



640GB High IOPS MLC Duo Adapter for IBM System x provides a new generation of ultra-high performance storage

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At a glance

This SSD-based high-performance server-class storage adapter can provide the performance required for extensive computations while utilizing a reduced storage footprint.

Features:

- 640 GB of SSD storage in a standard PCIe adapter: significantly lower power and cooling costs, low management overhead, smaller storage footprint in the datacenter, and a much greener storage solution
- An alternative to SSD-based hard drives: higher IOPS performance, lower cost per IOP, higher endurance, and efficiency of scale-up
- IBM® branding: a single point of serviceability and enterprise-grade warranty to enable interoperability with a variety of IBM and partner products
- The ability to do more with less during these tough economic times: lower operational expenditure (OPEX) and capital expenditure (CAPEX) in applications that require high IOPS compared to solutions that use a larger number of HDD and SSD devices to achieve equivalent IOPS

Overview

The 640GB High IOPS MLC Duo Adapter for IBM System x® comes with all the benefits of standard storage in addition to enterprise-class high performance of up to 200,000 sustained IOPS. This adapter is designed primarily for performance-hungry, high-performance servers and computing appliances while providing the added benefits of lower power and cooling costs, low management overhead, and a smaller storage footprint.

Based on standard PCIe architecture coupled with silicon-based NAND clustering storage technology, the High IOPS SSD PCIe Adapter is optimized for System x racks and blades. The scalable design comes in 640 GB capacity with Multi level cell (MLC) technology in a full-height, half-length PCI-e form factor.

This adapter uses NAND flash memory as the basic building block of solid-state storage and contains no moving parts, thus is less sensitive to issues associated with vibration, noise, and mechanical failure. The adapter is built as a block device on a PCIe bus with advanced wear-leveling, 11-bit ECC, and N+1 chip-level redundancy providing unparalleled reliability and efficiency.

Whether enabling high-performance computing or reducing the storage footprint, IBM offers High IOPS SSD PCIe Adapters to meet your computational requirements. This adapter is compatible with a wide variety of System x systems.

Providing that additional peace of mind, your High IOPS PCIe Adapter purchase is covered under IBM warranty.

Warranty: Three year limited warranty¹.

¹ For information on IBM's Statement of Limited Warranty, contact your local IBM representative. Copies are available upon request.

Key prerequisites

This SSD PCIe Adapter can be used on supported System x servers with an available PCI Express® expansion slot.

Planned availability date

May 19, 2010

- 640GB High IOPS MLC DUO Adapter (Feature number 5985)
- 640GB High IOPS MLC DUO Adapter (Pseudo Option 68Y7388)

Description

Ideal for businesses requiring high-performance storage without sacrificing capacity, this adapter provides an opportunity to lower power and cooling costs while simplifying management overhead and reducing the overall storage footprint.

- High reliability through:
 - Advanced wear-leveling
 - 11-bit ECC used for maximum efficiency
 - N+1 chip-level redundancy ("SAN on a card")
- Reduced power, cooling, and management costs through storage "in server" versus disk arrays and controllers
- Industry-standard PCIe adapter

Compatibility

- Support for popular network operating systems
- ServerProven® testing to verify servers and PCIe adapters function properly

Features:

- Investment protection, ease-of-use, and compatibility

Product positioning

None

Product number

Note: Following does not apply to other product in this announcement. Announcement is being used to get feature number announced.

Description	Part number
Pseudo Option - 640GB High IOPS MLC DUO Adapter for IBM System x	68Y7388

Note: EMEA will use Pseudo Option as internal only.

Model conversions

None

Feature conversions

None

Publications

Publications are shipped with the announced product.

The IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at

<http://publib14.boulder.ibm.com/infocenter/systems>

IBM Publications Center Portal

<http://www.ibm.com/shop/publications/order>

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Title	Order number	Part number
Installation Publications with Adapter	None	None

Displayable softcopy publications: None

Source file publications: None

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

For details on available services, contact your IBM representative or visit

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

<http://www.ibm.com/services/continuity>

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

Technical information

Specified operating environment

Physical specifications

640GB High IOPS MLC DUO Adapter for IBM System x

- Approximate height: 16 mm (0.63 in)
- Approximate width: 110 mm (4.331 in)
- Approximate depth: 170 mm (6.693 in)
- Approximate weight: 279 g (0.61 lb)

Shipping dimensions

- Approximate height: 65 mm (2.559 in)
- Approximate width: 220 mm (8.662 in)
- Approximate depth: 240 mm (9.449 in)
- Approximate weight: 478 g (1.05 lb)

Standards

None

Operating environment

- Temperature:
 - 0° to 55° C (32° to 131° F) at 0 to 914 m (0 to 3,000 ft)
 - 10° to 32° C (50° to 90° F) at 914 to 3,048 m (3,000 to 10,000 ft)
- Relative humidity: 20% to 80% (non-condensing)
- Maximum altitude: 3,048 m (10,000 ft)

Hardware requirements

The controller must be installed in a selected System x server system.

Software requirements

The 640GB High IOPS MLC DUO adapter supports the following major 64-bit operating systems:

- Windows® 2003
- Windows 2008
- Red Hat Enterprise Linux® 4
- Red Hat Enterprise Linux 5
- SUSE Linux Enterprise Server 10
- SUSE Linux Enterprise Server 11

Compatibility

For latest compatibility information, visit

<http://www.ibm.com/servers/eserver/serverproven/compat/us/>

Note: Some configurations may not be compatible.

Limitations

8 petabytes lifetime writes.

Note: 1 petabyte = 1024 terabytes of writes. Writes are tracked and reported by the adapter's management utility and may be affected by application writes, data patterns, and maintenance designed to maximize data integrity.

User group requirements

This announcement satisfies or partially satisfies the requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

640GB High IOPS MLC DUO Adapter for IBM System x

SSD PCIe Adapter product is designated as a customer replacement setup. Customer installation instructions are shipped with the option part.

Cable orders

None

Installability

The 640GB High IOPS MLC DUO Adapter requires about 20 minutes for installation.

Installation includes unpacking, setting up, and powering on.

Packaging

640GB High IOPS MLC DUO Adapter

Product	Package description	Boxes
640GB High IOPS MLC DUO Adapter for IBM System x	Option Unit Box	1

Contents:

640GB High IOPS MLC DUO adapter
 Quick install guide
 USB key with documentation
 Important Notices Flyer

The 640GB High IOPS MLC DUO Adapter is shipped as a single package. Other items are in zipped bags.

Retail only

Packaging dimensions/weight

- Single box (HxDxW): 65 mm (2.559 in) 240 mm (9.449 in) 220 mm (8.662 in)
- Package weight: 478 g (1.05 lb)

Note: All measurements are approximate.

Supplies

For end users

The 640GB High IOPS MLC DUO Adapter can be purchased through dealers around the world.

Security, auditability, and control

It is a customer's responsibility to ensure that the server is secure to prevent sensitive data from being removed.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings, for the efficient installation, implementation, and/or integration of this product.

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

<http://www.ibm.com/support/electronic>

Terms and conditions

Field installable features

No

Warranty period

Three years.

640GB High IOPS MLC DUO Adapter offers a three year limited warranty¹

- Warranty period 3 yr.
- Service type (IOR/IOE/CCE/CCR) CRU
- Maintenance agreement No
- Optional upgrade No

¹ For information on IBM's Statement of Limited Warranty, contact your local IBM representative. Copies are available upon request.

FRU replacement

- 68Y7382

Customer setup

Yes, as a replacement FRU only.

Machine code

No license terms apply.

Prices

For all local charges, contact your IBM representative.

Announcement countries

All European, Middle Eastern, and African countries.

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