Emulex 10Gb Virtual Fabric Adapter for IBM System x

IBM System x at-a-glance guide

The Emulex 10Gb Virtual Fabric Adapter for IBM System x is a member of IBM's comprehensive networking portfolio of 1 Gb and 10 Gb Ethernet adapters and delivers industry-leading performance and scalability per watt, reducing requirements for power and cooling. Protocol offloads enable the efficient use of computing resources and the support of more virtual machines per CPU, and reduce the number of servers required to support data center demands. Furthermore, the capability to use fiber-optic or twin-ax copper cabling allows you to deploy the fabric of your choice.

Figure 1. Emulex 10Gb Virtual Fabric Adapter for IBM System x (with optional SFP+ transceivers installed)

Did you know

The Emulex 10Gb Virtual Fabric Adaper for IBM System x is based on the Emulex OneConnect Universal Converged Network Adapter (UCNA) platform and will include support for Fibre Channel over Ethernet (FCoE) as a future feature entitlement upgrade.

By using a common infrastructure for Ethernet and SANs, you can reduce capital expense for adapters, switches, and cables; and operational expense for power, cooling, and IT administration.

Part number information

Table 1. Ordering part number and feature code

Description	Part number	Feature code
Emulex 10Gb Virtual Fabric Adapter for IBM System x	49Y4250	5749

Note: This adapter is referred to in the product documentation as the Emulex OneConnect OCe10102 multi-protocol PCI Express Converged Network Adapter.

The part number includes the following items:

- One Emulex 10Gb Virtual Fabric Adapter with a 3U bracket attached
- 2U bracket
- Quick Install Guide
- Documentation CD
- Important Notices flyer

The adapter has two empty SFP+ cages that support either SFP+ SR transceivers or twin-ax direct-attached copper cables as listed in Table 2.

Table 2. Supported transceivers and direct-attach cables

Description	Part number	Feature code
IBM 10Gb SFP+ SR Optical Transceiver (BN-CKM-SP-SR)	44W4408	4942
IBM/BNT 10Gb SFP+ SR Optical Transceiver	46C3447	Not available
IBM/Brocade 10Gb SFP+ SR Optical Transceiver (IB-000180)	45W2411	2117
IBM/Brocade 10Gb SFP+ SR Optical Transceiver	49Y4216	0069
IBM/QLogic 10Gb SFP+ SR Optical Transceiver (SFP10-SR50-IBMX-BK)	49Y4218	0064
IBM Twinax Direct Attach Cable (DAC) - 1m	45W2398	2711
IBM Twinax Direct Attach Cable (DAC) - 3m	45W2408	2731
IBM Twinax Direct Attach Cable (DAC) - 5m	45W3039	2751

Features

The Emulex 10Gb Virtual Fabric Adapter has the following features:

- Dual-channel, 10 Gbps Ethernet controller
- Near line-rate 10 Gbps performance
- 2 SFP+ empty cages to support either SFP+ SR or twin-ax copper connections
  - SFP+ SR link is with SFP+ SR optical module with LC connectors
  - SFP+ twin-ax copper link is with SFP+ direct attached copper module/cable
- TCIP/IP stateless offloads
- TCP chimney offload

- Based on Emulex OneConnect technology and includes FCoE support as a future feature entitlement upgrade
- Hardware parity, CRC, ECC, and other advanced error checking
- PCI Express 2.0 x8 host interface
- Low-profile form-factor design
- IPv4/IPv6 TCP, UDP checksum offload
- VLAN insertion and extraction
- Support for jumbo frames up to 9000 bytes
- Preboot eXecutive Environment (PXE) 2.0 network boot support
- Interrupt coalescing
- Load balancing and failover support
- Deploy and manage this and other Emulex OneConnect-based adapters with OneCommand Manager

Standards supported

The following IEEE standards are supported:

- IEEE 802.3ae (10Gb/s Ethernet XAUI)
- IEEE 802.1q (VLAN)
- IEEE 802.1Qbb (Priority flow control)
- IEEE 802.1Qaz (ETS and Congestion Management)
- IEEE 802.1p (QoS/CoS)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3x (Flow Control)

Physical specifications

The adapter has the following physical specifications:

Height: 167 mm (6.60 in)
Width: 69 mm (2.71 in)
Depth: 17.3 mm (0.69 in)

Operating environment

This adapter is supported in the following environment:

- Temperature:
  - Operating: 0° to 55° C (32° to 131° F)
  - Non-operating: -40° to 70° C (-40° to 158° F)
- Humidity: 5 to 95%, non-condensing

Warranty

One-year limited warranty. When installed in a System x server, these cards assume your system's base warranty and any IBM ServicePac upgrade.

Supported servers

The Emulex 10Gb Virtual Fabric Adapter for IBM System x is supported in the IBM System x and iDataPlex servers listed in Table 3.

Table 3. Supported servers

Adapter	x3200 M2	x3200 M3	x3250 M2	x3250 M3	x3350	x3400	x3400 M2	x3455	x3500	x3500 M2	x3550	x3550 M2	x3650	x3650 M2	x3655	x3755	x3850 M2	x3950 M2	dx360 M2
Emulex 10Gb Virtual Fabric Adapter	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

See IBM ServerProven for the latest information on the System x servers that support this adapter: http://ibm.com/servers/eserver/serverproven/compat/us/

Popular configurations

This section illustrates how the Emulex 10Gb Virtual Fabric Adapter can be used in configurations.

Figure 2 shows Emulex 10Gb Virtual Fabric Adapters installed in a supported x3650 M2 server. The servers are connected to a 10Gb Ethernet network using a pair of 10Gb Ethernet switches.

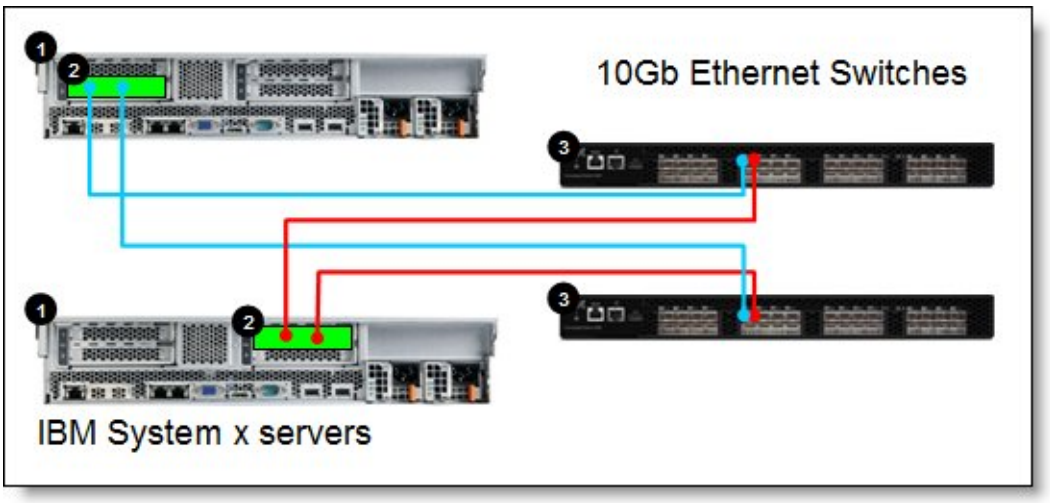

Figure 2. Popular configuration

The parts used are listed in Table 4.

Table 4. Components used with the Emulex 10Gb Virtual Fabric Adapter (Figure 2)

Diagram reference	Part number/machine type	Description	Quantity
1	Varies	x3650 M2 or other supported server (See Table 3)	2
2	49Y4250	Emulex 10Gb Virtual Fabric Adapter	2
2	Varies	Supported 10Gb SFP+ Transceivers or direct-attach cables (See Table 2)	4
3	Varies	10Gb Ethernet Switch	2

Note: If SFP+ transceivers are used, this configuration also requires fiber optic cabling between the servers and the switches.

Supported operating systems

The Emulex 10Gb Virtual Fabric Adapter for IBM System x supports the following operating systems:

- Microsoft Windows Server 2003, Web Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter Edition
- Microsoft Windows Server 2003/2003 R2, Datacenter x64 Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise Edition
- Microsoft Windows Server 2003/2003 R2, Enterprise x64 Edition
- Microsoft Windows Server 2003/2003 R2, Standard Edition

- Microsoft Windows Server 2003/2003 R2, Standard x64 Edition
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Small Business Server 2003/2003 R2 Premium Edition
- Microsoft Windows Small Business Server 2003/2003 R2 Standard Edition
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- SUSE LINUX Enterprise Server 10 for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 for x86
- SUSE LINUX Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE LINUX Enterprise Server 10 with Xen for x86
- SUSE LINUX Enterprise Server 11 for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for x86
- SUSE LINUX Enterprise Server 11 with Xen for AMD64/EM64T
- VMware ESX 4.0
- VMware ESXi 4.0

See IBM ServerProven at http://ibm.com/servers/eserver/serverproven/compat/us/ for the latest information about the specific versions and service packs supported.

Related publications

For more information refer to these documents:

- Emulex 10Gb Virtual Fabric Adapter for IBM System x Installation and User's Guide
  http://www.ibm.com/support
- 10Gb CNAs for IBM System x product page
  http://ibm.com/systems/storage/product/systemx/cna
- IBM US Announcement Letter
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS
- IBM System x Configuration and Options Guide
  http://www.ibm.com/support/docview.wss?uid=psg1SCOD-3ZVQ5W

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