

PCIe2 LP 8 Gb 4-port Fibre Channel Adapter

IBM Redbooks Product Guide

The PCIe2 LP 8 Gb 4-port Fibre Channel Adapter (feature EN0Y) is a low profile adapter for PCI Express 2.0 slots in IBM® Power Systems™ servers. It is based on the QLogic ISP2532 controller and operates at link speeds of 2, 4, and 8 Gbps, and automatically negotiates to the highest speed possible. Each port provides single initiator capability over a fiber optic link, or multiple initiator capability with NPIV. The ports have LC type connectors and use shortwave laser optics.

The following figure shows the PCIe2 LP 8 Gb 4-port Fibre Channel Adapter.



Figure 1. PCIe2 LP 8 Gb 4-port Fibre Channel Adapter

Did you know

This QLogic 8 Gb host bus adapter (HBA) enables an end-to-end SAN solution using 8 Gb Fibre Channel technology for Power Systems servers. It provides the ability to build high-performance, highly available SANs and is easy to set up and integrate into existing SAN configurations.

Offering four 8 Gb ports on a single adapter maximizes SAN connectivity and performance while maintaining multipath redundancy.

These adapters take advantage of QLogic's StarPower technology, which provides energy-smart features. StarPower technology offers dynamic and adaptive power-management features, such as power-optimized and bandwidth-optimized intelligent PCIe link training, low-power switching power supplies, and a thermally efficient layout that requires lower airflows.

Part number information

The following table shows the ordering part numbers and feature codes.

Table 1. Ordering part numbers and feature codes

Description	Power Systems feature code
PCIe2 LP 8 Gb 4-port Fibre Channel Adapter	EN0Y

Features

The adapter has the following features:

- Operates at 2, 4, or 8 Gbps (auto-negotiation)
- Persistent binding
- LUN masking
- 2,048 concurrent logins
- PCI Express 2.0 x8 compliance with backwards compatibility with PCI Express 1.0a
- Four SFP+ ports with LC-style connectors
- Standard PCI Express card with low profile MD2 form factor
- Support for both standard and low-profile PCIe slots

Specifications

The adapter has the following specifications:

- ASIC: QLogic ISP2532 .
- Memory: 1 MB SSRAM per port.
- Data throughput: 3200 MBps (full-duplex) per port.
- I/O operations per second (IOPS): 200,000 per port.
- Protocols: FCP-3-SCSI and FC-Tape (FCP-2).
- Standard supported: Enhanced Authentication (FC-SP), Data Integrity (T10), and Network isolation (NPIV).
- N_Port ID Virtualization (NPIV) capability is supported through VIOS.
- Power usage: 12 W (typical), 17 W (max).
- RoHS 6 compliant.

For cables, use multimode fibre optic cables with short-wave lasers that adhere to the following specifications:

- OM3: Multimode 50/125 micron fibre, 2000 MHz*km bandwidth
- OM2: Multimode 50/125 micron fibre, 500 MHz*km bandwidth
- OM1: Multimode 62.5/125 micron fibre, 200 MHz*km bandwidth

Because core sizes are different, OM1 cables can only be connected to other OM1 cables. For best results, OM2 cables should not be connected to OM3 cables. However, if an OM2 cable is connected to an OM3 cable, the characteristics of the OM2 cable apply to the entire length of the cables.

The following table shows the supported distances for the three different cable types at the three different link speeds.

Table 2. Supported cables

Cable	2.125 Gbps	4.25 Gbps	8.5 Gbps
OM3	0.5 m - 500 m	0.5 m - 380 m	0.5 m - 150 m
OM2	0.5 m - 300 m	0.5 m - 150 m	0.5 m - 50 m
OM1	0.5 m - 150 m	0.5 m - 70 m	0.5 m - 21 m

Physical specifications

The adapter has the following physical specifications:

- Height: 64 mm (2.5 in.)
- Width: 167 mm (6.6 in.)
- Depth: 25 mm (1.0 in.)
- Weight: 113 g (0.25 lb.)

Operating environment

The adapter is supported in the following environment:

- Temperature:
 - Operating: 0° - 55°C (32° - 131°F) at 0 - 914 m (0 - 3,000 ft.)
 - Storage: -40° - 70°C (-40° - 158°F) at 914 - 2,133 m (3,000 - 7,000 ft.)
- Relative humidity:
 - Operating: 10% - 90% (relative, non-condensing)
 - Non-operating: 5% - 93% (relative, non-condensing)

Warranty

These features assume the same warranty or maintenance terms as the machine in which they are installed for the full warranty or maintenance period announced for such a machine.

Supported servers

The PCIe2 LP 8 Gb 4-port Fibre Channel Adapter is supported in the IBM Power Systems servers listed in the following table.

Table 3. Supported servers

Adapter	Feature	Power 710 Express	Power 720 Express	Power 730 Express	Power 740 Express	Power 755	Power 770	Power 775	Power 780	Power 795
PCIe2 LP 8 Gb 4-port Fibre Channel Adapter	EN0Y	Y	Y	Y	Y	N	N	N	N	N

Supported operating systems

The adapter supports the following operating systems:

- AIX® Version 7.1 with the 7100-01 Technology level and Service pack 4 or later.
- AIX Version 7.1 with the 7100-00 Technology Level and Service Pack 6 or later (planned availability 6/29/2012).
- AIX Version 6.1 with the 6100-07 Technology Level and Service Pack 4 or later.
- AIX Version 6.1 with the 6100-06 Technology Level and service Pack 8 or later (planned availability 6/29/2012).
- AIX Version 5.3 with the 5300-12 Technology Level and Service Pack 6 or later (planned availability 6/29/2012). AIX 5.3 service extension is required.
- IBM i 6.1 with 6.1.1 machine code or later supported through VIOS 2.2.1.4.
- Red Hat Enterprise Linux 5.8 for POWER® or later.
- Red Hat Enterprise Linux 6.2 for POWER or later.
- Novel SUSE Linux Enterprise 10, Service Pack 4 or later.
- Novel SUSE Linux Enterprise 11 Service Pack 2 or later.
- VIOS 2.2.1.4 or later.

Related publications

For more information, see the following documents:

- *Adapter Quick Start Guide:*
<http://www.ibm.com/support>
- *IBM US Announcement Letter :*
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS112-069>
- Driver update for Linux:
<http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/info/LinuxAlerts.html>
- IBM Power Systems Facts and Features:
<http://ibm.com/systems/power/hardware/reports/factsfeatures.html>
- IBM Power Systems servers
<http://www.ibm.com/systems/power/hardware>

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service. IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing, IBM Corporation, North Castle Drive, Armonk, NY 10504-1785 U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you. This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk. IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurement may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

© Copyright International Business Machines Corporation 2012. All rights reserved.

Note to U.S. Government Users Restricted Rights -- Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

This document was created or updated on April 20, 2012.

Send us your comments in one of the following ways:

- Use the online **Contact us** review form found at:
ibm.com/redbooks
- Send your comments in an e-mail to:
redbook@us.ibm.com
- Mail your comments to:
IBM Corporation, International Technical Support Organization
Dept. HYTD Mail Station P099
2455 South Road
Poughkeepsie, NY 12601-5400 U.S.A.

This document is available online at <http://www.ibm.com/redbooks/abstracts/tips0883.html> .

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at <http://www.ibm.com/legal/copytrade.shtml>

The following terms are trademarks of the International Business Machines Corporation in the United States, other countries, or both:

AIX®
IBM®
Power Systems™
POWER®
Redbooks (logo)®

The following terms are trademarks of other companies:

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.