Intel I340 Ethernet Dual Port and Quad Port Server Adapters for System x

Product Guide (withdrawn product)

Based on the Intel 82580 Gigabit Ethernet Controller, the Intel Ethernet Dual Port and Quad Port Server Adapters for System x are Intel's fourth generation of PCI Express Gigabit Ethernet (PCIe GbE) adapters. These adapters are based on fully integrated, multi-port PCIe 2.0 GbE controllers, providing a smaller footprint and lower power dissipation.

In addition, these adapters offer advanced features, including support for multi-core processors and server virtualization, as well as a scalable PCI Express 2.0 interface. Intel's first eco-friendly, halogen-free design combines low power use and low cost for one of the best price to performance ratios in a multi-port solution that is available today. Figure 1 shows the Intel Ethernet Quad Port Server Adapter.

Figure 1. Intel Ethernet Quad Port Server Adapter

Did you know?

These dual port and quad port adapters provide high-performing, multi-port gigabit connectivity in a multi-core platform as well as in a virtualized environment. In a multi-core platform, the adapter supports technologies such as Intel QuickData Technology, MSI-X, and Low Latency Interrupts that help accelerate data across the platform, therefore improving application response times. For virtualized environments, Intel Ethernet adapters have advanced features with VMDq that lower CPU utilization and increase I/O performance.

Part number information

Table 1 shows the relevant part numbers and feature codes for the adapters.

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
Intel Ethernet Quad Port Server Adapter I340-T4 for System x	49Y4240	5768
Intel Ethernet Dual Port Server Adapter I340-T2 for System x	49Y4230	5767

The part numbers for the Intel Ethernet Dual Port and Quad Port Server Adapters include the following items:

- One Ethernet adapter with a full-heigh (3U, 4.75-in.) bracket
- One Driver CD
- One low-profile (2U) bracket
- One Publications CD
- One Safety flyer

Note: The Intel Ethernet Dual Port Server Adapter does not have a heatsink.

Features and specifications

The adapters have the following features:

- Two or four 10/100/1000 copper ports with RJ45 for Cat 5e/6 cabling
- Based on Intel 82580 ASIC (quad-port MAC/PHY controller)
- PCIe 2.0 x4 host interface
- Low-profile card form factor
- Wake on LAN support
- Preboot eXecution Environment (PXE) boot support
- VLAN support with VLAN tag insertion, stripping, and packet filtering for up to 4096 VLAN tags
- iSCSI boot support (built-in software iSCSI initiator)
- iSCSI support with native operating system initiators
- Jumbo frame support
- Intel I/O Acceleration Technology (I/OAT) acceleration
- Intel Virtual Machine Device Queues (VMDq) support for VMware with eight queues per port
- TCP/IP checksum offload
- TCP/IP segmentation offload / large-send offload support

Intel I/O Acceleration Technology (Intel I/OAT) is a suite of features that improves data acceleration across the platform, from networking devices to the chipset and processors, which helps to improve system performance and application response times. The suite of features includes:

- Intel QuickData Technology: Provides the Direct Memory Access (DMA) engine, which moves data using the chipset instead of the CPU.
- MSI-X: Minimizes the impact of I/O interrupts by load-balancing interrupts across multiple processor cores.
- Low-Latency Interrupts: Allows the adapter to bypass the automatic moderation of time intervals between the interrupts (based on the sensitivity of the incoming data).
- Receive Side Scaling (RSS): Directs the interrupts to a specific processor core based on the application's address.

Virtual Machine Device Queues (VMDq) reduces I/O impact on the Hypervisor in a virtualized server by performing data sorting and coalescing in the network silicon. VMDq technology makes use of multiple queues in the network controller. As data packets enter the network adapter, they are sorted, and packets traveling to the same destination (or virtual machine) are grouped together in a single queue. The packets are then sent to the Hypervisor, which directs them to their respective virtual machines. Relieving the Hypervisor of packet filtering and sorting improves overall CPU usage and throughput levels.

The adapters have complete iSCSI support for proven native OS and VMM iSCSI initiators as well as iSCSI boot. Historically, CRC32C computation has degraded system performance, but now with the CRC instruction set included in the latest Intel Xeon processors, CRC validation is possible with minimal impact to network throughput while delivering data integrity.

The adapters support the following IEEE standards:

- IEEE 802.3ad (link aggregation control protocol)
- IEEE 802.1Q VLANs
- IEEE 1588 Precision Time Control Protocol

- IEEE 802.3 2005 flow control support
- IEEE 802.1p

Physical specifications

The Intel Ethernet Server Adapter cards have the following physical specifications:

- Length: 140 mm (5.5 in)
- Height: 70 mm (2.75 in)
- Depth: 16 mm (0.62 in)
- Maximum weight: 0.25 kg (0.5 lb)

Operating environment

The Intel Ethernet Server Adapter cards are supported in the following environment:

Operating temperature:

- 10 to 35 °C (50 to 95 °F) at an altitude of 0 to 914 m (0 to 3,000 ft)
- 10 to 32 °C (50 to 90 °F) at an altitude of 914 m to 2,133 m (3,000 ft to 7,000 ft)

Relative humidity:

- Operating: 20% to 80%, noncondensing

Warranty

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

Server support

The Intel Ethernet Server Adapter cards are supported in the System x servers identified in the following tables.

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

Table 2. Support for System x and dense servers with Xeon E5/E7 v4 and E3 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)
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4	N	N	N	N	Y	N	N
49Y4230	Intel Ethernet Dual Port Server Adapter I340-T2	N	N	N	N	Y	N	N

Support for servers with Intel Xeon v3 processors

Table 3. Support for servers with Intel Xeon v3 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)
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4	Y	Y	Y	N	N	Y	N
49Y4230	Intel Ethernet Dual Port Server Adapter I340-T2	Y	Y	Y	N	N	Y	N

Support for servers with Intel Xeon v2 processors

Table 4. Support for servers with Intel Xeon v2 processors

Part number	Description	x3500 M4 (7383, E5-2600 v2)	x3530 M4 (7160, E5-2400 v2)	x3550 M4 (7914, E5-2600 v2)	x3630 M4 (7158, E5-2400 v2)	x3650 M4 (7915, E5-2600 v2)	x3650 M4 BD (5466)	x3650 M4 HD (5460)	x3750 M4 (8752)	x3750 M4 (8753)	x3850 X6/x3950 X6 (3837)	x3850 X6/x3950 X6 (6241, E7 v2)	dx360 M4 (E5-2600 v2)	nx360 M4 (5455)
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
49Y4230	Intel Ethernet Dual Port Server Adapter I340-T2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Support for servers with Intel Xeon v1 processors

Table 5. Support for servers with Intel Xeon v1 processors

Part number	Description	x3100 M4 (2582)	x3250 M4 (2583)	x3300 M4 (7382)	x3500 M4 (7383, E5-2600)	x3530 M4 (7160, E5-2400)	x3550 M4 (7914, E5-2600)	x3630 M4 (7158, E5-2400)	x3650 M4 (7915, E5-2600)	x3690 X5 (7147)	x3750 M4 (8722)	x3850 X5 (7143)	dx360 M4 (7912, E5-2600)
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
49Y4230	Intel Ethernet Dual Port Server Adapter I340-T2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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

Operating system support

The adapter cards support the following operating systems:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2016 (in box driver support only)
- Microsoft Windows Server version 1709
- 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 11 with Xen for AMD64/EM64T
- VMware vSphere Hypervisor (ESXi) 6.0
- VMware vSphere Hypervisor (ESXi) 6.5
- VMware vSphere Hypervisor (ESXi) 6.7

See ServerProven for the latest information about the specific versions and service packs supported at the following address:
http://www.lenovo.com/us/en/serverproven/

Related publications

For more information, refer to the following resources:

- U.S. Announcement Letter
  http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS110-038
- Intel Ethernet Dual Port and Quad Port Server Adapters for System x Installation and User's Guide (download and unpack the ISO image and open index.htm in a browser)
  http://ibm.com/support/entry/portal/docdisplay?lndocid=MIGR-54793
- System x Configuration and Options Guide
  http://www.lenovo.com/us/en/cog/
- Intel site for Lenovo Ethernet adapters
  http://www.intelethernet-ibm.com/

Related product families

Product families related to this document are the following:

- 1 Gb Ethernet Connectivity
- Ethernet Adapters

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