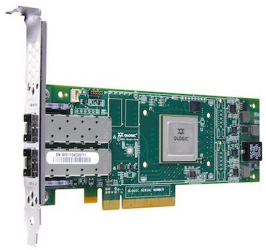

Lenovo 00Y3337 QLogic 16Gb FC Single-port and Dual-port HBAs for System x Owner's Manual

Contents

QLogic 16Gb FC Single-port and Dual-port HBAs for System x

Product Guide (withdrawn product)

The QLogic 16Gb FC Single-port and Dual-port Host Bus Adapters (HBAs) for System x ® are sixth generation

Fibre Channel Adapters. They offer 16 Gbps line-rate performance at extremely low CPU utilization with full hardware offloads. Support for powerful virtualization features make this adapter ideal for virtualized environments that need excellent I/O performance to service growing numbers of virtual machines (VMs).

Figure 1. QLogic 16 Gb FC Dual-port HBA (included SFP+ transceivers are not present)

Did you know?

Did you know that these QLogic adapters support nearly twice the throughput and 2.5 times the I/O operations per second (IOPS) per port compared to 8 Gb adapters? In addition, the adapters support both PCI Express 3.0 x4 or 2.0 x8 data transfer on the host side. The QLogic 16 Gb HBAs are ideal for high bandwidth and I/O-intensive applications, such as media streaming, backup/recovery, data warehousing, OLTP, Microsoft® Exchange Server, and server virtualization. Through rigorous testing by Lenovo through the ServerProven® program, you can maintain a high degree of confidence that your System x server storage subsystem is compatible and functions reliably when using these 16 Gb HBA adapters.

Click here to check for updates

Part number information

Table 1 shows the part number and feature codes for ordering the QLogic 16Gb FC HBAs.

Withdrawn: The adapters listed in this product guide are now withdrawn from marketing.

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
QLogic 16 Gb FC Single-port HBA	00Y3337	A3KW
QLogic 16 Gb FC Dual-port HBA	00Y3341	A3KX

The part numbers for the QLogic 16Gb FC Single-port and Dual-port HBAs include the following:

- One adapter with one or two short-wave (SWL) 16/8/4 Gb SFP+ transceivers installed and full-height (3U) bracket attached

- Separate low-profile (2U) bracket
- Documentation package

Figure 2 shows the single-port adapter.

Figure 2. QLogic 16 Gb FC Single-port HBA

Features

The QLogic 16Gb FC Single-port and Dual-port HBAs have the following features:

- Port architecture that offers independent functionality on each port — independent CPU, isolated memory and independent firmware image — provides higher reliability and predictable performance.
- Support for Message Signaled Interrupts eXtended (MSI-X) improves host utilization and enhances application performance.
- Support for 16 Gb, 8 Gb, and 4 Gb FC devices.
- Full hardware offload for Fibre Channel protocol.
- Support for PCIe 2.0 and PCIe 3.0 host interfaces.
- Comprehensive virtualization capabilities with support for N_Port ID Virtualization (NPIV) with 255 N_Port IDs per port.
- Host-to-fabric Fibre Channel Security Protocol (FC-SP) authentication.
- A common driver model allows a single driver to support all QLogic HBAs on a given operating system.
- Universal boot capability allows the appropriate boot environment to be automatically selected for any given hardware.
- Boot from SAN capability reduces the system management costs and increases uptime.

Technical specifications

The QLogic 16Gb FC Single-port and Dual-port HBAs have the following specifications:

- Based on the QLogic QLE2660 (single port) and QLE2662 (dual port) adapters
- Host interface: PCI Express 2.0 x8 or PCI Express 3.0 x4 (physical connector is PCIe x8)
- Single-port or dual-port SFP+ based adapters
- Support for 16 Gb, 8 Gb and 4 Gb FC link speeds, which are automatically negotiated
- Data rate: 14.025 Gbps (1600 MBps), 8.5 Gbps (800 MBps), and 4.25 Gbps (400 MBps) autosensing (per port), with full duplex
- Performance: Over 500,000 IOPS per port (over 1,200,000 IOPS per dual-port adapter)
- Throughput: 3,200 MB per port, full-duplex
- 2048 concurrent logins
- 255 N_Port IDs (NPIV) per port
- Industry standards:
  • Current ANSI/IETF standards: FC-PI-4, FC-PI-5, FC-FS-2 with amendment 1, FC-AL-2 with amendments 1 and 2, FC-LS-2, FC-GS-6, FC-DA, FC-SP-2, FCP-4, FC-MJS, FC-SB-4, FCSP, SPC-4, SBC-3, SSC-3, and RFC4338
  • Legacy ANSI/IETF standards: FC-PH, FC-PH-2, FC-PH-3, FC-PI, FC-PI-2, FC-FS, FC-AL, FC-GS-2/3/4/5, FCP, FCP-2, FC-SB-2, FC-FLA, FC-HBA, FC-PLDA, FC-TAPE, FC-MI, SPC3, SBC-2, SSC-2, and RFC2625
- Topology: Point-to-point and switched fabric
- Supported media: 16 Gbps Fibre Channel LC SFP+ short wave optical transceivers (850 nm), hotpluggable
- Management software:
  • The QLogic QConvergeConsole (QCC) management software delivers a unified web based single-pane-of-glass management console across the QLogic family of storage and networking adapters. A graphical user interface (GUI) or command line interface (CLI) are available. A VMware vCenter plug-in is also available.
  • Common IT tasks, such as VLAN configuration and teaming, can be easily accomplished either through QConvergeConsole or through native OS tools, thereby minimizing IT training and deployment costs.
  • Role-based authentication allows for separate logins and access for SAN and LAN administrators. This eliminates the need to change your organizational structure as you converge your network.

Server support

The QLogic 16Gb FC Single-port and Dual-port HBAs are supported on the servers that are listed 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)
00Y3337	QLogic 16Gb FC Single-port HBA	N	N	Y	Y	Y	Y	N
00Y3341	QLogic 16Gb FC Dual-port HBA	N	N	Y	Y	Y	Y	N

Support for System x and dense 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)
00Y3337	QLogic 16Gb FC Single-port HBA	Y	Y	Y	Y	Y	Y	Y
00Y3341	QLogic 16Gb FC Dual-port HBA	Y	Y	Y	Y	Y	Y	Y

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)
00Y3337	QLogic 16Gb FC Single-port HBA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
00Y3341	QLogic 16Gb FC Dual-port HBA	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

For the latest information about the System x servers that support each adapter, see the ServerProven® website at: http://www.lenovo.com/us/en/serverproven/xseries/sharedstorage/samatrix.shtml

Operating system support

The adapters support the following operating systems:

- QLogic 16Gb FC Single-port HBA, 00Y3337
- QLogic 16Gb FC Dual-port HBA, 00Y3341

Tip: This table is automatically generated based on data from **Lenovo ServerProven**. Note that older servers are not listed. Visit ServerProven to view OS support for those servers.

Table 5. Operating system support for QLogic 16Gb FC Single-port HBA, 00Y3337

Operating systems	x3850/3950 X6 (3837)	x3850/3950 X6 (6241, E7 v2)	x3850/3950 X6 (6241, E7 v3)	x3850/3950 X6 (6241, E7 v4)	nx360 M5 (5465)	x3500 M5 (5464)	x3550 M5 (5463)	x3550 M5 (8869)	x3650 M5 (5462)	x3650 M5 (8871)	x3100 M5 (5457)	x3250 M5 (5458)
Microsoft Windows Server 2008 R2	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2012	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2012 R2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2016	N	Y [1]	Y [1]	Y [1]	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	N	N	N	Y	N	N	N	Y	N	Y	N	N
Microsoft Windows Server version 1709	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Microsoft Windows Server version 1803	N	N	N	N	N	N	N	Y	N	Y	N	N
Red Hat Enterprise Linux 5 Server Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 5 Server with Xen x64 Edition	N	N	N	N	N	N	N	N	N	N	N	Y
Red Hat Enterprise Linux 5 Server x64 Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 6 Server Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 6 Server x64 Edition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	N	N	N	Y	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 11 for AMD64/EM64T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 for x86	N	N	N	N	N	N	N	N	N	N	Y	Y
SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 12	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 with Xen	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	N	N	Y	Y	Y	N	N	Y	N	Y	N	N
SUSE Linux Enterprise Server 15 with Xen	N	N	Y	Y	Y	N	N	Y	N	Y	N	N
VMware vSphere 5.1 (ESXi)	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y
VMware vSphere Hypervisor (ESXi) 5.5	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 6.5	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	Y	Y	Y [2]	N	Y [2]	N	Y [2]	N	N

1 [in box driver support only]
2 Detail information please refer to **Support Tip HT506708**

Table 6. Operating system support for QLogic 16Gb FC Dual-port HBA, 00Y3341

Operating systems	x3850/3950 X6 (3837)	x3850/3950 X6 (6241, E7 v2)	x3850/3950 X6 (6241, E7 v3)	x3850/3950 X6 (6241, E7 v4)	nx360 M5 (5465)	x3500 M5 (5464)	x3550 M5 (5463)	x3550 M5 (8869)	x3650 M5 (5462)	x3650 M5 (8871)	x3100 M5 (5457)	x3250 M5 (5458)
Microsoft Windows Server 2008 R2	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2012	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2012 R2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2016	N	Y [1]	Y [1]	Y [1]	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	N	N	N	Y	N	N	N	Y	N	Y	N	N
Microsoft Windows Server version 1709	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N
Microsoft Windows Server version 1803	N	N	N	N	N	N	N	Y	N	Y	N	N
Red Hat Enterprise Linux 5 Server Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 5 Server with Xen x64 Edition	N	N	N	N	N	N	N	N	N	N	N	Y
Red Hat Enterprise Linux 5 Server x64 Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 6 Server Edition	N	N	N	N	N	N	N	N	N	N	Y	Y
Red Hat Enterprise Linux 6 Server x64 Edition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.0	N	N	N	Y	N	N	N	N	N	N	N	N
SUSE Linux Enterprise Server 11 for AMD64/EM64T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 11 for x86	N	N	N	N	N	N	N	N	N	N	Y	Y
SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 12	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 with Xen	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15	N	N	Y	Y	Y	N	N	Y	N	Y	N	N
SUSE Linux Enterprise Server 15 with Xen	N	N	Y	Y	Y	N	N	Y	N	Y	N	N
VMware vSphere 5.1 (ESXi)	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	Y
VMware vSphere Hypervisor (ESXi) 5.5	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.0	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 6.5	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	Y	Y	Y [2]	N	Y [2]	N	Y [2]	N	N

1 [in box driver support only]
2 Detail information please refer to **Support Tip HT506708**

Physical specifications

The QLogic 16Gb FC Single-port and Dual-port HBAs have the following physical specifications.

Dimensions and weight (approximate):

- Height: 69 mm (2.7 in.)
- Width: 168 mm (6.6 in.)
- Depth: 25 mm (1.0 in.)
- Weight: 113 g (0.25 lb)

Shipping dimensions and weight (approximate):

- Height: 48 mm (1.9 in.)
- Width: 217 mm (8.5 in.)
- Depth: 140 mm (5.5 in.)
- Weight: 450 g (1.0 lb)

Operating environment

The adapters are supported in the following environment:

- Temperature:
  • Operating: 0 – 55 °C (32 – 131 °F)
  • Storage: -40 – 70 °C (-40 – 158 °F)
- Relative humidity:
  • 5 – 95% (relative, non-condensing)

Warranty

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

Agency approvals

The adapter conforms to the following standards:

- EN55022
- EN55024
- EN60950 / CE
- EN 61000-3-2
- EN 61000-3-3
- IEC 950 CB Scheme
- FCC Part 15 Class A
- UL 1950
- CSA C22.2 950-95
- VCCI
- NZ AS3548 / C-tick
- RRL for MIC (KCC)
- BSMI
- UL 94-/V

Related publications

For more information, refer to these documents:

- ServerProven compatibility for System x HBAs: **http://www.lenovo.com/us/en/serverproven/xseries/sharedstorage/samatrix.shtml**
- System x Configuration and Options Guide **https://support.lenovo.com/us/en/documents/SCOD-3ZVQ5W**
- QLogic page for Lenovo products **http://qlogic.com/go/lenovo**
- US Announcement Letter for the QLogic 16Gb FC Single-port and Dual-port HBAs: **http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS113-004**

Related product families

Product families related to this document are the following:

- **Host Bus Adapters**

Notices

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This document, TIPS0954, was created or updated on September 25, 2019.

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QLogic 16Gb FC Single-port and Dual-port HBAs for System x (withdrawn product)

Documents / Resources

	Lenovo 00Y3337 QLogic 16Gb FC Single-port and Dual-port HBAs for System x [pdf] Owner's Manual 00Y3337, QLogic 16Gb FC Single-port and Dual-port HBAs for System x, 00Y3337 QLogic 16Gb FC Single-port and Dual-port HBAs for System x

References

- Welcome | ServerProven
- WWPN not visible under NPIV config in VMWare ESXi 6.5 and 6.7 Host Web UI (Not the vCenterWeb UI) - Lenovo Server - Lenovo Support US
- Host Bus Adapters > Lenovo Press
- QLogic 16Gb FC Single-port and Dual-port HBAs for System x Product Guide (withdrawn product) > Lenovo Press
- Configuration and Options Guide (COG) - Lenovo x86 Servers - Lenovo Support US
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