



IBM System Storage DS8000 series (Machine types 2421, 2422, 2423, and 2424) delivers new flexibility and data protection options

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At a glance

New functional capabilities for the DS8000[™] series (Machine types 2421, 2422, 2423, and 2424) include:

- RAID-6
- 450 GB 15,000 rpm Fibre Channel Disk Drive
- Variable LPAR
- Extended Address Volumes
- IPv6

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

The IBM® System Storage[™] DS8000 series (Machine types 2421, 2422, 2423, and 2424) provides new functional capabilities, allowing clients to better choose the combination of price and efficiency that is right for their application needs. New options include:

- **RAID-6:** Allows for additional fault tolerance by using a second independent distributed parity scheme (dual parity).
- 450 GB 15,000 rpm Fibre Channel Disk Drive - Provides additional capacity and another price/performance option for transaction processing workloads
- **Variable LPAR:** Provides the ability for Dual DS8000 images where one image has more processor and cache than the other for increased flexibility.
- **Extended Address Volumes:** Extends the addressing capability of System z[™] environments to support volumes that can scale up to approximately 223 GB (262,668 cylinders). This capability can help relieve address constraints to support large storage capacity needs.
- **IPv6:** The IBM System Storage DS8000 has been certified as meeting the requirements of the IPv6 Ready Logo program, indicating its implementation of IPv6 mandatory core protocols and the ability to interoperate with other IPv6 implementations.

Key prerequisites

All features and functions in this announcement are supported on the IBM System Storage DS8000 series, and require DS8000 Licensed Machine Code (LMC) level 5.4.0xx.xx (bundle version 64.0.xx.xx), or later.

Planned availability date

September 5, 2008

Refer to the [Description](#) section for more information.

Description

Flexibility with support for RAID-6

In the past, physical capacity on the DS8000 series could be configured as RAID-5, RAID-10, or a combination of both. Today's announcement provides support for RAID-6, allowing for additional fault tolerance by using a second independent distributed parity scheme (dual parity). Data is striped on a block level across a set of drives, similar to RAID-5 configurations, and a second set of parity is calculated and written across all the drives. With these two levels of parity, RAID-6 can support a high data fault tolerance. When RAID-6 is used in combination with the Fibre ATA (FATA) and Serial ATA (SATA) disk drives, it provides new price/performance options for users. The decision to configure capacity as RAID-6, RAID-5, or RAID-10, as well as the amount of capacity to configure for each type, can be made at any time. RAID-6, RAID-5, and RAID-10 arrays can be intermixed within a single system and the physical capacity can be logically reconfigured at a later date (for example, RAID-6 arrays can be reconfigured into RAID-5 arrays).

The RAID-6 capability is optional to the DS8000 series and requires new device adapter cards (#3041, #3051, and #3061). For DS8000 machines already installed, a feature conversion to the new device adapter cards will be available. For new DS8000 machine orders requiring RAID-5, RAID-6, and RAID-10 support, the new device adapter cards are required for a charge.

450 GB 15,000 rpm Disk Drive offers additional price/performance options

Physical capacity for the DS8000 series is purchased via disk drive sets. A disk drive set contains 16 identical disk drives (same capacity and rpm). The DS8000 series now offers 450 GB 15,000 rpm disk drive sets, providing additional price/performance, and capacity flexibility to address specific application and business requirements. This support is in addition to the already supported 73 GB (15,000 rpm), 146 GB (15,000 rpm), and 300 GB (15,000 rpm) Fibre Channel disk drive sets, and 500 GB (7,200 rpm) FATA disk drive sets, as well as intermix of 73 GB, 146 GB, 300 GB, and 500 GB disk drives. The 450 GB 15,000 rpm disk drives provides 50% more raw capacity than 300 GB drives, increasing the total capacity of high-performance drives supported in a DS8000 system.

For additional flexibility, feature conversions are available for the 450 GB 15,000 rpm disk drive sets to exchange existing disk drive sets when purchasing new disk drive sets with higher capacity. The 450 GB 15,000 rpm disk drive sets are optional to the DS8000 series and are available with feature numbers 26xx.

450 GB 15,000 rpm Standby Capacity on Demand (Standby CoD) Disk Drive sets

The IBM Standby CoD offering for the DS8000 series allows inactive capacity to be installed and easily activated as business needs require. The DS8000 series now offers the 450 GB 15,000 rpm disk drive sets as part of the Standby CoD offering. This offering provides up to four Standby CoD disk drive sets (64 disk drives) that can be factory or field installed into your system. The 450 GB 15,000 rpm Standby CoD drive sets are optional to the DS8000 series and are available with feature numbers 26xx.

Variable System Storage Logical Partitions (LPARs) for increased flexibility

Today, the DS8300 Models 9A2 and 9B2 provide Logical Partition (LPAR) capabilities, allowing you to run two separate storage server images sharing resources equally (50/50 percent split). The variable LPAR capability provides additional flexibility in how resources are shared amongst the two server images. Each System Storage LPAR now has access to:

- 50/50 or 25/75 percent of the processors
- 50/50 or 25/75 percent of the processor memory

The System Storage LPAR continues to support up to 16 host adapters and up to 320 disk drives (for up to 160 TB of capacity). With these separate resources, each Storage System LPAR can run the same or different versions of microcode, and can be used for completely separate production, test, or other unique storage environments within this single physical system. This can enable storage consolidations where separate storage subsystems were previously required, helping to increase management efficiency and cost effectiveness. The Variable LPAR function is provided with the DS8000 series at no additional charge.

IBM Extended Address Volumes (EAV) for System z environments

The DS8000 series today supports System z CKD volumes up to 65,520 cylinders. With the Extended Address Volumes (EAV) function, this capability has been extended to support volumes that can scale up to approximately 223 GB (262,668 cylinders). This capability can help relieve address constraints to support large storage capacity needs in System z environments. Larger devices can help simplify storage management as it fosters management of fewer, large volumes as opposed to many small volumes. The HyperPAV function available today complements EAV by allowing scaling of I/O rates against a single, larger volume. In addition, Dynamic Volume Expansion can also support nondisruptive migration to the larger volume sizes now available. The function is supported on DS8000 series running on IBM System z servers with z/OS® V1.10, or later. The EAV capability is provided with the DS8000 series at no additional charge.

Variable System Storage Logical Partitions (LPARs) for increased flexibility

IPv6

The IBM System Storage DS8000 has been certified by the IPv6 Ready Logo Committee as meeting the requirements of the IPv6 Ready Logo program, indicating its implementation of IPv6 mandatory core protocols and the ability to interoperate with other IPv6 implementations. IBM DS8000 Systems can be configured in native IPv6 environments.

Support SFTP for HMC code downloads

The IBM System Storage DS8000 will now have the capability to use secure FTP to download microcode bundles to the HMC for improved security, replacing the use of FTP. The use of secure FTP will allow resilient, secure downloads for DS8000 microcode updates.

Product Preview

Serial ATA (SATA) disk drives: IBM intends to enhance the configuration options of the DS8000 series with support for:

- 1 TB 7,200 RPM SATA disk drives, doubling the raw capacity of existing models up to 1024 TB for DS8300 Turbo Models and up to 384 TB for DS8100 Turbo Models. IBM intends to provide this capability in early 2009.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice. Availability, prices, ordering information, and terms and conditions will be provided when the product is announced for general availability.

Planned availability dates:

September 5, 2008

Plant and field installation:

- Device Adapters (#3041, #3051, and #3061)
- Variable LPAR
- Extended Address Volumes
- IPv6
- Microcode Bundle Family (#1701)

Plant installation only:

- RAID-6
- 450 GB 15,000 rpm Fibre Channel Disk Drive

October 10, 2008

Field installation:

- 450 GB 15,000 rpm Fibre Channel Disk Drive

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.ibm.com/able/product_accessibility/index.html

Section 508 of the U.S. Rehabilitation Act

The IBM System Storage DS8100, IBM System Storage DS8300, and IBM System Storage DS8000 Expansion Unit are capable, as of December 3, 2004, 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 US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via IBM's Web site at:

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

Reference information

For details, refer to the following announcements:

Hardware Announcement [106-809](#), dated October 31, 2006 (IBM System Storage DS8000 series offers a one-year "Enterprise Choice" length of warranty)

Hardware Announcement [106-813](#), dated October 31, 2006 (IBM System Storage DS8000 series offers a two-year "Enterprise Choice" length of warranty)

Hardware Announcement [106-808](#), dated October 31, 2006 (IBM System Storage DS8000 series offers a three-year "Enterprise Choice" length of warranty)

Hardware Announcement [106-814](#), dated October 31, 2006 (IBM System Storage DS8000 series offers a four-year "Enterprise Choice" length of warranty)

Hardware Announcement [106-810](#), dated October 31, 2006 (IBM System Storage DS8000 - Machine Type 239x - Function Authorizations)

Product number

Description	Machine	Model	Feature
System Storage DS8100	2421	931	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set			2617
Device Adapters: - Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8300	2421	932	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set			2617
Device Adapters: - Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2421	92E	
Disk Drive Sets: - 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set			2617
Device Adapters: - Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8300	2421	9B2	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set A - 450 GB 15K Drive Set B			2626 2636
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set A - 450 GB 15K CoD Drive Set B			2627 2637
Device Adapters: - Device Adapter Pair II A - Device Adapter Pair II B			3051 3061

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2421	9AE	

Disk Drive Sets:
 - 450 GB 15K Drive Set A 2626
 - 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set A 2627
 - 450 GB 15K CoD Drive Set B 2637

Device Adapters:
 - Device Adapter Pair II A 3051
 - Device Adapter Pair II B 3061

Description	Machine	Model	Feature
System Storage DS8100	2422	931	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine	Model	Feature
System Storage DS8300	2422	932	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2422	92E	

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine	Model	Feature
System Storage DS8300	2422	9B2	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set A 2626
 - 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set A 2627

- 450 GB 15K CoD Drive Set B 2637

Device Adapters:

- Device Adapter Pair II A 3051
- Device Adapter Pair II B 3061

Description	Machine	Model	Feature
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System Storage DS8000 Expansion Unit	2422	9AE	
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Disk Drive Sets:

- 450 GB 15K Drive Set A 2626
- 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set A 2627
- 450 GB 15K CoD Drive Set B 2637

Device Adapters:

- Device Adapter Pair II A 3051
- Device Adapter Pair II B 3061

Description	Machine	Model	Feature
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System Storage DS8100	2423	931	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine	Model	Feature
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System Storage DS8300	2423	932	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine	Model	Feature
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System Storage DS8000 Expansion Unit	2423	92E	
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Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine	Model	Feature
System Storage DS8300	2423	9B2	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters: - Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2423	9AE	
Disk Drive Sets: - 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters: - Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

Description	Machine	Model	Feature
System Storage DS8100	2424	931	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set			2617
Device Adapters: - Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8300	2424	932	
Microcode Bundle Family: - Release 4 Bundle Family			1701
Disk Drive Sets: - 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets: - 450 GB 15K CoD Drive Set			2617
Device Adapters: - Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2424	92E	
Disk Drive Sets:			
- 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set			2617
Device Adapters:			
- Device Adapter Pair II			3041

Description	Machine	Model	Feature
System Storage DS8300	2424	9B2	
Microcode Bundle Family:			
- Release 4 Bundle Family			1701
Disk Drive Sets:			
- 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters:			
- Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

Description	Machine	Model	Feature
System Storage DS8000 Expansion Unit	2424	9AE	
Disk Drive Sets:			
- 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters:			
- Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

Model conversions (Machine types 2421, 2422, 2423, and 2424) - None

There are no new model conversions with this announcement. This is a reminder that model conversions are disruptive. In addition, data may not be preserved during the model conversion.

Feature conversions (Machine types 2421, 2422, 2423, and 2424)

Disk Drive Sets - Models 931, 932, and 92E:

Feature From	To	Description	Returned Parts	Continuous Maintenance
2616	2626	Disk drive set	No	Yes
2616	2636	Disk drive set	No	Yes

Disk Drive Sets - Models 9B2 and 9AE:

Feature From	To	Description	Returned Parts	Continuous Maintenance
2626	2616	Disk drive set	No	Yes
2636	2616	Disk drive set	No	Yes

Standby CoD Disk Drive Sets - Models 931, 932, and 92E:

Feature From	To	Description	Returned Parts	Continuous Maintenance
2617	2616	CoD Disk drive set	No	Yes
2617	2627	CoD Disk drive set	No	Yes
2617	2637	CoD Disk drive set	No	Yes

Standby CoD Disk Drive Sets - Models 9B2 and 9AE:

Feature From	To	Description	Returned Parts	Continuous Maintenance
2627	2626	CoD Disk drive set	No	Yes
2627	2617	CoD Disk drive set	No	Yes
2637	2636	CoD Disk drive set	No	Yes
2637	2617	CoD Disk drive set	No	Yes

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).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=108-327>

Publications

The following publication has been updated to reflect this announcement.

Title	Order Number
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IBM System Storage DS8000 Introduction and Planning Guide	GC35-0515
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DS8000 publications are available at

<http://www-1.ibm.com/servers/storage/support/disk/index.html>

Publications can be ordered from your IBM representative, by direct order, or through the Publications Center Web site at

<http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

The DS8000 information center is designed to provide comprehensive, browser-based information. It can help provide easy access to tasks, concepts, reference information, tutorials, code samples, scenarios, and other product information. It contains assistance for the tasks that users must perform and links to additional information.

To find information, users can search, browse the contents, use the index, follow links from one topic to related topics, and print the topics they want to read offline. The information center is available at:

<http://www.ibm.com/support/publications/us/library/>

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

Hardware requirements**Licensed Machine Code**

All features and functions in this announcement are supported on the IBM System Storage DS8000 series and require DS8000 Licensed Machine Code (LMC) level 5.4.0xx.xx (bundle version 64.0.xx.xx), or later.

Some DS8000 series features and functions may not be available or supported in all environments. Current information on supported environments, prerequisites, and minimum operating systems levels is available at

<http://www.ibm.com/systems/storage/disk/ds8000/interop.pdf>

Planning information

Customer responsibilities**Physical configuration planning**

Physical configuration planning is a customer responsibility. Introductory information, including required and optional features, can be found in the IBM System Storage DS8000 Introduction and Planning Guide (GC35-0515).

Installation planning

Installation planning is a customer responsibility. Information about planning the installation of your DS8000 series, including equipment, site, and power requirements, can be found in the IBM System Storage DS8000 Introduction and Planning Guide (GC35-0515).

Logical configuration planning and application

Logical configuration planning is a customer responsibility. Logical configuration refers to the creation of RAID ranks, volumes, or LUNs, and the assignment of the configured capacity to servers.

Application of the initial logical configuration and all subsequent modifications to the logical configuration is a customer responsibility. The logical configuration can be created, applied, and modified using the DS Storage Manager, DS CLI, or DS Open API.

IBM Global Services will also apply or modify your logical configuration (fee-based services).

Licensed Machine Code planning and application

IBM may release changes to the DS8000 series Licensed Machine Code. IBM plans to make most DS8000 series Licensed Machine Code changes available for download by the DS8000 series system from the IBM System Storage technical support worldwide Web. Note that not all Licensed Machine Code changes may be available via the support Web site. If the machine does not function as warranted and your problem can be resolved through your application of downloadable Licensed Machine Code, you are responsible for downloading and installing these designated Licensed Machine Code changes as IBM specifies. IBM has responsibility for installing changes that IBM does not make available for you to download. The DS8000 series includes many enhancements to make the Licensed Machine Code change process simpler, quicker, and more automated. If you would prefer, you may request IBM to install downloadable Licensed Machine Code changes; however, you may be charged for that service.

Calculating physical and effective capacity

Refer to the IBM System Storage DS8000 Introduction and Planning Guide (GC35-0515) for capacity calculation guidelines.

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

No cables required.

Direct customer support

Direct customer support for the DS8000 series is provided by IBM Operational Support Services - Support Line. This fee service can enhance your productivity by providing voice and electronic access into the IBM support organization. IBM Operational Support Services - Support Line will help 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).

Security, auditability, and control

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

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

MES Discount Applicable

No

Field-installable feature

Yes

Warranty Period

Machine Type 2421: One year

Machine Type 2422: Two years

Machine Type 2423: Three years

Machine Type 2424: Four years

Customer setup

No

Licensed Internal Code

Same license terms and conditions as designated machine.

Prices

For all local charges, contact your IBM representative.

Description	Machine Type	Model	Feature Number
System Storage DS8100	2421	931	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8300	2421	932	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8300	2421	9B2	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set A 2626
 - 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set A 2627
 - 450 GB 15K CoD Drive Set B 2637

Device Adapters:
 - Device Adapter Pair II A 3051
 - Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
System Storage DS8000 Expansion Unit	2421	92E	

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8000 Expansion	2421	9AE	

Disk Drive Sets:

- 450 GB 15K Drive Set A 2626
 - 450 GB 15K Drive Set B 2636
- Standby CoD Disk Drive Sets:
- 450 GB 15K CoD Drive Set A 2627
 - 450 GB 15K CoD Drive Set B 2637
- Device Adapters:
- Device Adapter Pair II A 3051
 - Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
System Storage DS8100	2422	931	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8300	2422	932	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set 2617

Device Adapters:
 - Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8300	2422	9B2	

Microcode Bundle Family:
 - Release 4 Bundle Family 1701

Disk Drive Sets:
 - 450 GB 15K Drive Set A 2626
 - 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:
 - 450 GB 15K CoD Drive Set A 2627
 - 450 GB 15K CoD Drive Set B 2637

Device Adapters:
 - Device Adapter Pair II A 3051
 - Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
System Storage DS8000 Expansion Unit	2422	92E	

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
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System Storage DS8000 Expansion Unit	2422	9AE	
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Disk Drive Sets:

- 450 GB 15K Drive Set A 2626

- 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set A 2627

- 450 GB 15K CoD Drive Set B 2637

Device Adapters:

- Device Adapter Pair II A 3051

- Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
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System Storage DS8100	2423	931	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
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System Storage DS8300	2423	932	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
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System Storage DS8300	2423	9B2	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set A 2626

- 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set A 2627

- 450 GB 15K CoD Drive Set B 2637

Device Adapters:

- Device Adapter Pair II A 3051
- Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
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System Storage DS8000 Expansion Unit	2423	92E	
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Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
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System Storage DS8000 Expansion Unit	2423	9AE	
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Disk Drive Sets:

- 450 GB 15K Drive Set A 2626
- 450 GB 15K Drive Set B 2636

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set A 2627
- 450 GB 15K CoD Drive Set B 2637

Device Adapters:

- Device Adapter Pair II A 3051
- Device Adapter Pair II B 3061

Description	Machine Type	Model	Feature Number
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System Storage DS8100	2424	931	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
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System Storage DS8300	2424	932	
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Microcode Bundle Family:

- Release 4 Bundle Family 1701

Disk Drive Sets:

- 450 GB 15K Drive Set 2616

Standby CoD Disk Drive Sets:

- 450 GB 15K CoD Drive Set 2617

Device Adapters:

- Device Adapter Pair II 3041

Description	Machine Type	Model	Feature Number
System Storage DS8300	2424	9B2	
Microcode Bundle Family:			
- Release 4 Bundle Family			1701
Disk Drive Sets:			
- 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters:			
- Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

Description	Machine Type	Model	Feature Number
System Storage DS8000 Expansion Unit	2424	92E	
Disk Drive Sets:			
- 450 GB 15K Drive Set			2616
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set			2617
Device Adapters:			
- Device Adapter Pair II			3041

Description	Machine Type	Model	Feature Number
System Storage DS8000 Expansion Unit	2424	9AE	
Disk Drive Sets:			
- 450 GB 15K Drive Set A			2626
- 450 GB 15K Drive Set B			2636
Standby CoD Disk Drive Sets:			
- 450 GB 15K CoD Drive Set A			2627
- 450 GB 15K CoD Drive Set B			2637
Device Adapters:			
- Device Adapter Pair II A			3051
- Device Adapter Pair II B			3061

For additional information and current prices, contact your local IBM representative.

Description	Feature Number	Install* Type	Feature Change Options		
			Feature Conversion	Feature Exchange	Feature Remove
Microcode Bundle Family:					
- Release 4 Bundle Family	1701	Both	No	No	No
Disk Drive Sets:					
- 450 GB 15K Drive Set	2616	Both	Yes	No	No
- 450 GB 15K Drive Set A	2626	Both	Yes	No	No
- 450 GB 15K Drive Set B	2636	Both	Yes	No	No
Standby CoD Disk Drive Sets:					
- 450 GB 15K CoD Drive Set	2617	Both	Yes	No	No

- 450 GB 15K CoD Drive Set A 2627 Both Yes No No
- 450 GB 15K CoD Drive Set B 2637 Both Yes No No

Device Adapters:

- Device Adapter Pair II 3041 Both No No No
- Device Adapter Pair II A 3051 Both No No No
- Device Adapter Pair II B 3061 Both No No No

* Install type of Both designates plant and field install.

Feature conversions

Disk Drive Sets (Machine Type 2421, 2422, 2423, and 2424 - Models 931, 932, and 92E):

Feature From	To	Description	Returned Parts	Continuous Maintenance
2616	2626	Disk drive set	No	Yes
2616	2636	Disk drive set	No	Yes

Disk Drive Sets (Machine Type 2421, 2422, 2423, and 2424 - Models 9B2 and 9AE):

Feature From	To	Description	Returned Parts	Continuous Maintenance
2626	2616	Disk drive set	No	Yes
2636	2616	Disk drive set	No	Yes

Standby CoD Disk Drive Sets (Machine Type 2421, 2422, 2423, and 2424 - Models 931, 932, and 92E):

Feature From	To	Description	Returned Parts	Continuous Maintenance
2617	2616	CoD Disk drive set	No	Yes
2617	2627	CoD Disk drive set	No	Yes
2617	2637	CoD Disk drive set	No	Yes

Standby CoD Disk Drive Sets (Machine Type 2421, 2422, 2423, and 2424 - Models 9B2 and 9AE):

Feature From	To	Description	Returned Parts	Continuous Maintenance
2627	2626	CoD Disk drive set	No	Yes
2627	2617	CoD Disk drive set	No	Yes
2637	2636	CoD Disk drive set	No	Yes
2637	2617	CoD Disk drive set	No	Yes

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Corrections

(Corrected on February 9, 2009)

The "Description -- Flexibility with support for RAID-6" section was revised.