

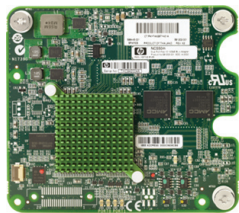


# Dual Port 10GbE Mezzanine Flex-10 Adapters

HP NC550m Flex-10 Adapter (HP Part Number 581204-B21)

HP NC552m Flex-10 Adapter (HP Part Number 610609-B21)

**SIMPLIFIED  
NETWORKING,  
TRUSTED SAN  
INTEROPERABILITY  
AND INCREASED  
BUSINESS  
AGILITY**



## Optimized Network Connectivity

The HP NC550m and NC552m Flex-10 Adapters are dual-port high-performance, 10Gb Ethernet (10GbE) mezzanine adapters for HP BladeSystem servers. Protocol offload for stateless TCP/IP and TCP Chimney provide maximum bandwidth with minimum use of CPU resources.

### Emulex OneConnect Universal CNA platform

HP NC550m and NC552m Flex-10 Adapters are based on the Emulex OneConnect Universal Converged Network Adapter (UCNA) architecture which delivers industry-leading performance with a single-chip architecture and provides enhanced functionality and flexibility over conventional 10GbE NICs, including:

- Support for HP Virtual Connect Flex-10 that allows each 10GbE network port to be configured as four individual NIC devices, or FlexNICs. Bandwidth is allocated to each FlexNIC, enabling optimum performance and flexibility with virtualized servers and servers that require managed I/O for individual applications.
- Industry-leading throughput based on Ixia IxChariot performance tests. Near 10Gb/s Ethernet line rates with more message sizes than the competition.<sup>1</sup>
- Optimized for virtualized servers, HP NC550m and NC552m Flex-10 Adapters complement HP's FlexFabric strategy. HP FlexFabric is a next-generation, highly scalable data center fabric architecture and a technology layer in the HP Converged Infrastructure architecture.

## Key Features

### Superior performance

- TCIP/IP stateless offloads
- TCP Offload Engine (TOE) support

### Energy-efficient design

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

### Flexible Ethernet Connectivity

- Virtual port bandwidth allocation for up to 8 FlexNICs in 100Mb/s increment

## Key Benefits

### Optimized for convergence

- Maximizes I/O consolidation with high-performance 10GbE ports
- One network infrastructure reduces CapEx
- One management console reduces OpEx
- Leverages existing IT investments

### Optimized for HP's FlexFabric strategy

- Provides the connectivity and scalability required for HP servers
- Enables converged storage and networking
- Delivers breakthrough cost reductions

### Enterprise-ready

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



OneConnect™

<sup>1</sup> IT Brand Pulse Unified Data Center Networking Test Report, January 2010

# Dual Port 10GbE Mezzanine Flex-10 Adapters

## Higher server virtualization ratios

Due to their compact design, HP BladeSystem server blades have limited capacity to add network adapters and increase I/O bandwidth, which can be a critical resource for virtualized servers. HP NC550m and NC552m Flex-10 Adapters deliver a full 40Gb/s of bandwidth (two 10Gb/s bidirectional ports) to support more virtual machines per server.

The HP NC550m and NC552m Flex-10 Adapters also provide hardware off-load and acceleration for stateless TCP/IP and TCP Offload Engine (TOE) which minimizes use of CPU and memory resources to further enable more virtual machines per server.

## Leverage Multi-Core Intel Xeon CPUs

The HP NC550m Flex-10 Adapter leverages new features of Xeon multi-core processors beginning with the 5500 series, including MSI-X, QPI, PCI-Express 2.0, HTT and VT-d. Protocol offload technology maximizes I/O per CPU to reduce the number of servers in the data center and lower costs for power and cooling.

## Enable real world networks

The HP NC550m Flex-10 Adapter supports up to eight FlexNICs per adapter with existing HP Virtual Connect modules to enable network traffic segmentation and redundant connectivity for high availability. Due to the scalable number of FlexNICs per adapter, traditional NIC deployment models for IP LAN, VMotion LAN, NAS, management and backup can be supported with multiple FlexNICs.

## SPECIFICATIONS

### Controller

- NC550m: BladeEngine 2
- NC552m: BladeEngine 3

### Standards

- 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)
- 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

### 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
- 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

### Comprehensive OS Support

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

### HP ProLiant BladeSystem Server Support

- HP NC550m:
- BL680c G5
  - BL685c G5
  - BL280c G6
  - BL2x220c G6
  - BL460c G6
  - BL465c G6
  - BL490c G6
  - BL495c G6
  - BL685c G6
  - BL465c G7
  - BL685c G7

### HP ProLiant BladeSystem Server Support

- HP NC552m:
- BL2x220c G6
  - BL280c G6
  - BL460c G6
  - BL465c G6
  - BL490c G6
  - BL685c G6
  - BL460c G7
  - BL465c G7
  - BL490c G7
  - BL620c G7
  - BL680c G7
  - BL685c G7

### Physical Dimensions

- Supported on all ProLiant c-Class servers with type I mezzanine slots
- Up to three adapters per full height server, two per half height server

### Environmental Requirements

- Operating temperature: 0° to 55°C (32° to 131°F)
- Relative humidity: 10% to 90% non-condensing

### Agency Approvals

- Class 1 Laser Product per DHHS 21CFR (J) and EN60825-1
- UL recognized to UL 60950-1
- CUR recognized to CSA22.2, No. 60950-1-07
- Bauart-certified to EN60950-1
- FCC Rules, Part 15, Class A
- ICES-003, Class A
- EMC Directive 2004/108/EEC (CE Mark)
- EN55022, Class A
- EN55024
- Australian EMC Framework (C-Tick Mark)
- AS/NZS CISPR22, Class A
- VCCI (Japan), Class A
- KCC (Korea), Class A
- EU RoHS Compliant (Directive 2002/95/EC)

### Ordering Information

- HP NC550m:
- HP Part Number 581204-B21
- HP NC552m:
- HP Part Number 610609-B21

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