Solstice Site/SunNet/Domain Manager Installation Guide

for Solaris 1.1.1 or later/SPARC

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Preface

This manual explains how to install the Site/SunNet/Domain Manager^{TM} 2.3 and AnswerBook^{TM} software from the product CD-ROM on to your machine.

Who Should Use This Book

This book is written for users installing Site/SunNet/Domain Manager 2.3 software. It assumes you are familiar with the Solaris^{TM} 1.1.1 operating environment.

How This Book Is Organized

This book contains the following chapters and appendices:

- Chapter 1, "Pre-Installation Notes and Requirements," provides information you should have before installing Site/SunNet/Domain Manager software, and information on getting help.

- Chapter 2, "Planning for Licensing and AnswerBook Installation," provides information to help prepare you for installing the AnswerBook files.

- Chapter 3, "Installing the Software," explains how to install Site/SunNet/Domain Manager software on the system from which you will manage the network—your manager station.

- Chapter 4, "Installing Agent Software on Remote Systems," explains how to install agent software on remote systems.

- Chapter 5, "Installing SNMP Version 2, " explains how to install and remove the software for SNMP Version 2 support.

- Appendix A, "Upgrading to Site/SunNet/Domain Manager 2.3," provides guidelines to consider if you are upgrading from Site/SunNet/Domain Manager release 2.0 to release 2.2.3.

- Appendix B, "Removing Software," contains the procedure for removing the Site/SunNet/Domain Manager software from the machine upon which it was installed.

- Appendix , "Installing a License," contain information on installing your license for this product.

Conventions Used in This Manual

This section describes the conventions used in this manual.

Operating System Terminology

This manual contains references to the SunOS^{TM} 4.x operating system and the Solaris 1.x operating environment.

The Solaris 1.1.1 environment includes:

- SunOS 4.1.3 U1 Rev B operating system
- Sun SPARC^{TM} computer, either a server or a workstation
- OpenWindows^{TM} 3.0 or later application development platform

SunOS 4.x implies one of the following:

- SunOS 4.1.3 with optional patches
- SunOS 4.1.2 with optional patches
- SunOS 4.1.1 with optional patches

The Solaris 2.3 and later environment includes:

- SunOS 5.3 or later operating system
- Sun SPARC computer, either a server or a workstation
- OpenWindows 3.3 or later application development platform

Command Line Examples

All command line examples in this manual use the C-shell environment. If you use either the Bourne or Korn shells, refer to `sh`(1) and `ksh`(1) man pages for information about the equivalent commands in these environments to the C-shell.

Typographic Conventions

The following table describes the type changes and symbols used in this book.

Table P-1 Typographic Conventions

Typeface or Symbol	Meaning	Example
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files. `system% You have mail.`
`AaBbCc123`	What you type, contrasted with on-screen computer output	`system%` **`su`** `Password:`
<AaBbCc123>	Command-line placeholder: replace with a real name or value	To delete a file, type `rm` **<*filename*>.**
AaBbCc123	Book titles, new words or terms, or words to be emphasized	These are called *class* options. You *must* be root to do this.
`%`	System prompt for an ordinary user account	`hostname%`
`#`	System prompt for the root (superuser) account	`hostname#`

Mouse Conventions

This book assumes that you are using a standard Sun workstation three-button mouse. The mouse buttons are called SELECT (left), ADJUST (middle), and MENU (right).

Click means to press and quickly release a mouse button.

Press indicates you should hold the button down until an action is completed, such as a menu appearing.

Related Documents

The SunNet Manager documentation set includes the following documents:

- *Site/SunNet/Domain Manager Installation Guide* (this document)
- *Site/SunNet/Domain Manager Release Notes*
- *Site/SunNet/Domain Manager Administration Guide*
- *Site/SunNet/Domain Manager Application and Agent Development Guide*
- *Site/SunNet/Domain Manager Cooperative Consoles Administration Guide*
- *Site/SunNet/Domain Manager Reference Manual* (hardcopy only)

You may want to have your Solaris 1.1.1 system documentation available as a reference if you need additional information on procedures in this manual.

Pre-Installation Notes and Requirements 1≡

This chapter provides a checklist of installation requirements and other information you may need for installing Site/SunNet/Domain Manager 2.3 software. It also provides information on getting help if you need it.

Installation Requirements

Note – See the *Release Notes* for definitive compatibility information, hardware and software requirements, and other important information that was not available when this book was published.

This checklist is provided to help you gather information you must have to complete the installation procedures. You must be able to answer yes or fill in the appropriate information on the lines provided. If you have problems with your installation, you will need this information when you call for help.

1. Is the machine that you are installing Site/SunNet/Domain Manager 2.3 software on a Sun SPARC™ machine? _____

2. Does your machine have at least 32 Mbytes of memory? _____

3. Is your machine running Solaris 1.1.1 (SunOS 4.1.3 U1 Rev B) system software? _____

4. Is your machine running OpenWindows 3.0 or later software?_____

5. The installation medium is a CD-ROM.

   - Do you have access to a local or remote CD-ROM drive?   _____
     (The remote drive can be attached to a Solaris 2.x
     machine.)
   - If remote, what is the hostname of the machine to
     which the CD-ROM drive is attached?   _____

6. In which directory will you install the the product
   software? (The default directory is /usr.)   _____

Note – Throughout this book, /usr is referenced as the default installation
directory for the product. If the product is going to be installed in a directory
other than /usr, all references should be changed accordingly.

---

7. Use the following command to check for disk space usage:

```
hostname% df /usr
```

Table 1-1 lists the amount of free disk space required to install the
Site/SunNet/Domain Manager and AnswerBook packages:

Table 1-1   Required Free Space

Package Name	Required Free Space (Mb)
Site/SunNet/Domain Manager and Cooperative Consoles	26
AnswerBook (nil option)	less than 1
AnswerBook (medium option)	7
AnswerBook (heavy option)	27

Is enough free disk space available in your installation
directory?   _____

Following installation, you need 10-15 Mb of disk space for your SNM
runtime database. The size of this database depends on the number of
elements you manage.

8. Do you have the superuser password for both the machine where the software is to be installed and the machine with the CD drive, if different? _____

9. Does superuser have read, write, and execute access to the installation directory (where the product and the AnswerBook software are being installed)? _____

   Does the user have read and execute permission? _____

10. If you are going to install the Sun SNMP agent, have you determined what its read and write community names will be? _____

   The Simple Network Management Protocol (SNMP) agent allows your management system to communicate with other SNMP-based systems. If you install the Sun SNMP agent, you need to specify the read and write community names for the agent. The defaults are, respectively, "public" and "private." Community names are equivalent to passwords and are used to authorize read and write access. Although many sites use "public" for read access, you should choose the write community name with the same care as a system root password. The community names are stored in the `/etc/snm/snmpd.conf` file, which should be readable only by root.

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Getting Help

If you have problems installing or using the the product software, call your authorized service provider and have the following information ready:

- Model number of the machine
- Serial number of the machine
- SunOS release number
- Release number of the product (2.3)

You can display information needed for help calls by entering the following command:

```
hostname% showrev
```

Your screen will show information similar to the following:

```
***************  showrev version 1.15  ****************
* Hostname: "gibber"
* Hostid: "52003053"
* Kernel Arch: "sun4c"
* Application Arch: "sun4"
* Kernel Revision:
  4.1.3_U1 (GENERIC) #1: Wed Oct 13 17:48:35 PDT 1993
* Release: 4.1.3_U1

******************************************************
```

Planning for Licensing and AnswerBook Installation 2≡

Both the license instsllation process and AnswerBook installation require some planning. This chapter provides the information you need to plan your installation.

Getting License Passwords

Site/SunNet/Domain Manager is a licensed product. You will need to obtain a password for every machine that you want to install it on. The license password is an alphanumeric code that you must obtain from the license distribution center and type in during installation. There are three ways to contact the license center:

- **Email** — You will need to compose an e-mail message with the information requested in the License Password Request Form (on page 2-4) and send it to one of the e-mail addresses listed inTable 2-1.

Table 2-1　License Center E-mail Addresses

Region/Country	E-mail address
USA, Canada	license@sun.com
Europe	eu-licensing@UK.sun.com
Japan	license@rrd.co.jp
All other countries	eu-license@UK.sun.com

- Fax — Fill out the License Password Request Form (on page 2-4) and fax it to appropriate number from Table 2-2.

Note – For Site∕SunNet∕Domain Manager, the "Server Hostname" is the name of the machine where you want to install the product.

Table 2-2   License Center FAX Numbers

Region/Country	FAX Number
USA, Canada	317-364-7220
Europe	44-937-541194
Japan	03-3263-3844
All other countries	44-937-541194

- **Phone** — The Site∕SunNet∕Domain Manager pkgadd script provides phone numbers for most of the license distribution centers. To contact the license distribution center, please use the toll-free phone numbers listed inTable 2-3.

Table 2-3   International Phone List for Licenses

Country	Phone Number
Belgium	078 11 21 03
Canada	1-800-872-4786
Finland	9800 14406
France	05 90 83 41
Germany	0130 81 47 33
Italy	1678 77252
Japan	813-3263-3821
Netherlands	06 0224198
Puerto Rico	1-800-872-4786
Spain	900 97 4448
Sweden	020 793154
Switzerland	155 8096

Table 2-3   International Phone List for Licenses

Country	Phone Number
United Kingdom	0800 929 112
United States	1-800-872-4786
European countries not listed	+44 937 541511

The Site/SunNet/Domain Manager installation script will prompt you for your license password during the software installation. The operator at the license distribution center will ask you for the following information:

- Product name
- Version number
- "Server" name (the name of the host where the product is to be installed)
- Host ID

You will also need to provide the serial number from your license certificate.

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License Password Request Form

To obtain a password, complete all sections and fax this form to one of the numbers provided below. Please type or print clearly. Use a separate form for each license server you will be using. Your password will be returned to you.

contact name	
company name	
job title	
mailing address	
city	**state**
country	**postal code**
telephone	
fax	
email	

FAX this form to:

In the U.S. and Canada:
   (317) 364-7220

In Japan:
   (+03) 3263-3844

In Europe and all other countries:
   +44 937 541194

Return password via:

❏   Email
❏   Fax

License Server (Fill out for 1, 3, or 5 servers)
(3 or 5 = Redundant Server Set Only)

Server host name	Server hostid

Product Information (Complete an additional form for more products)

Product name & version	Proof of License Certificate	RTUs to Use (Default is All)

NOTE: You do not have to use all RTUs from a certificate. The unused portions can be redeemed at a later time.

FOR OFFICE USE ONLY	date/time request received	date/time password sent

Planning for AnswerBook Installation

The AnswerBook requires some planning and decision-making before you install it. This chapter provides the information you need to plan your AnswerBook installation. Please read it carefully before you begin the installation.

Installing the AnswerBook software is entirely optional. You may choose to install it at the same time you install the other Site/SunNet/Domain Manager software, or you may install it at a later time. You may also choose not to install the AnswerBook software.

If you choose to install the AnswerBook, you have three installation options, heavy, medium or nil.

Before you install your software determine whether you will install the AnswerBook software and which installation option you prefer.

Filling Out the Pre-Installation Worksheet

The Pre-Installation Worksheet on the next page will help you formalize the AnswerBook installation for your site. Use the information in the following paragraphs to fill in this worksheet. When you are prompted for information during the AnswerBook installation procedure, you can use the information on the worksheet for your entries.

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Disk Configuration

Table 2-4 describes the installation options available and lists the disk space and installation time required for each.

Table 2-4   Installation Options

Option	Description	Disk Space (Mbytes)	Installation Time
nil	Leave all files on CD-ROM. Performance is slow, but adequate for occasional use.	Less than 1	1 minute
medium	Leave the larger files on CD-ROM with the search indexes and book databases on hard disk. Performance is adequate for medium use on a local system.	7	1 minute
heavy	Store all files on hard disk. Performance is optimized. This configuration is recommended if the AnswerBook package is to be shared by multiple systems.	27	2–3 minutes

Note – If you do not specify the *heavy* installation option, you *must* leave the CD-ROM in the CD-ROM drive so that the AnswerBook is available.

The installation procedure creates a configuration file that contains the installation locations of the AnswerBook product. If your machine is rebooted in the future and you have chosen the `nil` or `medium` installation options, you must make sure the CD-ROM is remounted on the same mount point you used during the initial installation.

AnswerBook Pre-Installation Worksheet

Select a disk configuration for the AnswerBook files from the following three options.

Disk Configuration: ☐ (1) CD-ROM-based (Requires dedicated CD-ROM drive)

☐ (2) CD-ROM/Hard Disk-based (Requires dedicated CD-ROM drive)

☐ (3) Hard Disk-based

Select a default setting or choose a new one for the files in each of the six categories below. Write your choices in the spaces provided.

AnswerBook Home Directory (ab_home): _____

Defaults: `/usr/AnswerBook`
`/AnswerBook`
`~/AnswerBook`

Search Indexes/Book Databases: _____

Choices: `ab_home`
`leave on CD`

PostScript Files: _____

Choices: `ab_home`
`leave on CD`

AnswerBook Binaries: _____

Defaults: `$OPENWINHOME/bin/xview`
`/usr/bin`
`/usr/local/bin`
`ab_home/bin)`

Help Files: _____

Defaults: `$OPENWINHOME/lib/help`
`ab_home/lib/help`
`/usr/lib/help`

User Mount Points:

`ab_home` mount point (if applicable): _____

CD-ROM mount point (if applicable): _____

AnswerBook Home Directory

The AnswerBook home directory stores the AnswerBook configuration file. If you want to use the AnswerBook software on multiple licensed systems on a network, choose a home directory location that is accessible to those users. The default directory name is `ab_home`.

Search Indexes/Book Databases

If you want to copy these files onto the hard disk, locate them in the AnswerBook home directory that you have chosen. Be sure you have 3 Mbytes of free disk space. Choose `leave on CD` to leave these files on the CD-ROM.

PostScript Files

If you want to copy the PostScript® files onto the hard disk, locate them in the selected location for the AnswerBook home directory. Be sure you have 20 Mbytes of free disk space. Choose `leave on CD` to leave these files on the CD-ROM.

AnswerBook Binaries

The best place to put the AnswerBook binary files is in a directory that is already included in users' search paths. For example, if users are running the OpenWindows software from a central network directory, you could specify the directory `$OPENWINHOME/bin/xview` as the location for the AnswerBook binaries. Another popular location for shared programs is `/usr/local/bin`.

Help Files

The default location for the AnswerBook on-line help files is either `$OPENWINHOME/lib/help` or `ab_home/lib/help`, depending on where you have write permission when you run the installation program.

User Mount Points

Workstations accessing the AnswerBook directories may need to use a different path to mount those directories than the path your workstation will use when you install the AnswerBook software. If this is the case, specify these different user mount points on the worksheet.

For instance, if you intend to install the AnswerBook software on a server that exports the local CD-ROM on the mount point `/cdrom` but clients access that mount point via `/net/`*<server>*`/cdrom`, specify the following CD-ROM mount point:

   `/net/`*<server>*`/cdrom`

As another example, clients at your site may access files on other systems via `/net`. If you install the AnswerBook files on *<server>* as `/usr/AnswerBook/snm`, users might access that mount point as follows:

   `/net/`*<server>*`/usr/AnswerBook/snm`

If possible, all users should access the AnswerBook directories using the same mount point because this can simplify administration. If such a configuration is undesirable on your network, specify an environment variable in the user mount point as follows:

   `/`*$ABENV*`/AnswerBook/snm`

All users must then set this variable as part of their environment.

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Site/SunNet/Domain Manager Installation Guide

Installing the Software *3*

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This chapter provides instructions for installing the product software on the system from which you will manage the network—the machine on which you will run the Console.

Site/SunNet/Domain Manager software is provided on CD-ROM. The software consists of management tools and applications, agent software, agent and manager services and libraries, configuration files, and on-line help and man pages. In addition, the the product documentation is provided in AnswerBook form. The software is stored on the product CD-ROM; you copy the software to your local storage medium by running the `cdm` or `cdmanager` programs.

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> **Note** – If you are upgrading from release 2.0, refer to Appendix A, "Upgrading to Site/SunNet/Domain Manager 2.3," before starting the installation.

Overview

The following is a summary of the steps to install the product 2.2.3 software. Complete procedures for these steps are given following this section.

Before starting installation, make sure that you have verified installation requirements as specified in "Installation Requirements" on page 1-1.

1. **Insert the product CD-ROM in a local or remote CD drive.**

2. **Install the product software using** `cdmanager` **or** `cdm`**.**

3. **Finish installation.**
   Finishing installation includes:

   - Updating the Network Information Service (NIS/NIS+) maps/tables, if you are running NIS/NIS+;
   - Modifying your PATH to access the executable files
   - Setting up access to on-line help and man pages;
   - Verifying installation.

Inserting and Accessing the CD-ROM

To install the the product software you must have either a local CD-ROM drive or a drive that is accessible over a network.

This section describes how to insert the CD-ROM in the drive and, if you are using a remote CD-ROM drive, how to export or share the CD-ROM filesystem.

> **Note** – Your target machine for *installing* the the product software must always be a system running SunOS 4.1.3 U1 Rev B (Solaris 1.1.1). You can use a remote SunOS 4.x or 5.x system to provide the CD-ROM drive.

▼ Inserting Your CD-ROM

In Solaris 2.*x*, to add a CD-ROM device, connect the device to the machine's SCSI bus and to a power source. Power up the device, then halt your machine by entering `init 0`. At the ok prompt enter `boot -r`.

1. **Remove the CD-ROM from its plastic case and place the CD-ROM in its caddy.Insert the caddy into the drive slot. (Make sure the CD drive is powered on.)Proceed to the following section if you are accessing a locally installed CD drive. Go to "Mounting the CD-ROM from a Remote CD Drive" if you are accessing a remotely installed CD drive.**

Note – Unless noted otherwise, you must log in as or become root to perform all of the following procedures.

▼ Mounting the CD-ROM from a Local CD Drive

Enter the following commands:

1. **Make the directory to mount the CD-ROM if it does not already exist:**

```
hostname# mkdir /cd
```

2. **Mount the CD-ROM:**

```
hostname# mount -r /dev/sr0 /cd
```

Go to "Selecting and Running an Installation Program" on page 3-7.

▼ Mounting the CD-ROM from a Remote CD Drive

To install the software on a machine that does not have its own CD-ROM drive, you must perform some activities on the remote machine (the machine with the CD-ROM device) and some on the local machine (the machine onto which you are installing the software). Be sure you follow the directions carefully. The instructions specify on which machine you must perform the steps.

▼ Exporting or Sharing from the Remote Machine

Because you are mounting the software from a remote CD-ROM, you must first export or share it from the remote machine. The methods are slightly different for remote SunOS 4.1.x (Solaris 1.x), SunOS 5.1 (Solaris 2.1), and SunOS 5.2 or later (Solaris 2.2 or later) systems and are described in separate procedures.

Exporting from a Remote SunOS 4.1.x System

Perform the following steps on the *remote* machine:

1. **Make a directory on which to mount the CD-ROM if it does not already exist:**

```
hostname# mkdir /cd
```

2. **Mount the CD-ROM on the remote machine:**

```
hostname# mount -r /dev/sr0 /cd
```

3. **If the entry is not already present, edit the** /etc/exports **file by adding the following line:**

```
/cd -ro
```

4. **Export the directory from the remote machine:**

```
hostname# exportfs /cd
```

5. **If they are not already running, start the NFS mount daemons by entering the following commands:**

```
hostname# nfsd 8
hostname# rpc.mountd &
```

6. **Check to see that the machine is exporting the directory by entering the** `exportfs` **command. The screen should show the** `/cd` **directory:**

```
hostname# exportfs
. . .
/cd
```

Go to "Mounting the Remote CD-ROM on the Local Machine" on page 3-7.

Sharing from a Remote SunOS 5.1 System

Perform the following steps on the *remote* machine:

1. **On the remote machine, make a directory on which to mount the CD-ROM if it does not already exist:**

```
hostname# mkdir /cd
```

2. **Mount the CD-ROM on the remote machine:**

```
hostname# mount -r /dev/dsk/c0t6d0s0 /cd
```

3. **If they are not already running, start the NFS daemons by entering the following commands:**

```
hostname# /usr/lib/nfs/nfsd 8
hostname# /usr/lib/nfs/mountd
```

4. **Share the directory from the remote machine:**

```
hostname# share -F nfs -o ro /cd
```

5. Check to see that the machine is exporting the directory by entering the share **command. The screen should show the** /cd **directory:**

```
hostname# share
. . .
-       /cd      ro      " "
. . .
```

It takes a few minutes for this shared directory to become available over the network.

Sharing from a Remote SunOS 5.2 System

Perform the following steps on the *remote* machine:

1. If they are not already running, start the NFS daemons by entering the following commands:

```
hostname# /usr/lib/nfs/nfsd 8
hostname# /usr/lib/nfs/mountd
```

2. Share the directory from the remote machine by entering the command:

```
hostname# share -F nfs -o ro /cdrom/sunnet_manager_2_3
```

3. Ensure that the machine is exporting the directory by entering the share **command. The screen should show the** /cdrom/sunnet_manager_2_3 **directory:**

```
hostname# share
. . .
-       /cdrom/sunnet_manager_2_3     ro      " "
. . .
```

It takes a few minutes for this shared directory to become available over the network.

▼ Mounting the Remote CD-ROM on the Local Machine

Having exported or shared the remote CD-ROM, you can now mount it on your local machine. Perform the following step on the local machine:

- **Use the automounter to automatically mount the exported or shared filesystem.**
  For remote SunOS 4.1.x and SunOS 5.1 systems enter:

```
hostname# cd /net/<remote_machine>/cd
```

For remote Solaris 2.2 or later systems enter:

```
hostname# cd /net/<remote_machine>/cdrom/sunnet_manager_2_3
```

- **If the automounter is not running on your machine, do the following on your local machine:**

1. **Make a directory on which to mount the CD-ROM if it does not already exist:**

```
hostname# mkdir /cd
```

2. **Mount the remote directory on** /cd**:**
     For remote SunOS 4.1.x and SunOS 5.1 systems enter:

```
hostname# mount -r <remote_machine>:/cd /cd
```

For SunOS 5.2 systems enter:

```
hostname# mount -r <remote_machine>:/cdrom/sunnet_manager_2_3 /cd
```

Selecting and Running an Installation Program

Whether you have a directly connected or remotely accessed CD-ROM player, you can now run the cdm or cdmanager commands. Using either program to install the product can take 15 minutes when installing from a directly

connected CD-ROM player, or minutes longer for a remotely accessed CD-ROM player on a busy network. Installing the AnswerBook files will take an additional 1 or 2 minutes, if the `nil` option is selected, or as long as 30 minutes for the `heavy` option.

The `cdmanager` program is an OpenWindows application that allows you to install Sun applications from CD-ROM. The `cdm` program is a command-line counterpart to `cdmanager` that allows you to install applications directly onto a machine that does not have a graphics display monitor. Instructions for invoking `cdmanager` or `cdm` are given below. After the initial commands for either program, installation instructions are essentially the same. These start in the section "Installing the Product Software" on page 3-10.

Before embarking on the following instructions, make sure you have mounted the CD-ROM, as described in the previous section.

Using `cdmanager`

To install the product using `cdmanager`, do the following:

1. **Either login as root** *or* **enter the following commands in normal user mode:**

```
hostname% xhost +<machinename>
hostname% su
```

where <*machinename*> is the name of the local system. The `xhost` command is needed to enable CDmanager display.

2. **In a shell,** `cd` **to the directory on which you have the CD-ROM filesystem mounted and enter** `./cdmanager`**. The** `cdmanager` **window appears, with the product icons (Site/SunNet/Domain Manager, Cooperative Consoles, and AnswerBook) displayed.**

Note – Be sure to install the Site/SunNet/Domain Manager package before the Cooperative Consoles package. Failure to do so will result in error.CDmanager Window

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3. **Use the left mouse button to select the icon. The icon colors invert, and a box appears around the icon, indicating selection. Press the MENU button and drag the pointer to the Install option before releasing. The installation script appears, as described in the next section.**

Using cdm

To install the product using cdm, do the following:

1. **Login as root or enter the** su **command at the system prompt.**

2. **In a shell,** cd **to the directory on which you have the CD-ROM filesystem mounted and enter** ./cdm**. You receive the following display:**

Note – Be sure to install the Site/SunNet/Domain Manager package before the Cooperative Consoles packages. Failure to do so will result in error.

```
   ----->>>>> CDM <<<<<-----

     1. Select Application
     2. Show Current Application
     3. Install Application
     4. Display Application Text File
     5. Print Application Text File
     6. List Applications
     7. List Categories
     8. Change Current Category
     9. Change Current Directory
     10. Show Program Environment

Please enter a number or q to quit:

       1.   Cooperative Consoles
       2.   Site/SunNet/Domain Manager

Please enter a number or q for the main menu:
```

3. **Enter** 1 **to select an application from the CDM menu, then enter the number for the application. You should see a line showing that Site/SunNet/Domain Manager and Cooperative Consoles are selected as the new application.**

4. From the CDM menu, enter 3 **to install the application. At the "Begin installation now?" prompt, enter** y. **The installation script appears, as described in the next section.**

Installing the Product Software

After invoking cdmanager or cdm, from this point forward, the installation script proceeds in the same way.

1. You receive a product description and copyright notice and are queried:

```
Do you want to continue [y|n]?
```

Enter y to proceed with the installation. You receive the following display:

```
                         * NOTICE *
Many non-Sun vendors provide management applications that run on the
platform.  If you are using such an application, check with the
vendor for compatibility with the product *before* you install the the
product software.

The run-time database format has changed since the 1.X
releases.  Before upgrading to Site/SunNet/Domain Manager 2.3 from a
1.X release please be sure to save all existing run-time databases in
ASCII format. After completing the installation, you may reload your
saved ASCII files.

Please refer to the Administration Guide for more information.

Do you wish to continue with the installation? [n]
```

2. **Enter** `y` **to the prompt above to proceed with the installation or press Return to leave the script.**
   For the remainder of these instructions, we assume you enter `y`. You receive the following display:

```
Site/SunNet/Domain Manager2.3 requires at least SunOS 4.1.3,
with the 'Networking Tools and Programs' option installed.

The sun4 package requires about 13000 KB.

This package is usually installed into the directory /usr/snm.
In most cases, it should be installed into /export/exec/ARCH/snm
(ARCH is your current machine architecture), which is a link
to /usr/snm.  You may specify a different directory.

When performing a server installation, if the software you are
installing does not match the server's architecture, the server's
system files will not be modified to run the product 2.2.3.

Installation requires five to fifteen minutes.
Supported architecture is: sun4.

Do you want to install into /export/exec [y]
```

3. **Press Return at the preceding prompt to install the product in** `/export/exec` **(which is a link to** `/usr`**) or enter** `n` **and specify an absolute pathname where you want to install SunNet Manager.**
   After accepting the default installation directory or specifying a different directory, you receive:

If you install the product in other than the default directory, you must set the `SNMHOME` environment variable before starting SNM. See "If You Installed the Product in a Non-Default Directory..." on page 3-27 for instructions on

```
It is recommended that you do not change the elements.schema file.
You may add your own element schema by creating a personalized file
with a .schema extension in one of the directories specified in
the 'Schema Locations' field in the console property
sheet.

Don't worry if you don't know what this means.

Would you like to install the Sun SNMP agent? [y]
```

4. Press Return at the preceding prompt to install the Sun SNMP agent.
If you have the agent installed from a previous release, the script asks if you want to save your existing `snmpd.conf` file in `/etc` and install a new file. Press Return to leave the existing file untouched or enter `y` to install a new file.

After you respond to the agent installation queries, the script checks the `/etc/rc.local` file to determine if it is configured to run the Sun SNMP agent at each reboot. If not, you will receive the following query:

```
To run the Sun SNMP agent at each reboot, the following lines
need to be added to the end of /etc/rc.local:

    if [ -x /etc/init.snmpd ]; then
            /etc/init.snmpd start
    fi

Would you like me to do this for you? [y]
```

5. Press Return at the preceding prompt to add the lines to `/etc/rc.local` **or enter** `n` **to not add the lines.**
After responding to the prompt above, you receive a display such as the one shown below. Note that the values displayed under the row that begins with `Filesystem` are for example purposes. Your own display will differ from this.

```
By default, database and log files are placed under the
directory /var/adm/snm which will be created during this installation.
A minimum of 10Mb to 15Mb of free space in the default database
location is recommended.  If you would like to put the databases in an
alternate directory by default, a link will be created from /var/adm/snm
to the new location.  The current usage for /var/adm/snm is:
Filesystem          kbytes    used    avail capacity  Mounted on
/dev/sd1g            74722    33631    33618    50%     /var

Would you like the databases to be written to a new default directory? [n]
```

6. **Press Return to have the database and log files placed in** `/var/adm/snm` **or enter** `y` **if you want these files to be stored elsewhere.**
   If you enter `y`, you are prompted to enter a new pathname. This should be an absolute pathname of a directory that is writable by root.

   After responding to the database and log file prompts, you receive a display such as the one shown below. Note that the values displayed under the row that begins with `Filesystem` are for example purposes. Your own display will differ from this.

```
Some of the daemons create log files that can grow over
1 Mb each in size, depending on the number of nodes you are managing.
The default directory for these log files is /var/adm/snm.  Here is the
current usage for /var/adm/snm:
Filesystem            kbytes    used    avail capacity  Mounted on
/dev/sd1g              74722    33632   33617    50%     /var

Would you like the log files to be written somewhere else (like
/usr/snm/logs)? [n]
```

7. **Press Return to have the daemon log files placed in** `/var/adm/snm` **or enter** `y` **if you want these files to be stored elsewhere.**
   If you enter `y`, you are prompted to enter a new pathname. This should be an absolute pathname of a directory that is writable by root.

   After responding to daemon log file queries you receive:

```
I'm about to install Site/SunNet/Domain Manager 2.3
into /export/exec for sun4, OK? [y]
```

8. The licensing install script begins by listing the phone numbers to call to obtain a license password. The script then displays:

```
The license distributor will ask you for the following
information:

    Server Name    : <host-name>
    Host ID        : <host-ID>

    You will also need to provide the Serial Number and
    the product name from the license certificate

Please Hit Return to continue .....
```

After you press Return, you will be asked:

```
Do you want to install the license now (y/n) [y]:
```

Press return to continue with the license installation.

```
Please enter the License Password for this node:
```

When you call the license distribution center, you must do the following:

a. The operator will provide you with a license password which you must type in at the prompt shown above.

b. Give the operator your serial number from your license certificate, product name and version, host name, and host ID.

c. The operator will ask you for your company address, phone number, and e-mail address.
After you type in the license password that the operator gives you, you will receive the following prompt:

```
Is this a demo license (y/n) [n]:
```

If you enter y, then you will be prompted to enter the expiration date of the demo license. For example:

```
Please enter the expiration date (dd-mmm-yyyy): 01-jan-1995
```

The installation will continue with the following prompts::

```
Please enter the loction where the SNM databases will be created?
[/var/adm/snm]
```

For the location of where the databases will be created, type in the location that you specified while installing the product using (`cd` or `cdmanager`) If a value is entered that is different from the location entered while installing, license information will be installed in the wrong place. Your product software will indicate that you do not have a license.

Once a valid database location is entered, the following is displayed:

```
Please choose the name of the product from the following list.
The name of the product s available with the license certificate
that you received along with the serial number.

    Type 1 for Site Manager
    Type 2 for SunNet Manager
    Type 3 for Domain Manager
    Type 4 for University Wide Domain Manager

Please enter the number corresponding to the product.
```

≡ 3

Currently the University Wide Domain Manager is only available for Universities. It is a special licensing variety of the Site/SunNet/Domain Manager product. If you are installing University Wide Domain Manager licensing, you need the network domain name in order to complete the licensing procedure.

```
Please enter your network domain(eg,. leland.stanford.edu):
```

After selecting one of the products, the following is displayed:

```
I am installing licensing for <product name> now. ok? (y/n) [y]
```

If license installation is successful, the following is displayed::

```
Licensing for <product name> 2.300 is completed successfully
```

The license password is stored in the `/var/adm/snm/snm_license.dat` file.

9. Press Return to begin the copying of files to the default or specified destination directory.
The script displays a long list of the files as they are copied. This portion of the script can take from two to ten minutes, depending on the location of the CD drive and machine resources.

After file copying completes, the installation script performs some "housekeeping" chores. Shown below is example excerpt from this stage of installation. Your own display might differ from this.

```
Setting root execute permission on snm_discover ... done.

[Lines omitted]

Generating /var/tmp/<machine_name>.db file ... done.
An example database file called /var/tmp/<machine_name>.db has been created.

Before using SunNet Manager, you should set the environment variable
SNMHOME to the directory /usr/snm.  You may
also want to add /usr/snm/bin to your PATH environment
variable.

You may then use 'snm' to start the Console, or use
'snm /var/tmp/<machine_name>.db' to start the product with the example
database.  Please refer to the Administration Guide for
information on how to set the location of Databases with
the SNMDBDIR environment variable.

Finished Installation on <machine_name>.
A log of the installation is in /usr/tmp/unbundled/2.3 SNM.log.  You
should check this log for any errors that may have occurred during
the installation process.

Site/SunNet/Domain Manager 2.3 Installation Completed on Mon Aug 21 08:07:07
PST 1995
```

If you are using `cdm`, you have finished the software installation.

If you are using `cdmanager`, when installation completes, you receive the query `Done analyzing results?`. Enter `y` to continue.

If you want to install the AnswerBook files at this time, go directly to Step 4 in the next section, under "Starting the AnswerBook Installation Using `cdmanager`." If you choose not to install the AnswerBook files at this time, pull down the window menu in the `cdmanager` window title bar and select Dismiss to dismiss the `cdmanager` window, then skip to the section below entitled "Ejecting the CD-ROM."

Installing the AnswerBook Software

As with the the product software, the AnswerBook can be installed using either `cdm` or `cdmanager`. You can install the AnswerBook files at the same time as the the product software installation or at a different time.

If you choose to install AnswerBook, you should make certain that `root` on the installation machine has write permission on the directories where AnswerBook will be installed.

Starting the AnswerBook Installation Using `cdmanager`

If you are installing the AnswerBook files on a system that is running the OpenWindows environment, you can accomplish the AnswerBook installation using `cdmanager`. If you have just installed the the product software and are still running `cdmanager`, go directly to Step 4.

1. **Enable CDmanager display with** `xhost`**.**
   Type the following command from a window where you are logged in as yourself, *not* as root:

   ```
   hostname% xhost +<hostname>
   ```

   where *<hostname>* is the name of the local system.

2. **Now enter the following command to login as** `root`**:**

   ```
   hostname% su
   ```

3. **In a shell,** `cd` **to the directory on which you have the CD-ROM file system mounted and enter** `./cdmanager`**. The** `cdmanager` **window appears (see Note –) with the AnswerBook icon displayed.**

4. **Click the left mouse button to select the AnswerBook icon in the**
`cdmanager` **window. To start the installation, select Install, either from the**
Options pulldown menu or from the APPLICATION OPTIONS popup
menu. (The popup menu appears if you press the right mouse button over
the selected icon.)
The installation script now begins, as described below under "Installing the
AnswerBook."

Starting the AnswerBook Installation Using `cdm`

To install the AnswerBook using `cdm`, do the following:

1. **Login as root or enter the** `su` **command at the system prompt.**

2. **At a shell prompt,** `cd` **to the directory on which you have the CD-ROM file**
system mounted and enter `./cdm`**. You receive the following display:**

```
   ----->>>>> CDM <<<<<-----

      1. Select Application
      2. Show Current Application
      3. Install Application
      4. Display Application Text File
      5. Print Application Text File
      6. List Applications
      7. List Categories
      8. Change Current Category
      9. Change Current Directory
      10. Show Program Environment

 Please enter a number or q to quit:
```

3. **Enter** `1` **to select an application from the CDM menu, then enter the**
number for theAnswerBook.

4. **From the CDM menu, enter** `3` **to install the application. At the "Begin**
installation now?" prompt, enter `y`**. From this point on, the installation**
script proceeds, as described in the next section.

Installing AnswerBook

After the installation has been invoked in either `cdm` or `cdmanager`, the installation script proceeds in the same way. You will be asked to complete the following steps:

1. **Read the opening screens.**
   The first few screens contain information about system requirements, licensing, and AnswerBook planning. Review this information, entering a `y` or pressing Return to move to the next screen, as instructed.

2. **Choose a configuration (1, 2, or 3).**
   The screen describes the hard disk space requirements and projected installation time for each option. Enter 1 to select the CD-ROM-based option, 2 for the mixed CD-ROM- and hard disk-based option, or 3 for the hard disk-based option.

After the installation software verifies that you have write permission and sufficient disk space in the target directories, it displays a list of default locations for the files in the `Installation Configuration` screen. A sample `Installation Configuration` screen is shown below.

```
        Installation Configuration
        ==========================
    Description                      Kbytes  Install Location
    -----------                      ------  ----------------
    AnswerBook Home Directory ($ABHOME)    5  /usr/AnswerBook/snm
    Search Indexes/Book Databases       3000  -- Leave on CD
    PostScript Files                   20000  -- Leave on CD
    AnswerBook Binaries                 3084  $OPENWINHOME/bin/xview
    Help Files                          1688  $OPENWINHOME/lib/help

Notes, Warnings and Problems
============================
-- indicates notes
** indicates warnings
XX indicates problems

-- $OPENWINHOME is currently set to "/usr/openwin"
-- Item "Search Indexes/Book Databases" will be left on the CD
-- Item "PostScript Files" will be left on the CD

** For the item "Help Files"
   the file "$OPENWINHOME/lib/help/viewer.info" will be overwritten


Install/Customize Menu
======================
    1  Perform Installation
    2  Customize Configuration
    3  QUIT Installation

Select desired action [1 - 3]:
```

The numbers that appear on your screen may be different.

Problems are indicated on this screen by an XX symbol; investigate them before continuing. If you do not want to change any of the default locations, go to Step 4.

3. **Customize the directory locations, if necessary.**
   If you want to modify the directory locations that are displayed, enter a 2. A screen of instructions will appear, together with a Customization Menu. If you want to change any of the installation settings, choose "Modify Installation Destinations" from the Customization Menu and follow the instructions that appear.

4. **Specify user mount points.**
   After choosing 1, Perform Installation, from the Installation Configuration menu, you will be asked for either a CD-ROM mount point, a mount point for the AnswerBook home directory (for example, ab_home) on your hard disk, or both, depending on the configuration option that you selected. For example, if you specified one of the two CD-ROM-based options, a screen such as the following appears:

```
Specify CD-ROM Mount Point
==========================

        If users will mount (access) the CD-ROM partition by a different
        path name than the one used during installation, you must change the
        CD-ROM mount point here so that it matches what users will see.

        [] Use the value for "CD-ROM Mount Point For Users" from your
           Installation Planning Worksheet.


The CD mount point is currently set to "/cdrom"
Enter new CD-ROM mount point, or hit Return to use current value.
```

Status messages appear as the installation proceeds. When the installation is complete, a prompt gives you the option of listing the files that were installed. Finally, the screen displays the command to start the AnswerBook software as well as a list of references for further reading.

Ejecting the CD-ROM

When you finish running cdm or cdmanager, eject the CD-ROM, using one of the following sets of commands:

d. For SunOS 4.x and SunOS 5.1 (Solaris 2.1) systems, enter:

```
hostname# cd /
hostname# umount /cdrom
hostname# eject cdrom
```

e. For Solaris 2.2 or later systems, enter:

```
hostname# cd /
hostname# eject
```

Finishing Installation

Finishing installation includes these tasks:

- Updating NIS/NIS+ maps/tables, if you are running NIS/NIS+
- Setting up access to on-line help and man pages
- Defining the SNMHOME variable, if you installed in a non-default directory

Note – If you installed the product software on a server, you can run the Console from a client. To do so, run the getagents program as described in the next chapter, and specify that you are using an NFS mount. Because of local site variations, you may need to modify environment variables on the client before all the resources are available to the various applications.

Updating NIS Maps or NIS+ Tables

If you are running NIS/NIS+, you must manually update the NIS services and rpc.bynumber maps or the equivalent tables in NIS+.

To update the NIS/NIS+ maps/tables:

1. On the master NIS/NIS+ server, log in as or become superuser:

```
hostname% su
Password: enter your superuser password
```

2. Edit the file `/etc/services` **by adding the following lines:**

```
snmp        161/udp                  # Simple Network Mgmt Protocol
snmp-trap   162/udp   snmptrap       # SNMP trap (event) messages
```

3. Edit the file `/etc/rpc` **by adding the following lines, if they do not already exist in the file:**

```
event      100101    na.event
logger     100102    na.logger
sync       100104    na.sync
diskinfo   100105    na.diskinfo
iostat     100106    na.iostat
hostperf   100107    na.hostperf
activity   100109    na.activity
lpstat     100111    na.lpstat
hostmem    100112    na.hostmem
sample     100113    na.sample
ping       100115    na.ping
rpcnfs     100116    na.rpcnfs
hostif     100117    na.hostif
etherif    100118    na.etherif
ippath     100119    na.ippath
iproutes   100120    na.iproutes
layers     100121    na.layers
snmp       100122    na.snmp
traffic    100123    na.traffic
layers2    100131    na.layers2
etherif2   100135    na.etherif2
hostmem2   100136    na.hostmem2
iostat2    100137    na.iostat2
snmpv2     100138    na.snmpv2
sender     100139    cc_sender
```

4. **Make the changes effective:**

   a. **If you are running NIS, update the maps using the** `ypmake` **command, then push the maps out to the slave NIS servers using the** `yppush` **command.**

   b. **If you are running NIS+, update the tables using the** `nisaddent` **command.**

Note – Refer to your system administration documentation if you need additional information on these commands.

If you executed `su –` or logged in to the console as root, use this command to look for the `inetd` process:
`ps -af | grep inetd`

5. **Look for and kill the** `inetd` **process by entering the following commands:**

```
hostname# ps -ax | grep inetd
hostname# kill -HUP <processnumber>
```

where *<processnumber>* is the `inetd` process number returned.

Setting up Access to Executables, On-line Help, and man Pages

To run executables, you must append the path of those executables—the default is `/usr/snm/bin`—to your `PATH` variable in your shell startup file.

For a C-shell, in your `$HOME/.cshrc` file enter:

```
setenv PATH ${PATH}:/usr/snm/bin
```

For a Bourne or Korn shell, in your `$HOME/.profile` file enter:

```
set PATH=${PATH}:/usr/snm/bin
export PATH
```

Context-sensitive help is available for the Console and tools. In order to use the on-line help, you need to put the help directory in a `HELPPATH` environment variable in your shell startup file. If you installed the product in `/usr/snm`, use one of the following commands.

For a C-shell, in your `$HOME/.cshrc` file enter:

```
setenv HELPPATH ${HELPPATH}:/usr/snm/help
```

For a Bourne or Korn shell, in your `$HOME/.profile` file enter:

```
set HELPPATH=${HELPPATH}:/usr/snm/help
export HELPPATH
```

To get on-line help on windows, menus, fields, and buttons, point the cursor to the appropriate item on the screen and press the F1 or Help key on the keyboard (see the following Note). A popup Help window is displayed that contains information about the item. You can then move the pointer to another screen item in a screen and press the Help key again. When you are done with the Help window, click SELECT on the Help window pushpin to dismiss the window.

Note – To invoke on-line help, you must use the key that is mapped as the Help key. The `xmodmap` command in the .xinitrc file in your home directory is used to modify keyboard mappings. If the line `xmod -e 'keysym F1 = Help'` is not commented out in the .xinitrc file, you should use the F1 key to display the popup Help window. If the line `xmodmap $HOME/.xmodmap` exists in the .xinitrc file, you should check the .xmodmap file in your home directory for any lines that remap the Help key.

To use the man pages, you need to put the man page directory in a `MANPATH` environment variable in your shell startup file. If you installed the product in `/usr/snm/bin`, use one of the following commands.

For a C-shell, in your `$HOME/.cshrc` file enter:

```
setenv MANPATH ${MANPATH}:/usr/snm/man
```

For a Bourne or Korn shell, in your `$HOME/.profile` file enter:

```
set MANPATH=${MANPATH}:/usr/snm/man
export MANPATH
```

The preceding examples assumed you installed the product in its default location. If you installed the product in a directory other than `/usr/snm`, specify the non-default directory when you assign a value to `PATH` or `MANPATH`.

If You Installed the Product in a Non-Default Directory...

If you installed the product in a directory other than `/usr`, you must set the `SNMHOME` environment variable to the directory where the product is stored. For example, if you installed the product in `/usr2`, enter assign a value to `SNMHOME` as follows:

For a C-shell, in your `$HOME/.cshrc` file enter:

```
setenv SNMHOME /usr2/snm
```

Then, as the `.cshrc` owner, enter:

```
hostname# source $HOME/.cshrc
```

For a Bourne or Korn shell, in your `$HOME/.profile` file enter:

```
set SNMHOME=/usr2/snm
export SNMHOME
```

Then, as the `.profile` owner, enter:

```
hostname# . $HOME/.profile
```

Remember that, for all shell types, for root, `$HOME` is your root (`/`) directory.

If you have an `$HOME/.SNMdefaults` file left over from version 2.0 of the product and have installed version 2.2.3 in a different directory from the one used for version 2.0, change the values of the `snm.console.schemaPath` and `snm.console.iconPath` parameters to reflect the non-default directory.

≡ *3*

The Next Step...

Proceed to Chapter 4, "Installing Agent Software on Remote Systems," for instructions on installing agents (the remote data collection programs) on remote systems.

After you have installed agents, the next step is start the Console and create a management database of network elements that you intend to manage. See the *Administration Guide* for instructions on performing these tasks.

Installing Agent Software on Remote Systems

4

This chapter provides instructions for installing the product agent software on remote systems.

Do You Need to Install Agents?

Depending on your network management needs, you do not have to install agents on machines in order to make effective use of the product . All Sun machines and most other machines that run on TCP/IP networks support protocols that enable the Console machine to obtain useful data from machines without agents.

The Console has the capability to manage agent-less machines through its proxy feature, working in conjunction with the `ping` and `hostperf` agents running on the Console machine. The proxy feature allows agents running on

one machine—the Console machine or any machine running agents—to respond as if they were running on another machine. This feature is described the *Administration Guide.*

Through use of the `hostperf` and `ping` proxy agents you can obtain the following information from a remote machine:

From the `hostperf` agent:

- number of CPU interrupts
- disk usage
- number of input and output packets
- percentage of CPU usage

All of the above items are expressed per unit of time.

From the `ping` agent:

- the reachability of a remote host
- round-trip time for a packet sent to a remote host

The information returned by the `ping` agent is analogous to that returned by the `ping -s` command.

You can use the `hostperf` and `ping` agents to send both data and event requests. You can save, browse, graph, and strip-chart data from a machine without agents in the same way that you manipulate data returned from a machine with host-resident agents.

Good reasons to install agents, rather than relying on the `hostperf` and `ping` proxies, are:

- You can obtain a far greater breadth and depth of information on each machine.
- You do not have a single point-of-failure (that is, the machine running the proxy agents).

If you install the SNMP agents, you gain the ability to set, as well as obtain, the values of parameters on a remote machine.

Proxy agents have uses other than obtaining data from machines that are not running agents. For example, they allow you to use the product to manage networks that use protocols other than TCP/IP or let you manage remote networks. Their ability to allow you to obtain data from agent-less machines is offered here as a consideration for your decision as to whether to install agents.

Overview of Agent Installation

The workstation running the Console (the "manager station") is the focal point for collecting and analyzing information. It gets the information from data collection programs (*agents*) usually running on remote machines.

The product software provides agents that run on Solaris 2.x systems and on SunOS 4.x systems. You use the `getagents` script to install agents on both types of systems.

Overview of the `getagents` Script

The `getagents` script allows a Sun workstation to run the product agents and proxy agents by editing system files (similar to what the installation script does) and copying agents, libraries, and the SNMP proxy agent schema from the manager station to another machine. The script makes backups of all system files that are modified.

Specifically, the `getagents` script:

- Copies the agents, schema files, libraries, and native SNMP agent files from the manager station.

- On a machine running Solaris 2.x, creates the `/var/opt/SUNWconn/snm` directory for log files. On a machine running SunOS 4.x, creates the `/var/adm/snm` directory for log files. (For a description of these log files, see the `snm.conf(5)` man page.)

- Under SunOS 4.x only, creates symbolic links from the `libnetmgt.sa.2.0` and `libnetmgt.so.2.0` shared library files to `/usr/lib`. These files are used by agent and manager applications. Under Solaris 2.x, the script creates symbolic links if the library files were installed in a location other than the default, `/opt/SUNWconn/lib`.

  If the link creation fails, an error message is printed, and you'll need to make the links yourself.

Note – Shared library files (or links to them) should be placed in `/usr/lib`. If you put them somewhere else, run `ldconfig(8)` with the library path names.

- On a machine running Solaris 2.x, creates a `/etc/opt/SUNWconn/snm/snm.conf` file if none exists, or updates the old one. On a machine running SunOS 4.x, creates a `/etc/snm.conf` file if none exists, or updates the old one. For a description of the `snm.conf` file, see the `snm.conf(5)` man page.

- Adds agent entries to `/etc/rpc`—see `rpc(5)`.

- Adds SNMP definitions to the `/etc/inet/services` file for Solaris 2.x systems, or to the `/etc/services` file for SunOS 4.x systems.

  If you are running NIS/NIS+, you must manually add the agent entries to `/etc/rpc` and `/etc/services` on the NIS/NIS+ master. To update the `rpc.bynumber` and `services` maps on both the master and the server, see the "Updating NIS Maps or NIS+ Tables" on page 3-23 for instructions.

- Updates `/etc/inet/inetd.conf` under Solaris 2.x, or `/etc/inetd.conf` under SunOS 4.x and asks `inetd(8C)` to reread its configuration file. See the `inetd.conf(5)` man page.

- Creates a sample database file you can add to your management database on the manager station.

- On a machine running Solaris 2.x, creates the `/var/opt/SUNconn/snm/snmp.hosts` and `/var/opt/SUNWconn/snm/snmp.traps` files for use by the SNMP proxy agent. On a machine running SunOS 4.x, creates the `/var/adm/snm/snmp.hosts` and the `/var/adm/snm/snmp.traps` files for use by the SNMP proxy agent.

Copying Scenarios

There are various ways the manager station can make files available to other machines. Two common approaches are NFS and `rcp(1)`. NFS is the recommended method, but not an option at every site. If `rcp` is used, the `/.rhosts` file on the manager station must contain the name of the remote (agent) machine, allowing the agent machine root access to the manager machine. Once you have installed the agents, you may remove the agent machine name from the manager's `/.rhosts` file to restore security.

Since the `getagents` script copies files across the network, it needs to know what access method is going to be used for the copy. The three basic scenarios are:

- The system has the the product distribution NFS mounted from the manager station. You do not want to copy the agents because you're going to run the agents over the mount.

- The system has the distribution NFS mounted from the manager station. You *want* to copy the agents because you're going to run the agents from a different file system.

- The distribution is not NFS mounted, so `rcp` is needed to copy the agents.

The programs do not use copy methods such as `tftp(1)`.

The following sections specify the following procedures:

- Running the `getagents` script using an NFS mount on Solaris 2.x systems (page 4-10)
- Running the `getagents` script using an NFS mount on SunOS 4.x systems (page 4-5)
- Running the `getagents` script using `rcp` on Solaris 2.x systems (page 4-20)
- Running the `getagents` script using `rcp` on SunOS 4.x systems (page 4-15)

Running `getagents` *Using an NFS Mount from SunOS 4.x Systems*

In the following procedure, the local machine (`agenthost`) has the distribution files NFS mounted from the manager (`mgrhost`) station.

To run the `getagents` script using an NFS mount:

1. **Log in as root on the manager station. Enter the following commands to export the filesystem and start the NFS daemons, if they are not already running:**

```
mgrhost# exportfs -o ro /usr/snm
mgrhost# /usr/etc/nfsd 8
mgrhost# /usr/etc/rpc.mountd
```

If the file `/etc/exports` does not exist on your system, as root, create the file and, in that file, enter the line: `/usr/snm -ro` and nothing else. Then, enter the `nfsd` and `rpc.mountd` commands as above and enter, in addition, `exportfs -a`.

2. **Log in as root to the machine that will run the agents (this machine will be referred to as the "local machine").**

3. **Create a mountpoint on the local machine.**

4. **Mount the the product software on your local machine from the manager station (by default, in** `/usr/snm`**):**

```
agenthost# mount mgrhost:/usr/snm <mountpoint>
```

5. **Run the** `getagents` **script from the** `bin` **directory under the mountpoint you created on the local machine.**
   The `getagents` script starts and asks for the name of the directory where the agents will be installed.

```
# <mountpoint>/bin/getagents

-- Site/SunNet/Domain Manager 2.3 agent installation --
Copyright (c) 1990-1995 by Sun Microsystems, Inc.

What is the name of the root directory where agents will be installed?
Agents will be installed into the 'agents' subdirectory of the directory
you specify. Type 'NFS' if you intend to run the agents via an NFS
mount. [/usr/snm]
```

6. **To run the agents over an NFS mount, enter** `NFS`**; to install the agents on the local system, press Return to accept the default,** `/usr/snm`**, or enter another path name.**

Note – If you enter `NFS`, the `getagents` script asks for the name of the root directory under which the the product agents and libraries are located. Go to Step 9.

The `getagents` script asks if you want to create the `agents` directory.

```
/usr/snm/agents doesn't exist, should I create it? [y]
```

7. **Press Return to accept the default,** `y`**.**
   The `getagents` script asks for the name of the host where the agents are located.

```
OK, /usr/snm/agents was made.

What is the name of the host where the agents are? Type Return if you
have the directory NFS mounted: [localhost]
```

8. **Press Return to accept the default, localhost.**
   The `getagents` script asks for the name of the root directory under which the agents and libraries are located.

```
What is the name of the root directory under which the the product
agents and libraries are located? []
```

9. **Enter the name of the mountpoint you created in Step 3.**
   The `getagents` copies agents from the manager station to the agent station, displays these agent files, then creates library links and asks if you want to install the Sun SNMP agent.

```
Backing up old library links in /usr/lib ... done.
Creating library links into /usr/lib ... done.
Would you like to install the Sun SNMP agent? [y]
```

10. Press Return to accept the default, y, to install the Sun SNMP agent, or enter n for no, if you do not want to install the Sun SNMP agent.

Note – If you enter n, the getagents script creates the /etc/snm.conf file, then asks for the location of the database files. Go to Step 14.

The getagents script displays several messages and information about community names, and then asks for the read community name.

```
Access to SNMP devices is controlled via community names.
The default community names for this SNMP agent installation will be:
     read: public
    write: private

You should change the write community name to a site specific
name to control access to this system via the SNMP agent.
You may also modify the read community name if desired.

New read community name? [public]
```

11. Press Return to accept the default read community name, public, or enter a new read community name.
The getagents script asks if you want to change the default write community name.

```
New write community name? [private]
```

12. **Press Return to accept the default write community name, private, or enter a new write community name.**
The `getagents` script displays lines that must be added to the `/etc/rc.local` file, and asks if you want them to be added now.

```
To run the Sun SNMP agent at each reboot, the following lines
need to be added to the end of /etc/rc.local:

  if [ -x /etc/init.snmpd ]; then
        /etc/init.snmpd start && echo 'Starting snmpd.'
  fi

Would you like me to do this? [y]
```

13. **Press Return to accept the default, y, or enter n for no. If you enter n, be sure to manually update the file after the installation.**
The `getagents` script creates the `/etc/snm.conf` file, then asks for the location of the database files.

```
Creating /etc/snm.conf ... done.

By default, database and log files are placed under the
directory /var/adm/snm which will be created during this installation.
A minimum of 10Mb to 15Mb of free space in the default database
location is recommended. If you would like to put the databases in an
alternate directory by default, a link will be created from /var/adm/snm
to the new location. The current usage for /var/adm/snm is:
Filesystem          kbytes      used     avail    capacity    Mounted on
/dev/sd1g           20570       1139     17373      6%          /var

Would you like the databases to be written to a new default directory? [n]
```

14. Press Return to accept the default location for the database files, /var/adm/snm**, or enter** y **to specify a different location. If you enter** y**, you will be prompted for the location for the database files.**
The getagents script asks for the location of the log files.

```
Some of the daemons create log files that can grow over
1 Mb each in size, depending on the number of nodes you are managing.
The default directory for these log files is /var/adm/snm. Here is the
current usage for /var/adm/snm:
Filesystem          kbytes      used     avail    capacity   Mounted on
/dev/sd1g           20570       1139     17373     6%          /var

Would you like the log files to be written somewhere else (like
/usr/snm/logs)? [n]
```

15. Press Return to accept the default location for the log files, /var/adm/snm**, or enter** y **to specify a different location. If you enter** y**, you will be prompted for the location for the log files.**
The getagents script creates snmp files, updates other files, and displays a message that it has finished.

You have installed the agents, and they are ready to be run and managed on this system.

Running getagents *Using an NFS Mount from Solaris 2.x Systems*

In the following procedure, the local machine (agenthost) has the distribution files NFS mounted from the manager (mgrhost) station.

To run the getagents script using an NFS mount:

1. **Log in as root on the manager station. Enter the following commands to export the filesystem and start the NFS daemons, if they are not already running:**

```
mgrhost# exportfs -o ro /usr/snm
mgrhost# /usr/etc/nfsd 8
mgrhost# /usr/etc/rpc.mountd
```

If the file `/etc/exports` does not exist on your system, as root, create the file and, in that file, enter the line: `/usr/snm -ro` and nothing else. Then, enter the `nfsd` and `rpc.mountd` commands as above and enter, in addition, `exportfs -a`.

2. **Log in as root to the machine that will run the agents (this machine will be referred to as the "local machine").**

3. **Create a mountpoint on the local machine.**

4. **Mount the the product software on your local machine from the manager station (by default, in** `/usr/snm`**):**

```
agenthost# mount <mgrhost>:/usr/snm <mountpoint>
```

5. **Run the** `getagents` **script from the** `bin` **directory under the mountpoint you created on the local machine.**
   The `getagents` script starts and asks for the name of the directory where the agents will be installed.

```
# <mountpoint>/bin/getagents

-- Site/SunNet/Domain Manager 2.3 agent installation --
Copyright (c) 1990-1995 by Sun Microsystems, Inc.

What is the name of the root directory where agents will be installed?
Agents will be installed into the 'agents' subdirectory of the directory
you specify. Type 'NFS' if you intend to run the agents via an NFS
mount. [/opt/SUNWconn/snm]
```

6. To run the agents over an NFS mount, enter `NFS`**; to install the agents on the local system, press Return to accept the default,** `/opt/SUNWconn/snm`**, or enter another pathname.**

Note – If you enter `NFS`, the `getagents` script asks for the name of the root directory under which the agents and libraries are located. Go to Step 9.

The `getagents` script asks if you want to create the `agents` directory.

```
/opt/SUNWconn/snm/agents doesn't exist, should I create it? [y]
```

7. Press Return to accept the default, `y`**.**
The `getagents` script asks for the name of the host where the agents are located.

```
OK, /opt/SUNWconn/snm/agents was made.

What is the name of the host where the agents are? Type Return if you
have the directory NFS mounted: [localhost]
```

8. Press Return to accept the default, localhost.
The `getagents` script asks for the name of the root directory under which the agents and libraries are located.

```
What is the name of the root directory under which the agents and libraries are located? []
```

If the Sun SNMP agent is not installed on your manager station, SNMP questions are not asked.

9. Enter the name of the mountpoint you created in Step 3.
The `getagents` script creates library links, then asks if you want to install the Sun SNMP agent.

```
Would you like to install the Sun SNMP agent? [y]
```

10. **Press Return to accept the default, y, to install the Sun SNMP agent, or enter n for no, if you do not want to install the Sun SNMP agent.**

Note – If you enter n, the `getagents` script creates the `/etc/opt/SUNWconn/snm/snm.conf` file, then asks for the location of the database files. Go to Step 14.

The `getagents` script displays several messages and information about community names, and then asks for the read community name.

```
Access to SNMP devices is controlled via community names.
The default community names for this SNMP agent installation will be:
     read: public
    write: private

You should change the write community name to a site specific
name to control access to this system via the SNMP agent.
You may also modify the read community name if desired.

New read community name? [public]
```

11. **Press Return to accept the default read community name, public, or enter a new read community name.**
The `getagents` script asks if you want to change the default write community name.

```
New write community name? [private]
```

12. **Press Return to accept the default write community name, private, or enter a new write community name.**
The getagents script displays information about the init.snmpd script, and asks if you want the script to be added to the /etc/init.d directory now.

```
To run the Sun SNMP agent at each reboot, the init.snmpd
startup/shutdown script needs to be added to the
/etc/init.d directory.

Would you like to add this script? [y]?
```

13. **Press Return to accept the default, y, or enter n for no. If you enter n, be sure to manually add the script after the installation; see the snmpd man page for instructions on how to add the script.**
The getagents script creates the /etc/opt/SUNWconn/snm/snm.conf file, then asks for the location of the database files.

```
Creating /etc/opt/SUNWconn/snm/snm.conf ... done.

By default, database and log files are placed under the
directory /var/opt/SUNWconn/snm which will be created during this installation.
A minimum of 10Mb to 15Mb of free space in the default database
location is recommended. If you would like to put the databases in an
alternate directory by default, a link will be created from /var/opt/SUNWconn/snm
to the new location. The current usage for /var/opt/SUNWconn/snm is:
Filesystem          kbytes      used     avail    capacity    Mounted on
/dev/dsk/c0t3d0s0     20570      1139     17373      6%          /var

Would you like the databases to be written to a new default directory? [n]
```

14. **Press Return to accept the default location for the database files,**
    /var/opt/SUNWconn/snm**, or enter** y **to specify a different location. If**
    you enter y**, you will be prompted for the location for the database files.**
    The getagents script asks for the location of the log files.

```
Some of the the product daemons create log files that can grow over
1 Mb each in size, depending on the number of nodes you are managing.
The default directory for these log files is /var/opt/SUNWconn/snm. Here is the
current usage for /var/opt/snm:
Filesystem            kbytes      used    avail   capacity   Mounted on
/dev/dsk/c0t3d0s0        20570      1139    17373      6%         /var

Would you like the log files to be written somewhere else (like
/usr/snm/logs)? [n]
```

15. **Press Return to accept the default location for the log files,**
    /var/opt/SUNWconn/snm**, or enter** y **to specify a different location. If**
    you enter y**, you will be prompted for the location for the log files.**
    The getagents script creates snmp files, updates other files, and displays a
    message that it has finished.

    You have installed the agents, and they are ready to be run and managed on
    this system.

Running getagents *Using* rcp *for SunOS 4.x Systems*

The following procedure uses rcp to copy agents from mgrhost (the manager
station) to agenthost (the "local host").

≡ 4

To run the `getagents` script using `rcp`:

1. **Set up the manager station to allow root access across the network for the host(s) that will be running `getagents` (add "`agenthost`" to list of trusted hosts).**

```
mgrhost# cat >>/.rhosts
agenthost
^D
```

If `/.rhosts` does not exist, enter touch `/.rhosts` prior to the preceding command.

2. **Copy `getagents` from the manager station to the local machine.**

```
mgrhost# rlogin agenthost
Password:
SunOS Release 4.1.1 (AGENTHOST) #1: Wed May 6 12:30:46 PDT 1992

agenthost# rcp mgrhost:/usr/snm/bin/getagents /tmp
```

3. **Run the `getagents` script. (The following instructions assume that you have copied `getagents` to `/tmp` on the local host, although you may copy it to any directory that is writable by root.)**
   The `getagents` script starts and asks for the name of the directory where the agents will be installed.

```
agenthost# /tmp/getagents

-- Site/SunNet/Domain Manager 2.3 agent installation --
Copyright (c) 1990-1995 by Sun Microsystems, Inc.

What is the name of the root directory where agents will be installed?
Agents will be installed into the 'agents' subdirectory of the directory
you specify. Type 'NFS' if you intend to run the agents via an NFS
mount. [/usr/snm]
```

4. **Press Return to accept the default,** `/usr/snm`**.**
   The `getagents` script asks if you want to create this directory.

5. **Press Return to accept the default,** `y` **(for yes, create the directory).**
   The `getagents` script asks for the name of the host where the agents are located.

```
OK, /usr/snm/agents was made.

What is the name of the host where the agents are? Type Return if you
have the directory NFS mounted: [localhost]
```

6. **Enter the name of the manager station.**
   The `getagents` script asks for the name of the root directory on the manager station under which the agents and libraries are located.

```
What is the name of the root directory on mgrhost under which the
the product agents and libraries are located? [/usr/snm]
```

7. **Press Return to accept the default,** `/usr/snm` **or specify a different directory if a non-default directory was used on the manager station.**
   The `getagents` script continues and installs the agents. The `getagents` script then asks if you want to install the Sun SNMP agent.

```
Getting the agents ... done.

Here are the agents now in agenthost:/usr/snm/agents -
na.activity   na.hostif    na.ippath    na.lpstat    na.snmp
na.diskinfo   na.hostmem   na.iproutes  na.ping      na.snmp-trap
na.etherif    na.hostperf  na.layers    na.rpcnfs    na.sync
na.event      na.iostat    na.logger    na.sample    na.traffic

Getting the libraries ... done.

Creating library links into /usr/lib ... done.

Would you like to install the Sun SNMP agent? [y]
```

8. Press Return to accept the default, y, to install the Sun SNMP agent, or enter n for no, if you do not want to install the Sun SNMP agent.

Note – If you enter n, the getagents script creates the /etc/snm.conf file, then asks for the location of the database files. Go to Step 12.

The getagents script displays several messages and information about community names, and then asks for the read community name.

```
Access to SNMP devices is controlled via community names.
The default community names for this SNMP agent installation will be:
     read: public
    write: private

You should change the write community name to a site specific
name to control access to this system via the SNMP agent.
You may also modify the read community name if desired.

New read community name? [public]
```

9. Press Return to accept the default read community name, public, or enter a new read community name.
The getagents script asks if you want to change the default write community name.

```
New write community name? [private]
```

10. **Press Return to accept the default write community name, private, or enter a new write community name.**
    The `getagents` script displays lines that must be added to the `/etc/rc.local` file, and asks if you want them to be added now.

```
To run the Sun SNMP agent at each reboot, the following lines
need to be added to the end of /etc/rc.local:

  if [ -x /etc/init.snmpd ]; then
        /etc/init.snmpd start && echo 'Starting snmpd.'
  fi

Would you like me to do this? [y]
```

11. **Press Return to accept the default, y, or enter n for no. If you enter n, be sure to manually update the file after the installation.**
    The `getagents` script creates the `/etc/snm.conf` file, then asks for the location of the database files.

```
Creating /etc/snm.conf ... done.

By default, database and log files are placed under the
directory /var/adm/snm which will be created during this installation.
A minimum of 10Mb to 15Mb of free space in the default database
location is recommended. If you would like to put the databases in an
alternate directory by default, a link will be created from /var/adm/snm
to the new location. The current usage for /var/adm/snm is:
Filesystem           kbytes      used      avail    capacity    Mounted on
/dev/sd1g            20570       1139      17373      6%          /var

Would you like the databases to be written to a new default directory? [n]
```

12. **Press Return to accept the default location for the database files,**
    `/var/adm/snm`**, or enter** `y` **to specify a different location. If you enter** `y`**,**
    you will be prompted for the location for the database files.
    The `getagents` script asks for the location of the log files.

```
Creating /var/adm/snm ... done.

Some of the daemons create log files that can grow over
1 Mb each in size, depending on the number of nodes you are managing.
The default directory for these log files is /var/adm/snm. Here is the
current usage for /var/adm/snm:
Filesystem          kbytes      used     avail    capacity   Mounted on
/dev/sd1g            20570       1139     17373    6%         /var

Would you like the log files to be written somewhere else (like
/usr/snm/logs)? [n]
```

13. **Press Return to accept the default location for the log files,**
    `/var/adm/snm`**, or enter** `y` **to specify a different location. If you enter** `y`**,**
    you will be prompted for the location for the log files.
    The `getagents` script creates `snmp` files, updates other files, and displays a
    message that it has finished.

You have installed the agents, and they are ready to be run and managed on
this system.

Note – If you previously modified the `/.rhosts` file on the manager station to
temporarily allow root access to other hosts, you should now remove the
entries to prevent future security breaches.

Running `getagents` *Using* `rcp` *for Solaris 2.x Systems*

The following procedure uses `rcp` to copy agents from `mgrhost` (the manager
station) to `agenthost` (the "local host").

To run the `getagents` script using `rcp`:

1. **Set up the manager station to allow root access across the network for the host(s) that will be running `getagents` (add "`agenthost`" to list of trusted hosts).**

```
mgrhost# cat >>/.rhosts
agenthost
^D
```

2. **Copy** `getagents` **from the manager station to the local machine.**

```
mgrhost# rlogin agenthost
Password:
SunOS Release 5.3 (AGENTHOST): January 1994

agenthost# rcp mgrhost:/usr/snm/bin/getagents /tmp
```

3. **Run the** `getagents` **script. (The following instructions assume that you have copied** `getagents` **to** `/tmp` **on the local host, although you may copy it to any directory that is writable by root.)**
    The `getagents` script starts and asks for the name of the directory where the agents will be installed.

```
agenthost# /tmp/getagents

-- Site/SunNet/Domain Manager 2.3 agent installation --
Copyright (c) 1990-1995 by Sun Microsystems, Inc.

What is the name of the root directory where agents will be installed?
Agents will be installed into the 'agents' subdirectory of the directory
you specify. Type 'NFS' if you intend to run the agents via an NFS
mount. [/opt/SUNWconn/snm]
```

4. **Press Return to accept the default,** `/opt/SUNWconn/snm` **or enter a different pathname if you want to use a non-default directory.**
    The `getagents` script asks if you want to create the directory (default or specified by you).

5. Press Return to accept the default, `y` (for yes, create the directory).
The `getagents` script asks for the name of the host where the agents are located.

```
OK, /opt/SUNWconn/snm/agents was made.

What is the name of the host where the agents are? Type Return if you
have the directory NFS mounted: [localhost]
```

6. Enter the name of the manager station.
The `getagents` script asks for the name of the root directory on the manager station under which the agents and libraries are located.

```
What is the name of the root directory on mgrhost under which the
agents and libraries are located? [/usr/snm]
```

7. Press Return to accept the default, `/usr/snm` or specify a different directory if a non-default directory was used on the manager station.
The `getagents` script continues and installs the agents. The `getagents` script then asks if you want to install the Sun SNMP agent.

If the Sun SNMP agent is not installed on your manager station, SNMP questions are not asked.

```
Getting the agents ... done.

Here are the agents now in agenthost:/opt/SUNWconn/snm/agents -
na.activity   na.hostif    na.ippath    na.lpstat    na.snmp-trap
na.diskinfo   na.hostmem2  na.iproutes  na.ping      na.sync
na.etherif2   na.hostperf  na.layers2   na.rpcnfs    na.traffic
na.event      na.iostat2   na.logger    na.snmp

Getting the libraries.

Would you like to install the Sun SNMP agent? [y]
```

8. Press Return to accept the default, y, to install the Sun SNMP agent, or enter n for no, if you do not want to install the Sun SNMP agent.

Note – If you enter n, the `getagents` script creates the `/etc/opt/SUNWconn/snm/snm.conf` file, then asks for the location of the database files. Go to Step 12.

The `getagents` script displays several messages and information about community names, and then asks for the read community name.

```
Access to SNMP devices is controlled via community names.
The default community names for this SNMP agent installation will be:
     read: public
    write: private

You should change the write community name to a site specific
name to control access to this system via the SNMP agent.
You may also modify the read community name if desired.

New read community name? [public]
```

9. Press Return to accept the default read community name, public, or enter a new read community name.
The `getagents` script asks if you want to change the default write community name.

```
New write community name? [private]
```

10. **Press Return to accept the default write community name, private, or enter a new write community name.**

    The `getagents` script displays information about the `init.snmpd` script, and asks if you want the script to be added to the `/etc/init.d` directory now.

```
To run the Sun SNMP agent at each reboot, the init.snmpd
startup/shutdown script needs to be added to the
/etc/init.d directory.

Would you like to add this script? [y]?
```

11. **Press Return to accept the default,** y**, or enter** n **for no. If you enter** n**, be sure to manually add the script after the installation; see the** snmpd **man page for instructions on how to add the script.**

    The `getagents` script creates the `/etc/opt/SUNWconn/snm/snm.conf` file, then asks for the location of the database files.

```
Creating /etc/opt/SUNWconn/snm/snm.conf ... done.

By default, database and log files are placed under the
directory /var/opt/SUNWconn/snm which will be created during this installation.
A minimum of 10Mb to 15Mb of free space in the default database
location is recommended. If you would like to put the databases in an
alternate directory by default, a link will be created from /var/opt/SUNWconn/snm
to the new location. The current usage for /var/opt/SUNWconn/snm is:
Filesystem            kbytes        used      avail    capacity    Mounted on
/dev/dsk/c0t3d0s0       20570        1139      17373       6%          /var

Would you like the databases to be written to a new default directory? [n]
```

12. **Press Return to accept the default location for the database files,** `/var/opt/SUNWconn/snm`**, or enter** `y` **to specify a different location. If you enter** `y`**, you will be prompted for the location for the database files.**
    The `getagents` script asks for the location of the log files.

```
Creating /var/opt/SUNWconn/snm ... done.

Some of the daemons create log files that can grow over
1 Mb each in size, depending on the number of nodes you are managing.
The default directory for these log files is /var/opt/SUNWconn/snm. Here is the
current usage for /var/opt/SUNWconn/snm:
Filesystem            kbytes      used     avail    capacity    Mounted on
/dev/dsk/c0t3d0s0       20570      1139     17373      6%          /var

Would you like the log files to be written somewhere else (like
/usr/snm/logs)? [n]
```

13. **Press Return to accept the default location for the log files,** `/var/opt/SUNWconn/snm`**, or enter** `y` **to specify a different location. If you enter** `y`**, you will be prompted for the location for the log files.**
    The `getagents` script creates `snmp` files, updates other files, and displays a message that it has finished.

    You have installed the agents, and they are ready to be run and managed on this system.

    Note – If you previously modified the `/.rhosts` file on the manager station to temporarily allow root access to other hosts, you should now remove the entries to prevent future security breaches.

The Next Step...

After you have installed agents, the next step is to start the Console and create a management database of network elements that you intend to manage. See the *Administration Guide* for more information.

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Installing SNMP Version 2 5☰

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SNMP Version 2 Support

Site/SunNet/Domain Manager provides a proxy agent that supports the Simple Network Management Protocol Version 2 (SNMPv2). The SNMPv2 proxy agent allows you to get data and event information from and set attribute values for devices that are managed via SNMPv2.

Site/SunNet/Domain Manager also provides an SNMP agent for Sun workstations called the `snmpv2d` daemon. The Console communicates with the `snmpv2d` daemon through the SNMP proxy agent. The `snmpv2d` daemon also allows Sun workstations to be managed by other SNMPv2 and SNMP stations. For more information about the `snmpv2d` daemon, see the `snmpv2d` (8) manual page.

Note – Support for SNMPv2 functionality is discussed in the *Administration Guide.* This chapter describes installation and removal of SNMPv2 software.

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SNMPv2 can be installed as an agent (`snmpv2d`), a manager (`na.snmpv2`), or both. Before installing SNMPv2, you must first install the product. After the product has been succesfully installed, you must create the three configuration files needed by the `v2install` script. These configuration files are:

- `agents` — contains the names of the hosts on which the `snmpv2d` agent will be installed.

- `mgrs.v1` — contains the names of the hosts that will be running SNMPv1 managers (`na.snmp`).

- `mgrs.v2` — contains the names of the hosts that will be running SNMPv2 managers (`na.snmpv2`).

See the `v2install`(1) man page for detailed information about these files.

Installing SNMPv2

As root, create the configuration files in the `agents` directory where the product was installed. By default, this is the `/usr/snm/agents` directory. The following is an example of the commands to create the configuration files:

```
hostname# cd /usr/snm/agents
hostname# vi agents mgrs.v1 mgrs.v2
```

Run the `v2install` script as shown below, where *<hostname>* refers to the name of the machine where the SNMPv2 manager resides.

```
hostname# usr/snm/agents/v2install <hostname>
```

Invoking the `v2install` script creates the configuration files needed by `snmpv2d` and `na.snmpv2` for authentication. The files will be created in the `./configs/`*<nodename>*`/agent` and `./configs/`*<nodename>*`/manager` directories, where *<nodename>* refers to the name of the machine where the `v2install` script is invoked. The `v2install` script copies the current hosts configuration files into the `/etc/snm/agent` and `/etc/snm/manager` directories, and then, if the current host is in the agents configuration file, starts up `snmpv2d`. You then need to copy the configuration files to all

machines that will be using SNMPv2. The following example assumes that
`/etc/snm` has been exported on all of the necessary machines and that the
`automounter` is running.

```
hostname# ls configs
augusta  poppyhills  pebblebeach  spyglass
hostname# ls configs/poppyhills
agent  manager
hostname# cp -r configs/augusta/* /net/augusta/etc
hostname# cp -r configs/pebblebeach/* /net/pebblebeach/etc
hostname# cp -r configs/spyglass/* /net/spyglass/etc
```

You should now install `na.snmpv2` and `snmpv2d` on each of the machines.
You should *not* run the `v2install` script again, as it creates a random string
which is used between machines for authentication. Make sure you use the
configuration files created by one execution of `v2install`.

On the machines where the above files were installed, as root, run the
following commands to start `snmpv2d`:

```
hostname# /etc/init.snmpd stop
hostname# /etc/init.snmpd start
Starting snmpv2d ...
```

Deinstalling SNMPv2

After SNMPv2 has been installed on a system, the `snmpv2` daemon will be run
each time the system is restarted. If you wish to run the SNMPv1 daemon,
there are two ways this can be accomplished. If you just want to temporarily
disable SNMPv2, but want to keep the configuration, then all you need to do is
rename the `snmpv2d.conf` file, and start `snmpd`, as follows:

```
hostname# cd /etc/snm/agent
hostname# mv snmpv2d.conf <snmpv2d.conf.temp>
hostname# /etc/init.snmpd stop
hostname# /etc/init.snmpd start
```

When the `snmp` startup script is run, it checks for the existence of the `snmpv2d.conf` file. If it finds it, then it runs `snmpv2d`, otherwise it will run `snmpd`. If you want to completely remove SNMPv2 support, a script (`v2deinstall`) has been included to deinstall SNMPv2. The `v2deinstall` script will remove all SNMPv2 configuration files, and restart `snmpd`. To run the script, type the following:

```
hostname# cd /usr/snm/agents
hostname# v2deinstall
```

Adding SNMPv2 to the NIS/NIS+ Maps

In order to use SNMPv2, the `rpc.bynumber` NIS/NIS+ maps/tables must be updated to include the following entry for SNMPv2:

```
snmpv2      100138      na.snmpv2
```

Refer to Chapter 3, "Installing the Software," for information on how to update the NIS/NIS+ maps/tables.

SNMPv2 Community Strings

The SNMP read and write community strings are used to distinguish between SNMPv1 and SNMPv2 requests. When the `v2install` script is run, its configuration file `mgrs.v1` is used to determine the v1 community strings. These by default were read: public/group, and write: private/secret/ TopSecret.

When these strings are setup in a components properties sheet, SNMPv1 requests will be sent and received.

To use SNMPv2 requests, the properties sheet needs to specify the v2 clustername to be used for the request. By default with the `v2install` script, the clustername will be the hostname of the machine that is responding to the request. The cluster records can be found in the `/etc/snm/manager/mgr.cnf` file.

Upgrading to Site/SunNet/Domain Manager 2.3   *A* ≡

- *Saving Your Database for Upgrading*
- *Upgrade Procedures*
- *Upgrading your Management Station*
- *Differences in Configuration from SunNet Manager 2.0 to Site/SunNet/Domain Manager 2.3*
- *Differences in Agents Between Solaris 2.x and SunOS 4.x (Solaris 1.x)*
- *Differences in APIs from SunNet Manager 2.0 to Site/SunNet/Domain Manager 2.3*

Saving Your Database for Upgrading

Caution – The following information is *extremely* important! Failure to read it could lead to the loss of your current management database.

Basically, the data records are compatible with earlier releases.   When upgrading to Site/SunNet/Domain Manager 2.3, you *must* first save your own database records into an ASCII data file. It is *very* important to save your original database prior to installation, or it will be overwritten.

When you have reloaded the ASCII data file containing your original database, all of the element glyphs will be redisplayed and any requests started again.

To save your current 2.x runtime database into an ASCII data file:

1. From the Console, select the File➤Save option.

≡ *A*

2. **Specify the path and name of the file where you want to save your 2.x database in the Name: field.**
   For example, you could save it to `/usr/snm/snm-databases/db.mydata`.

3. **Be sure you have write permission and adequate space available in the directory where you want to save the file.**

4. **To ensure the old NetISAM lock table is unlocked, enter:**

```
# rm /var/tmp/NETISAM.LOCKTABLE
```

Upgrade Procedures

Before installing the product on a machine that already has another version of the product installed on it, be sure to quit SNM, if it is running, stop the `snmp` (or `snmpv2`) daemon, and stop the agent processes. To locate the process numbers for the `na.<`*agent-name*`>` processes, enter the following command at a shell prompt:

```
hostname% ps -aux | grep na\.
```

If you have already installed a 2.x version of the product on the machine you wish to install the product on, you must first remove the previously installed software. Refer to Appendix B, "Removing Software," for more information.

After saving your database, you can install the software and start the Console. After the Console window appears, you have the option of reloading the ASCII data file in which you saved your original database back into the Console.

1. **Install the product as described in Chapter 3, "Installing the Software."**

Site/SunNet/Domain Manager Installation Guide

2. **Start the product by entering** `snm -i&` **or** `snm -i` *<database filename>*`&`*.* Specifying the `-i` option initializes (in effect clearing) the runtime database — *any existing runtime database is deleted.* If *<database filename>* is also specified on the command line, that file will be loaded into the runtime database.

   If you want to load the database that you have previously saved to an ASCII file, you can do this by entering that file name as *<database filename>* on the command line, For example, if you saved your 2.x runtime database to `/var/snm/db.mydata`, you can automatically load that database when starting the product if you enter:

   ```
   hostname% snm -i /var/snm/db.mydata
   ```

   If you start the product by specifying the database file to load at the command line, go directly to Step 5

3. **If you entered** `snm -i &` **without specifying a database file, the Quick Start window will appear.**
   SELECT the BasicStart (*not* HeadStart) icon from the Quick Start window to bring up the Console.

4. **Using the File▶Load▶Management Database option, reload your original 2.x database file that you saved in Step 1.**
   Specify the file you saved your original database to in the Name: field.

5. **If the original database file loads successfully, the element glyphs will be displayed in the Console and, if there are any requests to be sent, they will be restarted.**

Upgrading your Management Station

If you plan to upgrade your management station, you may want to preserve some of your current management capabilities. This appendix provides some guidelines to consider before you upgrade from earlier releases.

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Differences in Configuration from SunNet Manager 2.0 to Site/SunNet/Domain Manager 2.3

Site/SunNet/Domain Manager 2.3 contains the following configuration changes as distinguished from the 2.0 release:

- If you install the product in a non-default location (that is, anywhere other than `/usr/snm`), you must do the following:
  - Set the `SNMHOME` environment variable to the installation directory.
  - Set the `LD_LIBRARY_PATH` environment variable to `$SNMHOME/lib`, or append `$SNMHOME/lib` to the `LD_LIBRARY_PATH` variable if it already exists.

- In the 2.3 release, the `.SNMdefaults` file contains an attribute snm.console.DBMgrTrapAlways. The default value for this attribute is false. If set to true, the Console generates database manager traps to inform other applications when new elements are added to the runtime database. The generated trap contains the names of the elements that have been loaded.

Differences in Agents Between Solaris 2.x and SunOS 4.x (Solaris 1.x)

A Console installed on a Solaris 1.1 machine can manage both Solaris 2.x clients and SunOS 4.x clients.

A number of agents are designed specifically to run on Solaris 2.x machines. These agents are based on agents that had been designed to run on the SunOS 4.x operating system. To help you identify the Solaris 2.x agent, the number "2" has been appended to the original agent name. The table below shows the agents affected.

Table A-1 Solaris 2.x Agents and Their SunOS 4.x Equivalents

SunOS 4.x Agent	Solaris 2.x Agent
etherif	etherif2
hostmem	hostmem2
iostat	iostat2
layers	layers2

See the *Administration Guide* for information on the new agents and attributes.

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Differences in APIs from SunNet Manager 2.0 to Site/SunNet/Domain Manager 2.3

Site ⁄ SunNet ⁄ Domain Manager 2.3 contains minor Application Programming Interface (API) differences compared to the 2.0 release. See the *Administration Guide* for more information on manager and agent writers.

When you are ready to upgrade from an earlier release to Site ⁄ SunNet ⁄ Domain Manager 2.3, see Chapter 3, "Installing the Software," for instructions.

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Site/SunNet/Domain Manager Installation Guide

Removing Software B

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This appendix provides the procedure for removing the product software from a local machine. If you have mounted the product via NFS, follow this same procedure, however, you will need access to the NFS server to remove some of the files.

Note – Procedures presented here involve `rm` commands that, if used incorrectly, can delete files you want to keep. For this reason, these procedures should be undertaken only by experienced technical personnel.

You might remove the product software if you need to free up some disk space on a particular system, or if you want to reinstall SunNet Manager.

To remove the product software:

1. **Enter `su` and the password to become root.**

2. **Change directories to the parent directory of the directory where you installed SunNet Manager. For example, if you installed the product in the default location, `/usr/snm`, cd to `/usr`.**

Caution – The `rm` command specified in the following step recursively deletes all files and directories from the directory specified down to the bottom of the directory hierarchy. It is a very powerful, and therefore potentially destructive, command. If you are not sure about the effect of the command, obtain the help of someone more experienced with SunOS than you are before invoking it.

≡ *B*

3. **Invoke** `pwd` **to ensure you know where you are in the directory hierarchy. Invoke the following command to remove the files:**

```
hostname# rm -rf snm
```

4. **Change directories to the parent directory of the directory where you installed log files. For example, if you installed the log files in the default location,** `/var/adm/snm`**,** `cd` **to** `/var/adm`**.**

5. **Exercising the same caution you used in Step 3, invoke the following command to remove the files:**

```
hostname# rm -rf snm
```

6. **If you installed the SNMP daemon, remove the daemon and the daemon's start/stop script as follows:**

```
hostname# /etc/init.snmpd stop
hostname# rm /usr/etc/snmpd
hostname# rm /etc/init.snmpd
```

7. **At this point you can selectively kill the processes associated with various agents and daemons. An easier way to do this is to reboot your system. If you prefer not to reboot, use a command like the following to search for SNM-related processes:**

```
hostname# ps ax | egrep "  *na\." | grep -v grep
```

Note there are two spaces preceding the asterisk in the command line above. If you want to selectively kill processes, use `grep` on `ps` output to search for the `snmpd` process, in addition to the processes you uncover with the command line above.

8. **If you have removed the product software from every system on your network, and you are running NIS/NIS+, edit the** `/etc/rpc` **and** `/etc/services` **files on the master NIS/NIS+ server and make the changes effective, as follows:**

    a. Edit the `/etc/rpc` **file to remove the section "SunNet Manager agents."**

    b. Edit the `/etc/services` **file to remove the following lines:**

```
snmp       161/udp               # Simple Network Mgmt Protocol
snmp-trap  162/udp   snmptrap    # SNMP trap (event) messages
```

    c. If you are running NIS, update the maps using the `ypmake` **command, then push the maps out to the slave NIS servers using the** `yppush` **command.**

    d. If you are running NIS+, use the `nisaddent` **command.**

Note – Refer to your system administration documentation if you need additional information on these commands.

You have removed the the product software from your system.

≡ B

Site/SunNet/Domain Manager Installation Guide

Installing a License *C*

Site/SunNet/Domain Manager is a licensed product. You need a license for each host that the product mounted on it. The license password is an alphanumeric code that you must obtain from the license distribution center and type in during installation. You can either install the license at the same time you install the software or else you can install the license at a later time.

This chapter describes the installation procedure for the license if you choose to do this installation after installing the Site/SunNet/Domain Manager software packages.

Licensing allows you to use different software packages and to manage a variable number of nodes:

Site Manager License

A Site Manager license allows you to:

- manage a maximum of 100 nodes
- use the Cooperative Consoles Sender daemon

SunNet Manager License

A SunNet Manager license allows you to:

- manage an unlimited number of nodes
- use the Cooperative Consoles Sender daemon

≡ *C*

Domain Manager License

A Domain Manager license allows you to:

- manage an unlimited number of nodes
- use the Cooperative Consoles Sender daemon
- use the Cooperative Consoles Receiver daemon
- use the Network Layout Assistant tool

Installation Script

To begin the installation of your license, you need to become (or login as) superuser:

```
hostname% su
Password: enter your superuser password
```

To install the license, run the `install_snm_license` script. Assuming you have installed the product in the default location, enter the following command:

```
hostname# /usr/snm/bin/install_snm_license
```

The licensing install script begins by listing the phone numbers to call to obtain a license password. The script then displays:

```
The license distributor will ask you for the following
information:

    Server Name    : <host-name>
    Host ID        : <host-ID>

    You will also need to provide the Serial Number and
    the product name from the license certificate

Please Hit Return to continue .....
```

After you press Return, you will be asked:

```
Do you want to install the license now (y/n) [y]:
```

Press return to continue with the license installation.

```
Please enter the License Password for this node:
```

When you call the license distribution center, you must do the following:

a. **The operator will provide you with a license password which you must type in at the prompt shown above.**

b. **Give the operator your serial number from your license certificate, product name and version, host name, and host ID.**

c. **The operator will ask you for your company address, phone number, and e-mail address.**
After you type in the license password that the operator gives you, you will receive the following prompt:

```
Is this a demo license (y/n) [n]:
```

If you enter y, then you will be prompted to enter the expiration date of the demo license. For example:

```
Please enter the expiration date (dd-mmm-yyyy): 01-jan-1995
```

The installation will continue with the following prompts::

```
Please enter the loction where the SNM databases will be created?
[/var/adm/snm]
```

≡ C

For the location of where the databases will be created, type in the location that you specified while installing the product using (`cd` or `cdmanager`) If a value is entered that is different from the location entered while installing, license information will be installed in the wrong place. Your product software will indicate that you do not have a license.

Once a valid database location is entered, the following is displayed:

```
Please choose the name of the product from the following list.
The name of the product s available with the license certificate
that you received along with the serial number.

    Type 1 for Site Manager
    Type 2 for SunNet Manager
    Type 3 for Domain Manager
    Type 4 for University Wide Domain Manager

Please enter the number corresponding to the product.
```

Currently the University Wide Domain Manager is only available for Universities. It is a special licensing variety of the Site/SunNet/Domain Manager product. If you are installing University Wide Domain Manager licensing, you need the network domain name in order to complete the licensing procedure.

```
Please enter your network domain(eg,. leland.stanford.edu):
```

After selecting one of the products, the following is displayed:

```
I am installing licensing for <product name> now. ok? (y/n) [y]
```

If license installation is successful, the following is displayed::

```
Licensing for <product name> 2.300 is completed successfully
```

The license password is stored in the `/var/adm/snm/snm_license.dat` file.

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