



IBM System Storage N series EXN4000 offers outstanding performance and storage options

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At a glance

The EXN4000 FC expansion unit is designed to provide 1-Gbps, 2-Gbps, and 4-Gbps FC disk expansion for the IBM System Storage N series storage controllers. The EXN4000 is a 3U disk storage expansion unit that must be mounted in any industry-standard 19-inch rack. The EXN4000 contains:

- Dual redundant hot-pluggable integrated power supplies and cooling fans
- Dual redundant disk expansion unit switched controllers
- Fourteen hard disk drive slots
- Diagnostic and status LEDs

For ordering, contact:

Your IBM representative, an IBM Business Partner, or the Americas Call Centers at

800-IBM-CALL Reference: YE001

Overview

The IBM 2863 Model 004 System Storage™ EXN4000 FC expansion unit attaches to all N series storage controllers. The EXN4000 includes 4 Gigabit per second (Gbps) Fiber Channel (FC) disk storage for the IBM N series storage controllers that are 4 Gb capable. 4 Gbps is supported by Data ONTAP 7.2.1, or later. It also is designed to operate at 1-Gb and 2-Gb speeds for other N series storage controllers.

Key prerequisites

The EXN4000 4 Gbps support requires that the N series storage controller be running Data ONTAP 7.2.1, or later.

Planned availability date

June 8, 2007

Description

The EXN4000 4-Gbps FC disk expansion unit is shipped with five, and up to 14, FC hard disk drives in either 144 GB or 300 GB physical capacities. Each of these drives can be ordered in 10K RPM or 15K RPM rotational speeds. The 10K RPM disk is a 2-Gbps drive; the 15K drive is a 4-Gbps drive. With 144 GB FC hard disk drives, each EXN4000 provides 2.0 TB of physical storage capacity. With 300 GB FC

hard disk drives, each EXN4000 provides 4.2 TB of physical storage capacity.

The EXN4000 is a 3U disk storage expansion unit. It must be mounted in an industry standard 19-inch rack. The EXN4000 includes:

- Dual redundant hot-pluggable integrated power supplies and cooling fans
- Dual redundant disk expansion unit switched controllers
- Fourteen hard disk drive slots
- Diagnostic and status LEDs

The drives must be ordered as features of the EXN4000.

EXN4000 storage expansions units must be on separate FC loops from EXN1000 storage expansion units when attached to the N series storage controllers.

The EXN4000 should be considered a functional replacement to the EXN2000. The EXN4000 is capable of operating at 4-Gbps, 2-Gbps, or 1-Gbps transfer speeds. However, for 4-Gbps, the EXN4000 requires that the N series storage controller be running Data ONTAP 7.2.1, or later. EXN4000 attached to a 2-Gbps loop must be manually configured for 2-Gbps speed.

Section 508 of the U.S. Rehabilitation Act

The IBM System Storage N Series EXN4000 is capable, as of June 8, 2007, when used in accordance with IBM's associated documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via the following Web site

http://www-3.ibm.com/able/product_accessibility/index.html

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld ID and password are required (use IBM ID).

BP Attachment for Announcement Letter 107-281

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=107-281>

Trademarks

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Disk drive features

The IBM System Storage™ EXN4000 supports a maximum of 14 disk drives; all the disk drives installed must be of the same type (interface, capacity, and speed).

The following disk drive options are available for the EXN4000. Each feature provides one disk drive.

Feature	Description
4002	144 GB, 10K RPM FC HDD
4003	144 GB, 15K RPM FC HDD
4004	300 GB, 10K RPM FC HDD
4006	300 GB 4-Gbps 15K RPM FC HDD

Fibre Channel cable features

The 2863 Model 004 expansion unit requires Fibre Channel cables to connect the unit to a Model A10 or A20 base unit or to another Model 004 expansion unit.

The following Fibre Channel cable features are available for the 2863 Model 004:

Feature Description

2011	One 4-Gbps SFP GBIC
2021	Two 0.5 meter copper FC cables for connection to an N3700 storage controller or to another EXN4000
2023	Two 3.0 meter copper FC cables for connection to an N3700 storage controller or to another EXN4000
2042	Two 1.0 meter optical FC cables for connection to any N5x00 storage controller or to another EXN4000
2043	Two 2.0 meter optical FC cables for connection to any N5x00 storage controller or to another EXN4000
2044	Two 5.0 meter optical FC cables for connection to any N5x00 storage controller or to another EXN4000

Rack installation feature

All 2863 models are designed to be mounted in a rack. The following rack installation options are available:

Feature Description

9201	The EXN4000 will be installed in an IBM System Storage 2101 Model N00 System Rack by IBM manufacturing prior to shipment.
9202	Field install rack mount kit

Power (line) cord features

One power cord feature must be specified, either the Power Distribution Unit (PDU) power cord for and IEC 320, sheet C13 outlets, or one based on the country or region in which the system will be installed.

If feature #9201 is selected, power cord feature #9000 must be specified.

Feature Description

9000	PDU Pwr Cord, 42U Rack
9001	Power Cord, Cont. Europe
9002	Power Cord, UK
9003	Power Cord, Japan
9004	Power Cord, North America
9005	Power Cord, Australia/N. Z.
9006	Power Cord, Switzerland
9007	Power Cord, Argentina
9008	Power Cord, China
9009	Power Cord, Denmark
9010	Power Cord, India/S. Africa
9011	Power Cord, Israel
9012	Power Cord, Italy
9013	Power Cord, N. America 250V
9014	Power Cord, Brazil
9015	Power Cord, Taiwan
9016	Power Cord, Taiwan 250V

Publications

The following publications are shipped with the product. Additional copies will be available immediately.

Title	Form number
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Shipped in hardcopy:

IBM System Storage EXN4000	GC27-2079
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Installation and Setup Instructions

IBM Translated Safety Notices GA27-4338

IBM System Storage N Series
Statement of Limited Warranty
(in 9 Languages) GC26-7986

Shipped on CD-ROM:

IBM System Storage EXN4000
Hardware and Service Guide GC27-2080

IBM System Storage N5000 Series
Hardware and Service Guide. GC26-7785

IBM System Storage N7000 Series
Hardware and Service Guide. GC26-7953

IBM System Storage N series
Diagnostics Guide GC26-7789

IBM System Storage N Series
Error Messages and
Troubleshooting GC26-7984

IBM System Storage N Series
Statement of Limited Warranty
(in 29 Languages) GC26-7987

On the Web, all above, and:

IBM System Storage N series GA32-0543
Introduction and Planning Guide

The 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.

Displayable softcopy publications

The product books are offered in displayable softcopy form. The files are shipped on CD-ROM with the hardware and are available from the Web at

<http://www.ibm.com/servers/storage/support/nas/index.html>

Services

Global Technology Services

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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

- Width: 447 mm (17.6 in)
- Depth: 508 mm (20.0 in)
- Height: 133 mm (2.25 in)
- Weight: 35.8 kg (78.8 lb)

To assure installability and serviceability in non-IBM industry standard racks, review the installation planning information for any product specific installation requirements.

Standards

Safety

- UL/C-UL; CE

EMC

- FCC Class A
- EN55022: 1998
- EN61000-3-2
- EN61000-3-3
- CE
- ACA C-Tick
- VCCI

Immunity

- EN55024: 1998

Operating environment

- Temperature:
 - Maximum range: 10° to 40° C (50° to 104° F)
 - Recommended: 20° to 25° C (68° to 77° F)
 - Non-operating: -40° to 65° C (-40° to 149° F)
- Relative humidity: 10 to 90 (percent, non-condensing)

- Wet bulb (caloric value): 1,215 Btu/hr (fully loaded shelf)
- Electrical power: 100-120/200-240 V ac, 7/3.5 A, 50/60 Hz
- Noise level:
 - 49 dBa @ 1 m @ 23 degrees C
 - 5 bels @ 1 m @ 23 degrees C

Software requirements: For operation at 4-Gbps, the EXN4000 requires that the N series storage controller be running Data ONTAP 7.2.1, or later.

Limitations

- The EXN4000 is supported only in rack installations.
- A minimum of 5, and a maximum of 14, disk drives of the same type (interface, capacity, and speed) is required.
- This product is functional with the System i™ and OpenPower® platforms. However, on the System i, support is only available on Power Linux™ and AIX® partitions, not i5OS.

Planning information

Customer responsibilities: Physical configuration and installation planning for the EXN4000 is a customer responsibility. Information about physical configuration and installation requirements, including equipment, site, and power requirements, can be found in the IBM System Storage EXN4000 Installation and Setup Instructions (GC27-2079).

A customer-supplied Ethernet cable is required to connect the machine to a server or Ethernet network.

Cable orders: Fibre Channel cables are required to connect a Model 004 expansion unit to an N series system. Cables can be purchased using Model 004 features.

Refer to the Fibre Channel cable features section for cable requirements and information.

Installability: Estimated time to unpack a Model 004, install it in the rack, and perform a simple discovery and configuration is one hour.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, and/or application software to which it is attached.

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

Terms and conditions

Volume orders: Contact your IBM representative.

IBM Global Financing: Yes

Warranty period: Three years

Warranty service: If required, IBM provides repair or exchange service depending on the types of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone, or electronically via an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. If applicable to your product, parts considered customer replaceable units (CRUs) will be provided as part of the machine's standard warranty service.

Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for

country and location specific information. This product is covered by the following types of service.

CRU service and on-site for other selected parts

CRU service: IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request. CRUs are designated as being either a Tier 1 or a Tier 2 CRU.

Tier 1 CRU: Installation of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

For machines with on-site same-day response service IBM will replace a Tier 1 CRU part at your request, at no additional charge.

Tier 2 CRU: You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Based upon availability, CRUs will be shipped for next business day delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, (1) return instructions and a container is shipped with the replacement CRU and (2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts have been designated as Tier 1 CRU parts:

- AC power cord
- AC power supply
- Disk drive
- Cables
- Memory modules
- Wrap plug
- Operator panel

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

- 9 hours per day, Monday through Friday, excluding holidays, next-business-day response

Warranty service upgrades and maintenance service options

Warranty service upgrades

During the warranty period, warranty service upgrades provide an enhanced level of On-site Service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of On-site Service acquired by the customer. Service levels are response time objectives and are not guaranteed.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability.

On-site Service

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose. The following service selections are available as warranty upgrades for your machine type:

- 9 hours per day, Monday through Friday, excluding holidays, 4-hour average, same-business-day response, IOR
- 24 hours per day, 7 days a week, 4-hour average response, IOR

- 24 hours per day, 7 days a week, 2-hour average response, IOR

CRUs may be provided as part of the machine's standard warranty CRU service except that you may install a CRU yourself or request IBM installation, at no additional charge, under one of the On-site Service levels specified above. For additional information on the CRU service, see warranty information.

Maintenance Services

If required, IBM provides repair or exchange service depending on the types of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically, via an IBM Web site. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of maintenance service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country and location specific information. The following service selections are available as maintenance options for your machine type.

On-site Service: IBM will repair the failing machine at your location and verify its operation. You must provide suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

- 9 hours per day, Monday through Friday, excluding holidays, next-business-day response, IOR
- 9 hours per day, Monday through Friday, excluding holidays, 4 hour average response, IOR
- 24 hours per day, 7 days a week, 4-hour average response, IOR
- 24 hours per day, 7 days a week, 2-hour average response, IOR

CRUs

If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, or hard disk drive), and depending upon the maintenance service offerings in your geography, IBM will ship the CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request.

Based upon availability, CRUs will be shipped for next business day delivery. IBM specifies, in the materials shipped with a replacement CRU, whether a defective CRU must be returned to IBM. When return is required, (1) return instructions and a container is shipped with the replacement CRU and (2) you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

CRUs may be provided as part of the machine's standard maintenance service except that you may install a CRU yourself or request IBM installation, at no additional charge, under any of the On-site Service levels specified above.

Usage plan machine: No

IBM hourly service rate classification: One. When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

Field-installable features: Yes

Model conversions: Yes

Machine installation: Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated program license charges apply: No. This product does not contain Licensed Internal Code or Licensed Machine Code.

Educational allowance: A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

The educational allowance is 15% for the products in this announcement.

Prices

Product charges

Description	Machine type	Machine model	Feat. number	Purch. price
N Series EXN4000	2863	004		\$7,300
4-Gbps SFP GBIC	2863	004	2011	180
FC EXP to EXP Cbl 0.5m	2863	004	2021	75
FC EXP to EXP Cbl 3.0m	2863	004	2023	100
1.0 m FC Optical Cable	2863	004	2042	100
2.0 m FC Optical Cable	2863	004	2043	125
5.0 m FC Optical Cable	2863	004	2044	150
144 GB, 10K RPM FC HDD	2863	004	4002	1,180
144 GB, 15K RPM FC HDD	2863	004	4003	1,995
300 GB, 10K RPM FC HDD	2863	004	4004	1,825
300 GB 4-Gbps 15K RPM FC HDD	2863	004	4006	3,050
HDD Blank Panel	2863	004	4099	0

Power cords

PDU Pwr Cord, 42U Rack	2863	004	9000	0
Power Cord, Cont. Europe	2863	004	9001	0
Power Cord, United Kingdom	2863	004	9002	0
Power Cord, Japan	2863	004	9003	0
Power Cord, North America	2863	004	9004	0
Power Cord, Australia/N. Z.	2863	004	9005	0
Power Cord, Switzerland	2863	004	9006	0
Power Cord, Argentina	2863	004	9007	0
Power Cord, China	2863	004	9008	0
Power Cord, Denmark	2863	004	9009	0
Power Cord, India/S. Africa	2863	004	9010	0
Power Cord, Israel	2863	004	9011	0
Power Cord, Italy	2863	004	9012	0
Power Cord, N. America 250V	2863	004	9013	0
Power Cord, Brazil	2863	004	9014	0
Power Cord, Taiwan	2863	004	9015	0
Power Cord, Taiwan 250V	2863	004	9016	0

Installation

Plant install in 2101 rack	2863	004	9201	160
Field merge rack mount kit	2863	004	9202	160

MES ordering

MES Order Indicator	2863	004	9555	NC
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Alternative and maintenance service

ICA warranty upgrade

Machine type-model-feature	IWR IBM on-site repair (IOR, 24 x 7)
2863-004	\$2,330

ICA Maintenance

Machine type-model	I08 IBM next day on-site repair (IOR, 9 x 5)	I0R IBM 4-hr resp. on-site repair (IOR, 24 x 7)
2863-004	\$237	\$332

For ServiceElect (ESA) maintenance service charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

Plant /

	Mach/Mod/Feat	Field install	MES removal	Cabl req.	CSU (1)
4-Gbps SFP GBIC	2863/004/2011	Both	N	N	Y
FC EXP to EXP Cbl 0.5m	2863/004/2021	Both	N	N	Y
FC EXP to EXP Cbl 3.0m	2863/004/2023	Both	N	N	Y
1.0 m FC Optical Cable	2863/004/2042	Both	N	N	Y
2.0 m FC Optical Cable	2863/004/2043	Both	N	N	Y
5.0 m FC Optical Cable	2863/004/2044	Both	N	N	Y
144 GB, 10K RPM HDD	2863/004/4002	Both	N	N	Y
144 GB, 15K RPM FC HDD	2863/004/4003	Both	N	N	Y
300 GB, 10K RPM HDD	2863/004/4004	Both	N	N	Y
300 GB, 15K RPM HDD	2863/004/4006	Both	N	N	Y
HDD Blank Panel	2863/004/4099	Both	N	N	Y
PDU Pwr Cord, 42U Rack	2863/004/9000	Plant	N	N	Y
Power Cord, Cont. Europe	2863/004/9001	Plant	N	N	Y
Power Cord, UK	2863/004/9002	Plant	N	N	Y
Power Cord, Japan	2863/004/9003	Plant	N	N	Y
Power Cord, North America	2863/004/9004	Plant	N	N	Y
Power Cord, Australia/N. Z.	2863/004/9005	Plant	N	N	Y
Power Cord, Switzerland	2863/004/9006	Plant	N	N	Y
Power Cord, Argentina	2863/004/9007	Plant	N	N	Y
Power Cord, China	2863/004/9008	Plant	N	N	Y
Power Cord, Denmark	2863/004/9009	Plant	N	N	Y
Power Cord, India/S. Africa	2863/004/9010	Plant	N	N	Y
Power Cord, Israel	2863/004/9011	Plant	N	N	Y
Power Cord, Italy	2863/004/9012	Plant	N	N	Y
Power Cord, N. America 250V	2863/004/9013	Plant	N	N	Y
Power Cord, Brazil	2863/004/9014	Plant	N	N	Y
Power Cord, Taiwan	2863/004/9015	Plant	N	N	Y
Power Cord, Taiwan 250V	2863/004/9016	Plant	N	N	Y
Plant install	2863/004/9201	Plant	Y	N	Y
Field merge rack mount kit	2863/004/9202	Plant	N	N	Y
MES Order Indicator	2863/004/9555	Field	N	N	Y

(1) Customer setup

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

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

Order now

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To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

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Fax: 800-2IBM-FAX (242-6329)
Internet: callserv@ca.ibm.com
Mail: IBM Americas Call Centers
Dept. Teleweb Customer Support, 9th floor
105 Moatfield Drive
North York, Ontario
Canada M3B 3R1

Reference: YE001

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