



IBM Tivoli Storage Manager, S/390 Edition V5.2 Adds LAN-free Support for the z/OS Server

Overview

IBM Tivoli® Storage Manager, S/390® Edition provides a comprehensive solution focused on the key data protection activities of backup, archive, recovery, space management, and disaster planning. Tivoli Storage Manager enables high availability of business applications by providing superior data protection and unique technology to significantly improve performance and resource utilization. Additionally, IBM Tivoli Storage Manager for Mail, S/390 Edition provides higher levels of application integration with the data protection process.

Enhancements in Tivoli Storage Manager, S/390 Edition V5.2:

Integrated for Efficiency

- Reduces impact of backups by utilizing snapshot backups
- Has backup-archive client for VxFS file system on AIX®
- Adds LAN-free client support on Tivoli Storage Manager Server on z/OS™

Automated for Productivity

- Backs up open files or files locked from backup
- Automates control of Tivoli Storage Manager Recovery Log utilization

Optimized for Business Value

- Improves LAN-free support with features like tape mount retention and configuration
- Improves HSM usability
- Reduces data access times for premigrated files
- Extends long-term archive periods
- Adds language support for MAC OS X via Unicode
- Improves firewall security by enabling scheduled backups to run without client-initiated sessions
- Includes Tivoli Storage Manager client end user GUI updates

Key Prerequisites

Refer to **Hardware and Software Requirements** section.

Planned Availability Date

July 11, 2003

At a Glance

Tivoli Storage Manager, S/390 Edition V5.2 adds:

- LAN-free clients with Tivoli Storage Manager Server on z/OS
- The reduction of impact of backups by utilizing snapshot backups
- LAN-free enhancements that include tape mount retention and device configuration
- Automatic control of Tivoli Storage Manager Recovery Log utilization
- Improved HSM usability
- Faster access time for AIX GPFS files systems during HSM recall
- Extended retention time for archived data
- Backup of open files or files locked from backup
- Language support for MAC OS X via Unicode
- Backup-archive client for VxFS file systems on AIX
- Improved firewall security

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Reference: LE001

Description

Tivoli Storage Manager server on z/OS supports LAN-free clients

Backup processing cycles can be offloaded from the z/OS server, and network backup can be moved to a SAN, with LAN-free data transfer. LAN-free data transfer is now available between open systems clients and the Tivoli Storage Manager server on z/OS to IBM 3494 and STK libraries:

- IBM 3494 requires a UNIX®, Windows®, or Linux Tivoli Storage Manager server configured to manage drive resources for the LAN-free clients
- STK libraries, controlled by STK Library Station, will require a third party product on all Open System LAN-free client nodes

Tape mounts are still done through z/OS dynamic allocation of tape resources, using channel-attached drives, and the appropriate system interfaces. Drives within the library are partitioned such that:

- Channel-attached drives are accessible to the server on z/OS
- Open System Storage Area Network-attached drives are accessible to LAN-free client nodes

The volumes are shared between the server and the LAN-free clients. The LAN-free clients access the Open System Storage Area Network-attached tape drives and perform read/write operations through a Storage Agent. After data is written using LAN-free, the server manages the volumes for reclamation, data movement, and other server-related tape operations.

LAN-free enhancements including tape mount retention and device configuration

Tivoli Storage Manager, S/390 Edition supports LAN-free data transfer in a SAN environment. SANs provide an alternative path for data movement between the Tivoli Storage Manager client and server. LAN-free data transfer exploits this SAN path by enabling the Tivoli Storage Manager client to back up and restore data directly to and from SAN-attached storage, which is shared among the Tivoli Storage Manager server and client, and managed by the server. The existing LAN connection is used to exchange control information such as policy information and meta data about the objects being backed up, while the data movement utilizes the SAN to write directly to the storage media. Data movement is offloaded from the LAN and from the Tivoli Storage Manager server processor providing greater scalability for the server. The benefit is most pronounced when large files are involved. This makes the LAN more available for use by key revenue-generating network applications and improves the scalability of the Tivoli Storage Manager server to support a greater number of simultaneous client connections.

LAN-free implementation is more robust. These changes provide easier library sharing, easier device configurations, and improved mount retention handling to reduce tape mounts and idle time. Also error handling and recovery is improved in the sharing of volumes between the server and storage agent.

With V5.2, different PTF levels can be supported, in most cases, between the storage agent and the IBM Tivoli Storage Manager server.

Snapshot backup enablement via customer written scripts

You can reduce the impact of backups by backing up snapshots in environments where snapshot capabilities are available. Tivoli Storage Manager is enabled to work with snapshots provided by other products to provide progressive backups of snapshots using scripts provided by the end user. This capability is used in conjunction with end-user provided scripts that have been created for the target system to execute a snapshot backup. This general backup of snapshot capability is in addition to the Tivoli Storage Manager backup-archive client native support for specific snapshot providers such as the Windows and Linux x86.

Automatic control of Tivoli Storage Manager Recovery Log utilization

Tivoli Storage Manager has added the capability to monitor and control the utilization of the Tivoli Storage Manager server recovery log. This capability will help to better manage the recovery log to avoid overcommitment, thereby improving availability of the server. The control, depending on the circumstances of the log usage, includes the ability to cancel long running sessions or to delay the start of new sessions. The capability is automatic with no user intervention.

Improved usability for HSM by enabling non-root users to use standard commands

Usability is improved on AIX GPFS HSM and Solaris HSM by allowing some HSM commands, that previously required root-access authority, be available to non-root users. A non-root user will only have access to those files for which they have permission.

Improved data access times for AIX GPFS file systems during HSM recalls (streaming support)

HSM data can now be accessed faster with streaming support that enables an application to use the recalled HSM data as soon as a specified amount of that data has been read. The specified amount of data is configurable. An HSM application no longer has to wait until a file stored with HSM has been completely recalled before accessing it.

Long-term archive period extended

The maximum retention times for archives and backup sets will be increased to 30,000 days (82 years). Areas like the government and financial industries have regulations that require data archives be kept for a specific time, and longer than the 9,999 days (27 years) previously supported.

Backup files normally locked from backup (open file support)

Files on Windows will no longer be skipped from backup when locked from backup or archive. Tivoli Storage Manager can now back up and archive open files, files locked from backup, and also provide a way to back up and archive groups of files, as they existed at a particular point in time. Users will have the ability to run pre- and post-snapshot commands that will allow them to quiesce any applications prior to the start of the backup.

Open file support for backup includes all the variations — incremental, incremental by date, selective, and incremental image. Additionally, open file support will work with both the Sub-File and Journal-based backup features.

Improved Tivoli Storage Manager serviceability

Tivoli Storage Manager has improved serviceability by providing trace file enhancements, crash handling on Windows, and a new query command.

Tracing is an invaluable tool for problem determination, and has been in the product since its inception. For this release, the following enhancements have been made to Tivoli Storage Manager's client trace facility:

- Tracing has been added to help diagnose problems related to the client scheduler.
- In order to facilitate the handling of very large traces, trace files can now be spanned across multiple, smaller files at the time the trace is created. The size of each trace file (segment) can be configured by the user.

The "first failure data capture" capability of the Windows backup-archive client has been enhanced so that in the event of a client crash, information about the crash will be logged to a plain text file, and a "crash dump" will be created. These files can be sent in to IBM for analysis. The crash dump contains a stack trace showing the chain of calls that led to the failure, as well as other diagnostic information that is useful to diagnosing the cause of the crash.

When diagnosing client problems, a wide variety of information about the client and its environment is often needed. Previously, this information had to be collected from many different sources. A new client command, QUERY SYSTEMINFO, has been added to automatically obtain this information and roll it up into a single file that can be sent in to IBM for analysis.

Macintosh OS X language support is improved via Unicode

Tivoli Storage Manager for Macintosh clients support the Unicode code page for file, directory, and file space names. Unicode is a universal character encoding standard that supports the interchange, processing, and display of text that is written in any modern world language. Unicode file spaces provide support for multilingual workstations without regard for the current locale.

Backup-archive client for VxFS file system on AIX

AIX 5L V5.1 provides support for Veritas Volume Manager V3.2 and Veritas file system (VxFS) V3.4. This AIX client supports the VxFS file system for incremental, selective, filelist backup/archive and restore/retrieve processing, including Access Control Lists (ACLs). Also, image backup and restore functions are supported for volumes created using Veritas Volume Manager.

Improved firewall security enables scheduled backups without client-initiated sessions

Backups can now be done through a firewall without any backup-archive client-initiated sessions. Scheduled backups can be implemented by providing client contact information at the server. There is no longer a need for opening any ports through the firewall for scheduled backups. The specification of which clients can initiate sessions with the server can be controlled at the server. (This function is not supported for the MAC OS X client.)

Tivoli Storage Manager client end-user GUI update

The end-user GUI is enhanced to provide improved usability and to make it easier to navigate through the client task.

Backup-restore on VMware ESX Server Virtual Machines

Tivoli Storage Manager supported clients can be used on VMware virtual machines. This support is available for Tivoli Storage Manager backup-archive clients and Tivoli Storage Manager Data Protection component clients that run on and are supported on the systems that are virtual machines on VMware and connect via TCP/IP to a Tivoli Storage Manager server that is not running on VMware. Tivoli Storage Manager client support is the same as that provided for systems on native machines. VMware unique problems will be reported to VMware.

Backup of the VMware server console and the .dsk files that it uses are not supported at this time, nor is the use of the Tivoli Storage Manager server, Storage Agent, or client backupsets on removable media supported on VMware.

IBM Tivoli Storage Management Warehouse Enablement Pack (available September 26, 2003)

IBM Tivoli Storage Manager integrates with IBM Tivoli Data Warehouse V1.2, which provides a centralized database to store historical data from Tivoli applications. This integration can be leveraged via the IBM Tivoli Storage Management Warehouse Enablement Pack (warehouse pack), a component of IBM Tivoli Storage Manager.

The warehouse pack is an IBM Tivoli Data Warehouse application that extracts data from IBM Tivoli Storage Manager servers enabling IBM Tivoli Storage Manager administrators to monitor the health of their IBM Tivoli Storage Management installations and to analyze how usage changes over time. When used in conjunction with IBM Tivoli Service Level Advisor, the historical data extracted by the IBM Tivoli Storage Management Warehouse Enablement Pack may be used to establish and monitor service level agreements between IBM Tivoli Storage Management administrators and their customers.

The function, previously provided for Tivoli Storage Manager using Tivoli Decision Support to do historical reporting and analysis, will be replaced by IBM Tivoli Storage Warehouse Enablement Pack including Tivoli Data Warehouse 1.2 and other Tivoli Storage functions.

The IBM Tivoli Storage Manager Warehouse Enablement Pack will be available for downloading from the following Web site on September 26, 2003:

<ftp://ftp.software.ibm.com/storage/tivoli-storage-management/maintenance/warehouse/wep>

Accessibility by People with Disabilities

For software offerings:

The IBM Tivoli Storage Management product family, including the Tivoli Data Protection solution products, has been reviewed for Accessibility Readiness, and an IBM accessibility checklist has been completed.

The following features support use by people with disabilities:

- Operation by keyboard alone using Command Line Interface, Windows 2000, and Windows XP Native GUI Interface
- Screen readers for use by people with visual impairment when using Command Line Interface
- Screen magnifiers for use by people with visual impairment when using Command Line Interface, Windows 2000, and Windows XP Native GUI Interface

- Optional display of audio alerts for people with hearing impairment using Windows 2000 and Windows XP Native GUI Interface
- Optional font enlargement and high-contrast display settings for Windows 2000 and Windows XP Native GUI Interface

Product Positioning

IBM's Tivoli Storage Manager helps you protect your data. If a disk drive fails, or if you accidentally delete a file, IBM Tivoli Storage Manager helps restore your lost data. If your entire operation is hit by a disaster, IBM Tivoli Storage Manager keeps your data safe. IBM Tivoli Storage Manager helps keep your data backed up off-site. IBM Tivoli Storage Manager helps protect your data by copying active, online, data to offline and off-site storage, even from 24 x 365 applications. But that's not all. If your data growth exceeds your storage capacity, IBM Tivoli Storage Manager can effectively extend your capacity. IBM Tivoli Storage Manager moves inactive data from online storage to less expensive offline or nearline storage. IBM Tivoli Storage Manager automates and centralizes all these functions, making reports and providing alerts for unusual events. IBM Tivoli Storage Manager can back up the data on any number of computers, running any of more than a dozen different operating systems from laptops to mainframes. IBM Tivoli Storage Manager is a comprehensive data protection application.

IBM Tivoli Storage Manager's Capabilities

Backup-Restore

Comprehensive data protection starts with data backups. Backups are a copy of your active online data stored on offline storage. Should an online storage device fail, a data error occur, or someone accidentally delete a file, the offline copy of that data can be copied back to online storage restored. IBM Tivoli Storage Manager is famous for its extremely efficient backup methods. IBM Tivoli Storage Manager uses multiple techniques to reduce data transfer sizes to the minimum possible. These techniques reduce the total time required for both data backups and, more importantly, data restores.

Disaster Preparation and Recovery

Comprehensive data protection also involves disaster preparation and recovery. Local copies of data will protect against discrete failures or errors in equipment, storage, or people. But disasters tend to happen to entire facilities, not just a portion of the equipment inside those facilities. IBM Tivoli Storage Manager will prepare an additional copy of your active data for safekeeping at an off-site location to provide that extra protection against disasters. Should a disaster strike and destroy your online storage and computers, the off-site copy of your active data can be restored to new computers to get your business up and running quickly.

Archive-Retrieve

IBM Tivoli Storage Manager goes beyond just data backups to include data archiving. Until online storage is as inexpensive as offline storage, archiving inactive data is an effective way to reduce your online storage costs. The cost of storing a gigabyte of data on online storage is typically much more expensive than the same gigabyte on offline storage. Some percentage of your data is inactive — it hasn't been accessed in weeks, if not months. Does that inactive data need to remain on

expensive online storage? IBM Tivoli Storage Manager will move that inactive data to offline storage freeing up online disk space for more important active data. Should you find that the inactive data you archived must be used again, IBM Tivoli Storage Manager will retrieve that data for you.

HSM

IBM Tivoli Storage Manager also includes a more automated version of archive called Hierarchical Storage Management or HSM. Like archiving, HSM removes data from online storage and puts it on less expensive offline storage. But unlike archive, HSM leaves a data-stub on online storage that shows the name of the removed file. With this stub, you can easily access the offline data albeit much more slowly than if it were online. IBM Tivoli Storage Manager's HSM capabilities are automated. IBM Tivoli Storage Manager will watch online data files to see how often they are used. If not opened for an administrator-specified length of time, they will be removed to offline storage leaving only the data-stub behind. For many businesses with huge amounts of data, but not all of it needed online all the time, HSM is perhaps the best way to save on storage costs.

24 x 365 Application Protection

Some of today's most business-critical application programs must remain on and active 24 hours a day for 365 days a year. Fortunately, the manufacturers of some of these important programs understand the need for data protection. Some applications have a built-in capability to control external data protection applications. By directly controlling the time and method by which a data transfer to offline storage occurs, the application can continue operating with little or no interruption.

IBM Tivoli Storage Manager's Advantages

Management

IBM Tivoli Storage Manager is a client-server application. One IBM Tivoli Storage Manager server handles hundreds of IBM Tivoli Storage Manager clients. IBM Tivoli Storage Manager's administration control is extremely flexible via a hierarchy of administrators, each designated with different management authority levels and specific domains defining user groups or applications. Multiple administrators can manage IBM Tivoli Storage Manager simultaneously with full data integrity. Multiple IBM Tivoli Storage Manager servers can be controlled from any IBM Tivoli Storage Manager server or via a Web interface from any computer. Data restore requests can be initiated and controlled from the IBM Tivoli Storage Manager client, greatly reducing workload for the administrator. The heart of the IBM Tivoli Storage Manager server is an integrated relational database. This database catalogs each data transfer backup, archive, HSM, and so on, and the complete set of data for every IBM Tivoli Storage Manager client. If you tell IBM Tivoli Storage Manager to do data backups every day, the database allows the restore of data from every day in the past, for as far back as you specify. Like a time machine, IBM Tivoli Storage Manager lets you go back in time to previous versions of your data files. You specify the frequency of backups, where the copied data is held (magnetic disk storage pool, optical disk, data tape), how long it is held there until migrating the next storage type, and how long each version is kept before it is erased, and the space it used is made available for new data copies. You also specify how often data tapes should be tested for data integrity, what percent of empty should a tape be before its data is consolidated to another tape (freeing complete tapes for reuse), and how quickly should data

from single users be migrated from multiple tapes to a single tape to speed data restores.

Automation

All the management capabilities of IBM Tivoli Storage Manager can be automated. Automation control is via an extremely granular policy engine. This engine can be configured down to the individual file level to cover the who, what, where, when, and how of data transfers. Who has access to this file? What data should be transferred? Where should it be transferred to? When should IBM Tivoli Storage Manager check to see if the file has changed and must be transferred again? How should the transfer occur? With IBM Tivoli Storage Manager's policy-based automation engine configured and enabled, IBM Tivoli Storage Manager really is a set-it and forget-it application. IBM Tivoli Storage Manager reports what it has done and alerts you to anything out of the ordinary.

Support

The best automation and management features for data protection mean little if they won't work with the computers you have. IBM Tivoli Storage Manager's client software supports seventeen different operating systems. IBM Tivoli Storage Manager's server software runs on eight operating systems. Platforms vary from laptop computers all the way up to mainframe computers. Any supported server can work with any supported client all cross-platform: Solaris with Windows, AIX with Solaris, OS/390® with HP-UX, and any combination of these. IBM Tivoli Storage Manager supports more than 400 offline storage devices including optical disk and tape. To make sure your backups and restores can happen as efficiently as possible, IBM Tivoli Storage Manager also supports multiple network types — dial-up, the Internet, WAN, and LAN are each maximized for the data bandwidth they are capable of. IBM Tivoli Storage Manager is also an open product. Its Application Programming Interface (API) is available to anyone through the Tivoli Ready program.

Transfer

Even with the largest data pipes connecting servers and clients, IBM Tivoli Storage Manager minimizes the amount of data going over those pipes. Because of IBM Tivoli Storage Manager's integrated relational database, IBM Tivoli Storage Manager is smart. Smart enough to know that if a file hasn't changed, it doesn't need to be backed up again — ever. Smart enough to know that if only a few bytes of a file have changed, only those bytes must be backed up again. For those data transfers that include many bytes, IBM Tivoli Storage Manager is optimized for disk-to-disk transfers. Instead of transferring data from the disk of a client computer, over the network, directly to a tape, IBM Tivoli Storage Manager will instead make the first transfer to a disk storage pool. After an administrator-specified length of time (hours, days, or weeks) the data on that storage pool is migrated to other, less-expensive, offline storage devices. This technique allows more data to be moved faster, reducing the total time of all data transfers both from and to clients. At the other end of the bandwidth spectrum, if a dial-up or Internet connection is dropped, IBM Tivoli Storage Manager is smart enough to pick up where it left off. Instead of starting a transfer all over again when the connection is restored, IBM Tivoli Storage Manager continues from where it previously ended.

IBM's Tivoli Storage Manager helps protect your data, and IBM's service and support organization is a resource to help you get the most from IBM Tivoli Storage Manager. Recognized as one of the best service and support organizations in the world, IBM has been supporting IBM Tivoli Storage Manager around the globe since 1999, and its previous versions called ADSM for

more than a decade. Tens of thousands of organizations are using IBM Tivoli Storage Manager today with well more than a million computers protected. IBM Tivoli Storage Manager is a comprehensive data protection application.

Hardware and Software Support Services

SmoothStart™/Installation Services

IBM SmoothStart and Installation Services are not provided.

Reference Information

- For information regarding Tivoli Storage Manager, System 390 Edition, V5.1, refer to Software Announcement 202-109, dated May 7, 2002.
- For information regarding Tivoli Storage Manager, System 390 Edition, V4.2, refer to Software Announcement 201-219, dated July 31, 2001.
- For information on IBM Tivoli Storage Manager V3.7 and related products, refer to Software Announcement 299-281, dated September 28, 1999.
- For information on Tivoli ADSM for VM/ESA® and MVS™, V3.1, refer to Software Announcement 299-126, dated May 24, 1999.

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IBM US Announcement Supplemental Information

April 8, 2003

Education Support

Training is available, or will be available, for IBM Tivoli® products. Education is offered through IBM Learning Services, and through IBM Tivoli Software Authorized Training Providers.

For current information on public IBM Tivoli software education, visit the IBM Tivoli Software Education Web site at:

<http://www.ibm.com/software/tivoli/education>

or call 888-746-3331.

Current schedule information for Tivoli training is available on the Tivoli Software Education Schedules Web site at:

<http://www-3.ibm.com/software/tivoli/education/schedules/>

Technical Information

Specified Operating Environment

Hardware and Software Requirements

Tivoli Storage Manager Supported Devices

Tivoli Storage Manager, S/390® Edition supports DASD and tape drives that are supported by the OS/390® and z/OS™ operating systems.

Current information on Tivoli Storage Manager can be found at the following location:

<http://www-3.ibm.com/software/tivoli/solutions/storage/>

Server and Backup-Archive Client Requirements

The current **minimum** disk space requirement for **installing** a UNIX®-based IBM Tivoli Storage Manager backup-archive client is approximately 25 MB, with an additional 5 MB required for the API.

The current **minimum** disk space requirement for **installing** a desktop IBM Tivoli Storage Manager backup-archive client will vary up to 30 MB, with an additional 5 MB required for the API.

The **minimum** memory requirement for **running** the backup-archive clients ranges from 1 MB up to 20 MB. This does not include the installed backup-archive client package, nor any of the individual options that may be associated with a given client, including the API, GUI, and driver options you may have selected at installation.

All of the communication protocols supported for each server and client are included below. The actual communication protocols that can be used for any

particular server/client combination are limited to those protocols supported by both server and client.

These server requirements and client requirements may be modified as a result of product maintenance and client modifications.

For the most current and specific server, or client requirements and installation instructions, be sure to review the product **README** file instructions that accompany the products being installed.

For the most current server or client versions supported, and related information, see the Tivoli Web site:

<http://www.ibm.com/software/tivoli/solutions/storage>

IBM Tivoli Storage Manager Web Interface Requirements

The IBM Tivoli Storage Manager Web administrative interface for the server and a Web client interface for client machines require a Java™ Swing- (at JRE 1.3.1) capable Web browser (for platform specific JRE notes, see the README file):

- Netscape Navigator 6.0 (which contains Swing support), or later
- Netscape Navigator 4.7, or later with Java Plug-in 1.3.1
- MS Internet Explorer 5.0, or later with Java Plug-in 1.3.1

Refer to the **IBM Tivoli Storage Manager Backup-Archive Client Requirements** section for the specific operating system levels supported for the Web clients. TCP/IP is the only communication protocol supported for this client interface. For platform and browser-specific JRE notes, see the README file.

S/390 and z/OS Server Requirements for IBM Tivoli Storage Manager V5.2

An IBM Tivoli Storage Manager for OS/390 and z/OS server requires the following hardware and software:

- Machine — Any S/390 or zSeries™ architecture CPU
- Minimum disk space requirement to run — see the product README file
- Operating system — one of the following:
 - z/OS V1.1, or later
 - OS/390 V2.10, or later
- SMP/E
- Language Environment®
- Communication Protocol — one of the following:
 - APPC (VTAM® LU6.2)
 - 3270 Extended DataStream (VTAM LU2.0)
 - IBM TCP/IP Communications Server (CS) for OS/390 or z/OS Communications Server

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

TSO Administrative Client

A TSO client is provided as an administrative client with IBM Tivoli Storage Manager for OS/390 and z/OS. It is intended for execution under the TSO environment and requires the following hardware and software:

- Language Environment
- Communication Protocol — one of the following:
 - APPC (VTAM LU6.2)
 - IBM TCP/IP Communications Server (CS) for OS/390 or z/OS Communications Server

IBM Tivoli Storage Manager Backup-Archive Client Requirements

AIX® Backup-Archive Client

An AIX backup-archive client requires the following hardware and software:

- Machine — RS/6000® or pSeries™
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system — one of the following:
 - AIX 5.1 (32 bit or 64 bit)
 - AIX 5.2 (32 bit or 64 bit)
- X Windows® System, X11R6
- Motif 2.0
- Common Desktop Environment (CDE)
- Java JRE 1.3.1, or later (for the new Java GUI only)
- Communication Protocol —
 - TCP/IP, which comes standard with AIX/6000 (the only one used for Web client)
- Filesystems supported for backup-archive operations:
 - JFS
 - JFS2
 - GPFS
 - Veritas (VxFS) 3.4

For HACMP:

- Machine — at least two identical pSeries (RS/6000), SSA shared hard disk array, and one additional network adapter for each machine
- Operating system
 - AIX 5.1 (32 bit or 64 bit)
 - HACMP 4.4 or 4.5

Client Capabilities:

- Administrative Client Command Line Interface (CLI)
- Backup-Archive CLI
- Backup-Archive Java Graphical User Interface (Java GUI)
- Backup-Archive Native Graphical User Interface (Motif GUI)
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API
- X/Open API (32 bit)

- AFS®/DFS™ (on AFS 3.6, DFS 3.1) at V5.1 functional level

Additional client capabilities requirements (over and above the system requirements stated above for a backup-archive client):

- IBM Tivoli Storage Manager API support
 - Additional disk space — see the README file
- Administrative Client CLI

AIX HSM Client

An AIX HSM client requires the following hardware and software:

- Machine — RS/6000 or IBM @server pSeries
- Minimum memory and space requirement to run:
 - RAM — 256 MB
 - Disk space — 1 GB disk space for an HSM-managed filesystem
- Recommended hardware configuration:
 - Multiprocessor system (RS/6000)
 - RAM — 512 MB
 - Disk space — 10 GB disk space for an HSM-managed filesystem
- Operating system — one of the following:
 - AIX 5.1 (32 bit or 64 bit)
 - AIX 5.2 (32 bit or 64 bit)
- X Windows System, X11R6
- Motif 2.0
- CDE
- JFS or GPFS (GPFS V1.5, or later)
- Communication Protocol —
 - TCP/IP, which comes standard with AIX/6000

For HACMP:

- Machine — at least 2 identical pSeries (RS/6000), SSA shared hard disk array, or FASTT500/700 SCSI connected disks, and one additional network adapter for each machine
- Operating system
 - AIX 5.1 (32 bit)
 - HACMP 4.4 or 4.5

Client Capabilities:

- HSM Client CLI
- HSM Client GUI

Apple Macintosh Backup-Archive Client

An Apple Macintosh backup-archive client requires the following hardware and software:

- Machine — Any PowerBook, or Power Macintosh personal computer (G3, or higher)
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the product README file
- Operating system — Macintosh OS X, V10.x (where x ≥ 1.5)
- Communication Protocol:

- TCP/IP

Client Capabilities:

- Backup-Archive GUI

Hewlett-Packard HP-UX Backup-Archive Client

An HP-UX backup-archive client requires the following hardware and software:

- Machine — HP 9000 Series 700 or 800 workstation or server
- Minimum memory and space requirement to run:
 - RAM — 256 MB
 - Disk space — 70 MB
- Operating system — HP-UX level 11.0 (32 bit or 64 bit) or 11.11 (11i Version 1.0) (32 bit or 64 bit)
- The X Windows System X11R6
- Motif 2.0
- CDE
- Java JRE 1.3.1, or later (for the new Java GUI only)
- Communication Protocol:
 - TCP/IP, which comes standard with HP-UX

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Java Graphical User Interface (Java GUI)
- Backup-Archive Native Graphical User Interface (Motif GUI)
- Backup-Archive Web Client Interface
- Tivoli Storage Manager API
- X/Open API (32 bit)

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- Tivoli Storage Manager API
 - Additional disk space — see the README file

Linux for x86 Backup-Archive Client

A Linux for x86 backup-archive client requires the following hardware and software:

- Machine — x86-based PC architecture (for example, Pentium®), or later
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system requirements:
 - Linux kernel 2.4.x (for x=2, or later)
 - glibc 2.2.2
 - libstdc++ 2.9.x (for x=6, or later)
 - RPM 3.0.x or 4.0 (for x=0, or later)
 - X Windows System X11R6 (for end-user GUI only — see README file for more information)
 - Java JRE 1.4.1, or later (for the new Java GUI only)
- The following distributions fulfill the requirements:

- Red Hat 7.2, 7.3, 8, and Advanced Server 2.1
- SuSE 7.3, 8.0, 8.1, and SLES 7 and 8
- TurboLinux 7.5, and 8.0

Note: The Linux for x86 client was certified by Tivoli for these distributions. For other distributions, verify that the software requirements listed above are fulfilled.

- Communication Protocol:
 - TCP/IP, which comes standard with Linux

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Java Graphical User Interface (Java GUI)
- Backup-Archive Native Graphical User Interface (Motif GUI)
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- IBM Tivoli Storage Manager API
 - An additional 5 MB of disk space

Linux for pSeries Backup-Archive Client

A Linux for pSeries backup-archive client requires the following hardware and software:

- Machine — pSeries 610, pSeries 620, pSeries 630, pSeries 640, pSeries 660, pSeries 670, pSeries 690
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system requirements:
 - Linux kernel 2.4.x (for x=19, or later)
 - glibc 2.2.5, or later
 - libstdc++ 3.2, or later
 - RPM 3.0.x or 4.0 (for x=6, or later)
 - Java JRE 1.3.1 (for the new Java GUI only)
- The following distribution fulfills the requirements:
 - SuSE 8.0

Note: The Linux for pSeries client was certified by Tivoli for this distribution. Verify for other distributions that the software requirements listed above are fulfilled.

- Communication Protocol:
 - TCP/IP, which comes standard with Linux

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Java Graphical User Interface (Java GUI)
- Backup-Archive Native Graphical User Interface (Motif GUI)
- Backup-Archive Web Client Interface
- Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- Tivoli Storage Manager API
 - An additional 5 MB of disk space

Linux for zSeries and S/390 Backup-Archive Client

A Linux for zSeries and S/390 backup-archive client requires the following hardware and software:

- Machine — A 9672 G5 or G6, Multiprise® 3000, or zSeries 900 or 800 in 31 bit or 63 bit mode
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system requirements:
 - Linux kernel 2.4.x (for x=7, or later)
 - glibc 2.2.x (for x=2, or later)
 - libstdc++ 2.10.x (for x=0, or later)
 - RPM 3.0.x (for x=6, or later)
- The following distribution fulfills the requirements:
 - SuSE 7 and 8.0 for S/390 and zSeries

Note: The IBM Tivoli Storage Manager client for Linux zSeries or S/390 client was only certified on the SuSE distribution. If other vendors are used, the operating system requirements have to be validated.

- Communication Protocol:
 - TCP/IP, which comes standard with Linux

Client Capabilities (initially at V4.2.0.12 functional level):

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- IBM Tivoli Storage Manager API
 - An additional 5 MB of disk space

Novell NetWare Backup-Archive Client

A Novell NetWare backup-archive client requires the following hardware and software:

- Machine — A personal computer or workstation running as a NetWare file server
- Minimum memory and space requirement to run:
 - RAM — 1 MB for each 8,000 files per volume
 - Disk space — see the product README file
- Operating system — Novell NetWare 5.1 (with current support patches from Novell) or Novell NetWare 6
- One of the following communication protocols:
 - TCP/IP, which comes standard with Novell NetWare

Client Capabilities:

- Backup-Archive CLI
- Backup-Archive Web Client Interface
- Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- Tivoli Storage Manager API
 - Additional disk space — see the product README file

OS/390 and z/OS UNIX System Services Backup-Archive Client

A IBM Tivoli Storage Manager OS/390 and z/OS UNIX System Services client requires the following hardware and software:

- Machine — Any System/390® or zSeries architecture CPU
- Minimum disk space requirement to run — see the README file
- Operating System — one of the following:
 - OS/390 V2R10 with SMP/E
 - z/OS V1R1, z/OS V1R2, z/OS V1R3, or V1R4
- Communication protocol:
 - IBM TCP/IP

Restrictions — IBM Tivoli Storage Manager server functions not included in this client:

- SQLDB: Certain SQL select statements, using path for the files backed up by an OS/390 UNIX System Services client, might not work properly.
- Server command “query content”
- Cross client restore.

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- IBM Tivoli Storage Manager API
 - See the README.API file

OS/400® API Client

A Tivoli Storage Manager OS/400 API client requires the following hardware and software:

- Machine — Any AS/400® or @server iSeries™ which supports the operating system
- Minimum memory and space requirement to run:
 - RAM — 64 MB
 - Disk space — 5 MB
- Operating system
 - OS/400 V5R1 or V5R2
- Client Capabilities
 - Tivoli Storage Manager API

SGI IRIX UNIX Backup-Archive Client

A SGI IRIX UNIX backup-archive client requires the following hardware and software:

- Machine — An SGI workstation with MIPS processor IP19 (R4K), or higher
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system — IRIX UNIX Release 6.5 with EFS or XFS File Systems
- The X Windows System X11R6
- Motif 2.0
- Communication Protocol:
 - TCP/IP, which comes standard with IRIX UNIX

Client Capabilities (initially at V5.1 functional level):

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive GUI
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- IBM Tivoli Storage Manager API
 - Additional disk space — see the README file

Sun Solaris Backup-Archive Client

A Sun Solaris backup-archive client requires the following hardware and software:

- Machine — A SPARCstation or compatible workstation
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system — one of the following:
 - Sun Solaris 7 (32 bit or 64 bit)
 - Sun Solaris 8 (32 bit or 64 bit)
 - Sun Solaris 9 (32 bit or 64 bit)
- X Windows System X11R6
- Motif 2.0
- JRE 1.3.1, or later for the new Java GUI
- CDE
- Communication Protocol:
 - TCP/IP, which comes standard with Sun Solaris

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive Java Graphical User Interface (Java GUI)
- Backup-Archive Native Graphical User Interface (Motif GUI),
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API
- X/Open API (32 bit)

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- IBM Tivoli Storage Manager API
 - Additional disk space — see the README file

Sun Solaris HSM Client

A Sun Solaris HSM client requires the following hardware and software:

- Minimum hardware configuration:
 - Machine — A SPARCstation or compatible workstation
 - RAM — 256 MB
 - 1 GB disk space for an HSM managed filesystem
- Recommended hardware configuration:
 - A multiprocessor system (SPARCstation or compatible workstation)
 - RAM — 512 MB
 - 10 GB disk space for an HSM managed filesystem
- Operating system — one of the following:
 - Sun Solaris 7 (32 bit or 64 bit)
 - Sun Solaris 8 (32 bit or 64 bit)
 - Sun Solaris 9 (32 bit or 64 bit)
- Veritas File System (VxFS) 3.4
- X Windows System X11R6
- Motif 2.0
- CDE
- Communication Protocol:
 - TCP/IP, which comes standard with Sun Solaris

Client Capabilities:

- HSM Client CLI
- HSM Client GUI

Tru64 UNIX Backup-Archive Client

A Tru64 UNIX backup-archive client requires the following hardware and software:

- Machine — Any Compaq Alpha-processor machine
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system — Tru64 UNIX Version 5.1A
- The X Windows System X11R6
- Motif 2.0
- CDE
- Communication Protocol:
 - TCP/IP, which comes standard with Tru64 UNIX

Client Capabilities (at V5.1 functional level)

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive GUI
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API

Additional client capabilities requirements (over and above the system requirements stated above for the backup-archive client):

- Tivoli Storage Manager API
 - Additional disk space — see the README file

Windows Backup-Archive Client

A Windows backup-archive client requires the following hardware and software:

- Machine — An Intel® Pentium or compatible processor, or multiprocessor-based computer
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk space — see the README file
- Operating system — one of the following:
 - Windows XP (32 bit or 64 bit)
 - Windows Server 2003 (32 bit or 64 bit)
 - Windows 2000 Professional, Server, Advanced Server, and DataCenter Server
 - Windows NT® 4.0 SP5 and SP6a (with V5.1 functional level)

Note: For Windows 2000, all service packs are supported.

- Communication protocol — one of the following, which are included in the base Windows NT, Windows 2000, or Windows Server 2003 product package:
 - TCP/IP (the only one used for Web client)
 - Named Pipes

Client Capabilities:

- Administrative Client CLI
- Backup-Archive CLI
- Backup-Archive GUI
- Backup-Archive Web Client Interface
- IBM Tivoli Storage Manager API
- ODBC

IBM Tivoli Storage Manager Warehouse Enablement Pack (available September 26, 2003)

The IBM Tivoli Storage Manager Warehouse Enablement Pack requires the following hardware and software:

- For hardware and software requirements for IBM Tivoli Data Warehouse, refer to *Installing and Configuring the Tivoli Data Warehouse* on the product CD.
- IBM Tivoli Storage Manager V5.2, or later
- IBM Tivoli Storage Manager ODBC Driver V5.1.5, or later

IBM Tivoli Storage Manager for Mail

Tivoli Data Protection for Lotus® Domino™ V5.2 on OS/390 (at the V5.1.5 functional level)

Tivoli Data Protection for Lotus Domino on OS/390 requires the following hardware and software:

- Machine — S/390
- Minimum memory and space requirement to run:
 - RAM — 128 MB
 - Disk Space — see the product README file
- Operating system
 - OS/390 Version 2 Release 10 configured with UNIX System Services
 - z/OS V1R1, V1R2, V1R3, V1R4
 - SMP/E
 - Lotus Domino R5.0.1, or later, or Domino R6 Server

- A Tivoli Storage Manager server V4.2.x, or later
- A Tivoli Storage Manager API V5.1.1, or later
- A Tivoli Storage Manager backup-archive client V5.1, or later, if IBM Tivoli Storage Manager central scheduling is used

Note: The communication protocols that are supported by the Tivoli Storage Manager API, shipped with the product, and the Tivoli Storage Manager server, will be the ones supported for Tivoli Storage Manager for Mail.

Performance Considerations: IBM Tivoli Storage Manager, S/390 Edition and IBM Tivoli Storage Manager for Mail performance will vary depending upon a customer's particular configuration, the client-server options, and customization.

Planning Information

Installability

For the OS/390 and z/OS servers, the Tivoli Storage Manager database is not automatically upgraded. The Tivoli Storage Manager administrator must explicitly initiate the database upgrade utility, using the **UPGRADEDDB** parameter, after the Tivoli Storage Manager server product has been installed. After the database has been upgraded, a previous version of the server product cannot be used to access the database.

As a normal precaution, it is recommended that a full database backup be performed before installing the V5.2 code, as well as after completing the installation. See the *Quick Start* manual for more detailed information.

The V5.2 Macintosh client now has Unicode support. Once a Macintosh filesystem has been converted to Unicode, or backed up as Unicode by a V5.2 Macintosh client to a V4.2, or later IBM Tivoli Storage Manager server, those files cannot be restored by any lower-level client.

As part of a migration plan from IBM Tivoli Storage Manager V5.1 to IBM Tivoli Storage Manager V5.2, IBM Tivoli Storage Manager clients and servers may be upgraded at different times. To help avoid disruption of your backup and archive activities during the migration, note the following:

- A IBM Tivoli Storage Manager V5.1 client can perform backup, restore, archive, and retrieve functions to a IBM Tivoli Storage Manager V5.2 server.
- A IBM Tivoli Storage Manager V5.2 client can perform backup, restore, archive, and retrieve functions to a IBM Tivoli Storage Manager V5.1 server.
- A IBM Tivoli Storage Manager V5.1 HSM client can perform migrate and recall functions to a Tivoli Storage Manager V5.2 server.
- A IBM Tivoli Storage Manager V5.2 HSM client can perform migrate and recall functions to a Tivoli Storage Manager V5.1 server.
- Data that has been backed up from a IBM Tivoli Storage Manager V5.2 client to any IBM Tivoli Storage Manager server can be restored using a IBM Tivoli Storage Manager V5.1 client, except for Unicode file systems backed up by the V5.2 Macintosh client.
- Data that has been backed up from a IBM Tivoli Storage Manager V5.1 client to any IBM Tivoli Storage Manager server can be restored using an IBM Tivoli Storage Manager V5.2 client.

- All command line administrative clients can administer IBM Tivoli Storage Manager V5.1 and V5.2 servers.

The following Tivoli Storage Manager server operating system supported in V5.1 was not migrated to V5.2 and is not supported in V5.2:

- OS/390 V2R8, V2R9

The following client platforms or operating systems supported in V5.1 were not migrated to V5.2 and are not supported in V5.2:

- Linux zSeries 2.2 kernel
- OS/390 UNIX System Services V2R9

The following client operating systems supported in V5.1, while not migrated to V5.2, are supported when the V5.1 clients are used with V5.2 Tivoli Storage Manager servers, for the duration of V5.1:

- AIX 4.3.3
- Macintosh 9
- Solaris 2.6
- Windows Me

These clients can be downloaded from the Tivoli Storage Manager Web page at:

<http://www-3.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>

Future releases of Tivoli Storage Manager will not include support for the Motif GUI. The new Java GUI will replace the Motif GUI and will include all Motif GUI features. This information represents IBM's current intentions, goals, and objectives, and is subject to change or withdrawal without additional or prior notice.

To help minimize server performance impact with use of the Unicode option on Windows clients operating with V5.2 servers, follow the recommended migration techniques found in the Administrator's Guide for the V5.2 server platform.

Packaging

IBM Tivoli Storage Manager, S/390 Edition will ship the following basic materials with each order:

- One 3480 or 4-mm tape per server, containing the machine-readable code for z/OS and OS/390 server platforms
- IBM Tivoli Storage Manager Desktop Clients V5.2 (LCD7-0507)
- IBM Tivoli Storage Manager AIX Clients V5.2 (LCD7-0505)
- IBM Tivoli Storage Manager UNIX Clients (non-AIX) V5.2 (LCD7-0506)
- IBM Tivoli Storage Manager V5.2 Windows NT Client at V5.1 functional level (LCD7-0502)
- IBM Tivoli Storage Manager V5.2 SGI, Tru64 UNIX Clients at V5.1 functional level (LCD7-0501)
- IBM Tivoli Storage Manager V5.2 AFS/DFS Clients at V5.1 functional level (LCD7-0500)
- CD-ROM (LCD7-0422) for Tivoli Storage Manager Secure Web Administrator Proxy
- Tivoli Data Warehouse V1.2 CD deck (available September 26, 2003)
- The following hardcopy publications:

Title	Order Number
IBM Tivoli Storage Manager Read This First V5.2	GI11-0866
IBM Tivoli Storage Manager for OS/390 and z/OS Quick Start V5.2	GC32-0777
IBM Tivoli Storage Manager, S/390 Edition, V5.2 Licensed Program Specifications	GC32-0836
Program Directory for Tivoli Storage Manager V5.2 for OS/390 and z/OS	GI11-4005
Program Directory for Tivoli Storage Manager Application Program Interface, S/390 Edition	GI11-3997
Program Directory for Tivoli Storage Manager Backup-Archive Client, S/390 Edition	GI11-3998
Tivoli Storage Manager for Mail, S/390 Edition customers will be shipped:	
<ul style="list-style-type: none"> • One 3480 or 4-mm tape for IBM Tivoli Storage Manager for Mail V5.2 Data Protection for Lotus Domino at V5.1.5 • One 3480 or 4-mm tape for IBM Tivoli Storage Manager OS/390 UNIX Systems Services API V5.1.5 • The following hardcopy publications: 	

Title	Order Number
IBM Tivoli Storage Manager Read This First V5.2	GI11-0866
Program Directory for IBM Tivoli Storage Manager for Mail, S/390 Edition V5.2	GI10-3999
Program Directory for IBM Tivoli Storage Manager S/390 Edition Application Program Interface	GI11-0916
IBM Tivoli Storage Manager for Mail, S/390 Edition V5.2 Licensed Program Specifications	GC32-0838

Security, Auditability, and Control

This program uses 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

New Licensees: Orders for new licenses can be placed now.

Registered customers can access IBMLink™ for ordering information and charges.

Shipment will not occur before the availability date.

New users of Tivoli Storage Manager, S/390 Edition and IBM Tivoli Storage Manager for Mail should specify:

- Type: 5697 Model: ISM
- Type: 5697 Model: ILD

Basic License: To order a basic license, specify the program number and feature number 9001 for asset

registration. Specify feature number for a monthly license charge (MLC) from the table below. Also, specify the feature number for the desired distribution media.

Description	Program Product Number	Monthly License Charge Feature Numbers
IBM Tivoli Storage Manager, S/390 Edition	5697-ISM	
Base Charge Basic License ¹	5697-ISM	0003
Per Client	5697-ISM	0004
Per 250 Clients	5697-ISM	0005
Disaster Recovery Manager	5697-ISM	0008
Open Systems ²	5697-ISM	0007
IBM Tivoli Storage Manager for Mail S/390 Edition	5697-ILD	0001

¹ The Space Manager function is included as part of the Base Charge Basic License.

² The Open Systems feature enables support for the OS/390 UNIX System Services client and AFS/Distributed File Service (DFS) on the AIX client. A license is required for each OS/390 or z/OS server where the Open Systems server function resides.

Entry Support License (ESL): To order an ESL license, specify the program number, feature number 9001 for asset registration, and the applicable ESL OTC feature number. Also specify the feature number of the desired distribution medium.

Program Number	Description	ESL OTC Feature Number
5697-ISM	IBM Tivoli Storage Manager, S/390 Edition, V5.2	0006
5697-ILD	IBM Tivoli Storage Manager for Mail, S/390 Edition V5.2	0003

OTC = One-Time Charge

ESL machines can be determined by referring to the IBM Entry End User/390 Attachment (Z125-4379).

Single Version Charging: To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program, and the designated machine on which the programs are operating.

Basic Machine-Readable Material

		Feature Number	Distribution Medium
5697-ISM	IBM Tivoli Storage Manager, S/390 Edition, V5.2		
	z/OS API English	5802	3480 Tape
	z/OS API English	5803	4-mm Tape
5697-ISM	IBM Tivoli Storage Manager, S/390 Edition, V5.2		
	z/OS Server English	5804	3480 Tape
	z/OS Server English	5805	4-mm Tape
5697-ISM	IBM Tivoli Storage Manager, S/390 Edition, V5.2		
	z/OS Backup-Archive Client English	5806	3480 Tape
	English	5807	4-mm Tape
5697-ILD	IBM Tivoli Storage Manager for Mail S/390 Edition, V5.2		
	Lotus Domino English	5812	3480 Tape
	Lotus Domino English	5814	4-mm Tape
5697-ILD	IBM Tivoli Storage Manager for Mail S/390 Edition, V5.2		
	z/OS API English	5802	3480 Tape
	z/OS API English	5804	4-mm Tape

Customization Options: Select the appropriate feature numbers to customize your order to specify the delivery options desired. These features can be specific on the initial or MES orders.

Example: If publications are not desired for the initial order, specify feature number 3470 to ship media only. For future updates, specify feature number 3480 to ship media updates only. If, in the future, publication updates are required, order an MES to remove feature number 3480; then, the publications will ship with the next release of the program.

Unlicensed Documentation: The following publications can be ordered from the IBM Publications Center after July 11, 2003:

Title	Order Number
IBM Tivoli Storage Manager V5.2 Read This First	GI11-0866 ³
IBM Tivoli Storage Manager V5.2 OS/390 and z/OS Quick Start	GC32-0777 ³
IBM Tivoli Storage Manager V5.2 OS/390 and z/OS Administrator's Guide	GC32-0775
IBM Tivoli Storage Manager V5.2 OS/390 and z/OS Administrator's Reference	GC32-0776
IBM Tivoli Storage Manager Messages V5.2	GC32-0767
IBM Tivoli Storage Manager Warehouse Enablement Pack Implementation Guide V5.2 (available September 26, 2003)	SC32-9080
Installing and Configuring the Tivoli Data Warehouse V1.2	GC32-0744
IBM Tivoli Storage Manager for NetWare: Backup-Archive Client Installation and User's Guide V5.2	GC32-0786
IBM Tivoli Storage Manager for UNIX: Backup-Archive Clients Installation and User's Guide V5.2	GC32-0789
IBM Tivoli Storage Manager for Windows: Backup-Archive Clients Installation and User's Guide V5.2	GC32-0788
IBM Tivoli Storage Manager for Macintosh: Backup-Archive Client Installation and User's Guide V5.2	GC32-0787
IBM Tivoli Space Manager for UNIX: Using the Hierarchical Storage Management Clients	GC32-0794
IBM Tivoli Storage Manager — Using the Application Program Interface V5.2	GC32-0793

Note: Usage information for the OS/390 UNIX client is available in the *IBM Tivoli Storage Manager for UNIX: Backup-Archive Clients Installation and User's Guide* publication.

³ These titles are included here to indicate that additional hardcopies of these entitled publications may be ordered for a fee.

The IBM Publications Center Portal:

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

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

Displayable Softcopy Publications: English versions of the IBM Tivoli Storage Manager manuals are offered in displayable softcopy form. All unlicensed manuals are included. The files are shipped on CD-ROM.

These displayable manuals can be used with the Adobe Acrobat Reader, or an HTML browser in any of the supported environments.

The Adobe Acrobat browser can be found at the Adobe Web site:

<http://www.adobe.com>

Terms and conditions for use of the machine-readable files are shipped with the files.

The IBM Tivoli Storage Manager publications are available in HTML and PDF formats on the Tivoli Web site at:

<http://www-3.ibm.com/software/tivoli/products/storage-mgr>

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

Customized Offerings

Most product media is shipped only via Customized Offerings (for example, CBPDO, ServerPac, Systempac®). Non-customized items (CDs, diskettes, source media, media kits) will continue to be shipped via the standalone product.

Terms and Conditions

The terms for IBM Tivoli Storage Manager, S/390 Edition and IBM Tivoli Storage Manager for Mail, as previously announced in Software Announcement 202-109, dated May 7, 2002, licensed under the IBM Customer Agreement, are unaffected by this announcement.

IBM Operational Support Services — Support Line: Yes

Other Support: System/390

IBM Electronic Services

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IBM Electronic Services news page provides you with a single Internet entry point that replaces the multiple entry points traditionally used by customers to access IBM Internet services and support. By using the news page, it enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The IBM Electronic Service Agent is a no-additional charge software that resides on your IBM eServer system that is designed to proactively monitor events and transmit system inventory information to IBM on a periodic customer-defined timetable. The IBM Electronic Service Agent tracks system inventory, hardware error logs, and performance information. If the server is under a current IBM maintenance service agreement or within the IBM Warranty period, the Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to provide proactive service that maintains higher system availability and performance. In addition, information collected through the Service Agent will be made available to IBM service support representatives when

they are helping answer your questions or diagnosing problems.

To learn how IBM Electronic Services can work for you, visit:

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

Prices

Prices are unaffected by this announcement but are included here for informational purposes only.

Description	Program Product Number	Feature Numbers Monthly License Charge	Monthly License Charge
IBM Tivoli Storage Manager, S/390 Edition — Base Server	5697-ISM	0003	\$1,350
1 Client Connection	5697-ISM	0004	5
250 Client Connections	5697-ISM	0005	1,250
Disaster Recovery Manager	5697-ISM	0008	360
Open Systems	5697-ISM	0007	240
IBM Tivoli Storage Manager for Mail, S/390 Edition	5697-ILD	0001	210

Description	Product Number	ESL OTC Feature Number	ESL OTC Charge
IBM Tivoli Storage Manager, S/390 Edition	5697-ISM	0006	\$16,200
IBM Tivoli Storage Manager for Mail, S/390 Edition	5697-ILD	0003	2,520

ESL machines can be determined by referring to the IBM Entry End User/390 Attachment (Z125-4379).

Entry Support License OTC: An OTC authorizes use only on IBM Entry End User/390 Machines.

For additional product information, refer to Software Announcement 202-109, dated May 7, 2002.

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