



IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2 delivers advanced hardware snapshot backup and restore capabilities

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At a glance

IBM^(R) Tivoli^(R) Storage Manager Suite for Unified Recovery V7.1.2 now includes application integrated hardware snapshot capabilities that enable improved application availability and service levels through high-performance, near-instant restore capabilities that reduce downtime.

IBM Tivoli Storage FlashCopy^(R) Manager V4.1.2 hardware snapshot-based data protection is added to the following:

- IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2

IBM Tivoli Storage FlashCopy Manager V4.1.2 improves application availability with the addition of General Parallel File System (GPFSTM) support for near-instant file set level snapshots, in addition to usability improvements and currency enhancements.

IBM Tivoli Storage Manager for Virtual Environments and **IBM FlashCopy Manager** provide support for VMware vSphere 6 environments, excluding the ability to protect virtual machines located on VMware Virtual Volumes.

IBM Tivoli Storage Manager FastBack^(R), IBM Tivoli Storage Manager FastBack for Bare Machine Recovery, and IBM Tivoli Storage Manager FastBack for MicrosoftTM Exchange are no longer included in IBM Tivoli Storage Manager Suite for Unified Recovery.

Overview

IBM Tivoli Storage FlashCopy Manager V4.1.2 enhancements:

- Frequent, nondisruptive file set protection exploiting General Parallel File System (GPFS) software snapshots.
- Usability enhancements for its VMware configuration wizard to automate connection to third-party storage arrays.
- Usability enhancements for Microsoft Exchange protection by providing powershell commandlets for archive mailbox restore and public folder restore.

- Additional support includes VMware vSphere 6 support, excluding the ability to provide snapshot support for virtual machines located on VMware Virtual Volumes.

IBM Tivoli Storage Manager for Virtual Environments V7.1.2 enhancements:

- Support for VMware vSphere 6, excluding the ability to protect virtual machines located on VMware Virtual Volumes.
- The ability to automatically retry on snapshot failure
- Enables users to more easily perform fully integrated exchange database-level and item-level restores from VMware image backups
- Automatic identification and processing of VMware Site Recovery Manager resources that do not require protection

Removal of products from IBM Tivoli Storage Manager Suite for Unified Recovery

IBM Tivoli Storage Manager FastBack, IBM Tivoli Storage Manager FastBack for Microsoft Exchange, and IBM Tivoli Storage Manager FastBack for Bare Machine Recovery are being removed from:

- IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2

If you are entitled to the products above, you will be able to leverage the hardware snapshot capability through Tivoli Storage FlashCopy Manager included within the products above. This satisfies many of the same use cases that require application aware snapshots with near-instant recovery capability.

Tivoli Storage FlashCopy Manager is designed to deliver high levels of data protection for business-critical applications through integrated application snapshot backup and restore capabilities. The applications supported by Tivoli Storage FlashCopy Manager are IBM DB2^(R), Oracle, Microsoft Exchange, Microsoft SQL Server, and the VMware vSphere platform. In addition, DB2 and Oracle databases are supported for use either with or without SAP environments. Other applications can be supported on IBM AIX^(R), HP-UX, LinuxTM, Solaris, and Microsoft WindowsTM platforms through script customization.

These capabilities are achieved through the utilization of advanced storage-specific hardware snapshot technology to help create a high performance, low impact application data protection solution. Tivoli Storage FlashCopy Manager is easy to install, configure, deploy, and seamlessly integrates with various IBM and non-IBM storage systems.

In addition to the supported devices, Tivoli Storage FlashCopy Manager on the Microsoft Windows platform supports any storage system that is Microsoft Volume Shadow Copy Services (VSS) capable, by using the VSS system provider or a VSS hardware provider who adheres to the Microsoft VSS Provider interface.

Key prerequisites

IBM Tivoli Storage Manager supports:

- AIX
- Microsoft Windows
- Linux on System x, Linux on System p^(R), and Linux on z Systems
- Solaris
- HP-UX

- Apple Macintosh

Details are available on

<http://www.ibm.com/support/docview.wss?&uid=swg21243309>

Planned availability date

- April 17, 2015: Electronic
- May 15, 2015: DVD media

Availability of programs with encryption algorithm in France is subject to French government approval.

Refer to the [Availability of national languages](#) section for national language availability.

Description

IBM Tivoli Storage FlashCopy Manager, included in IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2, delivers high levels of protection for key applications and databases using advanced integrated application snapshot backup and restore capabilities.

IBM Tivoli Storage FlashCopy Manager:

- Is easy to install, configure, and deploy. Configuration Wizard provides VMware support for vSphere Web Client.
- Improves application availability and service levels through high-performance, near-instant restore capabilities that reduce downtime.
- Supports a wide range of applications, operating systems, and storage systems.
- Manages application-aware snapshots on EMC, Hitachi, NetApp, IBM, and Volume Shadow Copy Services (VSS) compatible Microsoft Windows storage.
- Enables fast, simple recovery of individual files, volumes, and mailboxes.
- Enables instant restore for VMware datastores.
- Simplifies database cloning.
- Enables off-site copying for enhanced data protection using either IBM Tivoli Storage Manager or IBM Metro Global Mirror.

Tivoli Storage FlashCopy Manager V4.1.2 adds support for the following features:

- Microsoft Windows:
 - Powershell commandlet for Microsoft Exchange Archive Mailbox Restore
 - Powershell commandlet for Microsoft Exchange Public Folder Restore
- UNIX™ and Linux:
 - Frequent, nondisruptive file set protection exploiting General Parallel File System (GPFS) software snapshots
 - HP 3PAR support as array using the Rocket Device Adapter Pack V1.5
- VMware:
 - vSphere V6 toleration support, excluding the ability to provide snapshot support for virtual machines located on VMware Virtual Volumes
 - Configuration Wizard to automate connection to third-party storage arrays
 - HP 3PAR support as storage array using the Rocket Device Adapter Pack V1.5

IBM Tivoli Storage Manager V7.1.2 and IBM Tivoli Storage Manager Extended Edition V7.1.2 enhancements:

- Tivoli Storage Manager Backup-Archive client support for Ubuntu support on Intel™ x86

IBM Tivoli Storage Manager for Mail V7.1.2 Data Protection for Exchange enhancements:

- Enables users to more easily perform fully integrated exchange database-level and item-level restores from VMware image backups with a fully automated mount process for exchange image that eliminates manual steps and saves time

IBM Tivoli Storage Manager HSM for Windows V7.1.2 enhancements:

- Alternate Data Stream Support provides the ability to migrate and retrieve alternate data stream data along with standard file data.

IBM System Storage^(R) Archive Manager V7.1.2 enhancements:

- The enhancements noted above for Tivoli Storage Manager and Tivoli Storage Manager Extended Edition V7.1.2 are also in System Storage Archive Manager V7.1.2.

IBM Tivoli Storage Manager Entry V7.1.2 enhancements:

- The enhancements noted above for Tivoli Storage Manager V7.1.2, Tivoli Storage Manager Extended Edition V7.1.2, Tivoli Storage Manager for Mail V7.1.2, and Tivoli Storage Manager for Virtual Environments V7.1.2 are also included in Tivoli Storage Manager Entry V7.1.2.

Reference information

For more information about IBM Tivoli Storage Manager V7.1 family of products, refer to Software Announcement [ZP13-0569](#), dated October 29, 2013.

For more information about IBM Tivoli Storage Manager Entry V7.1, IBM Tivoli Storage Manager for z/OS^(R) Media V7.1, and IBM Tivoli Storage Manager Extended Edition for z/OS Media V7.1, refer to Software Announcement [ZP14-0264](#), dated April 15, 2014.

For more information about support for IBM Tivoli Storage Manager for Storage Area Networks platform, refer to Software Announcement [ZP11-0463](#), dated October 11, 2011.

Availability of national languages

Description	Availability date	Language
Electronic	04/17/2015	French, German, Italian, Spanish, Russian, English
Media	05/15/2015	French, German, Italian, Spanish, Russian, English

Note 1: The following products are also available in Czech, Hungarian, and Polish:

- The client component of IBM Tivoli Storage Manager V7.1.2
- The client component of IBM Tivoli Storage Manager Extended Edition V7.1.2
- The client component of IBM System Storage^(R) Archive Manager V7.1.2
- The Data Protection for IBM Domino^(R) component of IBM Tivoli Storage Manager for Mail V7.1.2
- IBM Tivoli Storage Manager HSM for Windows V7.1.2

- IBM Tivoli Storage Manager for Space Management V7.1.2
- IBM Tivoli Storage Manager for Virtual Environments V7.1.2

Note 2: IBM Tivoli Storage Manager for Databases V7.1.2 does not support Russian.

Program number

Program number	VRM	Program name
5608-E01	7.1.2	IBM Tivoli Storage Manager
5725-Q58	7.1.2	IBM Tivoli Storage Manager Entry
5608-E02	7.1.2	IBM Tivoli Storage Manager Extended Edition
5608-E03	7.1.2	IBM System Storage Archive Manager
5608-E04	7.1.2	IBM Tivoli Storage Manager for Databases
5608-E06	7.1.2	IBM Tivoli Storage Manager for Mail
5608-E12	7.1.2	IBM Tivoli Storage Manager for Space Management
5725-A44	7.1.2	IBM Tivoli Storage Manager for Virtual Environments
5608-E13	7.1.2	IBM Tivoli Storage Manager HSM for Windows
5724-Z12	7.1.2	IBM Tivoli Storage Manager Suite for Unified Recovery
5725-R37	7.1.2	IBM Tivoli Storage Manager Suite for Unified Recovery - Front End
5725-H25	7.1.2	IBM Tivoli Storage Manager Suite for Unified Recovery Entry
5725-R38	7.1.2	IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End
5724-X94	4.1.2	IBM Tivoli Storage FlashCopy Manager (for Passport Advantage ^(R))
5608-ACB	4.1.2	IBM Tivoli Storage FlashCopy Manager (for AAS)

Product identification number

IBM Tivoli Storage FlashCopy Manager (for AAS)

Program PID number	Registration PID number	SW Subscription and Support
5608-ACB	5608-FCY	1 Year PID no charge registration number
	5608-R16	2 Year PID registration number
	5608-R13	3 Year PID registration number
	5608-R17	4 Year PID registration number
	5608-R18	5 Year PID registration number

Education support

IBM training provides education to support many IBM offerings. Descriptions of courses for IT professionals and managers are on the IBM training website

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

Contact your IBM representative for course information.

Offering Information

Product information is available via the Offering Information website

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

Also, visit the Passport Advantage^(R) website

<http://www.ibm.com/software/passportadvantage>

Publications

Documentation in English and all available translations will be available in the IBM Knowledge Center on the general availability date. The Tivoli product documentation is found under the Cloud & Smarter Infrastructure category.

<http://ibm.biz/IBMKCgo>

Links to downloadable PDFs will also be provided in the Knowledge Center.

Services

Global Technology Services

Contact your IBM representative for the list of selected services available in your country, either as standard or customized offerings for the efficient installation, implementation, or integration of this product.

Technical information

Specified operating environment

Hardware requirements

IBM Tivoli Storage Manager supported devices

Refer to the following websites for the list of devices that are supported by Tivoli Storage Manager (5608-E01), IBM Tivoli Storage Manager Extended Edition (5608-E02), and IBM System Storage Archive Manager (5608-E03). Libraries that have more than 4 drives or more than 48 tape slots require a license for Tivoli Storage Manager Extended Edition.

For Tivoli Storage Manager supported devices for AIX, HP-UX, Solaris, and Microsoft Windows, visit

http://www.ibm.com/software/sysmgmt/products/support/IBM_TSM_Supported_Devices_for_AIXHPSUNWIN.html

For Tivoli Storage Manager supported devices for Linux, visit

http://www.ibm.com/software/sysmgmt/products/support/IBM_TSM_Supported_Devices_for_Linux.html

Hardware and software requirements for Tivoli Storage Manager V7.1.2 products are available at the website listed with each product below.

IBM Tivoli Storage Manager (5608-E01) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM Tivoli Storage Manager Extended Edition (5608-E02) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM System Storage Archive Manager (5608-E03) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM Tivoli Storage Manager for Mail (5608-E06)

<http://www.ibm.com/support/docview.wss?uid=swg21219345>

IBM Tivoli Storage Manager for Space Management (5608-E12)

<http://www.ibm.com/support/docview.wss?uid=swg21321200>

IBM Tivoli Storage Manager for HSM for Windows (5608-E13)

<http://www.ibm.com/support/docview.wss?uid=swg21319299>

IBM Tivoli Storage Manager for Databases (5608-E04)

<http://www.ibm.com/support/docview.wss?uid=swg21218747>

IBM Tivoli Storage Manager for Virtual Environments (5725-A44)

<http://www.ibm.com/support/docview.wss?uid=swg21505139>

IBM Tivoli Storage FlashCopy Manager (5724-x94 for PPA) (5608-ACB for AAS)

<http://www.ibm.com/support/docview.wss?uid=swg21427692>

For a list of products included in the offering suite and the technical requirements for each of the included products, refer to the information portal website listed for each product below.

IBM Tivoli Storage Manager Entry V7.1.2 (5725-Q58)

<http://www.ibm.com/support/docview.wss?uid=swg27045159>

IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2 (5724-Z12)

<http://www.ibm.com/support/docview.wss?uid=swg27045157>

IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2 (5725-H25)

<http://www.ibm.com/support/docview.wss?uid=swg27045156>

IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2 (5725-R37)

<http://www.ibm.com/support/docview.wss?uid=swg27045157>

IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2
(5725-R38)

<http://www.ibm.com/support/docview.wss?uid=swg27045156>

Note 1: Tivoli Storage Manager V7.1, Tivoli Storage Manager Extended Edition V7.1, and System Storage Archive Manager V7.1 have the same hardware, software, and supported device requirements.

Software requirements

IBM Tivoli Storage Manager supported devices

Refer to the following websites for the list of devices that are supported by Tivoli Storage Manager (5608-E01), IBM Tivoli Storage Manager Extended Edition (5608-E02), and IBM System Storage Archive Manager (5608-E03). Libraries that have more than 4 drives or more than 48 tape slots require a license for Tivoli Storage Manager Extended Edition.

For Tivoli Storage Manager supported devices for AIX, HP-UX, Solaris, and Microsoft Windows, visit

http://www.ibm.com/software/sysmgmt/products/support/IBM_TSM_Supported_Devices_for_AIXHPSUNWIN.html

For Tivoli Storage Manager supported devices for Linux, visit

http://www.ibm.com/software/sysmgmt/products/support/IBM_TSM_Supported_Devices_for_Linux.html

Hardware and software requirements for Tivoli Storage Manager V7.1.2 products are available at the website listed with each product below.

IBM Tivoli Storage Manager (5608-E01) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM Tivoli Storage Manager Extended Edition (5608-E02) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM System Storage Archive Manager (5608-E03) (refer to Note 1)

<http://www.ibm.com/support/docview.wss?uid=swg21243309>

IBM Tivoli Storage Manager for Mail (5608-E06)

<http://www.ibm.com/support/docview.wss?uid=swg21219345>

IBM Tivoli Storage Manager for Space Management (5608-E12)

<http://www.ibm.com/support/docview.wss?uid=swg21321200>

IBM Tivoli Storage Manager for HSM for Windows (5608-E13)

<http://www.ibm.com/support/docview.wss?uid=swg21319299>

IBM Tivoli Storage Manager for Databases (5608-E04)

<http://www.ibm.com/support/docview.wss?uid=swg21218747>

IBM Tivoli Storage Manager for Virtual Environments (5725-A44)

<http://www.ibm.com/support/docview.wss?uid=swg21505139>

IBM Tivoli Storage FlashCopy Manager (5724-x94 for PPA) (5608-ACB for AAS)

<http://www.ibm.com/support/docview.wss?uid=swg21427692>

For a list of products included in the offering suite and the technical requirements for each of the included products, refer to the information portal website listed for each product below.

IBM Tivoli Storage Manager Entry V7.1.2 (5725-Q58)

<http://www.ibm.com/support/docview.wss?uid=swg27045159>

IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2 (5724-Z12)

<http://www.ibm.com/support/docview.wss?uid=swg27045157>

IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2 (5725-H25)

<http://www.ibm.com/support/docview.wss?uid=swg27045156>

IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2 (5725-R37)

<http://www.ibm.com/support/docview.wss?uid=swg27045157>

IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2 (5725-R38)

<http://www.ibm.com/support/docview.wss?uid=swg27045156>

Note 1: Tivoli Storage Manager V7.1, Tivoli Storage Manager Extended Edition V7.1, and System Storage Archive Manager V7.1 have the same hardware, software, and supported device requirements.

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.

Companion products

Customers who have a SAN environment may consider purchasing IBM Tivoli Storage Productivity Center in addition to IBM Tivoli Storage Manager. The customer can benefit from the ability to more fully manage their storage environment, including backup and recovery, management of disk performance, management of the physical network of the SAN, logical connections between the devices, and capacity management of file systems and databases. Additionally, Tivoli Storage Productivity Center complements Tivoli Storage Manager. The customer who leverages these products can benefit from the ability to extend policies and file reports to directly initiate a Tivoli Storage Manager's backup or archive when certain threshold conditions are met, or in the case of file reports, if conditions deem it necessary.

Performance considerations

Tivoli Storage Manager product's performance will vary depending upon your particular configuration, the client and server options, and customization.

IBM Electronic Support

The IBM Support Portal is your gateway to technical support. This includes IBM Electronic Support tools and resources, for software and hardware, to help save time and simplify support. The Electronic Support tools can help you find answers to questions, download fixes, troubleshoot, automate data collection, submit and track

problems through the Service Request online tool, and build skills. All these tools are made available through your IBM support agreement, at no additional charge. Read about the Electronic Support portfolio of tools

<http://ibm.com/electronicssupport>

Access the IBM Support Portal

<http://ibm.com/support>

Access the online Service Request tool

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

Planning information

Packaging

Tivoli Storage Manager V7.1.2 products are distributed with:

- International Program License Agreement (Z125-3301)
- License Information document
- DVD media
- Publications (refer to the [Publications](#) section)

This program, when downloaded from a website, contains the applicable IBM license agreement and License Information, if appropriate, and will be presented for acceptance at the time of installation of the program. For future reference, the license and License Information will be stored in a directory such as LICENSE.TXT.

Security, auditability, and control

Tivoli Storage Manager V7.1 products use the security and auditability features of the operating system software.

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

Ordering information

This IBM Workstation Software product is being announced as a dual-pipe offering, and is available for ordering by program and feature number or by part number.

When ordering by part numbers, this product can be obtained through IBM Passport Advantage. Contact your IBM representative or IBM Business Partner Reseller and Distributors for Workstation Software.

For more information, contact your IBM Sales Specialists, IBM Business Partner, or visit

<http://www.ibm.com/software/support/pa.html>

This product is only available via Passport Advantage. It is not available as shrinkwrap.

These products may only be sold directly by IBM or by authorized IBM Business Partners for Software Value Plus.

For more information about IBM Software Value Plus, visit

http://www.ibm.com/partnerworld/page/svp_authorized_portfolio

To locate IBM Business Partners for Software Value Plus in your geography for a specific Software Value Plus portfolio, visit

Product group: Tivoli Storage Management

Product category: Tivoli Storage Manager

Product Identifier Descriptions	PID number
IBM Tivoli Storage Manager	5608-E01
IBM Tivoli Storage Manager Extended Edition	5608-E02
IBM System Storage Archive Manager	5608-E03
IBM Tivoli Storage Manager for Databases	5608-E04
IBM Tivoli Storage Manager for Mail	5608-E06
IBM Tivoli Storage Manager for Space Management	5608-E12
IBM Tivoli Storage Manager HSM for Windows	5608-E13
IBM Tivoli Storage Manager Suite for Unified Recovery	5724-Z12
IBM Tivoli Storage Manager for Virtual Environments	5725-A44
IBM Tivoli Storage Manager Suite for Unified Recovery Entry	5725-H25
IBM Tivoli Storage Manager Entry	5725-Q58
IBM Tivoli Storage Manager Suite for Unified Recovery - Front End	5725-R37
IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End	5725-R38
IBM Tivoli Storage FlashCopy Manager	5724-X94 (for PPA)
IBM Tivoli Storage FlashCopy Manager	5608-ACB (for AAS)

Passport Advantage trade up

You must have previously acquired a license for the following precursor product to be eligible to acquire an equivalent license of the trade-up product.

Precursor product	Trade-up product	Trade-up part number
(5608-TE5)	(5608-E01)	
IBM Tivoli Storage Manager Express ^(R) License + SW S&S 12 Mo	IBM Tivoli Storage Manager 10 PVU License + SW S&S 12 Mo	D59V5LL
(5608-E01)	(5608-E02)	
IBM Tivoli Storage Manager License + SW S&S 12 Mo	IBM Tivoli Storage Manager Extended Edition 10 PVU License + SW S&S 12 Mo	D56FILL
(5608-TE5)	(5608-E02)	
IBM Tivoli Storage Manager for Express License + SW S&S 12 Mo	IBM Tivoli Storage Manager Extended Edition 10 PVU License + SW S&S 12 Mo	D59V6LL
(5608-TEQ)	(5608-E04)	
IBM Tivoli Storage Manager for SQL Microsoft License + SW S&S 12 Mo	IBM Tivoli Storage Manager for Databases 10 PVU License + SW S&S 12 Mo	D59V3LL
(5608-TEX)	(5608-E06)	
IBM Tivoli Storage Manager Express for Microsoft Exchange License + SW S&S 12 Mo	IBM Tivoli Storage Manager for Mail 10 PVU License + SW S&S 12 Mo	D59V4LL
(5725-H25)	(5724-Z12)	

Precursor product	Trade-up product	Trade-up part number
IBM Tivoli Storage Manager Suite for Unified Recovery Entry Terabyte (1-100) License + SW S&S 12 Mo (5725-R38)	IBM Tivoli Storage Manager Suite for Unified Recovery Terabyte (1-100) License + SW S&S 12 Mo (5725-R37)	D0Q3ZLL
IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End Terabyte (1-100) License + SW S&S 12 Mo	IBM Tivoli Storage Manager Suite for Unified Recovery - Front End Terabyte (1-100) License + SW S&S 12 Mo	D15T3LL

Consult your IBM representative if you have any questions.

Passport Advantage customer: Media pack entitlement details

Customers with active maintenance or subscription for the products listed are entitled to receive the corresponding media pack.

Media packs description	Part number
IBM Tivoli Storage Manager V7.1.2 Multiplatform, ML Media Pack (5608-E01)	BJ178ML
IBM Tivoli Storage Manager Entry V7.1.2 Multiplatform, ML Media Pack (5725-Q58)	BJ171ML
IBM Tivoli Storage Manager Extended Edition V7.1.2 Multiplatform, ML Media Pack (5608-E02)	BJ179ML
IBM Tivoli System Storage Archive Manager V7.1.2 Multiplatform, ML Media Pack (5608-E03)	BJ17AML
IBM Tivoli Storage Manager for Databases V7.1.2 Multiplatform, ML Media Pack (5608-E04)	BJ17BML
IBM Tivoli Storage Manager for Mail V7.1.2 Multiplatform, ML Media Pack (5608-E06)	BJ17CML
IBM Tivoli Storage Manager for Space Mgmt V7.1.2 Multiplatform, ML Media Pack (5608-E12)	BJ17DML
IBM Tivoli Storage Manager for HSM Windows V7.1.2 Multiplatform, ML Media Pack (5608-E13)	BJ17EML
IBM Tivoli Storage Manager for Virtual Environments V7.1.2 Multiplatform, ML Media Pack (5725-A44)	BJ17NML
IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2 Multiplatform, ML Media Pack (5724-Z12)	BJ17LML
IBM Tivoli Storage Manager Suite for Unified Recovery Archive Option V7.1.2 Multiplatform, ML Media Pack (5724-Z12)	BJ17FML
IBM Tivoli Storage Manager Suite for Unified Recovery - ProtecTIER [®] V7.1.2 Multiplatform, ML Media Pack (5724-Z12)	BJ17GML
IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2 Multiplatform, ML Media Pack (5725-H25)	BJ17HML
IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2 Multiplatform, ML Media Pack (5725-R37)	BJ17JML
IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2 Multiplatform, ML Media Pack (5725-R38)	BJ17KML
IBM Tivoli Storage FlashCopy Manager V4.1.2 Multiplatform, ML Media Pack (5724-X94)	BJ17MML

Cross-platform product for use on z Systems Integrated Facility for Linux (IFL) engines or zEnterprise[®] BladeCenter Extension

Order the part numbers that follow when the product is intended to run on zEnterprise BladeCenter Extension or the Linux operating system on z Systems IFL engines. If the product is not intended to run in these environments, order from the other set of part numbers in this announcement. This set of part numbers provides the identical supply and authorization as the other set in this announcement.

Program name/Description	Part number
IBM Tivoli Storage Manager (5608-E01)	
10 Processor Value Units:	
License and SW S&S 12 Months (Refer to Note 1)	D56FULL
Annual SW S&S Renewal	E029KLL
SW S&S Reinstatement 12 Months	D56FWLL
Lnx on z - License and SW S&S 12 Months	D56Q5LL
Lnx on z - Annual SW S&S Renewal	E02B7LL
Lnx on z - SW S&S Reinstatement 12 Months	D56Q6LL
IBM Tivoli Storage Manager Extended Edition (5608-E02)	
10 Processor Value Units:	
License and SW S&S 12 Months (Refer to Note 1)	D56FELL
Annual SW S&S Renewal	E029ELL
SW S&S Reinstatement 12 Months	D56FFLL
Lnx on z - License and SW S&S 12 Months	D56FJLL
Lnx on z - Annual SW S&S Renewal	E029GLL
Lnx on z - SW S&S Reinstatement 12 Months	D56FKLL
IBM Tivoli Storage Manager for Databases (5608-E04)	
10 Processor Value Units:	
License and SW S&S 12 Months	D56D9LL
Annual SW S&S Renewal	E028WLL
SW S&S Reinstatement 12 Months	D56DALL
Tradeup from Tivoli Storage Manager for SQL Microsoft	
License and SW S&S 12 Months	D59V3LL
for zEnterprise BladeCenter Extension and Linux on	
System z [®] 10 Processor Value Units (PVUs)	
License and SW S&S 12 Months	D0BTCLL
Annual SW S&S Renewal	E087QLL
SW S&S Reinstatement 12 Months	D0BTDLL
IBM Tivoli Storage Manager for Mail (5608-E06)	
10 Processor Value Units:	
License and SW S&S 12 Months	D56Q3LL
Annual SW S&S Renewal	E02B6LL
SW S&S Reinstatement 12 Months	D56Q4LL
Lnx on z - License and SW S&S 12 Months	D56Q1LL
Lnx on z - Annual SW S&S Renewal	E02B5LL
Lnx on z - SW S&S Reinstatement 12 Months	D56Q2LL
IBM Tivoli Storage Manager Suite for Unified Recovery - Front End (5725-R37)	
Per Terabyte (1-100)	

Program name/Description	Part number
License and SW S&S 12 Months	D15T1LL
Annual SW S&S Renewal	E0JV8LL
SW S&S Reinstatement 12 Months	D15T2LL
Tradeup from Tivoli Storage Manager Suite for Unified Recovery Entry - Front End Terabyte (1-100)	
License and SW S&S 12 Months	D15T3LL
Per Terabyte Linux on Sys z (1-100)	
License and SW S&S 12 Months	D15SVLL
Annual SW S&S Renewal	E0JV8LL
SW S&S Reinstatement 12 Months	D15SWLL
Per Terabyte (101-250)	
License and SW S&S 12 Months	D15TALL
Annual SW S&S Renewal	E0JV8LL
SW S&S Reinstatement 12 Months	D15TBLL
Per Terabyte Linux on Sys z (101-250)	
License and SW S&S 12 Months	D15T4LL
Annual SW S&S Renewal	E0JV8LL
SW S&S Reinstatement 12 Months	D15T5LL
Per Terabyte (251-500)	
License and SW S&S 12 Months	D15T8LL
Annual SW S&S Renewal	E0JVELL
SW S&S Reinstatement 12 Months	D15T9LL
Per Terabyte Linux on Sys z (251-500)	
License and SW S&S 12 Months	D15TELL
Annual SW S&S Renewal	E0JV8LL
SW S&S Reinstatement 12 Months	D15TFLL
Per Terabyte (501-750)	
License and SW S&S 12 Months	D15SHLL
Annual SW S&S Renewal	E0JV5LL
SW S&S Reinstatement 12 Months	D15SILL
Per Terabyte Linux on Sys z (501-750)	
License and SW S&S 12 Months	D15SJLL
Annual SW S&S Renewal	E0JV6LL
SW S&S Reinstatement 12 Months	D15SKLL
Per Terabyte (751-1250)	
License and SW S&S 12 Months	D15SLLL
Annual SW S&S Renewal	E0JV7LL
SW S&S Reinstatement 12 Months	D15SMLL
Per Terabyte Linux on Sys z (751-1250)	
License and SW S&S 12 Months	D15SXLL
Annual SW S&S Renewal	E0JV9LL
SW S&S Reinstatement 12 Months	D15SYLL
Per Terabyte (1251-2000)	
License and SW S&S 12 Months	D15SZLL
Annual SW S&S Renewal	E0JVALL
SW S&S Reinstatement 12 Months	D15T0LL
Per Terabyte Linux on Sys z (1251-2000)	
License and SW S&S 12 Months	D15T6LL
Annual SW S&S Renewal	E0JVDLL
SW S&S Reinstatement 12 Months	D15T7LL
Per Terabyte (2001+)	
License and SW S&S 12 Months	D15S4LL
Annual SW S&S Renewal	E0JV2LL

Program name/Description	Part number
SW S&S Reinstatement 12 Months Per Terabyte Linux on Sys z (2001+)	D15S5LL
License and SW S&S 12 Months	D15S6LL
Annual SW S&S Renewal	E0JV3LL
SW S&S Reinstatement 12 Months	D15S7LL

Note 1: Client licenses are interchangeable between IBM Tivoli Storage Manager and IBM Tivoli Storage Manager Extended Edition.

5608-ACB: IBM Tivoli Storage FlashCopy Manager V4.1.2

Feature description	Feature number
Per Terabyte (1-12) with 1 Year SW S&S	M3VZQE
Per Terabyte (13-32) with 1 Year SW S&S	M3V0QE
Per Terabyte (33-64) with 1 Year SW S&S	M3V1QE
Per Terabyte (65-100) with 1 Year SW S&S	M3V2QE
Per Terabyte (101-250) with 1 Year SW S&S	M3V3QE
Per Terabyte (251+) with 1 Year SW S&S	M3V4QE
Per 250 Terabyte (251+) with 1 Year SW S&S	X3V4ZE

Charge metric

For Tivoli Storage Manager, the quantity to be specified for the Passport Advantage part numbers in the following tables is per 10 Processor Value Units, per client device, and per terabyte. To order for Passport Advantage, specify the desired part number and quantity.

Program name	Part number or PID number	Charge metric
IBM Tivoli Storage Manager	5608-E01	
License and SW S&S 12 Months (Refer to Note 1)	D56FULL	10 PVU
Annual SW S&S Renewal	E029KLL	10 PVU
SW S&S Reinstatement 12 Months	D56FWLL	10 PVU
Lnx on z - License and SW S&S 12 Months	D56Q5LL	10 PVU
Lnx on z - Annual SW S&S Renewal	E02B7LL	10 PVU
Lnx on z - SW S&S Reinstatement 12 Months	D56Q6LL	10 PVU
Tradeup from Tivoli Storage Manager Express [®] License and SW S&S 12 Months	D59V5LL	10 PVU
License and SW S&S 12 Months	D5158LL	Client device
Annual SW S&S Renewal	E00AJLL	Client device
SW S&S Reinstatement 12 Months	D515ALL	Client device
Program name	Part number or PID number	Charge metric
IBM Tivoli Storage Manager Extended Edition	5608-E02	
License and SW S&S 12 Months (Refer to Note 1)	D56FELL	10 PVU
Annual SW S&S Renewal	E029ELL	10 PVU
SW S&S Reinstatement 12 Months	D56FFLL	10 PVU

Program name	Part number or PID number	Charge metric
Lnx on z - License and SW S&S 12 Months	D56FJLL	10 PVU
Lnx on z - Annual SW S&S Renewal	E029GLL	10 PVU
Lnx on z - SW S&S Reinstatement 12 Months	D56FKLL	10 PVU
Tradeup from Tivoli Storage Manager License and SW S&S 12 Months	D56FILL	10 PVU
Tradeup from Tivoli Storage Manager for Express License and SW S&S 12 Months	D59V6LL	10 PVU
License and SW S&S 12 Months	D51MKLL	Client device
Annual SW S&S Renewal	E00IALL	Client device
SW S&S Reinstatement 12 Months	D51MMLL	Client device

Note 1: Client licenses are interchangeable between IBM Tivoli Storage Manager and IBM Tivoli Storage Manager Extended Edition.

Program name	Part number or PID number	Charge metric
IBM System Storage Archive Manager	5608-E03	
License and SW S&S 12 Months	D61H2LL	Per Terabyte (1-12)
Annual SW S&S Renewal	E040YLL	Per Terabyte (1-12)
SW S&S Reinstatement 12 Months	D61H3LL	Per Terabyte (1-12)
License and SW S&S 12 Months	D61G7LL	Per Terabyte (13-32)
Annual SW S&S Renewal	E040ILL	Per Terabyte (13-32)
SW S&S Reinstatement 12 Months	D61G8LL	Per Terabyte (13-32)
License and SW S&S 12 Months	D61GHLL	Per Terabyte (33-64)
Annual SW S&S Renewal	E040NLL	Per Terabyte (33-64)
SW S&S Reinstatement 12 Months	D61GILL	Per Terabyte (33-64)
License and SW S&S 12 Months	D61GJLL	Per Terabyte (65-100)
Annual SW S&S Renewal	E040PLL	Per Terabyte (65-100)
SW S&S Reinstatement 12 Months	D61GKLL	Per Terabyte (65-100)
License and SW S&S 12 Months	D61GLLL	Per Terabyte (101-250)
Annual SW S&S Renewal	E040QLL	Per Terabyte (101-250)
SW S&S Reinstatement 12 Months	D61GMLL	Per Terabyte (101-250)
License and SW S&S 12 Months	D61GNLL	(251+)
Annual SW S&S Renewal	E040RLL	(251+)
SW S&S Reinstatement 12 Months	D61GPLL	(251+)
Program name	Part number or PID number	Charge metric
IBM Tivoli Storage Manager for Databases	5608-E04	
License and SW S&S 12 Months	D56D9LL	10 PVU

Program name	Part number or PID number	Charge metric
Annual SW S&S Renewal	E028WLL	10 PVU
SW S&S Reinstatement 12 Months	D56DALL	10 PVU
Tradeup from Tivoli Storage Manager for SQL Microsoft License and SW S&S 12 Months	D59V3LL	10 PVU
for zEnterprise ^(R) BladeCenter Extension and Linux on z System		
License and SW S&S 12 Months	D0BTCLL	10 PVU
Annual SW S&S Renewal	E087QLL	10 PVU
SW S&S Reinstatement 12 Months	D0BTDLL	10 PVU

Note 1: Client licenses are interchangeable between IBM Tivoli Storage Manager and IBM Tivoli Storage Manager Extended Edition.

Licensing metric definitions

Client Device

Client Device is a unit of measure by which the program can be licensed. A Client Device is a single user computing device or special purpose sensor or telemetry device that requests the execution of or receives for execution a set of commands, procedures, or applications from or provides data to another computer system that is typically referred to as a server or is otherwise managed by the server. Multiple Client Devices may share access to a common server. A Client Device may have some processing capability or be programmable to allow a user to do work. Examples include, but are not limited to actuators, appliances, automated teller machines, automatic meter readers, cash registers, disk drives, desktop computers, kiosks, notebook computers, personal digital assistant, point-of-sale terminals, sensors, smart meters, tape drives, and technical workstations. Licensee must obtain entitlements for every Client Device which runs, provides data to, uses services provided by, or otherwise accesses the program and for every other computer or server on which the program is installed.

Processor Value Unit (PVU)

Processor Value Unit (PVU) is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology defined within the PVU Table by processor vendor, brand, type, and model number at

http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html

and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip (socket). A dual-core processor chip, for example, has two processor cores.

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage Sub-Capacity Licensing Terms (refer to the webpage below). If using full capacity licensing, licensee must obtain PVU entitlements sufficient to cover all activated processor cores* in the physical hardware environment made available to or managed by the program, except for those servers from which the program has been permanently removed. If using virtualization capacity licensing, Licensee must obtain entitlements sufficient to cover all activated processor cores made available to or managed by the program, as defined according to the Virtualization Capacity License Counting Rules at

* An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

Terabyte

Terabyte is a unit of measure by which the program can be licensed. A terabyte is 2 to the 40th power bytes. Licensee must obtain an entitlement for each terabyte of storage available to the program.

IBM System Storage Archive Manager terabyte capacity

IBM System Storage Archive Manager terabyte capacity includes primary disk storage pool size combined with the amount of utilized primary removable media storage used by the IBM System Storage Archive Manager server.

Capacity does not include:

- Copy storage pools for the space-managed data that reside on disk.
- Copy storage pools for the space-managed data that reside on removable media.
- Space used on the IBM Tivoli Storage Manager server for any purpose other than the primary storage of space-managed data.
- Disk on the host being space managed.

A virtual tape library (VTL) is considered a removable media device, so capacity is based on utilization.

The minimum amount of capacity that can be purchased is 1 terabyte.

Partial capacity will be rounded up to the next whole number of terabytes.

Additional capacity must be added in increments of 1 terabyte.

Tiered terabytes (1-12), (13-32), (33-64), (65-100), (101-250), (251+)

Terabyte (1-12), terabyte (13-32), terabyte (33-64), terabyte (65-100), terabyte (101-250), and terabyte (251+) is a unit of measure by which the program can be licensed. Proofs of Entitlement (PoEs) are based on the number of terabytes available to the program. A terabyte is 2 to the 40th power bytes. Licensee must obtain sufficient entitlements required for licensee's environment. The entitlements are specific to the program and may not be exchanged, interchanged, or aggregated with entitlements of another program.

Instead of the entitlements required for the program directly, licensee must obtain terabyte entitlements for the program sufficient to cover the storage managed by the program.

IBM Tivoli Storage Manager Suite for Unified Recovery terabyte capacity

Tiered terabytes (1-100), (101-250), (251-500), (501-750), (751-1,250), (1,251-2,000), (2001+)

Terabyte (1-100), terabyte (101-250), terabyte (251-500), terabyte (501-750), terabyte (751-1,250), terabyte (1,251-2,000), terabyte (2,001+) is a unit of measure by which the program can be licensed. PoEs are based on the number of terabytes available to the program. A terabyte is 2 to the 40th power bytes. Licensee must obtain sufficient entitlements required for licensee's environment. The entitlements are specific to the program and may not be exchanged, interchanged, or aggregated with entitlements of another program.

Instead of the entitlements required for the program directly, licensee must obtain terabyte entitlements for the program sufficient to cover the storage managed by the program.

For Tivoli Storage Manager Suite for Unified Recovery, licensee must obtain sufficient entitlements required for all data stored in the designated Tivoli Storage Manager primary storage pool volumes and for all data stored in the designated Tivoli Storage Manager FastBack repository volumes and for all data managed by the Tivoli Storage FlashCopy Manager.

IBM Tivoli Storage Manager Suite for Unified Recovery - Front End terabyte capacity

Tiered terabytes (1-100), (101-250), (251-500), (501-750), (751-1,250), (1,251-2,000), (2001+)

Terabyte (1-100), terabyte (101-250), terabyte (251-500), terabyte (501-750), terabyte (751-1,250), terabyte (1,251-2,000), terabyte (2,001+) is a unit of measure by which the program can be licensed. PoEs are based on the number of Terabytes available to the program. A terabyte is 2 to the 40th power bytes. Licensee must obtain sufficient entitlements required for licensee's environment. The entitlements are specific to the program and may not be exchanged, interchanged, or aggregated with entitlements of another program.

Instead of the entitlements required for the program directly, licensee must obtain terabyte entitlements for the program sufficient to cover the data managed by the program. For Tivoli Storage Manager Suite for Unified Recovery Front End, licensee must obtain sufficient entitlements required for the aggregate amount of data protected by the program.

IBM Tivoli Storage Manager Suite for Unified Recovery - Archive Option terabyte capacity

Entitlements for the new Tivoli Storage Manager Suite for Unified Recovery - Archive Option component apply only to data classified as archive data within Tivoli Storage Manager that results from running an archive operation, and the data must reside on tape or VTL within the primary storage pool. An archive operation is designated either via the Tivoli Storage Manager's user interface itself or through Tivoli Storage Manager's application programming interface (API). Data stored on virtual tape appears to Tivoli Storage Manager as physical tape. The Tivoli Storage Manager Suite for Unified Recovery - Archive Option price applies to the capacity level recognized by Tivoli Storage Manager (which equates to the amount of data sent to the virtual tape). Subsequent deduplication of data within a VTL does not reduce the capacity level recognized by Tivoli Storage Manager.

Licensee must obtain sufficient entitlements required for all data stored in the designated IBM Tivoli Storage Manager primary storage pool volumes and for all data stored in the designated IBM Tivoli Storage Manager Fastback repository volumes and for all data managed by the IBM Tivoli Storage FlashCopy Manager.

IBM Tivoli Storage Manager Suite for Unified Recovery - ProtecTIER^(R) Option terabyte capacity

Licensee must obtain sufficient entitlements for the total aggregate usable physical capacity of all the IBM ProtecTIER repositories that are available to the IBM Tivoli Storage Manager primary storage pool, excluding the capacity for Disaster Recovery sites used for replication only.

Managed Server

Managed Server is a unit of measure. A server is a physical computer that is comprised of processing units, memory, and input/output capabilities and that executes requested procedures, commands or applications for one or more users or client devices. Where racks, blade enclosures, or other similar equipment is being employed, each separable physical device (for example, a blade or rack-mounted

device) that has the required components is considered itself a separate server. Licensee must obtain Managed Server entitlements for each server managed.

Standby or backup systems

For programs running or resident on backup machines, IBM defines three types of situations: cold, warm, and hot. In cold and warm situations, a separate entitlement for the copy on the backup machine is normally not required and typically no additional charge applies. In a hot backup situation, the customer needs to acquire other license or entitlements sufficient for that server. All programs running in backup mode must be solely under the customer's control, even if running at another enterprise's location.

As a practice, the following are definitions and allowable actions concerning the copy of the program used for backup purposes.

Cold: A copy of the program may reside, for backup purposes, on a machine as long as the program is not started. There is no additional charge for this copy.

Warm: A copy of the program may reside for backup purposes on a machine and is started, but is idling, and is not doing any work of any kind. There is no additional charge for this copy.

Hot: A copy of the program may reside for backup purposes on a machine, is started, and is doing work. The customer must acquire a license or entitlements for this copy and there will generally be an additional charge.

Doing work includes, for example, production, development, program maintenance, and testing. It also could include other activities such as mirroring of transactions, updating of files, synchronization of programs, data, or other resources (for example, active linking with another machine, program, database or other resource, and so on), or any activity or configurations that would allow an active hot switch or other synchronized switch over between programs, databases, or other resources to occur. In the case of a program or system configuration that is designed to support a high availability environment by using various techniques (for example, duplexing, mirroring of files, or transactions, maintaining a heartbeat, active linking with another machine, program, database, or other resource), the program is considered to be doing work in the hot situation and a license or entitlement must be purchased.

High Availability and Disaster Recovery (HADR)

To use HADR to replicate from one Tivoli Storage Manager server (with DB2 included) to another Tivoli Storage Manager server (with DB2 included), no additional DB2 licensing is required.

To use HADR to replicate from a Tivoli Storage Manager server (with bundled DB2) to a nonbundled DB2 instance, the licensee must purchase 100 Processor Value Units (PVUs) to obtain a license for DB2 Enterprise Edition (bundled).

Pricing examples

Pricing examples for Tivoli Storage Manager

The following examples are provided to illustrate the customer's licensing requirements.

References to processor-based licensing **do not** represent the actual number of entitlements required. Entitlement requirements are Value Unit based. Processors referenced in these examples represent the designated measurement on which the required number of Value Unit entitlements will be calculated. The number of Value Units required per processor will depend on the processor type.

Notes:

- When using Processor Value Unit based licensing, license entitlements for IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition are required for all managed servers including the managing server. Licensing

entitlement is Processor Value Unit based and both full capacity and sub-capacity licensing is offered.

- A PoE for IBM Tivoli Storage Manager Extended Edition is required to use any of the following function: node replication (and the use of REPLICATE NODE command as a target server), disaster recovery manager, Network Data Management Protocol (NDMP), support of tape libraries (including virtual tape libraries) with more than 4 drives or more than 48 slots.
- An IBM Tivoli Storage Manager Extended Edition server can only be used to manage IBM Tivoli Storage Manager Extended Edition components or clients.
- A Tivoli Storage Manager Extended Edition server can act as a target server for disaster recovery purposes, with the exception of node replication, for Tivoli Storage Manager servers.
- The use of node replication (REPLICATE NODE command) requires the same end-user entitlements for both the server that sends the data (source server) and the server that receives the data (target server).
- Tivoli Storage Manager or Tivoli Storage Manager Extended Edition licensing requirements for General Parallel File System (GPFS) and IBM SONAS require Tivoli Storage Manager license entitlements for each node performing data movement.
- Entitlement conversions to Tivoli Storage Manager Suite for Unified Recovery require entitlement of Tivoli Storage Manager Extended Edition. If there is entitlement of Tivoli Storage Manager, then a trade up to Tivoli Storage Manager Extended Edition is required as a precondition to the entitlement conversion.
- All Network Attached Storage (NAS) devices that are being backed up require entitlement for IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition. If NDMP is used, then entitlement for IBM Tivoli Storage Manager Extended Edition is required. If a proxy server or data mover is being used, then that server does not require additional entitlement.
- An IBM Tivoli Storage Manager for Storage Area Networks entitlement is required for each IBM Tivoli Storage Manager server that is sharing a library where an IBM Tivoli Storage Manager acts as the library manager. An entitlement is required for each library client and library manager. An IBM Tivoli Storage Manager for Storage Area Networks license entitlement is required for each system that performs LAN-free operations.

Go to the [Reference information](#) section for more information about IBM Tivoli Storage Manager for Storage Area Networks.

- Client Device entitlements for IBM Tivoli Storage Manager and IBM Tivoli Storage Manager Extended Edition are interchangeable.

Scenario 1: The customer wants to do basic archiving and retrieval for all of the LAN-connected servers in its network. The customer environment consists of the following:

- 20 Client devices (laptops)
- 10 4-way servers
- Five 8-way mail servers
- Five 16-way database servers
- One 32-way server
- One 8-way managing server

The customer must obtain the following entitlements for IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition:

Systems managed	Quantity in customer environment	Total client device entitlements required
Client devices	20	20
Total client device entitlements		20

Systems managed	Quantity in customer environment	Processor entitlements required
4-way	10	40
8-way	5	40
16-way	5	80
32-way	1	32
8-way (managing server)	1	8
Total processor entitlements		200

The customer must obtain the following additional entitlements for IBM Tivoli Storage Manager for Databases:

Systems managed	Quantity in customer environment	Processor entitlements required
16-way	5	80
Total processor entitlements		80

Note: This example is valid for any database application supported by IBM Tivoli Storage Manager for Databases. IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition is required for each system with a database managed by IBM Tivoli Storage Manager for Databases.

The customer must obtain the following additional entitlements for IBM Tivoli Storage Manager for Mail:

Systems managed	Quantity in customer environment	Processor entitlements required
8-way	5	40
Total processor entitlements		40

Note: This example is valid for any mail application supported by IBM Tivoli Storage Manager for Mail. IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition is required for each system with a mail server managed by IBM Tivoli Storage Manager for Mail.

Scenario 2: VMware environment with VMware vStorage APIs for Data Protection

The customer environment consists of the following:

- ESX server 1 with four virtual servers, three running as file servers, and the fourth running as a Microsoft SQL Server.
- ESX server 2 with four virtual servers, three running as file servers, and the fourth running as a Microsoft Exchange server.
- Both ESX servers are backed up using the vStorage APIs from a proxy server.
- Each virtual machine is assigned one processor core.
- The customer is backing up only the file servers.

Notes:

- IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition full capacity entitlement requires that all physical system cores on VMware ESX servers, being backed up by the proxy server, are to be entitled.
- IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition sub-capacity entitlement requires that the virtual cores, assigned to virtual machines on VMware ESX servers being backed up by the proxy server, are to be entitled.
- VMware vStorage API for Data Protection proxy server does not require entitlement for Tivoli Storage Manager, Tivoli Storage Manager Extended Edition, or Tivoli Storage Manager for Virtual Environments.

Full capacity requirement

Quantity of processor core entitlements required	ESX 1 (4 way)	ESX 2 (4 way)	Proxy server (4 way)	Total
TSM or TSM Extended Edition	4	4	0	8

Sub-capacity requirement

Quantity of processor core entitlements required	ESX 1 (4 way)	ESX 2 (4 way)	Proxy server (4 way)	Total
TSM or TSM Extended Edition	3	3	0	6

Note: Only the virtual machines running as file servers require entitlement. Since these are the only machines being backed up, the customer does not back up the fourth virtual machine.

Scenario 3: VMware environment with IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition backup agent installed inside a virtual machine and the customer is backing up Oracle and Microsoft Exchange.

The customer environment consists of the following:

- ESX server 1 with four virtual servers, three running as file servers, and the fourth running as an Oracle server.
- ESX server 2 with four virtual servers, three running as file servers, and the fourth running as a Microsoft Exchange server.
- Each virtual machine is assigned one processor core.

Notes:

- The full capacity IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition entitlement requirement is based on physical system cores and not virtual cores.
- The sub-capacity IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition entitlement requirement is based on virtual cores.

Full capacity requirements

Quantity of processor core entitlements required	ESX 1 (4 way)	ESX 2 (4 way)	Total
TSM or TSM Extended Edition	4	4	8
TSM for Databases	4	0	4
TSM for Mail	0	4	4

Note: If VMware VMotion is running across all ESX servers, enabling migration of virtual machines between the two ESX servers, then the ESX cluster is treated as the server at full capacity, which requires all cores on all ESX servers to be entitled. If VMotion is running in the above scenario, then IBM Tivoli Storage Manager Extended Edition, IBM Tivoli Storage Manager for Databases, and IBM Tivoli Storage Manager for Mail will each require eight cores to be entitled.

Sub-capacity requirements

Quantity of processor core entitlements required	ESX 1 (4 way)	ESX 2 (4 way)	Total
TSM or TSM Extended Edition	4	4	8
TSM for Databases	1	0	1
TSM for Mail	0	1	1

Note: If VMware VMotion is running across all ESX servers, enabling migration of virtual machines between the two ESX servers, entitlement requirements would not change from the above required entitlements.

Scenario 4: VMware environment with IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition backup agent running inside a virtual machine

The customer environment consists of the following:

- ESX server 1 with four virtual servers, three running as file servers, and the fourth running as an Oracle server.

Notes:

- The full capacity IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition entitlement requirement is based on physical system cores and not virtual cores.
- The sub-capacity IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition entitlement requirement is based on virtual cores.

Full capacity requirements

Quantity of processor core entitlements required	ESX 1 (4 way)	Total
TSM or TSM Extended Edition	4	4
TSM for Databases	4	4

Sub-capacity requirements

Quantity of processor core entitlements required	ESX 1 (4 way)	Total
TSM or TSM Extended Edition	4	4
TSM for Databases	1	1

Scenario 5: Network Attached Storage (NAS) Device backup

The customer environment consists of the following:

- The NAS device is being backup using NDMP.
- One 4-way NAS device.
- One 4-way server (acting as a data mover).
- One 8-way Tivoli Storage Manager Server.

The customer must obtain the following entitlements for IBM Tivoli Storage Manager Extended Edition.

	Customer environment	Entitlements required
4-way NAS Device	4	4
4-way Data Mover	4	0
8-way TSM Server	8	8

	Customer environment	Entitlements required
Total processor entitlements		12

If in addition to the NAS device being backed up, the data mover has locally attached data that is being backed up to the Tivoli Storage Manager Server, the customer must obtain the following entitlements for IBM Tivoli Storage Manager Extended Edition.

	Customer environment	Entitlements required
4-way NAS Device	4	4
4-way Data Mover	4	4
8-way TSM Server	8	8
Total processor entitlements		16

Pricing examples for IBM System Storage Archive Manager

Scenario 1

A customer has an IBM System Storage Archive Manager server with a 5 terabytes (TB) primary disk storage pool and a removable media storage pool that will store 4 TB of data within the next 12 months. The data in the primary storage pools will be copied for off-site protection to a copy pool. The customer has designated 10 TB of removable media for a copy storage pool.

The customer needs to purchase 9 TB of IBM System Storage Archive Manager.

Primary disk storage pool	Removable media storage pool	Capacity	Required entitlements
5 TB	4 TB	9 TB	9 TB of IBM System Storage Archive Manager for Windows

Scenario 2 (additional capacity)

A customer had purchased 9 TB of IBM System Storage Archive Manager. 12 months after that initial purchase, the customer is managing 9 TB of data. Over the next 12 months, the customer estimates they will need to manage an additional 2.4 TB worth of data.

The customer should purchase an additional 3 TB of IBM System Storage Archive Manager.

Primary disk storage pool	Removable media storage pool	Capacity	Required entitlements
5 TB	6.4 TB	11.4 TB	12 TB of IBM System Storage Archive Manager for Windows

Pricing examples for IBM Tivoli Storage Manager HSM for Windows

Entitlement for Tivoli Storage Manager HSM for Windows is based on the TB capacity being space managed (migrated). Capacity is defined as the primary HSM disk storage pool size combined with the amount of utilized HSM removable media storage pool. Storage pools are configured on the IBM Tivoli Storage Manager server. The minimum amount of capacity that can be purchased is 1 TB. Partial capacity will be rounded up to the next whole number of TB. Additional capacity must be added in multiples of 1 TB. Capacity does not include:

- Copy storage pools for the space-managed data that reside on disk
- Copy storage pools for the space-managed data that reside on removable media

Scenario 1

A customer wants to space manage 4.25 TB of files from six Microsoft Windows file servers. This means 4.25 TB of files will be migrated from their current location to the Tivoli Storage Manager server's primary HSM storage pools. The migrated files will be replaced with references to the original file. The data in the primary HSM storage pools will be copied for off-site protection to a copy pool. The customer has designated 0.25 TB of disk for an HSM disk storage pool, 4 TB for a HSM removable media storage pool, and 6 TB of removable media for a copy storage pool.

The customer needs to purchase 5 TB of Tivoli Storage Manager HSM for Windows.

HSM disk storage pool	HSM removable media storage pool	Capacity	Required entitlements
0.25 TB	4 TB	4.25 TB	5 TB of Tivoli Storage Manager HSM for Windows

Scenario 2 (additional capacity)

A customer had purchased 5 TB of Tivoli Storage Manager HSM for Windows. Over the last 12 months, the customer consumed the 5 TB of HSM capacity they purchased initially in addition to an additional 1 TB. Over the next 12 months, they expect the amount of space managed data will grow to 9 TB total. They will continue to keep the 0.25 TB for the HSM disk storage pool and thus store the remaining 8.75 TB in the removable media storage pool.

The customer should purchase an additional 4 TB of Tivoli Storage Manager HSM for Windows.

HSM disk storage pool	HSM removable media storage pool	Capacity	Required entitlements
0.25 TB	8.75 TB	9 TB	9 TB of Tivoli Storage Manager HSM for Windows

Pricing examples for IBM Tivoli Storage Manager for Virtual Environments

Protecting VMware environments using Tivoli Storage Manager for Virtual Environments

The customer environment consists of the following:

- vSphere (host) 1 with 12 virtual machines (guests).
- vSphere (host) 2 with 19 virtual machines (guests).
- All of the guests on both vSphere servers (hosts) are protected using Tivoli Storage Manager for Virtual Environments V6.2.

Notes:

- Either IBM Tivoli Storage Manager or IBM Tivoli Storage Manager Extended Edition are prerequisite products for Tivoli Storage Manager for Virtual Environments and require entitlement on all physical system cores on the vSphere hosts. This entitlement applies only to the vSphere hosts protected by Tivoli Storage Manager for Virtual Environments.
- Tivoli Storage Manager for Virtual Environments is physically installed on a centralized vStorage backup server, which is a secondary or proxy machine that is used to perform the backup using the vStorage application programming interface (API). This secondary or proxy machine can be either a physical machine or a virtual machine. A single vStorage backup server can be used to protect one or more virtual machines that reside on one or more vSphere servers. The customer can use one or more vStorage backup servers.
- Entitlements for Tivoli Storage Manager for Virtual Environments, Tivoli Storage Manager, and Tivoli Storage Manager Extended Edition are not required on the

vStorage backup server. Tivoli Storage Manager for Virtual Environment, Tivoli Storage Manager, and Tivoli Storage Manager Extended Edition entitlements are only required for the managed environment, which is the processor cores on the vSphere hosts running the virtual machines being protected.

- Tivoli Storage Manager for Virtual Environments can also be licensed under sub-capacity software licensing terms, if required. Processor Value Unit (PVU) sub-capacity licensing lets you license an eligible software product for less than the full capacity (or total number of processors) of your server or group of servers. It provides the licensing granularity needed to leverage various multicore chip and virtualization technologies. The sub-capacity software licensing terms are documented in the International Passport Advantage Agreement (IPAA) Attachment for Sub-capacity Licensing Terms (Sub-capacity Licensing Attachment).
- IBM Tivoli Storage Manager for Virtual Environments sub-capacity entitlement requires that the virtual cores, assigned to virtual machines on VMware ESX servers being backed up by the proxy server, are to be entitled.

Full capacity requirement

Scenario 1: Use a single vStorage backup server to protect both vSphere hosts

Quantity of processor core entitlements required	vSphere host 1 (4 way)	vSphere host 2 (8 way)	vStorage backup server (2 way)	Total
Tivoli Storage Manager or Tivoli Storage Manager Extended Edition	4	8	0	12
Tivoli Storage Manager for Virtual Environments	4	8	0	12

Scenario 2: Use two (2 way) vStorage backup servers to protect only the larger vSphere host

Quantity of processor core entitlements required	vSphere host 1 (4 way)	vSphere host 2 (8 way)	vStorage backup server 1 (2 way)	vStorage backup server 2 (2 way)	Total
Tivoli Storage Manager or Tivoli Storage Manager Extended Edition	0	8	0	0	8
Tivoli Storage Manager for Virtual Environments	0	8	0	0	8

Pricing example for IBM Tivoli Storage Manager Suite for Unified Recovery and IBM Tivoli Storage Manager Suite for Unified Recovery - Front End

Tivoli Storage Manager Suite for Unified Recovery and Tivoli Storage Manager Suite for Unified Recovery - Front End use the same tiered TB pricing model. The model consists of seven tiers that are to be used cumulatively. All tiers must be used in order (begin with the first tier and move on to the second tier, and so on) to arrive at the desired total amount of TB.

Tivoli Storage Manager Suite for Unified Recovery - Front End measures capacity on protected data at the source, instead of using capacity at Tivoli Storage Manager primary storage pool on the backend.

Based on the actual TB tiers, the following example is an illustration, using variables for prices, that shows how to calculate the prices:

Tier TB range (actual)	\$K/TB
1-100	x
101-250	y
251-500	z
501-750	a
751-1,250	b
1,251-2,000	c
2,001+	d
Total TB ordered	How it is charged
50 TB	(x * 50 TB)
150 TB	(x * 100 TB) + (y * 50 TB)
500 TB	(x * 100 TB) + (y * 150 TB) + (z * 250 TB)
1,200 TB	(x * 100 TB) + (y * 150 TB) + (z * 250 TB) + (a * 250 TB) + (b * 450 TB)
1,800 TB	(x * 100 TB) + (y * 150 TB) + (z * 250 TB) + (a * 250 TB) + (b * 500 TB) + (c * 550 TB)
2,500 TB	(x * 100 TB) + (y * 150 TB) + (z * 250 TB) + (a * 250 TB) + (b * 500 TB) + (c * 750 TB) + (d * 500 TB)

Pricing example for IBM Tivoli Storage Manager Suite for Unified Recovery Archive Option

Scenario 1

A client has Tivoli Storage Manager Suite for Unified Recovery Archive Option with a 5 TB primary disk storage pool and a removable media storage pool that will store 4 TB of data within the next 12 months. The data in the primary storage pools will be copied for off-site protection to a copy pool. The client has designated 10 TB of removable media for a copy storage pool.

The client must purchase 9 TB of Tivoli Storage Manager Suite for Unified Recovery Archive Option.

Primary disk storage pool	Removable media storage pool	Capacity	Required entitlements
5 TB	4 TB	9 TB	9 TB of Tivoli Storage Manager Suite for Unified Recovery Archive Option

Scenario 2 (additional capacity)

A client purchased 9 TB of Tivoli Storage Manager Suite for Unified Recovery Archive Option. Twelve months after that initial purchase, the client is managing 9 TB of data. Over the next 12 months, the client estimates they will need to manage an additional 2.4 TB worth of data.

The client should purchase an additional 3 TB of Tivoli Storage Manager Suite for Unified Recovery Archive Option.

Primary disk storage pool	Removable media storage pool	Capacity	Required entitlements
5 TB	6.4.TB	11.4 TB	12 TB of Tivoli Storage Manager Suite for Unified Recovery Archive Option

Pricing example for IBM Tivoli Storage Manager Suite for Unified Recovery ProtecTIER Option

If a customer has IBM ProtecTIER with a total aggregate usable physical capacity, excluding any capacity for disaster recovery sites used for replication only, of 20 TB that they will use as part of their Tivoli Storage Manager primary storage pool, they require PoEs of 20 TB of IBM Tivoli Storage Manager Suite for Unified Recovery ProtecTIER Option, regardless of the amount utilized. So, for example, in the case where the IBM ProtecTIER has a total aggregate usable physical capacity of 20 TB and the customer has 10 TB stored, the licensing requirement is for 20 TB.

Note: Entitlements for Tivoli Storage Manager Suite for Unified Recover ProtecTIER Option and Tivoli Storage Manager Suite for Unified Recovery standard tiers are not interchangeable and are separately licensed.

Pricing example for Tivoli Storage Manager Suite for Unified Recovery Entry

Tivoli Storage Manager Suite for Unified Recovery Entry supports a combined maximum of 100 TB per enterprise in the designated Tivoli Storage Manager primary storage pool volumes and for all data stored in the designated Tivoli Storage Manager FastBack repository volumes. In addition, a maximum of two Tivoli Storage Manager servers are supported per enterprise.

If a customer has 10 TB in their Tivoli Storage Manager primary storage pool and 10 TB in their Tivoli Storage Manager FastBack repository, the customer requires PoEs of 20 TB of Tivoli Storage Manager Suite for Unified Recovery Entry.

If a customer reaches the maximum of 100 TB under management and foresees the need for more licenses, the customer will require a trade up to Tivoli Storage Manager Suite for Unified Recovery (5724-Z12).

If a customer requires more than two Tivoli Storage Manager servers, the customer will require a trade up to Tivoli Storage Manager Suite for Unified Recovery (5724-Z12).

Pricing example for IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End

Tivoli Storage Manager Suite for Unified Recovery Entry - Front End supports a maximum of 100 terabytes (TB) per enterprise for the aggregate amount of data protected by the Program. In addition, a maximum of two Tivoli Storage Manager servers are supported per enterprise.

If a customer has 10 TB protected data, the customer requires PoEs of 10 TB of Tivoli Storage Manager Suite for Unified Recovery Entry - Front End.

If a customer reaches the maximum of 100 TB protected data and foresees the need for more licenses, the customer will require a trade up to Tivoli Storage Manager Suite for Unified Recovery - Front End (5725-R37).

If a customer requires more than two Tivoli Storage Manager servers, the customer will require a trade up to Tivoli Storage Manager Suite for Unified Recovery (5725-R37).

Pricing example for IBM Tivoli Storage Manager Entry products

- A managed server for Tivoli Storage Manager Entry is a server that is managed or protected by one of the components of this offering.

- Use is supported for up to 50 managed servers per enterprise, up to five of which can be virtual host servers.
- Use is supported with 100 or fewer nodes registered to Tivoli Storage Manager per enterprise. The replicated nodes do not count towards the 100 node count.
- Tivoli Storage Manager Entry is only supported on Microsoft Windows, Linux x86, and Linux on POWER^(R) platform.
- When using Per Managed Server licensing, entitlement for Tivoli Storage Manager Entry is required for all managed servers, including the managing server.
- Customers who are entitled to IBM Tivoli Storage Manager Entry are allowed to use node replication capability.

Scenario 1

The customer wants to do backup and recovery operations for all LAN-connected servers in its network. The customer environment consists of the following:

- One managing server
- Ten 4-way file servers
- Two 8-way mail servers

Entitlements required for the above environment are:

Product description	Quantity of entitlement required
IBM Tivoli Storage Manager	1
IBM Tivoli Storage Manager (Backup Assistant client)	10
IBM Tivoli Storage Manager for Mail	2
Total TSM Entry Entitlement:	13

Scenario 2

The customer wants to do backup and recovery operations for all LAN-connected servers in its network. The customer environment consists of the following:

- One 16-way managing server
- Two 16-way VMware ESX Host servers
- Six 8-way mail servers
- Six 16-way database servers

Entitlements required for the above environment are:

Product description	Quantity of entitlement required
IBM Tivoli Storage Manager	1
IBM Tivoli Storage Manager for Virtual Environments	2
IBM Tivoli Storage Manager for Mail	6
IBM Tivoli Storage Manager for Databases	6
Total TSM Entry entitlement:	15

Scenario 3

The customer wants to do backup and recovery operations for all LAN-connected servers in its network. The customer environment consists of the following:

- One managing server
- Two VMware ESX Host servers
- Eight mail servers; four of which are running in VM hosted by 1 ESX host
- Nine database servers; two of which are running in VMs hosted by ESX host

Entitlements required for the above environment are:

Product description	Quantity of entitlement required
IBM Tivoli Storage Manager	1
IBM Tivoli Storage Manager for Virtual Environments	2
IBM Tivoli Storage Manager for Mail	8
IBM Tivoli Storage Manager for Databases	9
Total TSM Entry entitlement:	20

Examples for IBM Tivoli Storage FlashCopy Manager within the Tivoli Storage Manager Suite for Unified Recovery V7.1.2 bundles:

Scenario		What is measured for entitlement
Tivoli Storage Manager Suite for Unified Recovery - Front End Capacity Measurement	Scenario 1 offloads snapshots into TSM	Size of protected application on source volume
Scenario 2 does not offload snapshots into TSM	Size of protected application on source volume	
Tivoli Storage Manager Suite for Unified Recovery - Back End Capacity Measurement	Scenario 3 offloads snapshots into TSM	Size of protected application on source volumes multiplied by the number of local snapshots managed and size of active/inactive objects in TSM Primary Storage Pools
Scenario 4 does not offload snapshots into TSM	Size of protected application on source volumes multiplied by the number of local snapshots managed	

Pricing example for Tivoli Storage Manager Suite for Unified Recovery - Front End with IBM Tivoli Storage FlashCopy Manager

Scenario 1

A client purchases Tivoli Storage Manager Suite for Unified Recovery - Front End to protect one 500 GB MS SQL Server database and one Oracle 3 TB database. The client keeps two fully allocated snapshots on disk and four full, uncompressed versions in Tivoli Storage Manager Server for both databases. The client protects 3.5 TB front-end database capacity.

$$0.5 \text{ TB} + 3 \text{ TB} = 3.5 \text{ TB}$$

The client must purchase 4 TB of Tivoli Storage Manager Suite for Unified Recovery.

Snapshots in array	TSM Primary Storage Pool	Capacity	Required entitlements
7 TB	14 TB	3.5 TB	4 TB of Tivoli Storage Manager Suite for Unified Recovery - Front End

Scenario 2

A client purchases Tivoli Storage Manager Suite for Unified Recovery - Front End to protect one 500 GB MS SQL Server database and one Oracle 3 TB database. The client keeps two fully allocated snapshots on disk for both databases. No data is stored in Tivoli Storage Manager Server, snapshots are being stored on disk only. The client protects 3.5 TB front-end database capacity.

$$0.5 \text{ TB} + 3 \text{ TB} = 3.5 \text{ TB}$$

The client must purchase 4 TB of Tivoli Storage Manager Suite for Unified Recovery.

Snapshots in array	TSM Primary Storage Pool	Capacity	Required entitlements
7 TB	0 TB	3.5 TB	4 TB of Tivoli Storage Manager Suite for Unified Recovery - Front End

Pricing example for Tivoli Storage Manager Suite for Unified Recovery with IBM Tivoli Storage FlashCopy Manager

Scenario 3

A client purchases Tivoli Storage Manager Suite for Unified Recovery to protect one 500 GB Microsoft SQL Server database and one Oracle 3 TB database. The client keeps two fully allocated snapshots on disk and four full, uncompressed versions in Tivoli Storage Manger Server for both database. The client protects 3.5 TB, which need to be multiplied by the snapshots on disk and the versions in Tivoli Storage Manager.

$$(3.5 \text{ TB} \times 2) + (3.5 \text{ TB} \times 4) = 21 \text{ TB}$$

The client must purchase 21 TB of Tivoli Storage Manager Suite for Unified Recovery.

Snapshots in array	TSM Primary Storage Pool	Capacity	Required entitlements
7 TB	14 TB	21 TB	21 TB of Tivoli Storage Manager Suite for Unified Recovery

Scenario 4

A client purchases Tivoli Storage Manager Suite for Unified Recovery to protect one 500 GB Microsoft SQL Server database and one Oracle 3 TB database. The client keeps two fully allocated snapshots on disk for both databases. No data is stored in Tivoli Storage Manger Server, snapshots are being stored on disk only. The client protects 3.5 TB, which need to be multiplied by the snapshots on disk.

$$3.5 \text{ TB} \times 2 = 7 \text{ TB}$$

The client must purchase 7 TB of Tivoli Storage Manager Suite for Unified Recovery.

Snapshots in array	TSM Primary Storage Pool	Capacity	Required entitlements
7 TB	0 TB	7 TB	7 TB of Tivoli Storage Manager Suite for Unified Recovery

Processor Value Unit (PVU)

PVU is a unit of measure by which the program can be licensed. The number of PVU entitlements required is based on the processor technology (defined within the PVU table by processor value, brand, type, and model number at the website below) and the number of processors made available to the program. IBM continues to define a processor, for the purpose of PVU-based licensing, to be each processor core on a chip (socket). A dual-core processor chip, for example, has two processor cores. The PVU table can be found at

http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html

Licensee can deploy the program using either full capacity licensing or virtualization capacity (sub-capacity) licensing according to the Passport Advantage Sub-Capacity Licensing Terms (refer to the web page below). If using full capacity licensing, licensee must obtain PVU entitlements sufficient to cover all activated processor cores* in the physical hardware environment made available to or managed by the program, except for those servers from which the program has been permanently removed. If using virtualization capacity licensing, licensee must obtain entitlements sufficient to cover all activated processor cores made available to or managed by the

program, as defined according to the Virtualization Capacity License Counting Rules at

http://www.ibm.com/software/lotus/passportadvantage/Counting_Software_licenses_using_specific_virtualization_technologies.html

* An activated processor core is a processor core that is available for use in a physical or virtual server, regardless of whether the capacity of the processor core can be or is limited through virtualization technologies, operating system commands, BIOS settings, or similar restrictions.

Notes:

- Some programs may require licenses for the program **and** what is being managed. In that case, the following applies. In addition to the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- Some programs may be licensed on a managed basis only. In that case, the following applies. Instead of the entitlements required for the program directly, licensee must obtain PVU entitlements for this program sufficient to cover the processor cores managed by the program.
- A few programs on an exception basis may be licensed on a referenced basis. In that case, the following applies. Rather than obtaining entitlements for the activated processor cores available to the program, licensee must obtain PVU entitlements for this program sufficient to cover the environment made available to the referenced program as if the program itself were executing everywhere the referenced program was executing, independent of the basis on which the referenced program is licensed.

Terms and conditions

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.

This product is only available via Passport Advantage.

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. Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

Agreement for Acquisition of Software Maintenance

The IBM Agreement for Acquisition of Software Maintenance (Z125-6011) 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 number

- IBM Tivoli Storage Manager V7.1.2 (5608-E01): L-BEBY-9T93RT
- IBM Tivoli Storage Manager Entry V7.1.2 (5725-Q58): L-BEBY-9T9UJM
- IBM Tivoli Storage Manager Extended Edition V7.1.2 (5608-E02): L-BEBY-9T93WB
- IBM System Storage Archive Manager V7.1.2 (5608-E03): L-BEBY-9T93YF
- IBM Tivoli Storage Manager for Databases V7.1.2 (5608-E04): L-BEBY-9T9RMK
- IBM Tivoli Storage Manager for Mail V7.1.2 (5608-E06): L-BEBY-9T9RPB
- IBM Tivoli Storage Manager for Space Management V7.1.2 (5608-E12): L-BEBY-9T9RV2
- IBM Tivoli Storage Manager HSM for Windows V7.1.2 (5608-E13): L-BEBY-9T9RWH
- IBM Tivoli Storage Manager for Virtual Environments V7.1.2 (5725-A44): L-BEBY-9T9RXU
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry V7.1.2 (5725-H25): L-BEBY-9T9TKA
- IBM Tivoli Storage Manager Suite for Unified Recovery V7.1.2 (5724-Z12): L-BEBY-9T9TSQ
- IBM Tivoli Storage Manager Suite for Unified Recovery - Archive Option V7.1.2 (5724-Z12): L-BEBY-9T9U46
- IBM Tivoli Storage Manager Suite for Unified Recovery - ProtectTIER Option V7.1.2 (5724-Z12): L-BEBY-9T9UGH
- IBM Tivoli Storage Manager Suite for Unified Recovery - Front End V7.1.2 (5725-R37): L-BEBY-9T9UUW
- IBM Tivoli Storage Manager Suite for Unified Recovery Entry - Front End V7.1.2 (5725-R38): L-BEBY-9T9VN4
- IBM Tivoli Storage FlashCopy Manager (for Passport Advantage) V4.1.2 (5724-X94): L-BEBY-9T9RZ5
- IBM Tivoli Storage FlashCopy Manager V4.1.2 (for AAS) (5608-ACB): L-BEBY-9T9RZ5

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

<http://www.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>

IBM will maintain this information for at least one year after the original licensee acquires the program (warranty period).

Program technical support

Technical support of a program product version or release will be available for a minimum of five years from the general availability date, as long as your Software Subscription and Support (also referred to as Software Maintenance) is in effect.

This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Subscription and Support (Software Maintenance) also provides you with access to updates (modifications or fixes), releases, and versions of the program. You will be notified, via announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

Money-back guarantee

If for any reason you are dissatisfied with the program and you are the original licensee, you may obtain a refund of the amount you paid for it, if within 30 days of your invoice date you return the program and its PoE to the party from whom you obtained it. If you downloaded the program, you may contact the party from whom you acquired it for instructions on how to obtain the refund.

For clarification, note that (1) for programs acquired under the IBM International Passport Advantage offering, this term applies only to your first acquisition of the program and (2) for programs acquired under any of IBM's On/Off Capacity on Demand (On/Off CoD) software offerings, this term does not apply since these offerings apply to programs already acquired and in use by you.

Volume orders (IVO)

No

Passport Advantage applies

Yes, and through the Passport Advantage website at <http://www.ibm.com/software/passportadvantage>

Software Subscription and Support applies

Yes. Software Subscription and Support (also referred to as Software Maintenance), is now included in the Passport Advantage Agreement. Installation and technical support for the products announced in this announcement is provided by the Software Subscription and Support offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity by providing voice or electronic access into the IBM support organizations.

IBM includes one year of Software Subscription and Support with the initial license acquisition of each program acquired. The initial period of Software Subscription and Support can be extended by the purchase of a renewal option.

While your Software Subscription and Support is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions. IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Handbook at

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

Software Subscription and Support does not include assistance for the design and development of applications, your use of programs in other than their specified operating environment, or failures caused by products for which IBM is not responsible under this agreement.

For additional information about the Passport Advantage Agreement, visit the Passport Advantage website at

<http://www.ibm.com/software/passportadvantage>

All distributed software licenses include Software Subscription and Support 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 three years from date of acquisition, may be elected.

Variable charges apply

No

Educational allowance available

Yes. When ordering through the program number process, a 15% education allowance applies to qualified education institution customers.

Education software allowance program applies when ordering through the program number process.

For the part number ordering process, special education prices are available for qualified customers through Passport Advantage.

ESAP available

Yes, to qualified customers.

Statement of good security practices

IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support, all at no additional cost to you.

Now integrated into the base operating system of AIX V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type `smitty esa_main`, and select Configure Electronic Service Agent. In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

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

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent™ tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24x7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool is designed to securely transmit either via the Internet (HTTPS or VPN) or modem to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system.

For additional information, refer to IBM Electronic Service Agent

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

More accurate reporting: Because system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, you are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

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