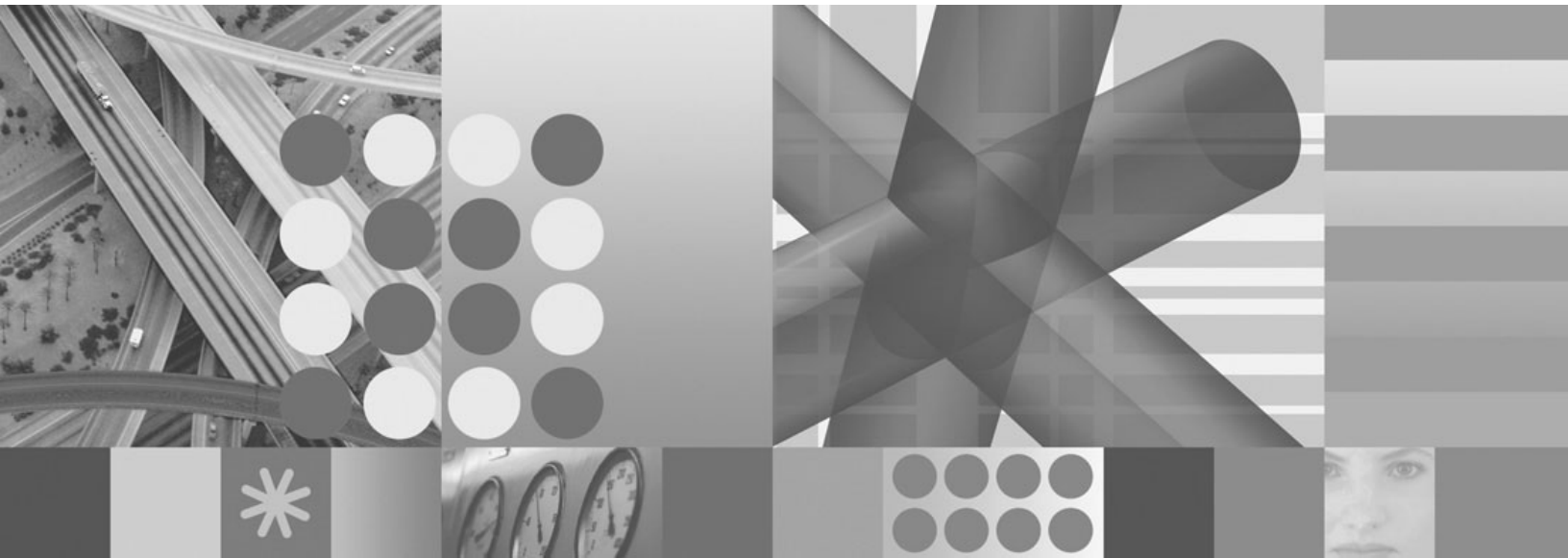




Installation Guide



Installation Guide

Note!

Before using this information and the product it supports, read the general information in the "Notices" appendix.

Edition notice

This edition applies to Version 5 Release 5 of IBM Tivoli Storage Manager for AIX (program numbers 5608-ISM, 5608-ISX) and to any subsequent releases until otherwise indicated in new editions.

Changes since the previous edition are marked with a vertical bar (|) in the left margin. Ensure that you are using the correct edition for the level of the product.

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Preface

This publication contains installation instructions for the Tivoli Storage Manager server and the Integrated Solutions Console and Administration Center.

Who should read this guide

The target audience for this publication is a system administrator installing or upgrading Tivoli Storage Manager.

In this book, it is assumed that you have an understanding of the following:

- The operating system on which the server will be installed
- Devices that Tivoli Storage Manager can use
- Workstation operating systems on which the clients reside
- Communication protocols installed on your client and server machines

Publications

Tivoli Storage Manager publications and other related publications are available online.

You can search all the Tivoli Storage Manager publications in the Information Center: <http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/index.jsp>

You can download PDF versions of publications from the IBM® Publications Center:

<http://www.elink.ibmmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

You can also order some related publications from this Web site. The Web site provides information for ordering publications from countries other than the United States. In the United States, you can order publications by calling 800-879-2755.

Tivoli Storage Manager publications

Tivoli Storage Manager server publications	
Publication Title	Order Number
<i>IBM Tivoli Storage Manager Messages</i>	SC32-0140
<i>IBM Tivoli Storage Manager Performance Tuning Guide</i>	SC32-0141
<i>IBM Tivoli Storage Manager Problem Determination Guide</i>	SC32-0142
<i>IBM Tivoli Storage Manager for AIX Installation Guide</i>	GC23-5969
<i>IBM Tivoli Storage Manager for AIX Administrator's Guide</i>	SC32-0117
<i>IBM Tivoli Storage Manager for AIX Administrator's Reference</i>	SC32-0123
<i>IBM Tivoli Storage Manager for HP-UX Installation Guide</i>	GC23-5970
<i>IBM Tivoli Storage Manager for HP-UX Administrator's Guide</i>	SC32-0118
<i>IBM Tivoli Storage Manager for HP-UX Administrator's Reference</i>	SC32-0124

Tivoli Storage Manager server publications

Publication Title	Order Number
<i>IBM Tivoli Storage Manager for Linux Installation Guide</i>	GC23-5971
<i>IBM Tivoli Storage Manager for Linux Administrator's Guide</i>	SC32-0119
<i>IBM Tivoli Storage Manager for Linux Administrator's Reference</i>	SC32-0125
<i>IBM Tivoli Storage Manager for Sun Solaris Installation Guide</i>	GC23-5972
<i>IBM Tivoli Storage Manager for Sun Solaris Administrator's Guide</i>	SC32-0120
<i>IBM Tivoli Storage Manager for Sun Solaris Administrator's Reference</i>	SC32-0126
<i>IBM Tivoli Storage Manager for Windows Installation Guide</i>	GC23-5973
<i>IBM Tivoli Storage Manager for Windows Administrator's Guide</i>	SC32-0121
<i>IBM Tivoli Storage Manager for Windows Administrator's Reference</i>	SC32-0127
<i>IBM Tivoli Storage Manager for z/OS Installation Guide</i>	GC23-5974
<i>IBM Tivoli Storage Manager for z/OS Administrator's Guide</i>	SC32-0122
<i>IBM Tivoli Storage Manager for z/OS Administrator's Reference</i>	SC32-0128
<i>IBM Tivoli Storage Manager for System Backup and Recovery Installation and User's Guide</i>	SC32-6543

Tivoli Storage Manager storage agent publications

Publication Title	Order Number
<i>IBM Tivoli Storage Manager for SAN for AIX Storage Agent User's Guide</i>	SC32-0129
<i>IBM Tivoli Storage Manager for SAN for HP-UX Storage Agent User's Guide</i>	SC32-0130
<i>IBM Tivoli Storage Manager for SAN for Linux Storage Agent User's Guide</i>	SC32-0131
<i>IBM Tivoli Storage Manager for SAN for Sun Solaris Storage Agent User's Guide</i>	SC32-0132
<i>IBM Tivoli Storage Manager for SAN for Windows Storage Agent User's Guide</i>	SC32-0133

Tivoli Storage Manager client publications

Publication Title	Order Number
<i>IBM Tivoli Storage Manager for Macintosh: Backup-Archive Clients Installation and User's Guide</i>	SC32-0143
<i>IBM Tivoli Storage Manager for NetWare: Backup-Archive Clients Installation and User's Guide</i>	SC32-0144
<i>IBM Tivoli Storage Manager for UNIX and Linux: Backup-Archive Clients Installation and User's Guide</i>	SC32-0145
<i>IBM Tivoli Storage Manager for Windows: Backup-Archive Clients Installation and User's Guide</i>	SC32-0146
<i>IBM Tivoli Storage Manager for Space Management for UNIX and Linux: User's Guide</i>	SC32-0148
<i>IBM Tivoli Storage Manager for HSM for Windows Administration Guide</i>	SC32-1773
<i>IBM Tivoli Storage Manager Using the Application Program Interface</i>	SC32-0147

Tivoli Storage Manager Data Protection publications	
Publication Title	Order Number
<i>IBM Tivoli Storage Manager for Advanced Copy Services: Data Protection for Snapshot Devices for SAP Installation and User's Guide for Oracle</i>	SC33-8207
<i>IBM Tivoli Storage Manager for Advanced Copy Services: Data Protection for Snapshot Devices for DB2 Installation and User's Guide</i>	SC33-8330
<i>IBM Tivoli Storage Manager for Advanced Copy Services: Data Protection for WebSphere Application Server Installation and User's Guide</i>	SC32-9075
<i>IBM Tivoli Storage Manager for Databases: Data Protection for Informix® Installation and User's Guide</i>	SH26-4095
<i>IBM Tivoli Storage Manager for Databases: Data Protection for Microsoft SQL Server Installation and User's Guide</i>	SC32-9059
<i>IBM Tivoli Storage Manager for Databases: Data Protection for Oracle for UNIX and Linux Installation and User's Guide</i>	SC32-9064
<i>IBM Tivoli Storage Manager for Databases: Data Protection for Oracle for Windows Installation and User's Guide</i>	SC32-9065
<i>IBM Tivoli Storage Manager for Enterprise Resource Planning: Data Protection for SAP Installation and User's Guide for DB2</i>	SC33-6341
<i>IBM Tivoli Storage Manager for Enterprise Resource Planning: Data Protection for SAP Installation and User's Guide for Oracle</i>	SC33-6340
<i>IBM Tivoli Storage Manager for Hardware: Data Protection for Enterprise Storage Server® for DB2 UDB Installation and User's Guide</i>	SC32-9060
<i>IBM Tivoli Storage Manager for Hardware: Data Protection for Snapshot Devices for Oracle Installation and User's Guide</i>	GC32-1772
<i>IBM Tivoli Storage Manager for Mail: Data Protection for Lotus Domino® for UNIX, Linux, and OS/400® Installation and User's Guide</i>	SC32-9056
<i>IBM Tivoli Storage Manager for Mail: Data Protection for Lotus Domino for Windows Installation and User's Guide</i>	SC32-9057
<i>IBM Tivoli Storage Manager for Mail: Data Protection for Microsoft Exchange Server Installation and User's Guide</i>	SC32-9058

Support information

You can find support information for IBM products from a number of different sources:

- “Getting technical training” on page viii
- “Searching knowledge bases” on page viii
- “Contacting IBM Software Support” on page ix

Getting technical training

Information about Tivoli® technical training courses is available online.

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

Searching knowledge bases

If you have a problem with Tivoli Storage Manager, there is a variety of knowledge bases you can search.

You can begin with the Information Center, from which you can search all the Tivoli Storage Manager publications: <http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/index.jsp>

Searching the Internet

If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem.

To search multiple Internet resources, go to the support web site for Tivoli Storage Manager: <http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>. From this section, you can search a variety of resources including:

- IBM technotes
- IBM downloads
- IBM Redbooks™

If you still cannot find the solution to your problem, you can search forums and newsgroups on the Internet for the latest information that might help you resolve your problem.

Using IBM Support Assistant

The IBM Support Assistant is a free, stand-alone application that you can install on any workstation. You can then enhance the application by installing product-specific plug-in modules for the IBM products you use.

The IBM Support Assistant helps you gather support information when you need to open a problem management record (PMR), which you can then use to track the problem. The product-specific plug-in modules provide you with the following resources:

- Support links
- Education links
- Ability to submit problem management reports

For more information, see the IBM Support Assistant Web site at <http://www.ibm.com/software/support/isa/>

Finding product fixes

A product fix might be available to resolve your problem. You can determine what fixes are available by checking the product support Web site.

1. Go to the IBM Software Support Web site: <http://www.ibm.com/software/tivoli/products/storage-mgr/product-links.html>
2. Click the **Support Pages** link for your Tivoli Storage Manager product.
3. Click **Fixes** for a list of fixes for your product.
4. Click the name of a fix to read the description and optionally download the fix.

Getting E-mail notification of product fixes

You can sign up to receive weekly E-mail notifications about fixes and other news about IBM products.

1. From the support page for any IBM product, click **My support** in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click **register** in the upper-right corner of the support page to establish your user ID and password.
3. Sign in to **My support**.
4. On the My support page, click **Edit profiles** in the left navigation pane, and scroll to **Select Mail Preferences**. Select a product family and check the appropriate boxes for the type of information you want.
5. Click **Submit**.
6. For E-mail notification for other products, repeat steps 4 and 5.

Contacting IBM Software Support

Before you contact IBM Software Support, you must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have.

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus®, and Rational® products, as well as DB2® and WebSphere® products that run on Windows® or UNIX® operating systems), enroll in Passport Advantage® in one of the following ways:

Online

Go to the Passport Advantage Web page (<http://www.ibm.com/software/sw-lotus/services/cwepassport.nsf/wdocs/passporthome>) and click **How to Enroll**

By phone

For the phone number to call in your country, go to the IBM Contacts Web page (<http://techsupport.services.ibm.com/guides/contacts.html>) and click the name of your geographic region.

- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries®, pSeries®, and iSeries™ environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web page: <http://www.ibm.com/servers/eserver/techsupport.html>.

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States. For a list of telephone

numbers of people who provide support for your location, go to the IBM Contacts Web page, <http://techsupport.services.ibm.com/guides/contacts.html>, and click the name of your geographic region.

Perform these actions to contact IBM Software Support:

1. Determine the business impact of your problem.
2. Describe your problem and gather background information.
3. Submit your problem to IBM Software Support.

Determine the business impact

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting.

Severity 1	Critical business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.
Severity 2	Significant business impact: The program is usable but is severely limited.
Severity 3	Some business impact: The program is usable with less significant features (not critical to operations) unavailable.
Severity 4	Minimal business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.

Describe your problem and gather background information

When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently.

To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be re-created? If so, what steps led to the failure?
- Have any changes been made to the system? For example, hardware, operating system, networking software, and so on.
- Are you currently using a workaround for this problem? If so, be prepared to explain it when you report the problem.

Submit your problem to IBM Software Support

You can submit your problem to IBM Software Support online or by phone.

Online

Go to the "Submit and track problems" page on the IBM Software Support site <http://www.ibm.com/software/support/probsub.html>. Enter your information into the appropriate problem submission tool.

By phone

For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM product support Web pages daily, so that other users who experience the same problem can benefit from the same resolutions.

Accessibility features

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features of Tivoli Storage Manager are described in this topic.

- Server and client command-line interfaces provide comprehensive control of Tivoli Storage Manager using a keyboard.
- The Windows client-graphical interface can be navigated and operated using a keyboard.
- The Web backup-archive client interface is HTML 4.0 compliant, and accessibility is limited only by the choice of Internet browser.
- All user documentation is provided in HTML and PDF format. Descriptive text is provided for all documentation images.
- The Tivoli Storage Manager for Windows Console follows Microsoft® conventions for all keyboard navigation and access. Drag and Drop support is handled using the Microsoft Windows Accessibility option known as MouseKeys. For more information about MouseKeys and other Windows accessibility options, please refer to the Windows Online Help (keyword: MouseKeys).

Technical Changes for Version 5 Release 5 — November 2007

The technical changes summarized here are only for changes that affect installation for Tivoli Storage Manager Version 5.5.

Client and Server authentication using Secure Socket Layer (SSL)

Tivoli Storage Manager now supports the use of Secure Socket Layer (SSL) for authentication of passwords between the server and clients. There are two new TCP/IP options: SSLTCPSPORT and SSLTCPADMINPORT.

See the *Administrator's Reference* for more information.

TCP/IP Version 6

Tivoli Storage Manager is now able to use TCP/IP Version 6 (IPv6) as its communications protocol. IPv6 is interoperable with TCP/IP Version 4. You can specify either IPv4 or both IPv4 and IPv6 in the COMMMETHOD option when you start the server, storage agent, client, or API application. The same port numbers are used by the server, storage agent, client, or API application for both IPv4 and IPv6.

IPv6 address formats are acceptable for all functions that support IPv6. However, if you use IPv6 addresses for functions that do not support IPv6, communications will fail.

See the *Administrator's Reference* for more information.

Chapter 1. Installing IBM Tivoli Storage Manager

Install the Tivoli Storage Manager server and related components on the server machine and Tivoli Storage Manager client code on every machine that will transfer data to Tivoli Storage Manager server-managed storage.

If you are planning to use Tivoli Storage Manager in a High Availability Cluster Multi-Processing (HACMP™) environment, see *Setting Up a Tivoli Storage Manager Server in an HACMP Cluster* in the *Administrator's Guide* before you install Tivoli Storage Manager.

System requirements

The Tivoli Storage Manager server can require a large amount of memory, network bandwidth, and processor resources. In many cases, the server performs best when other applications are not installed on the same system.

Ensure your system meets the following requirements:

- An appropriately configured 64 bit RISC System/6000® or pSeries computer with at least 200 MB of free disk storage and 1 GB of memory.
- AIX® 5.3 or later running in a 64 bit kernel environment.
- A configured communication method.
- A CD device available for installation.
- If you have an IBM 3570, 3590 or Ultrium tape library or drive, install the most current device driver *before* you install Tivoli Storage Manager 5.5. You can locate the device drivers at <ftp://ftp.software.ibm.com/storage/devdvr/>

Evaluation (try and buy) product

A 30-day evaluation version (try and buy) CD provides the same functions as the Tivoli Storage Manager standard licensed product. However, the licensing package is not available with the try and buy product, and you are limited to 50 clients.

The Tivoli Storage Manager installation instructions apply to both the standard licensed product and the CD try and buy product. You can apply maintenance to a try and buy version of IBM Tivoli Storage Manager.

Note: The try and buy CD is available from your IBM SE or sales department.

Upgrading from the try and buy product

You can upgrade from a try and buy version of Tivoli Storage Manager to the licensed product.

To upgrade to the licensed product, do the following:

1. Mount the Tivoli Storage Manager licensed product CD in your CD drive.
2. Install the license package: *tivoli.tsm.license.aix5.rte64TIVsm-license*. Only the license file is installed; server or user data is not lost.
3. Register the licensed features that you have purchased.

IBM Tivoli Storage Manager installation packages

Tivoli Storage Manager uses two types of AIX installation packaging: one for a new release and the other for a maintenance update. It is very important to understand the consequences of each type of installation.

New Installation and Upgrade

For a new version or release of Tivoli Storage Manager, installation packages are set up to perform a new installation if no earlier version is installed, or an upgrade of a previous version is installed. A new installation or an upgrade always establishes a base level for each file set.

In the case of an upgrade, the previous base level and all updates to that base level are removed from the system. You cannot remove file sets installed by an upgrade without first uninstalling the product.

Maintenance Update

You can use an update installation package with a maintenance update (fix pack) to correct a small number of high impact problems. An update installation allows the package to be rejected after installation and does not force a re-basing of a file set. You should use the SMIT option:

1. **Software Installation and Maintenance**
2. **Install and Update Software**
3. **Install and Update from ALL Available Software**

Then, select the code and set:

1. **COMMIT software updates?** to **No**
2. **and SAVE replaced files?** to **Yes**

The reject installation option is not available for a base upgrade installation, such as Tivoli Storage Manager Version 5.5.

Note: If you COMMIT a file set, you have just re-based that file set and cannot remove it without uninstalling the product.

Installation restrictions

Several restrictions might affect your Tivoli Storage Manager installation.

Consider the following restrictions before installing Tivoli Storage Manager:

- Installation stops and an error message is displayed if an active server or storage agent process is detected. All active server or storage agent processes must be halted before installation can proceed.
- Installation of the Tivoli Storage Manager server and Tivoli Storage Manager storage agent on the same machine is not supported.
- During server installation, *rmitab autosrvr* is run and it might remove customized autosrvr entries. The installation might remove all lines with the identifier *autosrvr* even if you have customized other options and commands under this identifier.

Installation directories

Installation directories for the Tivoli Storage Manager server include server, related server, device, and language. Each one contains several additional directories.

The following are the directories and their sub-directories:

- **Server Directory** (*/usr/tivoli/tsm/server/bin*), which contains:
 - Storage pool volumes (*backup.dsm, archive.dsm, spcmgmt.dsm*)
 - Database volume (*db.dsm*)
 - Recovery log volume (*log.dsm*)
 - Server code and licensing
- **Related Server Directories:**
 - The message repository, online help, and supported languages (*/usr/tivoli/tsm/server/bin/lang*). The message repository is called *dsmserv.cat* and the command and message help is called *dsmserv.hlp*.
 - Tivoli inventory (*/usr/tivoli/tsm/tivinv*)
 - Event receiver (*/etc/tivoready/monitorslfs*)
- **Device Directories**
 - */usr/tivoli/tsm/devices/bin*
 - */etc/drivers*
 - */etc/methods*
 - */usr/tivoli/tsm/devices/bin* and */etc*
- **Language Directory**

For language-dependent portions of the program: */usr/tivoli/tsm/server/bin/lang* file. U.S. English, German, French, Italian, Spanish, Brazilian Portuguese, Korean, Japanese, traditional Chinese, simplified Chinese, Chinese GBK, Chinese Big5, Russian, Czechoslovakian, Hungarian, and Polish are supported.

United States English (ISO8559), the *en_US* cultural convention and language translation environment, is a required installation regardless of the language environment you are using.

Installing Tivoli Storage Manager

You can use either the command line or the Motif GUI to install the Tivoli Storage Manager server and device support.

All active server or storage agent processes must be halted before installation can proceed. Installation stops and an error message is displayed if an active server or storage agent process is detected.

Installing Tivoli Storage Manager using the command line

Use SMIT to install the Tivoli Storage Manager server and device support.

Perform the following steps from the command line:

1. Log in as the root user. If you do not log in as root, certain key Tivoli Storage Manager functions will not work properly.
2. Load the AIX server CD into the selected drive.
3. Access SMIT and make selections according to the level of your AIX operating system.

Note: If you select a language other than U.S. English, see Appendix A, “National Language Support,” on page 31 for the correct selection path.

Enter:

smitty install_update

Then select:

Install and Update Software
Install and Update from ALL Available Software

4. Select the INPUT device that you are using for the installation. You can enter the drive name in the window or press **F4** to access the device list.
If you press **F4**, select the CD drive that you are using for the installation (for example, /dev/cd0).
5. Press **Enter**.
6. Select **Software to Install**. The value of the environment variable LANG controls which translated messages, help, and device selection messages in SMIT are automatically installed.
7. Press **F4** or **Esc + 4** for the latest available software packages.
8. Select the appropriate file sets to install for your configuration: **F7** or **Esc + 7**

Note:

- If you are not sure that your system currently has the Version 8 C++ Runtime, select the Version 8 C++ Runtime file set (xlC.rte.8.0.0.0).
- If you are not sure that your system currently has the Version 7.0.4.10 GSKit, select the Version 7.0.4.10 file set (gksa.rte).

Table 1. File sets on installation media

File Set	Description
tivoli.tsm.devices.acsls	STK Silo support (optional)
tivoli.tsm.devices.aix5.rte	Device support for AIX 5.3 or later, 64 bit
tivoli.tsm.license.aix5.rte64	License enablement module, 64 bit kernel
tivoli.tsm.license.cert	License certificates
tivoli.tsm.loc.server.ela	Electronic license agreements
tivoli.tsm.msg.en-US.devices	SMIT menu catalogs
tivoli.tsm.msg.en_US.server	Message library and help
tivoli.tsm.server.aix5.rte64	Server runtime, AIX 5.3 or later, 64 bit
tivoli.tsm.server.com	Server samples and diagnostic utilities
tivoli.tsm.webcon	Web console
xlC.rte.8.0.0.0	C++ Runtime for AIX Version 8
xlC.msg.en_US.rte.8.0.0.0	Messages for C++ Runtime for AIX Version 8
gksa.rte	64 bit server encryption and SSL capabilities

9. You must accept new license agreements to install the server. To view the license agreement, select **Yes** on the **Preview new LICENSE agreements?** option. To accept the license agreement, select **Yes** on the **Accept new**

LICENSE agreements? option. The license agreements are translated in many languages. The language environment that you set determines the version that is displayed.

10. If you are working in a language other than US English, you must also install your specific language pack in addition to the required U.S. English language pack.

tivoli.tsm.msg.yourlanguage.server	Message library and help
tivoli.tsm.msg.yourlanguage.devices	SMIT menu catalogs

11. Press **Enter**.
12. Set **COMMIT software updates?** to Yes: **F4** or **Esc + 4**.
13. Set **SAVE replaced files?** to No.
14. Check the default settings for the options on this window. Ensure all your selected file sets show **success**.
15. Press **Enter**.

SMIT responds:

ARE YOU SURE?...

16. Press **Enter**.
This installation can take several minutes.
17. After the installation is complete, press F10 to exit from SMIT, and remove the CD.

Note: The database, recovery log, and default storage pools are created through the installation process.

18. Redefine your Tivoli devices, if necessary.
19. To start the server from the `/usr/tivoli/tsm/server/bin` directory, enter:

```
nohup ./dsmserv
```

To start the server in the background, enter:

```
nohup ./dsmserv &
```

20. Optional: To run the server from a directory other than the default (`/usr/tivoli/tsm/server/bin`), you must set the `DSMSERV_DIR` environment variable to point to the location of the server installation (`/usr/tivoli/tsm/server/bin`). If you intend to use a different `dsmserv.opt` (the server options file), you should set the `DSMSERV_CONFIG` file to point to the location of your `dsmserv.opt` file.
21. Install a backup-archive client and an administrative client. See “Installing the Tivoli Storage Manager backup-archive client locally” on page 8 for instructions.
22. Change the server name from the default, `SERVER1`, to something unique. If all of your servers have the default name, you will only be able to add one of them to the Administration Center after you install or upgrade the server to Tivoli Storage Manager Version 5.5. Issue the `SET SERVERNAME` command to specify the new server name. The maximum length of the name is 64 characters. For example, issue the following to name the server “WELLS_DESIGN_DEPT”:

```
set servername wells_design_dept
```

See the *Administrator's Reference* for more details on the SET SERVERNAME command.

23. Verify your installation. See "Verifying your installation" on page 9.
24. Optional: To install the Integrated Solutions Console and the Administration Center, go to Chapter 2, "Installing the Integrated Solutions Console and the Administration Center," on page 19.
25. Register your licensed functions. See "Registering licenses" on page 11.
26. After you install Tivoli Storage Manager and before you customize it, go to the Tivoli Storage Manager Web site at the following address:
<http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>. Download and apply any applicable fixes.

Installing Tivoli Storage Manager using the Motif GUI

Use SMIT to install the Tivoli Storage Manager server and device support, using the Motif GUI.

1. Log in as the root user. If you do not log in as root, certain key Tivoli Storage Manager functions will not work properly.
2. Load the AIX server CD into the selected drive.
3. In the Common Desktop Environment, access SMIT in the System_Admin folder of the Application Manager and make selections according to the level of your AIX operating system.

Note: If you select a language other than U.S. English, selection paths differ from those shown here. See Appendix A, "National Language Support," on page 31.

Click the SMIT icon, then select Software Installation and Maintenance.

4. Select the INPUT device that you are using for the installation. You can enter the drive name in the window or click **List** to access the device list.
If you click **List**, select the CD drive that you are using for the installation (for example, /dev/cd0).
5. Click **OK**.
6. **Software to Install** appears now.
7. Set both **Automatically Install Required Software** and **Accept New License Agreement** to Yes.
8. Select the file sets you want to install for your configuration.

Note:

- If you are not sure that your system currently has the Version 8 C++ Runtime, you should select the Version 8 C++ Runtime file set (xlC.rte.8.0.0.0).
- If you are not sure that your system currently has the Version 7.0.4.10 GSKit, you should select the Version 7.0.4.10 file set (gksa.rte).

Table 2. File sets on installation media

File Set	Description
tivoli.tsm.devices.acsls	STK Silo support (optional)
tivoli.tsm.devices.aix5.rte	Device support for AIX 5.3 or later, 64 bit
tivoli.tsm.license.aix5.rte64	License enablement module, 64 bit kernel
tivoli.tsm.license.cert	License certificates

Table 2. File sets on installation media (continued)

File Set	Description
tivoli.tsm.loc.server.ela	Electronic license agreements
tivoli.tsm.msg.en-US.devices	SMIT menu catalogs
tivoli.tsm.msg.en_US.server	Message library and help
tivoli.tsm.server.aix5.rte64	Server runtime, AIX 5.3 or later, 64 bit
tivoli.tsm.server.com	Server samples and diagnostic utilities
tivoli.tsm.webcon	Web console
xlC.rte.8.0.0.0	C++ Runtime for AIX Version 8
xlC.msg.en_US.rte.8.0.0.0	Messages for C++ Runtime for AIX Version 8
gksa.rte	64 bit server encryption and SSL capabilities

- If you are working in a language other than US English, you must also install your specific language pack in addition to the required U.S. English language pack.

tivoli.tsm.msg.yourlanguage.server	Message library and help
tivoli.tsm.msg.yourlanguage.devices	SMIT menu catalogs

- Click **OK**.

SMIT responds:

ARE YOU SURE?...

- To continue, select **OK**.

This installation can take several minutes.

- Check the default settings for the options on this window. Ensure all your selected file sets show **success**.
- After the installation is complete, click **Exit**, remove the CD, and exit from SMIT.

Note: The database, recovery log and default storage pools are created by the installation process.

- Redefine devices that use the Tivoli Storage Manager device driver.
- To start the server from the `/usr/tivoli/tsm/server/bin` directory, enter

```
nohup ./dsmserv
```

- When running the server from a directory other than the default (`/usr/tivoli/tsm/server/bin`), you must set the environment variable `DSMSERV_DIR` to point to the location of the server installation (`/usr/tivoli/tsm/server/bin`). If you intend to use a different `dsmserv.opt`, you should set the `DSMSERV_CONFIG` file to point to the location of your `dsmserv.opt` file.
- Install a backup-archive client and an administrative client. See “Installing the Tivoli Storage Manager backup-archive client locally” on page 8 for instructions.
- When you install or upgrade the server to Tivoli Storage Manager Version 5.5, you must give your servers unique names. If all of your servers have the default name, `SERVER1`, you will only be able to add one of them to the

Administration Center. Use the SET SERVERNAME command to specify the new server name. The maximum length of the name is 64 characters. For example, to name the server WELLS_DESIGN_DEPT:

```
set servername wells_design_dept
```

See the *Administrator's Reference* for more details on this command.

19. To verify your installation, see "Verifying your installation" on page 9.
20. To register your licenses, see "Registering licenses" on page 11.
21. To install the Integrated Solutions Console and the Administration Center, go to Chapter 2, "Installing the Integrated Solutions Console and the Administration Center," on page 19.
22. After you have installed Tivoli Storage Manager and before you customize it for your use, go to the Tivoli Storage Manager Web site at:
<http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>. Download and apply any applicable fixes.

Installing the Tivoli Storage Manager backup-archive client locally

Install the Tivoli Storage Manager backup-archive client on the Tivoli Storage Manager server machine to help you validate your server configuration. The Tivoli Storage Manager backup-archive client is on a separate CD.

For more details about the backup-archive client, see the *Backup-Archive Clients Installation and User's Guide*. This installation procedure is designed to install directly from the CD using a local or remote-mounted CD drive.

If you are copying the client files into a local directory first, a .toc file is automatically created by the installp command. You can create a .toc file manually by running /usr/sbin/inutoc in the local directory to which you copied the Tivoli Storage Manager image. From the AIX command line, enter:

```
/usr/sbin/inutoc /usr/sys/inst.images
```

A .toc file is created in that directory.

To install Tivoli Storage Manager from the CD:

1. Log in as the root user, insert the CD into the CD drive device. You will need to manually mount the CD device for remote or NFS installations.
2. From the AIX command line, type **smitty install** and press Enter.
3. Select **Install and Update Software** and press Enter.
4. Select **Install and Update From ALL Available Software** and press Enter.
5. At the **INPUT device/directory for software** prompt, press the F4 key and select the CD device containing the installation CD or specify the directory containing the installation images. Press Enter.
6. At the **SOFTWARE to install** prompt, press the F4 key. Select the Tivoli Storage Manager file sets you want to install and press Enter.
7. Select the options you want and press Enter to begin the installation.

Moving backup-archive client files locally

The Tivoli Storage Manager files are installed in the `/usr/tivoli/tsm/client/ba/bin` directory. If you move the Tivoli Storage Manager files to another directory, you must perform several steps.

1. Make sure the permissions of the installed files have not changed.
2. Update the symbolic links for the installed files in the following directories:
 - The `/usr/bin` directory
 - The `/usr/lib` directory for Tivoli Storage Manager libraries
 - The directory that contains symbolic links for each language package you install (for example, `/usr/lib/nls/msg/en_US`)
3. Ensure that every user of Tivoli Storage Manager sets the `DSM_DIR` environment variable to the newly installed directory.

Verifying your installation

Verify your server installation by issuing several `QUERY` commands from either the server console or from an administrative client and by trying a backup operation from a backup-archive client.

Verifying by issuing commands

Verify your server installation by issuing several `QUERY` commands from either the server console or from an administrative client.

After installation, the server runs in the background so you must start the server in the foreground or use an administrative client to issue the commands. Issue the following commands to verify your installation:

- `QUERY STATUS` (shows if the server is enabled)

```
query status format=detailed
```

- `QUERY STGPOOL` (shows the storage pools that were automatically set up by the installation)

```
query stgpool format=detailed
```

- `QUERY DB` (shows a basic database that was set up by the installation)

```
query db format=detailed
```

- `QUERY LOG` (shows a basic recovery log that was set up by the installation)

```
query log format=detailed
```

- `QUERY OPTION` (shows options that were set up in `dsmserv.opt` file)

```
query option format=detailed
```

Trying a backup operation

Verify your server installation by trying a backup operation from a backup-archive client.

You can verify the complete Tivoli Storage Manager installation by backing up client data from a backup-archive client. The client must have been installed from the UNIX client CD. If the backup-archive client is not installed, see the “Installing the Tivoli Storage Manager backup-archive client locally” on page 8 for instructions.

Attention: Do not select files to back up that exceed your storage pool capacity. An 8 MB backup storage pool, an 8 MB archive storage pool, and an 8 MB space management pool are allocated at installation.

1. Ensure that the server is running before you use the administrative and backup-archive clients.
2. Configure the backup-archive client by doing the following:
 - a. Copy the sample client system options file (dsm.sys.smp) and the sample client user options file (dsm.opt.smp). The sample files are in `/usr/tivoli/tsm/client/ba/bin/`.
 - b. Edit the options files to include the options listed below:

- In dsm.opt:

```
servername server_name
```

In dsm.sys:

```
servername server_name commethod tcpip  
tcpport port_address tcpserveraddress server_address  
nodename client
```

Note: The server names specified in dsm.opt and dsm.sys must match. See the *Backup-Archive Clients Installation and User's Guide* for more information.

3. Start the backup-archive client graphical user interface by entering the following command:

```
dsmj
```

The default ID and password for the backup-archive client are:

- **ID Name:** *client*
 - **Password:** *client*
4. Back up several files by performing the following steps. For more detailed information and other backup procedures, see the appropriate Tivoli Storage Manager client manual.
 - a. Click **Backup**. The Backup window displays.
 - b. You can select files from a directory tree, or you can search a drive or directory to select files:
 - To select files from a directory tree, expand the tree and click the files you want to back up.
 - To search for files, do the following:
 - 1) Click the **Find** icon on the tool bar. The **Find Files (Backup)** window is displayed.

- 2) Enter your search criteria in the **Find Files (Backup)** window.
 - 3) Click **Search**. The **Matching Files (Backup)** window displays.
 - 4) Click the selection boxes next to the files you want to back up.
 - 5) Close the **Matching Files (Backup)** window by clicking on the backup-archive icon on the menu bar and selecting **Close**.
- c. Click **Always Backup** from the **Type of Backup** list.
 - d. Click **Backup**. The **Backup Status** window displays the backup processing status. You will receive a message when the backup has completed successfully.

Starting and stopping the server

You can verify that the server is installed by starting it. If you no longer want the server running, stop it by issuing a command.

- To start the server from the `/usr/tivoli/tsm/server/bin` directory, enter:

```
nohup ./dsmserve
```

- You can stop the server without warning if an unexpected problem requires you to return control to the operating system. To avoid losing administrative and client node connections, stop the server only after current sessions have completed or been canceled.

To stop the server, issue the following command from the Tivoli Storage Manager command prompt: `halt`. The server console will immediately stop.

Registering licenses

You should immediately register any Tivoli Storage Manager licensed functions that you purchase so you do not lose any data once you begin backing up to the server. Use the `REGISTER LICENSE` command for this task.

Upgrading to Tivoli Storage Manager Version 5.5

You can migrate directly to Tivoli Storage Manager Version 5.5 from any previous version of Tivoli Storage Manager.

The amount of time to migrate from Version 5.4 to 5.5 is negligible. The change in database size between Version 5.4 and 5.5 is also negligible. Versions earlier than 5.2 will take longer to migrate. The older the version, the longer this process will take. You should take actions to clean up system objects if you are upgrading to Tivoli Storage Manager from any previous release.

To return to an earlier version of Tivoli Storage Manager, after an upgrade, you must have a full database backup of that original version and the installation code for the server of that original version.

You can use the `DSMSERV RESTORE DB` utility to restore older versions of Tivoli Storage Manager databases where needed; this utility will perform database restores from earlier releases or versions of the product. If an error is encountered, contact IBM support to diagnose the cause of the restore database failure and resolve it if possible. Note that the database backup needs to be on a currently supported device, as IBM does not support being able to read from devices that are no longer available.

Before you perform an upgrade

You can install Tivoli Storage Manager Version 5.5 over a previous version of Tivoli Storage Manager, upgrading your server.

Tivoli Storage Manager device definitions are saved during an upgrade from previous versions of Tivoli Storage Manager.

Be aware of the results of returning to an earlier version of the server:

- References to client files that were backed up, archived, or upgraded to the Tivoli Storage Manager Version 5.5 server will be lost.
- While running Tivoli Storage Manager Version 5.5, some existing volumes might be overwritten or deleted due to operations such as migration, reclamation, a MOVE DATA command, or a DELETE VOLUME command. If so, client files that were on those volumes will no longer be accessible to the earlier version of the server.
- Definitions, updates, and deletions of objects performed on the Version 5.5 server will be lost.

A DSMSERV UPGRADEDDB operation is automatically performed during an upgrade. If you are running several instances of the server with a separate log and database, the upgrade database that is performed during the installation will have no effect. Enter the DSMSERV UPGRADEDDB command for each database.

If you are using HACMP and upgrading to Tivoli Storage Manager Version 5.5 (from any previous version), you will need to convert to the new startserver script. Device resets are no longer performed by the startserver script. They are now done by the server during initialization of the library. If the RESETDRIVES parameter is set to YES for a library, then the reset will be performed on the library manager for the library and all drives defined to it. If a library is defined as SHARED, the RESETDRIVES parameter automatically defaults to YES for the library. Otherwise, you can run the UPDATE LIBRARY command with RESETDRIVES=YES. See the appendix "Setting Up an IBM Tivoli Storage Manager Server in an HACMP Cluster" in the *Administrator's Guide* for more information.

Compatibility with other versions of IBM Tivoli Storage Manager

Ensure that your Tivoli Storage Manager server and the storage agent can function together by checking compatibility restrictions.

To ensure compatibility between the server and the storage agent, check the Tivoli Web site at the following address: <http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html> . You can also check that Web site for maintenance level requirements and to download the latest fix pack.

The Tivoli Storage Manager servers for the z/OS®, AIX, HP-UX, Linux®, Sun Solaris, and Windows operating systems support LAN-free data movement.

The Tivoli Storage Manager server and storage agent are not backwards compatible with prior releases of the server and storage agent. If you have implemented library sharing, server-to-server, enterprise configuration, or LAN-free, it is important to note that all Tivoli Storage Manager servers and storage agents must be upgraded to a compatible and supported level of Version 5.3 or later before invoking any Version 5.3 library sharing, server-to-server, or LAN-free communication.

When upgrading multiple servers that participate in library sharing to Version 5.3 and later, the servers acting as library manager must be upgraded first to maintain compatibility among the servers acting as library clients or storage agents. When upgrading multiple servers participating in server-to-server to Version 5.3 or later, all servers must be upgraded at the same time.

As a general rule, the Tivoli Storage Manager server normally supports storage agents and library clients at the same version, release, and modification level down to the modification level minus two. When the product release changes, Tivoli Storage Manager normally supports the last two maintenance releases of the previous release. For example, a Tivoli Storage Manager Version 5.5 server supports storage agents and library clients at the Version 5.4.0, Version 5.3.5, and Version 5.3.4 level. An exception to this rule is when a fix or a product enhancement requires concurrent code changes to the server, storage agent, and library client.

A Version 5.3 and later server acting as a library manager is compatible with Version 5.2 and 5.1 servers acting as library clients. However, Version 5.3 and later servers acting as library clients remain incompatible with Version 5.2 and Version 5.1 servers acting as library managers. When upgrading multiple servers that participate in library sharing to Version 5.3 or later, the servers acting as library managers must be upgraded first to maintain compatibility among the servers.

Performing an upgrade

Installation stops and an error message is displayed if an active server or storage agent process is detected. All active server or storage agent processes must be halted before installation can proceed.

Perform the following steps to upgrade the Tivoli Storage Manager server:

1. Before upgrading the Tivoli Storage Manager server to the new release, perform some clean up by issuing the EXPIRE INVENTORY command. If your server is currently at a release earlier than Version 5.2, there might be additional steps you should take to prepare for the upgrade to Version 5.5. Search the support site at <http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html> for more information.
2. Consider whether you need to install any operating system patches or a new operating system level before installing the latest Tivoli Storage Manager server.
3. Back up critical server information by using the BACKUP DB, BACKUP DEVCONFIG, and BACKUP VOLHIST commands. For example, the following commands back up device configuration information to files that you have identified in the dsmserv.opt file, with the DEVCONFIG option.

Or, you can specify file names with this command.

```
backup db type=full devclass=tape_device  
backup devconfig filename=filename
```

The following command backs up volume history information to files that you have identified in the dsmserv.opt file, with the VOLUMEHISTORY option. You can also specify file names with this command.

```
backup volhistory
```

If you need to revert to a previous release, you will have to restore from this database backup.

4. Save the following important files, which are in the default directory for the Tivoli Storage Manager server:

volhist (file name depends on what you specified with the
backup volhistory command)
devconfig (file name depends on what you specified with the
backup devconfig command)
dsmserv.opt
dsmserv.dsk

5. Ensure that no tapes are mounted. Use the QUERY MOUNT command. If any tapes are running, use the DISMOUNT VOLUME command and specify the volume name.
6. Ensure that no Tivoli Storage Manager processes are running. Use the QUERY PROCESS command. If needed, cancel processes by using CANCEL PROCESS process-number. Installation stops if any Tivoli Storage Manager processes are running.
7. Stop the server if it is running by entering:
halt
If you started the server as a background process, connect to the server as an administrative client and issue the HALT command.
8. Check the Readme file for any special instructions or specific information for your operating system.
9. If you have created scripts that have paths to */usr/lpp/adsmserve/bin*, change the paths to */usr/tivoli/tsm/server/bin*.
10. Install the latest Tivoli Storage Manager server software (see “Installing Tivoli Storage Manager” on page 3).

Note: Until the new version is installed and any required licenses are reregistered (step 15 on page 15), clients will not be able to connect to the server.

11. **Optional:** Load sample server scripts into the database. Tivoli Storage Manager is shipped with sample command scripts that can be loaded into the database and run from either an administrative client or from the server console. They can also be included in administrative command schedules. The sample scripts, located in *scripts.smp*, are primarily SELECT queries.

Note: The sample scripts might have been loaded when a previous version of Tivoli Storage Manager was installed. Loading the sample scripts again at this point will overlay any existing scripts of the same name, and any modifications made to those scripts will be lost.

To load the sample scripts into the database, issue the following command:

```
./dsmserv runfile /usr/tivoli/tsm/server/bin/scripts.smp
```

12. Verify that the installation was successful by starting the server.
./dsmserv
13. An upgrade will not normally create a new database, recovery log, and storage pool volumes. The dsmserv.dsk file points to the locations of the current database and recovery log volumes. However, if dsmserv.dsk is not in the */usr/lpp/adsmserve/bin* or */usr/tivoli/tsm/server/bin* directory, the installation creates the following volumes in the */usr/tivoli/tsm/server/bin* directory:
 - Database volume (db.dsm)
 - Recovery log volume (log.dsm)
 - Storage pool volumes (backup.dsm, archive.dsm, and spcmgmt.dsm)

To use your existing database, recovery log, and storage pool volumes, ensure that a copy of the dsmserv.dsk file is in */usr/tivoli/tsm/server/bin* and the file

system is mounted before you do an upgrade. You must not move the database, recovery log, and storage pool volumes.

14. If the following files are located in `/usr/lpp/adsmserve/bin`, the upgrade process copies them automatically to the new Tivoli Storage Manager installation:
 - The `dsmserv.dsk` file
 - The accounting log file (`dsmacct.log`)If the environment variable `DSMSERV_ACCOUNTING_DIR` was set, you must reset it. See “Defining environment variables” on page 17 for details.
 - The server options file `dsmserv.opt`
 - Existing device configuration and volume history files if they are named `devconfig` and `volhist`

Attention	If these files are not named <code>devconfig</code> and <code>volhist</code> , you should back up the files and save them in a temporary directory. You can later edit the new server options file to include the names of these files.
-----------	---

You should save any existing runfile scripts in a temporary directory.

15. Register licenses. Your licenses from the previous version are no longer valid and must be registered again.

Note: The `tivoli.tsm.license.aix5.rte64` package is required to register licenses. This package is installed when you install the server package.

Upgrading on an AIX server

You must migrate to AIX Version 5.3 or later before you can install Tivoli Storage Manager Version 5.5.

Perform the following steps to migrate to AIX Version 5.3:

1. Before you uninstall a previous version of Tivoli Storage Manager, record all Tivoli Storage Manager device definitions.
2. Uninstall the file set `tivoli.tsm.devices.aix5.rte` by issuing the following command:

```
installp -ug tivoli.tsm.devices.aix5.rte
```

This will also cause `tivoli.tsm.msg.[lang].devices` to be uninstalled, where `[lang]` is `en_US` and any other “tivoli.devices” messages file set that might be installed.

3. Migrate to AIX Version 5.3.
4. Install Tivoli Storage Manager Version 5.5. See “Installing Tivoli Storage Manager” on page 3.
5. Redefine the devices previously recorded in step 1.

Running multiple servers on a single machine

To run multiple Tivoli Storage Manager servers on the same machine, you must use multiple ports and create multiple pairs of database and recovery log files. Each server needs its own ports and its own database and recovery log. If the `DSMSERV_DIR` environment variable points to the installation directory, you do not have to copy the server executable files in more than one directory.

Note: You need a separate license for each unique instance of the server in order to run additional servers.

Each server instance has a separate dsmserv.dsk file in its own directory. When running multiple servers, note that running a server from a directory other than the installation directory is only supported by setting the DSMSERV_DIR environment variable. This is because the base install directory is used for more than just finding the executables. To run a server from a directory other than the installation directory, you set the DSMSERV_DIR environment variable to point to the installation directory and add /usr/tivoli/tsm/server/bin to your path.

Use the following procedure to set up an additional server:

1. Make the directory where you want the files created (for example */usr/local/newserv*) and copy the server options file into that directory:

```
mkdir /usr/local/newserv
cp /usr/tivoli/tsm/server/bin/dsmserv.opt /usr/local/newserv/dsmserv.opt
```

You must use a different options file for each server.

2. Modify the copy of the options file with the unique value for the ports. Ensure that the communication method parameters are unique; for example, the servers cannot use the same TCPSPORT, SHMPORT, TCPADMINPORT, or NDMPCONTROLPORT.
3. During installation, set your path on the server console or from an AIX terminal session by defining the environment variables (see “Defining environment variables” on page 17). Ensure that you are in the new directory before continuing.
4. Format the database and recovery logs files. For example, to format two 300 MB database volume and a 30 MB recovery log volume, enter:

```
dsmfmt -db dbvo12 300 dbvo13 300
dsmfmt -log dbvo12 30
```

5. Define your environment variables, for example:
 - a. To define the DSMSERV_DIR, enter:

```
DSMSERV_DIR=/opt/tivoli/tsm/server/bin export DSMSERV_DIR
```

Verify that the variable exported correctly.

- b. To define the DSMSERV_CONFIG to point to the server options file, enter:

```
DSMSERV_CONFIG=/opt/myserver/dsmserv.opt export DSMSERV_CONFIG
```

6. Initialize the database and recovery log in the new server directory:

```
dsmserv format 1 logvo12 2 dbvo12 dbvo13
```

A dsmserv.dsk file is produced.

Defining environment variables

An environment variable describes the operating environment of a process, such as the home directory or terminal in use. To run the server from a directory other than the default directory (*/usr/tivoli/tsm/server/bin*), you might have to define environment variables.

To run the server, the current directory must be the one that contains the file *dsmserve.dsk*.

- To define the `DSMSERV_DIR` environment variable to point to the `/usr/tivoli/tsm/server/bin` directory so that the server can find files, use *ksh* and enter:

```
export DSMSERV_DIR=/usr/tivoli/tsm/server/bin
```

Use the following command if your shell is in the *cs*h family:

```
setenv DSMSERV_DIR /usr/tivoli/tsm/server/bin
```

To save this environment, save this entry in the *.cshrc* or *.kshrc* file of your `$HOME` directory.

Use the following command if your shell is in the *ksh* family:

```
export DSMSERV_DIR=/usr/tivoli/tsm/server/bin
```

To save this environment, save this entry in the *.cshrc* or *.kshrc* file of your `$HOME` directory.

- To define an environment variable to point to the server options file (*dsmserve.opt*), for example, to define the `DSMSERV_CONFIG` environment variable to point to *dsmserve.opt*, enter:

```
export DSMSERV_CONFIG=/usr/tivoli/tsm/server/bin/dsmserve.opt
```

You can also use the `-o` parameter of the `DSMSERV` command to specify an options file name.

- To define an environment variable to point to the accounting log file, for example, to set the environment variable to place the accounting records in the `/home/engineering` directory, enter this command:

```
export DSMSERV_ACCOUNTING_DIR=/home/engineering
```

Accounting records are stored in the *dsmacct.log* file. The `DSMSERV_ACCOUNTING_DIR` environment variable specifies the directory where the accounting file is opened. If this variable is not set when the server is started, the *dsmacct.log* file is placed in the current directory when the server starts.

Chapter 2. Installing the Integrated Solutions Console and the Administration Center

Before you install the Integrated Solutions Console and the Administration Center, you must install, configure, and start the Tivoli Storage Manager server. Install the Integrated Solutions Console Version 6.0.1.1 before installing the Administration Center.

The installation wizards for the Integrated Solutions Console and the Administration Center are on separate CDs. The Integrated Solutions Console is only available through your regular order system such as Passport Advantage or the Advanced Administrative System (AAS). If you obtain your IBM software electronically through Passport Advantage, you must have an authorized user ID and password.

After both applications are installed, you will be able to administer Tivoli Storage Manager from anywhere in your network through a web browser.

You can obtain the Release Notes in the IBM Tivoli Storage Manager Information Center: <http://publib.boulder.ibm.com/infocenter/tivihelp/v1r1/index.jsp>

System requirements

The Tivoli Storage Manager server can require a large amount of memory, network bandwidth, and processor resources. In many cases, the server performs best when other applications are not installed on the same system. If the system meets the combined requirements for the server and the Administration Center, it can support both applications.

If you plan to use the Administration Center to manage an environment with a large number of servers or administrators, consider installing the Administration Center on a separate system.

For Administration Center system requirements, see the following Web site: <http://www.ibm.com/support/docview.wss?uid=swg21195062>.

Configuring the IP address

The Administration Center assumes that the host system is using a static IP address instead of a dynamically assigned IP address. A static IP address is necessary because the Administration Center server must be listed on the domain name servers, which map the host name to the physical address of the system.

On a system that is not connected to the network, you must configure your system so that the IP loopback port is mapped to the fully-qualified host name. To enable that mapping, perform the following procedure on the system where the Administration Center will be installed.

1. Locate the TCP/IP host file on your system.
Look in `/etc/hosts`.
2. Use a text editor. Open the host file and add lines similar to the following at the end:

```
127.0.0.1    localhost
127.0.0.1    your.server.name
```

where your.server.name is the fully-qualified host name for the Administration Center system.

3. Save the host file.

Overview: installing the Integrated Solutions Console and the Administration Center

The time required to install the Integrated Solutions Console depends on the speed of your processor and the memory in your machine.

There are six basic steps for setting up the Integrated Solutions Console and the Administration Center.

1. Install and start your Tivoli Storage Manager Version 5.5 servers. Give each server a unique name.
2. Use the Integrated Solutions Console CD or image to install the Integrated Solutions Console. During the installation process, create an Integrated Solutions Console user ID and password.
3. Use the Administration Center CD or image to install the Administration Center, on the same system as the Integrated Solutions Console.
4. Log onto the Integrated Solutions Console using a Web browser. You can then administer Tivoli Storage Manager from a browser anywhere in your network.
5. Add connections for the Tivoli Storage Manager servers you want to manage.
6. The default Integrated Solutions Console ID is iscadmin. You must specify a password for this ID. You can create additional Integrated Solutions Console user IDs and passwords for any other administrators who will access the Administration Center.

For more details about the Administration Center, see <http://www.ibm.com/support/>.

Installing the Integrated Solutions Console

Integrated Solutions Console 6.0.1.1 is required to use the Administration Center and it needs to be installed before installing the Administration Center. If an earlier version of the Integrated Solutions Console is already installed, you must upgrade to Version 6.0.1.1.

The time for the installation process to complete depends on the speed of your processor and memory.

The Integrated Solutions Console installation media and the Administration Center should be extracted to different directories.

To install the Integrated Solutions Console from a CD, do the following steps:

1. Insert the Integrated Solutions Console CD in your CD drive.
2. If you do not already have a mount point/file system defined for your CD, create the CD file system

```
crfs -v cdrfs -d /dev/cd0 -m /cdrom -p ro
```
3. Mount the file system by issuing the command: `mount /cdrom`.

4. Open a command window or go to a command prompt. Change to the CD directory.
5. Enter one of the following commands to install the Integrated Solutions Console:
 - For the installation wizard : `setupISC`
 - For the console installation wizard :`setupISC -console`
 - For silent installation, enter the following command on a single line:


```
setupISC -silent -W ConfigInput.adminName="user name"
-W ConfigInput.adminPass="user password"
-W ConfigInput.verifyPass="user password"
-W PortInput.webAdminPort="web administration port"
-W PortInput.secureAdminPort="secure administration port"
-W MediaLocationInput.installMediaLocation="media location"
-P ISCTProduct.installLocation="install location"
```

Note: An installation wizard can be used if you have X-Windows or a similar program through which to bring up an interface. A console installation wizard is used via the command line.
6. Release the CD. Make sure you are no longer in the CD directory, then unmount `/cdrom`.
7. If your system is configured to use a browser, go to the following URL, which will display the logon screen for the Integrated Solutions Console:
`http://machine_name:8421/ibm/console`. This indicates a successful installation of the Integrated Solutions Console.
8. If you are upgrading to the Integrated Solutions Console Version 6.0.1.1, you must also upgrade the Administration Center to Version 5.5.0.0. Your Integrated Solutions Console Version 5.1 directory will not be removed because it contains log files. After your upgrade completes successfully, you can delete this directory.
9. There is a possibility that the Integrated Solutions Console Version 5.1 will not properly uninstall, following the upgrade. If you encounter this situation, you might need to do the following.
 - Stop all Integrated Solutions Console and Java™ processes related to the Integrated Solutions Console.
 - Delete the Integrated Solutions Console 5.1 directory (`/opt/IBM/ISC`) and its subdirectories.
 - Start the Integrated Solutions Console 6.0.1.1 process. See “Starting and stopping the console server and console help server” on page 24.

To install the Integrated Solutions Console from an image, do the following steps:

1. Change to the directory where you placed the image and issue the following commands to extract the files:


```
chmod u+x file_name.bin
file_name.bin
```

where `file_name` is the name of the electronic Integrated Solutions Console bin file.
2. Enter one of the following commands to install the Integrated Solutions Console:
 - For the installation wizard : `setupISC`
 - For the console installation wizard :`setupISC -console`
 - For silent installation, enter the following command on a single line:

```

setupISC -silent -W ConfigInput.adminName="user name"
-W ConfigInput.adminPass="user password"
-W ConfigInput.verifyPass="user password"
-W PortInput.webAdminPort="web administration port"
-W PortInput.secureAdminPort="secure administration port"
-W MediaLocationInput.installMediaLocation="media location"
-P ISProduct.installLocation="install location"

```

Note: An installation wizard can be used if you have X-Windows or a similar program through which to bring up an interface. A console installation wizard is used via the command line.

3. If your system is configured to use a browser, go to the following URL, which will display the logon screen for the Integrated Solutions Console:
http://machine_name:8421/ibm/console. This indicates a successful installation of the Integrated Solutions Console.
4. If you are upgrading to the Integrated Solutions Console Version 6.0.1.1, you must also upgrade the Administration Center to Version 5.5.0.0. Your Integrated Solutions Console Version 5.1 directory will not be removed because it contains log files. After your upgrade completes successfully, you can delete this directory.
5. There is a possibility that the Integrated Solutions Console Version 5.1 will not properly uninstall, following the upgrade. If you encounter this situation, you might need to do the following.
 - Stop all Integrated Solutions Console and Java processes related to the Integrated Solutions Console.
 - Delete the Integrated Solutions Console 5.1 directory (/opt/IBM/ISC) and its subdirectories.
 - Start the Integrated Solutions Console 6.0.1.1 process. See “Starting and stopping the console server and console help server” on page 24.

Installing and upgrading the Administration Center

The Integrated Solutions Console must be running when you install or upgrade the Administration Center.

The Administration Center can display information in languages other than English. You can enable language support during installation. If this support is enabled, the Administration Center attempts to display the same language as the Web browser used to access it. If the Web browser uses a different language than the Tivoli Storage Manager server, some information will be displayed in the language used by the server. To change the default language used by the Web browser, see the browser documentation.

To install the Administration Center from a CD, do the following steps:

1. Insert the Administration Center CD in your CD drive.
2. If you do not already have a **mount point/file system** defined for your CD, create the CD file system

```
crfs -v cdrfs -d /dev/cd0 -m /cdrom -p ro
```
3. Mount the file system by issuing the command: `mount /cdrom`.
4. Open a command window or go to a command prompt.
5. Change the directory to the CD directory.
6. Run one of the following commands to install the Administration Center:
 - For the installation wizard : `startInstall.sh`

- For the console installation wizard : `startInstall.sh -console`
 - For silent install, enter the following command on a single line:


```
startInstall.sh -silent -W AdminNamePanel.adminName="user name"
-W Passwordinput.adminPass="user password"
-W Passwordinput.verifyPass="user password"
-W MediaLocationInput.InstallMediaLocation="media location"
-W PortInput.webAdminPort="web administration port"
-P AdminCenterdeploy.installLocation="install location"
```
7. To release the CD, make sure you are no longer in the CD directory, then issue the following command: `umount /cdrom`.

To install the Administration Center from an image, do the following steps:

1. Open a command window or go to a command prompt.
2. If you are installing from an image with the **5.5.0.0-TIV-TSMAC-MULTI.tar** file, issue the following command:

```
tar -xf 5.5.0.0-TIV-TSMAC-MULTI.tar
```

3. Run one of the following commands to install the Administration Center:

- For the installation wizard : `startInstall.sh`
- For the console installation wizard : `startInstall.sh -console`
- For silent install, enter the following command on a single line:

```
startInstall.sh -silent -W AdminNamePanel.adminName="user name"
-W Passwordinput.adminPass="user password"
-W Passwordinput.verifyPass="user password"
-W MediaLocationInput.InstallMediaLocation="media location"
-W PortInput.webAdminPort="web administration port"
-P AdminCenterdeploy.installLocation="install location"
```

Verifying your installation

After installing the Integrated Solutions Console and Administration Center, conduct several procedures to verify your installation.

Perform the following steps:

1. Enter the following address in a supported Web browser: `http://machine_name:8421/ibm/console`. The *machine_name* is the network name or IP address of the machine on which you installed the Administration Center. The default Web administration port (HTTP) is 8421. The default secure Web administration port (HTTPS) is 8422.
2. To get started, log in using the Integrated Solutions Console user ID and password you created during the installation. After you successfully log in, the Integrated Solutions Console welcome page is displayed. Expand the Tivoli Storage Manager folder in the **Work Items** list and click **Getting Started** to display the Tivoli Storage Manager welcome page. This page provides instructions for using the Administration Center.

Starting and stopping the console server and console help server

The Integrated Solutions Console server and help are automatically started after a successful installation. If you shut down the system after the initial installation, any Integrated Solutions Console servers that were started will be stopped.

This section describes the commands you use to start and stop Integrated Solutions Console servers.

In the following commands, the variables have these meanings:

- *isc_home* is the root directory for your Integrated Solutions Console installation.
- *iscadmin* is the administrator user ID for Administration Center if the installation uses the WebSphere Application Server embedded in the console runtime. If the installation uses a separate WebSphere Application Server installation, administrator is the administrator user ID for the WebSphere Application Server installation.
- *iscpass* is the password for the administrator.

To **start** Integrated Solutions Console system servers, complete the following steps:

1. Change your directory to *isc_home/PortalServer/bin*
2. Run the shell script `startISC.sh ISC_Portal`

To **stop** Integrated Solutions Console system servers, complete the following steps:

1. Change your directory to *isc_home/PortalServer/bin*
2. Run the shell script `stopISC.sh ISC_Portal iscadmin iscpass`

Note: It may take a few minutes for the service to stop even though the service manager indicates the server is stopped.

Uninstalling the Administration Center

Uninstall the Administration Center before uninstalling the Integrated Solutions Console. There is a separate procedure for removing the Integrated Solutions Console.

In the following commands, the variables have these meanings:

- *isc_home* is the root directory for your Integrated Solutions Console installation.
- *iscadmin* is the administrator user ID for Administration Center if the installation uses the WebSphere Application Server embedded in the console runtime. If the installation uses a separate WebSphere Application Server installation, administrator is the administrator user ID for the WebSphere Application Server installation.
- *iscpass* is the password for the administrator.

Note: The Integrated Solutions Console must be running when you uninstall the Administration Center.

1. Open a command window or go to a command prompt and change to the root directory for your Integrated Solutions Console installation. For example:

```
cd isc_home
```

2. Run the following command:

```
acuninst.sh iscadmin iscpass
```

Uninstalling the Integrated Solutions Console

Before uninstalling the Integrated Solutions Console, you must uninstall the Administration Center.

Note: To uninstall the Administration Center, see “Uninstalling the Administration Center” on page 24

1. In the following command, the variable *isc_home* is the root directory for your Integrated Solutions Console installation. Open a command window or go to a command prompt and change to the following directory:

```
cd isc_home/_iscuninst
```

2. Run one of the following commands to uninstall the Integrated Solutions Console:
 - To run the uninstall wizard: `uninstaller`
 - To run the console uninstall wizard: `uninstaller -console`
 - To perform a silent uninstall: `uninstaller -silent`

Manually uninstalling the Integrated Solutions Console

If the installation program fails or you are unable to uninstall with the wizard, you can try manually removing the Integrated Solutions Console and then installing it again.

In the following commands, the variables have these meanings:

- *isc_home* is the root directory for your Integrated Solutions Console installation.
- *iscadmin* is the administrator user ID for Administration Center if the installation uses the WebSphere Application Server embedded in the console runtime. If the installation uses a separate WebSphere Application Server installation, administrator is the administrator user ID for the WebSphere Application Server installation.
- *iscpass* is the password for the administrator.

Perform the following steps to manually uninstall the Integrated Solutions Console:

1. Open a command window or go to a command prompt.
2. Stop the console server (which is the application server named `ISC_Portal`) by issuing the following command:

```
isc_home/PortalServer/bin/stopISC.bat ISC_Portal iscadmin iscpass
```

3. Stop the application server named `server1` by issuing the following command on a single line:

```
isc_home/AppServer/bin/stopServer.sh server1 -user  
application_server_administrator -password  
application_server_password
```

4. Clean the system temporary directory by performing the following steps:
 - a. Change to the system temporary directory. The temporary directory is the value of the operating system variable `/tmp`.
 - b. Save a copy of the following files in the temporary directory:
 - `ISCRuntimeInstall.log`
 - `ISCRuntime.rsp`
 - `ISCRuntimeUninstall.log`
 - All of the `Portal*.log` files

- c. In the temporary directory, delete all of the files and the directories that begin with the string ISC (such as ISCRuntime.rsp, ISC_TEMP, ISCToolkitInstall.log) and all files that begin with the string Portal (such as PortalInit.log and PortalSetupWAS.log).
5. Clean the registry that InstallShield for Multiplatforms uses by performing the following steps:
 - a. Search for the vpd.properties file. There may be multiple files. If you find multiple copies, be sure to edit all copies of the file when you perform the edit step.
 - b. Save a copy of the vpd.properties file.
 - c. Use a text editor to open the vpd.properties file.

Note: Use an editor that does not wrap lines so that you can easily isolate single lines for removal.

Set the editor to use a monospace font (for example, Courier). This makes it easier to see the file structure.

- d. Delete each line that refers to the path for the root directory of the console runtime. If there are no remaining lines in vpd.properties, leave the file empty or delete it.

Note: The product registry contains entries regarding the installation, which must be removed manually. To remove those entries, run `vpddel`. Run `lslpp -L` to obtain a list of everything in the product registry. Locate the entries that contain the installation directory of the Integrated Solutions Console. Using the output from the command, construct a `vpddel` command for each entry. For example:

```
vpddel -c integratedSolutionsConsole -v 5.0.2.0 -D /isc
```

where the information for parameters is from the output of `lslpp -L`. See your AIX documentation for more information on the usage of `lslpp` and `vpddel`.

6. To manually disable automatic restart at reboot of the console and console server, edit the operating system file `/etc/inittab` to remove the following line:


```
isc6:23:boot:isc_home/PortalServer/bin/startISC.sh ISC_Portal
ISCUSER ISCPASS
```
7. Stop all Java processes for the Integrated Solutions Console by performing the following steps:
 - a. Issue the following command to find the processes that are using `isc_home/AppServer/java/bin/java.exe`:


```
ps -ef | grep java
```
 - b. Stop all of those processes.

Note: There may be other Java processes running for other applications.

8. Delete the environment variable `isc_home`. Issue the following command:


```
unset isc_home
```
9. Delete the root directory for the Integrated Solutions Console.

Attention: If the uninstallation of the Integrated Solutions Console or the Tivoli Storage Manager Administration Center fails, remove any ODM entries. For instructions, see <http://www.ibm.com/support/docview.wss?uid=swg21240202>.

Chapter 3. Specifying server and client communications

A default sample server options file, *dsmserv.opt.smp*, is created during Tivoli Storage Manager installation. To set up communications between the server and clients, you must create a new server options file by copying the sample file.

Name the new file *dsmserv.opt* and edit the options. Each sample or default entry in the sample options file is a comment, a line beginning with an asterisk (*). Options are not case-sensitive and one or more blank spaces are allowed between keywords and values.

When editing the options file, follow these guidelines:

- Remove the asterisk at the beginning of the line to activate an option.
- Begin entering the options in any column.
- Enter only one option per line, and the option must be on only one line.
- If you make multiple entries for a keyword, the Tivoli Storage Manager server uses the last entry.

If you change the server options file, you must restart the server for the changes to take effect. See the *Administrator's Reference* for a description of all server options.

You can specify one or more of the following communication methods:

- Shared memory
- TCP/IP Version 4 or Version 6
- SNMP DPI®

You also can specify that no communication method be used by adding the following server option to the server options file:

```
commethod none
```

With this option, users cannot connect to the server. It is useful for experimenting with policy commands.

Supporting multiple network adapters

IBM Tivoli Storage Manager supports multiple network adapters that let an administrator specify one or more communication methods. This support lets an administrator increase server throughput by providing multiple connections to the same network or serve several physically distinct networks with the same server.

With the exception of shared memory, the server communication methods support multiple network adapters. Protocols differ in the way the use of multiple adapters is specified.

No additional server configuration is required for TCP/IP support of multiple adapters. Each of the adapters must be set up with a separate TCP/IP address. The administrator must provide an address for the users to use for their client options file. The server will accept sessions from each of the adapters. The session limit is placed on the accumulated count from all of the adapters.

Setting shared memory options

IBM Tivoli Storage Manager supports shared memory communication between clients and servers on the same machine. To use shared memory, TCP/IP Version 4 or Version 6 must be installed on the machine.

Here is a sample shared memory setting:

```
commethod    sharedmem
shmport      1510
```

In this example, SHMPORT specifies the TCP/IP port address of a server when using shared memory. Use the SHMPORT option to specify a different TCP/IP port. The default port address is 1510.

Note: The maximum number of concurrent shared memory sessions is based on available system resources. Each shared memory session uses one shared memory region of up to 4 MB, and four IPCS message queues, depending on the Tivoli Storage Manager client level.

If the server and client are not run under the same user ID, then the server must be root. This will prevent shared memory communication errors.

Setting TCP/IP options

Select from a range of TCP/IP options for the Tivoli Storage Manager server or retain the default.

Here is a sample TCP/IP setting:

```
commethod    tcpip  tcpport    1500  tcpwindowsize  0  tcpnodelay  yes
```

Note: TCP/IP has to be either Version 4 or Version 6. See the *Administrator's Reference* for more information.

TCPPORT

The server TCP/IP port address. The default value is 1500.

TCPWINDOWSIZE

The size of the TCP/IP buffer used when sending or receiving data. The window size used in a session is the smaller of the server and client window sizes. Larger window sizes use additional memory but may improve performance.

You can specify an integer from zero to 2048. To use the default window size for the operating system, specify zero.

TCPNODELAY

Whether or not the server sends small messages or lets TCP/IP buffer the messages. Sending small messages may improve throughput but increases the number of packets sent over the network. Specify YES to send small messages or NO to let TCP/IP buffer them. The default is YES.

TCPADMINPORT

Specifies the port number on which the server TCP/IP communication driver is to wait for requests other than client sessions. The default value is 1500. See the *Administrator's Reference* for further information.

| **SSLTCPPORT**

| Specifies the SSL-only port number on which the server TCP/IP
| communication driver waits for requests for SSL-enabled sessions for the
| command line backup-archive client and the command line administrative
| client. See the *Administrator's Reference* for further information.

| **SSLTCPADMINPORT**

| Specifies the port address on which the server TCP/IP communication
| driver waits for requests for SSL-enabled sessions for the command line
| administrative client. See the *Administrator's Reference* for further
| information.

Setting SNMP options

Tivoli Storage Manager implements a simple network management protocol (SNMP) subagent. You can configure the SNMP subagent to send traps to an SNMP manager, such as NetView®, and to provide support for a management information base (MIB).

Note: For details about configuring SNMP for use with IBM Tivoli Storage Manager, see the *Administrator's Guide*.

The subagent communicates with the **snmpd** daemon, which in turn communicates with a management application. The **snmpd** daemon must support the DPI protocol. Agents are available on AIX.

The subagent process is separate from the Tivoli Storage Manager server process, but the subagent gets its information from the server options file. When the SNMP management application is enabled, it can get information from Tivoli Storage Manager servers.

Appendix A. National Language Support

National Language Support (NLS) for the IBM Tivoli Storage Manager server allows the server to display messages and help in languages other than U.S. English. It also allows for the use of locale conventions for date, time, and number formatting.

The languages supported are:

Brazilian Portuguese (pt_BR)	Japanese PC (Ja_JP)
Chinese, simplified (zh_CN)	Japanese EUC (ja_JP)
Chinese, Big 5 (Zh_TW)	Czechoslovakian (cs_CZ)
Chinese, (zh_TW)	Hungarian (hu_HU)
English (en_US)	Polish (pl_PL)
French (fr_FR)	Russian (ru_RU)
German (de_DE)	Korean (ko_KR)
Italian (it_IT)	Spanish (es_ES)

The system must have en_US environment support installed.

Note: For Administration Center users, some characters might not display properly if the HTML browser version is not the same language as the server. If this problem, occurs, use a browser version that uses the same language as the server.

Installing a language package

If you install a National Language Support (NLS) package, the IBM Tivoli Storage Manager server displays messages and help in languages other than U.S. English. Installation packages are provided with the Tivoli Storage Manager.

The SMIT installation of the server automatically installs the language that is defined by the LANG environment variable. To install a different language, use the Selective Installation. For any language, the appropriate language environment support for the operating system also must be installed.

```
System Environments
  Manage Language Environment
  Change/ Show Language Environment
  Add Additional Language Environments
```

Selective Installation: Select Install Update from ALL Available to list all the filesets during installation and choose those for the languages that you want. Use SMIT after installation to change the language selection. See "Using SMIT for the NLS feature" on page 32.

To enable support for a given locale, perform the following:

- Set the LANGUAGE option in the server options file to the name of the locale that you want to use. For example, to use the it_IT locale, set the LANGUAGE option to it_IT.

If the locale successfully initializes, it will control the date, time, and number formatting for the server. If the locale does not successfully initialize, the server defaults to the U.S. English message files and the date, time, and number format defaults to the U.S. English locale.

The server console uses the locale and language that are defined by the server options language variable. However, if an administrative client connects to the server and specifies a locale that is different from the one that is specified at the server, the server tries to initialize that specified locale for returning messages to the client.

- Set the LC_MESSAGES environment variable to match that which is set in the server options file. For example, to set the environment variable for Italian, enter the following:

```
export LC_MESSAGES=it_IT
```

To use a language other than the one that is defined at installation, or to add translation of Tivoli Storage Manager messages and online help, see “Using SMIT for the NLS feature.”

Using SMIT for the NLS feature

Use SMIT to perform basic installation and configuration of the NLS feature or to change or add a language selection. You can run SMIT from a command line or X Windows environment.

Perform the following steps to run SMIT:

1. Log in as the root user.
2. From your desktop, enter smit.
3. Choose the following selections from within SMIT to install, change, or add language capability:

```
Software Installation and Maintenance
  Install and Update Software
    Install / Update Selectable Software (Custom Install)
      Install / Update from ALL Available Software
```

Make your selections and, if necessary, continue to 4 on page 6 in “Installing Tivoli Storage Manager using the Motif GUI” on page 6 to complete your installation.

For more information about SMIT, see *Getting Started: Managing IBM RISC System/6000*, and read the SMIT windows during your installation.

For more information about language support, see the LANGUAGE server option in the *Administrator's Reference*.

Note: For Administration Center users, some characters might not display properly if the HTML browser version is not the same language as the server. If this problem occurs, use a browser version that uses the same language as the server.

Appendix B. Applying IBM Tivoli Storage Manager updates

Tivoli Storage Manager maintenance updates, also referred to as fix packs, bring your server up to the current maintenance level. The Tivoli Storage Manager server must not be running during maintenance updates.

Use the System Management Interface Tools (SMIT) to apply the updates.

To view a list of the latest maintenance and download fixes, visit the following Web site: <http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html>

Using SMIT to install maintenance updates

Apply maintenance updates on the AIX system by using SMIT. You can run SMIT from the AIX command line or from the command line of an xterm or desktop window.

Perform the following steps to install the maintenance updates:

1. Halt the server. Installation is stopped and an error message displayed if an active server or storage agent process is detected. All active server or storage agent processes must be halted before installation can proceed.
2. Ensure that you have disk space available.
3. Log in as the root user.

Note: To access the X Windows environment, enter: `xinit`.

4. Enter the following:

```
smit
```

5. To see a list of authorized program analysis reports (APARs) to select, choose the following selections from within SMIT:

```
Software Installation and Maintenance
  Install and Update Software
    Install and Update from All Available Software
```

6. On the next window, select the device that you are using for the installation. You can enter the drive name in the window or click **List** to access the device list. If you click **List**, select the device that you are using (for example, `/dev/cd0`).

Note: The status of the drive that you select must be *Available*. Do not use `/dev/mtx` for SMIT installations.

7. Click **Do**.
8. Place the cursor in "Software to Install" and press the F4 function key to list the available updates.
9. Select the updates that you want to install.
10. Check the default settings for the options on this window.

Attention: Committing the software prevents removal of Tivoli Storage Manager from the system, and prevents you from rejecting the fix pack and returning to the previous level. Do not commit the update until you are confident that the server is operating properly.

11. Check the default settings for all of the options.

12. Click **OK** to continue.

This installation may take several minutes.

13. After the installation is complete, click **Done**, remove the CD, and exit from SMIT.

Appendix C. Uninstalling the IBM Tivoli Storage Manager server

You can either return to a previous version of Tivoli Storage Manager, or uninstall the current IBM Tivoli Storage Manager server.

Note: You must have an existing database backup of the previous version that can be restored if you want to return to an earlier version of Tivoli Storage Manager after you perform an upgrade.

Before uninstalling IBM Tivoli Storage Manager

There are three steps to perform before you remove the Tivoli Storage Manager server to ensure that you do not lose your backup and archive data. Those steps are to perform a full database backup, save a copy of the volume history and device configuration files, and store the output volumes in a safe location.

If you reinitialize the database and recovery log by issuing the DSMSERV FORMAT command, any data that resided in your database, recovery log, and storage pool volumes is destroyed.

Note: You must have an existing database backup of the previous version that can be restored if you want to return to an earlier version of Tivoli Storage Manager after an upgrade.

Perform the following procedure before uninstalling Tivoli Storage Manager:

1. Perform a full database backup. For example, if you have a tape device class named `tapeclass`, enter the following command to perform a full backup:

```
backup db type=full devclass=tapeclass
```
2. Save a copy of the volume history and device configuration files that you defined on the VOLHISTORY and DEVCONFIG options in the server options file. For example, to save the volume history in a file named `volhist` and the device configuration in a file named `devices`, enter the following:

```
backup volumehistory filenames=volhist  
backup devconfig filenames=devices
```
3. Store the output volumes in a safe location.

Uninstalling Tivoli Storage Manager to return to an earlier version

It is possible to return to an earlier version of the Tivoli Storage Manager server. If you want to return to an earlier version of Tivoli Storage Manager after an upgrade, you must have a full database backup from your original version and the server installation code for your original version.

Attention: You cannot restore a backed-up database from a prior version onto a newer version of the Tivoli Storage Manager server.

Be aware of the following results when returning to an earlier version of Tivoli Storage Manager:

- References to client files that were backed up, archived, or updated to the Tivoli Storage Manager Version 5.5 server will be lost.

- Some existing volumes may be overwritten or deleted during the Tivoli Storage Manager Version 5.5 operation. If so, client files that were on those volumes and that were migrated, reclaimed, moved (MOVE DATA command), or deleted (DELETE VOLUME command) may no longer be accessible to the earlier version of Tivoli Storage Manager.
- Definitions, updates, and deletions of Tivoli Storage Manager objects performed on the Version 5.5 server will be lost.

To return to a previous version of Tivoli Storage Manager, perform the following steps.

Note: If you want to uninstall the Tivoli Storage Manager server without returning to a previous version, see step 3. Be aware that you will be unable to restore your database after you uninstall the Tivoli Storage Manager server.

1. Enter the Tivoli Storage Manager `halt` command to stop the Tivoli Storage Manager server if it is currently running.
2. Delete the current device definitions.

Enter the following: `smit`.

Select **Devices**.

Note: It is not necessary to remove the non-Tivoli Storage Manager devices that IBM Tivoli Storage Manager uses (3480, 3490, and 3590 drives, and 3494 and 3495 tape libraries).

- a. Select your device from the device selection screen.
- b. Select **Remove** for the device selected in the preceding step.

Do not keep the configurations in the database, but record the device SCSI address so you can use them later to redefine the devices. On the System Management Interface Tools (SMIT) screen (**Keep definition in database**) for defining devices, change the **yes** to **no**.

3. Remove the current Tivoli Storage Manager server software. Issue the following command:

```
/usr/sbin/installp -ug tivoli.tsm.license
/usr/sbin/installp -ug tivoli.tsm.devices
/usr/sbin/installp -ug tivoli.tsm.server.aix5.rte64
```

Note: Remove any other NLS IBM Tivoli Storage Manager packages that you might have installed (for example, *tivoli.tsm.msg.Ja_JP.server*).

Remove the license package.

4. If you have the previous *dsmserve.dsk*, database, and recovery log, restore them to the directory that will be used for the reinstall.
5. Reinstall the previous version of Tivoli Storage Manager and the most recent maintenance.
6. Define the IBM Tivoli Storage Manager devices to the operating system.
7. Reinitialize any database and recovery log volumes, other than those created during install, using the DSMSEV FORMAT utility. See the *Administrator's Reference* for details.
8. Reload the Tivoli Storage Manager database using the DSMSEV RESTORE DB utility.

```
./dsmserve restore db todate=07/04/2007
```

See the *Administrator's Reference* for details.

9. Start the server by issuing the following command:

```
./dsmserv
```

10. Examine the saved volume history file from step 2 on page 35.

For every sequential volume specified in the volume history file with a volume type of STGREUSE or STGDELETE, execute the AUDIT VOLUME FIX=YES command to clean up invalid database references to the volume(s) and to audit all disk storage pool volumes.

If you cannot locate a volume that has a volume type of STGDELETE, use the DELETE VOLUME DISCARDDATA=YES command to remove references to the volume from the server database.

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