

Software and AnswerBook Packages Administration Guide

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Overview for the Administrator: Software and AnswerBook Packages

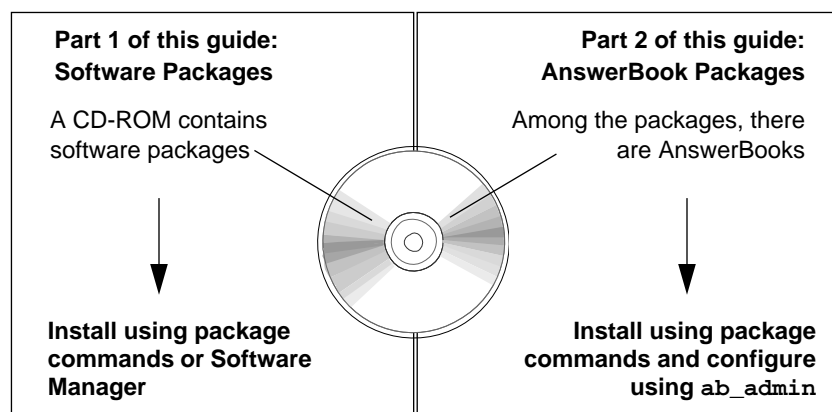
Solaris™ software is shipped on CD-ROM in units called *packages*. These packages may contain many kinds of software, from operating system to windowing applications and developer toolkits. They are configured as installable groups of object files arranged in clusters for installation.

Typically among the packages on a CD-ROM are one or more sets of AnswerBook® on-line documentation.

AnswerBook packages are different from other software packages in this respect: after you install an AnswerBook, you have to follow an administrative procedure to make the on-line documentation accessible to users on a network.

Thus this book for system administrators is divided into two parts:

- Part 1: Adding Software Packages
- Part 2: Adding and Configuring AnswerBook Packages



Part 1 — Adding Software Packages

Adding and Removing Packages

1

Solaris provides these ways to add and remove packages:

- Command-line utilities: `pkgadd(1M)`, `pkgrm(1M)`, and related commands
- Graphical user interface: Software Manager, `swmtool(1)`

Note – For reliable handling of AnswerBook packages, it is recommended that you use the command line utilities, `pkgadd(1M)` and related commands. For complete instructions on this topic, see *Adding and Configuring AnswerBook Packages*.

Use this table to find the instructions you need in this chapter.

Command-Line Interface for Handling Software Packages	
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Using Commands for Handling Software Packages

You can use the following commands to work with software packages:

- `pkgadd(1M)` to install a package
- `pkgrm(1M)` to remove a package
- `pkgchk(1M)` to check the installation of a package
- `pkginfo(1M)` to list the packages installed on a system

Installing Packages on a Server or Standalone System

Some package installations require space in the root file system, and others do not. If you know that a package's files do *not* need space in the root file system of client systems (for example, AnswerBook installations do not affect the root file system), you can install the package on a server. When the server's file system is mounted by the clients, the software becomes available to them.

Note – AnswerBook on-line documentation is an exception to the rule above. To make AnswerBook sets available to users on a network, you have to install the AnswerBook package(s) and then perform an administrative procedure. See Part 2 of this guide, *Adding and Configuring AnswerBook Packages*—in particular, Chapter 3, “AnswerBook Administration.”

If a package's files do affect the root file system, follow the instructions in “Installing Packages for Clients on a Server” on page 4.

▼ How to Insert the CD-ROM Disk

Begin all installations with these steps.

- 1. Place the CD-ROM into a caddy.**
- 2. Insert the caddy into the drive.**

If the volume management daemon is enabled (the default), inserting the CD-ROM mounts it automatically. If you have disabled volume management, mount the CD-ROM using the `mount(1M)` command.

File Manager opens, displaying the contents of the CD-ROM.

▼ How to Install Packages on a Server or Standalone System

1. Become superuser.

2. Type `/usr/sbin/pkgadd -d device pkgid` and press Return.

The argument *pkgid* stands for the name of the package to be installed.

For example:

```
# /usr/sbin/pkgadd -d /cdrom/solaris_2_3/s0/Solaris_2.3 SUNWpkgA
```

Use a space to separate multiple packages on the command line. For example:

```
# /usr/sbin/pkgadd -d /cdrom/solaris_2_3/s0/Solaris_2.3 SUNWpkgA SUNWpkgB SUNWpkgC
```

The argument to the `-d` option must be a full path name to a device or directory. If you do not specify the device on which the package resides, `pkgadd` checks the default spool directory (`/var/spool/pkg`). If the package is not there, installation fails.

If `pkgadd` encounters a problem during installation of the package, it displays a message related to the problem, followed by this prompt:

```
Do you want to continue with this installation?
```

Respond with either `yes`, `no`, or `quit`. If more than one package has been specified, type `no` to stop the installation of the package being installed. `pkgadd` continues with installation of the other packages. Type `quit` to stop the installation.

▼ How to Copy a Package to a Spool Directory

1. Become superuser.

2. Type `/usr/sbin/pkgadd -d device -s spooldir pkgid` and press Return.

The *spooldir* argument is the name of the spool directory where the package was spooled. The argument *pkgid* stands for the name of the package to be copied.

To install a package that has been copied to a spool directory, specify the spool directory as the argument to the `-d` option of `pkgadd`.

Installing Packages for Clients on a Server

This section describes how to install packages that place files in a client's root file system. If you are installing a package that does not place files on the client's root file system, the package can be installed on the server. See "Installing Packages on a Server or Standalone System" on page 2 for more information.

Use the `pkgadd` command with the `-R` option to specify the location of the dataless or diskless client's root file system for the client installation. After you have installed the package on the client's file systems, you may also need to install files that will be shared by all clients on the server's file systems. To install the package on the server, see "Installing Packages on a Server or Standalone System" on page 2.

Note – Packages installed on the server for diskless or dataless clients are read-only to the client and are shared with the server and other clients.

▼ How to Install a Package in a Diskless Client's Root File System

1. Become superuser.

2. Type `/usr/sbin/pkgadd -R rootpath -d device_name pkgid` and press Return.

The *rootpath* is the path name of the client's root file system. The argument *pkgid* stands for the name of the package to be installed.

During the installation you may see either of the following messages:

filename <already present on Read Only file system>

WARNING: *filename* <not present on Read Only file system>

Typically this means that the files named in the error messages will be shared by the clients and need to be installed on the server's file systems.

▼ How to Install a Package for a Dataless Client on a Server

1. Become superuser.

1. On the client, type `share root` and press Return.

2. **The client must export its root file system so it can be remotely mounted by the server.**
3. **On the server, type `mkdir /directory_name` and press Return.**
This directory will be used as a mount point for the client's root file system.
4. **On the server, type `/etc/mount client_name: / /directory_name` and press Return.**
The *directory_name* argument should be the same directory name specified in Step 2.
5. **Type `/usr/sbin/pkgadd -R /directory_name -d device_name pkgid` and press Return.**

During the installation you may see either of the following messages:

filename <already present on Read Only file system>

WARNING: *filename* <not present on Read Only file system>

Typically this means that the files named in the error messages will be shared by the clients and need to be installed on the server's file systems.

Checking the Installation of Packages

You use the `pkgchk` command to check installation completeness, path name, file contents, and file attributes of a package. Table 1-1 lists some of the `pkgchk` options and describes their purpose. See the `pkgchk(1M)` man page for more information on all the options.

Table 1-1 `pkgchk` Options

Option	Purpose
<code>-p <pathname></code>	Checks the accuracy of the specified path name
<code>-c</code>	Displays information on the contents of the files in the package
<code>-a</code>	Displays information on the attributes of the files in the package
<code>-d device</code>	Specifies the device or location of a spooled package

▼ How to Check the Installation of an Installed Package

♦ **Type** `/usr/sbin/pkgchk pkgid` and press Return.

You can specify more than one package identifier on the command line. The names are separated by spaces. If you specify no package identifier, the entire contents of the machine are checked.

▼ How to Check the Installation of a Specific Path Name

♦ **Type** `/usr/sbin/pkgchk -p <pathname>` and press Return.

You can specify multiple path names in a comma-separated list.

▼ How to Check the File Contents of a Package

♦ **Type** `/usr/sbin/pkgchk -c pkgid` and press Return.

▼ How to Check the File Attributes of a Package

♦ **Type** `/usr/sbin/pkgchk -a pkgid` and press Return.

▼ How to Check the Completeness of a Spooled Package

♦ **Type** `/usr/sbin/pkgchk -d spooldir pkgid` and press Return.

Note – The checks made of a spooled package are limited because not all information can be audited until a package is installed.

Checking Installed Package Information

Use the `pkginfo` command to display information about the packages that are installed on the system.

▼ How to List Information About All Installed Packages

♦ **Type** `/usr/sbin/pkginfo` **and press Return.**

The information displayed will be similar to the following, listing the primary category, package instance, and the names of all completely installed and partially installed packages.

```
system      SUNWcar      Core Architecture, (Root)
graphics    SUNWcgl2     GS (cgl2) Device Driver
```

▼ How to Display Detailed Information About a Package

♦ **Type** `/usr/sbin/pkginfo -l pkgid` **and press Return.**

The argument *pkgid* is the identifier, or instance, of the package for which you want the information.

The information you get will be similar to the following.

```
PKGINST:      SUNWcar
NAME:          Core Architecture, (Root)
CATEGORY:     system
ARCH:          sparc.sun4c
VERSION:       10.0.2
BASEDIR:       /a
VENDOR:        Sun Microsystems, Inc.
DESC:          Core Architecture, (Root)
PSTAMP:        dive920521215828
INSTDATE:      Jun 03 1992 03:16
HOTLINE:       Please contact your local service provider
STATUS:        completely installed
FILES:         39 installed path names
                7 shared path names
                1 linked files
                7 directories
                21 executables
                3603 blocks used (approx)
```

Removing Packages From Servers and Standalone Systems

Always use the `pkgrm` command to remove installed packages. Do not use the `rm(1)` command, which will corrupt the system's record-keeping of installed packages.

▼ How to Remove a Package

- ♦ **Type `/usr/sbin/pkgrm pkgid` and press Return.**
The argument *pkgid* is the identifier of the package to be removed.

▼ How to Remove a Spooled Package

- ♦ **Type `/usr/sbin/pkgrm -s spooldir [pkgid]` and press Return.**
The *spooldir* argument is the name of the spool directory where the package was spooled. The *pkgid* is the name of the package to be removed. If no package identifier is supplied, `pkgrm` prompts the user to remove each package listed in the spool directory.

▼ How to Remove a Client's Package

1. **Type `/usr/sbin/pkgrm -R rootpath pkgid` and press Return.**
The specified package is removed from the client's file systems that reside on the server.
2. **If shared files were installed on the server's file systems, type `/usr/sbin/pkgrm pkgid` and press Return.**
The shared files for that particular package are removed from the server.

If the package was installed on file systems that are on the client machine, you can remove the package as follows:

1. **On the client, type `export root` and press Return.**
The client must export its root file system so it can be remotely mounted by the server.
2. **On the server, type `mkdir /directory_name` and press Return.**
This directory will be used as a mount point for the client's root file system.
3. **On the server, type `/etc/mount client_name: / /directory_name` and press Return.**
The *directory_name* argument should be the same directory name specified in Step 2.
4. **Type `/usr/sbin/pkgrm -R /directory_name pkgid` and press Return.**

Files in the client's package database that are marked shared are not removed from the server, but are removed from the client's database. If all clients have removed the package, you can remove the shared files from the server using a separate invocation of `pkgrm` on the server.

Problem With Adding and Removing Packages

There is a known problem with adding or removing some packages developed prior to Solaris 2.4. If adding or removing the package fails during user interaction, or if you are prompted for user interaction and your responses are ignored, set the following environment variable:

```
NONABI_SCRIPT=TRUE
```

Software Manager (swmtool): Graphical User Interface for Packages

You can install software on your local system or a remote system with Software Manager (the `swmtool(1M)` command).

Software Manager can be used in two ways:

- To look at the software installed on the local system
- To install or remove software on a local or remote system

The default location for the installation is the local system (shown in the Target Hosts list presented by Software Manager).

Note – To add or remove AnswerBook packages, use the command line utilities `pkgadd(1M)` and related commands rather than Software Manager. See Part 2, *Adding and Configuring AnswerBook Packages*.

Basic Procedures Using Software Manager

To install or remove the software from a local or remote system, run Software Manager as superuser. If you just want to view the software packages that have been installed on a system, you do not need to be superuser.

▼ How to Start Software Manager as Superuser

1. To become superuser, type `su` and press **Return**.
2. Type the superuser password at the `Password:` prompt and press **Return**.
3. Type `/usr/sbin/swmtool &` and press **Return**.

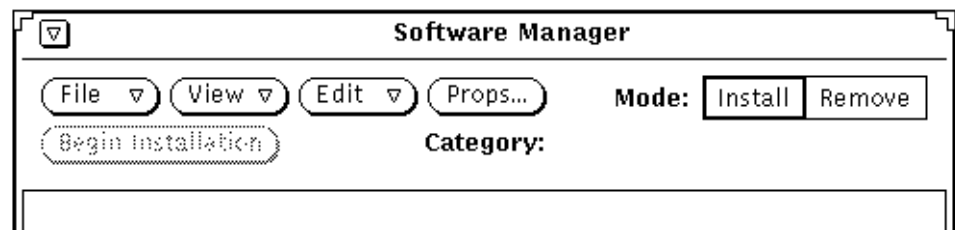
Note – Make sure that the system running Software Manager allows programs run by root to be displayed. If root is not authorized to display programs on that system, use the `xauth` command to set up the proper authorization. See `xauth(1)` for information.

When you start the Software Manager, use the `-d` option to specify the directory where it should look:

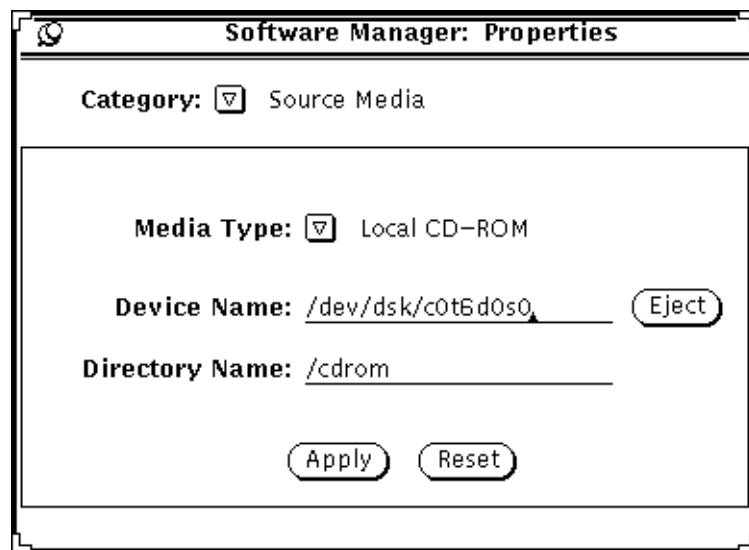
```
# /usr/sbin/swmtool -d /cdrom/cdrom0
```

▼ How to Install a Package on a Local System

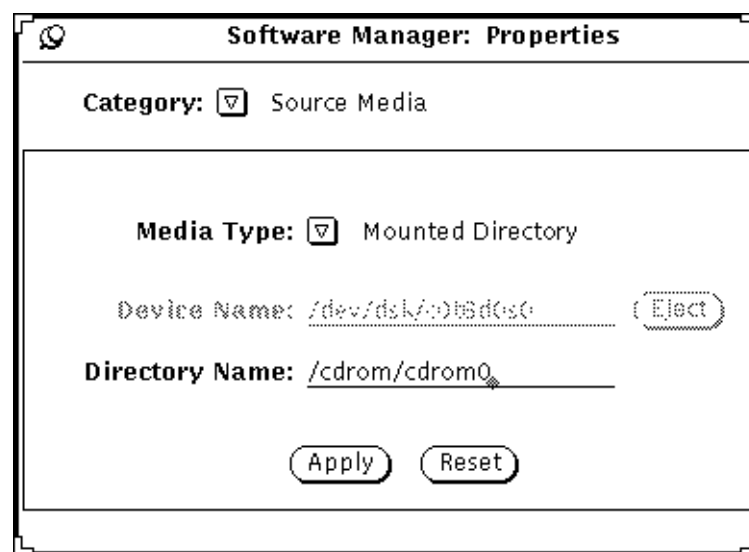
1. Place the CD-ROM disk into a caddy, then insert the caddy into the CD-ROM drive.
2. Choose **Install** from the Mode options presented by Software Manager.



3. Click **Props** to bring up the Properties window.
4. Choose **Source Media** from the Category menu to display the Properties window.



5. Choose Mounted Directory from the Media Type menu.

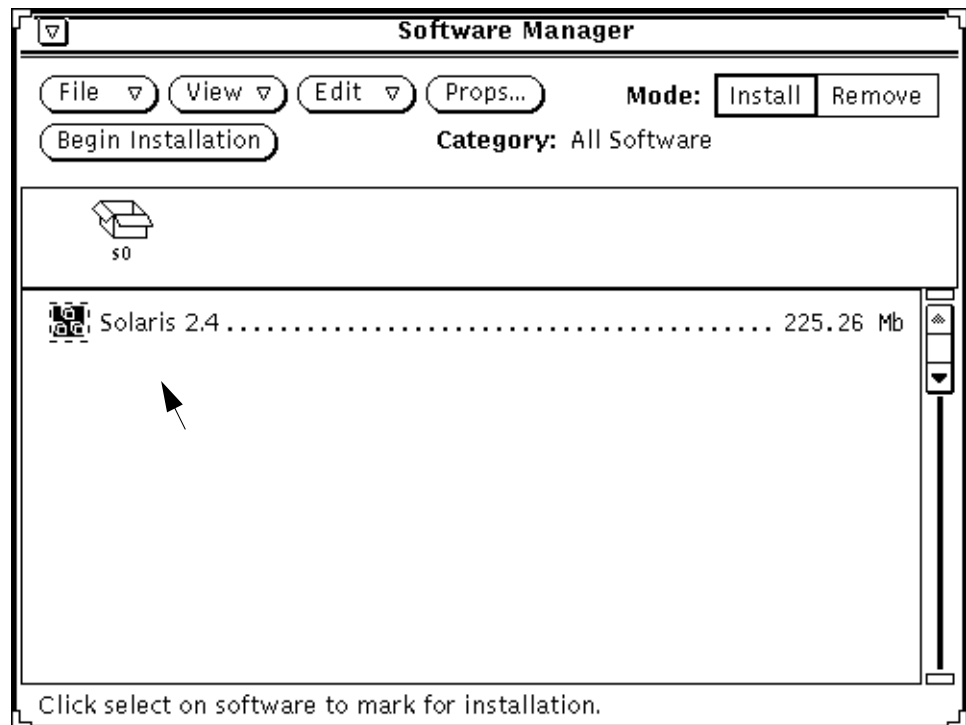


6. Type the name of the directory in the Directory Name field and click Apply.

If you are using a CD-ROM, it is automatically mounted by volume management with the default `/cdrom/cdrom0` for the mounted directory name. If you have disabled volume management, make sure in this step the path you specify is the full and correct mount point for the CD-ROM.

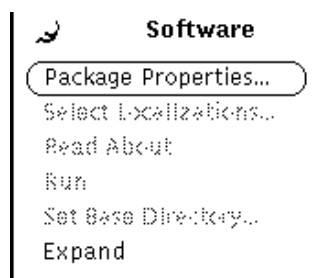
7. Select the icon associated with the software.

In this step you can see if the software you want to install will fit on the target system. If there is insufficient space available on the target system, the Space Meter window is displayed. Otherwise, the installation continues as described here.

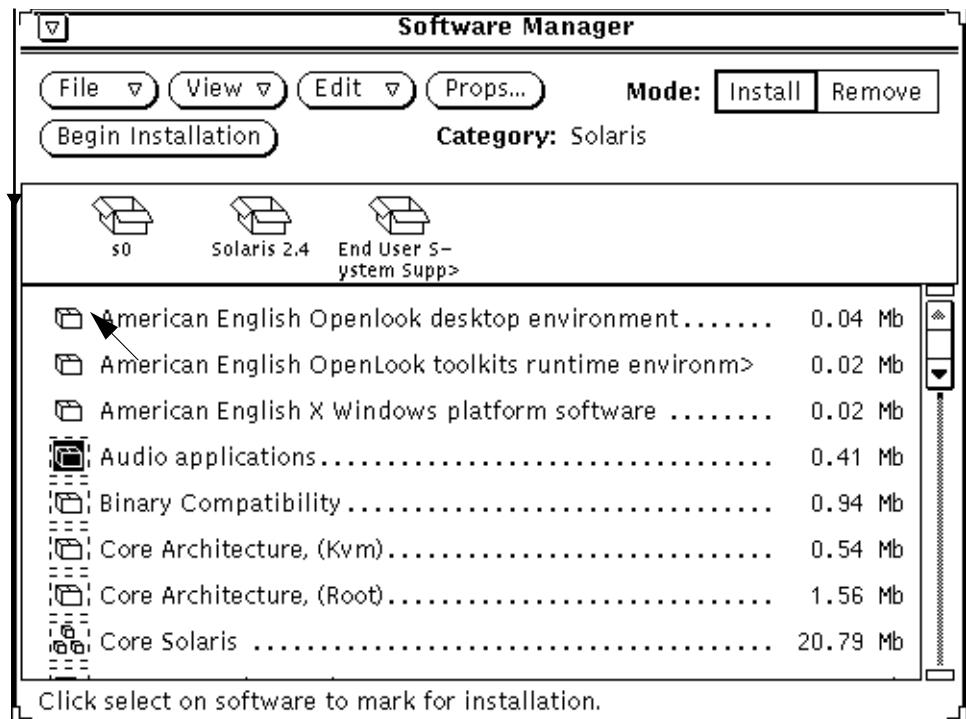


If the software is packaged in clusters, you can view the components of the clusters by double-clicking on the icon representing the software or by choosing Expand from the Software menu.

To bring up the Software menu, place the cursor over the software icon and press the MENU mouse button.



8. To choose the software you want to install, select the associated icons.
(The Space Meter window is displayed if there is insufficient space on the target system.)



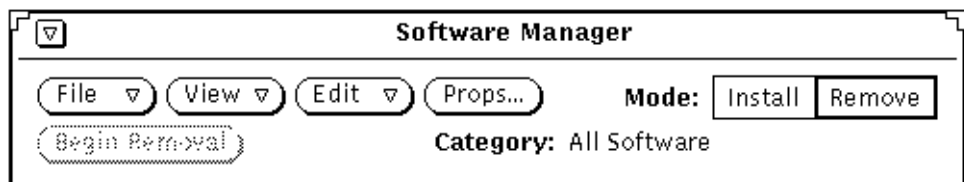
Note – Make sure that you have deselected all the software that you do not want to install. A package is selected if the icon is darkened. To deselect a software package, click once on the darkened icon. To deselect all the software packages, choose Deselect All from the Edit menu.

9. Click Begin Installation.

The Software Manager Command window is displayed and you are asked questions to help the Software Manager install the software.

▼ How to Remove a Package From a Local System

1. Choose Remove from the Mode options presented by Software Manager.

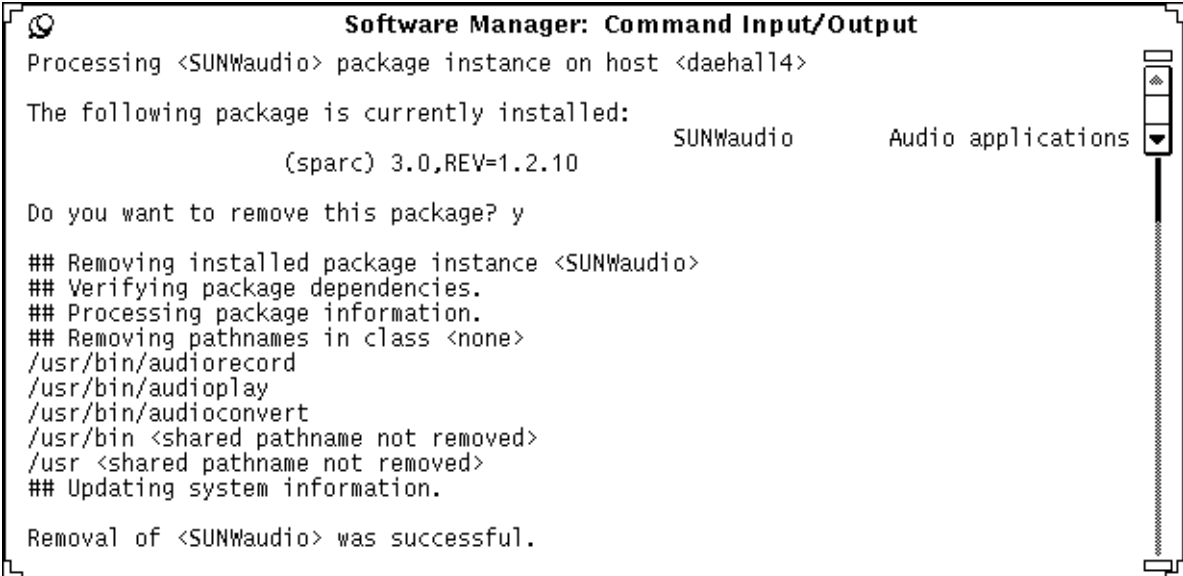


2. Select the packages to remove.

3. Click Begin Removal.

The Software Manager Command window asks you to confirm the removal of the software.

4. Type *y* to continue removing the package.



```
Software Manager: Command Input/Output
Processing <SUNWaudio> package instance on host <daehall4>

The following package is currently installed:
                                SUNWaudio      Audio applications
                                (sparc) 3.0,REV=1.2.10

Do you want to remove this package? y

## Removing installed package instance <SUNWaudio>
## Verifying package dependencies.
## Processing package information.
## Removing pathnames in class <none>
/usr/bin/audiorecord
/usr/bin/audioplay
/usr/bin/audioconvert
/usr/bin <shared pathname not removed>
/usr <shared pathname not removed>
## Updating system information.

Removal of <SUNWaudio> was successful.
```

The complete list of installed software displayed in the Software Manager is updated to reflect the changes you made.

Identifying Remote Systems to the Software Manager

Before you install or remove software on remote systems, you must provide the name of the remote system to the Software Manager. You need superuser access (root access) to the remote systems you identify. There are two ways to get this access:

- Know the superuser password for the remote system.
- Ensure that the remote system has an `.rhosts` entry allowing unrestricted superuser access to the system on which you are running the Software Manager.

Note – Note that allowing unrestricted superuser access on a system reduces the security of that system.

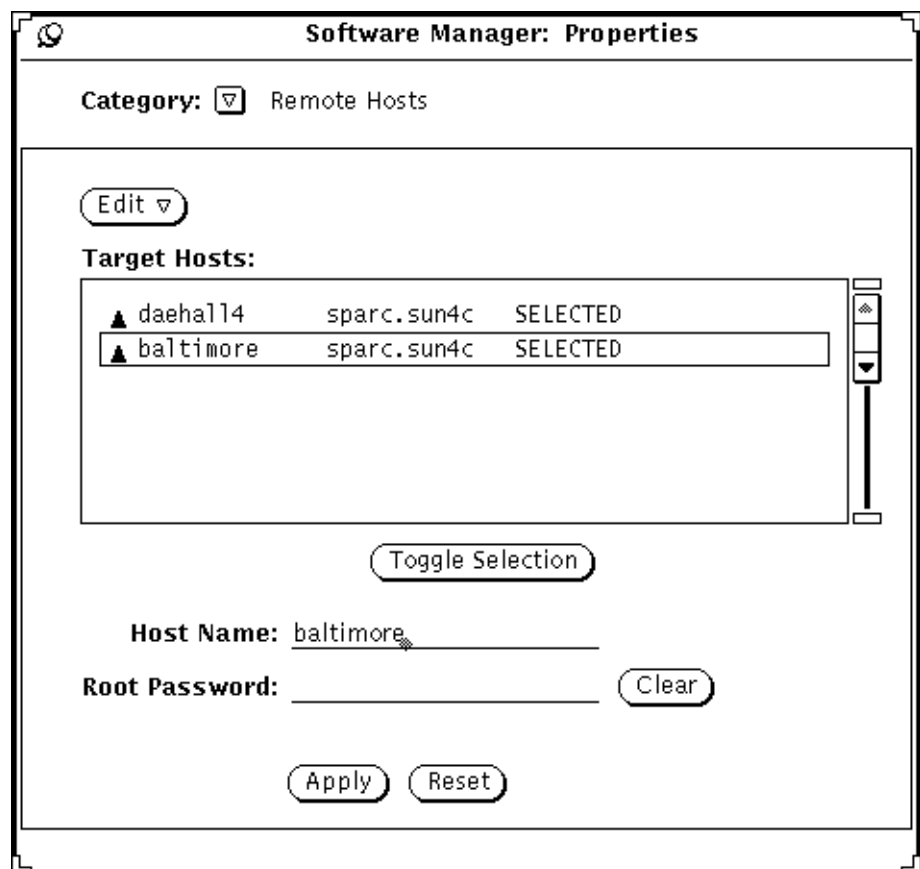
For both methods of getting superuser access, the `CONSOLE` entry in `/etc/default/login` must be commented out. In this version of Solaris, the default value is not commented out; remote root access is not permitted. Refer to “Restricting `root` Access” in *Security, Performance, and Accounting Administration*.

For more information on `.rhosts` entries, see *Security, Performance, and Accounting Administration* and the man page `rhost(4)` in the *SunOS Reference Manual*.

▼ How to Add a Remote System to the List of Hosts

Follow these steps to add a remote system to the list of hosts that the Software Manager keeps.

1. **Click the Props button on the Software Manager main window.**
The Properties window is displayed.
2. **Choose Remote Hosts from the Category menu on the Properties window.**
The Remote Hosts Properties window is displayed.

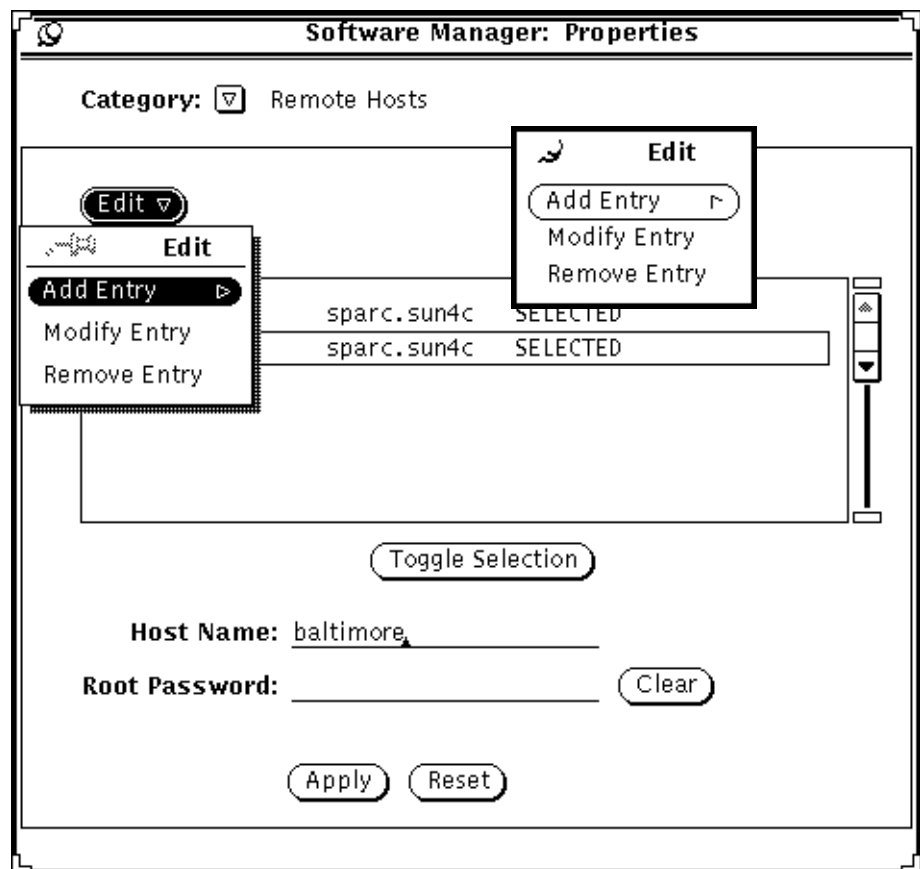


The image shows a window titled "Software Manager: Properties". At the top, there is a "Category:" label followed by a dropdown menu showing "Remote Hosts". Below this is an "Edit" button with a downward arrow. Underneath is the "Target Hosts:" section, which contains a list box with two entries: "daehall4" and "baltimore", both with "sparc.sun4c" as the architecture and "SELECTED" as the status. To the right of the list box is a vertical scrollbar. Below the list box is a "Toggle Selection" button. At the bottom, there are two text input fields: "Host Name:" with "baltimore" entered, and "Root Password:" which is empty. To the right of the "Root Password:" field is a "Clear" button. At the very bottom are "Apply" and "Reset" buttons.

Host Name	Architecture	Status
daehall4	sparc.sun4c	SELECTED
baltimore	sparc.sun4c	SELECTED





3. To add an entry for a remote system, enter its name in the Host Name field.
Enter the root (superuser) password if necessary.

4. To add the remote system to the Target Hosts list, choose Add Entry from the Edit menu.



In this example, the host `baltimore` was added to the Target Hosts list. Before actually adding it to the list, Software Manager checked to see if the root password for `baltimore` was valid. The Software Manager then added the host name to the list with a symbol showing a solid triangle pointing upward indicating that the remote host is operational. See Table 1-2 for a description of the Target Hosts symbols and their meaning.

Table 1-2 Target Hosts Symbols and Their Meaning

Target Hosts Symbol	Meaning
	The host listed is up. Software Manager has the necessary permissions to install or remove software on this host.
	The host listed is down.
	The host listed is a known host on the network, but Software Manager does not have the necessary permissions to install or remove software on this host. Or, the host is unknown to the network.
	The host listed is not a Solaris 2.x system.

5. When you have finished adding all the remote systems, click Apply.

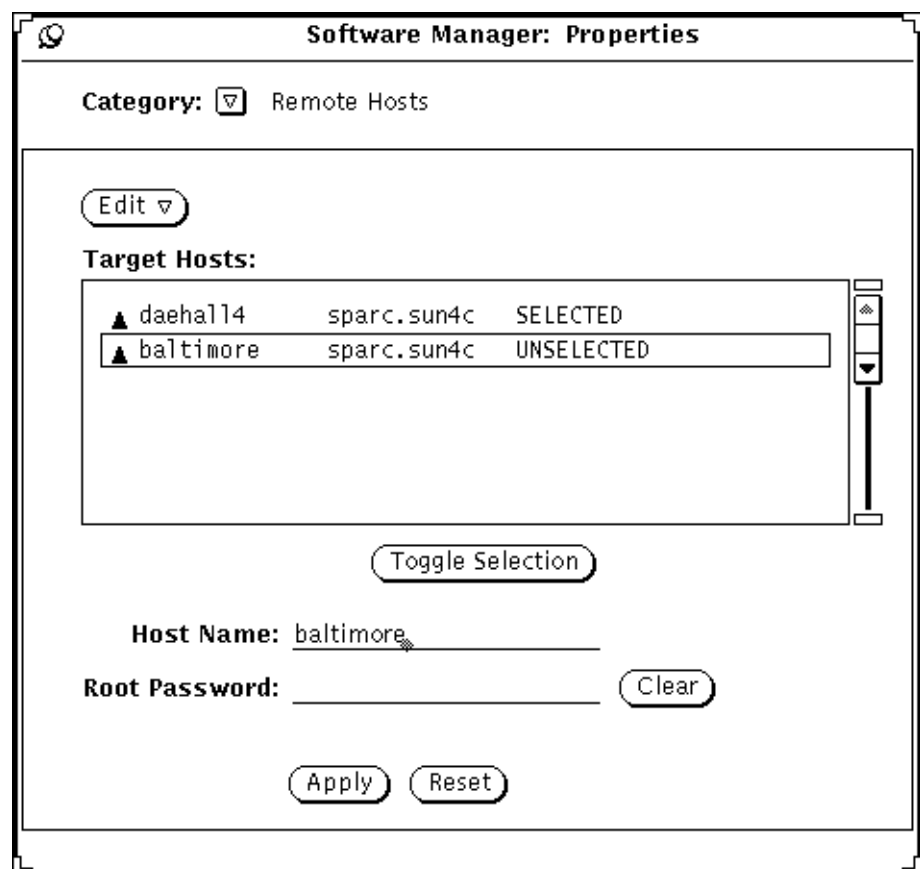
This registers your changes to the Target Hosts list with Software Manager.

▼ **How to Select a Remote System**

After adding a system to the list of hosts, you must select it before installing or removing software on it.

- 1. To determine if a system is selected, look at the right column in the Target Hosts list—it will say either SELECTED or UNSELECTED.**

2. If the system you want is **UNSELECTED**, click the entry in the Target Hosts list and click **Toggle Selection**.



The right column of the entry changes to show that host is **SELECTED**.

3. Be sure to deselect any systems on which you do not want to install or remove software.
4. To inform the Software Manager of your changes to the Target Hosts list, click **Apply**.
5. Install the software as you would for a local system.
The software is installed on the hosts you selected in the Target Hosts list.

▼ How to Set Up Access to a Remote CD-ROM Drive

If you want to set up access to files on a remote CD-ROM drive, follow these steps.

On the remote system with the CD-ROM drive:

1. Become superuser.

2. Insert the CD-ROM.

Volume management mounts it, and its files are accessible to the network.

3. Edit the `/etc/dfs/dfstab` file, adding the following line to the end of the file.

```
share -F nfs -o ro,anon=0 cdrom/cdrom0/s0
```

Note – For further reference, see the `share(1M)` man page.

4. Type the `shareall(1M)` command.

```
# shareall
```

▼ How to Access Shared CD-ROM Files

On a system from which you want to access the remote CD-ROM drive:

1. Become superuser.

2. Change to the CD-ROM directory.

If you are running automounter, change to the remote system's `cdrom/cdrom0` directory.

```
% cd /net/system_with_CDROM/cdrom/cdrom0/s0
```

Note – The path name shown here is the mount point if volume management is enabled (the default with Solaris). If you have disabled volume management, make sure in this step that the path you specify is the correct mount point for the CD-ROM.

3. If you are not running automounter, mount the directory:

```
# mount -F nfs -o ro system_with_CDROM:cdrom/cdrom/s0 /cdrom
```

The files from the remote system's directory `/cdrom/cdrom0/s0` are mounted on the *system_with_CDROM*.

Using Software Manager to Add Support for Clients

The Software Manager allows you to add software support for clients that have a different architecture or use a different operating system version than the server. Adding software support installs the portions of the operating system that are specific to the architecture or version of the operating system.

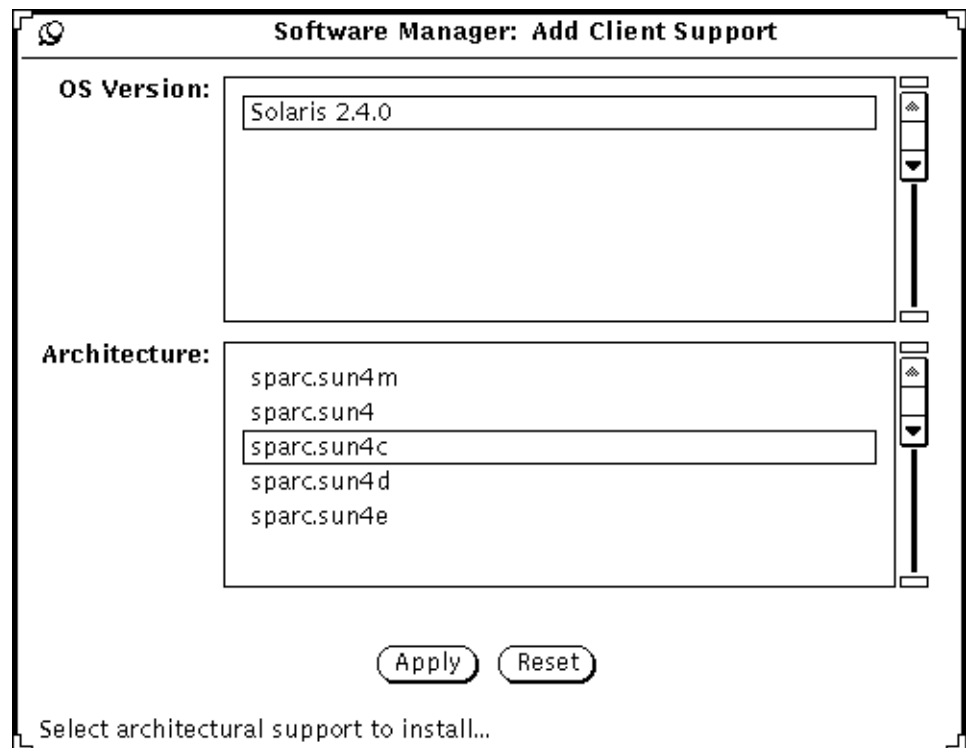
If you add diskless or dataless clients that have an architecture or operating system version different from the server, you must add software support before using Host Manager to set up the clients. For more information on Host Manager, see:

- *Common Administration Tasks*
- *Administration Application Reference Manual*

▼ **How to Add Software Support for Diskless or Dataless Clients**

- 1. Choose Add Client Support from the Software Manager Edit menu.**

The Add Client Support window is displayed.




2. **Select the OS (operating system) Version for the clients.**
3. **Select the machine architectures for the clients you want to support and click Apply.**

Note – Any client support software installed must contain the software for the local machine's native architecture. If, for example, the local machine is a Sun4c, then client support software must contain support for the Sun4c architecture. The native environment for the server is its operating system and architecture. If the server is a Sun4c machine running SunOS 5.3, its native environment is its operating system (SunOS 5.3) and its architecture (Sun4c).

4. **Click Begin Installation.**

Part 2 — Adding and Configuring AnswerBook Packages

AnswerBook Package Installation

2 

Use this table to find the topics you need in this chapter.

<i>Overview of AnswerBook Installation</i>	<i>page 28</i>
<i>Hardware and Software Requirements</i>	<i>page 28</i>
<i>AnswerBook Installation</i>	<i>page 29</i>
<i>Notes about the Solaris User AnswerBook</i>	<i>page 33</i>
<i>Verifying AnswerBook Installation</i>	<i>page 35</i>
<i>Removing an AnswerBook Package</i>	<i>page 36</i>

AnswerBook is the Desktop application that delivers on-line documentation to the screen. Like the printed books, the AnswerBook page-by-page interface is familiar to users, and it offers the added advantages of full-text searching capability, navigation via hypertext links, and an electronic form of bookmarking.

AnswerBook documentation is shipped on CD-ROM as units of software called *packages*. There are many AnswerBook packages available as part of various Solaris-related products.

If you are adding AnswerBook packages to your system, you need the advice and instructions in this chapter and in Chapter 3, “AnswerBook Administration.”

Overview of AnswerBook Installation

- First you run `pkgadd` to install one or more AnswerBook packages from the CD-ROM disk.
- For each AnswerBook package you install, you are asked to choose an installation option, `nil` or `heavy`. A choice of `nil` takes up less disk space, but choosing `heavy` results in better AnswerBook performance.
- You choose a parent directory for the AnswerBook package and check available disk space there.
- If users will be sharing AnswerBooks on a network, you perform an administrative procedure, covered in Chapter 3, “AnswerBook Administration.”

Hardware and Software Requirements

Review these requirements before you begin installation.

For Installing a Typical AnswerBook Package

To install an AnswerBook package, you need:

- A system or server running Solaris system software
- A CD-ROM drive available somewhere on the network
- Available disk space: from under 1 to more than several hundred Mbytes, depending on the AnswerBook package and the installation option you choose

For Viewing the Installed AnswerBook Package

Once you’ve installed the AnswerBook package, to use it you should have:

- A system or server running Solaris system software and a black-and-white or color bitmap graphics monitor
- OpenWindows™ Version 3.2 or later
- For printing pages from AnswerBook: A laser printer with Palatino™ style fonts resident (such as the Sun LaserWriter™ or Sun SPARCprinter™)

AnswerBook Installation

This procedure assumes you have a CD-ROM drive installed locally (connected to your system). Otherwise, see Chapter 1, “Adding and Removing Packages” for supplementary instructions, such as those for installing from a remote CD-ROM drive.

Installing an AnswerBook Package

- 1. Become superuser.**
- 2. Place the AnswerBook CD-ROM into the caddy.**
- 3. Insert the caddy into the drive.**

If the volume management daemon is enabled (the default), inserting the CD-ROM mounts it automatically. If you have disabled volume management, mount the CD-ROM using the `mount (1M)` command.

- 4. Run `pkgadd` to begin the installation.**

```
# pkgadd -d /cdrom/cdrom0
```

Note – The path name shown in the example above is the mount point if volume management is enabled (the default). If you have disabled volume management, make sure the path name you specify is the correct mount point for the CD-ROM.

The `pkgadd` software presents a numbered list of one or all the packages on the disk and their associated AnswerBook titles.

For example:

```
1   SUNWabc      ABC AnswerBook
      (pltfrm) 1.2.1
2   SUNWabook    Another AnswerBook
      (pltfrm) 40.5.2
3   SUNWasys     System AnswerBook
      (pltfrm) 78.9.3
```

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,??,q]:

5. **Specify one or all AnswerBook packages by number and press Return.** Each AnswerBook package will be installed successively. Prior to each package installation you will be prompted for information.

Alternatively, you can install a single AnswerBook package by typing its number from the list.

Considerations As You Install AnswerBook Packages

If you are concerned about having enough disk space for the installation, you should see:

- “A Review of AnswerBook Installation Options” on page 30
- “Checking the Size of AnswerBook Packages on the CD-ROM” on page 31
- “Checking Disk Space for the AnswerBook Package(s)” on page 31

Otherwise, skip to “Finishing Up Each AnswerBook Installation” on page 32.

A Review of AnswerBook Installation Options

For each AnswerBook package you install, you are asked to choose an installation option.

```
Copyright information....
The installation options are as follows:
Option:      Description:
-----
1. nil:      less than X Megabyte disk space required
              [slowest performance].
2. heavy:    XX Megabytes disk space required
              [best performance].
Enter the number of an installation option from the
list above (1 or 2).

Make sure to choose a parent directory on a file system
big enough to accommodate all the files to be moved for
the INSTALL OPTION you selected.
```


Table 2-1 explains more about these install options.

Table 2-1 AnswerBook Installation Options

Option	Description	Required Disk Space (Mbytes)	Install Time
nil	Leaves almost all AnswerBook files on the CD-ROM. Saves disk space but requires that the AnswerBook CD-ROM remain in the drive, dedicated to AnswerBook use. Not an option when installing the Solaris User AnswerBook.	< 1	< 5 min.
heavy	Stores all AnswerBook files on hard disk. Optimizes AnswerBook performance. This configuration is recommended if the AnswerBook package is to be shared by multiple systems and users.	varies with the package, from < 1 up to 50 or more	< 15-30 min.

Checking the Size of AnswerBook Packages on the CD-ROM

If you're concerned about available disk space for the installation, you can determine the *approximate* size of the contents of the CD-ROM before you install the AnswerBook package(s).

1. **Type `cd /cdrom/cdrom0` to change to the CD-ROM directory.**
2. **At the prompt, type `du -s .` to see the files in the current CD-ROM directory and determine their size.**

This will tell you how much disk space you'll need when you install.

Checking Disk Space for the AnswerBook Package(s)

As each AnswerBook package is installed, the installation software requires you to designate a parent directory.

Typically AnswerBook packages are installed in `/opt`, but they can be installed in any appropriate directory with enough disk space.

In a separate command window:

1. Type `df -k` to check available disk space in the directories under the root partition.
2. Compare the available space in the list with the sizes listed for the `nil` and `heavy` installations.

In the example below, the system has enough space in the `/opt` partition to do a heavy installation of an AnswerBook package under 18 Mbytes.

Filesystem	kbytes	used	avail	capacity	mounted on
/dev/dsk/c0t0d0s5	31966	10837	17939	38%	/opt

Finishing Up Each AnswerBook Installation

To proceed, you are prompted to choose an installation option.

Enter the number of an installation option from the list above (1 or 2).

1. Type `1` for `nil`, `2` for `heavy`.
2. Type the name of the parent directory for the package.
The default is `/opt`.

Specify the parent of the AnswerBook home directory:
`/opt`

3. Type `y` to complete the installation.

Do you want to continue with the installation of this package?
[y, n,?]
`y`

The installation proceeds, listing AnswerBook components as they are installed, until you see this message:

Installation was successful.

[Information varies...]

Select package(s) you wish to process (or 'all' to process all packages). (default: all) [?,?,q]:

4. Type `q` to quit the installation or specify another AnswerBook package and continue installing.

5. When you're finished with the installation, view the list of installed packages.

```
# pkginfo | grep AnswerBook
```

A list of all installed AnswerBook packages is displayed.

6. Check the installation accuracy of each installed package.

```
# pkgchk packagename packagename packagename [and so on]
```

Note – The `pkgchk` process takes time, even for one package.

7. Examine the new AnswerBook collection, and optionally make it available to other users.

See “Verifying AnswerBook Installation” on page 35.

Notes about the Solaris User AnswerBook

The Solaris User AnswerBook is a package of on-line documentation written for users of the Solaris desktop. It is included on the Solaris CD-ROM (the disk from which Solaris is installed), and consumes about 20 Mbytes of available disk space when installed.

There are two ways to install the Solaris User AnswerBook:

- As part of the Solaris installation, you can install it into a predetermined directory on the local system. To do so, you choose “customize” at the appropriate point during Solaris installation and include the Solaris User AnswerBook package (SUNWabe). This package is installed in the `/opt` directory during Solaris installation.

Note that the Solaris User AnswerBook package is installed on the local system by default if you have chosen the “Entire Distribution” software group. It is also installed automatically by certain configurations of JumpStart installation.

- You can install it *after* Solaris installation into the directory of your choice, using `pkgadd`, as shown in the following section. Many sites prefer to install the Solaris User AnswerBook this way, locating a single copy in the same place as other AnswerBook packages on their network.

Note that no `nil` installation option exists for the Solaris User AnswerBook.

Installing the Solaris User AnswerBook Package using pkgadd

Because the Solaris User AnswerBook package is part of the Solaris CD-ROM, installation steps are slightly different from those of other AnswerBook packages. Follow these steps:

1. Become superuser.

2. Place the Solaris CD-ROM into the caddy.

3. Insert the caddy into the drive.

If the volume management daemon is enabled (the default), inserting the CD-ROM mounts it automatically. If you have disabled volume management, mount the CD-ROM using the `mount (1M)` command.

Note – The path name shown in the following examples is the mount point if volume management is enabled (the default). If you have disabled volume management, make sure the path name you specify is the correct mount point for the CD-ROM.

4. Add the SUNWabe package.

To install the Solaris User AnswerBook in the `/opt` directory, type:

```
# pkgadd -d /cdrom/cdrom0 SUNWabe
```

Or, to install the Solaris User AnswerBook in a different location, type the following command and specify a directory when prompted:

```
# pkgadd -d /cdrom/cdrom0 -a none SUNWabe
```

Enter the path to the package base directory [?,q] **/export/ab**

A list of files is displayed as the package is installed. When the package installation is complete you will see:

```
Installation of <SUNWabe> was successful.
```

5. Check the installation accuracy of the package.

```
# pkgchk SUNWabe
```

Note – The `pkgchk` process takes time, even for one package.

6. Make the Solaris User AnswerBook available to other users, if applicable.

If you are planning to run the Solaris User AnswerBook only on the system where it is installed, you're done; it will be accessed automatically the next time you run the AnswerBook software.

If users on other systems will want access to this AnswerBook collection, make it available to them following the instructions in Chapter 3, "AnswerBook Administration."

Verifying AnswerBook Installation

Verify the installation on the system where you installed the AnswerBook package(s) with a trial run.

To start the AnswerBook application:

♦ Double-click on its icon in File Manager.

or:

♦ If the environment variable `OPENWINHOME` is not set, and you did not install OpenWindows in the default location (`/usr/openwin`), then type the following:

```
% setenv OPENWINHOME /<your_openwin_area>/openwin
```

```
% /<your_openwin_area>/openwin/bin/answerbook
```

Note – In setting the environment variable `OPENWINHOME`, you must give the exact path name `/usr/openwin`. You must have OpenWindows installed locally in `/usr/openwin` or mounted on `/usr/openwin`.

When the AnswerBook Navigator opens, click the Modify Library button and select AnswerBook titles from the scrolling list so they are included in the Navigator Contents.

Making AnswerBook Documentation Available to Users

Once you have installed the AnswerBook package(s), see Chapter 3, "AnswerBook Administration," for instructions on how to make them available to users on a network.

Removing an AnswerBook Package

You may decide you want to remove an AnswerBook package. For example, during the install you may have chosen the `nil` option, but now you want to install the complete `heavy` AnswerBook package.

First remove the AnswerBook package:

1. **Open a shell tool, and become superuser.**
2. **To find the `pkgid` of the package you want to remove, type `pkginfo`.**
A list of packages is displayed; the package identifiers are in the second column.
3. **Type `pkgrm pkgid`.**
Insert the identifier of the package you want to remove.

Caution – Always remove AnswerBook packages using the `pkgrm` command. Using the `rm` command will remove the files associated with the package, but it leaves the database of packages unchanged, as if the package were still installed.

4. **Type `y` to verify you want to remove the package.**

The following package is currently installed.

`[pkgid]`

Do you want to remove this package? `y/n/q?`

`y`

The following sections present important points about AnswerBook software for administrators.

AnswerBook Compatibility Issues

- Backward compatibility of AnswerBook software: The current software that supports AnswerBook viewing (Solaris 2.X) can read all versions of AnswerBook packages, past and present, including those dating from Solaris 2.1.
- Compatibility of earlier AnswerBook viewing software: If you have AnswerBook software that was delivered *prior* to the Solaris 2.2 release, note that it cannot be used to view AnswerBook packages published later under Solaris 2.2, Solaris 2.3, or any later releases.

AnswerBook Start-up Software

Note – Any individual or customized AnswerBook start-up scripts created *prior* to Solaris 2.2 should be ignored in favor of the generic start-up script, `answerbook(1)`, delivered with Solaris 2.2 and in subsequent releases.

- Re `answerbook(1)`: The AnswerBook application is started by a single centralized command, `answerbook(1)` in `/usr/openwin/bin`, and delivered as part of the OpenWindows package.

- AnswerBook from the Workspace menu: For users who prefer a graphical user interface for starting applications, AnswerBook is included among the OpenWindows applications that are shipped with Solaris.
- Locally installed AnswerBook packages: Whether invoked by command line or by menu, the `answerbook(1)` start-up script automatically recognizes and configures any *locally installed* AnswerBook packages. From the administrator's point of view, no special procedure is necessary to enable use of AnswerBooks on a local system.
- Network setup of AnswerBook packages: If users need to share AnswerBooks on a network, administrative steps are required. All relevant procedures are discussed in Part 2 of this book, particularly in this chapter.

AnswerBook Administrative Software

- `ab_admin(1)`: an administrative utility (executable). To support the AnswerBook user interface for users on a network, Solaris provides a utility called `ab_admin(1)` in `/usr/openwin/bin` for adding, removing, and verifying AnswerBook packages. These procedures are described in this chapter. For more background on the user interface, see “The User's View of the AnswerBook Library” on page 53.
- `ab_cardcatalog(4)`: a database file. This file lists installed AnswerBook packages. The administrator maintains this database file using the `ab_admin(1)` utility. The `ab_cardcatalog` file is also referred to as the “card catalog” file.

Note – Beginning with Solaris 2.2, `ab_cardcatalog(4)` replaced the original `bookinfo` mechanism. Any old `bookinfo` files that may be on your network should be converted to card catalog files using `ab_admin(1)`. (For details on the conversion process, see “Converting a bookinfo File (From Pre-Solaris 2.2)” on page 50). Also, with the release of Solaris 2.2, the old `abmerge` utility became obsolete. It has been replaced by the Library functionality of `ab_admin(1)` and `ab_cardcatalog(4)`.

Strategies for Network Use of AnswerBook Documentation

AnswerBook packages installed on a network server for access by client systems require the creation of two administrative files: `ab_cardcatalog` and `answerbook_setup`. These files must be made accessible to all of the clients that will use the installed AnswerBook documentation.

This section introduces background information on these administrative files and strategies.

About the Master Card Catalog on the Server Side

You must set up a master `ab_cardcatalog(4)` file that lists all available AnswerBook packages and the configuration information for each one. This file must contain all of the information from every AnswerBook card catalog and `bookinfo` files (if any), modified to specify network-compatible file path names. This file must be updated whenever an AnswerBook package is added or removed from the network.

For this procedure, see “Setting Up an AnswerBook Package on a Network” on page 42.

About AnswerBook Setup on the Client Side

To facilitate setup of each client on the network, create an `answerbook_setup` script to point to this master `ab_cardcatalog` file. When `answerbook` is started on each client system, the setup script will run, provided it is in each user’s path. The script sets the environment variable `$AB_CARDCATALOG`, which will point to the master `ab_cardcatalog(4)` file.

See “Setting Up an AnswerBook Package on a Network” on page 42.

What Happens at AnswerBook Start-up

When the user starts AnswerBook on the desktop, the AnswerBook Navigator consults the following:

- `$AB_CARDCATALOG` (an environment variable that points to one or more card catalog files of available AnswerBook packages)
- The user’s own card catalog (`~/ .ab_cardcatalog`)
- The `pkginfo(1)` database (to find locally installed AnswerBooks)

See “AnswerBook Software Flow Chart” on page 56 for a diagram of this chain of events at `answerbook(1)` start-up.

Options for the Administrator

To enable all users on a network to browse the same set of AnswerBook titles, you can take *either one* of the following approaches:

- Server side: You can create a network-wide master card catalog and have all users share it via the environment variable `$AB_CARDCATALOG`.
- Client side: You can update all users’ personal card catalogs (`~/.ab_cardcatalog`) to reflect network-wide AnswerBook titles.

Note – In the rest of this chapter, the notation `<ABHOME>` represents the path name where an AnswerBook configuration file is installed, such as:

`/opt/SUNWadmin`

The first part of the path name is the parent directory (typically `/opt`), which is defined by the administrator at installation time. The second element is the name of the AnswerBook package being installed and configured for users.

For more background information on these topics, see Appendix A, “Concepts of AnswerBook Administration.”

Background on AnswerBook Packages Installed Locally

What the Administrator Does	What the Software Does
<p>When you install the AnswerBook on a local, standalone system...</p>	<p>⇒ The install software copies the AnswerBook to <code><ABHOME></code> and creates its card catalog file in <code><ABHOME>/ab_cardcatalog</code>.</p>
<p>When the user starts Answerbook...</p>	<p>⇒ The <code>answerbook(1)</code> script checks for AnswerBook packages installed on the local system. It also creates an environment variable called <code>\$AB_CARDCATALOG</code>. For each AnswerBook package it finds, it appends that package's card catalog file name to <code>\$AB_CARDCATALOG</code>.</p> <p>The <code>answerbook(1)</code> script does not find AnswerBook packages that have not been installed using <code>pkgadd(1M)</code> or <code>swmtool(1M)</code>. You must convert these manually, using the <code>ab_admin(1)</code> utility with the <code>-convert</code> option.</p> <p>See the <code>ab_admin(1)</code> man page for details.</p> <p>See also "AnswerBook Software Flow Chart" on page 56.</p>

Setting Up an AnswerBook Package on a Network

What the Administrator Does	What the Software Does
❶ Install the AnswerBook on the network server. Follow the instructions in Chapter 2, “AnswerBook Package Installation.”	The install software copies the AnswerBook to <code><ABHOME></code> and creates its card catalog file in <code><ABHOME>/ab_cardcatalog</code> . Note – If the system has a pre-Solaris 2.2 AnswerBook installed, the <code>bookinfo</code> file for that AnswerBook is typically copied to <code><ABHOME>/bookinfo</code> .
❷ Decide where to locate the network-wide master card catalog file and note it here. For example: <code>/net/thor/export/ab_cardcatalog</code>	The partition where the file resides must be exported. For this example, <code>autofs</code> is used and the card catalog is located in <code>/export</code> on the server <code>thor</code> . <code>/net/thor/export/ab_cardcatalog</code>
❸ Use <code>ab_admin</code> to create/update the master card catalog with the entry for the new AnswerBook. <pre># ab_admin -file /net/thor/export/ab_cardcatalog -merge <ABHOME>/ab_cardcatalog</pre> To include older AnswerBooks, type: <pre># ab_admin -file /net/thor/export/ab_cardcatalog -convert <ABHOME>/bookinfo</pre>	<code>ab_admin(1)</code> adds the information for the AnswerBook package to the master card catalog.
❹ Make the AnswerBook partition available to the network. Edit the <code>/etc/dfs/sharetab</code> file on the server to include the <code>share(1M)</code> command. For instructions, see “How to Set Up Access to a Remote CD-ROM Drive” on page 21. For more detailed information, see <i>File System Administration</i> .	The <code>share(1M)</code> command makes the AnswerBook partition network-accessible.

What the Administrator Does	What the Software Does
<p>⑤ Use two <code>ab_admin</code> command options to find the locations of AnswerBook components.</p> <pre># ab_admin -file <ABHOME>/ab_cardcatalog \ -list SUNWab_2_6</pre> <p>Use the resulting package ID (in this example, <code>SUNWab_2_6</code>) as input to the next command. Here <code><ABHOME></code> is assumed to be <code>/opt</code>.</p>	<p>➡ The <code>-list</code> option lists the id and version numbers of the AnswerBooks.</p> <p>The <code>-match</code> option finds the paths to the AnswerBook components so you can check to be sure they are network-accessible.</p> <p>This example shows a locally installed AnswerBook package called <code>System AnswerBook</code> on a server called <code>thor</code>.</p>
<pre># ab_admin -file /net/thor/export/ab_cardcatalog -match SUNWab_2_6 id=SUNWab_2_6 title=System AnswerBook tocpath=/opt/Sys_AB/toc pspath=/opt/Sys_AB/ps indexpath=/opt/Sys_AB/index</pre>	
<p>⑥ If necessary, modify the paths (<code>/net/server</code>) so that the AnswerBook package can be accessed from other systems on the network via the automounter.</p>	
<pre># ab_admin -file /net/thor/export/ab_cardcatalog -modify SUNWab_2_6 \ tocpath=/net/thor/opt/Sys_AB/toc \ pspath=/net/thor/opt/Sys_AB/ps \ indexpath=/net/thor/opt/Sys_AB/index</pre>	
	<p>➡ The <code>-modify</code> option enables you to adjust the paths to make them network-accessible from client systems. This example uses the server <code>thor</code> accessed by the automounter.</p> <p>(See <i>NFS Administration Guide</i> for more information.)</p>

What the Administrator Does	What the Software Does
<p>7 Repeat steps 1–6 for every AnswerBook package you add.</p>	<p>⇒ The network-wide master <code>ab_cardcatalog</code> file accumulates the AnswerBook information.</p>
<p>8 Create a script called <code>answerbook_setup</code> in a directory common to users' search paths, and have it contain the <code>\$AB_CARDCATALOG</code> setting.</p> <p>Korn shell:</p> <pre># !/usr/bin/ksh AB_CARDCATALOG=/net/hostname1/export/\ ab_cardcatalog:\${AB_CARDCATALOG}</pre> <p>Bourne shell: Same as above, but substitute</p> <pre># !/usr/bin/sh</pre> <p>and add <code>export AB_CARDCATALOG</code></p> <p>Make the <code>answerbook_setup</code> file executable:</p> <pre># chmod 755 answerbook_setup</pre> <p>Be sure each user's search path can find the <code>answerbook_setup</code> file. To check this, type:</p> <pre># which answerbook_setup</pre>	<p>⇒ The <code>answerbook(1)</code> start-up script looks for the <code>answerbook_setup</code> script in the user's search path and sources it, thus gaining a pointer to the network master <code>ab_cardcatalog(4)</code>. This is an efficient way of setting up the shared card catalog for users.</p>
<p>9 Start the Answerbook application.</p> <p>See "Verifying AnswerBook Installation" on page 35.</p>	<p>⇒ The <code>answerbook(1)</code> script checks for AnswerBook packages on the local system. (See "Background on AnswerBook Packages Installed Locally" on page 41).</p> <p>The <code>answerbook(1)</code> script looks for an executable shell script named <code>answerbook_setup</code> in the user's search path, and sources it, thus finding the network master <code>ab_cardcatalog(4)</code>.</p> <p>The <code>answerbook(1)</code> script invokes the AnswerBook Navigator.</p> <p>See "AnswerBook Software Flow Chart" on page 56.</p>

AnswerBook Q & A and Troubleshooting Tips

For help with diagnosing AnswerBook configuration problems, see:

- “AnswerBook Administrative Software” on page 38
- “Strategies for Network Use of AnswerBook Documentation” on page 39
- “Setting Up an AnswerBook Package on a Network” on page 42
- “AnswerBook Software Flow Chart” on page 56

AnswerBook Display on Remote Systems and X Terminals

AnswerBook pages are rendered using the Display PostScript™ system from Adobe™ Systems, and can be displayed remotely on any Solaris system that is running the Display PostScript system. This is because appropriate fonts and software are installed by default with the Display PostScript system.

In addition, AnswerBook sets may be displayed remotely on other X-based systems provided that both the following are true:

- The remote X-based system supports the Display PostScript extension to X or supports Adobe Display PostScript NX software’s remote display capabilities.
- A complete LWII Type1 font set has been installed on the remote system or appropriate host.

For additional information about the Display PostScript system, send email with your name, company, address, and phone number to:

`dps-info@adobe.com`

Note – AnswerBook sets can also be displayed on remote systems that are running NeWS.

If Users Can’t Find Installed AnswerBook Titles

If you have installed and configured AnswerBook titles according to the instructions in this book, but users still cannot see the titles in the Navigator Contents list, have users bring up the Modify Library window from the Navigator and select available AnswerBook titles from the scrolling list.

If you have installed AnswerBook packages on the network, but users don't see their titles in the Modify Library scrolling list, you have not yet included the AnswerBooks in the network-wide card catalog using `ab_admin(1)`. See "Setting Up an AnswerBook Package on a Network" on page 42.

If Users Can't Find Pre-Solaris 2.2 AnswerBook Titles

Beginning with Solaris 2.2, the card catalog mechanism explained in this chapter replaced the original `bookinfo` mechanism. Any old `bookinfo` files associated with your pre-Solaris 2.2 AnswerBook titles should be converted to card catalog files using `ab_admin(1)`. See "Converting a `bookinfo` File (From Pre-Solaris 2.2)" on page 50.

Trouble Reading New AnswerBooks on a Pre-Solaris 2.2 System

Unfortunately, newer AnswerBook formats are not readable by systems running Solaris 2.1 or earlier.

What About Merging AnswerBook Sets?

The `ab_admin(1)` utility and the card catalog mechanism replace the `bookinfo` file and the `abmerge` utility from a previous release. Note that although merged AnswerBook sets no longer function according to the old `abmerge` utility, users can still use the AnswerBook titles individually, and each of them can be converted using the `ab_admin(1)` utility. See "Converting a `bookinfo` File (From Pre-Solaris 2.2)" on page 50.

If Users Can't Find Their Older Bookmarks

Bookmarks that users have created in AnswerBook titles that predate Solaris 2.2 are not compatible with the current AnswerBook Navigator.

If Users Can't Print Successfully From the Viewer

The number of pages that can be printed from AnswerBook per user request varies with the capacity of the printer. If users are having trouble printing large print jobs from the AnswerBook Viewer, the only way around this problem is to print section by section.

Before Running AnswerBook Software on a Standalone

To ensure successfully running the AnswerBook Viewer on a standalone Solaris system, do *either one* of the following steps:

♦ In a Shell Tool, type `xhost +` before starting AnswerBook.

♦ Start OpenWindows with the `-noauth` flag—

```
% openwin -noauth
```

—and then start AnswerBook as usual.

Trouble Accessing AnswerBook Titles From the Navigator

Assuming you have created an `answerbook_setup` script (see page 44), use this verification procedure:

1. Verify that the `answerbook_setup` script is in the user's search path.

```
% which answerbook_setup
/net/hostname/export/answerbook_setup
```

2. Verify that the `answerbook_setup` script is readable and executable by all.

```
% ls -l /net/hostname/export/answerbook_setup
-rwxr-xr-x 1 root other ... /net/hostname/export/answerbook_setup
```

3. Verify the contents of `answerbook_setup`.

Do this either by visual inspection or by typing:

```
% /bin/ksh
$ . answerbook_setup
$ echo $AB_CARDCATALOG
:/net/hostname/export/ab_cardcatalog
```

Trouble Accessing an AnswerBook Document

If, when using the Navigator, you receive messages such as:

```
Can't add AnswerBook '<bs=SUNWab_2_4;vr=>'
invalid AnswerBook: <bs=SUNWab_2_4;vr=>
Can't view document. View Document failed
Can't start new Viewer. Error executing link
```

Verify that the `tocpath`, `indexpath`, and `pspath` variables in the `ab_cardcatalog` file for that AnswerBook are correct, and that the directory paths they specify are readable by using the `-verify` option of `ab_admin(1)`. For example:

```
# ab_admin -file /net/thor/export/ab_cardcatalog -verify SUNWab_2_6
Invalid index path for 'SUNWab_2_6': \
'/net/hostname/ot/Sys_AB/index'
```

You can see in this example that a directory name in the path has been misspelled (*ot* should have been *opt*).

Environment Variables Essential to AnswerBook Administration

Be sure these user environment variables are set as shown here to support shared access to AnswerBook packages on the network.

```
PATH=/usr/openwin/bin:${PATH}

OPENWINHOME=/usr/openwin

LD_LIBRARY_PATH=/usr/openwin/lib

AB_CARDCATALOG=[location of master card catalog]

DISPLAY=hostname:0.0
```

The `DISPLAY` setting is helpful when displaying AnswerBook packages on a remote system, for example, a Solaris 4.x machine.

Problem with Adding and Removing Packages

There is a known problem with adding or removing some packages developed prior to Solaris 2.4. If adding or removing the package fails during user interaction, or if you are prompted for user interaction and your responses are ignored, set the following environment variable:

```
NONABI_SCRIPT=TRUE
```

Examples for AnswerBook Administrators

The following examples illustrate procedures for administering AnswerBooks on a local system and across the network.

These examples assume the administrator has set up two relevant card catalog files:

- One in the user's home directory (`~/ .ab_cardcatalog`) that contains an entry for one AnswerBook package
- A network-wide master card catalog file with entries for two other AnswerBook packages

(It is not necessary to set up both client and server side card catalogs, but this scenario is used for the sake of the examples, which illustrate both the client and server side of administration.) These examples also assume there are several AnswerBook packages installed on the local system.

In all of these examples, the `$AB_CARDCATALOG` environment variable points to the shared network-wide master card catalog file.

For more information, see `ab_admin(1)`.

Listing Card Catalogs and AnswerBook Packages

To list card catalogs and packages in the current environment:

```
% /bin/sh
$ echo $AB_CARDCATALOG
/net/<servername>/export/ab_cardcatalog
$ ab_admin -listpaths
/net/<servername>/export/ab_cardcatalog
/home/mickey/.ab_cardcatalog
$ for CC in `ab_admin -listpaths`
> do
> ab_admin -list -file $CC
> done
SUNWab_2_6
SUNWab_8_6
SUNWab_11_1
```

Listing a Catalog Entry for an AnswerBook Package

To list the AnswerBook package ID, title, and paths from the card catalog file, do this:

```
% ab_admin -match SUNWab_2_6 -file $AB_CARDCATALOG
id=SUNWab_2_6
title=System AnswerBook
tocpath=/net/<servername>/export/Sys_AB/toc
pspath=/net/<servername>/export/Sys_AB/ps
indexpath=/net/<servername>/export/Sys_AB/index
```

Verifying Card Catalog Entries

To verify AnswerBook packages in the card catalog, do this:

```
$ for AB in `ab_admin -list -file $AB_CARDCATALOG`
> do
> echo Verifying $AB
> ab_admin -verify $AB -file $AB_CARDCATALOG
> done
Verifying SUNWab_8_6
Verifying SUNWab_2_6
```

Combining Card Catalog Files

To combine listings from two card catalog files, do this:

```
# ab_admin -file $AB_CARDCATALOG \
-merge /opt/SUNWabu/ab_cardcatalog
```

Converting a `bookinfo` File (From Pre-Solaris 2.2)

To convert an older `bookinfo` file to card-catalog format, do this:

```
# ab_admin -file $AB_CARDCATALOG \
-convert /opt/<olderAB>/bookinfo
```

Modifying Paths in a Catalog Entry

To make the paths in a card-catalog entry accessible to other systems on the network, pre-pend `/net/<servername>` to each path:

```
# ab_admin -match SUNWab_8_6 -file $AB_CARDCATALOG
id=SUNWab_8_6
title=User AnswerBook
tocpath=/opt/SUNWabu/toc
pspath=/opt/SUNWabu/ps
indexpath=/opt/SUNWabu/index
# ab_admin -file $AB_CARDCATALOG -modify SUNWab_8_6 \
tocpath=/net/<servername>/opt/SUNWabu/toc \
pspath=/net/<servername>/opt/SUNWabu/ps \
indexpath=/net/<servername>/opt/SUNWabu/index
```

Removing a Catalog Entry

To remove a catalog entry for an AnswerBook package (in this example, `SUNWab_2_6`), do this:

```
# ab_admin -file $AB_CARDCATALOG -remove SUNWab_2_6
```

Listing Local AnswerBook Packages

To list packages on a local system, do this:

```
% pkginfo | grep -i answerbook
application SUNWabc          ABC Answerbook
application SUNWabook        Another Answerbook
application SUNWasys         System AnswerBook
```

Finding a Card Catalog

To find the card catalog file of a local AnswerBook package, do this:

```
% pkgparam SUNWabu ABHOME
/opt/SUNWabu
% ls /opt/SUNWabu/ab_cardcatalog
/opt/SUNWabu/ab_cardcatalog
```

Getting the ID of an AnswerBook Package

To find the package ID of an AnswerBook package, do this:

```
% ab_admin -list -file /opt/Sys_AB/ab_cardcatalog  
SUNWab_2_6
```

Concepts of AnswerBook Administration



Whether you're installing new AnswerBook packages, or making older AnswerBook titles accessible, it helps to understand the relationship between what the user sees and what you must do administratively to support the user's view.

The User's View of the AnswerBook Library

The AnswerBook software enables viewers to access and share AnswerBook titles and swap them in or out of a Library, as they might use books from a shelf. Users can browse, search, bookmark, and print from their AnswerBook Viewer window as if from a single source—their personal Library.

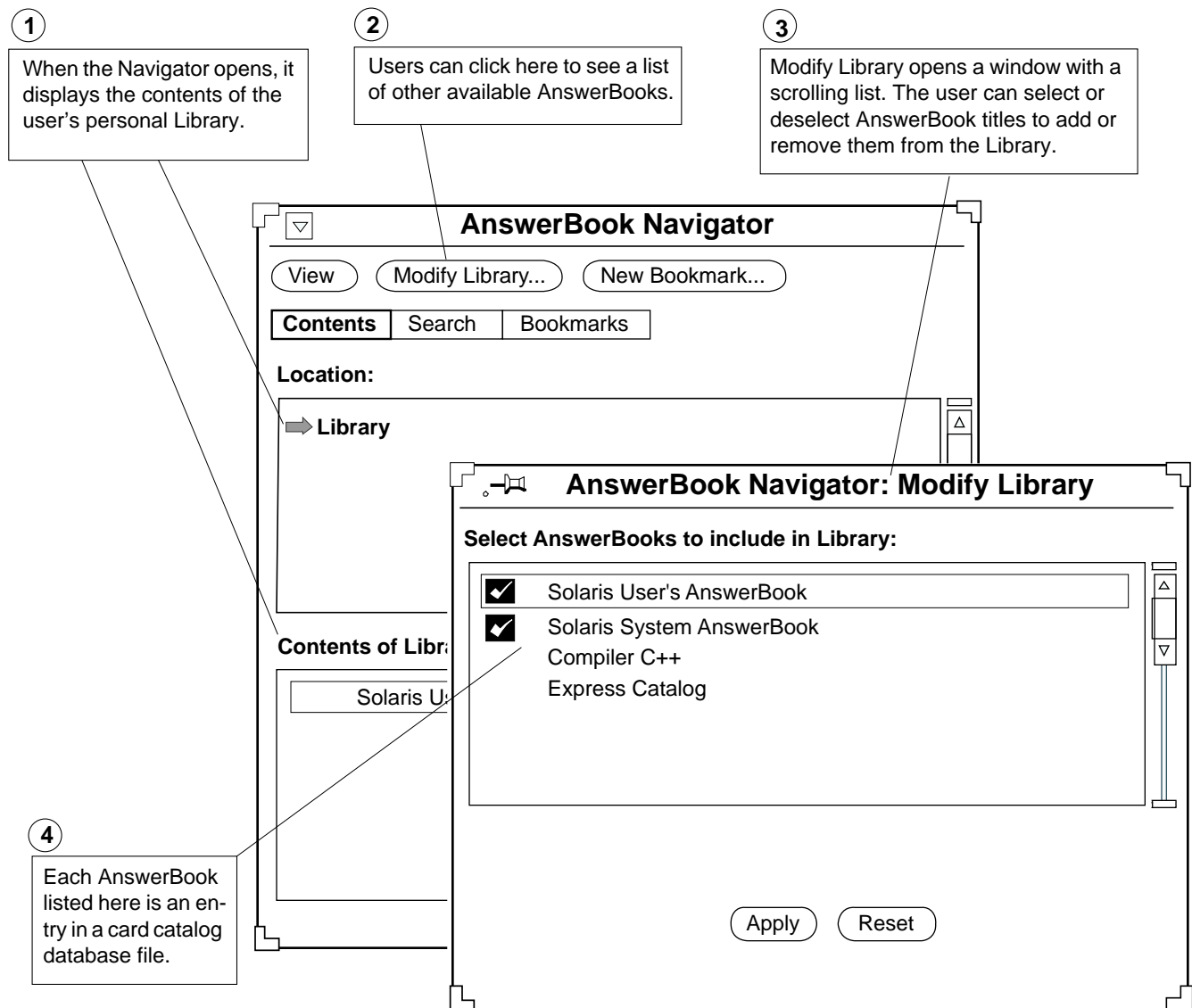
Typically the user starts AnswerBook via the Workspace menu:

Workspace ► Programs ► AnswerBook

When the new AnswerBook Navigator opens, it displays the contents of the user's personal Library.

Note – The contents of the user's Library varies according to which AnswerBook packages are installed, and, in the case of users sharing AnswerBook titles on a network, which ones have been made accessible by the system administrator. See Chapter 3, "AnswerBook Administration."

The AnswerBook Library User Interface



Supporting this Library user interface are two administrative files: the user's personal Library file and a card catalog file.

The User's Personal AnswerBook Library File

The personal library file (`~/ .ab_library`) is created the first time the user starts AnswerBook. This file accumulates the AnswerBook titles the user selects from the Modify Library list, as well as the user's bookmarks in those AnswerBook sets.

AnswerBook Card Catalog Files

Card catalog files form a database containing records for one or more AnswerBook titles. Each record describes a particular AnswerBook, including its title, its unique id, and where its component files reside.

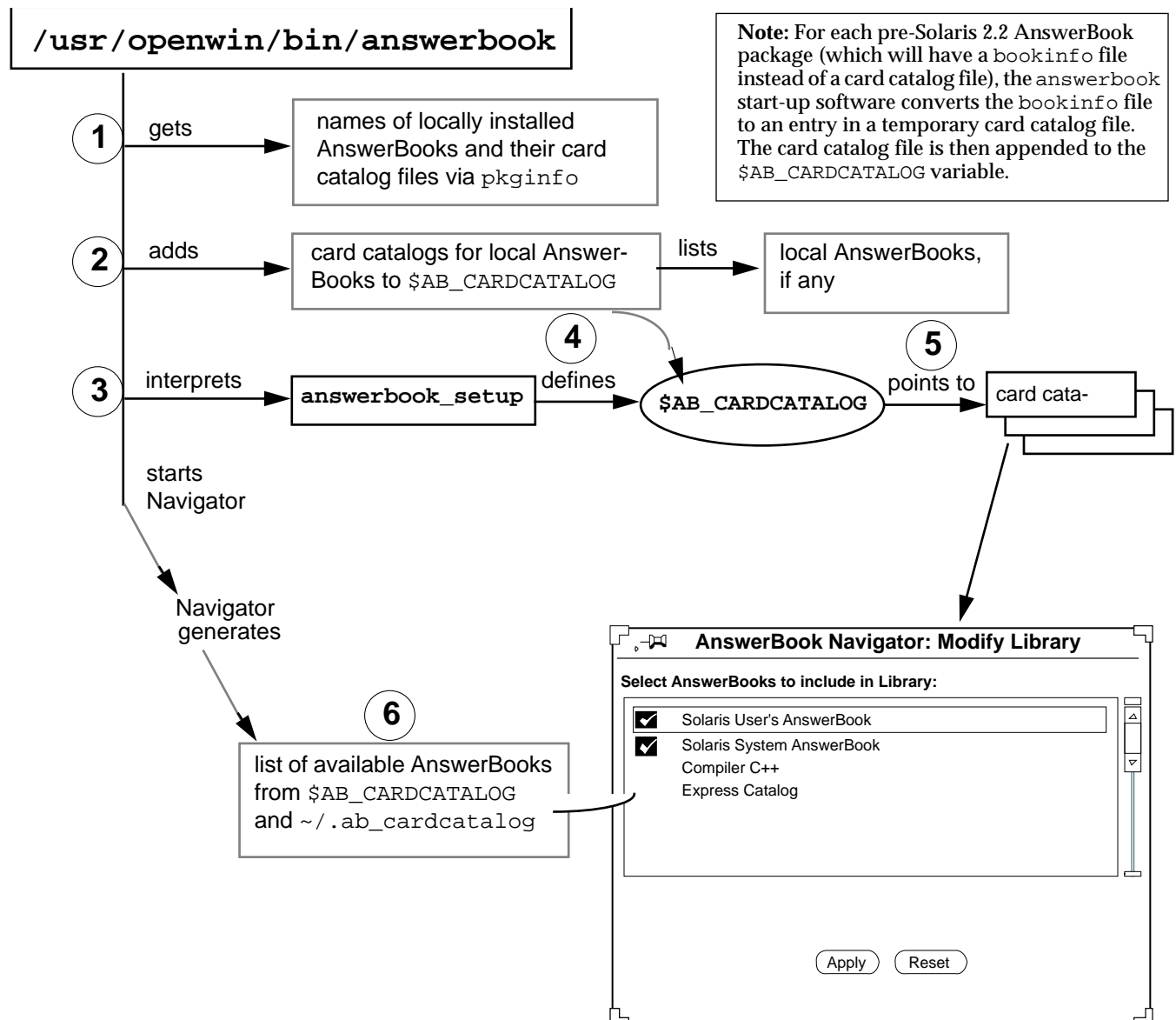
```
:id=SUNWab_x_xx: \  
:version=: \  
:title=ABC AnswerBook: \  
:tocpath=/net/marvin/answerbook1/ABC_x.x_AB/toc: \  
:pspath=/net/marvin/answerbook1/ABC_x.x_AB/ps: \  
:indexpath=/net/marvin/answerbook1/ABC_x.x_AB/index:\  

```

[and so on]

AnswerBook Software Flow Chart

This diagram illustrates the sequence of events when the `answerbook(1)` start-up script is invoked.



Example of AnswerBook Configurations on a Network

