet (10GbE) Mezzanine FlexFabric Adapters are based on the Emulex OneConnect™ Universal Converged Network Adapter (UCNA) technology and supported with specific models of HP c-Class ProLiant BladeSystem servers.

The HP NC551m and NC553m adapters support Transmission Control Protocol/Internet Protocol (TCP/IP) and Fibre Channel over Ethernet (FCoE) or accelerated iSCSI connectivity concurrently with high-performance protocol offloads that optimize server efficiency and maximize server virtualization ratios.

Emulex OneConnect UCNA technology fully supports HP's FlexFabric Converged Infrastructure, a next-generation, highly scalable data center fabric architecture and a technology layer in the HP Converged Infrastructure architecture. The combination of HP ProLiant G6 and G7 server blades, Emulex UCNA technology and the new HP Virtual Connect FlexFabric module simplifies, consolidates and virtualizes the server edge for HP BladeSystem customers.

### Optimized Network Connectivity

**Lower cost**—HP FlexFabric adapters can save up to 98% on adapter cards, switch ports and cables needed to support network and storage traffic.

**Lower power and cooling**—HP FlexFabric adapters can reduce the number of adapter cards and switches, resulting in savings up to 40% for power and cooling.

**Support for converged networks with HP Virtual Connect**—HP Virtual Connect provisions Local Area Network (LAN) and Storage Area Network (SAN) connectivity for BladeSystem server blades through administration of Media Access Control (MAC) and World Wide Port Names (WWPN) addresses. This allows server administrators to independently manage blade servers and their connectivity, maintaining high-availability connections and securely administering MAC addresses and WWPNs for each server.

**Support for HP Virtual Connect Flex-10**—The HP NC551m and NC553m also support Virtual Connect Flex-10 that allows each 10Gb port to be divided into four physical NICs to optimize bandwidth allocation for virtualized servers.

### Key Features

#### One platform for network and storage connection

- Simplifies I/O hardware choices for IT managers

#### Multiple protocol offloads for optimum server efficiency

- Stateless TCP/IP with Flex-10 support
- TCP Offload Engine (TOE)
- FCoE or accelerated iSCSI
- Provides (up to) eight connections to network and storage with HP Virtual Connect modules

#### Superior performance

- Full 20Gb/s bidirectional Ethernet bandwidth per port
- Up to 800K I/Os per second (IOPS) for FCoE

#### Energy-efficient design

- Industry-leading performance per watt
- Complements data center "green" initiatives

#### Easy to deploy and manage

- One management console for network and storage adapters
- HP Insight Control suite with enhanced Integrated Lights-Out 3 (iLO 3) remote management
- Centralized enterprise I/O management with Emulex OneCommand™ Manager
- Common drivers and management with HP NC551i and NC553i Integrated FlexFabric Adapters

### Key Benefits

#### Optimized for convergence

- Maximizes I/O consolidation with high-performance 10GbE ports
- One network and management infrastructure reduces capital (CapEx) and operating expenses (OpEx)
- Leverages existing IT investments

#### Enterprise-ready

- Hardware parity, CRC, ECC and other advanced error checking
- Backed by field-proven HP and Emulex reliability and support



## Dual Port 10GbE Mezzanine

# FlexFabric Adapters for HP ProLiant BladeSystem Servers

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## SPECIFICATIONS

### Simplified Management

**OneCommand Manager application**—The OneCommand Manager application provides centralized management of HP Storageworks and FlexFabric CNAs and Fibre Channel (FC) HBAs from Emulex throughout the data center from a centralized management console. The OneCommand Manager application provides a graphical user interface (GUI) and a scriptable command line interface (CLI) to optimize administration efficiency.

### Highest Performance and Reliability

**Enterprise-ready**—Leveraging ten generations of advanced, field-proven FC HBA technology, HP FlexFabric CNAs are based on the Emulex OneConnect architecture and meet the robust interoperability and reliability requirements of corporate data centers.

**Advanced error checking**—End-to-end data protection with hardware parity, CRC, ECC and other advanced error checking and correcting ensure that data is safe from corruption.

### Controller

- NC551m: BladeEngine™ 2 (BE2)
- NC553m: BladeEngine™ 3 (BE3)

### Standards

- ANSI INCITS T11 FC-BB-5 2.0, FC-PI-2, FC-GS-4, FC-TAPE, and FCP-3
- PCI Express base spec 2.0 PCI Bus Power Management Interface, rev. 1.2, Advanced Error Reporting (AER)
- IEEE 802.3ae (10GBASE Ethernet Ports)
- IEEE 802.1q (Virtual LANs)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)
- IEEE 802.1p (Quality/Class of Service)
- IEEE 802.1Qaz (Enhanced Transmission Selection)
- IEEE 802.1Qaz (Data Center Bridging Capabilities Exchange)
- IEEE 802.1Qbb (Priority-based Flow Control)
- IEEE 802.1ab (Link Layer Discovery Protocol)
- PHP hot plug-hot swap

### Architecture

- Dual-channel, 10Gb/s Ethernet link speed
- PCIe Express 2.0 (x8, 5GT/s), MSI-X support
- Integrated data buffer and code space memory

### FCoE Features

- Common driver for HP FCoE CNA and Fibre Channel HBAs from Emulex
- 64 N\_Port ID Virtualization (NPIV) interfaces (total for adapter)
- Support for FIP and FCoE Ether types
- Fabric Provided MAC Addressing (FPMA) support
- 1024 concurrent port logins (RPIs)
- 1024 active exchanges (XRIs) per port

### Ethernet Features

- IPv4/IPv6 TCP, UDP checksum offload; Large Send Offload (LSO); Large Receive Offload; Receive Side Scaling (RSS); IPv4 TCP Chimney Offload
- VLAN insertion and extraction
- Jumbo frames up to 9000 bytes (8000 bytes for ports using FCoE) for NC551m
- Preboot eXecution Environment (PXE) 2.0 network boot support
- Interrupt coalescing
- Load balancing and failover support including adapter fault tolerance (AFT), switch fault tolerance (SFT), adaptive load balancing (ALB), teaming support and IEEE 802.3ad

### Accelerated iSCSI Features

- Target discovery methods
- Authentication modes
- INT 13 Boot

### Comprehensive OS Support

- Microsoft Windows Server
- VMware ESX
- Red Hat Enterprise Linux Server
- Novell SUSE Linux Enterprise Server

### HP Virtual Connect Flex-10 Support

- Up to 4 physical function NICs per port
- 100Mb/s to 10Gb/s speeds

### HP ProLiant BladeSystem Server Support

#### HP NC551m:

ProLiant Server Blades

- BL2x220c G6
- BL280c G6
- BL460c G6
- BL465c G6
- BL490c G6
- BL495c G6
- BL685c G6
- BL465c G7
- BL685c G7

#### HP NC553m:

ProLiant Server Blades

- BL2x220c G6
- BL280c G6
- BL460c G6
- BL465c G6
- BL490c G6
- BL495c G6
- BL685c G6
- BL460c G7
- BL465c G7
- BL490c G7
- BL620c G7
- BL680c G7
- BL685c G7

### Interconnect Compatibility

- HP 10GbE Flex-10 and FlexFabric Virtual Connect modules
- HP ProCurve 6120XG Blade Switch
- HP 10GbE Pass-Thru Module
- All currently shipping Virtual Connect, switch, and pass thru modules with 1Gb downlinks

### Ordering Information

HP NC551m:

- HP Part Number: 580151-B21

HP NC553m:

- HP Part Number 613431-B21



OneConnect™ OneCommand™

**World Headquarters** 3333 Susan Street, Costa Mesa, CA 92626 +1 714 662 5600  
**Wokingham, UK** +44 (0) 118 977 2929 | **Munich, Germany** +49 (0) 89 97007 177  
**Paris, France** +33 (0) 158 580 022 | **Beijing, China** +86 10 68499547  
**Tokyo, Japan** +81 3 5325 3261 | **Bangalore, India** +91 80 40156789

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