

# IBM NetXtreme II 1000 Express Ethernet Adapters

## IBM System x at-a-glance guide

The NetXtreme II 1000 Express Quad Port Ethernet Adapter is a high performance PCI Express, quad-port, copper Gigabit Ethernet network adapter supporting both NIC/TOE and iSCSI over a single network connection. The NetXtreme II 1000 Express Quad Port Ethernet Adapter is the latest Ethernet switching option for the IBM System x and is part of the NetXtreme II family, which also comprises the single- and dual-port PCIe cards.

Figure 1 shows the NetXtreme II 1000 Express Quad Port Ethernet Adapter.

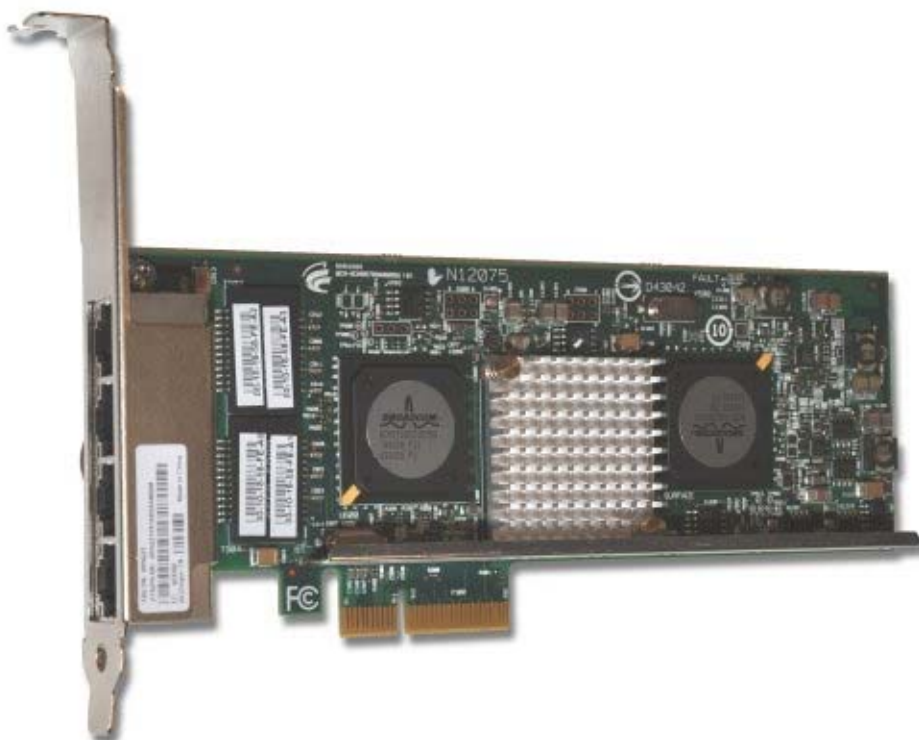


Figure 1. NetXtreme II 1000 Express Quad Port Ethernet Adapter

### Did You Know?

The NetXtreme II 1000 Express Quad Port Ethernet Adapter is an ideal way to implement a virtualization solution using your existing Gigabit Ethernet network. With four copper-based Gigabit ports on a single PCI Express 2.0 x4 interface, the adapter provides the density and capacity you need to support large numbers of virtualized systems on one server.

## Part number information

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
NetXtreme II 1000 Express Quad Port Ethernet Adapter	49Y4220	5766
NetXtreme II 1000 Express Dual Port Ethernet Adapter	42C1780	2995
NetXtreme II 1000 Express Single Port Ethernet Adapter	39Y6066	1485

The part numbers for the NetXtreme II adapters include the following items:

- One Ethernet adapter with standard (4.75 in) bracket
- Support CD
- Low profile (3.13 in) bracket
- Safety flyer

## Features and specifications

The adapters have the following features:

- One, two, or four 10/100/1000 copper ports with RJ45 for Cat 5E/6 cabling
- Half-length form factor
- TCP/IP Offload Engine (TOE) support standard
- iSCSI support standard on quad-port card, optional feature on dual-port card (requires the purchase of a software activation key, available 2Q/2011)

Table 2 compares the features of the three cards.

Table 2. Features

Feature	Quad-port adapter	Dual-port adapter	Single-port adapter
Part number	49Y4220	42C1780	39Y6066
Number of RJ45 ports	4	2	1
PCI Express	Yes	Yes	Yes
PCI Express 2.0	Yes	Yes	No
PCI Express lanes	x4	x4	x4
Chipset	Broadcom 5709C	Broadcom 5709C	Broadcom 5708C
TOE support	Yes	Yes	Yes
iSCSI support	Yes	Optional via key*	No
Wake on LAN	Yes (ports 0 and 1 only)	Yes (both ports)	Yes
Jumbo Frames support	Yes	Yes	Yes
Large Send Offload support	Yes	Yes	Yes
Form factor	Half-length low-profile	Half-length low-profile	Half-length low-profile

\* Support of iSCSI with the dual-port requires the purchase of a software activation key, available 4Q/2010

## Physical specifications

The NetXtreme II cards have the following physical specifications:

### NetXtreme II 1000 Express Quad Port Ethernet Adapter

- Length: 168 mm (6.6 in)
- Height: 64 mm (2.53 in)
- Depth: 19 mm (0.74 in)

### NetXtreme II 1000 Express Dual Port Ethernet Adapter

- Length: 118 mm (4.66 in)
- Height: 64 mm (2.53 in)
- Depth: 19 mm (0.74 in)

### NetXtreme II 1000 Express Single Port Ethernet Adapter

- Length: 149 mm (5.875 in)
- Height: 70 mm (2.75 in)
- Depth: 18 mm (0.70 in)

## Operating environment

The adapters are supported in the following environment:

### NetXtreme II 1000 Express Quad Port Ethernet Adapter

- Temperature:
  - Operating at 0 to 914 m (0 to 3,000 ft): 10° to 52°C (50° to 135°F)
  - Operating at 0 to 3000m (0 to 10,000 ft): 10° to 49°C (50° to 120°F)
  - Storage: -40° to 65°C (-40° to 149°F) at 0 to 12,000m (0 to 39,000 ft)
- Relative humidity:
  - Operating: 8% to 80% (relative, non-condensing)
  - Storage: 5% to 80% (relative, non-condensing)

### NetXtreme II 1000 Express Dual Port Ethernet Adapter

- Temperature: 0° to 55°C (32° to 131°F)
- Relative humidity: 10% to 90%

### NetXtreme II 1000 Express Single Port Ethernet Adapter

- Temperature: 0° to 55°C 32° to 131°F
- Relative humidity: 10% to 90%

## 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 NetXtreme II adapters are supported in the IBM System x servers identified in Table 3.

Table 3. Supported System x servers (Part 1)

Adapter	Part number	x3100 M3	x3200 M2	x3200 M3	x3250 M2	x3250 M3	x3350	x3400	x3400 M2	x3400 M3	x3455	x3500	x3500 M2	x3500 M3
Quad Port Adapter	49Y4220	N	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	Y
Dual Port Adapter	42C1780	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y
Single Port Adapter	39Y6066	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 3. Supported System x servers (Part 2)

Adapter	x3550	x3550 M2	x3550 M3	x3620 M3	x3630 M3	x3650	x3650 T	x3650 M2	x3650 M3	x3655	x3690 X5	x3755	x3755 M3	x3850 M2	x3950 M2	x3850 X5
Quad Port Adapter	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dual Port Adapter	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Single Port Adapter	Y	Y	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y

See IBM ServerProven for the latest information on the adapters supported by each System x server type:  
<http://ibm.com/servers/eserver/serverproven/compat/us/>.

## Connectors and LEDs

Figure 2 shows the LEDs on the NetXtreme II 1000 Express Single Port Ethernet Adapter.



Figure 2. Faceplate of the NetXtreme II 1000 Express Single Port Ethernet Adapter

The meanings of LEDs are shown in Table 4:

Table 4. LEDs on the NetXtreme II adapters

LED	Meaning
1000	On: A Gigabit Ethernet link has been established. Off: No Gigabit link; possible link at different speed, possible bad cable, bad connector, or configuration mismatch.
100	On: A 100 Mbps Ethernet link has been established. Off: No 100 Mbps link; possible link at different speed, possible bad cable, bad connector, or configuration mismatch.
10	On: A 10 Mbps Ethernet link has been established. Off: No 10 Mbps link; possible link at different speed, possible bad cable, bad connector, or configuration mismatch.
ACT	Activity of the Ethernet link. The rate of blinking indicates the level of activity.

## Supported operating systems

The NetXtreme II adapters support 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 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 AS for x86
- Red Hat Enterprise Linux 4 ES for AMD64/EM64T

- Red Hat Enterprise Linux 4 ES for x86
- Red Hat Enterprise Linux 4 WS/HPC for AMD64/EM64T
- Red Hat Enterprise Linux 4 WS/HPC for x86
- 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 3.5
- VMware ESX 4.0
- VMware ESX 4.1
- VMware ESXi 3.5
- VMware ESXi 4.0
- VMware ESXi 4.1

See IBM ServerProven for the latest information about the specific versions and service packs supported: <http://ibm.com/servers/eserver/serverproven/compat/us/>. Click **System x servers**, and then click **LAN** to see the support matrix. Click the check mark that is associated with the System x server in question to see the details of operating system support.

## Related publications

For more information, refer to the following resources:

- NetXtreme II Quick Installation Guide and User's Guide  
<http://www.ibm.com/support/docview.wss?uid=psg1MIGR-5081963>  
(Download the ISO file, burn to disc or unpack using 7zip or another tool, then open Manuals/English/index.htm)
- IBM US Announcement Letter for NetXtreme II 1000 Express Quad Port Ethernet Adapter  
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS110-041>
- IBM US Announcement Letter for NetXtreme II 1000 Express Dual Port Ethernet Adapter  
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS108-400>
- IBM US Announcement Letter for NetXtreme II 1000 Express Single Port Ethernet Adapter  
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS106-615>
- IBM System x Configuration and Options Guide  
<http://www.ibm.com/support/docview.wss?uid=psg1SCOD-3ZVQ5W>

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