



IBM System Storage DS3000 series Express models include frequently requested DS3000 options

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At a glance

The IBM System Storage DS3300, DS3400, and EXP3000 Express models include popular options to help you more easily create your storage configuration. The Express models have the following features and characteristics:

- DS3300 Express models include one IBM iSCSI HBA
- DS3400 Simple SAN Express Kits include a DS3400 FC single or dual controller, SAN Switch, FC HBAs, 4 Gbps SW SFP transceivers, and Fiber Optic cables
- EXP3000 Express models include an SAS cable or a MegaRAID adapter cable
- 2 U rack-mountable enclosures with 12 easily accessible drive bays
- Support for hot-swappable SAS HDDs at 10,000 and 15,000 rpm speeds
- Scalability of up to 3.6 TB internal physical storage capacity, using 300 GB hot-swappable SAS disks
- Built-in reliability features with dual-redundant power supplies
- Three-year limited warranty on parts and labor

For ordering, contact:

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

800-IBM-CALL Reference: SE001

Overview

The IBM System Storage™ DS3000 series family of external storage enclosures is being expanded to include several new DS3000 Express Models. The DS3000 series of scalable, flexible, and affordable storage solutions support IBM's System x™ and BladeCenter® servers.

Express Models of the DS3300 iSCSI storage controllers and the EXP3000 storage expansion enclosure combine popular, frequently requested options with the DS3300 controllers and EXP3000 storage expansion enclosure to help you easily create your storage configuration.

- DS3300 iSCSI Single Controller Express Model 31E
 - 1 x DS3300 iSCSI Single Controller model
 - 1 x IBM Qlogic iSCSI 1-port PCIe HBA
- DS3300 iSCSI Dual Controller Express Model 32E

- 1 x DS3300 iSCSI Dual Controller model
- 1 x IBM Qlogic iSCSI 1-port PCIe HBA
- EXP3000 Express Model 01E
 - 1 x EXP3000 Storage Expansion Enclosure
 - 1 x IBM 3m SAS Cable
- EXP3000 Express Model 01M
 - 1 x EXP3000 Storage Expansion Enclosure
 - 1 x IBM 3m MegaRAID Adapter Cable

Also being introduced are two new IBM System Storage Simple SAN Express kits that enable you to more easily setup and configure an SAN.

- DS3400 FC single or dual controller
- IBM Brocade SAN Switch
- Emulex HBAs
- 4 Gbps SW SFP transceivers
- 5m Fiber Optic cables LC-LC

Key prerequisites

Supported System x and BladeCenter server configurations that include:

- Supported operating system
- Backup application software
- Supported racks
- Power source and cables

Planned availability date

September 14, 2007

Description

IBM System Storage DS3000 series

IBM System Storage DS3000 series is a family of storage enclosures that support IBM System x and BladeCenter servers. This family of affordable storage products is designed to be scalable and flexible, with ease of use, and now includes the DS3200 SAS (Serial Attached SCSI) controllers, DS3300 iSCSI (Internet SCSI) controllers, DS3400 FC (Fibre Channel) controllers, and the EXP3000 storage expansion enclosure.

DS3300 Express Models

The IBM System Storage DS3300 Express Models combine a DS3300 iSCSI single or dual active RAID controller with an iSCSI host bus adapter (HBA) that can help you create your storage configuration easily and quickly.

DS3300 Express Models offer:

- DS3300 iSCSI Single Controller Express Model 31E (1726-31E)
 - 1 x DS3300 iSCSI Single Controller
 - 1 x IBM Qlogic iSCSI 1-port PCIe HBA (39Y6146)
- DS3300 iSCSI Dual Controller Express Model 32E (1726-32E)
 - 1 x DS3300 iSCSI Dual Controller

- 1 x IBM Qlogic iSCSI 1-port PCIe HBA (39Y6146)

A 2 U rack-mountable enclosure houses the DS3300 Express models. These iSCSI controllers contain two iSCSI 1 Gbps host ports per RAID controller. DS3300 Model 31E which contains a single RAID controller, has two 1 Gbps iSCSI host ports. The DS3300 Model 32E, containing dual-active RAID controllers, has four 1 Gbps iSCSI host ports.

The DS3300 Express Models support up to 12 SAS disk drives internal to their enclosures and can attach up to three EXP3000 expansion enclosures, resulting in the capability to connect up to 48 disk drives and enabling storage configuration up to 14.4 TB physical storage capacity using 300 GB SAS disk drives.

Optional advanced DS3000 storage management and copy service functions, including FlashCopy® and VolumeCopy, are available for the DS3300 Express Models. The DS3000 Storage Manager software is designed to help centralize storage management, help simplify partitioning of the DS3000 series storage into as many as 16 virtual servers, and strategically allocate storage capacity to maximize storage space.

The DS3300 Express Models support high-availability functions, such as redundant and hot-pluggable power supplies and fans. Most replaceable items and components are easily accessible for replacement from either the front or the back.

The System Storage DS3300 Express Models offer:

- 2 U rack-mountable enclosure with 12 easily accessible drive bays
- Two 1 Gbps iSCSI host ports per controller supporting up to 16 network attached hosts
- Support for dual-ported and hot-swappable SAS disks at 10,000 and 15,000 rpm speeds
- Scalability of up to 3.6 TB internal physical storage capacity using 300 GB hot-swappable SAS disks
- Expandability of up to 14.4 TB physical storage capacity with attachment of EXP3000 expansion units
- RAID 0, 1, 3, 5, and 10 support
- Built-in reliability features with dual-redundant power-supplies standard
- Three-year limited warranty on parts and labor

DS3400 Simple SAN Express Kits

Two new DS3400 Simple SAN Express Kits are now available that contain the parts needed to easily setup an SAN and quickly configure the DS3400 storage.

The DS3400 Simple SAN Express Kits contain the Emulex EZPilot software that enables automated installation and configuration of the Simple SAN components. The EZPilot software also provides a VDS-based storage manager for discovery, inventory, allocation and assignment of virtual disks.

DS3400 Simple SAN Express Kit Model 41U (1726-41U)

- DS3400 FC single controller
- One IBM SAN16B-2 Switch (2005B16) with eight 4 Gbps SW SFP transceivers
- Two IBM Emulex 4 Gbps FC 1-port PCI-E Enterprise HBA (42C2069)
- Four 5m Fiber Optic cables LC-LC (39M5697)
- CD and Flyer containing Emulex EZPilot software and instructions

DS3400 Simple SAN Express Kit Model 42U (1726-42U)

- DS3400 FC dual controller
- One IBM SAN16B-2 Switch (2005B16) with eight 4 Gbps SW SFP transceivers
- Four IBM Emulex 4 Gbps FC 1-port PCI-E Enterprise HBA (42C2069)
- Eight 5m Fiber Optic cables LC-LC (39M5697)

- Four 4 Gbps SW SFP transceivers (39R6475)
- CD and Flyer containing Emulex EZPilot software and instructions

The DS3400 Simple SAN Express Kits include all of the functionality of the base DS3400 controllers including the following:

- 2 U rack-mountable enclosure with 12 easily accessible drive bays
- Support for dual-ported, and hot-swappable SAS disks at 10,000 and 15,000 rpm speeds
- Scalability of up to 3.6 TB internal physical storage capacity using 300 GB disk drives
- Expandable by attaching up to three EXP3000s for a total of up to 48 disk drives and up to 14.4 TB
- Built-in reliability features with dual redundant power supplies standard
- Three-year limited-warranty on parts and labor

EXP3000 Express Models

The IBM System Storage EXP3000 is a modular, Serial Attached SCSI (SAS) storage expansion enclosure. The EXP3000 can be directly connected to an IBM System x server containing a MegaRAID adapter to enable expansion of the server's storage capacity. EXP3000 expansion enclosures can also be directly connected to DS3000 controllers to expand storage configurations up to 14.4 TB.

The EXP3000 is a high-function, high-density SAS storage expansion unit. It can support up to twelve 3 Gbps SAS disk drives. The EXP3000 supports high-availability functions and contains redundant, hot-pluggable power supplies and fans.

The EXP3000 storage enclosure supports easy customer servicing. Most replaceable items and components are easily accessible for replacement from either the front or the back.

EXP3000 Express Models combine an EXP3000 storage expansion unit with either an SAS cable to attach to a DS3000 storage controller or a MegaRAID cable to attach to a System x server with a MegaRAID adapter. Both express models enable you to attach the EXP3000 easily and quickly.

EXP3000 Express Models offer:

- EXP3000 w/SAS Cable Express Model 01E
 - 1 x EXP3000 Storage Expansion Unit
 - 1 x IBM 3m SAS Cable (39R6531)
- EXP3000 w/MegaRAID Cable Express Model 01M
 - 1 x EXP3000 Storage Expansion Unit
 - 1 x IBM 3m MegaRAID Adapter Cable (39R6471)

EXP3000 features include:

- 2 U rack-mountable enclosure with 12 easily accessible drive bays
- Support for dual-ported, and hot-swappable SAS disks at 10,000 and 15,000 rpm speeds
- Scalability of up to 3.6 TB internal physical storage capacity using 300 GB disk drives
- Provides two miniSAS connectors on a standard single Environment Services Module (ESM) to connect to System x servers or to DS3000 storage controllers
- Built-in reliability features with dual redundant power supplies standard
- Three-year limited-warranty on parts and labor.

Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

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

Product positioning

IBM System Storage DS3000 series is a new family of storage enclosures from IBM. The DS3000 series is specifically designed to address the needs of the small and medium businesses. The DS3300, DS3400, and EXP3000 Express models combine popular options that can enable users to easily create their storage configurations. With many small business IT departments having one or a part-time administrator, and limited time to spend on data management, the DS3000 series can be easily installed without extensive knowledge or effort.

The DS3000 Storage Manager software was designed for easy implementation for an unseasoned administrator. The task-oriented management interface of the DS3000 Storage Manager presents tasks to the administrator first, and then asks which object to perform the task on. Thus, the management application's task-oriented interface removes the resistance that many organizations have with moving to an external storage solution. The scalability of the DS3000 series helps allow businesses to respond to their constantly changing storage environment. By starting small, the DS3000 series is designed to allow users to make additional investments in their infrastructure, only when their data growth necessitates it. The DS3000 series capacity is increased by either adding hard disk drives or by expanding the configuration by adding EXP3000 expansion units. Both of these operations can be done without having to shut down the storage enclosure. This helps lessen impact to your environment and gives users control of their data storage as they expand capacity on an as-needed basis.

The DS3000 series is a comprehensive storage solution for IBM System x and BladeCenter servers. This flexibility helps you to break free of server barriers and use a single storage solution across your environment. With many functionality and availability features that come standard, and a price-point that does not strain the budget, the DS3000 series is the simple choice for the small and medium-sized businesses. Many other storage products require the purchase of expensive options for basic storage configurations. The DS3000 series is a complete out-of-the-box solution designed to satisfy most storage needs.

Features include:

- 2 U rack mount enclosure with 12 easily accessible drive bays
- Support for RAID 0, 1, 3, 5, and 10
- Support for dual-ported and hot-swappable SAS disks at 10,000 and 15,000 rpm speeds
- Scalability of up to 3.6 TB of internal physical storage capacity using 300 GB hot-swappable SAS disks
- Expandable by attaching up to three EXP3000s, or a total of 48 hard disk drives, for up to 14.4 TB physical storage capacity
- Built-in reliability features with dual-redundant power-supplies standard
- Three-year limited warranty on parts and labor

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 107-518

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=107-518>

Trademarks

System Storage and System x are trademarks of International Business Machines Corporation in the United States or other countries or both.

BladeCenter and FlashCopy are registered trademarks of International Business Machines Corporation in the United States or other countries or both.

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

Publications

For publications that are applicable to the DS3000 Express Models refer to publications that are shipped with the DS3000 base models as follows:

- For the DS3300 Express Models, refer to the base DS3300 iSCSI models Hardware Announcement [107-517](#), dated August 28, 2007.
- For the DS3400 Simple SAN Express Models, refer to the base DS3400 models Hardware Announcement [107-017](#), dated January 16, 2007.
- For the EXP3000 Express Models, refer to the base EXP3000 models Hardware Announcement [106-640](#), dated August 29, 2006.

The product books are offered in displayable softcopy form. The displayable manuals are part of the basic machine-readable material.

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.

xSeries® and BladeCenter® support services

Recommended core technical support: When you buy IBM xSeries technology, include the support services you need to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs, and we'll help you get started with a core support package that includes:

- **Hardware maintenance**

World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

Unlimited help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, refer to

<http://www.ibm.com/servers/eserver/xseries/services.html>

Specified operating environment

Physical specifications: DS3300 Express Model 31E (1726-31E)

- Width: 482 mm (18.98 in)
- Depth: 521 mm (20.51 in)
- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 28.3 kg (62.4 lb) fully configured

Installation time is approximately 30 minutes.

DS3300 Express Model 32E (1726-32E)

- Width: 482 mm (18.98 in)
- Depth: 521 mm (20.51 in)
- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 28.3 kg (62.4 lb) fully configured

Installation time is approximately 30 minutes.

DS3400 Simple SAN Express Kit Model 41U (1726-41U)

- Width: 482 mm (18.98 in)
- Depth: 521 mm (20.51 in)
- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 28.3 kg (62.4 lb) fully configured

Installation time is approximately 30 minutes.

DS3400 Simple SAN Express Kit Model 42U (1726-42U)

- Width: 482 mm (18.98 in)
- Depth: 521 mm (20.51 in)
- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 28.3 kg (62.4 lb) fully configured

Installation time is approximately 30 minutes.

EXP3000 Express Model 01E (1727-01E)

- Width: 448 mm (17.64 in)
- Depth: 521 mm (20.51 in)
- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 18 kg (39.70 lb) fully configured

Installation time is approximately 30 minutes.

EXP3000 Express Model 01M (1727-01M)

- Width: 448 mm (17.64 in)
- Depth: 521 mm (20.51 in)

- Height: 87.20 mm (3.43 in)
- Maximum weight: Up to 18 kg (39.70 lb) fully configured

Installation time is approximately 30 minutes.

Standards

Product safety conformance

- CB Report
- cUL, UL
- NOM
- S-mark
- BSMI-Safety CNS14336 2004

EMC conformance

- European Union: CE Mark
- Taiwan: BSMI CNS13438
- European Union: RoHS
- Australia and New Zealand: ACA C-Tick
- Russia: GOST
- Japan: VCCI
- China: WEEE
- U.S.: FCC

Operating environment: DS3300 Express Models 31E, 32E

- Temperature: 10° to 40°C (50° to 104°F)
- Relative Humidity: 20% to 80% (non-condensing)
- Wet bulb: 26°C (79°F) maximum
- Electrical ratings: 100-240 V ac, 50-60 Hz, 7.8 Amps max.
- Electrical Power: 540 watts maximum operating

DS3400 Simple SAN Express Models 41U, 42U

- Temperature: 10° to 40°C (50° to 104°F)
- Relative Humidity: 20% to 80% (non-condensing)
- Wet bulb: 26°C (79°F) maximum
- Electrical ratings: 100-240 V ac, 50-60 Hz, 7.8 Amps max.
- Electrical Power: 540 watts maximum operating

EXP3000 Express Models 01E, 01M

- Temperature: 10° to 40°C (50° to 104°F)
- Relative Humidity: 20% to 80% (non-condensing)
- Wet bulb: 26°C (79°F) maximum
- Electrical ratings: 100-240 V ac, 50-60 Hz, 7.8 Amps max.
- Electrical Power: 540 watts maximum operating

Hardware requirements: System Storage™ DS3000 series requires a System x™ or BladeCenter server.

IBM System Storage DS3000 offers:

- Power-up self-test functionality diagnostics
- Dual internal power supplies
- 2 U rack mount form
- Easy access front or rear
- Up to 12 drives per unit

Software requirements: System Storage DS3000 controllers and EXP3000 storage expansion enclosures are supported on both System x and BladeCenter server systems using the operating system and application software installed on the systems.

Compatibility: The DS3000 controllers and EXP3000 storage expansion enclosures are compatible with System x and BladeCenter servers.

For compatibility information, consult the DS3000 Interoperability Matrix

<http://www-03.ibm.com/systems/storage/disk/ds3000/pdf/interop.pdf>

Limitations: To avoid damage to the server, always disconnect and remove controllers and storage expansion units before relocating or shipping the server.

The EXP3000 Expansion Unit supports SATA disk drives only when directly attached to servers using the MegaRAID8480.

The EXP3000 Expansion Unit does not support SATA disk drives when attached to the DS3200, DS3300, or DS3400 controllers.

Planning information

Customer responsibilities: Physical planning is a customer responsibility.

The DS3000 series storage enclosures are designated as customer setup units (CSU).

It is the customer's responsibility to install the unit. Customers are responsible for obtaining the cables and adapters (if required) for system attachment.

You are responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called BIOS), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes; however, you may be charged for that service.

Cable orders: Category 5E or Category 6 Ethernet cables are required to attach the DS3300 Express models to a server.

The DS3400 Simple SAN Express Kit Models contain Fiber Optic cables to attach the DS3400 to the SAN switch and also attach the host servers to the SAN switch. Additional Fiber Optic cables can be ordered separately to attach more host servers to the SAN switch.

The EXP3000 Express models contain either an SAS cable to attach to a DS3000 storage controller or a MegaRAID cable to attach to a System x server with a MegaRAID adapter. Additional SAS cables can be ordered separately to attach multiple EXP3000 expansion units.

Customers are responsible for selecting and ordering the required attachment cables.

Installability: Installation time for the DS3300 iSCSI, DS3400 FC controllers, and EXP3000 expansion enclosures is approximately 30 minutes.

Direct customer support: Direct customer support for DS3000 series storage products are

provided by IBM Operational Support Services — Support Line. This fee service provides voice and electronic access into the IBM support organization. IBM Operational Support Services — Support Line helps answer questions pertaining to product and feature usage ("how to"), configuration, and product compatibility for eligible products. For a list of the products supported via Support Line, visit

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

For more information on services, call 800-IBM-4YOU (426-4968).

Packaging

Part number	(Description) Items included	Qty of boxes	Shipping weight
172631E	DS3300 Express Model 31E One DS3300 iSCSI Single Controller One IBM Qlogic 1-port PCIe HBA Two rack power cords Pubs group Rail mounting hardware kit	1	90 lb
172632E	DS3300 Express Model 32E One DS3300 Dual Controller One IBM Qlogic 1-port PCIe HBA Two rack power cords Pubs group Rail mounting hardware kit	1	96 lb
172641U	DS3400 Simple SAN Express Model 41U One DS3400 FC Single Controller One IBM SAN16B-2 Switch w/eight 4 Gbps SW SFP transceivers Two IBM Emulex 4 Gbps 1-port PCIe HBAs Four 5m Fiber Optic cables LC-LC Two rack power cords Pubs group Rail mounting hardware kit	1	115 lb
172642U	DS3400 Simple SAN Express Model 42U One DS3400 FC Dual Controller One IBM SAN16B-2 Switch w/eight 4 Gbps SW SFP transceivers Four IBM Emulex 4 Gbps 1-port PCIe HBAs Eight 5m Fiber Optic cables LC-LC Four 4 Gbps SW SFP transceivers Two rack power cords Pubs group Rail mounting hardware kit	1	127 lb
172701E	EXP3000 Express Model 01E One EXP3000 expansion enclosure One 3m SAS Cable Two rack power cords Pubs group Rail mounting hardware kit	1	88 lb
172701M	DS3300 Express Model 01M One EXP3000 expansion enclosure One 3m MegaRAID Adapter Cable Two rack power cords Pubs group Rail mounting hardware kit	1	88 lb

Security, auditability, and control

This product uses the security and auditability features of the host hardware, software, and application software.

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

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

Volume orders: Contact your IBM representative.

IBM credit corporation financing: Yes

To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or IBM.

In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept. JDJA/B203

Warranty period

- System hardware — Three years
- Optional features — One year

Note: Battery is a consumable and has no warranty.

Optional IBM features initially installed in an IBM DS3000 system, carry the same warranty and warranty service support category as the DS3000 system. If installed after the initial system installation, they carry the balance of the system warranty or the optional feature warranty, whichever is greater.

Warranty service: If required, IBM provides repair or exchange service depending on the type of warranty service specified below for the machine. 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. 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.

Customer replaceable unit (CRU) (for example, keyboard, mouse, speaker, memory, hard disk drive) service and on-site service 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 at any time on your request. CRUs are designated as being either a Tier 1 or a Tier 2 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. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, on-site service.

Based upon availability, CRUs will be shipped for NBD 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 are 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 CRUs:

- Bezel, chassis kit
- Fillers
- Shell
- Rack kit
- Power supply
- HDDs
- Line cord

On-site service: On-site repair (IOR), 9 hours per day, Monday through Friday excluding holidays, NBD response. 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. On-site service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where on-site service is not available, the normal in-country service delivery is used.

Call IBM at 800-IBM-SERV (426-7378), to assist with problem isolation for hardware to determine if warranty service is required. Telephone support may be subject to additional charges, even during the limited warranty period.

International Warranty Service (IWS): International Warranty Service (IWS) is available during the warranty period to customers who travel or relocate to countries where their computer is sold and serviced by IBM or IBM resellers authorized to perform warranty service. Eligible IBM computers are identified by their four-digit machine type.

You can obtain IWS through the method of service, such as CRU, depot, carry-in or on-site, provided in the servicing country. Service methods and procedures vary by country, and some service or parts may not be available in all countries. Service centers in certain countries may not be able to service all models of a particular machine type. In addition, some countries may have fees and restrictions that apply at the time of service.

For more information on IWS, refer to Services Announcement [601-034](#), dated September 25, 2001.

Licensing: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Maintenance services

ServicePac®, ServiceSuite™, and ServiceElect: ServicePac, ServiceSuite, and ServiceElect provide hardware warranty service upgrades, maintenance, and selected support services in one agreement.

Warranty service upgrade: During the warranty period, warranty service upgrade provides 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.

CRUs will be provided as part of the machine's standard warranty CRU service except that you may install a Tier 1 CRU yourself or request IBM installation, at no additional charge, under one of the on-site service levels specified below.

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.

The following warranty service upgrade options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, 4 hour average response.
- On-site service — IOR, 24 hours per day, 7 days a week, 4 hour average response.
- On-site service — IOR, 24 hours per day, 7 days a week, 2 hour average response.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified below for the machine. 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. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, hard disk drive), 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 at any time on your request.

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 are 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.

On-site service: IOR, 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.

The following on-site service options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, NBD response.
- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, 4 hour average response.
- On-site service — IOR, 24 hours per day, 7 days a week, 4 hour average response.
- On-site service — IOR, 24 hours per day, 7 days a week, 2 hour average response.

Maintenance service (ICA)

Maintenance services are available for ICA legacy contracts. The preferred go-to-market offerings are ServiceElect. However, ICA legacy contracts will still be available for current customers until they are withdrawn.

Alternative service (warranty service upgrades): During the warranty period, warranty service upgrade provides 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.

CRUs will be provided as part of the machine's standard warranty CRU service except that you may install a Tier 1 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service specified below, 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.

The following warranty service upgrade option is available.

- On-site service — IOR, 24 hours per day, 7 days a week, 4 hour average response.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified below for the machine. 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. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (for example, keyboard, mouse, speaker, memory, hard disk drive), 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 at any time on your request.

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 are 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.

On-site service: IOR, 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.

The following on-site service options are available:

- On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, NBD response.
- On-site service — IOR, 24 hours per day, 7 days a week, 4 hour average response.

Non-IBM Parts Support

Warranty service: IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to their customers, and normal warranty service procedures for the IBM machine apply.

Warranty service upgrades and maintenance services: Under certain conditions, IBM Integrated Technology Services repairs selected non-IBM parts, at no additional charge, for machines that are covered under warranty service upgrades or maintenance services.

IBM Service provides hardware problem determination on non-IBM parts (adapter cards, PCMCIA cards, disk drives, memory, and so forth) installed within IBM systems covered under warranty service upgrades or maintenance services and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

IBM hourly service rate classification: One

Field-installable features: No

Model conversions: No

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

Graduated program license charges apply: No. These products do not contain Licensed Internal Code or Licensed Machine Code.

Educational allowance: None

Prices

Description	Mach type Model	Feature number	Purchase price	Initial / MES/ Both/ Support
DS3300 Express Model 31E (iSCSI Single Controller)	1726 HC3	2709	\$ 4,545	Initial
DS3300 Express Model 32E (iSCSI Dual Controller)	1726 HC3	2710	7,045	Initial
DS3400 SAN Express Mod 41U (FC Single Controller)	1726 HC4	2719	9,933	Initial
DS3400 SAN Express Mod 42U (FC Dual Controller)	1726 HC4	2721	13,793	Initial
EXP3000 Express Model 01E (w/3m SAS Cable)	1727 HC1	2708	3,734	Initial
EXP3000 Express Model 01M (w/3m MegaRAID adpt Cable)	1727 HC1	2713	3,718	Initial

Single Entity Offering (SEO)

Description	Mach type Model	SEO number	Purch. price	Field Install Only	Plant Install Only
DS3300 Express SEO 172631E (iSCSI Single Controller)	1726 HC3	172631E	\$ 4,545	N	N
DS3300 Express SEO 172632E (iSCSI Dual Controller)	1726 HC3	172632E	7,045	N	N
DS3400 SAN Exp. 172641U (FC Single Controller)	1726 HC4	172641U	9,933	N	N
DS3400 SAN Exp. SEO 172642U (FC Dual Controller)	1726 HC4	172642U	13,793	N	N
EXP3000 Express SEO 172701E (w/3m	1727 HC1	172701E	3,734	N	N

SAS Cable)

EXP3000 Express SE0 1727 HC1 172701M 3,718 N N
172701M (w/3m
MegaRAID adpt Cable)

ServicePac information for warranty upgrades and maintenance

Hardware models announcing with this release will utilize existing U.S. ServicePacs.

Reference the following IBM Web site for applicable U.S. ServicePac information:

http://www-935.ibm.com/services/us/its/html/servicepac_americas.html

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

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