



# IBM System Storage DS8700 (Machine types 2421, 2422, 2423, and 2424) is designed to deliver new Easy Tier solid-state storage workload optimizer, advanced features supporting business continuity, and new drive options that can help to double the system's maximum capacity

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## At a glance

New capabilities for the IBM® System Storage™ DS8700 (machine types 2421, 2422, 2423, and 2424), offering greater choices in price and performance include:

- IBM System Storage Easy Tier
- Eight drive install groups of Solid State Disk (SSD)
- 600 GB 15,000 rpm Fibre Channel disk drive
- 2 TB 7,200 rpm SATA disk drives
- Quick initialization and Thin Provisioning for open volumes
- Remote Pair FlashCopy®
- Concurrent code load improvements
- Prevent deletion of CKD and FB volumes in use
- Disable recovery key
- Rekey data keys of an encryption group
- z/HPF extended distance

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 DS8700 (machine types 2421, 2422, 2423, and 2424) is designed to deliver new Easy Tier solid-state storage optimization, advanced business continuity features, and new drive options that double the system's overall capacity. New options include:

- IBM System Storage Easy Tier - Automates data placement throughout the DS8700 disk pool (including multiple drive tiers) to intelligently align the system with current workload requirements. This includes the ability for the system to automatically and nondisruptively relocate data (at the extent level) across drive tiers, and the ability to manually relocate full volumes.

- Eight drive install group of Solid State Disk (SSD) - Offers the support of eight drive install group of SSD (half disk drive set), providing additional price/performance and capacity flexibility to help address application and business requirements.
- 600 GB 15,000 rpm Fibre Channel Disk Drive - Provides additional capacity and price/performance option especially beneficial for transaction processing workloads.
- SATA drive support - Provides 2 TB 7,200 rpm SATA disk drives to support fixed-content, data-archival, reference-data, and other applications that require large amounts of storage capacity at lower cost per MB. Supported RAID configurations are RAID-6 and RAID-10.
- Quick initialization and Thin Provisioning - IBM System Storage DS8700 supports quick volume initialization and Thin Provisioning for open system environments, which can help increase disk capacity utilization, thereby supporting lower costs.
- Remote Pair FlashCopy - Provides management improvement to resiliency solutions by improving data synchronization when a FlashCopy target is also a Metro Mirror source. This keeps the local and remote site consistent which facilitates recovery, supports HyperSwap™, and reduces link bandwidth utilization.
- Concurrent code load improvements - Splitting code load phases (the Acquire/Distribution from Activation). The Acquire/Distribution phase can be done earlier and the Activation phase can be done later. This will allow for a less than 2-hour activation phase of the main components of the DS8700. Once installed, this capability will be enabled when moving forward to future levels of code.
- Prevent deletion of CKD and FB volumes in use - The DS8700 now supports additional measures to prevent online devices from deletion.
- Disable recovery key - With security administrator access, encryption group recovery key is optionally disabled, or configured, before establishing initial logical configuration.
- Rekey data keys of an encryption group - With security administrator access, users can rekey the data keys of their encryption group. Both of these enhancements can help clients satisfy PCI (Payment Card Industry) security standards.
- z/HPF extended distance - Reduces the impact associated with supported commands on current adapter hardware, thereby improving FICON® throughput on the DS8700 I/O ports.

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## Key prerequisites

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All features and functions in this announcement are supported on the IBM System Storage DS8000™ series, and require DS8000 Licensed Machine Code (LMC) level 6.5.1.xx (bundle version 75.1.xx.xx), or later.

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## Planned availability date

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May 21, 2010

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## Description

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### IBM System Storage Easy Tier

IBM System Storage Easy Tier is designed to help automate data placement throughout the DS8700 disk pool (including multiple drive tiers) to intelligently align the system with current workload requirements. This includes the ability for the system to automatically and nondisruptively relocate data (at the extent level) across drive tiers, and the ability to manually relocate full volumes. The benefit is to align performance of the system with the appropriate application workloads.

- Automated relocation - Volumes in an extent pool with SSD and HDD will be managed automatically by moving hot extents to SSD and cold extents to HDD.

- Volume migration - Enables the manual relocation of volumes between extent pools, as well as the restriping of volumes within an extent pool, and the ability to merge existing extent pools.

### **Automated relocation**

While SSDs can provide higher performance for most workloads, they do so at a significantly higher cost than traditional spinning drives. Even with recent improvements in the cost of SSDs, they remain an expensive option for many workloads, especially those requiring large amounts of storage. Based on those higher costs, it is often not realistic to replace all spinning drives with SSDs for a given application or workload. In order to improve performance of SSDs and reduce overall system cost, infrequently accessed (cold) data can and should reside on lower cost HDDs while frequently accessed (hot) data should be moved to SSDs. The mix of SSDs and HDDs should be used to strike a proper balance between performance and cost.

IBM System Storage DS8700 introduces this capability with IBM System Storage Easy Tier. Easy Tier provides the ability to manage data placement between two tiers of storage, SSD and either Fiber Channel or SATA drives. Using a learning algorithm developed with the IBM Research organization, Easy Tier is designed to eliminate the complexity of manual data placement among tiers, while providing the value and flexibility of sub-volume or sub-LUN data placement. This supports improved performance/cost options. This is an improvement over traditional tiering methods that require manual intervention to move data between tiers, or that does not work at a granular level, requiring too much data to be moved to see any benefits. The IBM System Storage Easy Tier feature can determine the appropriate tier of storage based on data access requirements and then automatically move the data to the appropriate tier. This allows the manual effort involved to be reduced, if not eliminated. In this new dynamic environment, data movement is maintained to the host application regardless of the storage tier on which the data resides.

The IBM System Storage Easy Tier feature is designed to provide granularity in identifying and moving hot data at the sub-volume or sub-LUN (extent) level to SSDs. IBM System Storage Easy Tier requires the use of a hybrid extent pool which contains both SSD and HDD drives. Extents from HDDs can be moved dynamically within a hybrid pool to SSD drives. Data movement done by the DS8700 is dynamic and transparent to the host server and application use of the data. The Easy Tier algorithm will assign 'heat' values to each extent in a storage device. These heat values, hot or cold, will indicate what tier the data should reside on, and migration will take place automatically. Sub-volume or Sub-LUN data movement is extremely important compared to full volume movement as not all data at the volume/LUN level will be hot data. Since for any given workload there is a distribution of data considered 'hot' or 'cold'; consequently, there is significant overhead associated with moving entire volumes between tiers. For example, if a volume is 1 TB, you would not have to move the entire 1 TB volume if the heat map generated indicates only 10 GB is considered hot. The DS8700's extent size is 1 GB, requiring only 10 extents to move to optimize the workload in this example, versus 1,000 extents for a less tuned method. This capability makes improved use of the SSD technology's higher performance while reducing the number of drives needed to improve that performance. In addition, depending on the workload and environment, it may be possible to combine Easy Tier, SSDs and larger capacity drives to receive equivalent or better performance than traditional high-performance configurations (using small spinning disks) while providing smaller footprints and lowering environmental costs.

### **Volume migration**

Users can dynamically relocate logical volumes between extent pools or within an extent pool, or users can change the extent allocation algorithm (EAM) of a logical volume (for example, re-Rotate extents within the target extent pool), or users can merge two existing extent pools (combine existing extent pools with homogeneous disks; merge two extent pools with heterogeneous disks to use automated relocation; changes volume/rank to extent pool relationship without moving data).

- Volume migration implementation

- Migration is transparent to attached hosts
- Allows any supported volume to be queued for migration
- Actively migrates a number of extents per CEC concurrently
- Overheads comparable to FlashCopy with background copy

The DS8700 has been enhanced to include performance monitoring capabilities, regardless of whether you have installed and activated the Easy Tier license feature on your DS8700. The monitoring capability of the DS8700 enables it to monitor the usage of storage at the volume extent level. Monitoring statistics are gathered and analyzed every 24 hours. In an Easy Tier managed extent pool, the analysis is used to form an extent relocation plan for the extent pool, which provides a recommendation for relocating extents on a volume to the most appropriate storage device. The results of this data is summarized in a summary report from which you can download.

The DS8700 now offers a reporting tool called IBM System Storage DS8700 Storage Tier Advisor, hereafter referred to as advisor tool. The advisor tool is a Microsoft® Windows® application that provides a graphical representation of performance data that is collected by the Easy Tier over a 24-hour operational cycle. Volume performance statistics is included in a summary binary file that is transformed to a readable statistical report that you can download to a directory you specify on your Windows workstation from which you are accessing the DS8700. The advisor tool is the application that allows you to view the data when you point your browser to the file. (You can access the advisor tool with any standard Web browser.) You can view the information displayed by the advisor tool to analyze workload statistics, evaluate which logical volumes might be candidates for Easy Tier management. If you have not installed and enabled the Easy Tier feature, you can use the performance statistics gathered by the monitoring process to help you determine whether to use Easy Tier to enable potential performance improvements in your storage environment.

The value propositions of IBM System Storage Easy Tier are:

- Manage storage performance within enterprise storage system to improve dynamic application demand or dynamic system configuration
- Improve performance/cost by taking advantage of the spectrum of storage drives available
- With a small percentage of data relocation from tier 1 or 2 to tier 0, a significant latency reduction or throughput improvement can be achieved for the total workload
- Moving small amounts of frequently accessed data to SSD can result in a better response time or increase in throughput, depending on customer workload and environment
- Enable customers to develop new insights into application workloads on their storage infrastructure and develop new optimization strategies

Support for IBM System Storage Easy Tier is an optional feature of the DS8700 Model 941, and is available with the IBM System Storage Easy Tier licensed feature indicator feature numbers 7083 and 0713 and corresponding DS8700 Function Authorization (239x-LFA) IBM System Storage Easy Tier feature number 7083.

### **Eight drive install group of solid state disk (SSD)**

Additional physical capacity for the DS8700 can be purchased via disk drive sets. A disk drive set contains 16 identical disk drives (same capacity and rpm). IBM System Storage DS8700 now offers the support of eight drive install group of SSD (half disk drive set), providing additional price/performance and capacity options to address specific application and business requirements. This support is in addition to the already supported 16 drive install group of SSD (a disk drive set). The 73 GB and 146 GB SSD half disk drive sets are supported.

## **600 GB 15,000 rpm disk drive offers additional price/performance options**

Physical capacity for the DS8700 is purchased via disk drive sets. A disk drive set contains 16 identical disk drives (same capacity and rpm). The DS8700 now offers 600 GB 15,000 rpm disk drive sets, providing additional price/performance options 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), 300 GB (15,000 rpm), and 450 GB (15,000 rpm) Fibre Channel disk drive sets, 1 TB (7,200 rpm), and 2 TB (7,200 rpm) SATA disk drive sets, as well as intermix of 73 GB, 146 GB, 300 GB, 450 GB, and 1 TB disk drives. The 600 GB 15,000 rpm disk drives provide about 33% more raw capacity than 450 GB drives, increasing the total capacity of high-performance drives supported in a DS8700 system.

For additional flexibility, feature conversions are available for the 600 GB 15,000 rpm disk drive sets to exchange existing disk drive sets when purchasing new disk drive sets with higher capacity. The 600 GB 15,000 rpm disk drive sets are optional to the DS8700 and are available with feature numbers 27xx.

## **600 GB 15,000 rpm standby capacity on demand (Standby CoD) disk drive sets**

The IBM Standby CoD offering for the DS8700 allows inactive capacity to be installed and easily activated as business needs require. The DS8700 now offers the 600 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 600 GB 15,000 rpm Standby CoD drive sets are optional to the DS8700 and are available with feature numbers 27xx.

## **2 TB 7,200 rpm Serial ATA (SATA) drive sets**

The DS8700 now offers 2 TB 7,200 rpm SATA disk drive sets, providing additional price and capacity flexibility to address specific application and business requirements. The 2 TB 7,200 rpm SATA disk drives can be added to the DS8700 models to support various fixed-content, data-archival, reference-data, and streaming applications that require large amounts of storage capacity at lower cost per MB. SATA drives are not intended for use in applications that require drive utilization duty cycles greater than 20%. In addition, SATA drives are supported only in RAID-6 and RAID-10 configurations. SATA drives will not share sparing capability with non-SATA drives, due to the low duty cycle nature of SATA drives.

The 2 TB 7,200 rpm SATA disk drives provide more raw capacity than existing models, up to 2,048 TB for DS8700 Model 941 (4-way) and up to 256 TB for DS8700 Model 941 (2-way). The 2 TB 7,200 rpm SATA disk drive sets are optional to the DS8700 and are available with feature numbers 29xx. 2 TB 7,200 rpm SATA drives will be available under the standard Capacity on Demand offering.

## **Quick initialization**

IBM now supports quick initialization as an enhancement to device provisioning technology on DS8700 platforms. Quick initialization improves initialization speeds up to 2.6 times over previous versions of the DS8700 and allows a copy services relationship to be established after a device is created, while the provisioning of storage is in progress. These improvements can help allow users to create an enterprise storage environment, quickly provision new logical devices, and move the devices into production while utilizing the new Thin Provisioning technology in less time than ever before on DS8700 systems.

## **IBM System Storage DS8700 Thin Provisioning**

The DS8700 now offers Thin Provisioning. Thin Provisioning allows users to overcommit storage to specific devices and throughout the system in general. This has several potential benefits. First, users can now allocate larger logical devices without having to provision the entire device. This allows users to consume storage allocated on the DS8700 without repeated device resizing as would be required today. The level of overcommitment can be decided by the user, but as the system

consumes physical storage, administrators will be notified of physical allocations as it reaches user-specified limits. Once all of the physical storage is in use, no further virtual storage can be allocated, so action must be taken before this condition occurs.

Thinly provisioned devices can be increased in size as needed if the logical size of the device becomes constrained. If the physical storage approaches full allocation within a given extent pool, then users can add additional physical capacity (via drive sets) to increase the size of the extent pool.

Users may see a reduction in operating costs by being able to deploy fewer physical disks to provision a given set of logical devices that are underutilized. Thin provisioned devices offer performance that is comparable to standard, fully allocated, logical devices, and are effective in reducing capacity allocations. The ability to overconfigure logical device capacities may also help to reduce operational costs related to expanding storage allocations for host system software components such as logical volume managers, file systems, and databases.

For the initial release, the IBM System Storage DS8700 Thin Provisioning feature is available only for open systems, excluding System i®. Support for IBM System Storage DS8700 Thin Provisioning is an optional feature of the DS8700 Model 941, and is available with the Thin Provisioning licensed feature indicator feature numbers 7071 and 0707 and corresponding DS8700 Function Authorization (239x-LFA) Thin Provisioning feature number 7071.

### **Remote Pair FlashCopy**

The IBM DS8700 provides the Remote Pair FlashCopy with the capability to allow a FlashCopy (Point-in-Time copy) relationship where the FlashCopy target device is a Metro Mirror primary device. This can significantly reduce the recoverability time that exists when a FlashCopy background copy and Metro Mirror Resync are in progress. The Remote Pair FlashCopy provides a solution for data replication, data migration, remote copy, and disaster recovery tasks.

For business continuity, the Remote Pair FlashCopy operations are nondisruptive, allowing the primary device of each FlashCopy pair to remain available to all hosts for both read and write I/O operations. Once established, Remote Pair FlashCopy operations continue unattended to support continuous data backup to the secondary device.

z/OS® support of Remote Pair FlashCopy is available on z/OS V1.9, or later, using the name FlashCopy Preserve Mirror.

### **Concurrent code load improvements**

The current DS8700 code load process combines multiple phases of code load into one step. Because of this, code loads are perceived to be unnecessarily long. Splitting the phases into two allows for one phase (Distribution) to be done ahead of time without any loss of access or quiescing of any resource (no loss of redundancy). This would leave the other phase (Activation) to be much shorter and could be scheduled during off-peak periods. This will allow for a less than 2-hour activation phase of the main components of the DS8700. Once installed, this capability will be enabled when moving forward to future levels of code.

### **Prevent deletion of CKD and FB volumes in use**

The DS8700 now supports additional measures to prevent online devices from deletion. "On-line" devices have a specific meaning based on volume type. For CKD volumes, the volume is "on-line" if it is participating in any Copy Services relationship, or if it is "grouped dynamic-pathing state". FB volumes are "on-line" if they are in a Copy Services relationship. The DSCLI will now always check for online status before completing a deletion command.

## Disable recovery key

On a DS8700 only, if you have a security administrator, you can configure or disable a recovery key for the DS8000 storage facility image before an encryption group is created. You can disable a recovery key within a secure key environment. The state of the recovery key must be "Unconfigured" in order to disable the recovery key. Be aware that if you disable a recovery key this allows an encryption group to be configured but with no recovery alternative. If, for some reason, you do not want a recovery key, you should disable it.

Encryption deadlock recovery key is to support the ability for customer administrators to restore access to a DS8700 when the encryption key for the storage is unavailable due to an encryption deadlock scenario. If customers disable the recovery key they do so at their own risk. Refer to White Paper "IBM Encrypted Storage Overview V1.2" for best practices for prevention of the deadlock situation.

## Rekey data keys of an encryption group

With security administrator access, users can rekey the data keys of their encryption group. With the encryption group rekey function, users can concurrently migrate a single platform key server configuration to a dual platform key server configuration to leverage changes in key management infrastructure. Both of these enhancements can help clients satisfy PCI (Payment Card Industry) security standards.

## z/HPF extended distance

Reduces the impact associated with supported commands on current adapter hardware, thereby improving FICON throughput on the DS8700 I/O ports.

## Accessibility by people with disabilities

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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](http://www.ibm.com/able/product_accessibility/index.html)

## Section 508 of the U.S. Rehabilitation Act

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The IBM System Storage DS8700 and IBM System Storage DS8700 Expansion Unit are capable, as of November 6, 2009, 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 IBM's Web site at

[http://www.ibm.com/able/product\\_accessibility/index.html](http://www.ibm.com/able/product_accessibility/index.html)

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 U.S. 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](http://www.ibm.com/able/product_accessibility/index.html)

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## Reference information

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For more information, refer to the following announcements:

- Hardware Announcement [109-702](#), dated October 20, 2009, IBM System Storage DS8700 (Machine type 2421) high-performance flagship high-end disk, one-year warranty model addresses your business and financial needs.

- Hardware Announcement [109-289](#), dated October 20, 2009, IBM System Storage DS8700 (Machine type 2422) high-performance flagship high-end disk, two-year warranty model addresses your business and financial needs.
- Hardware Announcement [109-756](#), dated October 20, 2009, IBM System Storage DS8700 (Machine type 2423) high-performance flagship high-end disk, three-year warranty model addresses your business and financial needs.
- Hardware Announcement [109-757](#), dated October 20, 2009, IBM System Storage DS8700 (Machine type 2424) high-performance flagship high-end disk, four-year warranty model addresses your business and financial needs.
- Software Announcement [209-017](#), dated February 10, 2009, IBM Tivoli® Key Lifecycle Manager for z/OS V1.0.

For IBM statement on compliance with European Union Directive on Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (2002/95/EC) ("RoHS"), visit

<http://www.ibm.com/ibm/environment/products/rohs.shtml>

### Business Partner information

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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=110-092>

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### Product number

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Description	Machine	Model	Feature
DS8700	2421	941	
Licensed Function Indicators:			
- Thin Provisioning indicator			0707
- IBM System Storage Easy Tier indicator			0713
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Microcode Bundle Family:			
- Release 5.1 Bundle Family			1712
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917
SSD Half Drive Sets:			
- 73 GB SSD half drive set			6014
- 146 GB SSD half drive set			6114
Disk enclosure filler:			
- Disk enclosure filler half set			2998
Function Authorization indicators:			



- Thin Provisioning Indicator 7071
- IBM System Storage Easy Tier indicator 7083

Description	Machine type	Model	Feature
DS8700	2421	94E	
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
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- Disk enclosure filler half set			2998

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- Disk enclosure filler half set 2998
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Standby CoD Disk Drive Sets:	
- 600 GB 15K FC CoD drive set	2717
- 2 TB 7.2K SATA CoD drive set	2917
SSD Half Drive Sets:	
- 73 GB SSD half drive set	6014
- 146 GB SSD half drive set	6114
Disk enclosure filler:	
- Disk enclosure filler half set	2998
Function Authorization indicators:	
- Thin Provisioning Indicator	7071
- IBM System Storage Easy Tier indicator	7083

Description	Machine type	Model	Feature
DS8700	2424	94E	
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917
SSD Half Drive Sets:			
- 73 GB SSD half drive set			6014
- 146 GB SSD half drive set			6114
Disk enclosure filler:			
- Disk enclosure filler half set			2998

## Model conversions

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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

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Yes

### Feature conversions (machine types 2421, 2422, 2423, and 2424 Model 941)

Feature	Returned		
From	To	Parts *	Description
FC Disk Drive Sets:			
2016	2716	Yes	Disk drive set conversion
2216	2716	Yes	Disk drive set conversion
2416	2716	Yes	Disk drive set conversion
2616	2716	Yes	Disk drive set conversion

Feature	Returned		
From	To	Parts *	Description
FC Standby CoD Disk Drive Set:			
2717	2716	No	CoD disk drive conversion

Feature	Returned		
From	To	Parts *	Description
SATA Disk Drive Sets:			
2816	2916	Yes	Disk drive set conversion

Feature	Returned		
From	To	Parts *	Description
SATA Standby CoD Disk Drive Set:			
2917	2916	No	CoD disk drive conversion

Feature	Returned		
From	To	Parts *	Description
SSD Disk Drive Sets:			
6014	6114	Yes	Disk drive set conversion
6014	6016	No	Disk drive set conversion
6014	6116	Yes	Disk drive set conversion
6114	6116	No	Disk drive set conversion

Feature	Returned		
From	To	Parts *	Description
FC to SATA Disk Drive Set:			
2016	2916	Yes	FC to SATA disk drive conversion
2216	2916	Yes	FC to SATA disk drive conversion
2416	2916	Yes	FC to SATA disk drive conversion
2616	2916	Yes	FC to SATA disk drive conversion
2716	2816	Yes	FC to SATA disk drive conversion
2716	2916	Yes	FC to SATA disk drive conversion

Feature	Returned		
From	To	Parts *	Description
FC to SSD Disk Drive Sets:			
2016	6014	Yes	FC to SSD disk drive conversion
2016	6114	Yes	FC to SSD disk drive conversion
2216	6014	Yes	FC to SSD disk drive conversion
2216	6114	Yes	FC to SSD disk drive conversion
2416	6014	Yes	FC to SSD disk drive conversion
2416	6114	Yes	FC to SSD disk drive conversion
2616	6014	Yes	FC to SSD disk drive conversion

2616	6114	Yes	FC to SSD disk drive conversion
2716	6014	Yes	FC to SSD disk drive conversion
2716	6114	Yes	FC to SSD disk drive conversion
2716	6016	Yes	FC to SSD disk drive conversion
2716	6116	Yes	FC to SSD disk drive conversion

Feature	Returned		
From	To	Parts *	Description

SATA to SSD Disk Drive Sets:

2916	6016	Yes	SATA to SSD disk drive conversion
2916	6116	Yes	SATA to SSD disk drive conversion

Feature conversions (machine types 2421, 2422, 2423, and 2424 Model 94E)

Feature	Returned		
From	To	Parts *	Description

FC Disk Drive Sets:

2016	2716	Yes	Disk drive set conversion
2216	2716	Yes	Disk drive set conversion
2416	2716	Yes	Disk drive set conversion
2616	2716	Yes	Disk drive set conversion

Feature	Returned		
From	To	Parts *	Description

FC Standby CoD Disk Drive Set:

2717	2716	No	CoD disk drive conversion
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Feature	Returned		
From	To	Parts *	Description

SATA Disk Drive Sets:

2816	2916	Yes	Disk drive set conversion
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Feature	Returned		
From	To	Parts *	Description

SATA Standby CoD Disk Drive Set:

2917	2916	No	CoD disk drive conversion
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Feature	Returned		
From	To	Parts *	Description

SSD Disk Drive Sets:

6014	6114	Yes	Disk drive set conversion
6014	6016	No	Disk drive set conversion
6014	6116	Yes	Disk drive set conversion
6114	6116	No	Disk drive set conversion

Feature	Returned		
From	To	Parts *	Description

FC to SATA Disk Drive Set:

2016	2916	Yes	FC to SATA disk drive conversion
2216	2916	Yes	FC to SATA disk drive conversion
2416	2916	Yes	FC to SATA disk drive conversion
2616	2916	Yes	FC to SATA disk drive conversion
2716	2816	Yes	FC to SATA disk drive conversion
2716	2916	Yes	FC to SATA disk drive conversion

Feature	Returned		
From	To	Parts *	Description

FC to SSD Disk Drive Sets:

2016	6014	Yes	FC to SSD disk drive conversion
2016	6114	Yes	FC to SSD disk drive conversion
2216	6014	Yes	FC to SSD disk drive conversion
2216	6114	Yes	FC to SSD disk drive conversion
2416	6014	Yes	FC to SSD disk drive conversion
2416	6114	Yes	FC to SSD disk drive conversion
2616	6014	Yes	FC to SSD disk drive conversion
2616	6114	Yes	FC to SSD disk drive conversion
2716	6014	Yes	FC to SSD disk drive conversion
2716	6114	Yes	FC to SSD disk drive conversion
2716	6016	Yes	FC to SSD disk drive conversion
2716	6116	Yes	FC to SSD disk drive conversion

Feature	Returned		
From	To	Parts *	Description

SATA to SSD Disk Drive Sets:

2916	6016	Yes	SATA to SSD disk drive conversion
2916	6116	Yes	SATA to SSD disk drive conversion

Feature conversions (machine types 2421, 2422, 2423, and 2424 - Model 931 or 932 to Model 941):

Feature	Returned		
From	To	Parts *	Description

Microcode Bundle Family:

1701	1712	No	Microcode bundle family conversion
1702	1712	No	Microcode bundle family conversion
1703	1712	No	Microcode bundle family conversion

Feature	Returned		
From	To	Parts *	Description

Function Authorization indicators:

7070	7071	No	Thin Provisioning Indicator conversion
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\* Parts removed or replaced become the property of IBM and must be returned.

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## Publications

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The IBM System Storage DS8000 Introduction and Planning Guide (GC35-0515) has been updated to reflect this announcement and will be available by April 13, 2010.

The following publications are shipped with the DS8000 series:

Title	Order number
IBM System Storage DS8000 Introduction and Planning Guide	GC35-0515
IBM System Storage DS8000 Host Systems Attachment Guide	SC26-7917
IBM System Storage DS® Command-Line Interface User's Guide	GC53-1127
IBM System Storage DS Open Application Programming Interface Referee	GC35-0516
IBM System Storage Statement of Limited Warranty	GC26-7919
IBM System Storage Licensed Machine Code Agreement	GC26-7918

For DS8000 publications, visit

<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.ibm.com/shop/publications/order>

The DS8000 information center is designed to provide comprehensive, browser-based information. It can help provide easy access to tasks, concepts, referee 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/>

The IBM System Storage DS8000 Information Center allows you to browse and search documentation for the DS8000 series.

The IBM System Storage DS8000 Information Center is at

<http://publib.boulder.ibm.com/infocenter/dsichelp/ds8000ic/index.jsp>

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## Services

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### Global Technology Services

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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.



### Specified operating environment

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#### **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 6.5.1.xx (bundle version 75.1.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 system levels is available at

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

### Planning information

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#### **Customer responsibilities**

##### **Physical configuration planning**

Physical configuration planning is a customer responsibility. Your disk marketing specialist can help you plan and select the DS8000 series physical configuration and features. Introductory information, including required and optional features, can be found in the *IBM System Storage DS8000 Introduction and Planning Guide (GC35-0515)*.

Capacity and performance planning assistance is also available. Through the use of Disk Magic, your disk marketing specialist can help you plan and anticipate performance characteristics for specific workloads by modelling proposed configurations.

##### **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, and/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 (IGS) will also apply and/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. Please 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.

### **Encryption planning**

Encryption planning is a customer responsibility. There are three major planning components to the implementation of an encryption environment. Please review all planning requirements and include them in your installation considerations.

- Key Server Planning
- Tivoli Key Lifecycle Manager Planning
- Full Disk Encryption Activation Review Planning

### **Key server planning**

Key server 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)*.

IBM, according to encryption best practices, the DS8700 requires at least two key servers and associated software for each site which has one or more encryption-enabled DS8000 systems. One server must be isolated, the others can be of any supported key server configuration. Any site that operates independently of other sites must have key servers for the encryption enabled DS8000 systems at that site.

An isolated key server is a separately purchased hardware product (using System Storage Productivity Center, machine type 2805 MC3 or MC4) for the DS8700 (#0021). Isolated key servers will not support any additional hardware or software beyond supported key management software. An isolated server must only use internal disk for the operating system and for all files required for key management operation. An isolated key server can be attached to multiple DS8000 systems. IBM requires at least two key servers to be configured to each DS8000 that is encryption enabled. At least one isolated key server must be attached to each encryption enabled DS8000. DS8000 Encryption environments are recommended to configure external Laptop HMC for high availability (#1130 or #1131). It is the customer's responsibility to replicate any key labels across all key servers attached to a given encryption-enabled DS8000 before configuring that key label on the DS8000.

### **Dual platform key server planning**

DS8000 supports the ability to configure two independent key labels for each encryption-enabled DS8000. This capability allows the use of two independent key server platforms when one or both key server platforms are using secure-key mode key stores. This allows the isolated key server platform to be used in conjunction with a second key server platform that is operating with a secure-key mode key store.

For customers needing dual platform key server support on DS8000, the installation of TKLM IFIX 2 (TKLM Version 1.0.0.2) is recommended to support displaying both key labels in the GUI. Additionally, for customers who intend to replicate keys between separate sysplexes using ICSF with the JCECCARACFKS key store in secure key mode and with the secure key configuration flag set in TKLM, TKLM Fix Pack 3 (TKLM Version 1.0.0.3) is required.

## Tivoli Key Lifecycle Manager planning

The DS8000 series supports:

- IBM Tivoli Key Lifecycle Manager V1.0

Program number	VRM	Program name
5724-T60	1.0.0	IBM Tivoli Key Lifecycle Manager
5608-A91	1.0.0	IBM Tivoli Key Lifecycle Manager (distributed for non-Passport Advantage) IBM Tivoli Key Lifecycle Manager for z/OS V1.0

Program number	VRM	Program name
5698-B35	1.0.0	IBM Tivoli Key Lifecycle Manager for z/OS

Isolated key servers ordered with feature number 0021, (machine type 2805 Model MC3 or MC4) will have a Linux® operating system and TKLM software preinstalled. Customers will need to acquire a TKLM license for use of the TKLM software, ordered separately from the standalone server hardware.

Refer to the following publications:

- IBM Tivoli Key Lifecycle Manager Quick Start Guide (GI11-8738)
- IBM Tivoli Key Lifecycle Manager Installation and Configuration Guide (SC23-9977)
- IBM Tivoli Key Lifecycle Manager Program Directory (for z/OS) (GI11-4300)

## Full Disk Encryption Activation review planning

Full Disk Encryption Activation is a customer responsibility. IBM Full Disk Encryption offerings must be activated prior to use. This activation is part of the installation and configuration steps required for use of the technology. This installation and activation review is performed by the IBM Systems and Technology Lab Services group.

Send e-mail to

storsvcs@us.ibm.com

Visit the Web site below and click on "Contact now" to submit your inquiry or request.

<http://www-03.ibm.com/systems/services/labservices/>

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.

## Model conversions

DS8100, DS8300, and DS8700 model conversions are disruptive. In addition, data may not be preserved during the conversion. Data migration or backup/restore is a customer responsibility. Fee-based data migration services are available from IGS.

Implementation may require the purchase of certain request for price quotations (RPQs) as a prerequisite. These RPQs would facilitate the relocation of installed features, such as disk drive sets, device adapters, disk enclosures, and I/O enclosures, within the machine or across the system. Contact your IBM representative for details.

The conversion of a Turbo Model 931 to a DS8700 Model 941 (2-way) may require the purchase of additional features including but not limited to:

- An upgrade to 32 GB of processor memory (#4xxx) if the Turbo Model 931 has 16 GB of processor memory (#4xxx)
- An upgrade to POWER6™ 2-way processor card (#43xx)
- Additional cable and infrastructure features
- Additional Licensed Microcode features (referred to as advanced function)

The conversion of a Turbo Model 932 to a DS8700 Model 941 (4-way) may require the purchase of additional features including but not limited to:

- An upgrade to POWER6 4-way processor card (#43xx)
- Additional cable and infrastructure features
- Additional Licensed Microcode features (referred to as advanced function)

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***

Cables are required to connect DS8000 series 4 Gb FCP/FICON host adapters ports to server or fabric ports.

Cables can be purchased using DS8000 series feature numbers. Additional cable options, along with product support services such as installation, is offered by IBM Global Services' Networking Services.

Fibre Channel/FICON (shortwave): Shortwave Fibre Channel and FICON ports on the DS8000 series require a 50-micron (multimode) fiber optic cable terminated with an LC connector.

Fibre Channel cables can be purchased using feature numbers 141x for 50-micron cables.

Fibre Channel/FICON (longwave): Longwave Fibre Channel and FICON ports on the DS8000 series require either a 9-micron (singlemode) or 50-micron (multimode) fiber optic cable terminated with an LC connector. A 50-micron cable is required when the longwave port is operating at a 4 Gb per second transfer rate.

Fibre Channel cables can be purchased using feature numbers 141x for 50-micron cables and numbers 142x for 9-micron cables.

### ***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 the following Web site

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

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

## Security, auditability, and control

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This product uses the security and auditability features of the 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.

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.

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## IBM Electronic Services

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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>

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## Terms and conditions

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### ***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.

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**Prices**

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Description	Machine Type	Model	Feature Number
System Storage DS8700	2421	941	
Licensed Function Indicators:			
- Thin Provisioning indicator			0707
- IBM System Storage Easy Tier indicator			0713
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Microcode Bundle Family:			
- Release 5.1 Bundle Family			1712
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917
SSD Half Drive Sets:			
- 73 GB SSD half drive set			6014
- 146 GB SSD half drive set			6114
Disk enclosure filler:			
- Disk enclosure filler half set			2998
Function Authorization indicators:			
- Thin Provisioning Indicator			7071
- IBM System Storage Easy Tier indicator			7083

Description	Machine Type	Model	Feature Number
System Storage DS8700	2421	94E	

Initial System Capacity:

- 1100.1 to 1200.0 TB capacity 0877
- 1200.1 to 1300.0 TB capacity 0878
- 1300.1 to 1400.0 TB capacity 0879
- 1400.1 to 1500.0 TB capacity 0880
- 1500.1 to 1600.0 TB capacity 0881
- 1600.1 to 1700.0 TB capacity 0882
- 1700.1 to 1800.0 TB capacity 0883
- 1800.1 to 1900.0 TB capacity 0884
- 1900.1 to 2000.0 TB capacity 0885
- 2000.1 to 2100.0 TB capacity 0886

Disk Drive Sets:

- 600 GB 15K FC drive set 2716
- 2 TB 7.2K SATA drive set 2916

Standby CoD Disk Drive Sets:

- 600 GB 15K FC CoD drive set 2717
- 2 TB 7.2K SATA CoD drive set 2917

SSD Half Drive Sets:

- 73 GB SSD half drive set 6014
- 146 GB SSD half drive set 6114

Disk enclosure filler:

- Disk enclosure filler half set 2998

Description	Machine Type	Model	Feature Number
System Storage DS8700	2422	941	

Licensed Function Indicators:

- Thin Provisioning indicator 0707
- IBM System Storage Easy Tier indicator 0713

Initial System Capacity:

- 1100.1 to 1200.0 TB capacity 0877
- 1200.1 to 1300.0 TB capacity 0878
- 1300.1 to 1400.0 TB capacity 0879
- 1400.1 to 1500.0 TB capacity 0880
- 1500.1 to 1600.0 TB capacity 0881
- 1600.1 to 1700.0 TB capacity 0882
- 1700.1 to 1800.0 TB capacity 0883
- 1800.1 to 1900.0 TB capacity 0884
- 1900.1 to 2000.0 TB capacity 0885
- 2000.1 to 2100.0 TB capacity 0886

Microcode Bundle Family:

- Release 5.1 Bundle Family 1712

Disk Drive Sets:

- 600 GB 15K FC drive set 2716
- 2 TB 7.2K SATA drive set 2916

Standby CoD Disk Drive Sets:

- 600 GB 15K FC CoD drive set 2717
- 2 TB 7.2K SATA CoD drive set 2917

SSD Half Drive Sets:

- 73 GB SSD half drive set 6014
- 146 GB SSD half drive set 6114

Disk enclosure filler:

- Disk enclosure filler half set 2998

Function Authorization indicators:

- Thin Provisioning Indicator 7071

- IBM System Storage Easy Tier indicator 7083

Description	Machine Type	Model	Feature Number
System Storage DS8700	2422	94E	
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917
SSD Half Drive Sets:			
- 73 GB SSD half drive set			6014
- 146 GB SSD half drive set			6114
Disk enclosure filler:			
- Disk enclosure filler half set			2998

Description	Machine Type	Model	Feature Number
System Storage DS8700	2423	941	
Licensed Function Indicators:			
- Thin Provisioning indicator			0707
- IBM System Storage Easy Tier indicator			0713
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Microcode Bundle Family:			
- Release 5.1 Bundle Family			1712
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917



SSD Half Drive Sets:  
 - 73 GB SSD half drive set 6014  
 - 146 GB SSD half drive set 6114

Disk enclosure filler:  
 - Disk enclosure filler half set 2998

Function Authorization indicators:  
 - Thin Provisioning Indicator 7071  
 - IBM System Storage Easy Tier indicator 7083

Description	Machine Type	Model	Feature Number
System Storage DS8700	2423	94E	

Initial System Capacity:  
 - 1100.1 to 1200.0 TB capacity 0877  
 - 1200.1 to 1300.0 TB capacity 0878  
 - 1300.1 to 1400.0 TB capacity 0879  
 - 1400.1 to 1500.0 TB capacity 0880  
 - 1500.1 to 1600.0 TB capacity 0881  
 - 1600.1 to 1700.0 TB capacity 0882  
 - 1700.1 to 1800.0 TB capacity 0883  
 - 1800.1 to 1900.0 TB capacity 0884  
 - 1900.1 to 2000.0 TB capacity 0885  
 - 2000.1 to 2100.0 TB capacity 0886

Disk Drive Sets:  
 - 600 GB 15K FC drive set 2716  
 - 2 TB 7.2K SATA drive set 2916

Standby CoD Disk Drive Sets:  
 - 600 GB 15K FC CoD drive set 2717  
 - 2 TB 7.2K SATA CoD drive set 2917

SSD Half Drive Sets:  
 - 73 GB SSD half drive set 6014  
 - 146 GB SSD half drive set 6114

Disk enclosure filler:  
 - Disk enclosure filler half set 2998

Description	Machine Type	Model	Feature Number
System Storage DS8700	2424	941	

Licensed Function Indicators:  
 - Thin Provisioning indicator 0707  
 - IBM System Storage Easy Tier indicator 0713

Initial System Capacity:  
 - 1100.1 to 1200.0 TB capacity 0877  
 - 1200.1 to 1300.0 TB capacity 0878  
 - 1300.1 to 1400.0 TB capacity 0879  
 - 1400.1 to 1500.0 TB capacity 0880  
 - 1500.1 to 1600.0 TB capacity 0881  
 - 1600.1 to 1700.0 TB capacity 0882  
 - 1700.1 to 1800.0 TB capacity 0883  
 - 1800.1 to 1900.0 TB capacity 0884  
 - 1900.1 to 2000.0 TB capacity 0885  
 - 2000.1 to 2100.0 TB capacity 0886

Microcode Bundle Family:  
 - Release 5.1 Bundle Family 1712

Disk Drive Sets:  
 - 600 GB 15K FC drive set 2716  
 - 2 TB 7.2K SATA drive set 2916

Standby CoD Disk Drive Sets:  
 - 600 GB 15K FC CoD drive set 2717  
 - 2 TB 7.2K SATA CoD drive set 2917

SSD Half Drive Sets:  
 - 73 GB SSD half drive set 6014  
 - 146 GB SSD half drive set 6114

Disk enclosure filler:  
 - Disk enclosure filler half set 2998

Function Authorization indicators:  
 - Thin Provisioning Indicator 7071  
 - IBM System Storage Easy Tier indicator 7083

Description	Machine Type	Model	Feature Number
System Storage DS8700	2424	94E	
Initial System Capacity:			
- 1100.1 to 1200.0 TB capacity			0877
- 1200.1 to 1300.0 TB capacity			0878
- 1300.1 to 1400.0 TB capacity			0879
- 1400.1 to 1500.0 TB capacity			0880
- 1500.1 to 1600.0 TB capacity			0881
- 1600.1 to 1700.0 TB capacity			0882
- 1700.1 to 1800.0 TB capacity			0883
- 1800.1 to 1900.0 TB capacity			0884
- 1900.1 to 2000.0 TB capacity			0885
- 2000.1 to 2100.0 TB capacity			0886
Disk Drive Sets:			
- 600 GB 15K FC drive set			2716
- 2 TB 7.2K SATA drive set			2916
Standby CoD Disk Drive Sets:			
- 600 GB 15K FC CoD drive set			2717
- 2 TB 7.2K SATA CoD drive set			2917
SSD Half Drive Sets:			
- 73 GB SSD half drive set			6014
- 146 GB SSD half drive set			6114
Disk enclosure filler:			
- Disk enclosure filler half set			2998

Feature Change Options

Description	Feature Number	Install Type	Feature Conversion	Feature Exchange	Feature Remove
<b>Licensed Function Indicators:</b>					
- Thin Provisioning indicator	0707	Both	No	No	Yes
- IBM System Storage Easy Tier indicator	0713	Both	No	No	Yes
<b>Initial System Capacity:</b>					
- 1100.1 to 1200.0 TB capacity	0877	Plant only	No	No	Yes
- 1200.1 to 1300.0 TB capacity	0878	Plant only	No	No	Yes
- 1300.1 to 1400.0 TB capacity	0879	Plant only	No	No	Yes
- 1400.1 to 1500.0 TB capacity	0880	Plant only	No	No	Yes
- 1500.1 to 1600.0 TB capacity	0881	Plant only	No	No	Yes
- 1600.1 to 1700.0 TB capacity	0882	Plant only	No	No	Yes
- 1700.1 to 1800.0 TB capacity	0883	Plant only	No	No	Yes
- 1800.1 to 1900.0 TB capacity	0884	Plant only	No	No	Yes
- 1900.1 to 2000.0 TB capacity	0885	Plant only	No	No	Yes
- 2000.1 to 2100.0 TB capacity	0886	Plant only	No	No	Yes
<b>Microcode Bundle Family:</b>					
- Release 5.1 Bundle Family	1712	Both	No	No	Yes
<b>Disk Drive Sets:</b>					
- 600 GB 15K FC drive set	2716	Both	Yes	No	No
- 2 TB 7.2K SATA drive set	2916	Both	Yes	No	No
<b>Standby CoD Disk Drive Sets:</b>					
- 600 GB 15K FC CoD drive set	2717	Both	Yes	No	No
- 2 TB 7.2K SATA CoD drive set	2917	Both	Yes	No	No
<b>SSD Half Drive Sets:</b>					
- 73 GB SSD half drive set	6014	Both	Yes	No	No
- 146 GB SSD half drive set	6114	Both	Yes	No	No
<b>Disk enclosure filler:</b>					
- Disk enclosure filler half set	2998	Both	No	No	Yes
<b>Function Authorization indicators:</b>					
- Thin Provisioning Indicator	7071	Both	No	No	Yes
- IBM System Storage Easy Tier indicator	7083	Both	No	No	Yes

- Feature conversion: As necessary, IBM service personnel will remove components from the machine and/or install additional components required to complete the conversion.
- Feature remove: This is an administrative transaction and only updates IBM machine and inventory records, except under the following condition:
  - IBM will remove components from the machine if the Feature Remove is ordered in conjunction with a Feature Add transaction.

MT	Model	Feature	Description	List Price
2421	941	0098	Special Oper Proc Identifier	\$0
2421	941	0707	Thin Provisioning indicator	\$0
2421	941	0713	Storage Easy Tier indicator	\$0
2421	941	0877	1100.1 to 1200.0 TB capacity	\$0
2421	941	0878	1200.1 to 1300.0 TB capacity	\$0

2421	941	0879	1300.1 to 1400.0 TB capacity	\$0
2421	941	0880	1400.1 to 1500.0 TB capacity	\$0
2421	941	0881	1500.1 to 1600.0 TB capacity	\$0
2421	941	0882	1600.1 to 1700.0 TB capacity	\$0
2421	941	0883	1700.1 to 1800.0 TB capacity	\$0
2421	941	0884	1800.1 to 1900.0 TB capacity	\$0
2421	941	0885	1900.1 to 2000.0 TB capacity	\$0
2421	941	0886	2000.1 to 2100.0 TB capacity	\$0
2421	941	1712	Release 5.1 Bundle family	\$40,000
2421	941	2716	600 GB 15K FC drive set	\$149,984
2421	941	2916	2 TB 7.2K SATA drive set	\$137,784
2421	941	2717	600 GB 15K FC CoD drive set	\$14,998
2421	941	2917	2 TB 7.2K SATA CoD drive set	\$13,778
2421	941	6014	73 GB SSD half drive set	\$269,990
2421	941	6114	146 GB SSD half drive set	\$405,328
2421	941	2998	Disk enclosure filler half set	\$50
2421	941	7071	Thin Provisioning Indicator	\$0
2421	941	7083	Storage Easy Tier indicator	\$0
2421	94E	0877	1100.1 to 1200.0 TB capacity	\$0
2421	94E	0878	1200.1 to 1300.0 TB capacity	\$0
2421	94E	0879	1300.1 to 1400.0 TB capacity	\$0
2421	94E	0880	1400.1 to 1500.0 TB capacity	\$0
2421	94E	0881	1500.1 to 1600.0 TB capacity	\$0
2421	94E	0882	1600.1 to 1700.0 TB capacity	\$0
2421	94E	0883	1700.1 to 1800.0 TB capacity	\$0

2421	94E	0884	1800.1 to 1900.0 TB capacity	\$0
2421	94E	0885	1900.1 to 2000.0 TB capacity	\$0
2421	94E	0886	2000.1 to 2100.0 TB capacity	\$0
2421	94E	2716	600 GB 15K FC drive set	\$149,984
2421	94E	2916	2 TB 7.2K SATA drive set	\$137,784
2421	94E	2717	600 GB 15K FC CoD drive set	\$14,998
2421	94E	2917	2 TB 7.2K SATA CoD drive set	\$13,778
2421	94E	6014	73 GB SSD half drive set	\$269,990
2421	94E	6114	146 GB SSD half drive set	\$405,328
2421	94E	2998	Disk enclosure filler half set	\$50
2422	941	0098	Special Oper Proc Identifier	\$0
2422	941	0707	Thin Provisioning indicator	\$0
2422	941	0713	Storage Easy Tier indicator	\$0
2422	941	0877	1100.1 to 1200.0 TB capacity	\$0
2422	941	0878	1200.1 to 1300.0 TB capacity	\$0
2422	941	0879	1300.1 to 1400.0 TB capacity	\$0
2422	941	0880	1400.1 to 1500.0 TB capacity	\$0
2422	941	0881	1500.1 to 1600.0 TB capacity	\$0
2422	941	0882	1600.1 to 1700.0 TB capacity	\$0
2422	941	0883	1700.1 to 1800.0 TB capacity	\$0
2422	941	0884	1800.1 to 1900.0 TB capacity	\$0
2422	941	0885	1900.1 to 2000.0 TB capacity	\$0
2422	941	0886	2000.1 to 2100.0 TB capacity	\$0
2422	941	1712	Release 5.1 Bundle family	\$40,000
2422	941	2716	600 GB 15K FC drive set	\$156,656
2422	941	2916	2 TB 7.2K SATA drive set	\$146,856
2422	941	2717	600 GB 15K FC CoD drive set	\$15,666

2422	941	2917	2 TB 7.2K SATA CoD drive set	\$14,686
2422	941	6014	73 GB SSD half drive set	\$286,160
2422	941	6114	146 GB SSD half drive set	\$433,552
2422	941	2998	Disk enclosure filler half set	\$50
2422	941	7071	Thin Provisioning Indicator	\$0
2422	941	7083	Storage Easy Tier indicator	\$0
2422	94E	0877	1100.1 to 1200.0 TB capacity	\$0
2422	94E	0878	1200.1 to 1300.0 TB capacity	\$0
2422	94E	0879	1300.1 to 1400.0 TB capacity	\$0
2422	94E	0880	1400.1 to 1500.0 TB capacity	\$0
2422	94E	0881	1500.1 to 1600.0 TB capacity	\$0
2422	94E	0882	1600.1 to 1700.0 TB capacity	\$0
2422	94E	0883	1700.1 to 1800.0 TB capacity	\$0
2422	94E	0884	1800.1 to 1900.0 TB capacity	\$0
2422	94E	0885	1900.1 to 2000.0 TB capacity	\$0
2422	94E	0886	2000.1 to 2100.0 TB capacity	\$0
2422	94E	2716	600 GB 15K FC drive set	\$156,656
2422	94E	2916	2 TB 7.2K SATA drive set	\$146,856
2422	94E	2717	600 GB 15K FC CoD drive set	\$15,666
2422	94E	2917	2 TB 7.2K SATA CoD drive set	\$14,686
2422	94E	6014	73 GB SSD half drive set	\$286,160
2422	94E	6114	146 GB SSD half drive set	\$433,552
2422	94E	2998	Disk enclosure filler half set	\$50
2423	941	0098	Special Oper Proc Identifier	\$0
2423	941	0707	Thin Provisioning indicator	\$0
2423	941	0713	Storage Easy Tier indicator	\$0
2423	941	0877	1100.1 to 1200.0 TB capacity	\$0

2423	941	0878	1200.1 to 1300.0 TB capacity	\$0
2423	941	0879	1300.1 to 1400.0 TB capacity	\$0
2423	941	0880	1400.1 to 1500.0 TB capacity	\$0
2423	941	0881	1500.1 to 1600.0 TB capacity	\$0
2423	941	0882	1600.1 to 1700.0 TB capacity	\$0
2423	941	0883	1700.1 to 1800.0 TB capacity	\$0
2423	941	0884	1800.1 to 1900.0 TB capacity	\$0
2423	941	0885	1900.1 to 2000.0 TB capacity	\$0
2423	941	0886	2000.1 to 2100.0 TB capacity	\$0
2423	941	1712	Release 5.1 Bundle family	\$40,000
2423	941	2716	600 GB 15K FC drive set	\$163,328
2423	941	2916	2 TB 7.2K SATA drive set	\$155,928
2423	941	2717	600 GB 15K FC CoD drive set	\$16,333
2423	941	2917	2 TB 7.2K SATA CoD drive set	\$15,593
2423	941	6014	73 GB SSD half drive set	\$302,330
2423	941	6114	146 GB SSD half drive set	\$461,776
2423	941	2998	Disk enclosure filler half set	\$50
2423	941	7071	Thin Provisioning Indicator	\$0
2423	941	7083	Storage Easy Tier indicator	\$0
2423	94E	0877	1100.1 to 1200.0 TB capacity	\$0
2423	94E	0878	1200.1 to 1300.0 TB capacity	\$0
2423	94E	0879	1300.1 to 1400.0 TB capacity	\$0
2423	94E	0880	1400.1 to 1500.0 TB capacity	\$0
2423	94E	0881	1500.1 to 1600.0 TB capacity	\$0
2423	94E	0882	1600.1 to 1700.0 TB capacity	\$0

2423	94E	0883	1700.1 to 1800.0 TB capacity	\$0
2423	94E	0884	1800.1 to 1900.0 TB capacity	\$0
2423	94E	0885	1900.1 to 2000.0 TB capacity	\$0
2423	94E	0886	2000.1 to 2100.0 TB capacity	\$0
2423	94E	2716	600 GB 15K FC drive set	\$163,328
2423	94E	2916	2 TB 7.2K SATA drive set	\$155,928
2423	94E	2717	600 GB 15K FC CoD drive set	\$16,333
2423	94E	2917	2 TB 7.2K SATA CoD drive set	\$15,593
2423	94E	6014	73 GB SSD half drive set	\$302,330
2423	94E	6114	146 GB SSD half drive set	\$461,776
2423	94E	2998	Disk enclosure filler half set	\$50
2424	941	0098	Special Oper Proc Identifier	\$0
2424	941	0707	Thin Provisioning indicator	\$0
2424	941	0713	Storage Easy Tier indicator	\$0
2424	941	0877	1100.1 to 1200.0 TB capacity	\$0
2424	941	0878	1200.1 to 1300.0 TB capacity	\$0
2424	941	0879	1300.1 to 1400.0 TB capacity	\$0
2424	941	0880	1400.1 to 1500.0 TB capacity	\$0
2424	941	0881	1500.1 to 1600.0 TB capacity	\$0
2424	941	0882	1600.1 to 1700.0 TB capacity	\$0
2424	941	0883	1700.1 to 1800.0 TB capacity	\$0
2424	941	0884	1800.1 to 1900.0 TB capacity	\$0
2424	941	0885	1900.1 to 2000.0 TB capacity	\$0
2424	941	0886	2000.1 to 2100.0 TB capacity	\$0
2424	941	1712	Release 5.1 Bundle family	\$40,000
2424	941	2716	600 GB 15K FC drive set	\$170,000



2424	941	2916	2 TB 7.2K SATA drive set	\$165,000
2424	941	2717	600 GB 15K FC CoD drive set	\$17,000
2424	941	2917	2 TB 7.2K SATA CoD drive set	\$16,500
2424	941	6014	73 GB SSD half drive set	\$318,500
2424	941	6114	146 GB SSD half drive set	\$490,000
2424	941	2998	Disk enclosure filler half set	\$50
2424	941	7071	Thin Provisioning Indicator	\$0
2424	941	7083	Storage Easy Tier indicator	\$0
2424	94E	0877	1100.1 to 1200.0 TB capacity	\$0
2424	94E	0878	1200.1 to 1300.0 TB capacity	\$0
2424	94E	0879	1300.1 to 1400.0 TB capacity	\$0
2424	94E	0880	1400.1 to 1500.0 TB capacity	\$0
2424	94E	0881	1500.1 to 1600.0 TB capacity	\$0
2424	94E	0882	1600.1 to 1700.0 TB capacity	\$0
2424	94E	0883	1700.1 to 1800.0 TB capacity	\$0
2424	94E	0884	1800.1 to 1900.0 TB capacity	\$0
2424	94E	0885	1900.1 to 2000.0 TB capacity	\$0
2424	94E	0886	2000.1 to 2100.0 TB capacity	\$0
2424	94E	2716	600 GB 15K FC drive set	\$170,000
2424	94E	2916	2 TB 7.2K SATA drive set	\$165,000
2424	94E	2717	600 GB 15K FC CoD drive set	\$17,000
2424	94E	2917	2 TB 7.2K SATA CoD drive set	\$16,500
2424	94E	6014	73 GB SSD half drive set	\$318,500
2424	94E	6114	146 GB SSD half drive set	\$490,000
2424	94E	2998	Disk enclosure filler half set	\$50

## Feature conversion purchase price

### Feature conversions (machine types 2421, 2422, 2423, and 2424 Model 941):

Feature From	To	Returned Parts *	Description	Continuous Maintenance
FC Disk Drive Sets:				
2016	2716	Yes	Disk drive set conversion	Yes
2216	2716	Yes	Disk drive set conversion	Yes
2416	2716	Yes	Disk drive set conversion	Yes
2616	2716	Yes	Disk drive set conversion	Yes
FC Standby CoD Disk Drive Set:				
2717	2716	No	CoD disk drive conversion	Yes
SATA Disk Drive Sets:				
2816	2916	Yes	Disk drive set conversion	Yes
SATA Standby CoD Disk Drive Set:				
2917	2916	No	CoD disk drive conversion	Yes
SSD Disk Drive Sets:				
6014	6114	Yes	Disk drive set conversion	Yes
6014	6016	No	Disk drive set conversion	Yes
6014	6116	Yes	Disk drive set conversion	Yes
6114	6116	No	Disk drive set conversion	Yes
FC to SATA Disk Drive Set:				
2016	2916	Yes	FC to SATA disk drive conversion	Yes
2216	2916	Yes	FC to SATA disk drive conversion	Yes
2416	2916	Yes	FC to SATA disk drive conversion	Yes
2616	2916	Yes	FC to SATA disk drive conversion	Yes
2716	2816	Yes	FC to SATA disk drive conversion	Yes
2716	2916	Yes	FC to SATA disk drive conversion	Yes
FC to SSD Disk Drive Sets:				
2016	6014	Yes	FC to SSD disk drive conversion	Yes
2016	6114	Yes	FC to SSD disk drive conversion	Yes
2216	6014	Yes	FC to SSD disk drive conversion	Yes
2216	6114	Yes	FC to SSD disk drive conversion	Yes
2416	6014	Yes	FC to SSD disk drive conversion	Yes
2416	6114	Yes	FC to SSD disk drive conversion	Yes
2616	6014	Yes	FC to SSD disk drive conversion	Yes
2616	6114	Yes	FC to SSD disk drive conversion	Yes
2716	6014	Yes	FC to SSD disk drive conversion	Yes
2716	6114	Yes	FC to SSD disk drive conversion	Yes
2716	6016	Yes	FC to SSD disk drive conversion	Yes
2716	6116	Yes	FC to SSD disk drive conversion	Yes
SATA to SSD Disk Drive Sets:				
2916	6016	Yes	SATA to SSD disk drive conversion	Yes

2916	6116	Yes	SATA to SSD disk drive conversion	Yes
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**Feature conversions (machine types 2421, 2422, 2423, and 2424 Model 94E):**

Feature From	To	Returned Parts *	Description	Continuous Maintenance
FC Disk Drive Sets:				
2016	2716	Yes	Disk drive set conversion	Yes
2216	2716	Yes	Disk drive set conversion	Yes
2416	2716	Yes	Disk drive set conversion	Yes
2616	2716	Yes	Disk drive set conversion	Yes
FC Standby CoD Disk Drive Set:				
2717	2716	No	CoD disk drive conversion	Yes
SATA Disk Drive Sets:				
2816	2916	Yes	Disk drive set conversion	Yes
SATA Standby CoD Disk Drive Set:				
2917	2916	No	CoD disk drive conversion	Yes
SSD Disk Drive Sets:				
6014	6114	Yes	Disk drive set conversion	Yes
6014	6016	No	Disk drive set conversion	Yes
6014	6116	Yes	Disk drive set conversion	Yes
6114	6116	No	Disk drive set conversion	Yes
FC to SATA Disk Drive Set:				
2016	2916	Yes	FC to SATA disk drive conversion	Yes
2216	2916	Yes	FC to SATA disk drive conversion	Yes
2416	2916	Yes	FC to SATA disk drive conversion	Yes
2616	2916	Yes	FC to SATA disk drive conversion	Yes
2716	2816	Yes	FC to SATA disk drive conversion	Yes
2716	2916	Yes	FC to SATA disk drive conversion	Yes
FC to SSD Disk Drive Sets:				
2016	6014	Yes	FC to SSD disk drive conversion	Yes
2016	6114	Yes	FC to SSD disk drive conversion	Yes
2216	6014	Yes	FC to SSD disk drive conversion	Yes
2216	6114	Yes	FC to SSD disk drive conversion	Yes
2416	6014	Yes	FC to SSD disk drive conversion	Yes
2416	6114	Yes	FC to SSD disk drive conversion	Yes
2616	6014	Yes	FC to SSD disk drive conversion	Yes
2616	6114	Yes	FC to SSD disk drive conversion	Yes
2716	6014	Yes	FC to SSD disk drive conversion	Yes
2716	6114	Yes	FC to SSD disk drive conversion	Yes
2716	6016	Yes	FC to SSD disk drive conversion	Yes
2716	6116	Yes	FC to SSD disk drive conversion	Yes
SATA to SSD Disk Drive Sets:				
2916	6016	Yes	SATA to SSD disk drive	Yes

2916	6116	Yes	conversion SATA to SSD disk drive conversion	Yes
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**Feature conversions (machine types 2421, 2422, 2423, and 2424 Model 931 or 932 to Model 941):**

Feature From	To	Returned Parts *	Description	Continuous Maintenance
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Microcode Bundle Family:

1701	1712	No	Microcode bundle family conversion	Yes
1702	1712	No	Microcode bundle family conversion	Yes
1703	1712	No	Microcode bundle family conversion	Yes

Function Authorization indicators:

7070	7071	No	Thin Provisioning Indicator conversion	Yes
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\* Parts removed or replaced become the property of IBM and must be returned.

Feature Conversions

MT	Model	Partnumber	Description	List Price
2421	941	242120162716	Disk drive set conversion	\$149,984
2421	941	242122162716	Disk drive set conversion	\$149,984
2421	941	242124162716	Disk drive set conversion	\$149,984
2421	941	242126162716	Disk drive set conversion	\$149,984
2421	941	242127172716	CoD disk drive conversion	\$134,986
2421	941	242128162916	Disk drive set conversion	\$137,784
2421	941	242129172916	CoD disk drive conversion	\$124,006
2421	941	242160146114	Disk drive set conversion	\$405,328
2421	941	242160146016	Disk drive set conversion	\$539,980
2421	941	242160146116	Disk drive set conversion	\$810,656
2421	941	242161146116	Disk drive set conversion	\$810,656
2421	941	242120162916	FC to SATA disk drive conv	\$137,784
2421	941	242122162916	FC to SATA disk drive conv	\$137,784
2421	941	242124162916	FC to SATA disk drive conv	\$137,784
2421	941	242126162916	FC to SATA disk drive conv	\$137,784
2421	941	242127162816	FC to SATA disk drive conv	\$79,340
2421	941	242127162916	FC to SATA disk drive conv	\$137,784
2421	941	242120166014	FC to SATA disk drive conv	\$269,990
2421	941	242120166114	FC to SSD disk drive conv	\$405,328

2421	941	242122166014	FC to SSD disk drive conv	\$269,990
2421	941	242122166114	FC to SSD disk drive conv	\$405,328
2421	941	242124166014	FC to SSD disk drive conv	\$269,990
2421	941	242124166114	FC to SSD disk drive conv	\$405,328
2421	941	242126166014	FC to SSD disk drive conv	\$269,990
2421	941	242126166114	FC to SSD disk drive conv	\$405,328
2421	941	242127166014	FC to SSD disk drive conv	\$269,990
2421	941	242127166114	FC to SSD disk drive conv	\$405,328
2421	941	242127166016	FC to SSD disk drive conv	\$539,980
2421	941	242127166116	FC to SSD disk drive conv	\$810,656
2421	941	242129166016	SATA to SSD disk drive conv	\$539,980
2421	941	242129166116	SATA to SSD disk drive conv	\$810,656
2421	941	242117011712	Microcode bundle family conv	\$40,000
2421	941	242117021712	Microcode bundle family conv	\$40,000
2421	941	242117031712	Microcode bundle family conv	\$40,000
2421	941	242170707071	Thin Provis Indicator conv	\$0
2421	94E	242120162716	Disk drive set conversion	\$149,984
2421	94E	242122162716	Disk drive set conversion	\$149,984
2421	94E	242124162716	Disk drive set conversion	\$149,984
2421	94E	242126162716	Disk drive set conversion	\$149,984
2421	94E	242127172716	CoD disk drive conversion	\$134,986
2421	94E	242128162916	Disk drive set conversion	\$137,784
2421	94E	242129172916	CoD disk drive conversion	\$124,006
2421	94E	242160146114	Disk drive set conversion	\$405,328
2421	94E	242160146016	Disk drive set conversion	\$539,980
2421	94E	242160146116	Disk drive set conversion	\$810,656
2421	94E	242161146116	Disk drive set conversion	\$810,656
2421	94E	242120162916	FC to SATA disk drive conv	\$137,784
2421	94E	242122162916	FC to SATA disk drive conv	\$137,784
2421	94E	242124162916	FC to SATA disk drive conv	\$137,784
2421	94E	242126162916	FC to SATA disk drive conv	\$137,784
2421	94E	242127162816	FC to SATA disk drive conv	\$79,340

2421	94E	242127162916	FC to SATA disk drive conv	\$137,784
2421	94E	242120166014	FC to SSD disk drive conv	\$269,990
2421	94E	242120166114	FC to SSD disk drive conv	\$405,328
2421	94E	242122166014	FC to SSD disk drive conv	\$269,990
2421	94E	242122166114	FC to SSD disk drive conv	\$405,328
2421	94E	242124166014	FC to SSD disk drive conv	\$269,990
2421	94E	242124166114	FC to SSD disk drive conv	\$405,328
2421	94E	242126166014	FC to SSD disk drive conv	\$269,990
2421	94E	242126166114	FC to SSD disk drive conv	\$405,328
2421	94E	242127166014	FC to SSD disk drive conv	\$269,990
2421	94E	242127166114	FC to SSD disk drive conv	\$405,328
2421	94E	242127166016	FC to SSD disk drive conv	\$539,980
2421	94E	242127166116	FC to SSD disk drive conv	\$810,656
2421	94E	242129166016	SATA to SSD disk drive conv	\$539,980
2421	94E	242129166116	SATA to SSD disk drive conv	\$810,656
2422	941	242220162716	Disk drive set conversion	\$156,656
2422	941	242222162716	Disk drive set conversion	\$156,656
2422	941	242224162716	Disk drive set conversion	\$156,656
2422	941	242226162716	Disk drive set conversion	\$156,656
2422	941	242227172716	CoD disk drive conversion	\$140,990
2422	941	242228162916	Disk drive set conversion	\$146,856
2422	941	242229172916	CoD disk drive conversion	\$132,170
2422	941	242260146114	Disk drive set conversion	\$433,552
2422	941	242260146016	Disk drive set conversion	\$572,320
2422	941	242260146116	Disk drive set conversion	\$867,104
2422	941	242261146116	Disk drive set conversion	\$867,104
2422	941	242220162916	FC to SATA disk drive conv	\$146,856
2422	941	242222162916	FC to SATA disk drive conv	\$146,856
2422	941	242224162916	FC to SATA disk drive conv	\$146,856
2422	941	242226162916	FC to SATA disk drive conv	\$146,856
2422	941	242227162816	FC to SATA disk drive conv	\$84,560
2422	941	242227162916	FC to SATA disk drive conv	\$146,856
2422	941	242220166014	FC to SATA disk drive conv	\$286,160

2422	941	242220166114	FC to SSD disk drive conv	\$433,552
2422	941	242222166014	FC to SSD disk drive conv	\$286,160
2422	941	242222166114	FC to SSD disk drive conv	\$433,552
2422	941	242224166014	FC to SSD disk drive conv	\$286,160
2422	941	242224166114	FC to SSD disk drive conv	\$433,552
2422	941	242226166014	FC to SSD disk drive conv	\$286,160
2422	941	242226166114	FC to SSD disk drive conv	\$433,552
2422	941	242227166014	FC to SSD disk drive conv	\$286,160
2422	941	242227166114	FC to SSD disk drive conv	\$433,552
2422	941	242227166016	FC to SSD disk drive conv	\$572,320
2422	941	242227166116	FC to SSD disk drive conv	\$867,104
2422	941	242229166016	SATA to SSD disk drive conv	\$572,320
2422	941	242229166116	SATA to SSD disk drive conv	\$867,104
2422	941	242217011712	Microcode bundle family conv	\$40,000
2422	941	242217021712	Microcode bundle family conv	\$40,000
2422	941	242217031712	Microcode bundle family conv	\$40,000
2422	941	242270707071	Thin Provis Indicator conv	\$0
2422	94E	242220162716	Disk drive set conversion	\$156,656
2422	94E	242222162716	Disk drive set conversion	\$156,656
2422	94E	242224162716	Disk drive set conversion	\$156,656
2422	94E	242226162716	Disk drive set conversion	\$156,656
2422	94E	242227172716	CoD disk drive conversion	\$140,990
2422	94E	242228162916	Disk drive set conversion	\$146,856
2422	94E	242229172916	CoD disk drive conversion	\$132,170
2422	94E	242260146114	Disk drive set conversion	\$433,552
2422	94E	242260146016	Disk drive set conversion	\$572,320
2422	94E	242260146116	Disk drive set conversion	\$867,104
2422	94E	242261146116	Disk drive set conversion	\$867,104
2422	94E	242220162916	FC to SATA disk drive conv	\$146,856
2422	94E	242222162916	FC to SATA disk drive conv	\$146,856
2422	94E	242224162916	FC to SATA disk drive conv	\$146,856
2422	94E	242226162916	FC to SATA disk drive conv	\$146,856

2422	94E	242227162816	FC to SATA disk drive conv	\$84,560
2422	94E	242227162916	FC to SATA disk drive conv	\$146,856
2422	94E	242220166014	FC to SSD disk drive conv	\$286,160
2422	94E	242220166114	FC to SSD disk drive conv	\$433,552
2422	94E	242222166014	FC to SSD disk drive conv	\$286,160
2422	94E	242222166114	FC to SSD disk drive conv	\$433,552
2422	94E	242224166014	FC to SSD disk drive conv	\$286,160
2422	94E	242224166114	FC to SSD disk drive conv	\$433,552
2422	94E	242226166014	FC to SSD disk drive conv	\$286,160
2422	94E	242226166114	FC to SSD disk drive conv	\$433,552
2422	94E	242227166014	FC to SSD disk drive conv	\$286,160
2422	94E	242227166114	FC to SSD disk drive conv	\$433,552
2422	94E	242227166016	FC to SSD disk drive conv	\$572,320
2422	94E	242227166116	FC to SSD disk drive conv	\$867,104
2422	94E	242229166016	SATA to SSD disk drive conv	\$572,320
2422	94E	242229166116	SATA to SSD disk drive conv	\$867,104
2423	941	242320162716	Disk drive set conversion	\$163,328
2423	941	242322162716	Disk drive set conversion	\$163,328
2423	941	242324162716	Disk drive set conversion	\$163,328
2423	941	242326162716	Disk drive set conversion	\$163,328
2423	941	242327172716	CoD disk drive conversion	\$146,995
2423	941	242328162916	Disk drive set conversion	\$155,928
2423	941	242329172916	CoD disk drive conversion	\$140,335
2423	941	242360146114	Disk drive set conversion	\$461,776
2423	941	242360146016	Disk drive set conversion	\$604,660
2423	941	242360146116	Disk drive set conversion	\$923,552
2423	941	242361146116	Disk drive set conversion	\$923,552
2423	941	242320162916	FC to SATA disk drive conv	\$155,928
2423	941	242322162916	FC to SATA disk drive conv	\$155,928
2423	941	242324162916	FC to SATA disk drive conv	\$155,928
2423	941	242326162916	FC to SATA disk drive conv	\$155,928
2423	941	242327162816	FC to SATA disk drive conv	\$89,780
2423	941	242327162916	FC to SATA disk drive conv	\$155,928



2423	941	242320166014	FC to SATA disk drive conv	\$302,330
2423	941	242320166114	FC to SSD disk drive conv	\$461,776
2423	941	242322166014	FC to SSD disk drive conv	\$302,330
2423	941	242322166114	FC to SSD disk drive conv	\$461,776
2423	941	242324166014	FC to SSD disk drive conv	\$302,330
2423	941	242324166114	FC to SSD disk drive conv	\$461,776
2423	941	242326166014	FC to SSD disk drive conv	\$302,330
2423	941	242326166114	FC to SSD disk drive conv	\$461,776
2423	941	242327166014	FC to SSD disk drive conv	\$302,330
2423	941	242327166114	FC to SSD disk drive conv	\$461,776
2423	941	242327166016	FC to SSD disk drive conv	\$604,660
2423	941	242327166116	FC to SSD disk drive conv	\$923,552
2423	941	242329166016	SATA to SSD disk drive conv	\$604,660
2423	941	242329166116	SATA to SSD disk drive conv	\$923,552
2423	941	242317011712	Microcode bundle family conv	\$40,000
2423	941	242317021712	Microcode bundle family conv	\$40,000
2423	941	242317031712	Microcode bundle family conv	\$40,000
2423	941	242370707071	Thin Provis Indicator conv	\$0
2423	94E	242320162716	Disk drive set conversion	\$163,328
2423	94E	242322162716	Disk drive set conversion	\$163,328
2423	94E	242324162716	Disk drive set conversion	\$163,328
2423	94E	242326162716	Disk drive set conversion	\$163,328
2423	94E	242327172716	CoD disk drive conversion	\$146,995
2423	94E	242328162916	Disk drive set conversion	\$155,928
2423	94E	242329172916	CoD disk drive conversion	\$140,335
2423	94E	242360146114	Disk drive set conversion	\$461,776
2423	94E	242360146016	Disk drive set conversion	\$604,660
2423	94E	242360146116	Disk drive set conversion	\$923,552
2423	94E	242361146116	Disk drive set conversion	\$923,552
2423	94E	242320162916	FC to SATA disk drive conv	\$155,928
2423	94E	242322162916	FC to SATA disk drive conv	\$155,928
2423	94E	242324162916	FC to SATA disk drive conv	\$155,928

2423	94E	242326162916	FC to SATA disk drive conv	\$155,928
2423	94E	242327162816	FC to SATA disk drive conv	\$89,780
2423	94E	242327162916	FC to SATA disk drive conv	\$155,928
2423	94E	242320166014	FC to SSD disk drive conv	\$302,330
2423	94E	242320166114	FC to SSD disk drive conv	\$461,776
2423	94E	242322166014	FC to SSD disk drive conv	\$302,330
2423	94E	242322166114	FC to SSD disk drive conv	\$461,776
2423	94E	242324166014	FC to SSD disk drive conv	\$302,330
2423	94E	242324166114	FC to SSD disk drive conv	\$461,776
2423	94E	242326166014	FC to SSD disk drive conv	\$302,330
2423	94E	242326166114	FC to SSD disk drive conv	\$461,776
2423	94E	242327166014	FC to SSD disk drive conv	\$302,330
2423	94E	242327166114	FC to SSD disk drive conv	\$461,776
2423	94E	242327166016	FC to SSD disk drive conv	\$604,660
2423	94E	242327166116	FC to SSD disk drive conv	\$923,552
2423	94E	242329166016	SATA to SSD disk drive conv	\$604,660
2423	94E	242329166116	SATA to SSD disk drive conv	\$923,552
2424	941	242420162716	Disk drive set conversion	\$170,000
2424	941	242422162716	Disk drive set conversion	\$170,000
2424	941	242424162716	Disk drive set conversion	\$170,000
2424	941	242426162716	Disk drive set conversion	\$170,000
2424	941	242427172716	CoD disk drive conversion	\$153,000
2424	941	242428162916	Disk drive set conversion	\$165,000
2424	941	242429172916	CoD disk drive conversion	\$148,500
2424	941	242460146114	Disk drive set conversion	\$490,000
2424	941	242460146016	Disk drive set conversion	\$637,000
2424	941	242460146116	Disk drive set conversion	\$980,000
2424	941	242461146116	Disk drive set conversion	\$980,000
2424	941	242420162916	FC to SATA disk drive conv	\$165,000
2424	941	242422162916	FC to SATA disk drive conv	\$165,000
2424	941	242424162916	FC to SATA disk drive conv	\$165,000
2424	941	242426162916	FC to SATA disk drive conv	\$165,000
2424	941	242427162816	FC to SATA disk drive conv	\$95,000

2424	941	242427162916	FC to SATA disk drive conv	\$165,000
2424	941	242420166014	FC to SATA disk drive conv	\$318,500
2424	941	242420166114	FC to SSD disk drive conv	\$490,000
2424	941	242422166014	FC to SSD disk drive conv	\$318,500
2424	941	242422166114	FC to SSD disk drive conv	\$490,000
2424	941	242424166014	FC to SSD disk drive conv	\$318,500
2424	941	242424166114	FC to SSD disk drive conv	\$490,000
2424	941	242426166014	FC to SSD disk drive conv	\$318,500
2424	941	242426166114	FC to SSD disk drive conv	\$490,000
2424	941	242427166014	FC to SSD disk drive conv	\$318,500
2424	941	242427166114	FC to SSD disk drive conv	\$490,000
2424	941	242427166016	FC to SSD disk drive conv	\$637,000
2424	941	242427166116	FC to SSD disk drive conv	\$980,000
2424	941	242429166016	SATA to SSD disk drive conv	\$637,000
2424	941	242429166116	SATA to SSD disk drive conv	\$980,000
2424	941	242417011712	Microcode bundle family conv	\$40,000
2424	941	242417021712	Microcode bundle family conv	\$40,000
2424	941	242417031712	Microcode bundle family conv	\$40,000
2424	941	242470707071	Thin Provis Indicator conv	\$0
2424	94E	242420162716	Disk drive set conversion	\$170,000
2424	94E	242422162716	Disk drive set conversion	\$170,000
2424	94E	242424162716	Disk drive set conversion	\$170,000
2424	94E	242426162716	Disk drive set conversion	\$170,000
2424	94E	242427172716	CoD disk drive conversion	\$153,000
2424	94E	242428162916	Disk drive set conversion	\$165,000
2424	94E	242429172916	CoD disk drive conversion	\$148,500
2424	94E	242460146114	Disk drive set conversion	\$490,000
2424	94E	242460146016	Disk drive set conversion	\$637,000
2424	94E	242460146116	Disk drive set conversion	\$980,000
2424	94E	242461146116	Disk drive set conversion	\$980,000
2424	94E	242420162916	FC to SATA disk drive conv	\$165,000
2424	94E	242422162916	FC to SATA disk drive conv	\$165,000

2424	94E	242424162916	FC to SATA disk drive conv	\$165,000
2424	94E	242426162916	FC to SATA disk drive conv	\$165,000
2424	94E	242427162816	FC to SATA disk drive conv	\$95,000
2424	94E	242427162916	FC to SATA disk drive conv	\$165,000
2424	94E	242420166014	FC to SSD disk drive conv	\$318,500
2424	94E	242420166114	FC to SSD disk drive conv	\$490,000
2424	94E	242422166014	FC to SSD disk drive conv	\$318,500
2424	94E	242422166114	FC to SSD disk drive conv	\$490,000
2424	94E	242424166014	FC to SSD disk drive conv	\$318,500
2424	94E	242424166114	FC to SSD disk drive conv	\$490,000
2424	94E	242426166014	FC to SSD disk drive conv	\$318,500
2424	94E	242426166114	FC to SSD disk drive conv	\$490,000
2424	94E	242427166014	FC to SSD disk drive conv	\$318,500
2424	94E	242427166114	FC to SSD disk drive conv	\$490,000
2424	94E	242427166016	FC to SSD disk drive conv	\$637,000
2424	94E	242427166116	FC to SSD disk drive conv	\$980,000
2424	94E	242429166016	SATA to SSD disk drive conv	\$637,000
2424	94E	242429166116	SATA to SSD disk drive conv	\$980,000

MT	Model	Feature	Description	TP(A M L)	IOR24
2421	941	2716	600 GB 15K FC drive set	M	\$612
2421	941	2916	2 TB 7.2K SATA drive set	M	\$832
2421	941	2717	600 GB 15K FC CoD drive set	M	\$612
2421	941	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2421	941	6014	73 GB SSD half drive set	M	\$2,118
2421	941	6114	146 GB SSD half drive set	M	\$3,696
2421	941	7071	Thin Provisioning Indicator	M	\$173
2421	941	7083	Storage Easy Tier indicator	M	\$0
2421	94E	2716	600 GB 15K FC drive set	M	\$612
2421	94E	2916	2 TB 7.2K SATA drive set	M	\$832

2421	94E	2717	600 GB 15K FC CoD drive set	M	\$612
2421	94E	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2421	94E	6014	73 GB SSD half drive set	M	\$2,118
2421	94E	6114	146 GB SSD half drive set	M	\$3,696
2422	941	2716	600 GB 15K FC drive set	M	\$612
2422	941	2916	2 TB 7.2K SATA drive set	M	\$832
2422	941	2717	600 GB 15K FC CoD drive set	M	\$612
2422	941	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2422	941	6014	73 GB SSD half drive set	M	\$2,118
2422	941	6114	146 GB SSD half drive set	M	\$3,696
2422	941	7071	Thin Provisioning Indicator	M	\$173
2422	941	7083	Storage Easy Tier indicator	M	\$0
2422	94E	2716	600 GB 15K FC drive set	M	\$612
2422	94E	2916	2 TB 7.2K SATA drive set	M	\$832
2422	94E	2717	600 GB 15K FC CoD drive set	M	\$612
2422	94E	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2422	94E	6014	73 GB SSD half drive set	M	\$2,118
2422	94E	6114	146 GB SSD half drive set	M	\$3,696
2423	941	2716	600 GB 15K FC drive set	M	\$612
2423	941	2916	2 TB 7.2K SATA drive set	M	\$832
2423	941	2717	600 GB 15K FC CoD drive set	M	\$612
2423	941	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2423	941	6014	73 GB SSD half drive set	M	\$2,118
2423	941	6114	146 GB SSD half drive set	M	\$3,696

2423	941	7071	Thin Provisioning Indicator	M	\$173
2423	941	7083	Storage Easy Tier indicator	M	\$0
2423	94E	2716	600 GB 15K FC drive set	M	\$612
2423	94E	2916	2 TB 7.2K SATA drive set	M	\$832
2423	94E	2717	600 GB 15K FC CoD drive set	M	\$612
2423	94E	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2423	94E	6014	73 GB SSD half drive set	M	\$2,118
2423	94E	6114	146 GB SSD half drive set	M	\$3,696
2424	941	2716	600 GB 15K FC drive set	M	\$612
2424	941	2916	2 TB 7.2K SATA drive set	M	\$832
2424	941	2717	600 GB 15K FC CoD drive set	M	\$612
2424	941	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2424	941	6014	73 GB SSD half drive set	M	\$2,118
2424	941	6114	146 GB SSD half drive set	M	\$3,696
2424	941	7071	Thin Provisioning Indicator	M	\$173
2424	941	7083	Storage Easy Tier indicator	M	\$0
2424	94E	2716	600 GB 15K FC drive set	M	\$612
2424	94E	2916	2 TB 7.2K SATA drive set	M	\$832
2424	94E	2717	600 GB 15K FC CoD drive set	M	\$612
2424	94E	2917	2 TB 7.2K SATA CoD drive set	M	\$832
2424	94E	6014	73 GB SSD half drive set	M	\$2,118
2424	94E	6114	146 GB SSD half drive set	M	\$3,696

MT	Model	Feature	Description	TP(A M)	Ref	Pr24X7
2421	941	2716	600 GB 15K FC drive set	M	24X7	\$556

2421	941	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2421	941	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2421	941	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2421	941	6014	73 GB SSD half drive set	M	24X7	\$1,925
2421	941	6114	146 GB SSD half drive set	M	24X7	\$3,360
2421	941	7071	Thin Provisioning Indicator	M	24X7	\$150
2421	941	7083	Storage Easy Tier indicator	M	24X7	\$0
2421	94E	2716	600 GB 15K FC drive set	M	24X7	\$556
2421	94E	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2421	94E	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2421	94E	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2421	94E	6014	73 GB SSD half drive set	M	24X7	\$1,925
2421	94E	6114	146 GB SSD half drive set	M	24X7	\$3,360
2422	941	2716	600 GB 15K FC drive set	M	24X7	\$556
2422	941	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2422	941	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2422	941	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2422	941	6014	73 GB SSD half drive set	M	24X7	\$1,925
2422	941	6114	146 GB SSD half drive set	M	24X7	\$3,360
2422	941	7071	Thin Provisioning Indicator	M	24X7	\$150
2422	941	7083	Storage Easy Tier indicator	M	24X7	\$0
2422	94E	2716	600 GB 15K FC drive set	M	24X7	\$556

2422	94E	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2422	94E	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2422	94E	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2422	94E	6014	73 GB SSD half drive set	M	24X7	\$1,925
2422	94E	6114	146 GB SSD half drive set	M	24X7	\$3,360
2423	941	2716	600 GB 15K FC drive set	M	24X7	\$556
2423	941	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2423	941	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2423	941	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2423	941	6014	73 GB SSD half drive set	M	24X7	\$1,925
2423	941	6114	146 GB SSD half drive set	M	24X7	\$3,360
2423	941	7071	Thin Provisioning Indicator	M	24X7	\$150
2423	941	7083	Storage Easy Tier indicator	M	24X7	\$0
2423	94E	2716	600 GB 15K FC drive set	M	24X7	\$556
2423	94E	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2423	94E	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2423	94E	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2423	94E	6014	73 GB SSD half drive set	M	24X7	\$1,925
2423	94E	6114	146 GB SSD half drive set	M	24X7	\$3,360
2424	941	2716	600 GB 15K FC drive set	M	24X7	\$556
2424	941	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2424	941	2717	600 GB 15K FC	M	24X7	\$556



			CoD drive set			
2424	941	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2424	941	6014	73 GB SSD half drive set	M	24X7	\$1,925
2424	941	6114	146 GB SSD half drive set	M	24X7	\$3,360
2424	941	7071	Thin Provisioning Indicator	M	24X7	\$150
2424	941	7083	Storage Easy Tier indicator	M	24X7	\$0
2424	94E	2716	600 GB 15K FC drive set	M	24X7	\$556
2424	94E	2916	2 TB 7.2K SATA drive set	M	24X7	\$756
2424	94E	2717	600 GB 15K FC CoD drive set	M	24X7	\$556
2424	94E	2917	2 TB 7.2K SATA CoD drive set	M	24X7	\$756
2424	94E	6014	73 GB SSD half drive set	M	24X7	\$1,925
2424	94E	6114	146 GB SSD half drive set	M	24X7	\$3,360

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