Flex System FC3052 2-port 8Gb FC Adapter
Product Guide (withdrawn product)

The network architecture on the Flex System platform has been specifically designed to address network challenges, giving you a scalable way to integrate, optimize, and automate your data center. The Flex System™ FC3052 2-port 8Gb Fibre Channel Adapter enables high-speed access for Flex System compute nodes to an external storage area network (SAN). This adapter is based on the proven Emulex Fibre Channel stack, and works with any of the 8 Gb or 16 Gb Flex System Fibre Channel switch and pass-thru modules.

Figure 1 shows the Flex System FC3052 2-port 8Gb FC Adapter.

Figure 1. Flex System FC3052 2-port 8Gb FC Adapter

Did you know?

The performance bottleneck with Fibre Channel storage typically exists in the switching. By moving to 8 Gb adapters and switches, you can localize the bottleneck to the storage controller, where it can be managed by expanding the disks attached to storage. When compared to the previous generation 4 Gb adapters, the new generation 8 Gb adapters double the throughput speeds for Fibre Channel traffic. As a result, you can manage increased amounts of data and possibly benefit from a reduced hardware expense.

The adapter connects to the midplane directly, without having to use cables or small form-factor pluggable (SFP) modules. By eliminating these components for up to 14 servers, the resulting savings alone can cover the investment in the chassis.

Part number information

Table 1 shows the part number to order this card.

> **Withdrawn**: This adapter is now withdrawn from marketing

Table 1. Part number and feature code for ordering

Description	Part number	Feature code	Feature code (x240 7863-10X only)*
Flex System FC3052 2-port 8Gb FC Adapter	95Y2375	A2N5	EC25

* This feature code is for x240 when ordered through AAS (e-config) as model 7863-10X only. All other supported systems and models use the other feature code.

The part number includes the following items:

- One Flex System FC3052 2-port 8 Gb FC Adapter
- Documentation package

Features

The Flex System FC3052 2-port 8Gb FC Adapter has the following features and specifications:

- Based on the Emulex "Saturn" 8Gb Fibre Channel I/O Controller (IOC) chip
- Multifunction PCIe 2.0 device with two independent FC ports
- Auto-negotiation between 2-Gbps, 4-Gbps, or 8-Gbps FC link attachments
- Complies with the PCIe base and CEM 2.0 specifications
- Enablement of high-speed and dual-port connection to a Fibre Channel SAN
- Comprehensive virtualization capabilities with support for N_Port ID Virtualization (NPIV) and Virtual Fabric
- Simplified installation and configuration using common HBA drivers
- Common driver model that eases management and enables upgrades independent of HBA firmware
- Fibre Channel specifications:
  - Bandwidth: Burst transfer rate of up to 1600 MBps full-duplex per port
  - Support for point-to-point fabric connection: F-Port Fabric Login
  - Support for Fibre Channel Arbitrated Loop (FC-AL) and FCAL-2 FL-Port Login
  - Support for Fibre Channel services class 2 and 3
- Single-chip design with two independent 8 Gbps serial Fibre Channel ports, each of which provides:
  - Reduced instruction set computer (RISC) processor
  - Integrated serializer/deserializer
  - Receive direct memory access (DMA) sequencer
  - Frame buffer
- Onboard DMA: DMA controller for each port: Transmit and receive
- Frame buffer first in, first out (FIFO): Integrated transmit and receive frame buffer for each data channel
- Support for Fabric Manager
- Support for UEFI
- Uses same FC/FCoE drivers as Flex System CN4054 10Gb Virtual Fabric Adapter

Supported servers

The following table lists the Flex System compute nodes that support the FC3052 2-port 8Gb FC Adapter.

Table 2. Supported servers

Description	Part number	x220 (7906)	x222 (7916)	x240 (8737, E5-2600)	x240 (8737, E5-2600 v2)	x240 (7162)	x240 M5 (9532)	x440 (7917)	x440 (7167)	x280 / x480 / x880 X6 (7903)	x280 / x480 / x880 X6 (7196)
FC3052 2-port 8Gb FC Adapter	95Y2375	Y	N	Y	Y	Y	Y	Y	Y	Y	Y

See the ServerProven website for the latest information about the expansion cards that are supported by each blade server type:
http://www.lenovo.com/us/en/serverproven/flexsystem.shtml

I/O adapter cards are installed in the slot in supported servers, such as the x240, as highlighted in the following figure.
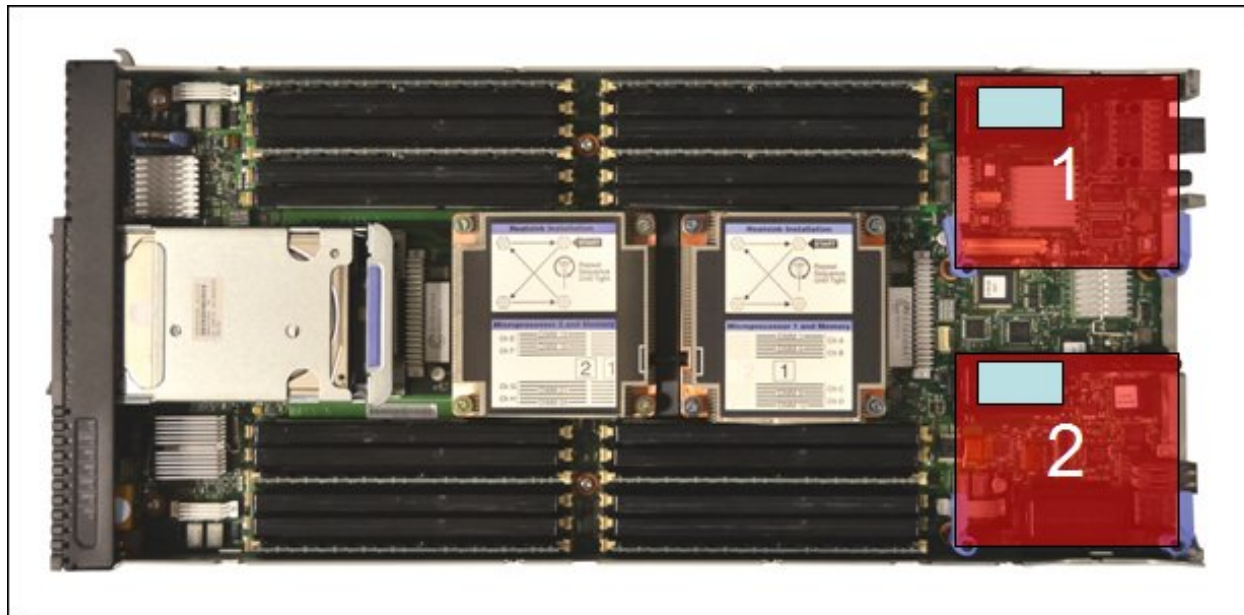

Figure 2. Location of the I/O adapter slots in the Flex System x240 Compute Node

Supported I/O modules

The FC3052 2-port 8Gb FC Adapter supports the I/O modules listed in the following table. One or two compatible switches must be installed in the corresponding I/O bays in the chassis. Installing two switches means that both ports of the adapter are enabled. When the adapter is paired with a 16 Gb switch, those internal switch ports will operate at 8 Gbps.

Table 3. I/O modules supported with the FC3052 2-port 8Gb FC Adapter

Description	Part number	Support the FC3052 adapter
Flex System FC3171 8Gb SAN Switch	69Y1930	Yes
Flex System FC3171 8Gb SAN Pass-thru	69Y1934	Yes
Flex System FC5022 16Gb SAN Scalable Switch	88Y6374	Yes
Flex System FC5022 24-port 16Gb ESB SAN Scalable Switch	90Y9356	Yes

The following table shows the connections between adapters installed in the compute nodes and the switch bays in the chassis.

Table 4. Adapter to I/O bay correspondence

I/O adapter slot in the server	Port on the adapter	Corresponding I/O module bay in the chassis
Slot 1	Port 1	Module bay 1
	Port 2	Module bay 2
Slot 2	Port 1	Module bay 3
	Port 2	Module bay 4

The connections between the adapters installed in the compute nodes and the switch bays in the chassis are shown diagrammatically in the following figure.
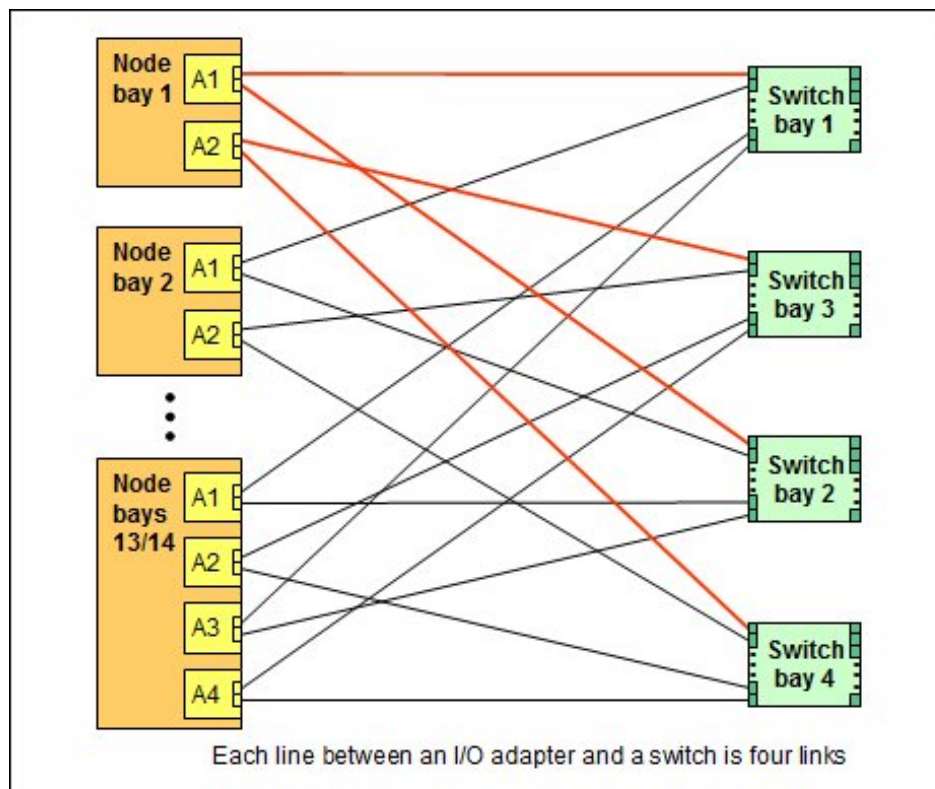
Figure 3. Logical layout of the interconnects between I/O adapters and I/O modules

Supported operating systems

The FC3052 2-port 8Gb FC Adapter supports the following operating systems:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019
- Microsoft Windows Server version 1709
- Red Hat Enterprise Linux 6 Server x64 Edition
- SUSE Linux Enterprise Server 11 for AMD64/EM64T
- SUSE Linux Enterprise Server 12
- SUSE Linux Enterprise Server 12 with Xen
- SUSE Linux Enterprise Server 15
- SUSE Linux Enterprise Server 15 with Xen
- VMware vSphere 5.1 (ESXi)
- VMware vSphere Hypervisor (ESXi) 5.5
- VMware vSphere Hypervisor (ESXi) 6.0
- VMware vSphere Hypervisor (ESXi) 6.5
- VMware vSphere Hypervisor (ESXi) 6.7

Operating system support may vary by server. For more information, see ServerProven at
http://www.lenovo.com/us/en/serverproven/. Select the server in question, scroll down to the adapter, and
click the + icon in that row to show the supported operating systems.

Warranty

The adapter has a 1-year limited warranty. When installed on an Flex System Compute Node, the adapter assumes the system's base warranty and any Lenovo warranty service upgrade.

Regulatory compliance

The adapter conforms to the following standards:

- United States FCC 47 CFR Part 15, Subpart B, ANSI C63.4 (2003), Class A
- United States UL 60950-1, Second Edition
- IEC/EN 60950-1, Second Edition
- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 4, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1-03
- Japan VCCI, Class A
- Australia/New Zealand AS/NZS CISPR 22:2006, Class A
- IEC 60950-1(CB Certificate and CB Test Report)
- Taiwan BSMI CNS13438, Class A
- Korea KN22, Class A; KN24
- Russia/GOST ME01, IEC-60950-1, GOST R 51318.22-99, GOST R 51318.24-99, GOST R 51317.3.2-2006, GOST R 51317.3.3-99
- IEC 60950-1 (CB Certificate and CB Test Report)
- CE Mark (EN55022 Class A, EN60950-1, EN55024, EN61000-3-2, EN61000-3-3)
- CISPR 22, Class A

Physical specifications

The dimensions and weight of the adapter are as follows:

- Width: 100 mm (3.9 in)
- Depth: 80 mm (3.1 in)
- Weight: 13 g (0.3 lb)

Shipping dimensions and weight (approximate):

- Height: 58 mm (2.3 in)
- Width: 229 mm (9.0 in)
- Depth: 208 mm (8.2 in)
- Weight: 0.4 kg (0.89 lb)

Related publications

For more information, see the following resources:

- Flex System Information Center (User's Guides for servers and options)
  http://publib.boulder.ibm.com/infocenter/flexsys/information
- *Flex System Interoperability Guide*
  http://lenovopress.com/fsig
- *Flex System Products and Technology,* SG24-8255
  http://lenovopress.com/sg248255
- ServerProven for Flex System
  http://www.lenovo.com/us/en/serverproven/flexsystem.shtml

Related product families

Product families related to this document are the following:

- Blade Storage Adapters

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