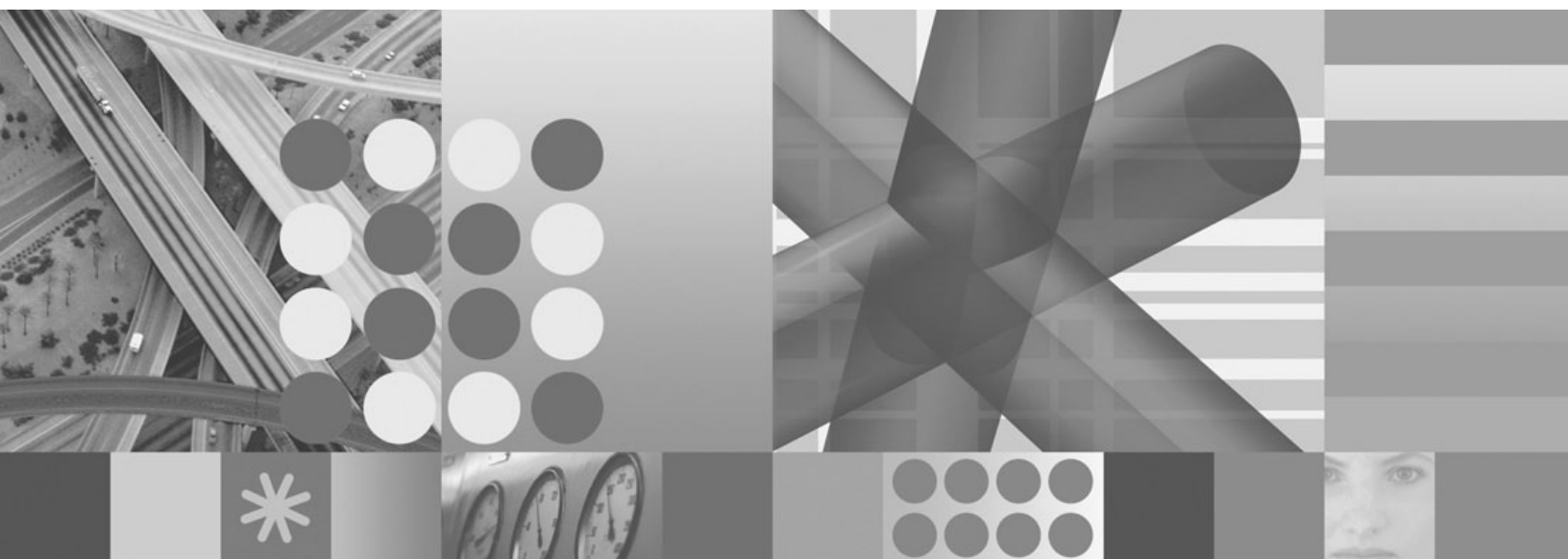




## Installation Guide





## Installation Guide

**Note**

Before using this information and the product it supports, read the general information in Appendix D, “Notices,” on page 33.

**First Edition (December 2004)**

This edition applies to Version 5 Release 3 of IBM Tivoli Storage Manager for AIX (program numbers 5608-HSM, 5608-ISM, 5608-ISX, 5608-SAN, 5608-TDR ) and to any subsequent releases until otherwise indicated in new editions.

Changes since the January 2004 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.

Order publications through your IBM sales representative or the branch office that serves your locality.

Your comments are important to help us provide the most accurate, quality information. If you have comments about this manual or any other IBM Tivoli Storage Manager manual, please see “Support Information” on page vii.

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## Before You Begin

This publication helps you install and configure IBM Tivoli Storage Manager.

Before using this publication, you should be familiar with:

- AIX operating systems
- Workstation operating systems on which the clients reside
- Communication protocols installed on your client and server machines

---

## Technical Changes

This section summarizes only those changes that affect installation.

The Administrative Web interface is being replaced in this release with the Administration Center. The Administration Center is a Web-based interface that can be used to centrally configure and manage Tivoli Storage Manager Version 5.3 servers. The Administration Center is the only Web interface that can be used to administer Version 5.3 or later servers. The old administrative Web interface cannot be used with Version 5.3 or later servers.

There might be new defaults set in your server options files. If you have not specified the affected options in the options files, then the new defaults will take effect immediately. If you have specified some of the options, the value they have already specified will be used and the default change will have no effect. If you want the new default to be used, you will have to change the settings.

If you install a new version of Tivoli Storage Manager over an existing version, and have NOT specified the affected option, then the new Version 5.3 defaults will be used. If you have specified values in the affected options, then installing a newer version of Tivoli Storage Manager will not override your specified values with the new defaults.

The new defaults are:

- DEFINE DEVCLASS – FILE Defaults for mountlimit and maxcapacity parameters changed
- DEFINE STGPOOL
  - Primary Sequential Access - Default value for collocate changed to GROUP.
  - Copy Sequential Access - Default value for collocate will be left at NONE.
- MOVE DATA Default for reconstruct changed
- MOVE NODEDATA Default for reconstruct changed

---

## Accessibility Features

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. These are the major accessibility features of Tivoli Storage Manager:

- Server and client command-line interfaces provide comprehensive control of Tivoli Storage Manager 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.

---

## IBM Tivoli Storage Manager Publications

This section lists publications in the IBM Tivoli Storage Manager library and related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

### IBM Tivoli Storage Manager Publications

The following table lists Tivoli Storage Manager server publications.

Publication Title	Order Number
<i>IBM Tivoli Storage Management Products License Information</i>	GH09-4572
<i>IBM Tivoli Storage Manager Messages</i>	GC32-0767
<i>IBM Tivoli Storage Manager for AIX Administrator's Guide</i>	GC32-0768
<i>IBM Tivoli Storage Manager for AIX Administrator's Reference</i>	GC32-0769
<i>IBM Tivoli Storage Manager for AIX Installation Guide</i>	GC32-1597

### Accessing Publications Online

The product CD contains the publications that are in the product library. The format of the publications is PDF, HTML, or both. To access the publications using a Web browser, open the `infocenter.html` file. The file is in the appropriate publications directory on the product CD.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli software information center Web site. Access the Tivoli software information center by first going to the Tivoli software library at the following Web address:

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

Scroll down and click the **Product manuals** link. In the Tivoli Technical Product Documents Alphabetical Listing window, click the **<Tivoli Storage Manager>** link to access the product library at the Tivoli software information center.

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File → Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

### Ordering Publications

You can order many Tivoli publications online at the following Web site:

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

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, see the following Web site for a list of telephone numbers:



## Tivoli Technical Training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site:

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

---

## Support Information

This section describes the following options for obtaining support for IBM products:

- “Searching knowledge bases”
- “Obtaining fixes”

### Searching knowledge bases

If you have a problem with your IBM software, begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

#### Search the information center on your local system or network

IBM Tivoli Storage Manager provides an information center on a CD. You can run the information center from the CD, or copy it to your local computer or an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, reference information, and support documents.

#### Search 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 for your product, go to the support web site for the product [www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html](http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html) and look for the section to search the support knowledge base. From this section, you can search a variety of resources including:

- IBM technotes
- IBM downloads
- IBM Redbooks
- Forums and newsgroups

### Obtaining fixes

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

1. Go to the IBM Software Support Web site (<http://www.ibm.com/software/support>).
2. Under **Products A - Z**, select your product name. This opens a product-specific support site.
3. Under **Self help**, follow the link to **All Updates**, where you will find a list of fixes, fix packs, and other service updates for your product. For tips on refining your search, click Search tips.

4. Click the name of a fix to read the description and optionally download the fix.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

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.

For more information about types of fixes, see the *Software Support Handbook* (<http://techsupport.services.ibm.com/guides/handbook.html>).

---

## Chapter 1. Installing IBM Tivoli Storage Manager

Installing IBM Tivoli Storage Manager consists of the following:

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

IBM Tivoli Storage Manager client code for UNIX and desktop clients is available on separate CDs included in the product package. The client code can also be installed from the internet. For detailed Tivoli Storage Manager client installation and configuration instructions, see *Backup-Archive Clients Installation and User's Guide*.

This chapter provides instructions for installing the IBM Tivoli Storage Manager server and related components, including the following tasks:

- “Migrating to IBM Tivoli Storage Manager Version 5.3” on page 3
- “Installing IBM Tivoli Storage Manager” on page 9
- “Verifying Your Installation” on page 12
- “Getting Started” on page 14
- Chapter 2, “Installing the Administration Center,” on page 15

To remove the Version 5.2 server, see Appendix C, “Removing the IBM Tivoli Storage Manager Server,” on page 29.

### Notes:

1. The Administrative Web interface is being replaced in this release with the Administration Center. See Chapter 2, “Installing the Administration Center,” on page 15.
2. 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.

See the Administrator's Guide for information on the following advanced topics:

- Operational Reporting
- Customizing Tivoli Storage Manager
- Measuring Database Log Size
- Using Tape Devices and Optical Devices

---

## System Requirements

**Before you install IBM Tivoli Storage Manager, ensure the following:**

- You have an appropriately configured RISC System/6000® or pSeries computer with at least 200 MB of free disk storage and 1 GB of memory.
- You have AIX® 5.1 or above.
- Your communication method is configured.
- You have 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 IBM Tivoli Storage Manager 5.3. You can locate the device drivers at <ftp://ftp.software.ibm.com/storage/devdrv/>

---

For requirements, supported devices, client code, and fixes, go to the IBM Tivoli Storage Manager Web site at:



[www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html](http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html)

After you have installed IBM Tivoli Storage Manager and before you customize it for your use, go to the IBM Tivoli Storage Manager Web site. Download and apply any applicable fixes.

---

## Evaluation (Try and Buy) Product

A 60-day evaluation (try and buy) of IBM Tivoli Storage Manager is available by internal order via CD. The CD try and buy version provides the same functions as the standard licensed product. However, the licensing package is not available with the try and buy product, and you are limited to 50 clients.

The installation instructions in this chapter (“Installing IBM Tivoli Storage Manager” on page 9) apply to both the standard licensed product and the CD try and buy product.

**Note:** You can apply maintenance to a try and buy version of IBM Tivoli Storage Manager.

To upgrade to the licensed product, do the following:

1. Mount the IBM Tivoli Storage Manager AIX server licensed product CD in your CD drive.
2. Install the license package (*tivoli.tsm.license.rte* or *tivoli.tsm.license.aix5.rte64*).

Only the license file is installed; server or user data is not lost. After you install the license package, register any licensed features that you purchased.

---

## IBM Tivoli Storage Manager Installation Packages

IBM Tivoli Storage Manager uses three types of AIX installation packaging. The type used depends on the content of the delivery. It is very important to understand the consequences of each type of install.

**Note:** Installation will be 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.

### New Install and Migrate

For a new version or release of IBM Tivoli Storage Manager, install packages are set up to do a new install if no prior version is installed or a migrate install if a prior version is installed. A new install or a migrate install always establishes a base level for each file set. In the case of a migrate install the prior base level and all updates to that base level are removed from the system. You cannot remove file sets installed by a migrate install without uninstalling the product.

### Update Install

An update install package is used with a maintenance update (FixPack) or

an Interim Fix, used to correct a small number of high impact problems. An update install 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 "Install and Update from ALL Available Software" and set "COMMIT software updates?" to no and "SAVE replaced files?" to yes.

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

---

## Migrating to IBM Tivoli Storage Manager Version 5.3

You can install IBM Tivoli Storage Manager Version 5.3 over a previous version of ADSM or IBM Tivoli Storage Manager. This is called a "migrate install". A DSMSEV UPGRADEDDB operation is automatically performed during a migrate install.

**Note:** If you are running several instantiations of the server with a separate log and database, the upgrade database that is performed during the install will have no effect. Enter the UPGRADEDDB command for each database.

The ADSM default installation directories changed for IBM Tivoli Storage Manager. If you have previously used disaster recovery manager (DRM) to create a disaster recovery plan file, that file refers to path names that can no longer be valid. After you have installed IBM Tivoli Storage Manager, you should back up your storage pools and database and create a new disaster recovery plan file. For the sequence and details of the procedure, see the disaster recovery manager chapter in the *Administrator's Guide*.

If you are using HACMP and migrating to Tivoli Storage Manager Version 5.3 (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.

---

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

- You cannot restore a prior version's backed up database onto the latest version of the server. For instance, you cannot restore a Version 4.2 database onto IBM Tivoli Storage Manager Version 5.3. For instructions on how to return to a prior version of the server, see Appendix C, "Removing the IBM Tivoli Storage Manager Server," on page 29.



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

- References to client files that were backed up, archived, or migrated to the IBM Tivoli Storage Manager Version 5.3 server will be lost.
  - While running IBM Tivoli Storage Manager Version 5.3, 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 5.3 server will be lost.
- 

## Compatibility with Other Versions of IBM Tivoli Storage Manager

To ensure compatibility between the server and the storage agent, check the Tivoli® Web site at [www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html](http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html) for maintenance level requirements and to download the latest Fix Pack Level. The Tivoli Storage Manager servers for the z/OS®, AIX, HP-UX, Linux™, Sun Solaris, and Windows® operating systems support LAN-free data movement.

Starting with Tivoli Storage Manager Version 5.2, the server and storage agent are no longer 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 5.2 or later code before invoking any Version 5.2 library sharing, server-to-server, or LAN-free communication.

When upgrading multiple servers participating in library sharing to Version 5.3, 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, all servers must be upgraded at the same time.

As a general rule, Tivoli Storage Manager server will normally support 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 will normally support the last two maintenance releases of the previous release. For example, a Tivoli Storage Manager Version 5.3.0 server supports storage agents and library clients at the Version 5.3.0, Version 5.2.4, and Version 5.2.3 levels. Note: An exception to this rule is where a fix or a product enhancement requires concurrent code changes to server, storage agent, and library client

Version 5.3 servers acting as a library manager are compatible with Version 5.2 and 5.1 servers acting as a library client. However, Version 5.3 servers acting as library

clients remain incompatible with Version 5.2 and Version 5.1 servers acting as library managers. When upgrading multiple servers participating in library sharing to Version 5.3, the servers acting as library managers must be upgraded first to maintain compatibility among the servers.

## Migrating from AIX 4.3.3 to AIX Version 5.3

If you have IBM Tivoli Storage Manager version 4.2 installed on AIX version 4.3.3, you must migrate to AIX version 5.1 or later before you can install Tivoli Storage Manager version 5.3. To do this, follow these steps.

1. Before you uninstall Tivoli Storage Manager version 4.2, record all IBM Tivoli Storage Manager device definitions.
2. Uninstall the file set *tivoli.tsm.devices.aix43.rte* by using the command:

```
installp -ug tivoli.tsm.devices.aix43.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 5.1.
4. Install IBM Tivoli Storage Manager version 5.3. See "Installing IBM Tivoli Storage Manager" on page 9
5. Redefine the devices previously recorded in step 1.

## Before You Perform a Migrate Install

This section describes some things to consider before you perform a migrate install.

- The *dsmserve.dsk* file points to the locations of the current database and recovery log volumes. A migrate install will not normally create a new database, recovery log, and storage pool volumes. However, if *dsmserve.dsk* is not in the */usr/lpp/adsmserve/bin* or */usr/tivoli/tsm/server/bin* directory, the install 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 *dsmserve.dsk* file is in */usr/tivoli/tsm/server/bin* and the file system is mounted before you do a migrate install. You must not move the database, recovery log, and storage pool volumes.

- If you decide to return to the previous version of the server, you must have a backup copy of your prior database, volume history, and device configuration files. In the following example, the tape device class named TAPECLASS is used for database backups.

```
backup db type=full devclass=tapeclass
backup devconfig filenames=devconfig.jan99
backup volhistory filenames=volhistory.jan99
```

**Note:** This command retrieves database records into a database dump. This process does not access the recovery log. Transactions held in the log database are lost.

Store the output volumes and the device configuration and volume history files in a safe location.



- During the migrate install, the following files are automatically copied from *usr/lpp/admserv/bin* to the location of the new IBM Tivoli Storage Manager installation when they are located in *usr/lpp/admserv/bin*:
  - The *dsmserv.dsk* file
  - The accounting log file (*dsmacnt.log*)
 

If the environment variable *DSMSERV\_ACCOUNTING\_DIR* was set, you must reset it. See “Defining Environment Variables” on page 11 for details.
  - The server options file *dsmserv.opt*
  - Existing device configuration and volume history files if they are named *devconfig* and *vollhist*



If these files are not named *devconfig* and *vollhist*, 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.

---

If the files are automatically copied, the server options file is automatically updated.

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

- Tivoli Storage Manager device definitions are not saved during a migrate install from Tivoli Storage Manager V4 only. They are saved during a migrate install from Tivoli Storage Manager V5.1 or V5.2 To install the new Tivoli Storage Manager drivers, you must have the output from the following commands:

```
lsdev -Cc tape
```

```
lsdev -Cc library
```

This is not required for the IBM® 3494, 3495, 3570, 3575, or 3590, which use drivers supplied with the devices.



During a migrate install, Fibre Channel Protocol definitions will be lost. Save existing FCP definitions before a migrate install or else they will have to be reinstalled.

---

## Performing a Migrate Install

Installation will be 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.

**Note:** Before migrating the Tivoli Storage Manager server to the new level, perform some clean up by running 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 in preparation for migration to Version 5.3. Search the support site at [www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html](http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html) for more information.

1. Consider whether you need to install any operating system patches or a new operating system level before installing the latest Tivoli Storage Manager server.
2. Back up critical server information by using the BACKUP DB, BACKUP DEVCONFIG, and BACKUP VOLHIST commands. For example, the following command backs up device configuration information to files that you have identified in the *dsmserv.opt* file, with the DEVCONFIG option. You can instead specify file names with this command.



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

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 instead specify file names with this command.

```
backup volhistory
```

3. 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
```

4. Ensure that no tapes are mounted. Use the `QUERY MOUNT` command.
5. Ensure that no Tivoli Storage Manager processes are running. Use the `QUERY PROCESS` command. Cancel processes if needed, by using `CANCEL PROCESS PROCESSNUMBER`. Installation stops if any Tivoli Storage Manager processes are running.
6. You can find the Tivoli Storage Manager server process ID by displaying the content of the following file on UNIX. For example:

```
pine:/opt/tivoli/tsm/server/bin # cat dsmserv.lock
dsmserv process ID 14618 started Fri Oct 8 14:50:54 2004
```

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. If you cannot connect to the server with an administrative client, you must use the **kill -9** command with the process ID number (pid) that is displayed at initialization.

**Note:** Before you issue the **kill -9** command, ensure that you know the correct process ID for the server.

8. Verify that all Tivoli Storage Manager code is removed from the machine.
9. Check the `README` file for any special instructions or specific information for your operating system.
10. If you have created scripts that have paths to `/usr/lpp/adsmserve/bin`, change the paths to `/usr/tivoli/tsm/server/bin`.
11. Install the latest IBM Tivoli Storage Manager server software (see “Installing IBM Tivoli Storage Manager” on page 9).

**Note:** Until the new version is installed and any required licenses are reregistered (step 14 on page 8), clients will not be able to connect to the server.

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

**Note:** The sample scripts might have been loaded when a previous version IBM 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:

```
./dsmserve runfile /usr/tivoli/tsm/server/webimages/scripts.smp
```

13. Verify that the installation was successful by starting the server .  
./dsmserve
14. Register licences. Your licenses from the previous version are no longer valid and must be registered again. See “Registering Licenses” on page 14.

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

---

## Installation Directories

Here is an overview of the installation 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/lib/nls/msg/*). The message repository is called *dsmserve.cat* and the command and message help is called *dsmserve.hlp*
  - Device and StorageTek support (*/usr/tivoli/tsm/devices/bin* and */etc*)
  - Tivoli inventory (*/usr/tivoli/tsm/tivinv*)
  - Event receiver (*/etc/tivoready/monitorslfs*)
- **Device Directories**
  - */usr/tivoli/tsm/devices/bin*
  - */etc/drivers*
  - */etc/methods*
- **Language Directory**
  - For language-dependent portions of the program: */usr/lib/nls/msg/[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.

---

## Installation Restrictions

This section lists restrictions that should be considered prior to installing IBM Tivoli Storage Manager.

Installation will be 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.

Installation of the IBM Tivoli Storage Manager server and IBM Tivoli Storage Manager storage agent on the same machine is not supported.

During server installation, *rmitab autosrvr* is run. This can remove customized autosrvr entries. The installation can remove all lines with the identifier *autosrvr* even if you have customized other options and commands under this identifier.

---

## Installing IBM Tivoli Storage Manager

Use the following System Management Interface Tool (SMIT) procedure to install the server and device support.

1. Log in as the root user.
2. Load the CD into the selected drive.
3. To install the server on AIX 5.1 or later, you must accept the license agreement. To view the license agreement, access SMIT and select **Yes** on the **Preview new LICENSE agreements?** option on the SMIT installation menu. The license agreements are translated in many languages. The language environment that you set determines the version that is displayed.
4. From your desktop window, access SMIT and make selections according to the level of your AIX operating system.

**Note:** When you are changing the language capability, selection paths differ from those shown here. See Appendix A, “National Language Support,” on page 25.

Enter:

```
smit install_update &
```

Then select:

```
Install and Update Software
  Install and Update from the LATEST Available Software
```

5. 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 on **List** to access the device list.  
If you click on **List**, select the CD drive that you are using for the installation (for example, /dev/cd0).
6. Click **OK**.
7. Locate the line **Software to Install**. The value of the environment variable LANG controls which translated messages, help, and device selection messages in SMIT are automatically installed.
  - a. To install all components listed in step 8 with default settings, continue at step 10 on page 10.
  - b. To selectively install components, click **List** for the latest available software packages and continue at step 8.
8. Select the file sets you want to install for your configuration. Supported file sets are listed by configuration.

32-bit hardware, 32-bit AIX kernel
---------------------------------------

tivoli.tsm.server.com
-----------------------

tivoli.tsm.server.rte
tivoli.tsm.msg.en_US.server
tivoli.tsm.license.cert
tivoli.tsm.license.rte
tivoli.tsm.webcon
tivoli.tsm.msg.en-US.devices
tivoli.tsm.devices.aix5.rte

<b>64-bit hardware, 64-bit AIX kernel</b>
tivoli.tsm.server.com
tivoli.tsm.server.aix5.rte64
tivoli.tsm.msg.en_US.server
tivoli.tsm.license.cert
tivoli.tsm.license.rte
tivoli.tsm.webcon
tivoli.tsm.msg.en-US.devices
tivoli.tsm.devices.aix5.rte
tivoli.tsm.devices.aix5.rte

<b>64-bit hardware, 32-bit AIX kernel</b>
tivoli.tsm.server.com
tivoli.tsm.server.rte
tivoli.tsm.msg.en_US.server
tivoli.tsm.license.cert
tivoli.tsm.license.rte
tivoli.tsm.webcon
tivoli.tsm.msg.en-US.devices
tivoli.tsm.devices.aix5.rte

9. Click **OK**.
10. Check the default settings for the options on this window.
11. To continue, click **OK**.

SMIT responds:

ARE YOU SURE?...

12. To continue, click **OK**.

This installation can take several minutes.

**Note:** Some file sets are operating system level-specific and will fail to install. This is normal behavior, and should not be interpreted as an error.

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

**Note:** The Database, Recovery Log and default storage pools are created (or should be) by the installation process.

14. To start the server from the `/usr/tivoli/tsm/server/bin` directory, enter: `nohup ./dsmserve &`
15. To install a backup-archive client and an administrative client, see *Backup-Archive Clients Installation and User's Guide* for instructions.
16. When you install or upgrade the server to IBM Tivoli Storage Manager V5.3, 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. Example: to name the server `WELLS_DESIGN_DEPT`: `set servername wells_design_dept`. See the *Administrator's Reference* for more details on this command.
17. To verify your installation, see "Verifying Your Installation" on page 12.

---

## 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. For example, 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 `ks` and enter:

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

You can define an environment variable to point to the server options file (`dsmserve.opt`). This allows two Tivoli Storage Manager servers running on the same machine to share the same options file. 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 define an environment variable to point to the accounting log file.

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.

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
```

The `DSMLABEL` utility, a standalone utility for labeling sequential access volumes, must read the `dsmserve.opt` file to pick up the language option. Therefore, `DSMLABEL` must be issued from the `/usr/tivoli/tsm/server/bin/` directory, or the `DSMSERV_DIR` and `DSMSERV_CONFIG` environment variables must be set.

**Notes:**

1. You can also use the `-o` parameter of the `DSMSERV` command to specify an options file name.
2. Use the following command if your shell is in the `cs` family:

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

3. Use the following command if your shell is in the `ksh` family:

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

4. To save this environment, save these entries in the `.cshrc` or `.kshrc` file of your `$HOME` directory.
5. The `dsmerv.dsk` is always read from the directory in which the server is started.

---

## Running Multiple Servers on a Single Machine

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

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

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/dsmerv.opt /usr/local/newserv/dsmerv.opt
```

You must use a different options file for each server. Or, if the `DSMSERV_CONFIG` environment variable points to a server option file, that file can be used by both servers.

**Note:** If you are using two options files, ensure that the communication method parameters are unique. For example, the servers cannot use the same `TCPPORT`, or `SHMPORT` or `TCPADMINPORT`.

2. During installation, set your path on the server console or from an `aix` term session by defining the environment variables (see “Defining Environment Variables” on page 11). Ensure that you are in the new directory before continuing.
3. Initialize the database and recovery log in the new server directory:

```
dsmerv format 1 logvol2 2 dbvol2 dbvol3
```

---

## Verifying Your Installation

You can verify server installation by issuing the following `QUERY` commands from the server console. Once installed, the server runs in the background, so you must start the server in the foreground or use an administrative client to issue the commands.

- QUERY STATUS
- QUERY STGPOOL (shows the stgpools automatically set up by the installation)
- QUERY DB (shows a basic database set up by the installation)
- QUERY LOG (shows a basic log set up by the installation)

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 *Backup-Archive Clients Installation and User's Guide* for instructions.



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

1. The server must be running before you can use the administrative and backup-archive clients. See *Stopping and Starting the Server* in the Administrator's Guide for the procedure for starting the server.
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 *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:

```
dsm
```

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

- **ID Name:** *client*
  - **Password:** *client*
4. To back up several files, perform the steps listed below. For more detailed information and other backup procedures, see the appropriate IBM Tivoli Storage Manager client manual.
    - a. Click on **Backup**. The Backup window displays.
    - b. You can select files from a directory tree, or you search a drive or directory to select files:
      - To select files from a directory tree, expand the tree and click on the files you want to back up.

- To search for files, do the following:
  - 1) Click on the **Find** icon on the tool bar. The **Find Files (Backup)** window displays
  - 2) Enter your search criteria in the **Find Files (Backup)** window.
  - 3) Click on **Search**. The **Matching Files (Backup)** window displays.
  - 4) Click on 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 on **Always Backup** from the **Type of Backup** list.
- d. Click on **Backup**. The **Backup Status** window displays the backup processing status. You will receive a message when the backup has completed successfully.

---

## Getting Started

This section describes the following tasks:

- “Starting and Stopping the Server”
- “Registering Licenses”

### Starting and Stopping the Server

To start the server from the `/usr/tivoli/tsm/server/bin` directory, enter: `nohup ./dsmserve &` or run in the background with `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`

### Registering Licenses

You should immediately register any Tivoli Storage Manager licensed functions that you purchase. Use the `REGISTER LICENSE` command to do this, documented in the Administrator’s Reference and the Administrator’s Guide. Also, be sure to see the IBM Tivoli Storage Manager readme file for the latest information regarding enrollment certificate files.



---

## Chapter 2. Installing the Administration Center

The administrative Web interface is being replaced in this release with the Administration Center. The Administration Center is a Web-based interface that can be used to centrally configure and manage Tivoli Storage Manager Version 5.3 servers. The Administration Center can only be used to administer Version 5.3 or later servers. The old administrative Web interface cannot be used with Version 5.3 or later servers.

The Administration Center is installed as an IBM Integrated Solutions Console (ISC) component. The Integrated Solutions Console allows you to install components provided by multiple IBM applications, and access them from a single interface.

Version 5.0.2 of the Integrated Solutions Console is required to use the Administration Center. This version of the Integrated Solutions Console is to be installed prior to installing the Administration Center. If an earlier version of the Integrated Solutions Console is already installed, you will have the option of upgrading to Version 5.0.2.

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 (for example, it has at least 2 GB of physical memory), it can support both applications. However, 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.

When you install or upgrade the server to IBM Tivoli Storage Manager Version 5.3, 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.

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.

This section includes:

- Prerequisite software
- Prerequisite hardware
- Configuring the IP address
- Starting and stopping the servers
- The installation procedure for the Administration Center

**Note:** For the setting up the secure sockets layer (SSL) procedure, see the *Administrator's Guide* appendix.

---

## Prerequisite Software

One of the following operating systems must be installed on the machine before you can install the Administration Center. Ensure that your system meets the prerequisites for the type of installation you will perform.

- AIX 5.1 on pSeries (64-bit operating system on either a 32-bit or 64-bit hardware system) plus the following maintenance level and APARs:
  - Maintenance Level 4
  - APAR IY36884
  - APAR IY43951
- AIX 5.2 on pSeries (64-bit operating system on either a 32-bit or 64-bit hardware system) plus:
  - Maintenance Level 2
  - APAR IY44183
- AIX 5.3
- Sun Solaris 8

### Notes:

1. There are two libraries that are not part of the default Sun Solaris 8 but are required by the server. The server or storage agent will fail to start unless these two libraries are provided. Ensure that you have the latest update, or an update that provides these two libraries revisions.
  - a. C library SUNWlibC at revision 99.06.09 or greater.
  - b. The 64-bit server requires, in addition, that the SUNWlibCx is revision 1999.06.09 or greater.
  - c. The revisions are dates but typed just as they are listed by the Solaris tool "pkginfo" (for example: pkginfo -l SUNWlibCx). Note that the 64-bit package uses a four digit date but the 32-bit package only uses a two digit date.
- SuSE Linux Enterprise Server 8 Powered by United Linux 1.0 (on a 32-bit Intel system)
- Red Hat Linux Advanced Server 2.1 (on a 32-bit Intel system).
- Windows 2000 Server with Service Pack 4 (on a 32-bit Intel system)
- Windows 2000 Advanced Server with Service Pack 4 (on a 32-bit Intel system)

The host system must be configured to use a static IP address. See "Configuring the IP Address" on page 17.

You need a Web browser to log in and use the console. The Web browser can be installed on the same or a separate system. The following browsers are supported:

- Microsoft Internet Explorer 6.x (Windows systems only)
- Mozilla 1.0.2, Mozilla 1.3 (Mozilla has published some fixes that you might need to run on AIX systems), and Mozilla 1.4
- Netscape 6.2 and Netscape 7

---

## Prerequisite Hardware

The following hardware requirements apply to AIX, Linux, Solaris, and Windows systems. The requirements are the same except as noted for the different processors.

- **AIX Processor:** RISC System/6000 at 450 MHz minimum, or pSeries; higher for production environments.
- **Linux Processor:** CPU speeds of late model, mid-range to high-end servers are recommended (Pentium 800 MHz or equivalent at a minimum). Production environments should consider the Pentium 4 processor at 1.4GHz or higher.
- **Solaris Processor:** Ultra 60 at 450 MHz at a minimum; Sun Blade 2000 workstation at 1 GHz or higher is recommended.
- **Windows Processor:** CPU speeds of late model, mid-range to high-end servers are recommended (Pentium 800 MHz or equivalent at a minimum). Production environments should consider the Pentium 4 processor at 1.4 GHz or higher.
- **Physical memory:** 1024 MB or more for runtime installations.
- **Disk space:** To install the console on a system for the first time and use the WebSphere Application Server that is embedded in the Administration Center, you need:
  - 982 MB to satisfy the installation program disk space check
  - An additional 679 MB in the /tmp directory (which is also checked during the installation)
  - 290 MB for the completed installation
- **Virtual memory/swap space:** Double your physical memory. At a minimum, this should be at least equal to your physical memory.
- **Network connectivity:** To use the Administration Center across a network, the following items are required for the Administration Center machine:
  - A network adapter and connection to a physical network that can carry IP packets (for example, Ethernet, Token Ring, and ATM).
  - A static IP address
  - A configured, fully-qualified host name. Administration Center must be able to resolve an IP address from its fully-qualified host name. To verify that the host name is configured correctly, issue the ping command from a command line. For example:
 

```
ping hostname.yourco.com
```

where hostname.yourco.com is the fully-qualified host name.

---

## 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.

If you are installing the Administration Center for your use only and no other users will need to access this Administration Center installation, 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.

1. Go to the system where the Administration Center will be installed.
2. Locate the TCP/IP host file on your system.
  - For Windows systems, look in the path WINNT\system32\drivers\etc
  - For AIX, Linux, and Solaris systems, look in the path/etc
3. Use a text editor to open the host file.
4. At the end of the host file, add lines similar to the following lines:

```
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.

5. Save the host file.

---

## Starting and Stopping the Console Server and Console Help Server

If you install the Administration Center, the console server and the console help server are installed. The installation program automatically starts both servers after a successful installation.

If you shut down the system after the initial installation, any ISC servers that were started will be stopped. This section describes the commands you use to start and stop the ISC servers.

To start AIX, Linux, or Solaris system servers, enter:

```
your_isc_root/PortalServer/bin/startISC.sh ISC_Portal
```

To stop AIX, Linux, or Solaris system servers, enter:

```
your_isc_root/PortalServer/bin/stopISC.sh ISC_Portal administrator password
```

To start Windows system servers, enter:

```
your_isc_root\PortalServer\bin\startISC.bat ISC_Portal
```

To stop Windows system servers, enter:

```
your_isc_root\PortalServer\bin\stopISC.bat ISC_Portal administrator password
```

**Note:** In the commands, the variables have the following meanings:

- *your\_isc\_root* is the root directory for your Administration Center installation.
- *administrator* 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.
- *password* is the password for the administrator.

---

## Installation Procedure for the Administration Center

Perform installation in two steps:

1. Install the Integrated Solutions Console using the CD provided.
2. Install the Administration Center using the CD provided.

Instructions on how to install the CDs are given below.

**Note:**

**For Windows, perform the following steps:**

1. Insert the CD into your CD drive, and it will run automatically.

2. Follow the installation instructions for each panel. After you complete the panels, the Integrated Solutions Console or the Administration Center will be installed. Complete installation might take from one to two hours.

**For AIX, perform the following steps (as root):**

1. Insert the CD in your CD drive.
2. If you do not already have a **mount point/file system** defined for your CD, perform the following steps:
  - a. Create a directory `/cdrom`.  
**mkdir /cdrom**
  - b. Create the CD-ROM file system  
**crfs -v cdrfs -d /dev/cd0 -m /cdrom -p ro**
3. Mount the file system **mount /cdrom**.
4. Open the setup.bin file with your browser.
5. To release the CD, make sure you are no longer in the CD-ROM's directory, then **umount /cdrom**.
6. Follow the installation instructions for each panel. After you complete the panels, the Integrated Solutions Console or the Administration Center will be installed. Complete installation might take from one to two hours.

**For Sun Solaris and Linux, perform the following steps (as root):**

1. Insert the CD in your CD drive.
2. Open the setup.bin file with your browser.

**Note:** If you have multiple CD devices defined, the device may be `cdrom0` or `cdrom1`, depending on the number of devices defined.

3. To release the CD, make sure you are no longer in the CD-ROM's directory, then **eject cdrom0**.
4. Follow the installation instructions for each panel. After you complete the panels, the Integrated Solutions Console or the Administration Center will be installed. Complete installation might take from one to two hours.

**After installing the Integrated Solutions Console and Administration Center:**

1. Enter the following address in a supported Web browser:  
`http://:8421/ibm/console`. The `machine_name` is the network name or IP address of the machine on which you installed the Administration Center.
2. To get started, log in using the Integrated Solutions Console user ID and password you created during the installation. When 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.



---

## Chapter 3. Specifying Server and Client Communications

This chapter describes how to specify communication methods between the IBM Tivoli Storage Manager server and clients. A sample server options file, called *dsmserve.opt.smp*, is created by default by the installation. To set up communications, you must create a new server options file by copying the sample file. Name the new file *dsmserve.opt* and edit the options. Each sample or default entry in the sample options file is a comment, a line beginning with an asterisk (\*). When editing the options file, follow these guidelines:

- To activate an option, remove the asterisk at the beginning of the line.
- Options can begin in any column.
- Enter only one option per line, and the option must be on only one line.
- Options are not case-sensitive.
- One or more blank spaces are allowed between keywords and values.

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
- SNMP DPI®

**Note:** 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. Clients are then provided with one of the addresses 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 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 listen 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 userid, then the server must be root. This will prevent shared memory communication errors

---

## Setting TCP/IP Options

Here is a sample TCP/IP setting:

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

### 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

(Optional) 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.



---

## 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 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)

**Note:** English (en\_US) is required and must have en\_US environment support installed.

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 also must be installed.

**Selective Installation:** During installation, select Install Update from ALL Available to list all the filesets, and choose those for the languages that you want. Use SMIT after installation to change the language selection. See “SMIT Installation Procedure for the NLS Feature” on page 26.

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

- 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:

```
export LC_MESSAGES=it_IT
```

- Set the LANGUAGE option in the server options file to the name of the locale 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. This overrides the server options file definitions for date, time, and number formatting. If the locale does not successfully initialize, the server defaults to U.S. English message files, and the server options file continues to control the date, time, and number formats.

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.

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 “SMIT Installation Procedure for the NLS Feature” on page 26.

---

## SMIT Installation Procedure for the NLS Feature

Use SMIT to perform basic installation and configuration, or to change or add a language selection. If you are upgrading from ADSM to IBM Tivoli Storage Manager, read “Migrating to IBM Tivoli Storage Manager Version 5.3” on page 3.

**Note:** You can run SMIT from a command line or X Windows environment.

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 at step 5 on page 9 in the “Basic Installation and Configuration” procedure 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 administrative Web interface 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

This appendix describes how to use Tivoli Storage Manager maintenance updates with AIX. These updates, also referred to as Fix Packs, bring your server up to the current maintenance level. Use the System Management Interface Tools (SMIT) to apply the updates. To view a list of the latest maintenance and download fixes, visit this Web site: [www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html](http://www.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html)



The Tivoli Storage Manager server must **not** be running during maintenance updates.

---

---

### Before Applying Maintenance Updates

Maintenance updates may contain README files that provide a summary of changes for the PTF. Review this information before you apply the update. If required, a DSMSEV UPGRADED operation is automatically performed when maintenance is applied.

1. Mount the CD-ROM by entering from the root directory:

```
crfs -v cdrfs -d /dev/cd0 -m /cdrom -pro
mount /cdrom
```

2. Change to a directory where you have write permission. For example, to change to the `/home/temp` directory, enter:

```
cd /home/temp
```

3. List the contents of the PTF using the `RESTORE` command. For example:

```
restore -Tvf /cdrom/u452223.bff
```

4. Note the relative location of any README files. For example:

```
./usr/tivoli/tsm/server/bin/README.SRV
./usr/tivoli/tsm/devices/bin/README.DEV
```

5. Restore the README file. For example:

```
restore -xvf /cdrom/u452223.bff ./usr/tivoli/tsm/server/bin/README.SRV
```

6. Change to the directory containing the README and use your favorite browser to view the contents.

---

### Using SMIT to Install Maintenance Updates on AIX

Installation will be 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.

Complete the following procedure to apply maintenance updates on the AIX system by using SMIT.

**Note:** To use SMIT to apply maintenance updates on AIX, you must be root user and have disk space available. SMIT can be run from the AIX command line or from the command line of an xterm or desktop window.



The server must be halted before you begin this procedure.

It is strongly recommended that you do not commit the update until you are confident that the server is operating properly.

---

1. Log in as the root user.

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

2. Enter:

smit

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

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

4. 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 on **List** to access the device list. If you click on **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.

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



Committing the software prevents removal of Tivoli Storage Manager from the system, and prevents you from rejecting the PTF and returning to the previous level.

---

9. Check the default settings for all of the options.
10. Click **OK** to continue.  
This installation may take several minutes.
11. After the installation is complete, click on **Done**, remove the CD-ROM, and exit from SMIT.

---

## Appendix C. Removing the IBM Tivoli Storage Manager Server

This appendix describes what you must do before you remove the current version of the Tivoli Storage Manager server, and describes how to return to a previous version of Tivoli Storage Manager.

After you remove the IBM Tivoli Storage Manager device driver, restart your system.

To return to an earlier version of Tivoli Storage Manager after you perform a migrate install, perform a full database backup from your original version and the server install code for your original version.

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

If you return to an earlier version of Tivoli Storage Manager, be aware of these results:

- References to client files that were backed up, archived, or migrated to the current Tivoli Storage Manager server will be lost.
- Some volumes might be overwritten or deleted during Tivoli Storage Manager server operation. If so, client files that were on those volumes and that were migrated, reclaimed, moved (MOVE DATA command), or deleted (DELETE VOLUME command) might not be accessible to the earlier version of Tivoli Storage Manager.
- Definitions, updates, and deletions of Tivoli Storage Manager objects that were performed on the current Tivoli Storage Manager server will be lost.

---

### Before You Remove IBM Tivoli Storage Manager

Perform the following procedure:

1. Perform a full database backup. For example, if you have a tape device class named `tapeclass`, enter this 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:  

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

---

### Return to a Previous Version of Tivoli Storage Manager

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

Installation will be 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.

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

1. Enter `halt` to stop the current IBM Tivoli Storage Manager server if it is currently running.
2. Delete the current device definitions.  
Enter `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 SMIT screen (**Keep definition in database**) for defining devices, change the **yes** to **no**.

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

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

**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 *dsmserv.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 *Administrator's Reference* for details.
8. Reload the Tivoli Storage Manager database using the DSMSEV RESTORE DB utility.

```
dsmserv restore db todate=07/04/2003
```

See *Tivoli Storage Manager Administrator's Reference* for details.

9. Start the server by entering the following command:

```
dsmserv
```

10. Issue an `AUDIT VOLUME FIX=YES` command for each sequential storage pool volume that has a volume type of `STGDELETE` or `STGREUSE` to audit all disk storage pool volumes.
11. Examine the saved volume history file from step 2 on page 29.  
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).



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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