

Broadcom NetXtreme Gigabit Ethernet Adapters

Product Guide

The Broadcom NetXtreme Gigabit Ethernet Adapters are a family of high performance PCI Express adapters. The adapters are available with either two ports or four ports and are supported on ThinkSystem and System x servers.

Figure 1 shows the Broadcom NetXtreme I Quad Port GbE Adapter.



Figure 1. Broadcom NetXtreme I Quad Port GbE Adapter

Did you know?

The NetXtreme 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

The following table lists the ordering information for the adapters.

Table 1. Ordering information

| Part number | Feature code | Description |
|---------------------|--------------|--|
| ThinkSystem options | | |
| 7ZT7A00482 | AUZX | Lenovo ThinkSystem NetXtreme PCIe 1Gb 2-Port RJ45 Ethernet Adapter By Broadcom |
| 7ZT7A00484 | AUZV | Lenovo ThinkSystem NetXtreme PCIe 1Gb 4-Port RJ45 Ethernet Adapter By Broadcom |
| System x options | | |
| 90Y9370 | A2V4 | Broadcom NetXtreme I Dual Port GbE Adapter |
| 90Y9352 | A2V3 | Broadcom NetXtreme I Quad Port GbE Adapter |
| 42C1780* | 2995 | Broadcom NetXtreme 2xGbE BaseT Adapter |
| 39Y6066* | 1485 | Broadcom NetXtreme 1xGbE BaseT Adapter |

* Withdrawn from marketing

The part numbers for the adapters include the following items:

- One Ethernet adapter with full-height (4.75-inch) bracket
- Low profile (3.13-inch) bracket
- Documentation 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
- Full line-rate performance across all ports
- Low-profile form factor - supported by the majority of System x and iDataPlex servers
- PCI Express 2.0 host interface (39Y6066 is PCI Express 1.1)
- Jumbo Frames support (9600 bytes frames)
- IEEE 802.1q VLAN support - provides enhanced network management and efficiency
- I/O virtualization (IOV) support for VMWare NetQueue and Microsoft VMQ - improves network performance in virtualized environments
- IEEE 802.3x flow control support
- Receive and transmit side scaling
- TCP, IP, and UDP checksum offload
- Message Signaled Interrupts (MSI) and MSI-X support - Maximizes server processing performance by reducing CPU overhead and lowering interrupt latency
- On-chip temperature monitor (NetXtreme I only)
- IEEE 802.3az Energy Efficient Ethernet (EEE) compliant - Reduces adapter power consumption by up to 42% through intelligent adaptive power management, adjusting power based on data traffic load. (NetXtreme I only)
- IEEE 802.3z (Clause 30) - Statistics for SNMP MIB II, Ethernet like MIB, and Ethernet MIB

(NetXtreme I only)

- IEEE 1588 Precision Time Control and 802.1AS time synchronization support - Provides greater accuracy of data packet delivery within the network (NetXtreme I only)
- Management using Broadcom Advanced Control Suite (BACS), Windows Management Instrumentation (WMI), and Broadcom Management API (BMAPI)

The following table compares the features of the cards.

Table 2. Features

| | ThinkSystem 4-port | ThinkSystem 2-port | NetXtreme I quad-port | NetXtreme I dual-port | NetXtreme 2xGbE* | NetXtreme 1xGbE* |
|--|---------------------------|---------------------------|------------------------------|------------------------------|-------------------------|-------------------------|
| Part number | 7ZT7A00484 | 7ZT7A00482 | 90Y9352 | 90Y9370 | 42C1780 | 39Y6066 |
| Chipset | BCM5719 | BCM5720 | BCM5719 | BCM5720 | BCM5709C | BCM5708C |
| RJ45 connectors | 4 | 2 | 4 | 2 | 2 | 1 |
| Host interface | PCIe 2.0 | PCIe 2.0 | PCIe 2.0 | PCIe 2.0 | PCIe 2.0 | PCIe 1.1 |
| PCIe Lanes | x4 | x1 | x4 | x1 | x4 | x4 |
| TOE support | No | No | No | No | Yes (both ports) | Yes |
| iSCSI offload | No (SW Initiator) | No (SW Initiator) | No (SW Initiator) | No (SW Initiator) | Yes | No (SW Initiator) |
| Stateless offloads | Yes | Yes | Yes | Yes | Yes | Yes |
| Jumbo Frames | Yes | Yes | Yes | Yes | Yes | Yes |
| IEEE 802.1Q VLAN support | Yes | Yes | Yes | Yes | Yes | Yes |
| PXE Boot | Yes | Yes | Yes | Yes | Yes | Yes |
| iSCSI Boot | Yes | Yes | Yes | Yes | Yes | Yes |
| NIC Teaming | Yes | Yes | Yes | Yes | Yes | Yes |
| On-chip temperature monitor | Yes | Yes | Yes | Yes | No | No |
| IEEE 802.3az (Energy Efficient Ethernet, EEE) | Yes | Yes | Yes | Yes | No | No |
| IEEE 1588/802.1AS (Precision Time Protocol, PTP) | Yes | Yes | Yes | Yes | No | No |
| VMware NetQueue & Microsoft VMQ | Yes | Yes | Yes | Yes | Yes | No |
| Statistics for SNMP MIB II | Yes | Yes | Yes | Yes | No | No |
| Form Factor | Low-profile | Low-profile | Low-profile | Low-profile | Low-profile | Low-profile |

* Withdrawn from marketing

Physical specifications

The adapters have the following physical specifications:

- Broadcom NetXtreme I Dual Port GbE Adapter and ThinkSystem 2-port adapter
 - Length: 109 mm (4.3")
 - Height: 69 mm (2.7")
 - Depth: 19 mm (0.74 in)
- Broadcom NetXtreme I Quad Port GbE Adapter and ThinkSystem 4-port adapter
 - Length: 132 mm (5.2")
 - Height: 69 mm (2.7")
 - Depth: 19 mm (0.74 in)
- Broadcom NetXtreme 2xGbE BaseT Adapter:
 - Length: 118 mm (4.66 in)
 - Height: 64 mm (2.53 in)
 - Depth: 19 mm (0.74 in)
- Broadcom NetXtreme 1xGbE BaseT Adapter:
 - Length: 149 mm (5.875 in)
 - Height: 70 mm (2.75 in)
 - Depth: 18 mm (0.70 in)

The following figure shows the Broadcom NetXtreme I Dual Port GbE Adapter



Figure 2. Broadcom NetXtreme I Dual Port GbE Adapter

Operating environment

The adapters are supported in the following environment:

ThinkSystem NetXtreme PCIe 1Gb 4-Port RJ45 Ethernet Adapter By Broadcom

ThinkSystem NetXtreme PCIe 1Gb 2-Port RJ45 Ethernet Adapter By Broadcom

Broadcom NetXtreme I Quad Port GbE Adapter:

Broadcom NetXtreme I Dual Port GbE Adapter:

- Temperature:
 - Operating at 0 to 914 m (0 to 3,000 ft): 10° to 35°C (50° to 95°F)
 - Operating at 914 m to 2133m (3,000 to 7,000 ft): 10° to 32°C (50° to 90°F)
- Relative humidity: 20% to 80% (non-condensing)

Broadcom NetXtreme 2xGbE BaseT Adapter:

Broadcom NetXtreme 1xGbE BaseT Adapter:

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

Warranty

One-year limited warranty. When installed in a Lenovo server, these cards assume the server's base warranty and any warranty upgrade.

Server support - ThinkSystem

The following table lists the ThinkSystem servers that are compatible.

Table 3. ThinkSystem server support

| Part number | Description | 2S Rack & Tower | | | | | | | | 4S Rack | | Dense/ Blade | | |
|-------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------|--------------|--------------|
| | | ST550 (7X09/7X10) | SR530 (7X07/7X08) | SR550 (7X03/7X04) | SR570 (7Y03/7Y04) | SR590 (7X98/7X99) | SR630 (7X01/7X02) | SR650 (7X05/7X06) | SR850 (7X18/7X19) | SR860 (7X69/7X70) | SR950 (7X11/12/13) | SD530 (7X21) | SN550 (7X16) | SN850 (7X15) |
| 7ZT7A00482 | ThinkSystem NetXtreme PCIe 1Gb 2-Port RJ45 Ethernet Adapter | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N | N |
| 7ZT7A00484 | ThinkSystem Broadcom NetXtreme PCIe 1Gb 4-Port RJ45 Ethernet Adapter | Y | Y | Y | Y | Y | Y | Y | Y | N | N | N | N | N |

Server support - System x

The adapters are supported in the servers identified in the following tables.

Support for System x and dense servers with Xeon E5/E7 v4 and E3 v5 processors

Table 4. Support for System x and dense servers with Xeon E5 v4 and E5 v5 processors

| Part number | Description | x3250 M6 (3943) | x3250 M6 (3633) | x3550 M5 (8869) | x3650 M5 (8871) | x3850 X6/x3950 X6 (6241, E7 v4) | nx360 M5 (5465, E5-2600 v4) | sd350 (5493) |
|-------------|--|-----------------|-----------------|-----------------|-----------------|---------------------------------|-----------------------------|--------------|
| 90Y9370 | Broadcom NetXtreme I Dual Port GbE Adapter | Y | Y | Y | Y | Y | Y | N |
| 90Y9352 | Broadcom NetXtreme I Quad Port GbE Adapter | N | N | Y | Y | Y | Y | N |
| 42C1780 | Broadcom NetXtreme 2xGbE BaseT Adapter | N | N | Y | Y | N | N | N |
| 39Y6066 | Broadcom NetXtreme 1xGbE BaseT Adapter | N | N | N | N | N | N | N |

Support for System x and dense servers with Intel Xeon E5/E7 v3 and E3 v4 processors

Table 5. Support for servers with Intel Xeon E5 v3 and E3 v4 processors

| Part number | Description | x3100 M5 (5457) | x3250 M5 (5458) | x3500 M5 (5464) | x3550 M5 (5463) | x3650 M5 (5462) | x3850 X6/x3950 X6 (6241, E7 v3) | nx360 M5 (5465) |
|-------------|--|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------------------|-----------------|
| 90Y9370 | Broadcom NetXtreme I Dual Port GbE Adapter | Y | Y | Y | Y | Y | Y | Y |
| 90Y9352 | Broadcom NetXtreme I Quad Port GbE Adapter | Y | N | Y | Y | Y | Y | Y |
| 42C1780 | Broadcom NetXtreme 2xGbE BaseT Adapter | N | N | Y | Y | Y | N | N |
| 39Y6066 | Broadcom NetXtreme 1xGbE BaseT Adapter | N | N | N | N | Y | N | N |

Support for servers with Intel Xeon v2 processors

Table 6. Support for servers with Intel Xeon v2 processors

| Part number | Description | x3300 M4 (7382) | x3500 M4 (7383, E5-2600 v2) | x3550 M4 (7914, E5-2600 v2) | x3630 M4 (7158, E5-2400 v2) | x3650 M4 (7915, E5-2600 v2) | x3650 M4 BD (5466) | x3750 M4 (8753) | x3850 X6/x3950 X6 (6241, E7 v2) |
|-------------|--|-----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------|-----------------|---------------------------------|
| 90Y9370 | Broadcom NetXtreme I Dual Port GbE Adapter | Y | Y | Y | Y | Y | Y | Y | Y |
| 90Y9352 | Broadcom NetXtreme I Quad Port GbE Adapter | Y | Y | Y | Y | Y | Y | Y | Y |
| 42C1780 | Broadcom NetXtreme 2xGbE BaseT Adapter | Y | Y | Y | Y | Y | N | N | N |
| 39Y6066 | Broadcom NetXtreme 1xGbE BaseT Adapter | Y | Y | Y | Y | Y | N | N | N |

See ServerProven for the latest information on the adapters supported by each System x server type:
<http://www.lenovo.com/us/en/serverproven/xseries/lan/matrix.shtml>

Connectors and LEDs

Figure 4 shows the LEDs on the Broadcom NetXtreme I Dual Port GbE Adapter.

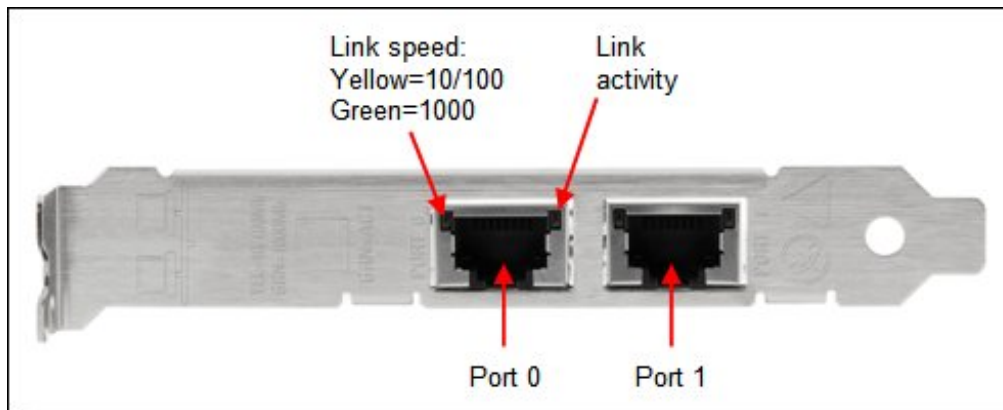


Figure 3. Broadcom NetXtreme I Dual Port GbE Adapter connectors and LEDs

Regulatory compliance

The adapters conform to the following international standards:

- EN55022
- EN55024
- EN60950 / CE
- EN 61000-3-2
- EN 61000-3-3
- ICES-003, Issue-004
- IEC 950 CB Scheme
- FCC 47 CFR Part 15 Class A
- UL 1950
- CSA C22.2 950-95
- VCCI
- AS/NZSCISPR 22 / C-tick
- RRL for KC
- BSMI
- UL 94-/V
- RoHS

Operating system support

The ThinkSystem adapters support the following operating systems:

- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Red Hat Enterprise Linux 6 Server x64 Edition
- Red Hat Enterprise Linux 7
- SUSE Linux Enterprise Server 11 for AMD64/EM64T
- SUSE Linux Enterprise Server 12
- VMware vSphere 6.0 (ESXi)
- VMware vSphere 6.5 (ESXi)

The System x adapters support the following operating systems:

- Microsoft Windows Server 2008 HPC Edition, Windows 2008HPC
- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x64 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 Server 2012
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft Windows Small Business Server 2008 Premium Edition
- Microsoft Windows Small Business Server 2008 Standard Edition
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- Red Hat Enterprise Linux 7
- 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 11 for AMD64/EM64T
- SUSE LINUX Enterprise Server 11 for x86
- SUSE LINUX Enterprise Server 11 with Xen for AMD64/EM64T
- SUSE LINUX Enterprise Server 12
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware vSphere 5.0 (ESXi)
- VMware vSphere 5.1 (ESXi)
- VMware vSphere 5.5 (ESXi)
- VMware vSphere 6.0 (ESXi)

See ServerProven for the latest information about the specific versions and service packs supported:

<http://www.lenovo.com/us/en/serverproven>

Related publications

For more information, refer to the following resources:

- Lenovo Network adapters home page:
<http://shop.lenovo.com/us/en/systems/servers/options/systemx/networking/adapters/>
- ServerProven compatibility page for Ethernet adapters:
<http://www.lenovo.com/us/en/serverproven>

Related product families

Product families related to this document are the following:

- [Ethernet Adapters](#)

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This document, TIPS0758, was created or updated on November 28, 2017.

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