



IBM System Storage DS8700 (M/T 239x) Function Authorization for IBM System Storage Easy Tier and other advanced features to support business continuity

Table of contents

1 Overview	7 Publications
2 Key prerequisites	8 Technical information
2 Planned availability date	12 Terms and conditions
2 Description	13 Pricing
7 Product number	

At a glance

The DS8000™ series Function Authorizations establish the extent of IBM® authorization for use of the licensed functions on the IBM System Storage™ DS8000 series.

This announcement introduces the Function Authorizations for IBM System Storage DS8700 series (M/T 239x) high-performance flagship - Feature numbers 7xxx (239x LFA).

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

Overview

The DS8000 series Function Authorizations are for billing purposes only and establish the extent of IBM authorization for use of the licensed functions on an IBM System Storage DS8000 series (IBM 242x). This announcement introduces the Function Authorization for:

2396 Model LFA

- IBM System Storage Thin Provisioning (feature number 7071)
- IBM System Storage Easy Tier (feature number 7083)

2397 Model LFA

- IBM System Storage Thin Provisioning (feature number 7071)
- IBM System Storage Easy Tier (feature number 7083)

2398 Model LFA

- IBM System Storage Thin Provisioning (feature number 7071)
- IBM System Storage Easy Tier (feature number 7083)

2399 Model LFA

- IBM System Storage Thin Provisioning (feature number 7071)

- IBM System Storage Easy Tier (feature number 7083)

For more information, refer to the following announcements on the DS8000 series and licensed functions:

- 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.
- Hardware Announcement [109-749](#), dated October 20, 2009, IBM System Storage DS8700 series (M/T 239x) high-performance flagship - Function Authorizations.

Key prerequisites

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

Planned availability date

May 21, 2010

Description

The following licensed functions are available on the IBM System Storage DS8000 series (IBM 242x):

Licensed function	Description
Operating Environment	IBM System Storage DS® Operating Environment
Thin Provisioning	IBM System Storage Thin Provisioning
Database Protection	IBM Database Protection Feature
FICON® Attachment	IBM System Storage FICON Attachment
High Performance FICON IBM System Storage High Performance FICON for System z	IBM System Storage High Performance FICON for System z
IBM System Storage Easy Tier	IBM System Storage Easy Tier
FlashCopy® IBM System Storage FlashCopy	IBM System Storage FlashCopy
Space Efficient FlashCopy IBM System Storage Space Efficient FlashCopy	IBM System Storage Space Efficient FlashCopy
Metro/Global Mirror	IBM System Storage Metro/Global Mirror
Metro Mirror	IBM System Storage Metro Mirror IBM System Storage Global Copy
Global Mirror	IBM System Storage Global Mirror IBM System Storage Global Copy
z/OS® Global Mirror	IBM System Storage z/OS Global Mirror

z/OS Metro/Global Mirror Incremental Resync	IBM System Storage z/OS Metro/Global Mirror Incremental Resync
Parallel Access Volumes	IBM Parallel Access Volumes
HyperPAV	IBM HyperPAV

All DS8700 series licensed functions are enabled, authorized, managed, activated, and enforced based upon the physical capacity contained in a 242x system. In the context of licensed functions, these terms are defined as follows:

- "242x system" refers to the 242x base unit and all physically attached 242x expansion units:
 - A 242x base unit refers to the Models 941.
 - A 242x expansion unit refers to the Models 94E.

"Enablement" refers to the selection of a 242x licensed function indicator feature number to technically activate the associated licensed function.

"Authorization" refers to the acquisition of a DS8000 series Function Authorization (IBM 239x) feature number to establish the extent of IBM authorization (license size in terms of physical capacity) for use of an associated licensed function. This is also referred to as the "authorization level."

"Management" refers to client use of the Disk Storage Feature Activation (DSFA) application to select the license scope, assign the license value, and deactivate a licensed function.

"Activation" refers to the client retrieval and installation of the feature activation code into the 242x system. The feature activation code is made available by IBM and obtained using the DSFA application.

"Enforcement" refers to logic and other technology within the 242x's Licensed Machine Code to maintain compliance with established IBM authorization levels.

Enablement

Each licensed function is enabled for a 242x system through the selection of the appropriate licensed function indicator feature number on the 242x base unit.

Licensed function	Licensed function indicator
Operating Environment	242x feature numbers 0700 and 70xx
Thin Provisioning	242x feature numbers 0707 and 7071
Database Protection	242x feature numbers 0708 and 7080
FICON Attachment	242x feature numbers 0703 and 7091
High Performance FICON	242x feature numbers 0709 and 7092
IBM System Storage Easy Tier	242x feature numbers 0713 and 7083
FlashCopy	242x feature numbers 0720 and 72xx
Space Efficient FlashCopy	242x feature numbers 0730 and 73xx
Metro/Global Mirror	242x feature numbers 0742 and 74xx
Metro Mirror	242x feature numbers 0744 and 75xx
Global Mirror	242x feature numbers 0746 and 75xx
z/OS Global Mirror	242x feature numbers 0760 and 76xx
z/OS Metro/Global Mirror Incremental Resync	242x feature numbers 0763 and 76xx
Parallel Access Volumes	242x feature numbers 0780 and 78xx
HyperPAV	242x feature numbers 0782 and 7899

Each licensed function indicator feature selected on a 242x base unit enables that function at the system level. These features are not selected on any attached 242x expansion units.

Authorization

The extent of IBM authorization for the use of a licensed function on a 242x system is established by acquiring 239x function authorization models and feature numbers for the 242x base unit:

Licensed function	Function authorization
Operating Environment	239x Model LFA feature number 7030-7065
Thin Provisioning	239x Model LFA feature number 7071
Database Protection	239x Model LFA feature number 7080
FICON Attachment	239x Model LFA feature number 7091
High Performance FICON	239x Model LFA feature number 7092
IBM System Storage Easy Tier	239x Model LFA feature number 7083
FlashCopy	239x Model LFA feature number 7250-7260
Space Efficient FlashCopy	239x Model LFA feature number 7350-7360
Metro/Global Mirror	239x Model LFA feature number 7480-7490
Metro Mirror	239x Model LFA feature number 7500-7510
Global Mirror	239x Model LFA feature number 7520-7530
z/OS Global Mirror	239x Model LFA feature number 7650-7660
z/OS Metro/Global Mirror	239x Model LFA feature number 7680-7690
Incremental Resync	
Parallel Access Volumes	239x Model LFA feature number 7820-7830
HyperPAV	239x Model LFA feature number 7899

Each function authorization acquired for a 242x base unit establishes the authorization level for the 242x system. For example, a system with a Model 941 and two Model 94E expansion units requires only one operating environment (239x Model LFA feature numbers 70xx) function authorization. Therefore, the authorization level(s) established by acquiring one or more function authorizations for the Model 941 must also cover the physical capacity of the attached Model 94E expansion units.

The authorization level provided by each feature number is stated within the feature number description. The unit represents physical capacity, where a TB (terabyte) equals one trillion bytes. A 242x system's total authorization level for a given licensed function is the sum of the units (terabytes) associated with all the acquired feature numbers.

Management

Licensed functions are managed using the Disk Storage Feature Activation (DSFA) application at

<http://www.ibm.com/storage/dsfa>

To access DSFA, you will be required to enter information about your 242x machine. You can find this information on the Storage Unit General Properties page in the IBM System Storage DS8000 Storage Manager application.

Management activities include:

- Selection of a license scope
- Assignment of a license value
- Deactivation of a licensed function

License scope: Licensed functions are activated and enforced within a defined license scope. License scope refers to the type of storage, and therefore the type of servers, that the function can be used with:

- Fixed Block (FB)
 - The function can be used only with data from Fibre Channel-attached servers.
- Count Key Data (CKD)
 - The function can be used only with data from FICON-attached servers.
- Both FB and CKD (ALL)

- The function can be used with data from all attached servers.

Selected licensed functions have multiple license scope options, while other functions have only a single license scope.

Licensed Function	License scope options
Operating Environment	ALL
Thin Provisioning	FB
Database Protection	FB, CKD, or ALL
FICON Attachment	CKD
High Performance FICON	CKD
IBM System Storage Easy Tier	FB, CKD, or ALL
FlashCopy	FB, CKD, or ALL
Space Efficient FlashCopy	FB, CKD, or ALL
Metro/Global Mirror	FB, CKD, or ALL
Metro Mirror	FB, CKD, or ALL
Global Mirror	FB, CKD, or ALL
z/OS Global Mirror	CKD
z/OS Metro/Global Mirror	CKD
Incremental Resync	
Parallel Access Volumes	CKD
HyperPAV	CKD

If a licensed function has multiple license scope options, you will be required to select a license scope during the initial retrieval of the feature activation code. This activity is performed using the DSFA application.

The license scope is not selected while ordering function authorization feature numbers; the feature numbers only establish the extent of IBM authorization (in terms of physical capacity) regardless of the storage type.

You can also change the license scope using the DSFA application after a licensed function has been activated. A new feature activation code will be generated and when you install it into the machine, the function will be activated and enforced using the newly selected license scope. Only an increase in the license scope (changing FB or CKD to ALL) is a nondisruptive activity. A lateral change (changing FB to CKD or changing CKD to FB) or a reduction of the license scope (changing ALL to FB or CKD) is a disruptive activity and requires a machine IML.

License value: Licensed functions are activated and enforced based upon an assigned license value.

License value refers to extent of IBM authorization and is referenced as terabytes (TB) of physical capacity.

On the Model 941, license value assignment is an optional activity you can perform using the DSFA application.

On these models, the feature activation codes will always be generated using the total license value for each licensed function, unless you assign a license value of zero (0.0 TB).

Deactivation: Assigning a license value of zero (0.0 TB) provides the ability to deactivate (disable) a licensed function. A new feature activation code will be generated and when you install it into the machine, the function will be deactivated during the next IML of the machine.

You can also reactivate a deactivated licensed function by changing the license value to a non-zero value. A new feature activation code will be generated and when you install it into the machine, the function will be activated. Reactivation is a nondisruptive activity.

When you deactivate a licensed function using the DSFA application, the installed function authorization feature numbers remain on the machine record. This means that you do not need to reacquire your function authorization feature numbers if you want to reactivate the licensed function at a future date.

Activation

Licensed functions are activated by the installation of feature activation codes into the 242x system. The feature activation codes are made available by IBM and are obtained using the DSFA application.

Enforcement

The 242x Licensed Machine Code contains logic and other technology to maintain compliance with established authorization levels. For each storage type, you will be allowed to logically configure physical capacity (that is, disk drives) only up to the extent of your authorization level for that storage type. If you have multiple licensed functions with the same license scope, the extent of IBM authorization is defined by the licensed function with the lowest license value.

For a 242x machine with Standby CoD disk drives (#2xx7 features), activation (logical configuration) of CoD disk drives may exceed the extent of IBM authorization for a licensed function, in which case an increased authorization level must be acquired.

Accessibility by people with disabilities

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

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

Section 508 of the U.S. Rehabilitation Act

The IBM System Storage DS8700 and IBM System Storage DS8700 Expansion Unit are capable, as of October 23, 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 US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested via IBM's Web site at

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

Reference information

For additional information on the DS8000 and licensed functions, 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.
- Hardware Announcement [109-749](#), dated October 20, 2009, IBM System Storage DS8700 series (M/T 239x) high-performance flagship - Function Authorizations.

Product number

Description	Machine	Model	Feature
DS8000 series Function Authorization	2396	LFA	
Thin Provisioning indicator			7071
IBM System Storage Easy Tier indicator			7083

Description	Machine	Model	Feature
DS8000 series Function Authorization	2397	LFA	
Thin Provisioning indicator			7071
IBM System Storage Easy Tier indicator			7083

Description	Machine	Model	Feature
DS8000 series Function Authorization	2398	LFA	
Thin Provisioning indicator			7071
IBM System Storage Easy Tier indicator			7083

Description	Machine	Model	Feature
DS8000 series function authorization	2399	LFA	
Thin Provisioning indicator			7071
IBM System Storage Easy Tier indicator			7083

Feature conversions

Machine type 2396, 2397, 2398, and 2399 Model LFA

Function Authorization Indicators:

Feature	Returned		
From	To	Parts *	Description
7070	7071	No	Thin Provisioning Indicator conversion

* Parts removed or replaced become the property of IBM and must be returned.

Business Partner information

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

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=110-103>

Publications

No publications are shipped with the DS8000 series Function Authorizations.

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

IBM Publications Center Portal

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

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

Services

Global Technology Services

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

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

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

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

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

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

For details on education offerings related to specific products, visit

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

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

Technical information

Specified operating environment

Physical specifications

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

Hardware requirements

Each DS8000 series Function Authorization (IBM 239x) establishes the extent of IBM authorization for one or more licensed functions acquired for an IBM System Storage DS8000 series (IBM 242x). Each 239x function authorization is applicable only for the specific 242x (by serial number) for which it was acquired and is not transferable to another serial numbered 242x.

Each 239x function authorization requires a corequisite licensed function indicator feature number on the 242x for which is was acquired:

IBM 242x	IBM 239x	indicator feature number	function authorization models and feature numbers
Licensed function			
Operating Environment		0700 and 70xx	Model LFA 7030-7065
Thin Provisioning		0707 and 7071	Model LFA 7071
Database Protection		0708 and 7080	Model LFA 7080
FICON Attachment		0703 and 7091	Model LFA 7091
High Performance FICON		0709 and 7092	Model LFA 7092
IBM System Storage Easy Tier		0713 and 7083	Model LFA 7083
FlashCopy		0720 and 72xx	Model LFA 7250-7260
Space Efficient FlashCopy		0730 and 73xx	Model LFA 7350-7360
Metro/Global Mirror		0742 and 74xx	Model LFA 7480-7490
Metro Mirror		0744 and 75xx	Model LFA 7500-7510
Global Mirror		0746 and 75xx	Model LFA 7520-7530
z/OS Global Mirror		0760 and 76xx	Model LFA 7650-7660
z/OS Metro/Global Mirror		0763 and 76xx	Model LFA 7680-7690
Incremental Resync			
Parallel Access Volumes		0780 and 78xx	Model LFA 7820-7830
HyperPAV		0782 and 7899	Model LFA 7899

Operating environment: A per TB unit operating environment license and a value unit operating environment license are required on every 242x base unit (Models 941). The extent of IBM authorization acquired through the 239x Model LFA feature numbers must cover the physical capacity and the value units required for each acquired drive set of the 242x system, where system is defined as the base unit and all physically attached expansion units (excluding Standby CoD capacity).

Feature	Description	Corequisite
7030	OEL - inactive indicator	Model LFA feature #7030
7031	OEL - 1 TB unit indicator	Model LFA feature #7031
7032	OEL - 5 TB unit indicator	Model LFA feature #7032
7033	OEL - 10 TB unit indicator	Model LFA feature #7033
7034	OEL - 25 TB unit indicator	Model LFA feature #7034
7035	OEL - 50 TB unit indicator	Model LFA feature #7035
7040	OEL - 100 TB unit indicator	Model LFA feature #7040
7045	OEL - 200 TB unit indicator	Model LFA feature #7045
7050	OEL - inactive indicator	Model LFA feature #7050
7051	OEL - 1 Value Unit indicator	Model LFA feature #7051
7052	OEL - 5 value Unit indicator	Model LFA feature #7052
7053	OEL - 10 Value Unit indicator	Model LFA feature #7053
7054	OEL - 25 Value Unit indicator	Model LFA feature #7054
7055	OEL - 50 Value Unit indicator	Model LFA feature #7055
7060	OEL - 100 Value Unit indicator	Model LFA feature #7060
7065	OEL - 200 value Unit indicator	Model LFA feature #7065

Feature number	Size	Drive type	Drive speed	Encryption drive	Nonencryption drive	Units required
6014	73 GB	SSD half set	N/A	No	Yes	6.0
6114	146 GB	SSD half set	N/A	No	Yes	9.0
6016	73 GB	SSD	N/A	No	Yes	12.0
6116	146 GB	SSD	N/A	No	Yes	18.0
2016	73 GB	FC	15K rpm	No	Yes	3.3
2216	146 GB	FC	15K rpm	No	Yes	4.8
2416	300 GB	FC	15K rpm	No	Yes	6.8
2616	450 GB	FC	15K rpm	No	Yes	9.0
2716	600 GB	FC	15K rpm	No	Yes	11.5
5016	146 GB	FC	15K rpm	Yes	No	4.8
5116	300 GB	FC	15K rpm	Yes	No	6.8
5216	450 GB	FC	15K rpm	Yes	No	9.0
2816	1 TB	SATA	7.2K rpm	No	Yes	11.0
2916	2 TB	SATA	7.2K rpm	No	Yes	20.0

The value unit operating environment licenses (Model LFA 7050-7065) are required in addition to the per TB unit operating environment licenses (features #7030-7045). For each drive set listed above, the corresponding number of value units must be purchased. This is required for the operating environment and for a valid system configuration.

The per TB unit operating environment license feature activation code can be retrieved and activated by using the DSFA application. The value unit operating environment licenses are mainly a pricing mechanism, so there will not be any feature activation code to be retrieved and activated by using the DSFA application.

If the operating environment license has not been acquired and activated on the machine, disk drives installed within the 242x system cannot be logically configured for use. Upon activation of the operating environment, disk drives can be logically configured up to the extent of IBM authorization.

As additional disk drives are installed, the extent of IBM authorization must be increased by acquiring additional 239x Model LFA feature numbers. Otherwise, the additional disk drives cannot be logically configured for use.

For a 242x system with Standby CoD disk drives (#2xx7 features), activation (logical configuration) of CoD disk drives may exceed the extent of IBM authorization for the operating environment, in which case an increased authorization level must be acquired.

Limitations

- Conversions between machine types is not supported.
- The intermix of models and features between machine types (M/T) is not supported (for example, intermix of a Machine Type 2396 Model LFA and a Machine Type 2398 Model LFA is not supported).
- The amount of physical capacity within a 242x system that can be logically configured for use will be enforced by the 242x Licensed Machine Code to maintain compliance with the extent of IBM authorization established for licensed functions activated on the machine. The 242x Licensed Machine Code will not allow the logical configuration of physical capacity beyond the extent of IBM authorization (except when activating Standby CoD capacity).
- The lateral change or reduction in the license scope is a disruptive activity and requires a machine IML (Model 941).
 - A lateral change is defined as changing the license scope from FB to CKD or from CKD to FB.
 - A reduction is defined as changing the license scope from ALL to FB or from ALL to CKD.
 - The deactivation of an activated licensed function occurs at the next machine IML (Model 941).

Planning information

Customer responsibilities

Determining the required extent of IBM authorization

You are responsible for determining the extent of IBM authorization required for each licensed function. Your disk marketing specialist can help you with this activity.

Below are some general guidelines:

- The required authorization level depends upon the license scope:
 - If the license scope is FB, the authorization level must be equal to or greater than the total amount of physical capacity within the system that will be logically configured as FB.
 - If the license scope is CKD, the authorization level must be equal to or greater than the total amount of physical capacity within the system that will be logically configured as CKD.
 - If the license scope is ALL, the authorization level must be equal to or greater than the total system physical capacity.
- You can exclude Standby CoD disk drives (#2xx7 features) from your authorization level calculation. However, you must increase your authorization levels as Standby CoD disk drives are activated (logically configured for use).

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

Licensed function management and activation

You are responsible for licensed function management and activation activities:

- Management refers to use of the Disk Storage Feature Activation (DSFA) application to select the license scope and assign the license value.
- Activation refers to the retrieval and installation of the feature activation code into the 242x system. The feature activation code is made available by IBM and obtained using the DSFA application.

These activities are your responsibility during the initial activation of a licensed function and when you increase the extent of IBM authorization.

DSFA application: To access DSFA, you will be required to enter information about your 242x machine. You can find this information on the Storage Unit General Properties page in the IBM System Storage DS8000 Storage Manager application.

The DSFA application is available at

<http://www.ibm.com/storage/dsfa>

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

Cable orders

No cables are required.

Direct customer support

Direct customer support for the DS8000 Function Authorization 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

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

IBM Electronic Services

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

complementary, elements: Electronic Services news page and Electronic Services Agent.

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

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

To learn how Electronic Services can work for you, visit

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

Terms and conditions

MES discount applicable

Equal to the volume commitment discount

Field installable feature

Yes

Warranty period

Warranty for a DS8000 series licensed function is entitled as a feature of the 242x machine for which the licensed function is authorized, under the terms and conditions associated with that machine.

Customer setup

Customers are responsible for installation according to the instructions IBM provides with the machine.

Licensed machine code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and for which the customer has acquired.

You can obtain the agreement at

http://www-1.ibm.com/servers/support/machine_warranties/machine_code.html

or by contacting your IBM representative.

DS8000 series Function Authorizations (IBM 239x) are acquired for 242x base unit models and establish the extent of IBM authorization for the licensed function at the 242x system level. A 242x system is defined as the 242x base unit model (Model 931, 932, and 9B2) and any physically attached 242x expansion unit models (Model 92E and 9AE).

Each DS8000 Function Authorization acquired for a 242x Model 9B2 establishes the extent of IBM authorization for one or more licensed functions on all System Storage LPARs within that system.

Pricing

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

Description	Machine type	Model	Feature number
DS8000 series Function Authorization	2396	LFA	
Thin Provisioning Indicator IBM System Storage Easy Tier indicator			7071 7083

Description	Machine type	Model	Feature number
DS8000 series Function Authorization	2397	LFA	
Thin Provisioning Indicator IBM System Storage Easy Tier indicator			7071 7083

Description	Machine type	Model	Feature number
DS8000 series Function Authorization	2398	LFA	
Thin Provisioning Indicator IBM System Storage Easy Tier indicator			7071 7083

Description	Machine type	Model	Feature number
DS8000 series Function Authorization	2399	LFA	
Thin Provisioning Indicator IBM System Storage Easy Tier indicator			7071 7083

Feature change options

Description	Feature number	Install type	Feature Conversion	Feature Exchange	Feature Remove
Thin Provisioning Indicator IBM System Storage Easy Tier indicator	7071 7083	Both Both	No No	No No	Yes Yes

The feature change options define the approach by which the feature number is removed from the machine and/or IBM machine-level inventory records.

- **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.

Feature conversion

Machine types 2396, 2397, 2398, and 2399 Model LFA

Feature From	To	Returned parts *	Description	Continuous maintenance
7070	7071	No	Thin Provisioning indicator conversion	Yes

* Parts removed or replaced become the property of IBM and must be returned.

MT	Model	Feature	Description	List price
2396	LFA	7071	Thin Provisioning Indicator	\$69,600
2396	LFA	7083	Easy Tier indicator	\$0
2397	LFA	7071	Thin Provisioning Indicator	\$71,400
2397	LFA	7083	Easy Tier indicator	\$0
2398	LFA	7071	Thin Provisioning Indicator	\$73,200
2398	LFA	7083	Easy Tier indicator	\$0
2399	LFA	7071	Thin Provisioning Indicator	\$75,000
2399	LFA	7083	Easy Tier indicator	\$0
MT	Model	Part number	Description	List price
2396	LFA	239670707071	Thin Provis indicator conv	\$0
2397	LFA	239770707071	Thin Provis indicator conv	\$0
2398	LFA	239870707071	Thin Provis indicator conv	\$0
2399	LFA	239970707071	Thin Provis indicator conv	\$0

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