



# IBM System Storage ProtecTIER Entry Edition brings data protection to remote offices

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## At a glance

The TS7610 appliance is a data protection offering for customers backing up no more than 3 TB of data per week.

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

## Overview

Mid-sized customer offices and enterprise customers with smaller remote offices often struggle to provide the resources needed for the backup and recovery of critical data at these sites, resulting in a potential lack of adequate data protection. The IBM System Storage® TS7610 ProtecTIER® Deduplication Appliance Express® is designed to provide a simple, integrated data protection solution for these smaller customer offices and remote sites.

The TS7610 appliance combines the IBM 3959 Model SM1, with its integrated processing power and disk storage, and the IBM System Storage ProtecTIER Entry Edition software. The TS7610 appliance offers:

- In-line data deduplication using IBM's HyperFactor® technology
- Virtual Tape Library functionality, emulating:
  - Up to 4 virtual TS3500 tape libraries
  - Up to 64 virtual LTO3 tape drives
  - Up to 8,192 virtual tape cartridges
- Two software configurations with usable repository sizes of approximately 4.4 TB and 5.9 TB
- Optional ProtecTIER Internet Protocol (IP) replication to copy data from and to other TS7650 or TS7610 ProtecTIER systems

The TS7610 appliance can quickly be deployed by using the pre-installed default software configuration.

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## Key prerequisites

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The IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express requires the IBM System Storage ProtecTIER Entry Edition software to be installed on IBM 3959 Model SM1.

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## Planned availability date

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August 6, 2010

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## Description

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The IBM System Storage ProtecTIER Entry Edition V2.1 software combined with TS7610 ProtecTIER Deduplication Appliance Express is a data deduplication and replication solution that compresses and stores backup data on your disk storage array. This combined software and hardware solution is referred to as the TS7610 Express. The replication function allows ProtecTIER systems to be distributed across sites. To facilitate backup applications that are designed for use with tape storage, the TS7610 Express emulates a TS3500 tape library unit containing LTO3 tape drives. This emulation capability is designed to help customers achieve the following operational and throughput efficiencies:

- Backup window reduction
- Restoration time reduction
- Data sharing and resource optimization
- Operational efficiency
- Improved sharing of virtual tape libraries across applications and servers

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### Data management and advanced features

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ProtecTIER Entry Edition is designed with the following data management and advanced features:

#### HyperFactor

ProtecTIER contains HyperFactor data factoring, or data deduplication, technology. This technology is designed to detect recurring data in multiple backups. The common data is merged into a single instance store, saving disk space needed to store multiple backups without sacrificing performance or the availability of backups for restore. HyperFactor is a breakthrough on several areas:

- The algorithm used to find the common data between backups does not affect the backup performance of the virtual tape engine
- HyperFactor avoids the statistical possibility of data corruption due to hash collisions inherent in products based on hashing algorithms.
- Merged data is stored in a format that preserves restore performance

HyperFactor can help to save space by taking advantage of the fact that only a very small percentage of data actually changes from backup to backup. Incremental backups include all files whose modification dates have changed since the last full or incremental backup, while full backups backup all data, changed or not. The amount of space saved is a function of many factors, but mostly of the backup policies and retention periods, and the variance of the data between them. The more full backups retained on ProtecTIER, and the more intervening incremental backups, the more space that will be saved overall.

## Replication

Replication provides complete system backup across sites. The replication function allows ProtecTIER (PT) deployment to be distributed across sites. ProtecTIER systems are connected through the customer's WAN for replication.

### Many-to-one replication

ProtecTIER many-to-one replication supports both single node and clustered ProtecTIER configurations. It is designed to provide the following functionality and support:

- **Setting replication performance limits** - This feature allows the user to set system-wide physical or nominal limits in order to indicate to the replication engine the maximum replication transfer rate allowed in the network for a specific repository. The performance limits refer to overall resource consumption of the system, and is reflected onto the network transfer rate. Performance limits are based on the Replication Rate Control mechanism. Current RRC is used when a user does not provide a time frame and the system replicates continuously. The enhancement is in the rate calculation which uses performance limits to understand the maximum rate possible in idle and busy levels of system usage and then it normalizes the rate accordingly.
- **Reserving space for hub repository** - This feature provides the ability to exclusively assign a fragment of a hub repository's capacity for local backups. In large deployments with many spokes replicating, capacity management done by the user might cause a situation where replication is trying to occupy all the space in the hub repository. Since the assumption is that backup has precedence over replication, this feature has been added so that capacity is reserved only for local backup, so that replication cannot be written to this storage fragment. Error notifications appear in the event the capacity reserved for the local backup or the capacity reserved for replication on the repository hub is running out of space.
- **Enhanced monitoring of repository space consumption** - This enhancement is displayed in the GUI as a nominal data pie, where a user can get a view of the proportion of the nominal data out of the repository and the internal capacity distribution of replication data versus local backup data and free space.
- **Additional replication information in repository's cartridge view** - This feature adds cartridge replication properties, such as last update time and destination, to a new replication view that adds replication properties for cartridges which are also displayed in the regular cartridge view. This feature allows the user to see replication properties for a batch of cartridges, each in a single row. Sorting capability for the new replication fields was added to match the sorting capabilities for the rest of the cartridge fields.
- **Disaster recovery site replaces production site operation** - This feature supports a scenario where a disaster recovery site (the hub) is chosen to replace one of its spokes permanently. The feature allows the user to assume the responsibility for the cartridges of the old spoke after running the replace repository wizard from the Replication Manager.
- **Enhanced timeframe support** - This feature enhances the repository timeframe attribute to be a weekly scheduler on a repository level. The timeframe is a set of 30 minute time intervals across a full week. The user chooses at which time interval the replication should run during a single week. The new timeframe also uses the performance limits feature for normalizing the replication rate when in the chosen timeframe.
- **Command Line Interface (CLI) for Disaster Recovery (DR)** - This feature adds a CLI that allows a user to run complex queries on cartridges and provides cartridge batch move operation during a manual DR procedure. The feature allows the user to query ProtecTIER in order to obtain a list of cartridges that falls under specific criteria. The query criteria are cartridge replication properties and cartridge location properties.

### Replication grid

The replication grid is defined as an entity that supports replication between its members. The replication grid members are ProtecTIER repositories and are

configured using a Replication Manager. The Replication Manager is a software component that may be installed on a dedicated host or on a ProtecTIER machine. The Replication Manager should be able to monitor all the members of all the whole network the Replication Manager handles on both replication subnets.

A replication grid defines a set of ProtecTIER repositories and the actions between them. The Replication Manager is server software that is separately deployed on the customer's WAN or on a ProtecTIER machine. The Replication Manager can manage the configuration of multiple replication grids in an organization. An agent on each ProtecTIER system (specifically on every node) interacts with the server and maintains a table of its grid's members.

**Important:** Be sure to coordinate between the replication sites to ensure that the servers at all locations are fully configured before you use the ProtecTIER Replication Manager GUI to create the replication grid. Consult with Solutions Assurance and your IBM Representative for assistance and information.

Many-to-one replication defines the following two roles in a replication grid:

- Spoke
  - A backup target that can only replicate to a single hub
  - May not be a target for replication
- Hub
  - A replication and backup target
  - May receive replication from up to 12 spokes
  - May not replicate to another system except during failback

A group of one hub and 1-12 spokes is referred to as a topology group. A single grid may include up to eight hubs and therefore up to eight topology groups. Spokes do not need physical connections between them. All repositories need a network connection to the replication manager server.

### **Supported replication configurations**

TS7610 Express systems may participate in topology groups with TS7650 Appliances, TS7650G Gateways, and other TS7610 Express systems.

A TS7610 Express system may serve as a spoke to any replication hub. A TS7610 Express system serving as a replication hub may only support 4 spokes.

### **ProtecTIER Virtual Tape**

The ProtecTIER Virtual Tape service emulates traditional tape libraries. By emulating tape libraries, ProtecTIER Virtual Tape enables you to transition to disk backup without having to replace your entire backup environment. Your existing backup application can access virtual robots to move virtual cartridges between virtual slots and drives. The backup application perceives that the data is being stored on cartridges, while ProtecTIER actually stores data on a deduplicated disk repository on the storage fabric.

ProtecTIER Entry Edition emulates up to:

- 4 virtual TS3500 tape libraries
- 64 virtual LTO3 tape drives
- 8,192 virtual tape cartridges
- 64,000 virtual tape slots
- 1,022 virtual Import/Export cells

## ProtectTIER Manager

The ProtectTIER Manager application can be installed on one or more workstations, enabling you to monitor the status of nodes and clusters in your ProtectTIER system, along with the accompanying repositories and services.

### 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)

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## Product positioning

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TS7610 ProtectTIER Deduplication Appliance Express fits neatly into IBM's storage and tape product portfolio by expanding data protection offerings to mid-sized customers.

By enabling customers to store up to 25 times more user data on a given amount of physical disk capacity, ProtectTIER can help greatly change the economics of data protection.

TS7610 Appliance is designed with capacity, price, performance, function, and RAS (Reliability, Availability, and Serviceability) characteristics to appeal to the mid-sized customer, and to the enterprise customer with data backup and protection requirements in remote offices.

TS7610 Appliance complements and integrates with many other IBM hardware and software offerings:

- IBM Tivoli® Storage Manager is compatible with TS7610 Appliance and can take advantage of a TS7610 Appliance as a target to increase backup performance and reliability
- IBM Tape Systems, such as the TS3500 Tape Library, can be used in conjunction with the TS7610 Appliance to provide a comprehensive end-to-end backup and recovery environment that takes advantage of the strengths of both disk and tape

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## Reference information

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For information about IBM System Storage TS7610 ProtectTIER Appliance (IBM 3959-SM1), refer to Hardware Announcement [110-193](#), dated July 20, 2010.

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## Program number

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Program number	VRM	Program name
5639-TAA	2.1.0	IBM System Storage ProtectTIER Entry Edition V2.1 Software
Software Maintenance		
5639-TAB		ProtectTIER Entry Edition Reg./Ren. 1 year
5639-TAC		ProtectTIER Entry Edition After license 1 year
5639-TAD		ProtectTIER Entry Edition Registration 3 year
5639-TAE		ProtectTIER Entry Edition Renewal 3 year
5639-TAF		ProtectTIER Entry Edition After license 3 year
5639-TAG		ProtectTIER Entry Edition Registration 2 year

5639-TAH  
5639-TAI

ProtecTIER Entry Edition Registration 4 year  
ProtecTIER Entry Edition Registration 5 year

## Product identification number

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Program PID number	First Yr Reg and Maintenance 1 year Renewal PID number	Maintenance 1 year After License PID number
5639-TAA	5639-TAB	5639-TAC
	Maintenance 3 year Registration PID number	Maintenance 3 year Renewal PID number
	5639-TAD	5639-TAE
	Maintenance 3 year After License PID number	
	5639-TAF	
	Maintenance 2 year Registration PID number	Maintenance 4 year Registration PID number
	5639-TAG	5639-TAH
	Maintenance 5 year Registration PID number	
	5639-TAI	

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## Offering Information

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Product information is available via the Offering Information Web site

<http://www.ibm.com/common/ssi>

### 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=210-244>

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## Publications

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All required publications are shipped with the corequisite IBM 3959-SM1 hardware order when the software preload feature is ordered on ProtecTIER Entry Edition software.

To review publications titles for the IBM System Storage TS7610 ProtecTIER Appliance Express (IBM 3959-SM1), refer to Hardware Announcement [110-193](#), dated July 20, 2010.

Publications are available on the IBM Publications Center Web site and are included on the *IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express Publications CD-ROM LCD8-1486-00 (part number 46X4251)*.

To order additional selected hardcopy publications for a fee or download free PDF format publications, visit the IBM Publications Center Web site

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## Technical information

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### **Specified operating environment**

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#### **Hardware requirements**

##### **General Platform Prerequisites**

A TS7610 Appliance solution with IBM ProtecTIER Deduplication software requires the IBM 3959 Model SM1 hardware with the following features:

- One 4 GB Fibre Channel dual port HBA - Host (feature #3459)
- One 9022 VTL (feature #9022)
- One SW Capacity (feature #9313 or #9314)

Customer provided monitor and keyboard are required for system installation and maintenance.

##### **ProtecTIER Manager:**

ProtecTIER Manager is required for service or maintenance of ProtecTIER systems, and must be installed on a customer provided workstation.

The customer provided workstation must be capable of operating one of the following operating systems:

- Microsoft® Windows® 2003, Windows XP, or Windows 7
- Red Hat Enterprise 4 or 5

The workstation must also have:

- At least 1.2 GB of available disk space
- At least 256 MB of RAM

The workstation must have access to the ProtecTIER service nodes (port 3501 is open on the firewall).

The ProtecTIER Manager can support more than one ProtecTIER server. If the ProtecTIER Manager workstation is connected to more than one ProtecTIER server, they can be connected to a workstation via a switch box or via a terminal server. The workstation and switch box must be provided by the customer.

Confer with your IBM representative for workstation configuration alternatives.

#### **Supported Configurations**

TS7610 appliance offers two software configurations with usable repository sizes of approximately 4.4 TB and approximately 5.9 TB.

Tested platforms are listed in the Installation Guide under **Release notes**.

#### **Software requirements**

##### **Operating system prerequisites**

The appropriate Linux® operating system is included with ProtecTIER Entry Edition V2.1 software and is loaded on the TS7610 Appliance with your initial order.

##### **Connectivity prerequisites**

The supported Fiber Channel switches are listed in the System Storage Operation Center (SSIC) located at

<http://www-03.ibm.com/systems/support/storage/config/ssic/>

If this TS7610 ProtecTIER Deduplication Appliance is to be accessed via ProtecTIER Manager installed on another computer, network connections must be configured to allow access.

The program's specifications and specified operating environment information may be found in documentation accompanying the program, if available, such as a README file, or other information published by IBM, such as an announcement letter. Documentation and other program content may be supplied only in the English language.

### **Compatibility**

The ProtecTIER Entry Edition V2.1 software emulates the IBM System Storage TS3500 tape library with IBM Ultrium 3 Tape Drives.

### **Limitations**

ProtecTIER Entry Edition V2.1 software is only supported for installation on TS7610 ProtecTIER Deduplication Appliance Express hardware (3959 Model SM1).

### **Planning information**

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#### **Customer responsibilities**

Physical planning is a customer responsibility. Detailed planning information is in the *IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express Introduction and Planning Guide (GA32-0776)*.

This guide is available at no charge at the IBM Publications Center. Refer to the [Publications](#) section.

#### **Installability**

##### **Direct customer support**

Less than one hour is required to install and configure the management software on the management console.

For technical support or assistance, contact your IBM representative or visit

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

#### **IBM Global Services**

IBM Technical Support Services provides comprehensive hardware and software support, including hardware and software implementation for the ProtecTIER TS7650 Deduplication solution.

Technical Support Services are designed to support your installations of IBM System Storage hardware and software. Offering the best solutions for storage management and data migration, IBM Technical Support Services can assist you in developing and deploying storage solutions to enable your success and satisfaction. For more information, contact your IBM representative or Business Partner.

#### **Packaging**

For new orders of IBM System Storage ProtecTIER Entry Edition V2.1 (5639-TAA), the following media are shipped:

- With media feature 5806:
  - IBM System Storage ProtecTIER Entry Edition - Small Capacity (LCD7-4603-00)
  - IBM System Storage ProtecTIER Manager (LCD8-1040-06)



- IBM System Storage ProtecTIER Maintenance and Recovery Disk for 3959-SM1 (LCD7-4605-00)
- IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express Publications CD-ROM (LCD8-1486-00)
- IBM License Agreement for Machine Code (Z125-5468-04)
- With media feature 5816:
  - IBM System Storage ProtecTIER Entry Edition - Medium Capacity (LCD7-4604-00)
  - IBM System Storage ProtecTIER Manager (LCD8-1040-06)
  - IBM System Storage ProtecTIER Maintenance and Recovery Disk for 3959-SM1 (LCD7-4605-00)
  - IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express Publications CD-ROM (LCD8-1486-00)
  - IBM System Storage TS7610 ProtecTIER Deduplication Appliance Express - Increasing Capacity on the 3959 SM1 from 4.0 TB to 5.4 TB (GA32-0819-00)
  - IBM License Agreement for Machine Code (Z125-5468-04)

The paid invoice with associated customer number acts as Proof of Entitlement (PoE) for all orders of IBM System Storage ProtecTIER Entry Edition V2.1 software.

Refer to the [Ordering information](#) section and to the Hardware Announcements listed in the [Reference information](#) section for correlated hardware order features.

Media feature 5806 causes the code DVD for the Base Small Capacity to be shipped, and media feature 5816 causes the code DVD for the Base Medium Capacity to be shipped.

Serial number only feature 3444 suppresses code CDs from being shipped.

### **Security, auditability, and control**

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This product uses the security and auditability features of host hardware, host software, or application software to which it is attached. The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

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## **Software Services**

IBM Software Services has the breadth, depth, and reach to manage your services needs. You can leverage the deep technical skills of our lab-based, software services team and the business consulting, project management, and infrastructure expertise of our IBM Global Services team. Also, we extend our IBM Software Services reach through IBM Business Partners to provide an extensive portfolio of capabilities. Together, we provide the global reach, intellectual capital, industry insight, and technology leadership to support a wide range of critical business needs.

To learn more about IBM Software Services or to contact a Software Services sales specialist, visit

<http://www.ibm.com/software/sw-services/>

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## Ordering information

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### **Charge metric**

Program name	Part number or PID number	Charge metric
ProtectTIER Entry Edition V2.1	5639-TAA	per Storage Device

### **Server**

Server is the unit of measure by which this program is licensed. A server is a computer system that executes requested procedures, commands, or applications to one or more user or client devices. A Proof of Entitlement (PoE) must be obtained for each server regardless of the number of processor cores or partitions in the server on which the program runs or each server managed by the program. Where blade technology is employed, each blade is considered a separate server.

### **IBM System Storage ProtecTIER Entry Edition V2.1**

Storage Device is a unit of measure by which the Program is licensed. A Storage Device is an independently powered, channel attached device that stores or controls the storage of data on magnetic disks or solid state drives, such as disk controllers and their respective expansion units, each constituting separate Storage Devices. Licensee must obtain entitlements for every Storage Device which runs, uses services provided by, or otherwise accesses the Program and for every Storage Device on which the Program is installed.

In addition to the entitlements required for the Program directly, Licensee must obtain entitlements for this Program sufficient to cover the Storage Devices managed by the Program.

The Product Identification (PID) number for the IBM System Storage ProtecTIER Entry Edition V2 license is 5639-TAA. The following is a description of each of the feature codes:

- Feature #0001 - ProtecTIER Base Small Cap: This feature must be selected to order a base license for each TS7610 Appliance that ProtecTIER Entry Edition will be loaded on where a 4.4 TB\* (4.0 TiB\*) repository will be authorized. The maximum quantity of ProtecTIER Base Small Cap is 1. This feature is mutually exclusive with ProtecTIER Base Med Capacity.
- Feature #0002 - ProtecTIER Repl Small Cap: This feature must be selected to entitlement the use of ProtecTIER replication on a storage device with the ProtecTIER Base Small Cap feature. The maximum quantity of ProtecTIER Repl Small Cap is 1. For an initial order, ProtecTIER Small Cap must be included in the order with 0002. To order ProtecTIER Repl Small Cap as a upgrade, ProtecTIER Small Cap must be present in the current license.
- Feature #0003 - ProtecTIER Base Med Capacity: This feature must be selected to order a base license for each TS7610 Appliance that ProtecTIER Entry Edition will be loaded on where a 5.9 TB\* (5.4 TiB\*) repository will be authorized. The maximum quantity of ProtecTIER Base Med Capacity is 1. This feature is mutually exclusive with ProtecTIER Base Small Cap.
- Feature #0004 - Upgrade from Base Small Capacity: This feature must be selected to migrate from ProtecTIER Base Small Cap to ProtecTIER Base Med Capacity. The maximum quantity of feature #0004 is 1.
- Feature #0005 - ProtecTIER Repl Med Capacity: This feature must be selected to entitlement the use of ProtecTIER replication on a storage device with the ProtecTIER Base Small Med feature, or the Upgrade from Base Small Capacity feature. The maximum quantity of ProtecTIER Repl med Capacity is 1. For an initial order, ProtecTIER Med Capacity must be included in the order with feature #0005. To order ProtecTIER Repl Med Capacity as a upgrade, either ProtecTIER

Med Capacity or Upgrade from Base Small Capacity must be present in the current license.

- Feature #0006 - Upgrade from Repl Small Capacity: This feature must be selected to migrate from ProtecTIER Repl Small Cap to ProtecTIER Repl Med Capacity. The maximum quantity of feature #0006 is 1.

\* 1 TB is defined as 10 to the 12th power bytes, or 1,000,000,000,000 bytes.

1 TiB is defined as 2 to the 40th power bytes, or 1,099,511,627,776 bytes.

You must also include a Software Maintenance PID to register for Software Maintenance and to be entitled for Software Subscription and Support. Registration PIDs are available for 1 year, 2 year, 3 year, 4 year or 5 year periods.

### **ProtecTIER Entry Edition billing features**

5639-TAA:

IBM System Storage ProtecTIER Entry Edition V2.1

Use Authorizations  
with One Year Software Maintenance

One-time charge features

ProtecTIER Entry Edition V2.1  
per Storage Device  
with 1 Year SW Maintenance

Feature description	OTC Feature number
ProtecTIER Base Small Cap	0001
ProtecTIER Repl Small Cap	0002
ProtecTIER Base Med Capacity	0003
Upgrade from Base Small Capacity	0004
ProtecTIER Repl Med Capacity	0005
Upgrade from Repl Small Capacity	0006

No-charge Features:

Feature description	Feature number
Serial Number	3444
Base Small Capacity	5806
Base Medium Capacity	5816

### **IBM System Storage ProtecTIER Entry Edition Software Maintenance**

Order Software Maintenance Registration corresponding to each ProtecTIER Entry Edition V2.1 product base, capacity, and cluster authorization feature, for both new and upgrade orders.

Order renewals prior to the expiration of the original Software Maintenance registration period or previous Software Maintenance renewal.

5639-TAB:

IBM System Storage ProtecTIER Entry Edition V2.1  
One Year Software Maintenance

ProtecTIER Entry Edition V2.1  
One Year Renewal  
No Charge Registration  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0003
ProtectTIER Base Med Capacity	0005
ProtectTIER Repl Med Capacity	0007

One-time charge features

ProtectTIER Entry Edition V2.1  
 One Year Renewal  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0002
ProtectTIER Repl Small Cap	0004
ProtectTIER Base Med Capacity	0006
ProtectTIER Repl Med Capacity	0008

5639-TAC:

IBM System Storage ProtectTIER Entry Edition V2.1  
 One Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 One Year After License  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAD:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Three Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 Three Year Registration  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAE:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Three Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
Three Year Renewal  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAF:  
IBM System Storage ProtectTIER Entry Edition V2.1  
Three Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Three Year After License  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAG:  
IBM System Storage ProtectTIER Entry Edition V2.1  
Two Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Two Year Registration  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAH:  
IBM System Storage ProtectTIER Entry Edition V2.1  
Four Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Four Year Registration  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAI:  
IBM System Storage ProtectTIER Entry Edition V2.1  
Five Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Five Year Registration  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

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## Terms and conditions

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The information provided in this announcement letter is for reference and convenience purposes only. The terms and conditions that govern any transaction with IBM are contained in the applicable contract documents such as the IBM International Program License Agreement, IBM International Passport Advantage® Agreement, and the IBM Agreement for Acquisition of Software Maintenance.

### ***Licensing***

IBM International Program License Agreement including the License Information document and Proof of Entitlement (PoE) govern your use of the program. PoEs are required for all authorized use.

This software license includes Software Subscription and Support (also referred to as Software Maintenance).

### ***Agreement for Acquisition of Software Maintenance***

The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) agreement applies for subscription and support (also referred to as Software Maintenance) and does not require customer signatures.

These programs are licensed under the IBM Program License Agreement (IPLA) and the associated Agreement for Acquisition of Software Maintenance, which provide for support with ongoing access to releases and versions of the program. IBM includes one year of Software Subscription and Support (also referred to as Software Maintenance) with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support (also referred to as Software Maintenance) can be extended by the purchase of a renewal option, if available. These programs have a one-time license charge for use of the program and an annual renewable charge for the enhanced support that includes telephone assistance (voice support for defects during normal business hours), as well as access to updates, releases, and versions of the program as long as support is in effect.

### ***License Information form number***

L-CKOR-86A2AK

The program's LI will be available for review on the IBM Software License Agreement Web site

<http://www-03.ibm.com/software/sla/sladb.nsf>

**Limited warranty applies**

Yes

**Limited warranty**

IBM warrants that when the program is used in the specified operating environment, it will conform to its specifications. The warranty applies only to the unmodified portion of the program. IBM does not warrant uninterrupted or error-free operation of the program or that IBM will correct all program defects. You are responsible for the results obtained from the use of the program.

IBM provides you with access to IBM databases containing information on known program defects, defect corrections, restrictions, and bypasses at no additional charge. For further information, consult the IBM Software Support Handbook found at

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

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**Volume orders (IVO)**

Yes. Contact your IBM representative.

**Passport Advantage applies**

No

**Usage restriction**

Yes

IBM System Storage ProtecTIER Entry Edition V2.1 software (5639-TAA) is licensed on a per storage device basis. Optional Clustering support and Replication support functions are licensed on a per terabyte capacity basis.

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Yes. All distributed software licenses include Software Subscription and Support (also referred to as Software Maintenance) for a period of 12 months from the date of acquisition, providing a streamlined way to acquire IBM software and assure technical support coverage for all licenses. Extending coverage for a total of two, three, four, or five years from date of acquisition may be elected.

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**IBM Operational Support Services - SoftwareXcel**

No

**System i Software Maintenance applies**

No

**Variable charges apply**

No

**Educational allowance available**

Yes. A 15% education allowance applies to qualified education institution customers.

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**Prices**

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Information on charges is available at

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

Choose the option entitled Purchase/upgrade tools.

5639-TAA:

IBM System Storage ProtecTIER Entry Edition V2.1

Use Authorizations  
with One Year Software Maintenance

One-time charge features

ProtecTIER Entry Edition V2.1  
per Storage Device  
with 1 Year SW Maintenance

Feature description	OTC Feature number
ProtecTIER Base Small Cap	0001
ProtecTIER Repl Small Cap	0002
ProtecTIER Base Med Capacity	0003
Upgrade from Base Small Capacity	0004
ProtecTIER Repl Med Capacity	0005
Upgrade from Repl Small Capacity	0006

No-charge Features:

Feature description	Feature number
Serial Number	3444
Base Small Capacity	5806



Base Medium Capacity 5816

5639-TAB:

IBM System Storage ProtectTIER Entry Edition V2.1  
One Year Software Maintenance

ProtectTIER Entry Edition V2.1  
One Year Renewal  
No Charge Registration  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0003
ProtectTIER Base Med Capacity	0005
ProtectTIER Repl Med Capacity	0007

One-time charge features

ProtectTIER Entry Edition V2.1  
One Year Renewal  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0002
ProtectTIER Repl Small Cap	0004
ProtectTIER Base Med Capacity	0006
ProtectTIER Repl Med Capacity	0008

5639-TAC:

IBM System Storage ProtectTIER Entry Edition V2.1  
One Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
One Year After License  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAD:

IBM System Storage ProtectTIER Entry Edition V2.1  
Three Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Three Year Registration  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001

ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAE:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Three Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 Three Year Renewal  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAF:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Three Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 Three Year After License  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAG:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Two Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 Two Year Registration  
 One Time Charge  
 per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAH:

IBM System Storage ProtectTIER Entry Edition V2.1  
 Four Year Software Maintenance  
 One-time charge features

ProtectTIER Entry Edition V2.1  
 Four Year Registration  
 One Time Charge

per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

5639-TAI:

IBM System Storage ProtectTIER Entry Edition V2.1  
Five Year Software Maintenance  
One-time charge features

ProtectTIER Entry Edition V2.1  
Five Year Registration  
One Time Charge  
per Storage Device

Feature description	OTC Feature number
ProtectTIER Base Small Cap	0001
ProtectTIER Repl Small Cap	0002
ProtectTIER Base Med Capacity	0003
ProtectTIER Repl Med Capacity	0004

Description	Type	Feature	List price
ProtectTIER Base Small Cap	5639TAA	0001	\$10,000
ProtectTIER Repl Small Cap	5639TAA	0002	5,000
ProtectTIER Base Med Capacity	5639TAA	0003	25,000
Upgrade from Base Small Capacity	5639TAA	0004	15,000
ProtectTIER Repl Med Capacity	5639TAA	0005	12,500
Upgrade from Repl Small Capacity	5639TAA	0006	7,500
Serial Number	5639TAA	3444	0
Base Small Capacity	5639TAA	5806	0
Base Medium Capacity	5639TAA	5816	0
ProtectTIER Base Small Cap	5639TAB	0001	0
ProtectTIER Repl Small Cap	5639TAB	0003	0
ProtectTIER Base Med Capacity	5639TAB	0005	0
ProtectTIER Repl Med Capacity	5639TAB	0007	0
ProtectTIER Base Small Cap	5639TAB	0002	2,000
ProtectTIER Repl Small Cap	5639TAB	0004	1,000
ProtectTIER Base Med Capacity	5639TAB	0006	5,000
ProtectTIER Repl Med Capacity	5639TAB	0008	2,500
ProtectTIER Base Small Cap	5639TAC	0001	6,000
ProtectTIER Repl Small Cap	5639TAC	0002	3,000

ProtectTIER Base Med Capacity	5639TAC	0003	15,000
ProtectTIER Repl Med Capacity	5639TAC	0004	7,500
ProtectTIER Base Small Cap	5639TAD	0001	4,000
ProtectTIER Repl Small Cap	5639TAD	0002	2,000
ProtectTIER Base Med Capacity	5639TAD	0003	10,000
ProtectTIER Repl Med Capacity	5639TAD	0004	5,000
ProtectTIER Base Small Cap	5639TAE	0001	6,000
ProtectTIER Repl Small Cap	5639TAE	0002	3,000
ProtectTIER Base Med Capacity	5639TAE	0003	15,000
ProtectTIER Repl Med Capacity	5639TAE	0004	7,500
ProtectTIER Base Small Cap	5639TAF	0001	10,000
ProtectTIER Repl Small Cap	5639TAF	0002	5,000
ProtectTIER Base Med Capacity	5639TAF	0003	25,000
ProtectTIER Repl Med Capacity	5639TAF	0004	12,500
ProtectTIER Base Small Cap	5639TAG	0001	2,000
ProtectTIER Repl Small Cap	5639TAG	0002	1,000
ProtectTIER Base Med Capacity	5639TAG	0003	5,000
ProtectTIER Repl Med Capacity	5639TAG	0004	2,500
ProtectTIER Base Small Cap	5639TAH	0001	6,000
ProtectTIER Repl Small Cap	5639TAH	0002	3,000
ProtectTIER Base Med Capacity	5639TAH	0003	15,000
ProtectTIER Repl Med Capacity	5639TAH	0004	7,500
ProtectTIER Base Small Cap	5639TAI	0001	8,000
ProtectTIER Repl Small Cap	5639TAI	0002	4,000
ProtectTIER Base Med Capacity	5639TAI	0003	20,000
ProtectTIER Repl Med Capacity	5639TAI	0004	10,000

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## **Corrections**

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**(Corrected on November 5, 2010)**

The Hardware requirements section has been updated.

**(Corrected on July 21, 2010)**

The Compatibility section has been updated.