SunLink™ SNA 9.1 End Node Planning and Installation Guide

THE NETWORK IS THE COMPUTER®

Sun Microsystems Computer Company
A Sun Microsystems, Inc. Business
2550 Garcia Avenue
Mountain View, CA 94043 USA
415 960-1300 fax 415 969-9131

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Preface

This manual describes the planning and installation procedures for the SunLink™ 9.1 SNA Server on Solaris SPARC-based systems.

The SunLink 9.1 SNA Server provides SNA connectivity for Unix systems. This manual outlines the SunLink 9.1 SNA Server and SNA client software, details the software and hardware requirements for running these programs, and lists the software and hardware installation procedures.

These instructions are designed for an experienced system administrator with networking knowledge.

Before You Read This Book

This manual is an installation guide for system administrators. It describes the hardware and software installation of the components that make up the SunLink 9.1 SNA Server. System administrators should use this book to determine the necessary resources required for running the SunLink 9.1 SNA Server products. System administrators should also reference this manual during the installation of the products.

To carry out the system administration functions, two different areas of knowledge are required: a Unix system administrator installs the SNA Server products and builds its local configuration; while a network administrator is often responsible for adding new devices to the SNA host or peer-to-peer network configurations. These system administrators must coordinate the local configuration and the SNA host or peer-to-peer network configurations.

As a system administrator responsible for the SunLink 9.1 SNA Server installation and local configuration, you should be familiar with the Unix operating system, the configuration of device drivers, and the configuration of SNA devices.

How This Book Is Organized

This manual is divided into five chapters plus appendices. It covers system specific and operating system details of planning and installing the components that make up the SunLink 9.1 SNA Server. The *SunLink SNA 9.1 PU2.1 Server Configuration and Administration Guide* contains chapters on SunLink 9.1 SNA Server concepts, SNA networking concepts, and configuration of the SNA Server. It should be used as a reference in addition to this manual when planning and performing the installation.

Each chapter of this manual is described below:

Chapter 1, "Pre-Installation Planning," describes disk space requirement and directory layout created for the components of the SunLink 9.1 SNA Server.

Chapter 2, "Hardware Requirements," describes the computer and physical connectivity requirements necessary for successful installation of the PU2.1 SNA Server component of the SunLink 9.1 SNA Server.

Chapter 3, "Hardware Installation and Configuration," describes how to install the synchronous and IBM Token Ring communications hardware, and how to gather the information necessary for configuring the communications hardware into your SNA Server environment.

Chapter 4, "Software Installation," details the software installation procedures for the components of the SunLink 9.1 SNA Server.

Chapter 5, "Software De-Installation," details the procedures for removing the software products from your system.

Chapter A, "Software Installation and De-Installation Log," shows the software installation logs for the installation of the components of the SunLink 9.1 SNA Server.

Chapter B, "Communication Ports," contains reference information about the various communications ports supported by the SNA Server.

Typographic Conventions

The following table describes the typographic changes used in this book.

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. `% You have mail.`
`AaBbCc123`	What you type, when contrasted with on-screen computer output.	`% su` `Password:`
AaBbCc123	Command-line variable: replace with a real name or value.	To delete a file, type `rm` *filename.*
	Book titles, new words or terms, words to be emphasized	Read Chapter 6 in the *User's Guide.* These are called *class* options. You *must* be root to do this.

Shell Prompts

The following table shows the default system prompt and superuser prompt for the C shell, Bourne shell, and Korn shell.

Shell	Prompt
C shell	`machine_name%`
C shell superuser	`machine_name#`
Bourne shell and Korn shell	`$`
Bourne shell and Korn shell superuser	#

Related Documents

The following Sun documents contain topics that relate to the information in *SunLink SNA 9.1 End Node Planning and Installation Guide.*

Application	Deliverable	Part Number
Installation	*SunLink SNA 9.1 End Node Planning and Installation Guide*	802-2665-12
Administration	*SunLink SNA/X.25 9.1 Configuration and Administration Guide*	802-3166-12
Configuration, user information	*SunLink 3270 OpenClient 9.1 Configuration and User's Guide*	802-2667-12
Programming information	*SunLink Client IBM 3270 9.1 Programmer's Guide*	802-2668-12
Configuration, user information	*SunLink RJE/3770 9.1 Configuration and User's Guide*	802-2672-12
Configuration information	*SunLink SNA PU 2.1 9.1 Server Configuration Guide*	802-2673-12
Reference information	*SunLink SNA SNM 9.1 Reference Manual*	802-2674-12
Programming information	*SunLink LU0 9.1 API Programmer's Guide*	802-2676-12
Programming information	*SunLink SNA Peer to Peer LU 6.2 9.1 Programmer's Guide*	802-2680-12
Programming information	*SunLink SNA Peer to Peer CPI-C 9.1 Programmer's Guide*	802-2681-12
Late-breaking news	*SunLink SNA 9.1 for Solaris Release Notes*	802-3165-12
CD-ROM insert for the Answerbook package	CD-ROM insert for the AnswerBook™ version of the SunLink SNA 9.1 product	804-5670-10
CD-ROM insert	SunLink SNA 9.1 Gateway CD-ROM	804-5649-10
CD-ROM insert	SunLink SNA 9.1 RJE/3770	804-5650-10
CD-ROM insert	SunLink SNA/SNM	804-5651-10
CD-ROM insert	SunLink SNA LU0	804-5652-10

Other publications.

- LU6.2 and CPI-C
  - *IBM Systems Network Architecture Transaction Programmer's Reference Manual for LU Type 6.2*, GC30-3084
  - *Systems Application Architecture Common Programming Interface Communications Reference*, SC26-4399
  - *X/Open Developer's Specification: CPI-C, XO/DEV/90/050*

- IBM Token Ring
  - *IBM Token-Ring Network Architecture Reference*, SC30-3374
- X.25
  - *IBM X.25 Network Control Program Packet Switching Interface, Planning and Installation*, SC30-3501
- Network Interface Controllers
  - *SunLink Token Ring Interface/SBus 3.0 Installation Guide*, Part No 801-3890-05
  - *SunLink HSI/S 2.0 Installation and Administration Guide*, Part No 801-3931-10

Ordering Sun Documents

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Table P-1 SunExpress Contact Information

Country	Telephone	Fax
United States	1-800-873-7869	1-800-944-0661
United Kingdom	0800-89-88-88	0800-89-88-87
Canada	1-800-873-7869	1-800-944-0661
France	0800-90-61-57	0800-90-61-58
Belgium	02-720-09-09	02-725-88-50
Luxembourg	32-2-720-09-09	32-2-725-88-50
Germany	01-30-81-61-91	01-30-81-61-92
The Netherlands	06-022-34-45	06-022-34-46
Sweden	020-79-57-26	020-79-57-27
Switzerland	0800-55-19-26	0800-55-19-27
Holland	06-022-34-45	06-022-34-46
Japan	0120-33-9096	0120-33-9097

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- Email: `smcc-docs@sun.com`
- Fax: SMCC Document Feedback
  1-415-786-6443

Pre-Installation Planning 1

This chapter describes the requirements of the software installation and lists the directory structure and files created by the installation. The installation procedures ask questions of the installer when the request script is run. This chapter outlines the questions asked, and helps you to decide what answers to provide. Primarily, it discusses license installation information procedures and procedures to upgrade an existing 8.0 or 9.0 version of the SunLink SNA software to SunLink SNA 9.1. The SunLink 9.1 SNA Server installation procedure defaults set up the files in a predefined set of directories that should suit most installations.

The SunLink 9.1 SNA Server consists of the following packages that can be installed on some or all of the systems in your environment. See the Chapter 4, "Getting Started" of the *SunLink SNA 9.1 PU2.1 Server Configuration and Network Administration Guide* for information to help you plan which systems should have the various components installed.

- SunLink SNA 9.1 Gateway Manager—`SUNWgman`
- SunLink SNA 9.1 Graphical Management Interface—`SUNWgmi`
- FlexLM License System—`SUNWlicsw`
- STE License Installation Tool—`SUNWlit`
- SunLink SNA 9.1 Logical Unit Type 6.2—`SUNWlu62`
- SunLink SNA 9.1 NetView/SunNet Manager Gateway—`SUNWntvw`
- SunLink SNA 9.1 3270 Open Client 9.1—`SUNWopcl`
- SunLink SNA 9.1 PU2.1 Server—`SUNWpu21`
- SunLink SNA 9.1 SAA Server—`SUNWsaa`

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The installation procedures for each of the components are all performed in a similar fashion and use a common set of terms to describe directories used by the SNA Server. You are asked whether you want to use the default directory structure produced by the installation procedure, or if you'd like to supply different directory names.

Installation Directory - The installation directory is the directory created by `pkgadd` to contain the product executable files. On Solaris, this directory is normally rooted in the `/opt` tree with the directory name being the package name. `/opt/SUNWpu21`, `/opt/SUNWgman` and `/opt/SUNWgmi` are the installation directories created for the SunLink 9.1 SNA Server.

1.1 Disk Space Requirements

This section lists the disk space requirements for each of the components of the SNA Server. For each of the systems that you plan to install some or all of the components on, make sure that you have adequate free space on the filesystem that contains the directories. Use the `df` command to check free disk space. The `SUNWgmi` package requires 6.5 Mbytes, the `SUNWgman` package requires 2.5 Mbytes, and the `SUNWpu21` package requires 5.5 Mbytes in the installation directory (typically, `/opt`).

1.2 Prerequisite Software

In addition to requiring installation of the Solaris base software, the SunLink GMI component also requires that the Motif Runtime Kit (`SUNWmfrun`) package be installed on the system that runs the SunLink GMI product.

The other components have no additional requirements other than the Solaris base.

1.3 TCP/IP Service Names and Port Numbers

The SunLink 9.1 SNA Server uses a number of TCP/IP ports for communication both internally and with SNA Client programs. The table below lists the service names that are used and the default port values for each. The installation procedure checks to see if the service names are already defined in your `/etc/services` file and, if not, will add the required service names. If the default port numbers for the named services are already assigned to other services, different values will be used.

If you are using Network Information Service (NIS) formerly known as Yellow Pages or YP, or NIS+, you will need to update your NIS / NIS+ server with the TCP / IP port names and numbers after the installations.

Table 1-1 Updating your NIS and NIS+ Server

TCP/IP Service Name	Default Port Number	Components that define or use this port
sungman_applport	7004	SunLink GMAN, SunLink GMI
sungman_m2m_port	7005	SunLink GMAN
sunsman_port	5120	SunLink GMAN, SunLink PU21
sunsman_gmanport	5121	SunLink GMAN, SunLink PU21
sungman_cpd_port	5122	SunLink GMAN, SunLink PU21
sun_pu2_espd	5020	SunLink PU21
sunadmin_pu2	5021	SunLink PU21
sunftp	8021	SunLink PU21
suntelnet	8023	SunLink PU21
sunlu62_serv	5030	SunLink PU21

1.4 Planning Your License System Installation

The license system software has two packages that must be installed on the same machine:

- License server software (SUNWlicsw)
- License Installation Tool (SUNWlit)

SUNWlicsw contains the license daemon, which maintains the product license database for applications supported by the license system. SUNWlit provides a user interface that helps you get your license and install it.

If you have already installed the SunLink SNA 9.0 license server and tools on the system (since it is compatible with SunLink 9.1 products) you do not need to install the license packages again.

Note – It is not necessary that your license server be located on the same machine as either the gateway or client software.

1.4.1 Setting Up License Servers

A license server is automatically set up when you install the license server software package (`SUNWlicsw`) and license installation tool package (`SUNWlit`) on a machine and run the license installation tool.

1.4.1.1 Independent License Servers

For each independent license server you must do the following:

- Install `SUNWlicsw`
- Install `SUNWlit`
- Run `lit`
- Install a license password
- Copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` from each independent server to all product servers where application binaries are run.

1.4.1.2 Redundant License Servers

For a set of redundant license servers you must do the following:

- Install `SUNWlicsw` on each redundant license server.
- Install `SUNWlit` on one of the redundant license servers.
- Run `lit` on the redundant license server where `SUNWlit` was installed.
- Install a license password on the redundant license server running `lit`.
- Copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` from where `lit` was run to the remaining license servers.
- Copy and run the `/etc/opt/licenses/LIC_CONFIG_SCRIPT` from where `lit` was run to all product servers.

1.4.1.3 Getting License Password

Part of the license installation process includes getting a license password. The license password is an alphanumeric code that you must get from the license distribution center and type into your license installation tool. The license installation tool provides on-line phone numbers for most of the license distribution centers. This section also contains the email addresses to use for getting your license password.

In all cases, gather the following information prior to contacting the license center:

- Product Name
- Version Number
- Serial Number (from license card supplied with the product)
- For each License Server include:
  - Server Hostname
  - Server's Hostid
  - Number of Units
- Contact Information including:
  - Your Name
  - Phone Number
  - Company Name and Address
- How to return the password information (choose one):
  - Email - your email address
  - FAX - your FAX number

In the United States, Canada, and Puerto Rico, you can get information on the licensing centers from the `http://www.sun.com/licensing` website, or by contacting the license distribution center in one of the following ways:

- **Email**: Send email to `license@sun.com`.
- **Fax**: Fax the information to 1-801-437-3657
- **Phone**: Gather the same information and call 1-800-872-4786

In other countries or regions, do one of the following:

- **Email**: In Europe, send email to `eu-licensing@UK.sun.com`. In Japan, send email to `license@rrd.co.jp`. In all other countries send email to `license@sun.com`. Include the information described above.
- **Fax**: Gather the information. In Europe, fax it to +44 937 541194. In Japan, fax it to 813-3263-3844. In all other countries fax the form to 317-364-7220 in the United States.
- **Phone:** Gather the information. Contact your Service Representative for the appropriate number.

1.4.2 Adding Licenses to an Already Running License Server.

If the FLEXlm daemon is running, stop it, then restart it to recognize the new licenses:

1. Become root, then change your working directory to the license directory.

```
% su
# cd /etc/opt/licenses
```

2. Verify that FLEXlm is running by typing

```
# lmstat -a
```

If FLEXlm is not running, skip the next step.

3. Stop the FLEXlm Daemon:

```
# lmdown -c licenses_combined
```

4. Update the license files by running either `lit` or `lit_tty`:

```
# lit
```

5. Restart the FLEXlm daemon.

```
# lmgrd.ste -c licenses_combined &
```

1.5 Planning Your Product Installation

You may decide to install your software on any one or combination of workstations. There are three units that must be installed:

- License Server Software
- Gateway Software
- Client Software

1.5.1 All Software Resides on One Workstation

The SunLink SNA 9.1 software is shipped on 3 CD-ROMs. Use the `pkgadd` command to install the following License Server, Gateway, and Client software packages from the CD-ROMs on one workstation:

- `SUNWpu21`
- `SUNWgman`
- `SUNWgmi`
- `SUNWlu62`
- `SUNWappc`
- `SUNWlu0`
- `SUNWsaa`
- `SUNWntvw`
- `SUNW3770`
- `SUNWopcl`
- `SUNWlicsw`
- `SUNWlit`

After installing the software, obtain all the licenses required and use `lit` to install the passwords.

In order for the SunLink SNA 9.1 products to have access to the licenses, two environment variables must be set. Set these variables as shown:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/licenses_combined
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

1.5.2 License Server Coexists with either the Gateway or Client

You might choose to have the License Server reside on the same workstation as the Gateway while the Client(s) reside on a separate workstation, or you might want the License Server to coexist with the Client software. Installation is slightly different for each case.

Here is an example of the Gateway and License Server coexisting on one workstation. The Client exists on a separate workstation.

Installation on the Gateway/License Server Workstation

In this case, install the following packages on the combined Gateway and License Server workstation:

- `SUNWpu21`
- `SUNWgman`
- `SUNWgmi`
- `SUNWlu62`
- `SUNWappc`
- `SUNWsaa`
- `SUNWntvw`
- `SUNWlicsw`
- `SUNWlit`

Once all the software is installed, obtain the required licenses and install the passwords using `lit`.

After the license passwords are installed on the combined License Server and Gateway, you must set the environment variables to allow the SunLink SNA 9.1 software access to the licenses as follows:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/licenses_combined
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

1.5.2.1 Installation on the Client Workstation

- Install the following SNA API packages on the Client workstation(s) from the SunLink SNA 9.1 RJE CD-ROM:
  - `SUNWopcl`
  - `SUNW3770`
- Copy and run the file `/etc/opt/LICENSE_CONFIG_SCRIPT` that was created on the License Server/Gateway workstation.
- Set the environment variables that allow the SunLink SNA 9.1 Client software access to the licenses as follows:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/opcl_3270_9.0.lic,1
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

Note – If the License Server coexists with the Client rather than the Gateway, then on the Gateway, the environment variable `LM_LICENSE_FILE` needs to be set to `/etc/opt/licenses/sna_sunpu21_9.0.lic,1`.

1.5.3 License Server, Gateway, and Client on Distinct Workstations

In this case, the License Server resides on one workstation, the Gateway resides on a second workstation and the Client(s) reside on other workstations.

1.5.3.1 Installation on the License Server

On the workstation designated as the license server, do the following:

- Install the following license software packages:
  - `SUNWlicsw`
  - `SUNWlit`
- Obtain and install the license passwords.

1.5.3.2 Installation on the Gateway

On the Gateway workstation, do the following:

- Install the following packages:
  - SUNWpu21
  - SUNWgman
  - SUNWgmi
  - SUNWlu62
  - SUNWappc
  - SUNWsaa
  - SUNWntvw
- Copy and run the file /etc/opt/LICENSES_CONFIG_SCRIPT that was created on the License Server.
- Set the environment variables that allow the SunLink SNA 9.1 PU 2.1 software access to the licenses as follows:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/sna_sunpu21_9.0.lic,1
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

1.5.3.3 Installation on the Client

On the Client workstation(s), do the following:

- Install the following package:
  - SUNWopcl
  - SUNW3770
- Copy and run the file /etc/opt/LICENSES_CONFIG_SCRIPT that was created on the License Server.

- Set the environment variables that allow the SunLink 3270 9.1 Open Client software access to the licenses as follows:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/opcl_3270_9.0.lic,1
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

1.5.4 License Server is separate from combined Client and Gateway

It is possible to install the License Server on one workstation and the SunLink SNA 9.1 software on a separate workstation.

1.5.4.1 Installation on the License Server

On the workstation designated as the license server, do the following:

- Install the following license software packages:
  - SUNWlicsw
  - SUNWlit
- Obtain and install the license passwords.

1.5.4.2 Installation on the combined Gateway/Client

On the Gateway/Client workstation, do the following:

- Install the following packages:
  - SUNWpu21
  - SUNWgman
  - SUNWgmi
  - SUNWlu62
  - SUNWappc
  - SUNWsaa
  - SUNWntvw
  - SUNWopcl
  - SUNW3770

- Copy and run the file `/etc/opt/LICENSES_CONFIG_SCRIPT` that was created on the License Server.
- Set the environment variables that allow the SunLink SNA 9.1 PU 2.1 software to access the licenses as follows:

```
$ LD_LIBRARY_PATH=/usr/openwin/lib:/usr/lib
$ LM_LICENSE_FILE=/etc/opt/licenses/sna_sunpu21_9.0.lic,1 : \
                  /etc/opt/licenses/opcl_3270_9.0,1
$ export LD_LIBRARY_PATH LM_LICENSE_FILE
```

1.6 Concurrent 9.0 and 9.1 Operations

Concurrent operation of both SunLink SNA 9.0 and SunLink SNA 9.1 has been tested.

- To run SunLink SNA 9.0 and SunLink SNA 9.1 concurrently, you must bring up the SunLink SNA 9.0 gateway before you bring up SunLink SNA 9.1.
- To run LU62 operations on SunLink SNA 9.0 and SunLink SNA 9.1 concurrently, you must add the `lu62` service port entry to your `/etc/services` file. For example, you must add the `brxlu62_serv_a` port entry to the `/etc/services` file and enable your application to open this port instead of the default `brxlu62_serv` port.
- To specify a particular number of licenses for the SunLink SNA 9.1 gateway, you can set the `LM_LICENSE_PU2SESS` environment variable to the required number of licenses. GMAN will check out these licenses from FlexLM. Your requested number of licenses can range from `0-all`, where `all` represents the maximum number of available licenses that GMAN can check out. If you do not specify a number, GMAN will assume that it needs to check all the available licenses.

1.7 Concurrent 8.0 and 9.1 Operations

Concurrent operation of SNA 8.0 and SNA 9.1 has also been tested. You can run both clients on one Sun Workstation. You cannot, however, connect to the SNA 9.1 Server with an SNA 8.0 Client or connect to the SNA 8.0 Server with the SNA 9.1 Client.

On the Server side (sunpu21), configure each Server for a unique I/O port. For instance, you might use zsh0 under version 8.0 while using zsh1 under version 9.0. They cannot both use the same zsh port.

The Telnet 3270 Clients are interchangeable because they both communicate through a standard protocol directly to the IBM Host or the Telnet Server supplied with either product. SunLink SNA 9.1 PU 2.1 software provides a built-in telnet server.

1.8 Gateway Configuration Conversion Tool

Sun provides a software tool called FullConvert.sh to help you convert from an earlier version of the SunLink SNA software to SunLink SNA 9.1. That is, it enables you to convert from SunLink SNA 8.0 and SunLink SNA 9.0 to SunLink SNA 9.1. It also allows you to convert from SunLink SNA 8.0 to SunLink SNA 9.0.

1.8.1 Converting 9.0 to 9.1 Server Configuration

Follow these steps to convert from SunLink SNA 9.0 to SunLink SNA 9.1:

1. **Install the** SUNWpu21**,** SUNWgman**, and** SUNWgmi **packages from the SunLink SNA 9.1 CD-ROM.**

2. **Run** sunsetup **to set up the SunLink SNA 9.1 gateway product.**
   If you have an existing SunLink SNA 9.0 configuration file, that file will be taken as input to the sunsetup program.

   The sunsetup program will create all the necessary gateway configuration files in the default SUNWgman/config1 directory. This directory will contain the SunNetwork.cfg, SunSrv_<*PU_NAME*>.cfg, SunSys_<*DOMAIN_NAME*>.cfg, SunSys_<*DOMAIN_NAME*>.aftp, and SunUser.cfg files. The parent SUNWgman directory will contain the SunConfigDate.cfg, SunConfigs.cfg, and SunManager.cfg files.

1.8.2 *Using* FullConvert.sh

1. **Change directories (**cd**) to the** SUNWpu21 **directory**

```
% cd /opt/SUNWpu21
```

2. **As root, run the** FullConvert.sh **script:**

```
# FullConvert.sh
```

You are presented with the following conversion options:

```
   Sunlink Configuration Conversion Program

1 - Convert Sunlink 8.0 to Sunlink 9.0
2 - Convert Sunlink 8.0 to Sunlink 9.1
3 - Convert Sunlink 9.0 to Sunlink 9.1
h - HELP
q - Exit
```

3. **Indicate if you are converting from SunLink SNA 8.0 or SunLink SNA 9.0 to SunLink SNA 9.1, or from SunLink SNA 8.0 to SunLink SNA 9.0:**

```
> Enter Selection [h]?
```

4. **Respond to the following questions related to the SunLink SNA 9.1 configuration and its associated files.**
   You can accept the default values that appear within square brackets by choosing <Return>:

```
Have you created a Configuration and a System through Sunlink 9.1
sungmi (Yes/No)? [Y]? y

Please enter the Configuration Name [config1]? <Return>

Please enter the System name [sy-diana]? <Return>
```

5. **Indicate the name of your SunLink SNA 9.0 configuration file that you want to convert:**

```
Please enter the SunLink 9.0 PU2 configuration file to be
converted?
Enter the full path:? /opt/SunSrv_MASTER.cfg
```

6. **Specify the PU2.1 server name:**

```
Please give a name to the PU2.1 server? puname
```

7. **The `FullConvert.sh` script updates the necessary configuration file and announces the successful creation of the new PU 2.1 configuration file.**

Note – Until GMAN is restarted, GMI will not display the converted configuration files.

1.9 Configuration Setup Script

The SunLink 9.1 SNA Server ships with a setup script, `sunsetup`, that allows you to do any necessary configuration after the components of the server have been installed. It also allows you to change the configuration at a later time without having to hand-edit various configuration files.

After installing the SunLink GMAN component, you must run the setup script to complete the SunLink GMAN configuration. You need to answer questions that define how the SunLink DNS and SunLink Manager configuration should be set up.

1.10 SunLink Manager Configuration

You can configure the new SunLink Manager to be a Primary or Secondary manager as part of the execution of the setup script.

- If the SunLink GMAN that you are installing is the first in your network, or you wish to setup a second SunLink domain, then you should define the new manager as a Primary manager.
- If the SunLink GMAN that you are installing is to be added to an existing SunLink Manager network, then you should define the new manager as a Secondary manager.

1.11 SunLink DNS Configuration

You can configure the SunLink GMAN to operate with an existing DNS server in your environment, or to act as a primary DNS server for the SunLink SNA resources if you do not have an existing DNS server in place. See the DNS sections in *SunLink SNA 9.1 PU2.1 Server Configuration and Administration Guide* for more information.

If you are defining the SunLink GMAN to operate with your existing DNS server, you need to supply the domain name that you wish the SunLink sub-domain to be a part of, and the name of the SunLink sub-domain.

For example, if your existing domain name is `acme.com`, you could create a SunLink sub-domain called `sunlink`. This would result in a fully qualified SunLink domain name of `sunlink.acme.com`. A `tn3270` client could then connect to your 'PUBLIC' pool by specifying a resource name of `public.sunlink` or `public.sunlink.acme.com`.

If you are defining the SunLink GMAN to operate as a primary DNS server, then you need to supply the domain name that should be used.

For example, if you define your domain name as `sunlink`, your fully qualified SunLink domain name would be `sunlink`. A `tn3270` client could then connect to your 'PUBLIC' pool by specifying a resource name of `public.sunlink`.

1.12 On-line Help Browser

The SunLink Graphical Management Interface (SunLink GMI) supplies on-line help files that you can view by using a HyperText Markup Language (HTML) browser.

The `sungmi` supports both the Netscape and Mosaic browsers but must be configured with the type and location of the browser on your system. When specifying the location of the browser, you can provide the full pathname or just the image name if the image is included in one of the directories specified by the `PATH` environment variable.

1

Hardware Requirements 2

This chapter describes the hardware requirements to support connectivity to an SNA network from the SunLink 9.1 SNA Server. Supported SPARC computers are identified and physical connectivity issues relating to both synchronous communications and IBM Token Ring connection are discussed.

The SunLink 9.1 PU2.1 SNA Server supports connections to the IBM environment by using synchronous links, Token Ring, Ethernet, or FDDI. The list below outlines the hardware options supported for each type of connection.

Synchronous Connections

- Local serial port on all SPARC systems
- SunLink SBUS serial communications board (Aurora)
- SunLink High Speed Serial Interface / SBUS (HSI / S) communications board

Token Ring Connections

- Sun Token Ring Interface / SBUS (TRI / S)

Ethernet Connections

- Ethernet port available on all SPARC systems

FDDI Connections

- Sun FDDI adapter

2

2.1 SPARC Systems

The SunLink 9.1 SNA Server software is compatible with Sun4d, Sun4u, and Sun4m systems.

SunLink 9.1 PU21 SNA Server communications software can use the local serial ports and SBus communications board ports for SDLC and X.25 QLLC connection to the SNA network.

Connection to the SNA network via an IBM Token Ring network requires an SBus network interface controller board local in a board slot that can support bus-master capability. Refer to the hardware installation guide for your particular system to determine which slots will satisfy the bus-master requirement.

2.2 Telecommunications

The SunLink 9.1 SNA Server supports synchronous SDLC links to the SNA network. Wide area connection is achieved using leased or switched telecommunications facilities provided by the phone company. This section discusses physical connectivity issues, namely how the link is effected using modems, cables, and interface adapters. It also describes the use of the local serial ports and the SBus communications board, identifying their particular connectivity issues and usage constraints.

2.2.1 Physical Connectivity

There are many different ways in which you may gain telecommunications connectivity to the SNA network. Figure 2-1 illustrates two possibilities.

When you connect to the SNA network via a leased line, the phone company provides a circuit to your premises. The circuit is terminated by a modem, or, in the case of a digital facility, a data set unit or DSU. You are responsible for cabling your system to the modem.

When you connect to a local IBM communications controller or peer PU2.1 node, you use modem eliminators or Limited Distance Modems (LDMs). These devices, however, usually look like modems to your system (i.e., physical DCEs).

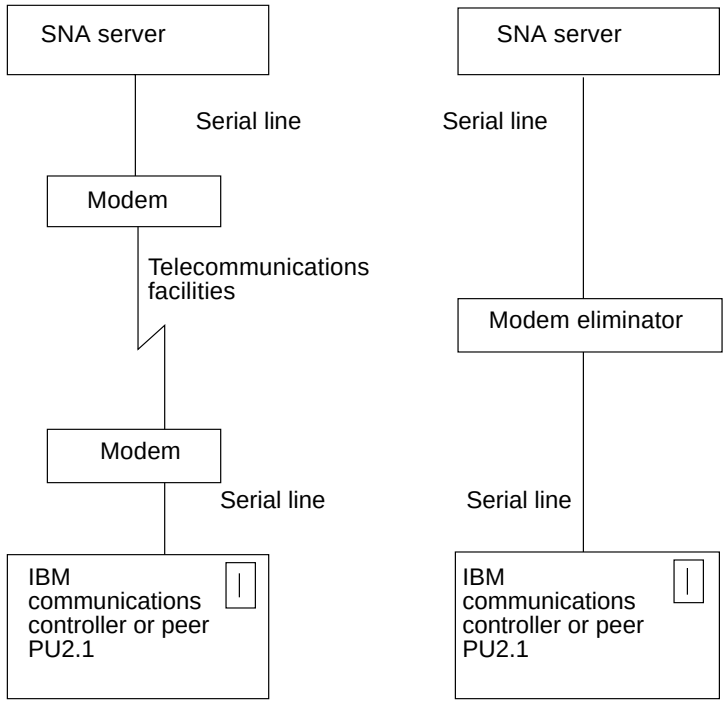

Figure 2-1 Telecommunications Configurations

You need the following communications equipment to connect the SunLink 9.1 SNA Server system to the SNA network:

- Modems (or modem eliminators)
- Cables
- Interface Adapters (optional)
- Convert RS-232 connector types to *other* cabling schemes (e.g., V.35)

Note – You can directly connect the SunLink 9.1 SNA Server system and the IBM Communications Controller or peer PU2.1 node, bypassing the modems or modem eliminator requirement. You will have to obtain or build a "turnaround" cable. Refer to the appropriate communications port pin-out described in Appendix B.

2.2.2 Modems

Modems, LDMs, and modem eliminators control physical level communications between the SunLink 9.1 SNA Server system and the IBM Communications Controller or peer PU2.1 node. Follow these rules for selecting and installing modems:

- Choose modems which meet the criteria stated in the Modem Requirements table.
- Select compatible (read the same) modems.
- Ensure the modem parameters / switches are correct. Refer to modem documentation and the Modem Requirements table.
- Check that the distance from each modem to the connected device is less than the maximum cable length specified by the modem manufacturer.
- Set-up transmission facilities between modems for switched (dial-up) or non-switched (dedicated line) lines.

Table 2-1 Modem Requirements

Parameter Switch	Requirement
Mode	Synchronous
Link	Point-to-Point or Multi-Point
Data Flow	Full duplex or Half duplex
Speed	2400 to 64,000 bps
Connector	RS-232 Male or Female (on SunLink 9.1 SNA Server side)
Data Encoding	NRZ or NRZI

2.2.3 Cables

In order to connect your system to a modem, your must supply a cable. You need two cables for every connection: one cable from the SunLink 9.1SNA Server system to a modem, and another from the IBM Communications Controller or peer PU2.1 node to a modem. The SunLink 9.1 SNA Server requires a straight-through RS-232 cable.

There are four considerations when designing or ordering cables:

- Length of the cable.
- Physical connector type and gender (male/female) required at each end of the cable.
- Electrical signaling operated by the system and the modem. If the modem interfaces are not D-style-25/RS-232-C, you may need an interface adapter.
- Number of conductors running through the cable.

You should also be aware of the building code relating to cables. Teflon-coated cable, for example, is often required.

A straight-through, 11-conductor cable terminated with D-style-25 connectors generally connects the SunLink 9.1 SNA Server system to a standard V.25 (RS-232-C) modem. A D-style-25 straight-through cable connects pin 1 to pin 1, pin 2 to pin 2, etc. The gender of the cable connections depends on the gender of the communications ports on the system and the modem (for Hayes-compatible modems, the port's gender is normally female).

The RS-232-C standard dictates a maximum cable length of 50 feet. Use of (more expensive) shielded, low capacity cable can extend this distance up to 200 feet. The cable length must not exceed the length suggested by the modem manufacturer.

2.2.4 Interface Adapters

For higher speed link connections (greater than 38200 bps) an adapter may be required. Adapters, for example, can convert the V.24 (RS-232) to a V.35 cabling scheme. Refer to the manufacturer’s documentation when selecting an adapter for your installation.

2.2.5 IBM Host Telecommunications Interfacing

The IBM hardware requirements you (or an SNA host system programmer) need to consider when connecting a SunLink 9.1 SNA Server system to an IBM communications controller are:

- IBM communications controller (e.g., 3745) line connector (male or female). You need this information for cabling requirements.
- IBM communications controller type of line connector (e.g., RS-232). You need to check that it is compatible with the type of connector on the modem or modem eliminator.
- IBM communications controller line speed. You need to coordinate the speed with the SunLink 9.1 SNA Server configuration.

The SNA host system programmer follows the same procedure to add a SunLink 9.1 SNA Server system to the SNA network as used for adding any other devices.

2.2.6 Local Serial Ports

The local serial ports support synchronous communications on all current Sun SPARC systems, although the SPARCstation 10 and SPARCstation LX support synchronous communications on one port (A) only.

When planning your SNA connections, remember to:

- Obtain cables with the correct connector types: D-style-25 male or female. Local serial ports have a female connector; therefore, you need a cable with a D-style-25 male connector on one end.
- Synchronize the speed of the line with the SNA host system programmer.

2.2.6.1 Features

Features of the local serial port are as follows:

- Software-only solution
- 1 or 2 synchronous ports
- Speeds up to 19.2 kbps

2.2.6.2 Restrictions

Use speeds less than or equal to 19.2 kbps for the local serial ports.

The SPARCstation LX supports only one local serial port A, for synchronous communications. If you need access to port B for asynchronous communications, you should purchase the Serial Interface Y-Cable from Sun Microsystems.

On the SPARCstation IPC or IPX, the use of SBus communications board ports to connect to the SNA network is recommended. The local serial ports can be used with external clocking but, with no transmit clock input, the receive clock is used for both receive and transmit clocking.

For early versions of the SPARCstation 2, the local serial ports do not work properly for synchronous communications: the clock signaling does not work correctly. If your SPARCstation 2 fails to communicate in synchronous mode contact your Sun representative to obtain a field upgrade.

2.2.6.3 Cabling

The local serial ports on Sun SPARC systems (except SPARC IPCs and IPXs) obey RS-232-C standard signaling. The local serial ports have female, D-style-25 connectors. You need a male, D-style-25 connector on the end of the cable you attach to the SPARC system. To connect to modems, use a D-style-25 straight-through cable.

Refer to Appendix B, “Communication Ports,” for specific information on the local serial ports.

2.2.7 SBus Serial Communications Board

The SBus communications board comes in two versions: a 4-port version (Model #SM2404) and an 8-port version (Model #SM3508). These boards are serial communications cards designed for use with your SPARC workstation, providing increased connectivity capabilities. The boards interface with the SPARCstation through the SBus architecture internal to the workstation platform.

Sun recommends the SBus communications board if the local serial ports are already used, or you require:

- Synchronous communications at speeds greater than 19.2 kbps.
- Synchronous communications requirements for SPARC IPCs and IPXs.
- Multiple serial lines.

When planning your SNA connections, remember to:

- Obtain cables with the correct connector types: D-style-25 male or female. SBus communications board ports have male connectors; therefore, you need a cable with a D-style-25 female connector on one end.
- Synchronize the speed of the line with the SNA host system programmer.

2.2.7.1 Features

The SBus communications board has the following features:

- Four high-speed serial ports:
  - Up to four high-speed synchronous ports (64 kbps)
  - Up to two ports running 128 kbps
  - Aggregate bandwidth for the 4-port board is 256 kbps
  - Up to 4 high-speed asynchronous ports (38.4 kbps)
- 8 high-speed serial ports:
  - Up to eight high-speed synchronous ports (64 kbps)
  - Up to four ports running 128 kbps
  - Aggregate bandwidth for each set of four ports is 256 kbps
  - Up to eight high-speed asynchronous ports (38.4 kbps)
- Transfers blocks of data to/from the SPARC system.
- Full modem support on all channels (except CD and DSR for synchronous connections)

- An on-board 10 MIPS RISC processor to control data flow and management (2 RISC processors for the 8-port board)
- Multiple boards can be installed in one system (i.e., three 8-port boards can be combined to provide 24 serial lines)
- Synchronous and asynchronous ports can operate on the same board

2.2.7.2 *Restrictions*

NRZI is supported only at 9.6 kbps.

2.2.7.3 *Cabling*

The 4-port SBus communications board comes with a 4-way cable to provide the serial connections. A D-style-37 connector is used to connect the cable to the board. The four ends of the 4-way cable have male D-style-25 connectors.

The 8-port SBus communications board comes with a serial Expander Box that contains eight male D-style-25 connectors. The Expander Box is connected to the board with a D-style-62 extension cable.

The synchronous ports do not conform to standard RS-232-C signaling. The transmit clock is input on pin 8 (CD) and the receive clock is input on pin 6 (DSR). A synchronous adapter is provided to transform the interface to standard RS-232-C. This adapter is connected to the port D-style-25 connector as shown in Figure 2-2.

To connect to a modem, you must use the synchronous adapter. Refer to Appendix B, “Communication Ports,” for SBus communication board port specifications and how to make a synchronous null-modem cable.

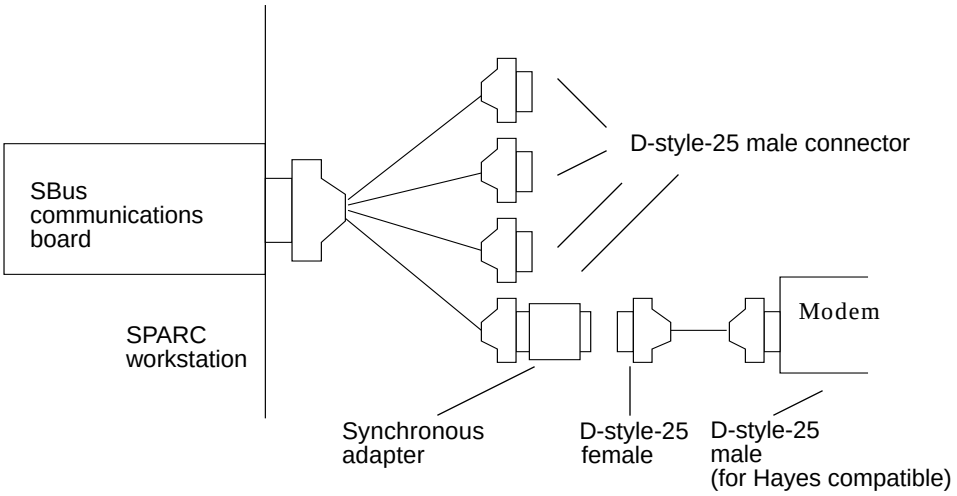

Figure 2-2 Bus Synchronous Connection

2.2.8 High Speed Serial Interface/SBus (HSI/S) Communications Board

SunLink utilizes the SunLink High Speed Serial Interface/SBus (HSI/S) available from Sun. HSI/S is capable of up to 4 lines operating at speeds up to 128kbps. Refer to the *SunLink HSI/S Installation and Administration Guide* for more information.

2.3 Token Ring Network

The SunLink SNA Server supports local area network (LAN) interfaces to the SNA network using IBM Token Ring network interface controllers. This section discusses physical connectivity issues, namely how the network interface is effected using MAUs, cables, and network interface controllers.

2.3.1 Physical Connectivity

Attachment to an IBM Token Ring network is a straightforward task. In general, it may be as simple as running a network interface cable, known as a lobe, from the network interface controller on the SPARCstation to either a multi-station access unit (MAU), or a wall-mounted faceplate with an IBM Token Ring connector running from a wiring closet. Figure 2-3 illustrates two possibilities.

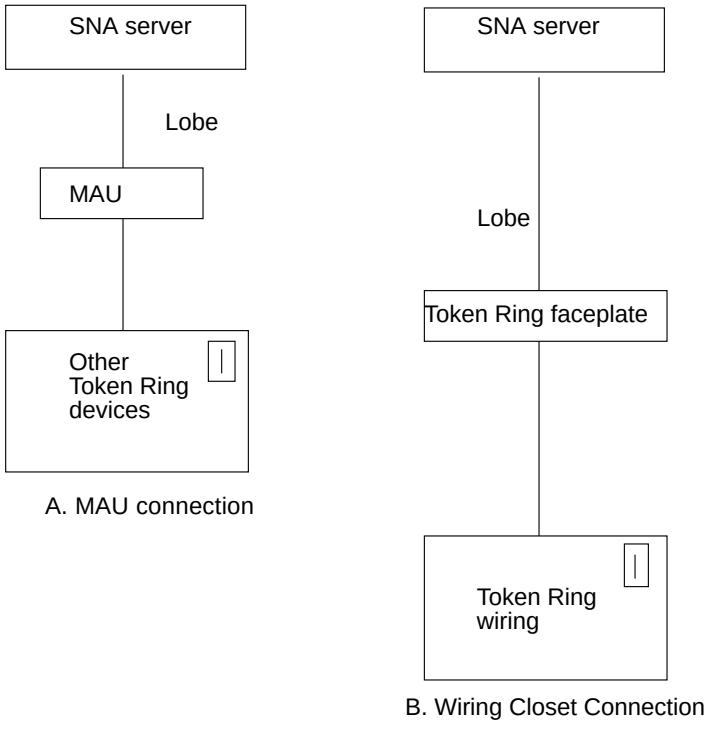

Figure 2-3 IBM Token Ring Configurations

You need the following communications equipment to connect the SunLink 9.1 SNA Server to the IBM Token Ring network:

- SBus IBM Token Ring network interface controller
- Network attachment cable (Lobe)
- MAU or wall-mounted faceplate

2.3.2 SBus IBM Token Ring Network Interface Controllers

An SBus IBM Token Ring network interface controller (NIC), along with the software that controls it, provides the IBM Token Ring network functionality for a SPARC system. Once the NIC and the software are installed and configured on a workstation, simply connect the lobe from the NIC to the IBM Token Ring network.

2.3.3 Lobes

A lobe is the network interface cable that connects the IBM Token Ring network interface controller located in an SBus slot on a SPARC system to an IBM Token Ring network. The network connection may be a multi-station access unit that is located next to the workstation, or a wall-mounted faceplate connected to either a remote multi-station access unit or to a wiring closet. The lobe itself has a D-sytle 9-pin connector on one end for attachment to the NIC, and either an IBM Token Ring Universal Connector or an RJ45 for connection into the MAU or faceplate.

2.3.4 Multi-Station Access Units

A multi-station access unit (MAU) is an IBM Token Ring network component that functions as a wiring concentrator and allows the connection of multiple lobes. A MAU is a self-enclosed IBM Token Ring network and may be rack-mounted or used stand-alone. One of the more popular MAUs consists of 8 lobes and two additional ports used for the interconnection of MAUs in order to extend the IBM Token Ring network. Note that the interconnection of MAUs does not constitute a token ring bridge or a router, since the connected MAUs are part of one physical ring. Other methods of extending networks and attaching MAUs include the use of both copper and fiber optic repeaters.

MAUs support either a universal token ring connector or an RJ45 connector. Many MAUs can now handle token ring speeds of 4 Mbs and 16 Mbs, but all network interfaces into the same MAU or attached MAUs *must operate at the same data rate.* To connect IBM token rings of various data rates, then use a token ring bridge or router.

2.3.5 Additional Network Components and Set-up

More advanced components of an IBM Token Ring network are generally found in network control centers and wiring closets. Such components may include Controlled Access Units (CAUs) for attachment of a large number of devices to the token ring, Lobe Attachment Modules (LAMs) for use with CAUs, and intelligent hubs which provide integrated network management capabilities in addition to lobe connection ports.

2.4 IBM Host Local Area Network Interfacing

The IBM hardware requirements to consider when connecting a SunLink 9.1 SNA Server system to an IBM Token Ring network include:

- IBM Integrated Communications Adapter (ICA) with IBM Token Ring Support for ES/9000 and 9370 mainframes.
- IBM communications controller (e.g., 3745, 3725, 3720) token ring interface coupler (TIC).
- NCP Token-Ring Interconnection (NTRI).
- 3174 Establishment Controller with Token-Ring 3270 Gateway Feature.

The SNA host system programmer follows the same procedure to add a SunLink 9.1 SNA Server system to the SNA network as used for adding any other Downstream Physical Unit (DSPU) on the IBM Token Ring.

2.4.1 Sun Token Ring Interface/SBus (TRI/S)

SunLink 9.1 SNA Server uses the SunLink Token Ring Interface/SBus (TRI/S) available from Sun Microsystems (Part No: 801-3890-05). TRI/S is capable of either 4 or 16 Mbs operation. Additionally, the board device driver provides support for source routing that can be used in bridged IBM Token Ring networks.

When planning your SNA connections, remember to:

1. Obtain cables (lobes) with the correct connector type: D-style-9 male. The SBus network interface controller board has a female connector; therefore, you need a cable with a D-style-9 male connector on one end. Make sure the that other end of the cable has either an IBM Token Ring Universal connector or an RJ45 connector compatible with the MAU or the faceplate.

2. Synchronize the local area network rate for the network interface coupler with the SNA host system programmer.
3. Coordinate the Service Access Point (SAP) and Medium Access Control Addressing (MAC) information with the SNA host system programmer.

Hardware Installation and Configuration 3

The SunLink 9.1 SNA Server uses the local serial ports and an SBus serial communications board to provide synchronous connectivity. For IBM Token Ring Network connection, SunConnect's Token Ring Interface/SBus 3.0 (TRI/S) communications board is used.

3.1 Installation

No hardware installation is required to use the local serial ports.

To install the TRI/S card, refer to the *Token Ring Interface/SBus (TRI/S) Installation Guide*. Software installation of the TRI/S card installs the Token Ring driver and creates the IP network interface tr0. TCP/IP and ONC applications run over the Token Ring in the same way that they run over Ethernet. `tr0` is administered and monitored using Solaris utilities, in particular ifconfig(1M) and `netstat`(1M).

Installing the SBus communication boards is a relatively straightforward procedure. It is described in this chapter. Once the hardware is installed, you must configure the SunLink SNA server to use the hardware.

3

3.2 The SunLink 9.1 SNA Server Configuration

SunLink 9.1 SNA resources are defined using the SunLink 9.1 Graphical Management Interface (SunLink GMI). The *SunLink SNA 9.1 PU2.1 Server Configuration and Administration Guide* describes the configuration dialog and the configuration process in detail. This chapter identifies the elements of the configuration that are hardware specific, and describe how the information required for the SunLink 9.1 SNA Server configuration may be determined.

3.3 Installing the SBus Board

Refer to your *SPARC Installation Guide* (or hardware owner's guide) for instructions on installing the SBus serial communication and network interface controller boards. The following steps outline the installation of the SBus serial communication or network interface controller boards in your SPARC system:

1. **Power off the SPARC system.**
2. **Remove the SPARC system unit cover.**
3. **Install the SBus serial communication or network interface controller board(s).**
   For the serial communications board, you can install the board in any available SBus slot on the main logic board of the SPARC system. For the IBM Token Ring network interface controller board, you must install the board in a DVMA bus-master capable SBus slot on the main logic board of the SPARC system.
   a. **Remove the sheet metal protector for the desired slot on the inner surface of the back panel of the unit.**
   b. **Slide the external peripheral connector of the board into the open slot.**
   c. **Align the plug on the board with the socket on the main logic board;**
   d. **Gently press the plug into the socket.**
4. **Replace the SPARC-based system unit cover.**

5. **Follow the steps for serial or Token Ring communications:**

   For serial communications:

   a. **Connect the 4-way cable (or the extension cable for the 8-port board) for serial communications.**

   b. **Place the Synchronous Adapter on Ports for Synchronous Communications (i.e., SNA connections) for serial communications.**

   For IBM Token Ring Networking:

   a. **Connect the SPARC system to the IBM Token Ring network with an IBM Token Ring Network Interface lobe cable for local area network operation.**

6. **Power on the SPARC system.**

3.4 Local Serial Ports

The SunLink 9.1 PU21 software installation procedure installs the SunLink synchronous driver into the kernel and creates the synchronous devices, zsh0 and (except on SPARCclassic™ and SPARCstation™ LX systems) zsh1.

The SunLink 9.1 Graphical Management Interface (SunLink GMI) Create New SDLC Line configuration dialog is used to define the physical characteristics of an SDLC line and associate the line with a system device. The following table summarizes the configuration parameters for the local serial ports.

Table 3-1 Local Serial Ports Configuration Parameters

Parameter	Value	Description
Device	`/dev/zsh0 | /dev/zsh1`	Specifies the Unix pathname of the device special file for the selected communications port (A or B).
Clock	EXTERNAL | INTERNAL	Specifies the clock source for the synchronous line. When an EXTERNAL clock is provided by the modem, the serial ports can operate at rates up to 19200 bps. For direct connections, an INTERNAL clock may be generated at rates up to 19200 bps (see Line Speed).
Duplex	HALF | FULL	Indicates the electrical characteristics of the line. Use HALF for multi-point lines. Use FULL for point-to-point lines.
Use NRZI Encoding	YES | NO	Defines the data encoding on the line.
Monitor Carrier Detect	YES | NO	Specifies whether the line should be marked inoperative when the Carrier Detect (CD) signal is lost.
Line Speed	n	Defines the clock rate, in bits per second, to be generated when clock is INTERNAL. The serial ports can generate clock at rates up to 19200 bps.

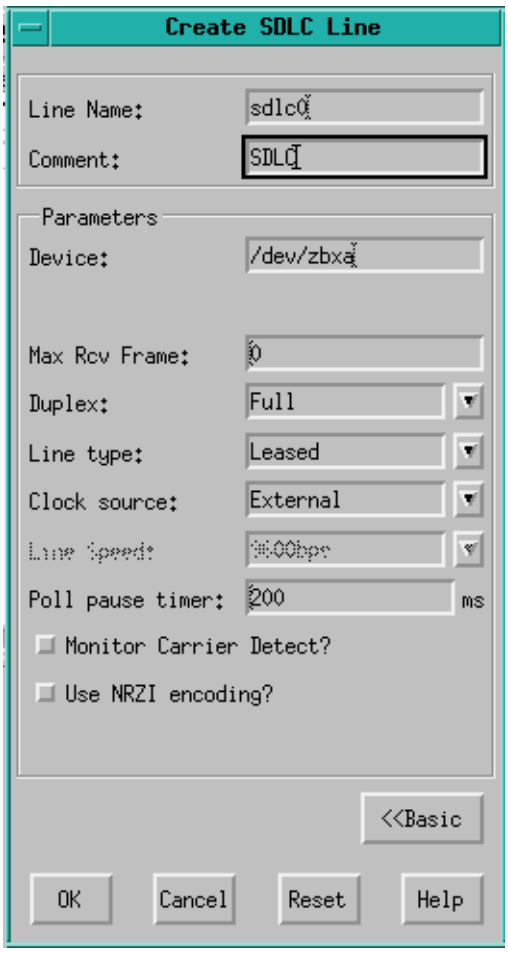

Figure 3-1 Configuring a Local Serial Port

3.5 SBus Serial Communications Card

The SunLink 9.1 PU21 software installation procedure installs the SunLink driver into the kernel and creates the synchronous devices, `sync/0` - `sync/3`. If the 8-port card is installed, devices `sync/4` - `sync/7` are also created.

The SunLink GMI Create New SDLC Line configuration dialog is used to define the physical characteristics of an SDLC line and associate the line with a system device. The following table summarizes the configuration parameters the SBus communications card.

Table 3-2 SBUS Communications Card Configuration Parameters

Parameter	Value	Description
Device	`/dev/sync/[0-n]`	Specifies the Unix pathname of the device special file for the selected communications port.
Clock	EXTERNAL | INTERNAL	Specifies the clock source for the synchronous line. When an EXTERNAL clock is provided by the modem, the SBus ports can operate at rates up to 128000 bps. For direct connections, an INTERNAL clock may be generated at rates up to 128000 bps (see Line Speed).
Duplex	HALF | FULL	Indicates the electrical characteristics of the line. Use HALF for multi-point lines. Use FULL for point-to-point lines.
Use NRZI Encoding	YES | NO	Defines the data encoding on the line. NRZI encoding is only supported at data rates of 9600 bps.
Monitor Carrier Detect	NO	The Carrier Detect (CD) signal is not available.
Line Speed	`n`	Defines the clock rate, in bits per second, to be generated when clock is INTERNAL. The SBus ports can generate clock at rates up to 128000 bps.

3.6 High Speed Serial Interface/SBus Communications Card

If you are using a High-speed Serial Interface / SBus (HSI / S) card, the hardware and software driver (available from Sun) must be installed prior to configuring the SunLink 9.1 SNA Server. The HSI / S software installation procedure installs the driver into the kernel and creates the synchronous devices, hih0 - hih3. If multiple cards are installed, devices `hih4` - `hih7` are also created.

The SunLink 9.1 Graphical Management Interface (SunLink GMI) Create New SDLC Line configuration dialog is used to define the physical characteristics of an SDLC line and associate the line with a system device. The following table summarizes the configuration parameters the HSI / S communications card.

Table 3-3 HSI / S Communications Card Configurations Parameters

Parameter	Value	Description
Device	`/dev/hih[0-n]`	Specifies the Unix pathname of the device special file for the selected communications port.
Clock	EXTERNAL | INTERNAL	Specifies the clock source for the synchronous line. When an EXTERNAL clock is provided by the modem, the SBus ports can operate at rates up to 128000 bps. For direct connections, an INTERNAL clock may be generated at rates up to 128000 bps (see Line Speed).
Duplex	HALF | FULL	Indicates the electrical characteristics of the line. Use HALF for multi-point lines. Use FULL for point-to-point lines.

Table 3-3 HSI/S Communications Card Configurations Parameters

Parameter	Value	Description
Use NRZI Encoding	YES | NO	Defines the data encoding on the line. NRZI encoding is only supported at data rates of 9600 bps.
Monitor Carrier Detect	NO	The Carrier Detect (CD) signal is not available.
Line Speed	n	Defines the clock rate, in bits per second, to be generated when clock is INTERNAL. The SBus ports can generate clock at rates up to 128000 bps.

3.7 Sun Token Ring Interface/SBus (TRI/S)

The SunLink 9.1 SNA Server uses the TRI/S card to provide IBM Token Ring connectivity. You will need to determine the following information in order to configure the SunLink 9.1 SNA Server to use the TRI/S:

- Physical Point of Attachment (PPA)
- Medium Access Control (MAC) address

The PPA identifies which Token Ring adapter to use. The MAC address is required by the SNA network administrator to configure host and peer systems to access the SunLink 9.1 SNA server system.

3.7.1 SunLink Token Ring Configuration

The TRI/S software installation also creates the cloneable device `/dev/tr`, which is used to gain direct access in STREAMS to the Token Ring Medium Access Control (MAC) layer.

The SunLink 9.1 Graphical Management Interface (SunLink GMI) Create New LAN Connection configuration dialog is used to define the physical characteristics of a Token Ring line and associate the line with a system device.

Table 3-4 summarizes the configuration parameters for the TRI/S card.

Table 3-4 TRI/S Card Configuration Parameters

Parameters	Value	Description
Device	`/dev/tr`	Specifies the Unix pathname of the device special file for the TRI/S driver.
PPA	`n`	Specifies the Physical Point of Attachment associated with the Token Ring adapter. Determine the PPA as described in the following section on Section 3.8, “Token Ring Interface/SBus Configuration." Default: 0.
Local MAC Address	'*mac_addr*'	Specifies the 12-character hexadecimal MAC ring station address of the network adapter. You may use the globally administered MAC address that is resident in the host IDPROM (and is also used as the system’s Ethernet address), or you may specify a locally administered MAC address using the Unix `ifconfig` command as described in the following section on Section 3.8, “Token Ring Interface/SBus Configuration."
Maximum Data Size	`n`	Corresponds to the maximum MAC frame size (excluding headers, trailers, and source routing) that may be sent and received over this network adapter. The value of n is from 1 to 4472. Default: 4472.
LAN Speed	4Mbs | 16Mbs	Specifies the Token Ring data rate, 4Mbs or 16Mbs. This software setting must correspond to the hardware setting selected by a jumper on the TRI/S card. Default: 4Mbs.

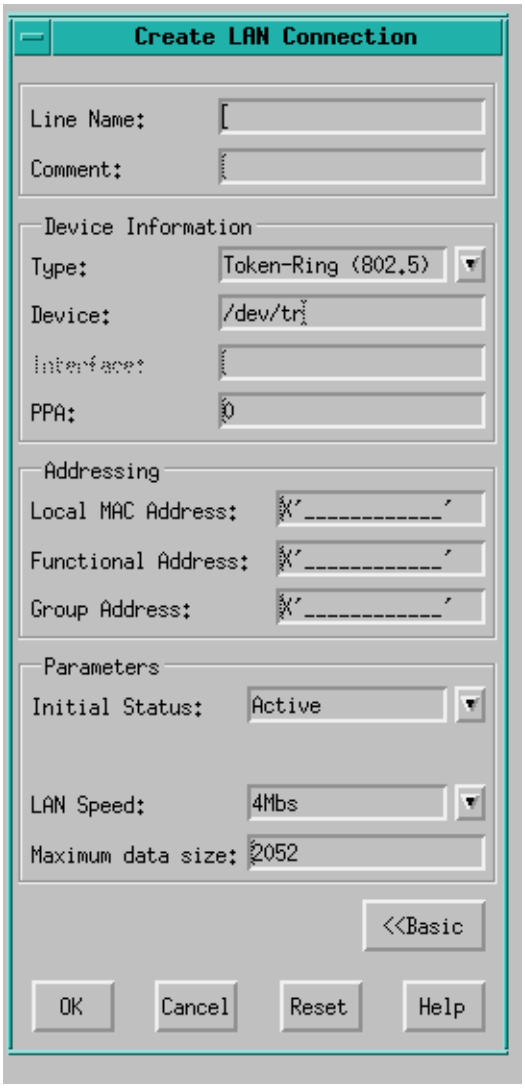

Figure 3-2 Configuring a Token Ring Card

3.7.2 PU2.1 LLC Configuration

The configuration parameter Enable Source Routing specifies whether or not the SunLink LLC driver will perform source routing in a multiple bridged ring environment. The default is YES. See Appendix B, “IBM Token Ring Concepts”, in the *SunLink 9.1 SNA PU2.1 Server Configuration and Administration Guide*, for more information on source routing.

3.8 Token Ring Interface/SBus Configuration

Token Ring Interface (TRI) and SBus configuration consists of:

- determining the PPA
- determining the source address
- changing the MAC address

3.8.1 Determining the PPA

The PPA corresponds to the TRI/S card instance number. Software installation of the TRI/S card installs the Token Ring driver and creates the IP network interface tr*n*, where *n* represents the TRI/S card instance number, 0, 1, 2, ..., and corresponds to the order in which the cards were installed. Thus the first card to be installed is accessed via interface `tr0`, the second card by `tr1`, and so on. Note that the instance number is independent of the slot number in which the TRI/S card is installed.

To determine the TRI/S IP network interfaces, use the `netstat` command:

```
# netstat -ia
Name     Mtu    Net/Dest      Address   Ipkts     Ierrs  Opkets  Oerrs   Collist  Queue
lo0      8232   loop          localhost 1828009   0      1828009  0       0        0
tr0      2052   199.97.127.0  sunlink   107916857 4      98681658         2658     1743943
```

In this case, the IBM Token Ring network interface name is tr0, and thus its PPA is 0.

3.8.2 Determining the Source Address

To determine the TRI/S IP MAC address, use the Unix `ifconfig` command, specifying the network interface name determined above:

```
    # ifconfig tr0
tr0: flags=63<UP,BROADCAST,NOTRAILERS,RUNNING>
        inet 192.9.220.9 netmask ffffff00 broadcast 192.9.220.0
    ether 8:00:20:b:df:93
```

The MAC address is given by the ether value, in this case the globally administered address, 0800200bdf93.

3.8.3 Changing the MAC Address

It is recommended that you use the globally administered MAC address. This guarantees that no address conflict will occur. If you want to change the MAC address to a locally administered value, however, this may be done using the ifconfig command. If the interface is running, then you must bring the interface down to change the MAC address:

```
# ifconfig tr0 down
# ifconfig tr0 ether 40:00:13:57:24:68
```

Bring the TRI/S IBM Token Ring network interface up:

```
# ifconfig tr0 up
```

Verify the address:

```
# ifconfig tr0
tr0: flags=63<UP,BROADCAST,NOTRAILERS,RUNNING>
inet 192.9.220.9 netmask ffffff00 broadcast 192.9.220.0
ether 40:0:13:57:24:68
```

Refer to the *Token Ring Interface/SBus (TRI/S) Installation Guide* for more information on configuring TRI/S. If you use a configured MAC address as opposed to the IDPROM value, place the `ifconfig` command in the startup script.

3.9 IBM Token Ring Network Setup

Unlike attaching a station to the IBM Token Ring network, setting up an IBM Token Ring itself may be a highly-complex task requiring a great deal of time and planning. Simple configurations are, however, relatively straightforward. The following table presents the steps necessary to set up a simple IBM Token Ring network with a single system running the SunLink 9.1 SNA Server. Additional systems may be similarly configured. If other devices will be attached to the token ring, follow the necessary instructions for the particular device.

Table 3-5 Setting up a Token Ring Network

Task	Requirement
1. Install NIC software	Run SunLink software install procedures
2. Configure NIC software	Set necessary network parameters
3. Halt system	
4. Power down system	
5. Install NIC	Install supported SBus IBM Token Ring NIC
6. Install MAU	Purchase MAU compatible with NIC
7. Connect lobe from MAU to NIC	Purchase lobe compatible with MAU and NIC
8. Power up system	

3.10 Ethernet

The SunLink 9.1 SNA Server uses the Ethernet card to provide IBM Ethernet connectivity. You will need to determine the following information in order to configure the SunLink 9.1 SNA Server to use the Ethernet:

- Physical Point of Attachment (PPA).
- Medium Access Control (MAC) address.

The PPA identifies which Ethernet adapter to use. The MAC address is required by the SNA network administrator to configure host and peer systems to access the SunLink 9.1 SNA Server system.

3.10.1 SunLink Ethernet Configuration

The Ethernet software installation also creates the cloneable device `/dev/le`, which is used to gain direct access in STREAMS to the Medium Access Control (MAC) layer.

The SunLink 9.1 Graphical Management Interface (SunLink GMI) Create New LAN Connection configuration dialog is used to define the physical characteristics of a Ethernet line and associate the line with a system device.

The following table summarizes the configuration parameters for the Ethernet card.

Table 3-6 Ethernet Card Configuration Parameters

Parameters	Value	Description
Device	`/dev/le`	Specifies the Unix pathname of the device special file for the Ethernet driver.
PPA	n	Specifies the Physical Point of Attachment associated with the Ethernet adapter. Determine the PPA as described in Section 3.8.1, “Determining the PPA,” on page 3-11. Default: 0.
Local MAC Address	'*mac_addr*'	Specifies the 12-character hexadecimal MAC ring station address of the network adapter. You may use the globally administered MAC address that is resident in the host IDPROM (and is also used as the system’s Ethernet address), or you may specify a locally administered MAC address using the Unix `ifconfig` command as described in Section 3.8.2, “Determining the Source Address,” on page 3-12.
Maximum Data Size	n	Corresponds to the maximum MAC frame size (excluding headers, trailers, and source routing) that may be sent and received over this network adapter. The value of n is from 1 to 1512. Default: 1512.
LAN Speed	10Mbs	Specifies the Ethernet data rate, 10Mbs. This software setting must correspond to the hardware setting selected by a jumper on the Ethernet card. Default: 10Mbs.

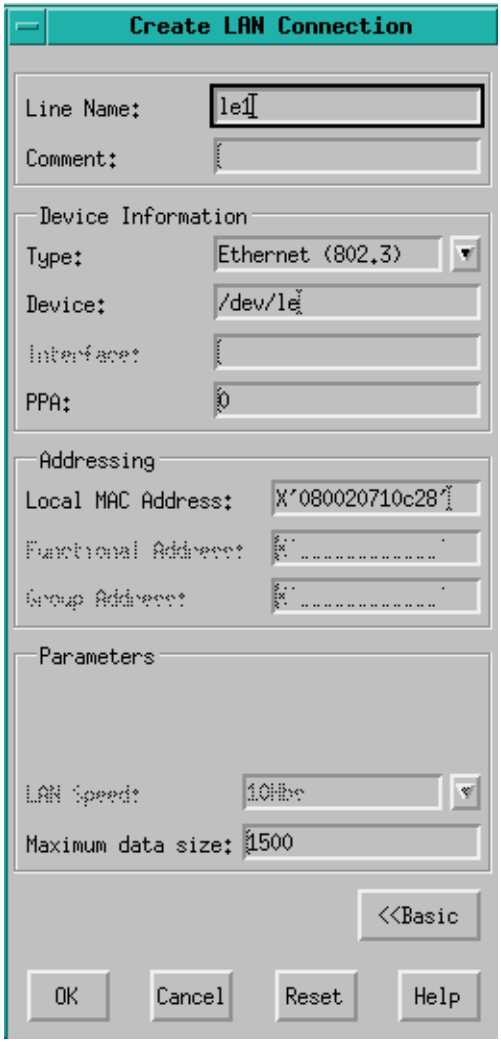

Figure 3-3 Configuring an Ethernet Card

3.11 FDDI

The SunLink 9.1 SNA Server uses the FDDI card to provide IBM FDDI connectivity. You will need to determine the following information in order to configure the SunLink 9.1 SNA Server to use the FDDI:

- Physical Point of Attachment (PPA).
- Medium Access Control (MAC) address.

The PPA identifies which FDDI adapter to use. The MAC address is required by the SNA network administrator to configure host and peer systems to access the SunLink 9.1 SNA Server system.

3.11.1 SunLink FDDI Configuration

The FDDI software installation also creates the cloneable device `/dev/nf`, which is used to gain direct access in STREAMS to the Medium Access Control (MAC) layer.

The SunLink 9.1 Graphical Management Interface (SunLink GMI) Create New LAN Connection configuration dialog is used to define the physical characteristics of a FDDI line and associate the line with a system device.

The following table summarizes the configuration parameters for the FDDI card.

Table 3-7 FDDI Card Configuration Parameters

Parameters	Value	Description
Device	`/dev/nf`	Specifies the Unix pathname of the device special file for the FDDI driver.
PPA	n	Specifies the Physical Point of Attachment associated with the FDDI adapter. Determine the PPA as described in Section 3.8.1, “Determining the PPA,” on page 3-11. Default: 0.
Local MAC Address	'*mac_addr*'	Specifies the 12-character hexadecimal MAC ring station address of the network adapter. You may use the globally administered MAC address that is resident in the host IDPROM (and is also used as the system’s Ethernet address), or you may specify a locally administered MAC address using the Unix `ifconfig` command as described in Section 3.8.2, “Determining the Source Address,” on page 3-12.
Maximum Data Size	n	Corresponds to the maximum MAC frame size (excluding headers, trailers, and source routing) that may be sent and received over this network adapter. The value of n is from 1 to 4096. Default: 4096.
LAN Speed	100Mbs	Specifies the FDDI data rate, 100Mbs. This software setting must correspond to the hardware setting selected by a jumper on the FDDI card. Default: 100Mbs.

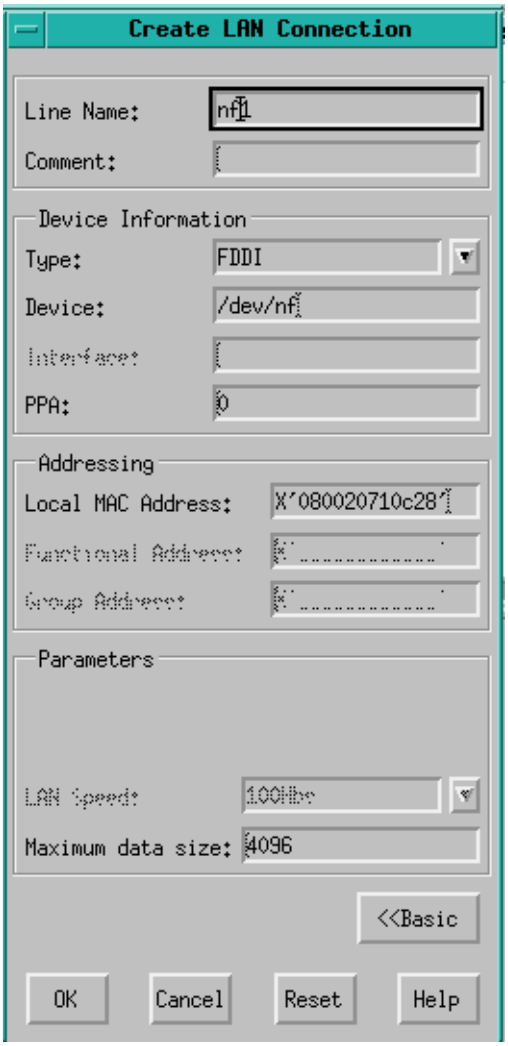

Figure 3-4 Configuring an FDDI Card

3

Software Installation 4

This chapter describes the software installation procedure for the components of the SunLink 9.1 SNA server product set on SPARCserver or SPARCstation platforms running Solaris 2.4, Solaris 2.5, and Solaris 2.5.1. Installation is performed using the standard `pkgadd`(1M) utility.

Chapter 5, “Software De-Installation,” describes how to deinstall the SunLink software using the `pkgrm`(1M) command. Appendix A, “Software Installation and De-Installation Log,” contains sample installations of the four components of the SNA server, and an example of the `sunsetup` configuration script used to configure SunLink 9.1 GMAN, GMI, and PU2.1 components after the installation.

4.1 Installing Software

SunLink 9.1 SNA server software is distributed on a CD-ROM. See Section 1.1, “Disk Space Requirements,” on page 1-2, to determine how much disk space is needed for the product installations. Use the `df` command to verify that there is adequate available disk space in the file system containing the installation directory before proceeding with the installation.

All the software is installed into appropriately named sub-directories of the standard installation area, `/opt`, unless you choose to indicate a different installation root directory (by using the `pkgadd` command with the `-a` option). For example, the SunLink 9.1 PU2.1 SNA server software is installed into the directory `/opt/SUNWpu21`; SunLink Gateway Manager software is installed into the directory `/opt/SUNWgman`.

To install the software in a different location from `/opt`, you can use the `-a` option with the `pkgadd` command.

Note – The `pkgadd` command works with either no option or with the `-a` option. In other words, you can issue the `pkgadd -a none -d` *<directory containing packages>* command to install the SunLink SNA 9.1 software.

Log in as the super-user (root) and follow the instructions given below. The # sign is the Unix prompt.

4.1.1 *Running the* `pkgadd` *Utility*

Before you run `pkgadd`, follow these steps to prepare to setup for the installation of the software.

The SunLink SNA 9.1 software ships on three CD-ROMs. Though the package contents on each CD-ROM differ, the installation procedures are similar. All procedures assume that you are running Volume Manager on your system.

Note – Before installing an updated version of the SunLink GMAN, SunLink PU21, or SunLink GMI packages, you must first remove any currently installed versions using `pkgrm`. Any configuration files that have been created for the previous version will be left intact after the removal of the older version. You can use these files with the current version.

Follow these procedures to install the SunLink SNA 9.1 software:

1. **Log in as superuser.**

2. **Decide if you want to install Gateway, RJE, or API software from one of the following three CD-ROMs:**

- To install the software on the SunLink IBM SNA Gateway 9.1 CD-ROM:

   a. **Insert the SunLink IBM SNA Gateway 9.1 CD-ROM into the disk drive.**
   Since your system is running Volume Manager, it should automatically mount the CD-ROM on the following directory:

```
/cdrom/sunlink_ibm_sna_gateway_9_1_beta
```

   Apart from the English and French copyright statements, this directory will contain the following software packages in the `/Product` sub-directory:

```
SUNWgman
SUNWgmi
SUNWlicsw
SUNWlit
SUNWlu62
SUNWntvw
SUNWopcl
SUNWpu21
SUNWsaa
```

   b. **Change directories (`cd`) to the `/Product` directory:**

```
# cd /cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product
```

c. Use `pkgadd` command to install all the software packages in `/opt`, the default destination directory, or in an alternate directory. Issue one of the following commands:

```
# pkgadd -d .
```

or:

```
# pkgadd -a none -d <directory containing packages>
```

- To install the packages individually, indicate the unique number of the package or package name as follows:

```
1 SUNWgman  SNA Gateway Manager
            (sparc) 9.1
2 SUNWgmi   SNA Graphical Management Interface
            (sparc) 9.1
3 SUNWlicsw FlexLM License System
            (sparc) 4.2
4 SUNWlit   STE License Installation Tool
            (sparc) 4.0
5 SUNWlu62  SNA Logical Unit Type 6.2
            (sparc) 9.1
6 SUNWntvw  SNA NetView/SunNet Manager Gateway
            (sparc) 9.1
7 SUNWopcl  SunLink 3270 Open Client 9.1
            (sparc) 9.1
8 SUNWpu21  SNA PU2.1 Server
            (sparc) 9.1
9 SUNWsaa   SAA Server
            (sparc) 9.1
```

- To install the software on the SunLink RJE 3770 9.1 CD-ROM:

  a. Insert the SunLink RJE 3770 9.1 CD-ROM into the disk drive.
  Since your system is running Volume Manager, it should automatically mount the CD-ROM on the following directory:

```
/cdrom/sunlink_rje_3770_9_1_beta
```

  Apart from the English and French copyright statements, this directory will contain the following software packages in the `/Product` sub-directory:

```
SUNW3770
SUNWgman
SUNWgmi
SUNWlicsw
SUNWlit
SUNWpu21
```

  b. Change directories (`cd`) to the `/Product` directory:

```
# cd /cdrom/sunlink_rje_3770_9_1_beta/Product
```

c. Use `pkgadd` command to install all the software packages in `/opt`, the default destination directory, or in an alternate directory. Issue one of the following commands:

```
# pkgadd -d .
```

or:

```
# pkgadd -a none -d <directory containing packages>
```

If you wish to install the packages individually, you can do so by indicating the unique number of the package or package name as follows:

```
1 SUNW3770  3770 Device Emulator
            (sparc) 9.1
2 SUNWgman  SNA Gateway Manager
            (sparc) 9.1
3 SUNWgmi   SNA Graphical Management Interface
            (sparc) 9.1
4 SUNWlicsw FlexLM License System
            (sparc) 4.2
5 SUNWlit   STE License Installation Tool
            (sparc) 4.0
6 SUNWpu21  SNA PU2.1 Server
            (sparc) 9.1
```

- To install the software on the SunLink LU0 API 9.1 CD-ROMs:

  a. **Insert the SunLink LU0 API 9.1 CD-ROM into the disk drive.**
  Since your system is running Volume Manager, it should automatically mount the CD-ROM on the following directory:

```
/cdrom/sunlink_lu0_api_9_1_beta
```

  Apart from the English and French copyright statements, this directory will contain the following software packages in the `/Product` sub-directory:

```
SUNWappc
SUNWlu0
SUNWopcl
```

  b. **Change directories (`cd`) to the `/Product` directory:**

```
# cd /cdrom/sunlink_lu0_api_9_1_beta/Product
```

c. Use `pkgadd` command to install all the software packages in `/opt`, the default destination directory, or in an alternate directory. Issue one of the following commands:

```
# pkgadd -d .
```

or:

```
# pkgadd -a none -d <directory containing packages>
```

To install the packages individually, indicate the unique number of the package or package name as follows:

```
1 SUNWappc  LU6.2 and CPI-C APIs
            (sparc) 9.1
2 SUNWlu0   SNA LU0 Library
            (sparc) 9.1
3 SUNWopcl  SunLink 3270 Open Client 9.1
            (sparc) 9.1
```

4.1.2 Common Installation Questions

The installation procedures for the components of the SunLink SNA server ask a similar set of questions as part of the installation script. See Chapter 1, "Pre-Installation Planning," for information that will help answer these questions.

Selecting the Target Installation Directory

Enter the path to the target installation directory. The default is `/opt`. The SunLink software package will be extracted into a sub-directory of the target installation directory, for example, `/opt/SUNWpu21`.

If the target installation directory you select does not exist, the `pkgadd` utility will flag an error and allow you to re-enter the path to the target installation directory. In this case you should create the target installation directory and then re-enter the path to the target installation directory. If the target

installation directory does exist, the pkgadd utility continues on with the software installation. In this example, the default target installation directory `/opt` is selected.

If you wish to install the software in a directory other than `/opt`, use the `-a` option with the `pkgadd` command as shown. You will be asked to indicate a new target installation directory:

```
# pkgadd -a none -d <directory containing packages>
```

4.1.3 SunLink GMI Installation Questions

Using Mosaic for reading the online help files

An HTML browser is used for reading the online help files provided with the SunLink GMI package. If you want to use Mosaic for the browser, you can enter `Yes` to accept the default answer, or specify the full path for the Netscape™ browser (`/usr/dist/exe/netscape`).

4.1.4 SunLink 9.1 PU21 Installation Questions

The SunLink 9.1 PU21 installation asks a few questions related to what connectivity options you wish to setup. Certain device drivers are optional and you are asked whether or not you want to install them. Which drivers you choose to install depends on your intended use of the system. For example, if you intend to connect SDLC links to the local serial ports, you must install the ZSH driver and SDLC. If you are planning to use an HSI/S communications card, you must first have the SunLink HSI/S kernel object package (`SUNWhsis`) installed.

If you are planning IBM Token Ring DLC connections, you must install LLC—it is assumed that a Token Ring device driver has already been installed according to the vendor's instructions.

If you do not install a device driver now, you can install it at some later time by following the instructions given in the Section 4.2, “Post-Installation.”

Installing SDLC pseudo-device driver

The SDLC pseudo device driver supports SDLC connections using the local serial ports (ZSH driver) or SBus communications ports (BX driver). If you plan to use SDLC connections, enter Yes.

Installing LLC pseudo-device driver

The LLC pseudo device driver supports Token Ring DLC connections using an IBM Token Ring network interface controller and Ethernet connections using an Ethernet controller. If you plan to use Token Ring or Ethernet connections, enter Yes.

Installing SunLink 9.1 SNA PU2.1 boot script

To allow the PU2.1 Server to be started each time your system is rebooted, enter Yes and the installation procedure will add the startup file `/etc/rc2.d/S89SunPU21` into the system startup directory.

4.1.5 Proceeding with Installation

SunLink provides sed scripts that are used by `pkgadd` to modify these system files. Before the files are modified, however, the SunLink request script saves the current versions with `SUNWPU21` suffix, for example, `/etc/system.SUNWPU21`.

If you are installing the software for the first time, continue with the next step.

If you are installing a new version of a software package and select the same target installation directory, be aware that `pkgadd` will overwrite the existing installation. `pkgadd` will, however, warn you of package file conflicts and ask you if you want to continue the installation.

```
## Processing package information.
## Processing system information.
   6 package pathnames are already properly
## Verifying disk space requirements.
## Checking for conflicts with packages already

The following files are already installed on the system and are
used by another package:
    /opt/SUNWpu21/...
    ...

Do you want to install these conflicting files?
```

If you changed any configuration files, or if you edited any of the BMD message files, then you should not overwrite these files. It is recommended that you save the installed version of the software by renaming its installation directory as follows:

```
# cd /opt
# mv SUNWpu21 SUNWpu.save
# mv SUNWgman SUNWgman.save
```

Alternatively, you could select a different target installation directory for the new software. Once you have installed the new version of the software package, copy any required files from the old installation directory into the new installation directory. For modified files, be sure to check the file's version number before you overwrite the new version - new messages may have been added to a BMD file, for example. Check the file's version number by using the `what` command to extract the SCCS ID and release number:

```
# /usr/ccs/bin/what PU21_msglib
       PU21_msglib:
           PU21_msglib /main/6
```

4.1.5.1 Continuing with the Software Installation

After answering the questions asked, and possibly being presented with the package conflict screen shown above, `pkgadd` asks if you want to continue with the installation to extract files onto your installation directory. Enter Yes to continue.

The installation procedure lists the files it is extracting into the installation area.

4.2 Post-Installation

Sun provides a post-installation script for each package. After `pkgadd` has extracted the package software into the installation directory, it proceeds to run the post-install script. The post-installation script performs several actions necessary for the installation of the software package. These actions are described in the following section. See Appendix A for a complete log of the output of running the three installations.

The post-installation script adds its commentary to the `pkgadd` output and maintains a log (e.g., `/opt/SUNWpu21/log.SUNWPU21`) of its post-installation actions.

If the software extraction and installation is unsuccessful, see "Troubleshooting."

4.2.1 SunLink 9.1 Graphical Management Interface (Post Installation)

The post-installation script actions for the SunLink GMI component are summarized below.

1. Adds SunLink services to the `/etc/services` file
2. Links `sungmi` image to `/usr/bin`
3. Installs online help files
4. Installs SunLink on-line manual pages

Note – On Solaris 2.4 and Solaris 2.5 systems running `sungmi`, the `SUNWgmi` packages requires that the Motif Runtime Kit (`SUNWmfrun`) is installed on the system. You can install the `SUNWmfrun` package from the Solaris 2.4 or Solaris 2.5 software CD-ROM.

4.2.2 SunLink 9.1 Gateway Manager (Post Installation)

The post-installation script actions for the SunLink GMAN component are summarized below:

1. Adds SunLink services to the `/etc/services` file
2. Creates default working directory and configuration directory
3. Adds `SUNWgman` startup file, `S90SUNWgman`, to the `/etc/rc2.d` startup directory
4. Installs SunLink on-line manual pages

4.2.3 SunLink 9.1 PU2.1 SNA Server (Post-Installation)

The post-installation script actions for the SunLink PU2.1 SNA server are more involved. In particular, STREAMS device drivers and modules are installed on your system. The actions of the script are summarized below:

1. Adds SunLink services to the `/etc/services` file
2. Adds `SUNWpu21` startup file, `S89SunPU21`, to the `/etc/rc2.d` startup directory
3. Copies STREAMS modules to the `/kernel/strmod` directory
4. Copies STREAMS drivers to the `/kernel/drv` directory
5. Runs `add_drv` for STREAMS drivers
6. Creates device name files for `zsh` and `bx` STREAMS drivers
7. Installs SunLink on-line manual pages

SunLink services are considered further in the following sections. Installing the SunLink PU2.1 SNA server also creates new devices.

4.2.4 `sunsetup` *Configuration Script*

The SunLink 9.1 SNA server comes with a setup script that allows you to change user-settable configuration parameters, look at the current settings for the parameters, and start/stop the components of the SNA server.

The setup script is located in `/opt/SUNWpu21/sunsetup`. You must run this script after installing the SunLink GMAN component. You may optionally want to run it after installing the SunLink GMI or SunLink PU21 components if you need to change any of the parameters that were set during the installation.

The configurable parameters for the SNA server components are:

SunLink GMAN

- Product Installation Directory
- SunLink DNS role - operate with existing DNS server or be the primary DNS server
- SunLink DNS domain and sub-domain names
- Whether to run the SunLink GMAN startup script at system start time
- Whether the system should be configured as a Primary or Secondary SunLink Manager. This is only done during the first run of the script after SunLink GMAN installation.

SunLink GMI

- Product Installation Directory
- HTML browser to use for reading online help files. Netscape and Mosaic are the two browsers supported for this release. (The HTML browser needs to be installed and configured separately.)

SunLink PU21

- Product Installation Directory
- Whether to run the SunLink PU21 startup script at system start time

The initial screen of the sunsetup script appears below.

```
# /etc/sunlink/sunsetup

SunLink SNA Server Setup

1 - Configure GMAN Software
2 - Configure GMI Software
3 - Configure PU21 Software
4 - Start GMAN Software
5 - Start PU21 Software
6 - Stop GMAN Software
7 - Stop PU21 Software
8 - Show GMAN configuration
9 - Show GMI configuration
10 - Show PU21 configuration

q - Exit
Enter Selection [q]? q
```

When you elect to configure one of the components of the SNA server, you enter a configuration dialog, that displays the current settings for a series of parameters and asks if you want to change the current setting. After answering all the questions, a final confirmation is requested. If you proceed, your answers are recorded and the changes are made. If you do not confirm the changes, then no changes are made to your system.

4.3 SunLink Services

The TCP/IP Service Name and Port Number table in Chapter 1 lists the TCP services required by SunLink SNA server.

The SunLink post-installation scripts update the system's `/etc/services` file as necessary for each product. Before doing so, the script saves a version of the services file to be updated, for example, `/etc/services.SUNWPU21`. It also marks any new lines it adds to the file with explicit comments. The post-installation scripts attempt to create `/etc/services` entries with known port numbers. This is not always possible, as a port number may already be assigned to another service. If you are installing clients on systems remote from the SunLink 9.1 PU2.1 SNA server, verify that the installed service port numbers are the same as those on the SunLink SNA server's system.

Note – If you are running Network Information Service (NIS), previously known as Yellow Pages or YP, updating the `/etc/services` file is not enough. You must manually update the services map on the NIS master host and `yppush`(8) the map from the NIS master host to the NIS slaves.

4.4 SunLink Devices

The SunLink PU2.1 SNA server supports loadable device drivers. The associated devices, listed in the table below, are created during installation. It is not necessary to re-boot the system to use these devices. Each device in the `/dev` directory is symbolically linked to a device in the `/devices/pseudo` directory. Check to see if any of these devices conflict with device names in your `/dev` directory or `/devices/pseudo` directory. If there is a conflict, contact Technical Support.

Table 4-1 Devices and Directories

Device/Pseudo Device	`/dev` **Directory**	`/devices/pseudo` **Directory**
SDLC Driver	`cntsdlc`	`clone:cntsdlc`
LLC Driver	`llc`	`clone:llc`
Scope Driver	`scoped`	`clone:scoped`
Local Serial Port Synchronous Driver	`zsh`	`clone:zsh`
Local Serial Port A	`zsh0`	`zsh:0`
Local Serial Port B	`zsh1`	`zsh:1`
SBus Board Ports 0-3	`sync/0 ... sync/3`	
SBus Board Ports 0-7	`sync/0 ... sync/7`	

You may have elected not to install one or more of these devices during SunLink PU21 software installation. The following sections describe how to manually install each device.

4.5 ZSH Local Serial Port Device Driver

If you did not install the ZSH serial port synchronous device driver when you installed the SUNWpu21 software package, you may install it at some later time. You need to issue the commands listed below in order to install the driver. For these commands, it is assumed that the target installation directory is /opt.

```
# /usr/sbin/rem_drv zsh
# cd /opt/SUNWpu21
# cp zsh /kernel/drv
# cp zsh.conf /kernel/drv
# /usr/sbin/add_drv zsh
```

If the files zsh:0 and zsh:1 are present in the /devices/pseudo directory, enter the following commands:

```
# /bin/ln -s /devices/pseudo/zsh:0 /dev/zsh0
# /bin/ln -s /devices/pseudo/zsh:1 /dev/zsh1
```

If the files zsh@0:0 and zsh@0:1 are present in the /devices/pseudo directory, enter the following commands:

```
# /bin/ln -s /devices/pseudo/zsh@0:0 /dev/zsh0
# /bin/ln -s /devices/pseudo/zsh@0:1 /dev/zsh1
```

If you decide to deinstall the ZSH serial port synchronous device driver, enter the following commands:

```
# /usr/sbin/rem_drv zsh
# /bin/rm /kernel/drv/zsh
# /bin/rm /kernel/drv/zsh.conf
# /bin/rm /dev/zsh0
# /bin/rm /dev/zsh1
```

4.5.1 SDLC Pseudo Device Driver

If you did not install the SDLC device driver when you installed the SUNWpu21 software package, you may install it at some later time. You need to issue the commands listed below in order to install the driver. For these commands, it is assumed that the target installation directory is /opt.

```
# /usr/sbin/rem_drv cntsdlc
# cd /opt/SUNWpu21
# cp cntsdlc /kernel/drv
# cp cntsdlc.conf /kernel/drv
# /usr/sbin/add_drv cntsdlc
# /bin/ln -s /devices/pseudo/clone:cntsdlc /dev/cntsdlc
```

If you decide to deinstall the SDLC device driver, execute the following commands:

```
# /usr/sbin/rem_drv cntsdlc
# /bin/rm /kernel/drv/cntsdlc
# /bin/rm /kernel/drv/cntsdlc.conf
# /bin/rm /dev/cntsdlc
# /bin/rm /devices/pseudo/clone:cntsdlc
```

4.5.2 LLC Pseudo Device Driver

If you did not install the LLC device driver when you installed the SUNWpu21 software package, you may install it at some later time. You need to issue the commands listed below in order to install the driver. For these commands, it is assumed that the target installation directory is /opt.

```
# /usr/sbin/rem_drv llc
# cd /opt/SUNWpu21
# cp llc /kernel/drv
# cp llc.conf /kernel/drv
# /usr/sbin/add_drv llc
# /bin/ln -s /devices/pseudo/clone:llc /dev/llc
```

If you decide to deinstall the LLC device driver, execute the following commands:

```
# /usr/sbin/rem_drv llc
# /bin/rm /kernel/drv/llc
# /bin/rm /kernel/drv/llc.conf
# /bin/rm /dev/llc
# /bin/rm /devices/pseudo/clone:llc
```

4.6 *Troubleshooting*

This section describes the actions to take if you encounter problems during the software installation procedure.

`pkgadd` installation progress is output to the terminal or window. SunLink post-installation scripts log their output to a `log.SUNW`*xxx* file in the installation directory. If the installation process fails, determine where in the installation procedure the error was encountered. Rectify the error and re-run the `pkgadd` command.

Table 4-2 Common Installation Problems

Problem	Probable Cause	Corrective Action
File System full.	Not enough disk space for specified directory.	Check the Disk Space Requirements table in Chapter 1 to determine the file space required. Install package on a filesystem with adequate free space.
Bad file number.	Media corrupted.	Contact Technical Support.
I/O Error.	Media corrupted.	Contact Technical Support.

Software De-Installation 5

This chapter describes the software removal procedure for the SunLink SNA Server components on the Solaris SPARC platform. To remove software, you must use the `pkgrm` utility.

5.1 Software De-Installation

De-install the SunLink software packages using the `pkgrm` command.

Log in as superuser and follow the instructions given below.

1. **Execute the `pkgrm` command.**

2. **Execute the following command, assuming that `SUNWpu21` is the package you want to remove:**

```
# pkgrm SUNWpu21
```

   If you remove the software package, you may re-install it later.

3. **If you really want to remove the software package, type `y` and press `Enter`.**

```
gajendra: pkgrm SUNWpu21

The following package is currently installed:
   SUNWpu21        SNA PU2.1 Server
```

```
                    (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWpu21>
```

4. **Remove the software package.**

5. **Type** `y` **and press** `Enter` **to continue the removal.**
   Sun provides a preremove script for each package. This script is run when you execute the `pkgrm` command. The actions performed by the preremove script vary depending on the package being removed. The preremove script logs all activity to a log file (e.g., `log.SUNWpu21`) for your inspection. This log file is stored in the `SUNWpu21` sub-directory of the target installation directory. The preremove script is executed automatically and the package is removed:

```
This package contains scripts which will be executed with
super-user permission during the process of removing this package.
Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
```

   For more information on removing all of the SunLink SNA 9.1 software packages, refer to Appendix A, “Software Installation and De-Installation Log.”

Software Installation and De-Installation Log

A

This appendix lists the output from pkgadd during the installation of the software components of the SunLink SNA Server. These sample installations show you what you may see when installing the products on your system (depending on whether you are installing the software for the first time or overwriting pre-existing software).

Following the installation logs is a sample of the sunsetup script. This example shows the necessary steps to configure SunLink GMAN, SunLink GMI, and SunLink PU21.

A.1 pkgadd *Installation Log*

The SunLink SNA 9.1 software ships on three CD-ROMs:

- SunLink IBM SNA Gateway 9.1
- SunLink RJE 3770 9.1
- SunLink LU0 API 9.1

This section documents the product installation logs from all three software CD-ROMs.

A.1.1 Log for the SunLink IBM SNA Gateway 9.1 Software

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log

```
# cd /cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product
# pkgadd -d .

The following packages are available:
  1  SUNWgman      SNA Gateway Manager
                   (sparc) 9.1
  2  SUNWgmi       SNA Graphical Management Interface
                   (sparc) 9.1
  3  SUNWlicsw     FlexLM License System
                   (sparc) 4.2
  4  SUNWlit       STE License Installation Tool
                   (sparc) 4.0
  5  SUNWlu62      SNA Logical Unit Type 6.2
                   (sparc) 9.1
  6  SUNWntvw      SNA NetView/SunNet Manager Gateway
                   (sparc) 9.1
  7  SUNWopcl      SunLink 3270 Open Client 9.1
                   (sparc) 9.1
  8  SUNWpu21      SNA PU2.1 Server
                   (sparc) 9.1
  9  SUNWsaa       SAA Server
                   (sparc) 9.1

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

Processing package instance <SUNWgman> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SNA Gateway Manager
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Gateway Manager on gajendra.

Do you wish to continue (Yes/No) [Y]? y
Using </opt> as the package base directory.
## Processing package information.
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWgman> [y,n,?] y

Installing SNA Gateway Manager as <SUNWgman>

## Installing part 1 of 1.
/opt/SUNWgman/ARCH_sun4_oem_sunos5.4
/opt/SUNWgman/BMD/BCFG_msglib
/opt/SUNWgman/BMD/BCPD_msglib
/opt/SUNWgman/BMD/BLMS_msglib
/opt/SUNWgman/BMD/BMSG_msglib
/opt/SUNWgman/BMD/GMAN_msglib
/opt/SUNWgman/BMD/XSVC_msglib
/opt/SUNWgman/RELEASE_NOTES_SUNOEM
/opt/SUNWgman/SunGMAN.rc
/opt/SUNWgman/VERSION
/opt/SUNWgman/VERSION_3.0.5-SUNOEM
/opt/SUNWgman/aud.awk
/opt/SUNWgman/audit_filter
/opt/SUNWgman/bmsg
/opt/SUNWgman/suncpd
/opt/SUNWgman/sungman
/opt/SUNWgman/sungmanmib.txt
/opt/SUNWgman/sunsetup
[ verifying class <none> ]
## Executing postinstall script.


                    Sun Microsystems, Inc.
                SunLink IBM Connectivity 9.1 / SNA Gateway Manager
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
SUNWgman installation activity is logged to /opt/SUNWgman/log.SUNWGMAN
Saving system files...
/bin/cp /etc/services /etc/services.SUNWGMAN
SunLink message directory is /opt/SUNWgman/BMD
Setting up working environment...

Updating /etc/services...


***************************************************************

NOTE:
The SUNWgman has now been installed on your system.  You must
run the SunLink SNA Server Configuration script (sunsetup)
to answer a few questions regarding the setup of the SunLink DNS
configuration and the SunLink Manager configuration.

***************************************************************

SUNWgman Installation Complete


Installation of <SUNWgman> was successful.

Processing package instance <SUNWgmi> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SNA Graphical Management Interface
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Graphical Management Interface on gajendra.

Do you wish to continue (Yes/No) [Y]? y

The product can use the Mosaic or Netscape HTML browsers to view
the online help files provided in the installation package. If
the mosaic image is in your default path, you can accept the
default answer to the following question. If not, you can enter
the full pathname of the Mosaic or Netscape image below. If you
don't have a browser available, you can accept the default answer
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
and continue with the installation.

Use mosaic for reading the online help files (Yes/No) [Y]? n
Enter full pathname of the browser [mosaic] /usr/dist/exe/netscape

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWgmi> [y,n,?] y

Installing SNA Graphical Management Interface as <SUNWgmi>

## Installing part 1 of 1.
/opt/SUNWgmi/ARCH_sun4_oem_sunos5.4
/opt/SUNWgmi/BMD/BSCA_msglib
/opt/SUNWgmi/RELEASE_NOTES_SUNOEM
/opt/SUNWgmi/SunGMI.ad
/opt/SUNWgmi/VERSION
/opt/SUNWgmi/VERSION_3.0.5-SUNOEM
/opt/SUNWgmi/bin/sungmi
/opt/SUNWgmi/help/enterprz-Configur-10.html
/opt/SUNWgmi/help/enterprz-Configur-11.html
/opt/SUNWgmi/help/enterprz-Configur-12.html
/opt/SUNWgmi/help/enterprz-Configur-2.html
/opt/SUNWgmi/help/enterprz-Configur-3.html
/opt/SUNWgmi/help/enterprz-Configur-4.html
/opt/SUNWgmi/help/enterprz-Configur-5.html
/opt/SUNWgmi/help/enterprz-Configur-6.html
/opt/SUNWgmi/help/enterprz-Configur-7.html
/opt/SUNWgmi/help/enterprz-Configur-8.html
/opt/SUNWgmi/help/enterprz-Configur-9.html
/opt/SUNWgmi/help/enterprz-Configur.html
/opt/SUNWgmi/help/enterprz-Contents.html
/opt/SUNWgmi/help/enterprz-Diagnost.html
/opt/SUNWgmi/help/enterprz-Getting.html
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/enterprz-Index.html
/opt/SUNWgmi/help/enterprz-Managing.html
/opt/SUNWgmi/help/enterprz-Overview.html
/opt/SUNWgmi/help/enterprz-Preface.html
/opt/SUNWgmi/help/enterprz-Resource.html
/opt/SUNWgmi/help/enterprz-SNA.html
/opt/SUNWgmi/help/enterprz-Troubles.html
/opt/SUNWgmi/help/enterprz-Users.html
/opt/SUNWgmi/help/enterprz-Using-2.html
/opt/SUNWgmi/help/enterprz-Using.html
/opt/SUNWgmi/help/enterprz.html
/opt/SUNWgmi/help/graphics/acme_x.gif
/opt/SUNWgmi/help/graphics/act_time.gif
/opt/SUNWgmi/help/graphics/cchana.gif
/opt/SUNWgmi/help/graphics/cchanb.gif
/opt/SUNWgmi/help/graphics/cconfig.gif
/opt/SUNWgmi/help/graphics/ccpu2a.gif
/opt/SUNWgmi/help/graphics/ccpu2b.gif
/opt/SUNWgmi/help/graphics/ceo_x.gif
/opt/SUNWgmi/help/graphics/cgrp.gif
/opt/SUNWgmi/help/graphics/cilua.gif
/opt/SUNWgmi/help/graphics/cilub.gif
/opt/SUNWgmi/help/graphics/clana.gif
/opt/SUNWgmi/help/graphics/clanb.gif
/opt/SUNWgmi/help/graphics/cli_conn.gif
/opt/SUNWgmi/help/graphics/clicence.gif
/opt/SUNWgmi/help/graphics/client_conn.gif
/opt/SUNWgmi/help/graphics/clpu2a.gif
/opt/SUNWgmi/help/graphics/clpu2b.gif
/opt/SUNWgmi/help/graphics/clua.gif
/opt/SUNWgmi/help/graphics/club.gif
/opt/SUNWgmi/help/graphics/cmgr.gif
/opt/SUNWgmi/help/graphics/cmodea.gif
/opt/SUNWgmi/help/graphics/cmodeb.gif
/opt/SUNWgmi/help/graphics/cnt_logo.gif
/opt/SUNWgmi/help/graphics/config.gif
/opt/SUNWgmi/help/graphics/console.gif
/opt/SUNWgmi/help/graphics/cplua.gif
/opt/SUNWgmi/help/graphics/cplub.gif
/opt/SUNWgmi/help/graphics/cpool.gif
/opt/SUNWgmi/help/graphics/cqllca.gif
/opt/SUNWgmi/help/graphics/cqllcb.gif
/opt/SUNWgmi/help/graphics/cqpu2a.gif
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/cqpu2b.gif
/opt/SUNWgmi/help/graphics/csaaa.gif
/opt/SUNWgmi/help/graphics/csaab.gif
/opt/SUNWgmi/help/graphics/csaapa.gif
/opt/SUNWgmi/help/graphics/csaapb.gif
/opt/SUNWgmi/help/graphics/csdlca.gif
/opt/SUNWgmi/help/graphics/csdlcasu.gif
/opt/SUNWgmi/help/graphics/csdlcb.gif
/opt/SUNWgmi/help/graphics/csec.gif
/opt/SUNWgmi/help/graphics/cseca.gif
/opt/SUNWgmi/help/graphics/cspu2a.gif
/opt/SUNWgmi/help/graphics/cspu2b.gif
/opt/SUNWgmi/help/graphics/csvra.gif
/opt/SUNWgmi/help/graphics/csvrb.gif
/opt/SUNWgmi/help/graphics/csysa.gif
/opt/SUNWgmi/help/graphics/csysb.gif
/opt/SUNWgmi/help/graphics/ctpa.gif
/opt/SUNWgmi/help/graphics/ctpb.gif
/opt/SUNWgmi/help/graphics/ctrace.gif
/opt/SUNWgmi/help/graphics/cusera.gif
/opt/SUNWgmi/help/graphics/cuserb.gif
/opt/SUNWgmi/help/graphics/dchana.gif
/opt/SUNWgmi/help/graphics/dchanb.gif
/opt/SUNWgmi/help/graphics/dconfig.gif
/opt/SUNWgmi/help/graphics/dconnect.gif
/opt/SUNWgmi/help/graphics/dcpu2a.gif
/opt/SUNWgmi/help/graphics/dcpu2b.gif
/opt/SUNWgmi/help/graphics/dfmt.gif
/opt/SUNWgmi/help/graphics/dgateway.gif
/opt/SUNWgmi/help/graphics/dgrp.gif
/opt/SUNWgmi/help/graphics/dilua.gif
/opt/SUNWgmi/help/graphics/dilub.gif
/opt/SUNWgmi/help/graphics/dirctry.gif
/opt/SUNWgmi/help/graphics/dlana.gif
/opt/SUNWgmi/help/graphics/dlanb.gif
/opt/SUNWgmi/help/graphics/dlicence.gif
/opt/SUNWgmi/help/graphics/dlpu2a.gif
/opt/SUNWgmi/help/graphics/dlpu2b.gif
/opt/SUNWgmi/help/graphics/dlua.gif
/opt/SUNWgmi/help/graphics/dlub.gif
/opt/SUNWgmi/help/graphics/dmgr.gif
/opt/SUNWgmi/help/graphics/dmodea.gif
/opt/SUNWgmi/help/graphics/dmodeb.gif
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/dmullu1.gif
/opt/SUNWgmi/help/graphics/dmullu2.gif
/opt/SUNWgmi/help/graphics/dnsdb.gif
/opt/SUNWgmi/help/graphics/dnsex.gif
/opt/SUNWgmi/help/graphics/dnssub.gif
/opt/SUNWgmi/help/graphics/dplua.gif
/opt/SUNWgmi/help/graphics/dplub.gif
/opt/SUNWgmi/help/graphics/dpool.gif
/opt/SUNWgmi/help/graphics/dqllca.gif
/opt/SUNWgmi/help/graphics/dqllcb.gif
/opt/SUNWgmi/help/graphics/dqpu2a.gif
/opt/SUNWgmi/help/graphics/dqpu2b.gif
/opt/SUNWgmi/help/graphics/dsaaa.gif
/opt/SUNWgmi/help/graphics/dsaab.gif
/opt/SUNWgmi/help/graphics/dsaapa.gif
/opt/SUNWgmi/help/graphics/dsaapb.gif
/opt/SUNWgmi/help/graphics/dsdlca.gif
/opt/SUNWgmi/help/graphics/dsdlcb.gif
/opt/SUNWgmi/help/graphics/dsec.gif
/opt/SUNWgmi/help/graphics/dseca.gif
/opt/SUNWgmi/help/graphics/dspu2a.gif
/opt/SUNWgmi/help/graphics/dspu2b.gif
/opt/SUNWgmi/help/graphics/dsvra.gif
/opt/SUNWgmi/help/graphics/dsvrb.gif
/opt/SUNWgmi/help/graphics/dsysa.gif
/opt/SUNWgmi/help/graphics/dsysb.gif
/opt/SUNWgmi/help/graphics/dtpa.gif
/opt/SUNWgmi/help/graphics/dtpb.gif
/opt/SUNWgmi/help/graphics/dtrace.gif
/opt/SUNWgmi/help/graphics/dusera.gif
/opt/SUNWgmi/help/graphics/duserb.gif
/opt/SUNWgmi/help/graphics/empty.gif
/opt/SUNWgmi/help/graphics/ether.gif
/opt/SUNWgmi/help/graphics/fig2_1.gif
/opt/SUNWgmi/help/graphics/fig2_2.gif
/opt/SUNWgmi/help/graphics/fig2_3.gif
/opt/SUNWgmi/help/graphics/fig2_4.gif
/opt/SUNWgmi/help/graphics/fig2_5.gif
/opt/SUNWgmi/help/graphics/fig4_3.gif
/opt/SUNWgmi/help/graphics/figb_1.gif
/opt/SUNWgmi/help/graphics/figb_2.gif
/opt/SUNWgmi/help/graphics/figb_3.gif
/opt/SUNWgmi/help/graphics/figb_4.gif
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/figb_5.gif
/opt/SUNWgmi/help/graphics/filetran.gif
/opt/SUNWgmi/help/graphics/fmtdrop.gif
/opt/SUNWgmi/help/graphics/grayname.gif
/opt/SUNWgmi/help/graphics/group.gif
/opt/SUNWgmi/help/graphics/ilu.gif
/opt/SUNWgmi/help/graphics/ilusess.gif
/opt/SUNWgmi/help/graphics/ipx.gif
/opt/SUNWgmi/help/graphics/ipxport.gif
/opt/SUNWgmi/help/graphics/lanex.gif
/opt/SUNWgmi/help/graphics/locked.gif
/opt/SUNWgmi/help/graphics/lu.gif
/opt/SUNWgmi/help/graphics/lu0.gif
/opt/SUNWgmi/help/graphics/lu1.gif
/opt/SUNWgmi/help/graphics/lu2.gif
/opt/SUNWgmi/help/graphics/lu3.gif
/opt/SUNWgmi/help/graphics/lu6.gif
/opt/SUNWgmi/help/graphics/lu62usr.gif
/opt/SUNWgmi/help/graphics/lustat.gif
/opt/SUNWgmi/help/graphics/manager.gif
/opt/SUNWgmi/help/graphics/maximize.gif
/opt/SUNWgmi/help/graphics/mcnfcont.gif
/opt/SUNWgmi/help/graphics/mcnfed.gif
/opt/SUNWgmi/help/graphics/mevlog.gif
/opt/SUNWgmi/help/graphics/mfile.gif
/opt/SUNWgmi/help/graphics/mhelp.gif
/opt/SUNWgmi/help/graphics/minimize.gif
/opt/SUNWgmi/help/graphics/mode.gif
/opt/SUNWgmi/help/graphics/mopt.gif
/opt/SUNWgmi/help/graphics/msvrcont.gif
/opt/SUNWgmi/help/graphics/msvred.gif
/opt/SUNWgmi/help/graphics/mtrace.gif
/opt/SUNWgmi/help/graphics/multilu.gif
/opt/SUNWgmi/help/graphics/mwin.gif
/opt/SUNWgmi/help/graphics/next.gif
/opt/SUNWgmi/help/graphics/open_c.gif
/opt/SUNWgmi/help/graphics/oper_x.gif
/opt/SUNWgmi/help/graphics/operator.gif
/opt/SUNWgmi/help/graphics/paper.gif
/opt/SUNWgmi/help/graphics/partner.gif
/opt/SUNWgmi/help/graphics/pool.gif
/opt/SUNWgmi/help/graphics/pool2.gif
/opt/SUNWgmi/help/graphics/pool_x.gif
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/poolmib.gif
/opt/SUNWgmi/help/graphics/poolstat.gif
/opt/SUNWgmi/help/graphics/popconf.gif
/opt/SUNWgmi/help/graphics/popsvr.gif
/opt/SUNWgmi/help/graphics/port.gif
/opt/SUNWgmi/help/graphics/ppoolst.gif
/opt/SUNWgmi/help/graphics/previous.gif
/opt/SUNWgmi/help/graphics/pu2.gif
/opt/SUNWgmi/help/graphics/qllcline.gif
/opt/SUNWgmi/help/graphics/rtmstat.gif
/opt/SUNWgmi/help/graphics/save_now.gif
/opt/SUNWgmi/help/graphics/save_typ.gif
/opt/SUNWgmi/help/graphics/saveasd.gif
/opt/SUNWgmi/help/graphics/scoped.gif
/opt/SUNWgmi/help/graphics/scopepop.gif
/opt/SUNWgmi/help/graphics/scopew.gif
/opt/SUNWgmi/help/graphics/sdlcex.gif
/opt/SUNWgmi/help/graphics/sdlcline.gif
/opt/SUNWgmi/help/graphics/secver.gif
/opt/SUNWgmi/help/graphics/server.gif
/opt/SUNWgmi/help/graphics/smiley.gif
/opt/SUNWgmi/help/graphics/snaappn.gif
/opt/SUNWgmi/help/graphics/snaenter.gif
/opt/SUNWgmi/help/graphics/statline.gif
/opt/SUNWgmi/help/graphics/statlu.gif
/opt/SUNWgmi/help/graphics/stipple.gif
/opt/SUNWgmi/help/graphics/sysmenu.gif
/opt/SUNWgmi/help/graphics/system.gif
/opt/SUNWgmi/help/graphics/tb-conf.gif
/opt/SUNWgmi/help/graphics/tb-conn.gif
/opt/SUNWgmi/help/graphics/tb-copy.gif
/opt/SUNWgmi/help/graphics/tb-delet.gif
/opt/SUNWgmi/help/graphics/tb-disab.gif
/opt/SUNWgmi/help/graphics/tb-disc.gif
/opt/SUNWgmi/help/graphics/tb-enabl.gif
/opt/SUNWgmi/help/graphics/tb-move.gif
/opt/SUNWgmi/help/graphics/tb-new.gif
/opt/SUNWgmi/help/graphics/tb-open.gif
/opt/SUNWgmi/help/graphics/tb-save.gif
/opt/SUNWgmi/help/graphics/tb-undel.gif
/opt/SUNWgmi/help/graphics/tb-undo.gif
/opt/SUNWgmi/help/graphics/tb-wconf.gif
/opt/SUNWgmi/help/graphics/tb-wconfs.gif
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/tb-wmgrs.gif
/opt/SUNWgmi/help/graphics/tb-wops.gif
/opt/SUNWgmi/help/graphics/tb-wres.gif
/opt/SUNWgmi/help/graphics/tbldrop.gif
/opt/SUNWgmi/help/graphics/tbmain.gif
/opt/SUNWgmi/help/graphics/tocbutt.gif
/opt/SUNWgmi/help/graphics/top.gif
/opt/SUNWgmi/help/graphics/tp.gif
/opt/SUNWgmi/help/graphics/tpaccess.gif
/opt/SUNWgmi/help/graphics/trace.gif
/opt/SUNWgmi/help/graphics/trline.gif
/opt/SUNWgmi/help/graphics/up.gif
/opt/SUNWgmi/help/graphics/user.gif
/opt/SUNWgmi/help/graphics/wappl.gif
/opt/SUNWgmi/help/graphics/wconfigs.gif
/opt/SUNWgmi/help/graphics/wconnect.gif
/opt/SUNWgmi/help/graphics/wlicence.gif
/opt/SUNWgmi/help/graphics/wlog.gif
/opt/SUNWgmi/help/graphics/wmgrs.gif
/opt/SUNWgmi/help/graphics/wres.gif
/opt/SUNWgmi/help/graphics/wtools.gif
/opt/SUNWgmi/help/graphics/wtrace.gif
/opt/SUNWgmi/remoteSunscope.sh
/opt/SUNWgmi/sungmi.sh.template
/opt/SUNWgmi/sunscope
/opt/SUNWgmi/sunsetup
[ verifying class <none> ]
## Executing postinstall script.


                    Sun Microsystems, Inc.
              SunLink IBM Connectivity 9.1 / SNA Graphical Management Interface
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWgmi installation activity is logged to /opt/SUNWgmi/log.SUNWGMI


Saving system files...
/bin/cp /etc/services /etc/services.SUNWGMI
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
Creating bin for SUN_OEM directories...

Linking executables into /opt/SUNWgmi...
sungmi
Installing SunGMI resource file into /usr/lib/X11/app-defaults

Updating /etc/services...


Installation of <SUNWgmi> was successful.

Processing package instance <SUNWlicsw> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

FlexLM License System
(sparc) 4.2
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   4 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlicsw> [y,n,?] y

Installing FlexLM License System as <SUNWlicsw>

## Executing preinstall script.
## Installing part 1 of 1.
/etc/init.d/lic_mgr
/etc/opt/licenses/lic.SUNW <symbolic link>
/etc/opt/licenses/lmdiag <symbolic link>
/etc/opt/licenses/lmdown <symbolic link>
/etc/opt/licenses/lmgrd.ste <symbolic link>
/etc/opt/licenses/lmhostid <symbolic link>
/etc/opt/licenses/lmremove <symbolic link>
/etc/opt/licenses/lmreread <symbolic link>
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/etc/opt/licenses/lmstat <symbolic link>
/etc/opt/licenses/lmver <symbolic link>
/etc/opt/licenses/suntechd <symbolic link>
/opt/SUNWste/bin/lic.SUNW <symbolic link>
/opt/SUNWste/bin/lmdiag <symbolic link>
/opt/SUNWste/bin/lmdown <symbolic link>
/opt/SUNWste/bin/lmgrd.ste <symbolic link>
/opt/SUNWste/bin/lmhostid <symbolic link>
/opt/SUNWste/bin/lmremove <symbolic link>
/opt/SUNWste/bin/lmreread <symbolic link>
/opt/SUNWste/bin/lmstat <symbolic link>
/opt/SUNWste/bin/lmutil <symbolic link>
/opt/SUNWste/bin/lmver <symbolic link>
/opt/SUNWste/bin/suntechd <symbolic link>
/opt/SUNWste/license_tools/License_Request_Form
/opt/SUNWste/license_tools/daemon_options
/opt/SUNWste/license_tools/lic.SUNW
/opt/SUNWste/license_tools/lmdiag
/opt/SUNWste/license_tools/lmdown
/opt/SUNWste/license_tools/lmgrd.ste
/opt/SUNWste/license_tools/lmhostid
/opt/SUNWste/license_tools/lmremove
/opt/SUNWste/license_tools/lmreread
/opt/SUNWste/license_tools/lmstat
/opt/SUNWste/license_tools/lmutil
/opt/SUNWste/license_tools/lmver
/opt/SUNWste/license_tools/man/man1/lmdown.1
/opt/SUNWste/license_tools/man/man1/lmgrd.ste.1
/opt/SUNWste/license_tools/man/man1/lmhostid.1
/opt/SUNWste/license_tools/man/man1/lmremove.1
/opt/SUNWste/license_tools/man/man1/lmreread.1
/opt/SUNWste/license_tools/man/man1/lmstat.1
/opt/SUNWste/license_tools/man/man1/lmutil.1
/opt/SUNWste/license_tools/man/man1/lmver.1
/opt/SUNWste/license_tools/man/man3/license_errors.3
/opt/SUNWste/license_tools/suntechd
/opt/SUNWste/man/man1/lmdown.1 <symbolic link>
/opt/SUNWste/man/man1/lmgrd.ste.1 <symbolic link>
/opt/SUNWste/man/man1/lmhostid.1 <symbolic link>
/opt/SUNWste/man/man1/lmremove.1 <symbolic link>
/opt/SUNWste/man/man1/lmreread.1 <symbolic link>
/opt/SUNWste/man/man1/lmstat.1 <symbolic link>
/opt/SUNWste/man/man1/lmutil.1 <symbolic link>
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWste/man/man1/lmver.1 <symbolic link>
/opt/SUNWste/man/man3/license_errors.3 <symbolic link>
[ verifying class <none> ]
/etc/rc2.d/S85lmgrd <linked pathname>
## Executing postinstall script.
IF YOU ARE NOT INSTALLING LICENSES USING lit, PLEASE RESTART THE
LICENSE DAEMON By RUNNING THE COMMAND /etc/rc2.d/S85lmgrd

Installation of <SUNWlicsw> was successful.

Processing package instance <SUNWlit> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

STE License Installation Tool
(sparc) 4.0
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   6 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlit> [y,n,?] y

Installing STE License Installation Tool as <SUNWlit>

## Installing part 1 of 1.
/etc/opt/licenses/lic2.0_reconfig <symbolic link>
/etc/opt/licenses/lit <symbolic link>
/etc/opt/licenses/lit_tty <symbolic link>
/opt/SUNWste/bin/lit <symbolic link>
/opt/SUNWste/bin/lit_tty <symbolic link>
/opt/SUNWste/license_tools/.litphones <symbolic link>
/opt/SUNWste/license_tools/LIC_CONFIG_FILE
/opt/SUNWste/license_tools/config_template
/opt/SUNWste/license_tools/lic2.0_reconfig
/opt/SUNWste/license_tools/lit
/opt/SUNWste/license_tools/lit_tty
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWste/license_tools/locale/C/LC_MESSAGES/.litphones
[ verifying class <none> ]
## Executing postinstall script.

Installation of <SUNWlit> was successful.

Processing package instance <SUNWlu62> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SNA Logical Unit Type 6.2
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.0 / SNA
Logical Unit Type 6.2 on gajendra.

Do you wish to continue (Yes/No) [Y]? y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlu62> [y,n,?] y

Installing SNA Logical Unit Type 6.2 as <SUNWlu62>

## Installing part 1 of 1.
/opt/SUNWlu62/BMD/BCFG_msglib
/opt/SUNWlu62/BMD/CSRV_msglib
/opt/SUNWlu62/BMD/LU62_msglib
/opt/SUNWlu62/BMD/XSVC_msglib
/opt/SUNWlu62/VERSION
/opt/SUNWlu62/liblu62.so
/opt/SUNWlu62/libsunp2p.so
/opt/SUNWlu62/sunlu6.2
[ verifying class <none> ]
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
## Executing postinstall script.


                      Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA Logical Unit Type 6.2
                      for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWlu62 installation activity is logged to /opt/SUNWlu62/log.SUNWLU62


Reading SUNWpu21.info for working directory...

Linking executables into /usr/SUNWpu21...
sunlu6.2

Copying BMD message files into /usr/SUNWpu21/BMD...

Setting up working environment...
Updating LU6.2 shared libraries symbolic links

SUNWlu62 Installation Complete


Installation of <SUNWlu62> was successful.

Processing package instance <SUNWntvw> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SNA NetView/SunNet Manager Gateway
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWntvw> [y,n,?] y

Installing SNA NetView/SunNet Manager Gateway as <SUNWntvw>

## Installing part 1 of 1.
/opt/SUNWntvw/BMD/BSNM_msglib
/opt/SUNWntvw/BMD/UNVW_msglib
/opt/SUNWntvw/VERSION
/opt/SUNWntvw/sunpu2.config.snm
/opt/SUNWntvw/sunsnm
/opt/SUNWntvw/sunsnm.config
/opt/SUNWntvw/sunsnm.defaults
[ verifying class <none> ]
## Executing postinstall script.


                    Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA SunNet Manager Gateway
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are installing the software for SunLink IBM Connectivity 9.1 / SNA SunNet
Manager Gateway on gajendra.

SUNWntvw installation activity is logged to /opt/SUNWntvw/log.SUNWntvw


Saving /etc/services as /etc/services.SUNWntvw...

SUNWntvw Installation Complete...


Installation of <SUNWntvw> was successful.

Processing package instance <SUNWopcl> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SunLink 3270 Open Client 9.1
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWopcl> [y,n,?] y

Installing SunLink 3270 Open Client 9.1 as <SUNWopcl>

## Installing part 1 of 1.
/opt/SUNWopcl/BMD/B327_msglib
/opt/SUNWopcl/BMD/B387_msglib
/opt/SUNWopcl/BMD/I327_msglib
/opt/SUNWopcl/BMD/KBDM_msglib
/opt/SUNWopcl/NAEnglishCaps
/opt/SUNWopcl/README.gddm
/opt/SUNWopcl/SpanishAsciiEbcdicTable
/opt/SUNWopcl/VERSION
/opt/SUNWopcl/ehllapi.h
/opt/SUNWopcl/ehllapi.o
/opt/SUNWopcl/gddmPat1
/opt/SUNWopcl/gddmPat10
/opt/SUNWopcl/gddmPat11
/opt/SUNWopcl/gddmPat12
/opt/SUNWopcl/gddmPat13
/opt/SUNWopcl/gddmPat14
/opt/SUNWopcl/gddmPat2
/opt/SUNWopcl/gddmPat3
/opt/SUNWopcl/gddmPat4
/opt/SUNWopcl/gddmPat5
/opt/SUNWopcl/gddmPat6
/opt/SUNWopcl/gddmPat7
/opt/SUNWopcl/gddmPat8
/opt/SUNWopcl/gddmPat9
/opt/SUNWopcl/kbds/sunkeKbd.hppa
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWopcl/kbds/sunkeKbd.i86
/opt/SUNWopcl/kbds/sunkeKbd.rs6000
/opt/SUNWopcl/kbds/sunkeKbd.sco
/opt/SUNWopcl/kbds/sunkeKbd.sol86
/opt/SUNWopcl/kbds/sunkeKbd.sun4
/opt/SUNWopcl/kbds/sunkeKbd.sun4.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.2
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.3
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5c.solaris2.4
/opt/SUNWopcl/pcatGeom
/opt/SUNWopcl/pcft
/opt/SUNWopcl/prg_samples/Makefile
/opt/SUNWopcl/prg_samples/playback
/opt/SUNWopcl/prg_samples/playback.c
/opt/SUNWopcl/prg_samples/query
/opt/SUNWopcl/prg_samples/query.c
/opt/SUNWopcl/prg_samples/record
/opt/SUNWopcl/prg_samples/record.c
/opt/SUNWopcl/res_example
/opt/SUNWopcl/sun3270map
/opt/SUNWopcl/sun3270tty
/opt/SUNWopcl/sun3270x
/opt/SUNWopcl/sun3287
/opt/SUNWopcl/sun4Geom
/opt/SUNWopcl/sun5Geom
/opt/SUNWopcl/sunke
/opt/SUNWopcl/sunkeMap
/opt/SUNWopcl/suntn3270tty
/opt/SUNWopcl/suntn3270x
/opt/SUNWopcl/vt100-3270.tic
[ verifying class <none> ]
## Executing postinstall script.


                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SunLink 3270 Open Client
                        for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
You are installing the software for SunLink IBM Connectivity 9.1 / SunLink 3270
Open Client on gajendra.

SUNWopcl installation activity is logged to /opt/SUNWopcl/log.SUNWopcl


Updating /etc/services...
No licenses available to insert.
Make sure to run the license insertion tool or the license configuration script
on this machine.

SUNWopcl Installation Complete...


Installation of <SUNWopcl> was successful.

Processing package instance <SUNWpu21> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SNA PU2.1 Server
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Physical Unit Type 2.1 on gajendra.

Do you wish to continue (Yes/No) [Y]? y

Install SDLC pseudo-device-driver (Yes/No) [Y]? y

Install LLC pseudo-device-driver (Yes/No) [Y]? y

Install SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1 boot script
(Yes/No) [Y]? y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   5 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
The following files are already installed on the system and are being
used by another package:
* /opt/SUNWpu21/sunpu2.1
* /opt/SUNWpu21/sunpu2.1.adm

* - conflict with a file which does not belong to any package.

Do you want to install these conflicting files [y,n,?,q] y
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWpu21> [y,n,?] y

Installing SNA PU2.1 Server as <SUNWpu21>

## Installing part 1 of 1.
/opt/SUNWpu21/ARCH_sun4_oem_sunos5.4
/opt/SUNWpu21/BMD/B327_msglib
/opt/SUNWpu21/BMD/BCFG_msglib
/opt/SUNWpu21/BMD/BCPD_msglib
/opt/SUNWpu21/BMD/BLLC_msglib
/opt/SUNWpu21/BMD/BMSG_msglib
/opt/SUNWpu21/BMD/BSCA_msglib
/opt/SUNWpu21/BMD/BSCD_msglib
/opt/SUNWpu21/BMD/CSRV_msglib
/opt/SUNWpu21/BMD/LLCD_msglib
/opt/SUNWpu21/BMD/LLCI_msglib
/opt/SUNWpu21/BMD/LU62_msglib
/opt/SUNWpu21/BMD/OP20_msglib
/opt/SUNWpu21/BMD/PU20_msglib
/opt/SUNWpu21/BMD/PU21_msglib
/opt/SUNWpu21/BMD/PUNS_msglib
/opt/SUNWpu21/BMD/QLLC_msglib
/opt/SUNWpu21/BMD/SDLC_msglib
/opt/SUNWpu21/BMD/SMAN_msglib
/opt/SUNWpu21/BMD/SNAS_msglib
/opt/SUNWpu21/BMD/TNET_msglib
/opt/SUNWpu21/BMD/XID3_msglib
/opt/SUNWpu21/BMD/XSVC_msglib
/opt/SUNWpu21/FullConvert.sh
/opt/SUNWpu21/RELEASE_NOTES_SUNOEM
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWpu21/SunPU21.rc
/opt/SUNWpu21/VERSION
/opt/SUNWpu21/VERSION_9.1
/opt/SUNWpu21/app.cat
/opt/SUNWpu21/bmsg
/opt/SUNWpu21/cntsdlc
/opt/SUNWpu21/cntsdlc.conf
/opt/SUNWpu21/cs_xid3
/opt/SUNWpu21/hsi_lldi
/opt/SUNWpu21/llc
/opt/SUNWpu21/llc.conf
/opt/SUNWpu21/llcd
/opt/SUNWpu21/llci
/opt/SUNWpu21/mib.txt
/opt/SUNWpu21/p2p_awk
/opt/SUNWpu21/scoped
/opt/SUNWpu21/scoped.conf
/opt/SUNWpu21/suncpd
/opt/SUNWpu21/sunftpd
/opt/SUNWpu21/sunftpd.sh
/opt/SUNWpu21/sunop
/opt/SUNWpu21/sunop.ini
/opt/SUNWpu21/sunpu2.1
/opt/SUNWpu21/sunpu2.1.adm
/opt/SUNWpu21/sunscope
/opt/SUNWpu21/sunsetup
/opt/SUNWpu21/sunsman
[ verifying class <none> ]
## Executing postinstall script.


                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1
                        for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWpu21 installation activity is logged to /opt/SUNWpu21/log.SUNWPU21


Saving system files...
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
/bin/cp /etc/path_to_inst /etc/path_to_inst.SUNWPU21
/bin/cp /etc/iu.ap /etc/iu.ap.SUNWPU21
/bin/cp /etc/devlink.tab /etc/devlink.tab.SUNWPU21
/bin/cp /etc/system /etc/system.SUNWPU21
/bin/cp /etc/services /etc/services.SUNWPU21

Creating standard directories...

Installing startup scripts...
/etc/rc2.d/S89SunPU21

Updating /etc/services...

Updating HSI_LLDI STREAMS module...

Updating XID3 STREAMS module...

Updating SDLC STREAMS Driver...

Updating LLCI STREAMS module...

Updating LLCD STREAMS module...

Updating LLC STREAMS Driver...

Updating Scope STREAMS Driver...

Updating LU6.2 dependencies...
Updating LU6.2 symbolic links...
Updating LU6.2 library...

SunLU6.2 is present on this installation.  If any transaction programs
are to be invoked onto this SunPU2.1 SNA End Node Server, then you
must manually add the user "sunlu62" to your /etc/passwd file or
NIS password database.  Please consult your system administrator
for instructions on how to do this.

No licenses available to insert.
Make sure to run the license insertion tool or the license configuration script
on this machine.

SUNWpu21 Installation Complete...
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

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

NOTE:
The SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1 has now been
installed on your
system.  To start the product, you can run the startup script
as shown below:
     /etc/rc2.d/S89SunPU21 start
or reboot your system

************************************************************


SUNWpu21 Installation Complete...

Installation of <SUNWpu21> was successful.

Processing package instance <SUNWsaa> from
</cdrom/sunlink_ibm_sna_gateway_9_1_beta/Product>

SAA Server
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SAA
Server on gajendra.

Do you wish to continue (Yes/No) [Y]? y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWsaa> [y,n,?] y
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
Installing SAA Server as <SUNWsaa>

## Installing part 1 of 1.
/opt/SUNWsaa/BMD/BSAA_msglib
/opt/SUNWsaa/README
/opt/SUNWsaa/VERSION
/opt/SUNWsaa/sunsaa
[ verifying class <none> ]
## Executing postinstall script.


                    Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SAA Server
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWsaa installation activity is logged to /opt/SUNWsaa/log.SUNWSAA

SUNWsaa Installation Complete

Installation of <SUNWsaa> was successful.

The following packages are available:
  1  SUNWgman      SNA Gateway Manager
                   (sparc) 9.1
  2  SUNWgmi       SNA Graphical Management Interface
                   (sparc) 9.1
  3  SUNWlicsw     FlexLM License System
                   (sparc) 4.2
  4  SUNWlit       STE License Installation Tool
                   (sparc) 4.0
  5  SUNWlu62      SNA Logical Unit Type 6.2
                   (sparc) 9.1
  6  SUNWntvw      SNA NetView/SunNet Manager Gateway
                   (sparc) 9.1
  7  SUNWopcl      SunLink 3270 Open Client 9.1
                   (sparc) 9.1
  8  SUNWpu21      SNA PU2.1 Server
                   (sparc) 9.1
  9  SUNWsaa       SAA Server
```

Code Example A-1 SunLink IBM Gateway 9.1 Software Installation Log *(Continued)*

```
                  (sparc) 9.1
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]: q
```

A.1.2 Log for the SunLink RJE 3770 9.1 Software

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log

```
# cd /cdrom/sunlink_rje_3770_9_1_beta/Product
# pkgadd -d .

The following packages are available:
  1  SUNW3770      3770 Device Emulator
                   (sparc) 9.1
  2  SUNWgman      SNA Gateway Manager
                   (sparc) 9.1
  3  SUNWgmi       SNA Graphical Management Interface
                   (sparc) 9.1
  4  SUNWlicsw     FlexLM License System
                   (sparc) 4.2
  5  SUNWlit       STE License Installation Tool
                   (sparc) 4.0
  6  SUNWpu21      SNA PU2.1 Server
                   (sparc) 9.1

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

Processing package instance <SUNW3770> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

3770 Device Emulator
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNW3770> [y,n,?] y

Installing 3770 Device Emulator as <SUNW3770>

## Installing part 1 of 1.
/opt/SUNW3770/BMD/B377_msglib
/opt/SUNW3770/Sun3770
/opt/SUNW3770/VERSION
/opt/SUNW3770/jcl_get
/opt/SUNW3770/jcl_put
/opt/SUNW3770/job_end_script
/opt/SUNW3770/job_get
/opt/SUNW3770/job_put
/opt/SUNW3770/job_start_script
/opt/SUNW3770/sun3770
/opt/SUNW3770/sun_cmd
/opt/SUNW3770/sun_stripper.c
/opt/SUNW3770/suna2e
/opt/SUNW3770/sunaddq
/opt/SUNW3770/sunchgq
/opt/SUNW3770/sundelq
/opt/SUNW3770/sune2a
/opt/SUNW3770/sunlistq
/opt/SUNW3770/trn_jcl_get
/opt/SUNW3770/trn_jcl_put
/opt/SUNW3770/trn_job_end_script
/opt/SUNW3770/trn_job_get
/opt/SUNW3770/trn_job_put
/opt/SUNW3770/trn_job_start_script
[ verifying class <none> ]
## Executing postinstall script.


                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / 3770 Device Emulator
                        for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
You are installing the software for SunLink IBM Connectivity 9.1 / 3770 Device
Emulator on gajendra.

SUNW3770 installation activity is logged to /opt/SUNW3770/log.SUNW3770


Updating /etc/services...

SUNW3770 Installation Complete...


Installation of <SUNW3770> was successful.

Processing package instance <SUNWgman> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

SNA Gateway Manager
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Gateway Manager on gajendra.

Do you wish to continue (Yes/No) [Y]? y
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWgman> [y,n,?] y

Installing SNA Gateway Manager as <SUNWgman>

## Installing part 1 of 1.
/opt/SUNWgman/ARCH_sun4_oem_sunos5.4
/opt/SUNWgman/BMD/BCFG_msglib
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgman/BMD/BCPD_msglib
/opt/SUNWgman/BMD/BLMS_msglib
/opt/SUNWgman/BMD/BMSG_msglib
/opt/SUNWgman/BMD/GMAN_msglib
/opt/SUNWgman/BMD/XSVC_msglib
/opt/SUNWgman/RELEASE_NOTES_SUNOEM
/opt/SUNWgman/SunGMAN.rc
/opt/SUNWgman/VERSION
/opt/SUNWgman/VERSION_3.0.5-SUNOEM
/opt/SUNWgman/aud.awk
/opt/SUNWgman/audit_filter
/opt/SUNWgman/bmsg
/opt/SUNWgman/suncpd
/opt/SUNWgman/sungman
/opt/SUNWgman/sungmanmib.txt
/opt/SUNWgman/sunsetup
[ verifying class <none> ]
## Executing postinstall script.


                     Sun Microsystems, Inc.
                SunLink IBM Connectivity 9.1 / SNA Gateway Manager
                     for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWgman installation activity is logged to /opt/SUNWgman/log.SUNWGMAN


Saving system files...
/bin/cp /etc/services /etc/services.SUNWGMAN
SunLink message directory is /opt/SUNWgman/BMD
Setting up working environment...

Updating /etc/services...


************************************************************

NOTE:
The SUNWgman has now been installed on your system.  You must
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
run the SunLink SNA Server Configuration script (sunsetup)
to answer a few questions regarding the setup of the SunLink DNS
configuration and the SunLink Manager configuration.

***********************************************************

SUNWgman Installation Complete
Installation of <SUNWgman> was successful.

Processing package instance <SUNWgmi> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

SNA Graphical Management Interface
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Graphical Management Interface on gajendra.

Do you wish to continue (Yes/No) [Y]? y

The product can use the Mosaic or Netscape HTML browsers to view
the online help files provided in the installation package. If
the mosaic image is in your default path, you can accept the
default answer to the following question. If not, you can enter
the full pathname of the Mosaic or Netscape image below. If you
don't have a browser available, you can accept the default answer
and continue with the installation.

Use mosaic for reading the online help files (Yes/No) [Y]? y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   1 package pathname is already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWgmi> [y,n,?] y
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
Installing SNA Graphical Management Interface as <SUNWgmi>

## Installing part 1 of 1.
/opt/SUNWgmi/ARCH_sun4_oem_sunos5.4
/opt/SUNWgmi/BMD/BSCA_msglib
/opt/SUNWgmi/RELEASE_NOTES_SUNOEM
/opt/SUNWgmi/SunGMI.ad
/opt/SUNWgmi/VERSION
/opt/SUNWgmi/VERSION_3.0.5-SUNOEM
/opt/SUNWgmi/bin/sungmi
/opt/SUNWgmi/help/enterprz-Configur-10.html
/opt/SUNWgmi/help/enterprz-Configur-11.html
/opt/SUNWgmi/help/enterprz-Configur-12.html
/opt/SUNWgmi/help/enterprz-Configur-2.html
/opt/SUNWgmi/help/enterprz-Configur-3.html
/opt/SUNWgmi/help/enterprz-Configur-4.html
/opt/SUNWgmi/help/enterprz-Configur-5.html
/opt/SUNWgmi/help/enterprz-Configur-6.html
/opt/SUNWgmi/help/enterprz-Configur-7.html
/opt/SUNWgmi/help/enterprz-Configur-8.html
/opt/SUNWgmi/help/enterprz-Configur-9.html
/opt/SUNWgmi/help/enterprz-Configur.html
/opt/SUNWgmi/help/enterprz-Contents.html
/opt/SUNWgmi/help/enterprz-Diagnost.html
/opt/SUNWgmi/help/enterprz-Getting.html
/opt/SUNWgmi/help/enterprz-Index.html
/opt/SUNWgmi/help/enterprz-Managing.html
/opt/SUNWgmi/help/enterprz-Overview.html
/opt/SUNWgmi/help/enterprz-Preface.html
/opt/SUNWgmi/help/enterprz-Resource.html
/opt/SUNWgmi/help/enterprz-SNA.html
/opt/SUNWgmi/help/enterprz-Troubles.html
/opt/SUNWgmi/help/enterprz-Users.html
/opt/SUNWgmi/help/enterprz-Using-2.html
/opt/SUNWgmi/help/enterprz-Using.html
/opt/SUNWgmi/help/enterprz.html
/opt/SUNWgmi/help/graphics/acme_x.gif
/opt/SUNWgmi/help/graphics/act_time.gif
/opt/SUNWgmi/help/graphics/cchana.gif
/opt/SUNWgmi/help/graphics/cchanb.gif
/opt/SUNWgmi/help/graphics/cconfig.gif
/opt/SUNWgmi/help/graphics/ccpu2a.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/ccpu2b.gif
/opt/SUNWgmi/help/graphics/ceo_x.gif
/opt/SUNWgmi/help/graphics/cgrp.gif
/opt/SUNWgmi/help/graphics/cilua.gif
/opt/SUNWgmi/help/graphics/cilub.gif
/opt/SUNWgmi/help/graphics/clana.gif
/opt/SUNWgmi/help/graphics/clanb.gif
/opt/SUNWgmi/help/graphics/cli_conn.gif
/opt/SUNWgmi/help/graphics/clicence.gif
/opt/SUNWgmi/help/graphics/client_conn.gif
/opt/SUNWgmi/help/graphics/clpu2a.gif
/opt/SUNWgmi/help/graphics/clpu2b.gif
/opt/SUNWgmi/help/graphics/clua.gif
/opt/SUNWgmi/help/graphics/club.gif
/opt/SUNWgmi/help/graphics/cmgr.gif
/opt/SUNWgmi/help/graphics/cmodea.gif
/opt/SUNWgmi/help/graphics/cmodeb.gif
/opt/SUNWgmi/help/graphics/cnt_logo.gif
/opt/SUNWgmi/help/graphics/config.gif
/opt/SUNWgmi/help/graphics/console.gif
/opt/SUNWgmi/help/graphics/cplua.gif
/opt/SUNWgmi/help/graphics/cplub.gif
/opt/SUNWgmi/help/graphics/cpool.gif
/opt/SUNWgmi/help/graphics/cqllca.gif
/opt/SUNWgmi/help/graphics/cqllcb.gif
/opt/SUNWgmi/help/graphics/cqpu2a.gif
/opt/SUNWgmi/help/graphics/cqpu2b.gif
/opt/SUNWgmi/help/graphics/csaaa.gif
/opt/SUNWgmi/help/graphics/csaab.gif
/opt/SUNWgmi/help/graphics/csaapa.gif
/opt/SUNWgmi/help/graphics/csaapb.gif
/opt/SUNWgmi/help/graphics/csdlca.gif
/opt/SUNWgmi/help/graphics/csdlcasu.gif
/opt/SUNWgmi/help/graphics/csdlcb.gif
/opt/SUNWgmi/help/graphics/csec.gif
/opt/SUNWgmi/help/graphics/cseca.gif
/opt/SUNWgmi/help/graphics/cspu2a.gif
/opt/SUNWgmi/help/graphics/cspu2b.gif
/opt/SUNWgmi/help/graphics/csvra.gif
/opt/SUNWgmi/help/graphics/csvrb.gif
/opt/SUNWgmi/help/graphics/csysa.gif
/opt/SUNWgmi/help/graphics/csysb.gif
/opt/SUNWgmi/help/graphics/ctpa.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/ctpb.gif
/opt/SUNWgmi/help/graphics/ctrace.gif
/opt/SUNWgmi/help/graphics/cusera.gif
/opt/SUNWgmi/help/graphics/cuserb.gif
/opt/SUNWgmi/help/graphics/dchana.gif
/opt/SUNWgmi/help/graphics/dchanb.gif
/opt/SUNWgmi/help/graphics/dconfig.gif
/opt/SUNWgmi/help/graphics/dconnect.gif
/opt/SUNWgmi/help/graphics/dcpu2a.gif
/opt/SUNWgmi/help/graphics/dcpu2b.gif
/opt/SUNWgmi/help/graphics/dfmt.gif
/opt/SUNWgmi/help/graphics/dgateway.gif
/opt/SUNWgmi/help/graphics/dgrp.gif
/opt/SUNWgmi/help/graphics/dilua.gif
/opt/SUNWgmi/help/graphics/dilub.gif
/opt/SUNWgmi/help/graphics/dirctry.gif
/opt/SUNWgmi/help/graphics/dlana.gif
/opt/SUNWgmi/help/graphics/dlanb.gif
/opt/SUNWgmi/help/graphics/dlicence.gif
/opt/SUNWgmi/help/graphics/dlpu2a.gif
/opt/SUNWgmi/help/graphics/dlpu2b.gif
/opt/SUNWgmi/help/graphics/dlua.gif
/opt/SUNWgmi/help/graphics/dlub.gif
/opt/SUNWgmi/help/graphics/dmgr.gif
/opt/SUNWgmi/help/graphics/dmodea.gif
/opt/SUNWgmi/help/graphics/dmodeb.gif
/opt/SUNWgmi/help/graphics/dmullu1.gif
/opt/SUNWgmi/help/graphics/dmullu2.gif
/opt/SUNWgmi/help/graphics/dnsdb.gif
/opt/SUNWgmi/help/graphics/dnsex.gif
/opt/SUNWgmi/help/graphics/dnssub.gif
/opt/SUNWgmi/help/graphics/dplua.gif
/opt/SUNWgmi/help/graphics/dplub.gif
/opt/SUNWgmi/help/graphics/dpool.gif
/opt/SUNWgmi/help/graphics/dqllca.gif
/opt/SUNWgmi/help/graphics/dqllcb.gif
/opt/SUNWgmi/help/graphics/dqpu2a.gif
/opt/SUNWgmi/help/graphics/dqpu2b.gif
/opt/SUNWgmi/help/graphics/dsaaa.gif
/opt/SUNWgmi/help/graphics/dsaab.gif
/opt/SUNWgmi/help/graphics/dsaapa.gif
/opt/SUNWgmi/help/graphics/dsaapb.gif
/opt/SUNWgmi/help/graphics/dsdlca.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/dsdlcb.gif
/opt/SUNWgmi/help/graphics/dsec.gif
/opt/SUNWgmi/help/graphics/dseca.gif
/opt/SUNWgmi/help/graphics/dspu2a.gif
/opt/SUNWgmi/help/graphics/dspu2b.gif
/opt/SUNWgmi/help/graphics/dsvra.gif
/opt/SUNWgmi/help/graphics/dsvrb.gif
/opt/SUNWgmi/help/graphics/dsysa.gif
/opt/SUNWgmi/help/graphics/dsysb.gif
/opt/SUNWgmi/help/graphics/dtpa.gif
/opt/SUNWgmi/help/graphics/dtpb.gif
/opt/SUNWgmi/help/graphics/dtrace.gif
/opt/SUNWgmi/help/graphics/dusera.gif
/opt/SUNWgmi/help/graphics/duserb.gif
/opt/SUNWgmi/help/graphics/empty.gif
/opt/SUNWgmi/help/graphics/ether.gif
/opt/SUNWgmi/help/graphics/fig2_1.gif
/opt/SUNWgmi/help/graphics/fig2_2.gif
/opt/SUNWgmi/help/graphics/fig2_3.gif
/opt/SUNWgmi/help/graphics/fig2_4.gif
/opt/SUNWgmi/help/graphics/fig2_5.gif
/opt/SUNWgmi/help/graphics/fig4_3.gif
/opt/SUNWgmi/help/graphics/figb_1.gif
/opt/SUNWgmi/help/graphics/figb_2.gif
/opt/SUNWgmi/help/graphics/figb_3.gif
/opt/SUNWgmi/help/graphics/figb_4.gif
/opt/SUNWgmi/help/graphics/figb_5.gif
/opt/SUNWgmi/help/graphics/filetran.gif
/opt/SUNWgmi/help/graphics/fmtdrop.gif
/opt/SUNWgmi/help/graphics/grayname.gif
/opt/SUNWgmi/help/graphics/group.gif
/opt/SUNWgmi/help/graphics/ilu.gif
/opt/SUNWgmi/help/graphics/ilusess.gif
/opt/SUNWgmi/help/graphics/ipx.gif
/opt/SUNWgmi/help/graphics/ipxport.gif
/opt/SUNWgmi/help/graphics/lanex.gif
/opt/SUNWgmi/help/graphics/locked.gif
/opt/SUNWgmi/help/graphics/lu.gif
/opt/SUNWgmi/help/graphics/lu0.gif
/opt/SUNWgmi/help/graphics/lu1.gif
/opt/SUNWgmi/help/graphics/lu2.gif
/opt/SUNWgmi/help/graphics/lu3.gif
/opt/SUNWgmi/help/graphics/lu6.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/lu62usr.gif
/opt/SUNWgmi/help/graphics/lustat.gif
/opt/SUNWgmi/help/graphics/manager.gif
/opt/SUNWgmi/help/graphics/maximize.gif
/opt/SUNWgmi/help/graphics/mcnfcont.gif
/opt/SUNWgmi/help/graphics/mcnfed.gif
/opt/SUNWgmi/help/graphics/mevlog.gif
/opt/SUNWgmi/help/graphics/mfile.gif
/opt/SUNWgmi/help/graphics/mhelp.gif
/opt/SUNWgmi/help/graphics/minimize.gif
/opt/SUNWgmi/help/graphics/mode.gif
/opt/SUNWgmi/help/graphics/mopt.gif
/opt/SUNWgmi/help/graphics/msvrcont.gif
/opt/SUNWgmi/help/graphics/msvred.gif
/opt/SUNWgmi/help/graphics/mtrace.gif
/opt/SUNWgmi/help/graphics/multilu.gif
/opt/SUNWgmi/help/graphics/mwin.gif
/opt/SUNWgmi/help/graphics/next.gif
/opt/SUNWgmi/help/graphics/open_c.gif
/opt/SUNWgmi/help/graphics/oper_x.gif
/opt/SUNWgmi/help/graphics/operator.gif
/opt/SUNWgmi/help/graphics/paper.gif
/opt/SUNWgmi/help/graphics/partner.gif
/opt/SUNWgmi/help/graphics/pool.gif
/opt/SUNWgmi/help/graphics/pool2.gif
/opt/SUNWgmi/help/graphics/pool_x.gif
/opt/SUNWgmi/help/graphics/poolmib.gif
/opt/SUNWgmi/help/graphics/poolstat.gif
/opt/SUNWgmi/help/graphics/popconf.gif
/opt/SUNWgmi/help/graphics/popsvr.gif
/opt/SUNWgmi/help/graphics/port.gif
/opt/SUNWgmi/help/graphics/ppoolst.gif
/opt/SUNWgmi/help/graphics/previous.gif
/opt/SUNWgmi/help/graphics/pu2.gif
/opt/SUNWgmi/help/graphics/qllcline.gif
/opt/SUNWgmi/help/graphics/rtmstat.gif
/opt/SUNWgmi/help/graphics/save_now.gif
/opt/SUNWgmi/help/graphics/save_typ.gif
/opt/SUNWgmi/help/graphics/saveasd.gif
/opt/SUNWgmi/help/graphics/scoped.gif
/opt/SUNWgmi/help/graphics/scopepop.gif
/opt/SUNWgmi/help/graphics/scopew.gif
/opt/SUNWgmi/help/graphics/sdlcex.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/sdlcline.gif
/opt/SUNWgmi/help/graphics/secver.gif
/opt/SUNWgmi/help/graphics/server.gif
/opt/SUNWgmi/help/graphics/smiley.gif
/opt/SUNWgmi/help/graphics/snaappn.gif
/opt/SUNWgmi/help/graphics/snaenter.gif
/opt/SUNWgmi/help/graphics/statline.gif
/opt/SUNWgmi/help/graphics/statlu.gif
/opt/SUNWgmi/help/graphics/stipple.gif
/opt/SUNWgmi/help/graphics/sysmenu.gif
/opt/SUNWgmi/help/graphics/system.gif
/opt/SUNWgmi/help/graphics/tb-conf.gif
/opt/SUNWgmi/help/graphics/tb-conn.gif
/opt/SUNWgmi/help/graphics/tb-copy.gif
/opt/SUNWgmi/help/graphics/tb-delet.gif
/opt/SUNWgmi/help/graphics/tb-disab.gif
/opt/SUNWgmi/help/graphics/tb-disc.gif
/opt/SUNWgmi/help/graphics/tb-enabl.gif
/opt/SUNWgmi/help/graphics/tb-move.gif
/opt/SUNWgmi/help/graphics/tb-new.gif
/opt/SUNWgmi/help/graphics/tb-open.gif
/opt/SUNWgmi/help/graphics/tb-save.gif
/opt/SUNWgmi/help/graphics/tb-undel.gif
/opt/SUNWgmi/help/graphics/tb-undo.gif
/opt/SUNWgmi/help/graphics/tb-wconf.gif
/opt/SUNWgmi/help/graphics/tb-wconfs.gif
/opt/SUNWgmi/help/graphics/tb-wmgrs.gif
/opt/SUNWgmi/help/graphics/tb-wops.gif
/opt/SUNWgmi/help/graphics/tb-wres.gif
/opt/SUNWgmi/help/graphics/tbldrop.gif
/opt/SUNWgmi/help/graphics/tbmain.gif
/opt/SUNWgmi/help/graphics/tocbutt.gif
/opt/SUNWgmi/help/graphics/top.gif
/opt/SUNWgmi/help/graphics/tp.gif
/opt/SUNWgmi/help/graphics/tpaccess.gif
/opt/SUNWgmi/help/graphics/trace.gif
/opt/SUNWgmi/help/graphics/trline.gif
/opt/SUNWgmi/help/graphics/up.gif
/opt/SUNWgmi/help/graphics/user.gif
/opt/SUNWgmi/help/graphics/wappl.gif
/opt/SUNWgmi/help/graphics/wconfigs.gif
/opt/SUNWgmi/help/graphics/wconnect.gif
/opt/SUNWgmi/help/graphics/wlicence.gif
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWgmi/help/graphics/wlog.gif
/opt/SUNWgmi/help/graphics/wmgrs.gif
/opt/SUNWgmi/help/graphics/wres.gif
/opt/SUNWgmi/help/graphics/wtools.gif
/opt/SUNWgmi/help/graphics/wtrace.gif
/opt/SUNWgmi/remoteSunscope.sh
/opt/SUNWgmi/sungmi.sh.template
/opt/SUNWgmi/sunscope
/opt/SUNWgmi/sunsetup
[ verifying class <none> ]
## Executing postinstall script.


                    Sun Microsystems, Inc.
              SunLink IBM Connectivity 9.1 / SNA Graphical Management Interface
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWgmi installation activity is logged to /opt/SUNWgmi/log.SUNWGMI


Saving system files...
/bin/cp /etc/services /etc/services.SUNWGMI

Creating bin for SUN_OEM directories...

Linking executables into /opt/SUNWgmi...
sungmi
Installing SunGMI resource file into /usr/lib/X11/app-defaults

Updating /etc/services...


Installation of <SUNWgmi> was successful.

Processing package instance <SUNWlicsw> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

FlexLM License System
(sparc) 4.2
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
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   2550 Garcia Avenue, Mountain View, California, 94043-1100 U.S.A.

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This product incorporates technology used under license from Fulcrum
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
Technologies, Inc.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   4 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlicsw> [y,n,?] y

Installing FlexLM License System as <SUNWlicsw>

## Executing preinstall script.
## Installing part 1 of 1.
/etc/init.d/lic_mgr
/etc/opt/licenses/lic.SUNW <symbolic link>
/etc/opt/licenses/lmdiag <symbolic link>
/etc/opt/licenses/lmdown <symbolic link>
/etc/opt/licenses/lmgrd.ste <symbolic link>
/etc/opt/licenses/lmhostid <symbolic link>
/etc/opt/licenses/lmremove <symbolic link>
/etc/opt/licenses/lmreread <symbolic link>
/etc/opt/licenses/lmstat <symbolic link>
/etc/opt/licenses/lmver <symbolic link>
/etc/opt/licenses/suntechd <symbolic link>
/opt/SUNWste/bin/lic.SUNW <symbolic link>
/opt/SUNWste/bin/lmdiag <symbolic link>
/opt/SUNWste/bin/lmdown <symbolic link>
/opt/SUNWste/bin/lmgrd.ste <symbolic link>
/opt/SUNWste/bin/lmhostid <symbolic link>
/opt/SUNWste/bin/lmremove <symbolic link>
/opt/SUNWste/bin/lmreread <symbolic link>
/opt/SUNWste/bin/lmstat <symbolic link>
/opt/SUNWste/bin/lmutil <symbolic link>
/opt/SUNWste/bin/lmver <symbolic link>
/opt/SUNWste/bin/suntechd <symbolic link>
/opt/SUNWste/license_tools/License_Request_Form
/opt/SUNWste/license_tools/daemon_options
/opt/SUNWste/license_tools/lic.SUNW
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWste/license_tools/lmdiag
/opt/SUNWste/license_tools/lmdown
/opt/SUNWste/license_tools/lmgrd.ste
/opt/SUNWste/license_tools/lmhostid
/opt/SUNWste/license_tools/lmremove
/opt/SUNWste/license_tools/lmreread
/opt/SUNWste/license_tools/lmstat
/opt/SUNWste/license_tools/lmutil
/opt/SUNWste/license_tools/lmver
/opt/SUNWste/license_tools/man/man1/lmdown.1
/opt/SUNWste/license_tools/man/man1/lmgrd.ste.1
/opt/SUNWste/license_tools/man/man1/lmhostid.1
/opt/SUNWste/license_tools/man/man1/lmremove.1
/opt/SUNWste/license_tools/man/man1/lmreread.1
/opt/SUNWste/license_tools/man/man1/lmstat.1
/opt/SUNWste/license_tools/man/man1/lmutil.1
/opt/SUNWste/license_tools/man/man1/lmver.1
/opt/SUNWste/license_tools/man/man3/license_errors.3
/opt/SUNWste/license_tools/suntechd
/opt/SUNWste/man/man1/lmdown.1 <symbolic link>
/opt/SUNWste/man/man1/lmgrd.ste.1 <symbolic link>
/opt/SUNWste/man/man1/lmhostid.1 <symbolic link>
/opt/SUNWste/man/man1/lmremove.1 <symbolic link>
/opt/SUNWste/man/man1/lmreread.1 <symbolic link>
/opt/SUNWste/man/man1/lmstat.1 <symbolic link>
/opt/SUNWste/man/man1/lmutil.1 <symbolic link>
/opt/SUNWste/man/man1/lmver.1 <symbolic link>
/opt/SUNWste/man/man3/license_errors.3 <symbolic link>
[ verifying class <none> ]
/etc/rc2.d/S85lmgrd <linked pathname>
## Executing postinstall script.
IF YOU ARE NOT INSTALLING LICENSES USING lit, PLEASE RESTART THE
LICENSE DAEMON By RUNNING THE COMMAND /etc/rc2.d/S85lmgrd

Installation of <SUNWlicsw> was successful.

Processing package instance <SUNWlit> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

STE License Installation Tool
(sparc) 4.0
      Copyright 1996 Sun Microsystems, Inc. All Rights Reserved.
   2550 Garcia Avenue, Mountain View, California, 94043-1100 U.S.A.
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

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Technologies, Inc.
Using </opt> as the package base directory.
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
## Processing package information.
## Processing system information.
   6 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlit> [y,n,?] y

Installing STE License Installation Tool as <SUNWlit>

## Installing part 1 of 1.
/etc/opt/licenses/lic2.0_reconfig <symbolic link>
/etc/opt/licenses/lit <symbolic link>
/etc/opt/licenses/lit_tty <symbolic link>
/opt/SUNWste/bin/lit <symbolic link>
/opt/SUNWste/bin/lit_tty <symbolic link>
/opt/SUNWste/license_tools/.litphones <symbolic link>
/opt/SUNWste/license_tools/LIC_CONFIG_FILE
/opt/SUNWste/license_tools/config_template
/opt/SUNWste/license_tools/lic2.0_reconfig
/opt/SUNWste/license_tools/lit
/opt/SUNWste/license_tools/lit_tty
/opt/SUNWste/license_tools/locale/C/LC_MESSAGES/.litphones
[ verifying class <none> ]
## Executing postinstall script.

Installation of <SUNWlit> was successful.

Processing package instance <SUNWpu21> from
</cdrom/sunlink_rje_3770_9_1_beta/Product>

SNA PU2.1 Server
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.

You are installing the software for the SunLink IBM Connectivity 9.1 / SNA
Physical Unit Type 2.1 on gajendra.

Do you wish to continue (Yes/No) [Y]? y
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
Install SDLC pseudo-device-driver (Yes/No) [Y]? y

Install LLC pseudo-device-driver (Yes/No) [Y]? y

Install SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1 boot script
(Yes/No) [Y]? y

Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   5 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.

The following files are already installed on the system and are being
used by another package:
* /opt/SUNWpu21/sunpu2.1
* /opt/SUNWpu21/sunpu2.1.adm

* - conflict with a file which does not belong to any package.

Do you want to install these conflicting files [y,n,?,q] y
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWpu21> [y,n,?] y

Installing SNA PU2.1 Server as <SUNWpu21>

## Installing part 1 of 1.
/opt/SUNWpu21/ARCH_sun4_oem_sunos5.4
/opt/SUNWpu21/BMD/B327_msglib
/opt/SUNWpu21/BMD/BCFG_msglib
/opt/SUNWpu21/BMD/BCPD_msglib
/opt/SUNWpu21/BMD/BLLC_msglib
/opt/SUNWpu21/BMD/BMSG_msglib
/opt/SUNWpu21/BMD/BSCA_msglib
/opt/SUNWpu21/BMD/BSCD_msglib
/opt/SUNWpu21/BMD/CSRV_msglib
/opt/SUNWpu21/BMD/LLCD_msglib
/opt/SUNWpu21/BMD/LLCI_msglib
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWpu21/BMD/LU62_msglib
/opt/SUNWpu21/BMD/OP20_msglib
/opt/SUNWpu21/BMD/PU20_msglib
/opt/SUNWpu21/BMD/PU21_msglib
/opt/SUNWpu21/BMD/PUNS_msglib
/opt/SUNWpu21/BMD/QLLC_msglib
/opt/SUNWpu21/BMD/SDLC_msglib
/opt/SUNWpu21/BMD/SMAN_msglib
/opt/SUNWpu21/BMD/SNAS_msglib
/opt/SUNWpu21/BMD/TNET_msglib
/opt/SUNWpu21/BMD/XID3_msglib
/opt/SUNWpu21/BMD/XSVC_msglib
/opt/SUNWpu21/FullConvert.sh
/opt/SUNWpu21/RELEASE_NOTES_SUNOEM
/opt/SUNWpu21/SunPU21.rc
/opt/SUNWpu21/VERSION
/opt/SUNWpu21/VERSION_9.1
/opt/SUNWpu21/app.cat
/opt/SUNWpu21/bmsg
/opt/SUNWpu21/cntsdlc
/opt/SUNWpu21/cntsdlc.conf
/opt/SUNWpu21/cs_xid3
/opt/SUNWpu21/hsi_lldi
/opt/SUNWpu21/llc
/opt/SUNWpu21/llc.conf
/opt/SUNWpu21/llcd
/opt/SUNWpu21/llci
/opt/SUNWpu21/mib.txt
/opt/SUNWpu21/p2p_awk
/opt/SUNWpu21/scoped
/opt/SUNWpu21/scoped.conf
/opt/SUNWpu21/suncpd
/opt/SUNWpu21/sunftpd
/opt/SUNWpu21/sunftpd.sh
/opt/SUNWpu21/sunop
/opt/SUNWpu21/sunop.ini
/opt/SUNWpu21/sunpu2.1
/opt/SUNWpu21/sunpu2.1.adm
/opt/SUNWpu21/sunscope
/opt/SUNWpu21/sunsetup
/opt/SUNWpu21/sunsman
[ verifying class <none> ]
## Executing postinstall script.
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1
                        for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


SUNWpu21 installation activity is logged to /opt/SUNWpu21/log.SUNWPU21


Saving system files...
/bin/cp /etc/path_to_inst /etc/path_to_inst.SUNWPU21
/bin/cp /etc/iu.ap /etc/iu.ap.SUNWPU21
/bin/cp /etc/devlink.tab /etc/devlink.tab.SUNWPU21
/bin/cp /etc/system /etc/system.SUNWPU21
/bin/cp /etc/services /etc/services.SUNWPU21

Creating standard directories...

Installing startup scripts...
/etc/rc2.d/S89SunPU21

Updating /etc/services...

Updating HSI_LLDI STREAMS module...

Updating XID3 STREAMS module...

Updating SDLC STREAMS Driver...

Updating LLCI STREAMS module...

Updating LLCD STREAMS module...

Updating LLC STREAMS Driver...

Updating Scope STREAMS Driver...

Updating LU6.2 dependencies...
Updating LU6.2 symbolic links...
Updating LU6.2 library...
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
SunLU6.2 is present on this installation.  If any transaction programs
are to be invoked onto this SunPU2.1 SNA End Node Server, then you
must manually add the user "sunlu62" to your /etc/passwd file or
NIS password database.  Please consult your system administrator
for instructions on how to do this.

No licenses available to insert.
Make sure to run the license insertion tool or the license configuration script
on this machine.

SUNWpu21 Installation Complete...


*************************************************************

NOTE:
The SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1 has now been
installed on your
system.  To start the product, you can run the startup script
as shown below:
     /etc/rc2.d/S89SunPU21 start
or reboot your system

*************************************************************


SUNWpu21 Installation Complete...

Installation of <SUNWpu21> was successful.

The following packages are available:
  1  SUNW3770      3770 Device Emulator
                   (sparc) 9.1
  2  SUNWgman      SNA Gateway Manager
                   (sparc) 9.1
  3  SUNWgmi       SNA Graphical Management Interface
                   (sparc) 9.1
  4  SUNWlicsw     FlexLM License System
                   (sparc) 4.2

  5  SUNWlit       STE License Installation Tool
                   (sparc) 4.0
  6  SUNWpu21       SNA PU2.1 Server
```

Code Example A-2 SunLink RJE 3770 9.1 Software Installation Log *(Continued)*

```
                  (sparc) 9.1
Select package(s) you wish to process (or 'all' to process
all packages). (default: all) [?,??,q]: q
```

A.1.3 Log for the SunLink LU0 API 9.1 Software

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log

```
# cd /cdrom/sunlink_lu0_api_9_1_beta/Product
# pkgadd -d .

The following packages are available:
  1  SUNWappc      LU6.2 and CPI-C APIs
                   (sparc) 9.1
  2  SUNWlu0       SNA LU0 Library
                   (sparc) 9.1
  3  SUNWopcl      SunLink 3270 Open Client 9.1
                   (sparc) 9.1

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

Processing package instance <SUNWappc> from
</cdrom/sunlink_lu0_api_9_1_beta/Product>

LU6.2 and CPI-C APIs
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWappc> [y,n,?] y

Installing LU6.2 and CPI-C APIs as <SUNWappc>
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

```
## Installing part 1 of 1.
/opt/SUNWappc/RELEASE_NOTES
/opt/SUNWappc/VERSION
/opt/SUNWappc/api.h
/opt/SUNWappc/api_const.h
/opt/SUNWappc/api_proto.h
/opt/SUNWappc/cpic_calls
/opt/SUNWappc/examples/.make.state
/opt/SUNWappc/examples/Makefile
/opt/SUNWappc/examples/XPA
/opt/SUNWappc/examples/copr_calls.c
/opt/SUNWappc/examples/cpic_ft.c
/opt/SUNWappc/examples/cpic_ft.h
/opt/SUNWappc/examples/cpic_get_file.c
/opt/SUNWappc/examples/cpic_put_file.c
/opt/SUNWappc/examples/cpic_rs.c
/opt/SUNWappc/examples/cpic_sr.c
/opt/SUNWappc/examples/tp_calls.c
/opt/SUNWappc/examples/tp_listen.c
/opt/SUNWappc/examples/tp_rs.c
/opt/SUNWappc/examples/tp_sr.c
/opt/SUNWappc/examples/util62.c
/opt/SUNWappc/liblu62.a
/opt/SUNWappc/libsunp2p.a
/opt/SUNWappc/lu62_convert.c
/opt/SUNWappc/sun_api.h
/opt/SUNWappc/sun_general.h
/opt/SUNWappc/suncpic.h
/opt/SUNWappc/sunlu62.h
[ verifying class <none> ]
## Executing postinstall script.

                              Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / LU6.2 and CPI-C APIs
                       for Solaris (TM) Software Environment

                       Copyright 1997 Sun Microsystems, Inc.

You are installing the software for SunLink IBM Connectivity 9.1 / LU6.2 and
CPI-C APIs on gajendra.

SUNWappc installation activity is logged to /opt/SUNWappc/log.SUNWAPPC
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

```
Updating /etc/services...

SUNWappc Installation Complete

Installation of <SUNWappc> was successful.

Processing package instance <SUNWlu0> from
</cdrom/sunlink_lu0_api_9_1_beta/Product>

SNA LU0 Library
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWlu0> [y,n,?] y

Installing SNA LU0 Library as <SUNWlu0>

## Installing part 1 of 1.
/opt/SUNWlu0/Makefile
/opt/SUNWlu0/VERSION
/opt/SUNWlu0/libsun.a
/opt/SUNWlu0/sunlib.h
/opt/SUNWlu0/sunlib_defs.h
/opt/SUNWlu0/sunlu0_ex.c
[ verifying class <none> ]
## Executing postinstall script.


                      Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA LU0 Library
                      for Solaris (TM) Software Environment

                Copyright 1997 Sun Microsystems, Inc.
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

```
You are installing the software for SunLink IBM Connectivity 9.1 / SNA LU0
Library on gajendra.

SUNWlu0 installation activity is logged to /opt/SUNWlu0/log.SUNWLU0


Saving /etc/services as /etc/services.SUNWLU0...

Updating /etc/services...

SUNWlu0 Installation Complete...


Installation of <SUNWlu0> was successful.

Processing package instance <SUNWopcl> from
</cdrom/sunlink_lu0_api_9_1_beta/Product>

SunLink 3270 Open Client 9.1
(sparc) 9.1
Copyright 1997 Sun Microsystems, Inc. All rights reserved.
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
   2 package pathnames are already properly installed.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <SUNWopcl> [y,n,?] y

Installing SunLink 3270 Open Client 9.1 as <SUNWopcl>

## Installing part 1 of 1.
/opt/SUNWopcl/BMD/B327_msglib
/opt/SUNWopcl/BMD/B387_msglib
/opt/SUNWopcl/BMD/I327_msglib
/opt/SUNWopcl/BMD/KBDM_msglib
/opt/SUNWopcl/NAEnglishCaps
/opt/SUNWopcl/README.gddm
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWopcl/SpanishAsciiEbcdicTable
/opt/SUNWopcl/VERSION
/opt/SUNWopcl/ehllapi.h
/opt/SUNWopcl/ehllapi.o
/opt/SUNWopcl/gddmPat1
/opt/SUNWopcl/gddmPat10
/opt/SUNWopcl/gddmPat11
/opt/SUNWopcl/gddmPat12
/opt/SUNWopcl/gddmPat13
/opt/SUNWopcl/gddmPat14
/opt/SUNWopcl/gddmPat2
/opt/SUNWopcl/gddmPat3
/opt/SUNWopcl/gddmPat4
/opt/SUNWopcl/gddmPat5
/opt/SUNWopcl/gddmPat6
/opt/SUNWopcl/gddmPat7
/opt/SUNWopcl/gddmPat8
/opt/SUNWopcl/gddmPat9
/opt/SUNWopcl/kbds/sunkeKbd.hppa
/opt/SUNWopcl/kbds/sunkeKbd.i86
/opt/SUNWopcl/kbds/sunkeKbd.rs6000
/opt/SUNWopcl/kbds/sunkeKbd.sco
/opt/SUNWopcl/kbds/sunkeKbd.sol86
/opt/SUNWopcl/kbds/sunkeKbd.sun4
/opt/SUNWopcl/kbds/sunkeKbd.sun4.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.2
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.3
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5c.solaris2.4
/opt/SUNWopcl/pcatGeom
/opt/SUNWopcl/pcft
/opt/SUNWopcl/prg_samples/Makefile
/opt/SUNWopcl/prg_samples/playback
/opt/SUNWopcl/prg_samples/playback.c
/opt/SUNWopcl/prg_samples/query
/opt/SUNWopcl/prg_samples/query.c
/opt/SUNWopcl/prg_samples/record
/opt/SUNWopcl/prg_samples/record.c
/opt/SUNWopcl/res_example
/opt/SUNWopcl/sun3270map
/opt/SUNWopcl/sun3270tty
/opt/SUNWopcl/sun3270x
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

```
/opt/SUNWopcl/sun3287
/opt/SUNWopcl/sun4Geom
/opt/SUNWopcl/sun5Geom
/opt/SUNWopcl/sunke
/opt/SUNWopcl/sunkeMap
/opt/SUNWopcl/suntn3270tty
/opt/SUNWopcl/suntn3270x
/opt/SUNWopcl/vt100-3270.tic
[ verifying class <none> ]
## Executing postinstall script.


                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SunLink 3270 Open Client
                        for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are installing the software for SunLink IBM Connectivity 9.1 / SunLink 3270
Open Client on gajendra.

SUNWopcl installation activity is logged to /opt/SUNWopcl/log.SUNWopcl


Updating /etc/services...
No licenses available to insert.
Make sure to run the license insertion tool or the license configuration script
on this machine.

SUNWopcl Installation Complete...

Installation of <SUNWopcl> was successful.

The following packages are available:
  1  SUNW3770      3770 Device Emulator
                   (sparc) 9.1
  2  SUNWlu0       SNA LU0 Library
                   (sparc) 9.1
  3  SUNWopcl      SunLink 3270 Open Client 9.1
                   (sparc) 9.1
```

Code Example A-3 SunLink LU0 API 9.1 Software Installation Log *(Continued)*

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

A.2 `sunsetup` *Log*

The following log represents the `sunsetup` script used with `SUNWgman`, `SUNWgmi`, and the `SUNWpu21` packages.

Code Example A-4 Configuring `SUNWgman`, `SUNWgmi`, and `SUNWpu21` with `sunsetup`

```
gajendra:> sunsetup

        SunLink SNA Server Setup

  1 - Configure GMAN Software
  2 - Configure GMI Software
  3 - Configure PU21 Software
  4 - Start GMAN Software
  5 - Start PU21 Software
  6 - Stop GMAN Software
  7 - Stop PU21 Software
  8 - Show GMAN configuration
  9 - Show GMI configuration
 10 - Show PU21 configuration

  q - Exit

Enter Selection? 1

This appears to be first run of the sunsetup script after the
SUNWgman package was installed.  You will be asked a few questions
about the location of files on disk, the setup of the DNS
components of the SNA Server, and the SunLink Manager configuration.
After you have answered the questions, a summary is listed and
you are asked to confirm your selections.

The SUNWgman configuration file directory root is currently set to
/opt/SUNWgman.
Do you want to change it (Yes/No) [N]? n

The SUNWgman is configured for a site that does not have a main DNS server.
```

Code Example A-4 Configuring SUNWgman, SUNWgmi, and SUNWpu21 with sunsetup

```
In this mode, client systems must be configured to use this system
directly to resolve lookups for resources in the SunLink domain.

Do you want to change this setting (Yes/No) [N]? n

The DNS domain name is currently set to gajendra.
Do you want to change it (Yes/No) [N]? n

The SUNWgman product is set to startup automatically each time
your system reboots.
Do you want to change it (Yes/No) [N]? n

If this system is the first SunLink Manager in your network, or you are
setting up an additional SunLink domain, this system can be setup
with an initial configuration that will define the local system as a
Primary SunLink Manager.

If you have an existing SunLink domain already running on a different
system and you want to add this system as a secondary/backup manager for
that domain, then you don't want any initial configuration to be put in
place.

Should this system be setup as a Primary SunLink Manager (Yes/No) [Y]? y

The SUNWgman will be configured as follows:
     Installation directory           /opt/SUNWgman
     Working directory                /opt/SUNWgman
     Configuration file directory root /opt/SUNWgman
     SunLink DNS configuration        SUNWgman is primary DNS server
     Full DNS domain name             gajendra
     Run startup script at boot       YES

     Initial configuration for Primary SunLink Manager will be created

Is this configuration correct (Yes/No) [Y]? y

WARNING: You have elected to configure this system as a Primary SunLink
         Manager but there is already an existing configuration directory
         in place at /opt/SUNWgman.  You can either use the
         existing directory as is, or you can overwrite the configuration
         directory with a new, initial configuration.

Do you want to use the configuration files that are already in place [YES]? n
```

Code Example A-4 Configuring SUNWgman, SUNWgmi, and SUNWpu21 with sunsetup

```
Creating initial configuration, config1
 ..created SunConfigs.cfg file
 ..created SunManager.cfg file
 ..created SunNetwork.cfg file
 ..created SunSys_gajendra.cfg file

Would you like to start the SUNWgman now (Yes/No) [Y]? y
Starting SunLink sungman process.
(C) Copyright 1990,1996 Sun Microsystems, Inc.
Starting SunLink suncpd process.


        SunLink SNA Server Setup

  1 - Configure GMAN Software
  2 - Configure GMI Software
  3 - Configure PU21 Software
  4 - Start GMAN Software
  5 - Start PU21 Software
  6 - Stop GMAN Software
  7 - Stop PU21 Software
  8 - Show GMAN configuration
  9 - Show GMI configuration
 10 - Show PU21 configuration

  q - Exit
GMAN0002 : SunGMAN initialization started
GMAN0003 : SunGMAN initialization completed

Enter Selection? 2

The SUNWgmi help browser is currently set to /usr/dist/exe/netscape.
Do you want to change it (Yes/No) [N]? n

The SUNWgmi working directory is currently set to /opt/SUNWgmi.
Do you want to change it (Yes/No) [N]? n

The SUNWgmi will be configured as follows:
     Installation directory           /opt/SUNWgmi
     Working directory                /opt/SUNWgmi
     Help browser type                netscape
     Help browser pathname/image      /usr/dist/exe/netscape
     Xterm command path               /usr/bin/X11/xterm
```

Code Example A-4 Configuring SUNWgman, SUNWgmi, and SUNWpu21 with sunsetup

```
Is this configuration correct (Yes/No) [Y]? y

        SunLink SNA Server Setup

  1 - Configure GMAN Software
  2 - Configure GMI Software
  3 - Configure PU21 Software
  4 - Start GMAN Software
  5 - Start PU21 Software
  6 - Stop GMAN Software
  7 - Stop PU21 Software
  8 - Show GMAN configuration
  9 - Show GMI configuration
 10 - Show PU21 configuration

  q - Exit

Enter Selection? 3

The SUNWpu21 working directory is currently set to /opt/SUNWpu21.
Do you want to change it (Yes/No) [N]? n

The SUNWpu21 configuration file directory root is currently set to
/opt/SUNWpu21.
Do you want to change it (Yes/No) [N]? n

The SUNWpu21 product is set to startup automatically each time
your system reboots.
Do you want to change it (Yes/No) [N]? n


The SUNWpu21 will be configured as follows:
     Installation directory           /opt/SUNWpu21
     Working directory                /opt/SUNWpu21
     Configuration file directory root /opt/SUNWpu21
     Run startup script at boot       YES

Is this configuration correct (Yes/No) [Y]? y


        SunLink SNA Server Setup

  1 - Configure GMAN Software
```

Code Example A-4 Configuring SUNWgman, SUNWgmi, and SUNWpu21 with sunsetup

```
  2 - Configure GMI Software
  3 - Configure PU21 Software
  4 - Start GMAN Software
  5 - Start PU21 Software
  6 - Stop GMAN Software
  7 - Stop PU21 Software
  8 - Show GMAN configuration
  9 - Show GMI configuration
 10 - Show PU21 configuration

  q - Exit

Enter Selection? q
```

A.3 pkgrm *Log*

The following log displays the log that was created during the removal of the SunLink SNA 9.1 software packages.

Code Example A-5 Removing the SunLink SNA 9.1 Software

```
# pkgrm SUNW3770

The following package is currently installed:
   SUNW3770        3770 Device Emulator
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNW3770>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

                     Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / 3770 Device Emulator
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / 3770 Device
Emulator on gajendra.

SUNW3770 deinstallation activity is logged to /opt/SUNW3770/log.SUNW3770
WARNING: /etc/services.SUNW3770 does not exists to restore from....

SUNW3770 Deinstallation Complete...

## Removing pathnames in class <none>
/opt/SUNW3770/trn_job_start_script
/opt/SUNW3770/trn_job_put
/opt/SUNW3770/trn_job_get
/opt/SUNW3770/trn_job_end_script
/opt/SUNW3770/trn_jcl_put
/opt/SUNW3770/trn_jcl_get
/opt/SUNW3770/sunlistq
/opt/SUNW3770/sune2a
/opt/SUNW3770/sundelq
/opt/SUNW3770/sunchgq
/opt/SUNW3770/sunaddq
/opt/SUNW3770/suna2e
/opt/SUNW3770/sun_stripper.c
/opt/SUNW3770/sun_cmd
/opt/SUNW3770/sun3770
/opt/SUNW3770/job_start_script
/opt/SUNW3770/job_put
/opt/SUNW3770/job_get
/opt/SUNW3770/job_end_script
/opt/SUNW3770/jcl_put
/opt/SUNW3770/jcl_get
/opt/SUNW3770/VERSION
/opt/SUNW3770/Sun3770
/opt/SUNW3770/BMD/B377_msglib
/opt/SUNW3770/BMD
/opt/SUNW3770 <non-empty directory not removed>
## Updating system information.
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
Removal of <SUNW3770> was successful.
# pkgrm SUNWappc

The following package is currently installed:
   SUNWappc        LU6.2 and CPI-C APIs
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWappc>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

                              Sun Microsystems Inc.
               SunLink IBM Connectivity 9.1 / LU6.2 and CPI-C APIs
                                    for

                      Copyright 1997 Sun Microsystems, Inc.

You are deinstalling the software for SunLink IBM Connectivity 9.1 / LU6.2 and
CPI-C APIs on gajendra.

SUNWappc deinstallation activity is logged to /opt/SUNWappc/log.SUNWAPPC

SUNWappc Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWappc/sunlu62.h
/opt/SUNWappc/suncpic.h
/opt/SUNWappc/sun_general.h
/opt/SUNWappc/sun_api.h
/opt/SUNWappc/lu62_convert.c
/opt/SUNWappc/libsunp2p.a
/opt/SUNWappc/liblu62.a
/opt/SUNWappc/examples/util62.c
/opt/SUNWappc/examples/tp_sr.c
/opt/SUNWappc/examples/tp_rs.c
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWappc/examples/tp_listen.c
/opt/SUNWappc/examples/tp_calls.c
/opt/SUNWappc/examples/cpic_sr.c
/opt/SUNWappc/examples/cpic_rs.c
/opt/SUNWappc/examples/cpic_put_file.c
/opt/SUNWappc/examples/cpic_get_file.c
/opt/SUNWappc/examples/cpic_ft.h
/opt/SUNWappc/examples/cpic_ft.c
/opt/SUNWappc/examples/copr_calls.c
/opt/SUNWappc/examples/XPA
/opt/SUNWappc/examples/Makefile
/opt/SUNWappc/examples/.make.state
/opt/SUNWappc/examples <non-empty directory not removed>
/opt/SUNWappc/cpic_calls
/opt/SUNWappc/api_proto.h
/opt/SUNWappc/api_const.h
/opt/SUNWappc/api.h
/opt/SUNWappc/VERSION
/opt/SUNWappc/RELEASE_NOTES
/opt/SUNWappc <non-empty directory not removed>
## Updating system information.

Removal of <SUNWappc> was successful.
# pkgrm SUNWgman

The following package is currently installed:
   SUNWgman        SNA Gateway Manager
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWgman>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                        Sun Microsystems, Inc.
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
                SunLink IBM Connectivity 9.1 / SNA Gateway Manager
                      for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA Gateway
Manager on gajendra.

SUNWgman deinstallation activity is logged to /opt/SUNWgman/log.SUNWGMAN

SUNWgman Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWgman/sunsetup
/opt/SUNWgman/sungmanmib.txt
/opt/SUNWgman/sungman
/opt/SUNWgman/suncpd
/opt/SUNWgman/bmsg
/opt/SUNWgman/audit_filter
/opt/SUNWgman/aud.awk
/opt/SUNWgman/VERSION_3.0.5-SUNOEM
/opt/SUNWgman/VERSION
/opt/SUNWgman/SunGMAN.rc
/opt/SUNWgman/RELEASE_NOTES_SUNOEM
/opt/SUNWgman/BMD/XSVC_msglib
/opt/SUNWgman/BMD/GMAN_msglib
/opt/SUNWgman/BMD/BMSG_msglib
/opt/SUNWgman/BMD/BLMS_msglib
/opt/SUNWgman/BMD/BCPD_msglib
/opt/SUNWgman/BMD/BCFG_msglib
/opt/SUNWgman/BMD <non-empty directory not removed>
/opt/SUNWgman/ARCH_sun4_oem_sunos5.4
/opt/SUNWgman <non-empty directory not removed>
## Updating system information.

Removal of <SUNWgman> was successful.
# pkgrm SUNWgmi

The following package is currently installed:
   SUNWgmi         SNA Graphical Management Interface
                   (sparc) 9.1
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
Do you want to remove this package? y

## Removing installed package instance <SUNWgmi>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                    Sun Microsystems, Inc.
              SunLink IBM Connectivity 9.1 / SNA Graphical Management Interface
                    for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA
Graphical Management Interface on gajendra.


SUNWgmi deinstallation activity is logged to /opt/SUNWgmi/log.SUNWGMI

SUNWgmi Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWgmi/sunsetup
/opt/SUNWgmi/sunscope
/opt/SUNWgmi/sungmi.sh.template
/opt/SUNWgmi/remoteSunscope.sh
/opt/SUNWgmi/help/graphics/wtrace.gif
/opt/SUNWgmi/help/graphics/wtools.gif
/opt/SUNWgmi/help/graphics/wres.gif
/opt/SUNWgmi/help/graphics/wmgrs.gif
/opt/SUNWgmi/help/graphics/wlog.gif
/opt/SUNWgmi/help/graphics/wlicence.gif
/opt/SUNWgmi/help/graphics/wconnect.gif
/opt/SUNWgmi/help/graphics/wconfigs.gif
/opt/SUNWgmi/help/graphics/wappl.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/user.gif
/opt/SUNWgmi/help/graphics/up.gif
/opt/SUNWgmi/help/graphics/trline.gif
/opt/SUNWgmi/help/graphics/trace.gif
/opt/SUNWgmi/help/graphics/tpaccess.gif
/opt/SUNWgmi/help/graphics/tp.gif
/opt/SUNWgmi/help/graphics/top.gif
/opt/SUNWgmi/help/graphics/tocbutt.gif
/opt/SUNWgmi/help/graphics/tbmain.gif
/opt/SUNWgmi/help/graphics/tbldrop.gif
/opt/SUNWgmi/help/graphics/tb-wres.gif
/opt/SUNWgmi/help/graphics/tb-wops.gif
/opt/SUNWgmi/help/graphics/tb-wmgrs.gif
/opt/SUNWgmi/help/graphics/tb-wconfs.gif
/opt/SUNWgmi/help/graphics/tb-wconf.gif
/opt/SUNWgmi/help/graphics/tb-undo.gif
/opt/SUNWgmi/help/graphics/tb-undel.gif
/opt/SUNWgmi/help/graphics/tb-save.gif
/opt/SUNWgmi/help/graphics/tb-open.gif
/opt/SUNWgmi/help/graphics/tb-new.gif
/opt/SUNWgmi/help/graphics/tb-move.gif
/opt/SUNWgmi/help/graphics/tb-enabl.gif
/opt/SUNWgmi/help/graphics/tb-disc.gif
/opt/SUNWgmi/help/graphics/tb-disab.gif
/opt/SUNWgmi/help/graphics/tb-delet.gif
/opt/SUNWgmi/help/graphics/tb-copy.gif
/opt/SUNWgmi/help/graphics/tb-conn.gif
/opt/SUNWgmi/help/graphics/tb-conf.gif
/opt/SUNWgmi/help/graphics/system.gif
/opt/SUNWgmi/help/graphics/sysmenu.gif
/opt/SUNWgmi/help/graphics/stipple.gif
/opt/SUNWgmi/help/graphics/statlu.gif
/opt/SUNWgmi/help/graphics/statline.gif
/opt/SUNWgmi/help/graphics/snaenter.gif
/opt/SUNWgmi/help/graphics/snaappn.gif
/opt/SUNWgmi/help/graphics/smiley.gif
/opt/SUNWgmi/help/graphics/server.gif
/opt/SUNWgmi/help/graphics/secver.gif
/opt/SUNWgmi/help/graphics/sdlcline.gif
/opt/SUNWgmi/help/graphics/sdlcex.gif
/opt/SUNWgmi/help/graphics/scopew.gif
/opt/SUNWgmi/help/graphics/scopepop.gif
/opt/SUNWgmi/help/graphics/scoped.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/saveasd.gif
/opt/SUNWgmi/help/graphics/save_typ.gif
/opt/SUNWgmi/help/graphics/save_now.gif
/opt/SUNWgmi/help/graphics/rtmstat.gif
/opt/SUNWgmi/help/graphics/qllcline.gif
/opt/SUNWgmi/help/graphics/pu2.gif
/opt/SUNWgmi/help/graphics/previous.gif
/opt/SUNWgmi/help/graphics/ppoolst.gif
/opt/SUNWgmi/help/graphics/port.gif
/opt/SUNWgmi/help/graphics/popsvr.gif
/opt/SUNWgmi/help/graphics/popconf.gif
/opt/SUNWgmi/help/graphics/poolstat.gif
/opt/SUNWgmi/help/graphics/poolmib.gif
/opt/SUNWgmi/help/graphics/pool_x.gif
/opt/SUNWgmi/help/graphics/pool2.gif
/opt/SUNWgmi/help/graphics/pool.gif
/opt/SUNWgmi/help/graphics/partner.gif
/opt/SUNWgmi/help/graphics/paper.gif
/opt/SUNWgmi/help/graphics/operator.gif
/opt/SUNWgmi/help/graphics/oper_x.gif
/opt/SUNWgmi/help/graphics/open_c.gif
/opt/SUNWgmi/help/graphics/next.gif
/opt/SUNWgmi/help/graphics/mwin.gif
/opt/SUNWgmi/help/graphics/multilu.gif
/opt/SUNWgmi/help/graphics/mtrace.gif
/opt/SUNWgmi/help/graphics/msvred.gif
/opt/SUNWgmi/help/graphics/msvrcont.gif
/opt/SUNWgmi/help/graphics/mopt.gif
/opt/SUNWgmi/help/graphics/mode.gif
/opt/SUNWgmi/help/graphics/minimize.gif
/opt/SUNWgmi/help/graphics/mhelp.gif
/opt/SUNWgmi/help/graphics/mfile.gif
/opt/SUNWgmi/help/graphics/mevlog.gif
/opt/SUNWgmi/help/graphics/mcnfed.gif
/opt/SUNWgmi/help/graphics/mcnfcont.gif
/opt/SUNWgmi/help/graphics/maximize.gif
/opt/SUNWgmi/help/graphics/manager.gif
/opt/SUNWgmi/help/graphics/lustat.gif
/opt/SUNWgmi/help/graphics/lu62usr.gif
/opt/SUNWgmi/help/graphics/lu6.gif
/opt/SUNWgmi/help/graphics/lu3.gif
/opt/SUNWgmi/help/graphics/lu2.gif
/opt/SUNWgmi/help/graphics/lu1.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/lu0.gif
/opt/SUNWgmi/help/graphics/lu.gif
/opt/SUNWgmi/help/graphics/locked.gif
/opt/SUNWgmi/help/graphics/lanex.gif
/opt/SUNWgmi/help/graphics/ipxport.gif
/opt/SUNWgmi/help/graphics/ipx.gif
/opt/SUNWgmi/help/graphics/ilusess.gif
/opt/SUNWgmi/help/graphics/ilu.gif
/opt/SUNWgmi/help/graphics/group.gif
/opt/SUNWgmi/help/graphics/grayname.gif
/opt/SUNWgmi/help/graphics/fmtdrop.gif
/opt/SUNWgmi/help/graphics/filetran.gif
/opt/SUNWgmi/help/graphics/figb_5.gif
/opt/SUNWgmi/help/graphics/figb_4.gif
/opt/SUNWgmi/help/graphics/figb_3.gif
/opt/SUNWgmi/help/graphics/figb_2.gif
/opt/SUNWgmi/help/graphics/figb_1.gif
/opt/SUNWgmi/help/graphics/fig4_3.gif
/opt/SUNWgmi/help/graphics/fig2_5.gif
/opt/SUNWgmi/help/graphics/fig2_4.gif
/opt/SUNWgmi/help/graphics/fig2_3.gif
/opt/SUNWgmi/help/graphics/fig2_2.gif
/opt/SUNWgmi/help/graphics/fig2_1.gif
/opt/SUNWgmi/help/graphics/ether.gif
/opt/SUNWgmi/help/graphics/empty.gif
/opt/SUNWgmi/help/graphics/duserb.gif
/opt/SUNWgmi/help/graphics/dusera.gif
/opt/SUNWgmi/help/graphics/dtrace.gif
/opt/SUNWgmi/help/graphics/dtpb.gif
/opt/SUNWgmi/help/graphics/dtpa.gif
/opt/SUNWgmi/help/graphics/dsysb.gif
/opt/SUNWgmi/help/graphics/dsysa.gif
/opt/SUNWgmi/help/graphics/dsvrb.gif
/opt/SUNWgmi/help/graphics/dsvra.gif
/opt/SUNWgmi/help/graphics/dspu2b.gif
/opt/SUNWgmi/help/graphics/dspu2a.gif
/opt/SUNWgmi/help/graphics/dseca.gif
/opt/SUNWgmi/help/graphics/dsec.gif
/opt/SUNWgmi/help/graphics/dsdlcb.gif
/opt/SUNWgmi/help/graphics/dsdlca.gif
/opt/SUNWgmi/help/graphics/dsaapb.gif
/opt/SUNWgmi/help/graphics/dsaapa.gif
/opt/SUNWgmi/help/graphics/dsaab.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/dsaaa.gif
/opt/SUNWgmi/help/graphics/dqpu2b.gif
/opt/SUNWgmi/help/graphics/dqpu2a.gif
/opt/SUNWgmi/help/graphics/dqllcb.gif
/opt/SUNWgmi/help/graphics/dqllca.gif
/opt/SUNWgmi/help/graphics/dpool.gif
/opt/SUNWgmi/help/graphics/dplub.gif
/opt/SUNWgmi/help/graphics/dplua.gif
/opt/SUNWgmi/help/graphics/dnssub.gif
/opt/SUNWgmi/help/graphics/dnsex.gif
/opt/SUNWgmi/help/graphics/dnsdb.gif
/opt/SUNWgmi/help/graphics/dmullu2.gif
/opt/SUNWgmi/help/graphics/dmullu1.gif
/opt/SUNWgmi/help/graphics/dmodeb.gif
/opt/SUNWgmi/help/graphics/dmodea.gif
/opt/SUNWgmi/help/graphics/dmgr.gif
/opt/SUNWgmi/help/graphics/dlub.gif
/opt/SUNWgmi/help/graphics/dlua.gif
/opt/SUNWgmi/help/graphics/dlpu2b.gif
/opt/SUNWgmi/help/graphics/dlpu2a.gif
/opt/SUNWgmi/help/graphics/dlicence.gif
/opt/SUNWgmi/help/graphics/dlanb.gif
/opt/SUNWgmi/help/graphics/dlana.gif
/opt/SUNWgmi/help/graphics/dirctry.gif
/opt/SUNWgmi/help/graphics/dilub.gif
/opt/SUNWgmi/help/graphics/dilua.gif
/opt/SUNWgmi/help/graphics/dgrp.gif
/opt/SUNWgmi/help/graphics/dgateway.gif
/opt/SUNWgmi/help/graphics/dfmt.gif
/opt/SUNWgmi/help/graphics/dcpu2b.gif
/opt/SUNWgmi/help/graphics/dcpu2a.gif
/opt/SUNWgmi/help/graphics/dconnect.gif
/opt/SUNWgmi/help/graphics/dconfig.gif
/opt/SUNWgmi/help/graphics/dchanb.gif
/opt/SUNWgmi/help/graphics/dchana.gif
/opt/SUNWgmi/help/graphics/cuserb.gif
/opt/SUNWgmi/help/graphics/cusera.gif
/opt/SUNWgmi/help/graphics/ctrace.gif
/opt/SUNWgmi/help/graphics/ctpb.gif
/opt/SUNWgmi/help/graphics/ctpa.gif
/opt/SUNWgmi/help/graphics/csysb.gif
/opt/SUNWgmi/help/graphics/csysa.gif
/opt/SUNWgmi/help/graphics/csvrb.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/csvra.gif
/opt/SUNWgmi/help/graphics/cspu2b.gif
/opt/SUNWgmi/help/graphics/cspu2a.gif
/opt/SUNWgmi/help/graphics/cseca.gif
/opt/SUNWgmi/help/graphics/csec.gif
/opt/SUNWgmi/help/graphics/csdlcb.gif
/opt/SUNWgmi/help/graphics/csdlcasu.gif
/opt/SUNWgmi/help/graphics/csdlca.gif
/opt/SUNWgmi/help/graphics/csaapb.gif
/opt/SUNWgmi/help/graphics/csaapa.gif
/opt/SUNWgmi/help/graphics/csaab.gif
/opt/SUNWgmi/help/graphics/csaaa.gif
/opt/SUNWgmi/help/graphics/cqpu2b.gif
/opt/SUNWgmi/help/graphics/cqpu2a.gif
/opt/SUNWgmi/help/graphics/cqllcb.gif
/opt/SUNWgmi/help/graphics/cqllca.gif
/opt/SUNWgmi/help/graphics/cpool.gif
/opt/SUNWgmi/help/graphics/cplub.gif
/opt/SUNWgmi/help/graphics/cplua.gif
/opt/SUNWgmi/help/graphics/console.gif
/opt/SUNWgmi/help/graphics/config.gif
/opt/SUNWgmi/help/graphics/cnt_logo.gif
/opt/SUNWgmi/help/graphics/cmodeb.gif
/opt/SUNWgmi/help/graphics/cmodea.gif
/opt/SUNWgmi/help/graphics/cmgr.gif
/opt/SUNWgmi/help/graphics/club.gif
/opt/SUNWgmi/help/graphics/clua.gif
/opt/SUNWgmi/help/graphics/clpu2b.gif
/opt/SUNWgmi/help/graphics/clpu2a.gif
/opt/SUNWgmi/help/graphics/client_conn.gif
/opt/SUNWgmi/help/graphics/clicence.gif
/opt/SUNWgmi/help/graphics/cli_conn.gif
/opt/SUNWgmi/help/graphics/clanb.gif
/opt/SUNWgmi/help/graphics/clana.gif
/opt/SUNWgmi/help/graphics/cilub.gif
/opt/SUNWgmi/help/graphics/cilua.gif
/opt/SUNWgmi/help/graphics/cgrp.gif
/opt/SUNWgmi/help/graphics/ceo_x.gif
/opt/SUNWgmi/help/graphics/ccpu2b.gif
/opt/SUNWgmi/help/graphics/ccpu2a.gif
/opt/SUNWgmi/help/graphics/cconfig.gif
/opt/SUNWgmi/help/graphics/cchanb.gif
/opt/SUNWgmi/help/graphics/cchana.gif
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWgmi/help/graphics/act_time.gif
/opt/SUNWgmi/help/graphics/acme_x.gif
/opt/SUNWgmi/help/graphics
/opt/SUNWgmi/help/enterprz.html
/opt/SUNWgmi/help/enterprz-Using.html
/opt/SUNWgmi/help/enterprz-Using-2.html
/opt/SUNWgmi/help/enterprz-Users.html
/opt/SUNWgmi/help/enterprz-Troubles.html
/opt/SUNWgmi/help/enterprz-SNA.html
/opt/SUNWgmi/help/enterprz-Resource.html
/opt/SUNWgmi/help/enterprz-Preface.html
/opt/SUNWgmi/help/enterprz-Overview.html
/opt/SUNWgmi/help/enterprz-Managing.html
/opt/SUNWgmi/help/enterprz-Index.html
/opt/SUNWgmi/help/enterprz-Getting.html
/opt/SUNWgmi/help/enterprz-Diagnost.html
/opt/SUNWgmi/help/enterprz-Contents.html
/opt/SUNWgmi/help/enterprz-Configur.html
/opt/SUNWgmi/help/enterprz-Configur-9.html
/opt/SUNWgmi/help/enterprz-Configur-8.html
/opt/SUNWgmi/help/enterprz-Configur-7.html
/opt/SUNWgmi/help/enterprz-Configur-6.html
/opt/SUNWgmi/help/enterprz-Configur-5.html
/opt/SUNWgmi/help/enterprz-Configur-4.html
/opt/SUNWgmi/help/enterprz-Configur-3.html
/opt/SUNWgmi/help/enterprz-Configur-2.html
/opt/SUNWgmi/help/enterprz-Configur-12.html
/opt/SUNWgmi/help/enterprz-Configur-11.html
/opt/SUNWgmi/help/enterprz-Configur-10.html
/opt/SUNWgmi/help
/opt/SUNWgmi/bin/sungmi
/opt/SUNWgmi/bin
/opt/SUNWgmi/VERSION_3.0.5-SUNOEM
/opt/SUNWgmi/VERSION
/opt/SUNWgmi/SunGMI.ad
/opt/SUNWgmi/RELEASE_NOTES_SUNOEM
/opt/SUNWgmi/BMD/BSCA_msglib
/opt/SUNWgmi/BMD
/opt/SUNWgmi/ARCH_sun4_oem_sunos5.4
/opt/SUNWgmi <non-empty directory not removed>
## Updating system information.

Removal of <SUNWgmi> was successful.
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
# pkgrm SUNWlicsw

The following package is currently installed:
   SUNWlicsw       FlexLM License System
                   (sparc) 4.2

Do you want to remove this package? y

## Removing installed package instance <SUNWlicsw>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
License File copied to /etc/opt/licenses/licenses_combined.BAK
## Removing pathnames in class <none>
/opt/SUNWste/man/man3/license_errors.3
/opt/SUNWste/man/man3
/opt/SUNWste/man/man1/lmver.1
/opt/SUNWste/man/man1/lmutil.1
/opt/SUNWste/man/man1/lmstat.1
/opt/SUNWste/man/man1/lmreread.1
/opt/SUNWste/man/man1/lmremove.1
/opt/SUNWste/man/man1/lmhostid.1
/opt/SUNWste/man/man1/lmgrd.ste.1
/opt/SUNWste/man/man1/lmdown.1
/opt/SUNWste/man/man1
/opt/SUNWste/man
/opt/SUNWste/license_tools/suntechd
/opt/SUNWste/license_tools/man/man3/license_errors.3
/opt/SUNWste/license_tools/man/man3
/opt/SUNWste/license_tools/man/man1/lmver.1
/opt/SUNWste/license_tools/man/man1/lmutil.1
/opt/SUNWste/license_tools/man/man1/lmstat.1
/opt/SUNWste/license_tools/man/man1/lmreread.1
/opt/SUNWste/license_tools/man/man1/lmremove.1
/opt/SUNWste/license_tools/man/man1/lmhostid.1
/opt/SUNWste/license_tools/man/man1/lmgrd.ste.1
/opt/SUNWste/license_tools/man/man1/lmdown.1
/opt/SUNWste/license_tools/man/man1
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWste/license_tools/man
/opt/SUNWste/license_tools/lmver
/opt/SUNWste/license_tools/lmutil
/opt/SUNWste/license_tools/lmstat
/opt/SUNWste/license_tools/lmreread
/opt/SUNWste/license_tools/lmremove
/opt/SUNWste/license_tools/lmhostid
/opt/SUNWste/license_tools/lmgrd.ste
/opt/SUNWste/license_tools/lmdown
/opt/SUNWste/license_tools/lmdiag
/opt/SUNWste/license_tools/lic.SUNW
/opt/SUNWste/license_tools/daemon_options
/opt/SUNWste/license_tools/License_Request_Form
/opt/SUNWste/license_tools <shared pathname not removed>
/opt/SUNWste/bin/suntechd
/opt/SUNWste/bin/lmver
/opt/SUNWste/bin/lmutil
/opt/SUNWste/bin/lmstat
/opt/SUNWste/bin/lmreread
/opt/SUNWste/bin/lmremove
/opt/SUNWste/bin/lmhostid
/opt/SUNWste/bin/lmgrd.ste
/opt/SUNWste/bin/lmdown
/opt/SUNWste/bin/lmdiag
/opt/SUNWste/bin/lic.SUNW
/opt/SUNWste/bin <shared pathname not removed>
/opt/SUNWste <shared pathname not removed>
/etc/rc2.d/S85lmgrd
/etc/rc2.d <shared pathname not removed>
/etc/opt/licenses/suntechd
/etc/opt/licenses/lmver
/etc/opt/licenses/lmstat
/etc/opt/licenses/lmreread
/etc/opt/licenses/lmremove
/etc/opt/licenses/lmhostid
/etc/opt/licenses/lmgrd.ste
/etc/opt/licenses/lmdown
/etc/opt/licenses/lmdiag
/etc/opt/licenses/lic.SUNW
/etc/opt/licenses <shared pathname not removed>
/etc/opt <shared pathname not removed>
/etc/init.d/lic_mgr
/etc <shared pathname not removed>
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
## Updating system information.

Removal of <SUNWlicsw> was successful.
# pkgrm SUNWlit

The following package is currently installed:
   SUNWlit         STE License Installation Tool
                   (sparc) 4.0

Do you want to remove this package? y

## Removing installed package instance <SUNWlit>
## Verifying package dependencies.
## Processing package information.
## Removing pathnames in class <none>
/opt/SUNWste/license_tools/locale/C/LC_MESSAGES/.litphones
/opt/SUNWste/license_tools/locale/C/LC_MESSAGES
/opt/SUNWste/license_tools/locale/C
/opt/SUNWste/license_tools/locale
/opt/SUNWste/license_tools/lit_tty
/opt/SUNWste/license_tools/lit
/opt/SUNWste/license_tools/lic2.0_reconfig
/opt/SUNWste/license_tools/config_template
/opt/SUNWste/license_tools/LIC_CONFIG_FILE
/opt/SUNWste/license_tools/.litphones
/opt/SUNWste/license_tools
/opt/SUNWste/bin/lit_tty
/opt/SUNWste/bin/lit
/opt/SUNWste/bin
/opt/SUNWste
/etc/opt/licenses/lit_tty
/etc/opt/licenses/lit
/etc/opt/licenses/lic2.0_reconfig
/etc/opt/licenses <shared pathname not removed>
/etc/opt <shared pathname not removed>
/etc <shared pathname not removed>
## Updating system information.

Removal of <SUNWlit> was successful.
# pkgrm SUNWlu0

The following package is currently installed:
   SUNWlu0         SNA LU0 Library
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
                  (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWlu0>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                     Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA LU0 Library
                     for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA LU0
Library on gajendra.

SUNWlu0 deinstallation activity is logged to /opt/SUNWlu0/log.SUNWLU0

SUNWlu0 Deinstallation Complete...

## Removing pathnames in class <none>
/opt/SUNWlu0/sunlu0_ex.c
/opt/SUNWlu0/sunlib_defs.h
/opt/SUNWlu0/sunlib.h
/opt/SUNWlu0/libsun.a
/opt/SUNWlu0/VERSION
/opt/SUNWlu0/Makefile
/opt/SUNWlu0/BMD
/opt/SUNWlu0 <non-empty directory not removed>
## Updating system information.

Removal of <SUNWlu0> was successful.
# pkgrm SUNWlu62
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
The following package is currently installed:
   SUNWlu62        SNA Logical Unit Type 6.2
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWlu62>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                     Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA Logical Unit Type 6.2
                     for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA Logical
Unit Type 6.2 on gajendra.

SUNWlu62 deinstallation activity is logged to /opt/SUNWlu62/log.SUNWLU62

SUNWlu62 Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWlu62/sunlu6.2
/opt/SUNWlu62/libsunp2p.so
/opt/SUNWlu62/liblu62.so
/opt/SUNWlu62/VERSION
/opt/SUNWlu62/BMD/XSVC_msglib
/opt/SUNWlu62/BMD/LU62_msglib
/opt/SUNWlu62/BMD/CSRV_msglib
/opt/SUNWlu62/BMD/BCFG_msglib
/opt/SUNWlu62/BMD
/opt/SUNWlu62 <non-empty directory not removed>
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
## Updating system information.

Removal of <SUNWlu62> was successful.
# pkgrm SUNWntvw

The following package is currently installed:
   SUNWntvw        SNA NetView/SunNet Manager Gateway
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWntvw>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                     Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA SunNet Manager Gateway
                     for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA SunNet
Manager Gateway on gajendra.

SUNWntvw deinstallation activity is logged to /opt/SUNWntvw/log.SUNWntvw

SUNWntvw Deinstallation Complete...

## Removing pathnames in class <none>
/opt/SUNWntvw/sunsnm.defaults
/opt/SUNWntvw/sunsnm.config
/opt/SUNWntvw/sunsnm
/opt/SUNWntvw/sunpu2.config.snm
/opt/SUNWntvw/VERSION
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWntvw/BMD/UNVW_msglib
/opt/SUNWntvw/BMD/BSNM_msglib
/opt/SUNWntvw/BMD
/opt/SUNWntvw <non-empty directory not removed>
## Updating system information.

Removal of <SUNWntvw> was successful.
# pkgrm SUNWopcl

The following package is currently installed:
   SUNWopcl        SunLink 3270 Open Client 9.1
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWopcl>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.


                        Sun Microsystems, Inc.
                    SunLink IBM Connectivity 9.1 / SunLink 3270 Open Client
                      for Solaris (TM) Software Environment


                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SunLink
3270 Open Client on gajendra.

SUNWopcl deinstallation activity is logged to /opt/SUNWopcl/log.SUNWopcl
SUNWopcl Deinstallation Complete...

## Removing pathnames in class <none>
/opt/SUNWopcl/vt100-3270.tic
/opt/SUNWopcl/suntn3270x
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWopcl/suntn3270tty
/opt/SUNWopcl/sunkeMap
/opt/SUNWopcl/sunke
/opt/SUNWopcl/sun5Geom
/opt/SUNWopcl/sun4Geom
/opt/SUNWopcl/sun3287
/opt/SUNWopcl/sun3270x
/opt/SUNWopcl/sun3270tty
/opt/SUNWopcl/sun3270map
/opt/SUNWopcl/res_example
/opt/SUNWopcl/prg_samples/record.c
/opt/SUNWopcl/prg_samples/record
/opt/SUNWopcl/prg_samples/query.c
/opt/SUNWopcl/prg_samples/query
/opt/SUNWopcl/prg_samples/playback.c
/opt/SUNWopcl/prg_samples/playback
/opt/SUNWopcl/prg_samples/Makefile
/opt/SUNWopcl/prg_samples
/opt/SUNWopcl/pcft
/opt/SUNWopcl/pcatGeom
/opt/SUNWopcl/license_dir <non-empty directory not removed>
/opt/SUNWopcl/kbds/sunkeKbd.sun5c.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.3
/opt/SUNWopcl/kbds/sunkeKbd.sun5.solaris2.2
/opt/SUNWopcl/kbds/sunkeKbd.sun5
/opt/SUNWopcl/kbds/sunkeKbd.sun4.solaris2.4
/opt/SUNWopcl/kbds/sunkeKbd.sun4
/opt/SUNWopcl/kbds/sunkeKbd.sol86
/opt/SUNWopcl/kbds/sunkeKbd.sco
/opt/SUNWopcl/kbds/sunkeKbd.rs6000
/opt/SUNWopcl/kbds/sunkeKbd.i86
/opt/SUNWopcl/kbds/sunkeKbd.hppa
/opt/SUNWopcl/kbds
/opt/SUNWopcl/gddmPat9
/opt/SUNWopcl/gddmPat8
/opt/SUNWopcl/gddmPat7
/opt/SUNWopcl/gddmPat6
/opt/SUNWopcl/gddmPat5
/opt/SUNWopcl/gddmPat4
/opt/SUNWopcl/gddmPat3
/opt/SUNWopcl/gddmPat2
/opt/SUNWopcl/gddmPat14
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWopcl/gddmPat13
/opt/SUNWopcl/gddmPat12
/opt/SUNWopcl/gddmPat11
/opt/SUNWopcl/gddmPat10
/opt/SUNWopcl/gddmPat1
/opt/SUNWopcl/ehllapi.o
/opt/SUNWopcl/ehllapi.h
/opt/SUNWopcl/VERSION
/opt/SUNWopcl/SpanishAsciiEbcdicTable
/opt/SUNWopcl/README.gddm
/opt/SUNWopcl/NAEnglishCaps
/opt/SUNWopcl/BMD/KBDM_msglib
/opt/SUNWopcl/BMD/I327_msglib
/opt/SUNWopcl/BMD/B387_msglib
/opt/SUNWopcl/BMD/B327_msglib
/opt/SUNWopcl/BMD
/opt/SUNWopcl <non-empty directory not removed>
## Updating system information.

Removal of <SUNWopcl> was successful.
# pkgrm SUNWpu21

The following package is currently installed:
   SUNWpu21        SNA PU2.1 Server
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWpu21>

This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.

                        Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SNA Physical Unit Type 2.1
                        for Solaris (TM) Software Environment
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
                Copyright 1997 Sun Microsystems, Inc.


You are deinstalling the software for SunLink IBM Connectivity 9.1 / SNA
Physical Unit Type 2.1 on gajendra.

SUNWpu21 deinstallation activity is logged to /opt/SUNWpu21/log.SUNWPU21

SUNWpu21 Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWpu21/sunsman
/opt/SUNWpu21/sunsetup
/opt/SUNWpu21/sunscope
/opt/SUNWpu21/sunpu2.1.adm
/opt/SUNWpu21/sunpu2.1
/opt/SUNWpu21/sunop.ini
/opt/SUNWpu21/sunop
/opt/SUNWpu21/sunftpd.sh
/opt/SUNWpu21/sunftpd
/opt/SUNWpu21/suncpd
/opt/SUNWpu21/scoped.conf
/opt/SUNWpu21/scoped
/opt/SUNWpu21/p2p_awk
/opt/SUNWpu21/mib.txt
/opt/SUNWpu21/llci
/opt/SUNWpu21/llcd
/opt/SUNWpu21/llc.conf
/opt/SUNWpu21/llc
/opt/SUNWpu21/license_dir <non-empty directory not removed>
/opt/SUNWpu21/hsi_lldi
/opt/SUNWpu21/cs_xid3
/opt/SUNWpu21/cntsdlc.conf
/opt/SUNWpu21/cntsdlc
/opt/SUNWpu21/bmsg
/opt/SUNWpu21/app.cat
/opt/SUNWpu21/VERSION_9.1
/opt/SUNWpu21/VERSION
/opt/SUNWpu21/SunPU21.rc
/opt/SUNWpu21/RELEASE_NOTES_SUNOEM
/opt/SUNWpu21/FullConvert.sh
/opt/SUNWpu21/BMD/XSVC_msglib
/opt/SUNWpu21/BMD/XID3_msglib
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
/opt/SUNWpu21/BMD/TNET_msglib
/opt/SUNWpu21/BMD/SNAS_msglib
/opt/SUNWpu21/BMD/SMAN_msglib
/opt/SUNWpu21/BMD/SDLC_msglib
/opt/SUNWpu21/BMD/QLLC_msglib
/opt/SUNWpu21/BMD/PUNS_msglib
/opt/SUNWpu21/BMD/PU21_msglib
/opt/SUNWpu21/BMD/PU20_msglib
/opt/SUNWpu21/BMD/OP20_msglib
/opt/SUNWpu21/BMD/LU62_msglib
/opt/SUNWpu21/BMD/LLCI_msglib
/opt/SUNWpu21/BMD/LLCD_msglib
/opt/SUNWpu21/BMD/CSRV_msglib
/opt/SUNWpu21/BMD/BSCD_msglib
/opt/SUNWpu21/BMD/BSCA_msglib
/opt/SUNWpu21/BMD/BMSG_msglib
/opt/SUNWpu21/BMD/BLLC_msglib
/opt/SUNWpu21/BMD/BCPD_msglib
/opt/SUNWpu21/BMD/BCFG_msglib
/opt/SUNWpu21/BMD/B327_msglib
/opt/SUNWpu21/BMD
/opt/SUNWpu21/ARCH_sun4_oem_sunos5.4
/opt/SUNWpu21 <non-empty directory not removed>
/etc/opt/licenses <shared pathname not removed>
/etc/opt <shared pathname not removed>
/etc <shared pathname not removed>
## Updating system information.

Removal of <SUNWpu21> was successful.
# pkgrm SUNWsaa

The following package is currently installed:
   SUNWsaa         SAA Server
                   (sparc) 9.1

Do you want to remove this package? y

## Removing installed package instance <SUNWsaa>
This package contains scripts which will be executed with super-user
permission during the process of removing this package.

Do you want to continue with the removal of this package [y,n,?,q] y
## Verifying package dependencies.
```

Code Example A-5 Removing the SunLink SNA 9.1 Software *(Continued)*

```
## Processing package information.
## Executing preremove script.

                      Sun Microsystems Inc.
                SunLink IBM Connectivity 9.1 / SAA Server
                      for Solaris (TM) Software Environment
                Copyright 1997 Sun Microsystems, Inc.
You are deinstalling the software for SunLink IBM Connectivity 9.1 / SAA Server
on gajendra.

SUNWsaa deinstallation activity is logged to /opt/SUNWsaa/log.SUNWSAA

SUNWsaa Deinstallation Complete

## Removing pathnames in class <none>
/opt/SUNWsaa/sunsaa
/opt/SUNWsaa/VERSION
/opt/SUNWsaa/README
/opt/SUNWsaa/BMD/BSAA_msglib
/opt/SUNWsaa/BMD
/opt/SUNWsaa <non-empty directory not removed>
## Updating system information.

Removal of <SUNWsaa> was successful.
```

Communication Ports

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This appendix contains reference information on the various communications ports supported by the SunLink SNA server product set.

B.1 Sun SPARC System Serial Ports

B.1.1 Synchronous Pinning

Table B-1 shows the pins and associated signals for the SPARC system local serial ports (11 conductors). For SPARCclassic and SPARCstation LX, Figure B-1 represents port A of the Serial Interface Y-Cable.

The active pins of the local serial port D-style-25 connector are shown in Figure B-1.

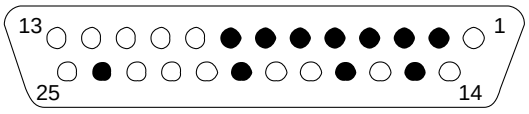

Figure B-1 Serial Port Active Pins

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Table B-1 SPARC Serial Pin Specifications

Pin	Signal	V.24	Direction	Description
2	TXD	103	output	Transmit Data: Sends data to peripheral device or (`modem/csu`).
3	RXD	104	input	Receive Data: Receives data from the peripheral device (`modem/csu`).
4	RTS	105	output	Request To Send: Signal asking if peripheral device (`modem/csu`) is ready to receive data.
5	CTS	106	input	Clear To Send: Signal from the peripheral device (`modem/csu`) indicating readiness to accept data.
6	DSR	107	input	Data Set Ready: Signal from the peripheral device indicating its status.
7	GND	102	none	Ground Signal: Provides reference level for other signals.
8	DCD	109	input	Data Carrier Detect: Signal indicating that the peripheral device (modem/csu) has detected a signal from the remote peripheral device over the telecommunications channel.
15	TXC	114	input	Transmit Clock: Provides transmitter signal element timing.
17	RXC	115	input	Receive Clock: Provides receiver signal element timing.
20	DTR	108.2	output	Data Terminal Ready: Indicates that the local device is ready to communicate.
24	ETC	113	output	External Transmitter Clock: DTE provided signal element timing.

B.1.2 Synchronous Null-Modem Cable

The local serial ports are capable of providing clock to the remote system. Figure B-2 illustrates the null-modem cable pinning requirements for synchronous communications.

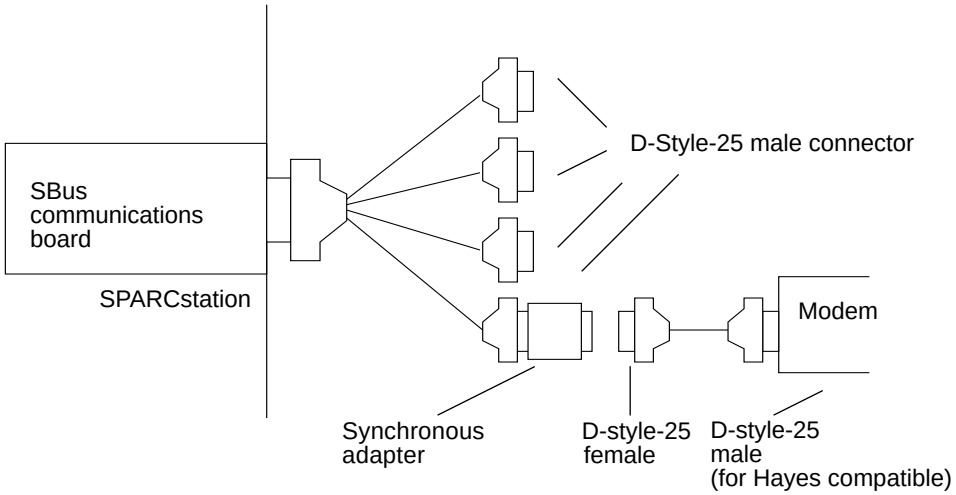

Figure B-2 Serial Port Synchronous Null-Modem Cable

Note – Standard asynchronous null-modem cables do not work for synchronous communications. If you construct your own synchronous null-modem cable, check all the cable's connections carefully.

B.2 SBus Communications Board

B.2.1 Synchronous Pinning for 400S/400S+/800S+ Boards

Synchronous ports require non-standard cable connections to modems: the transmit clock is input on pin 8 (CD) and the receive clock is input on pin 6 (DSR). The following table lists the pin-out for a synchronous port (9 conductors):

Table B-2 SBus Communications Port Specifications

Pin	Signal	V.24	Direction	Description
1	GND	101	none	Ground Signal: Provides reference level for other signals.
2	TXD	103	output	Transmit Data: Sends data to peripheral device or (`modem/csu`).
3	RXD	104	input	Receive Data: Receives data from the peripheral device (`modem/csu`).
4	RTS	105	output	Request To Send: Signal asking if peripheral device (`modem/csu`) is ready to receive data.
5	CTS	106	input	Clear To Send: Signal from the peripheral device (`modem/csu`) indicating readiness to accept data.
6	TXC	114	input	Transmit Clock: Provides transmitter signal element timing.
7	GND	102	none	Ground Signal: Provides reference level for other signals.
8	RXC	115	input	Receive Clock: Provides receiver signal element timing.
20	DTR	108.2	output	Data Terminal Ready: Indicates that the local device is ready to communicate. Only when port configuration is CLOCK=EXTERNAL.
24	ETC	113	output	External Transmitter Clock: DTE provided transmitter signal element timing. Only when port configuration is CLOCK=INTERNAL.

B.2.2 Synchronous Adapter

A synchronous adapter is provided to transform the 400/400S interface to standard RS-232-C. This adapter is connected to the port D-style-25 connector as shown in Figure B-3.

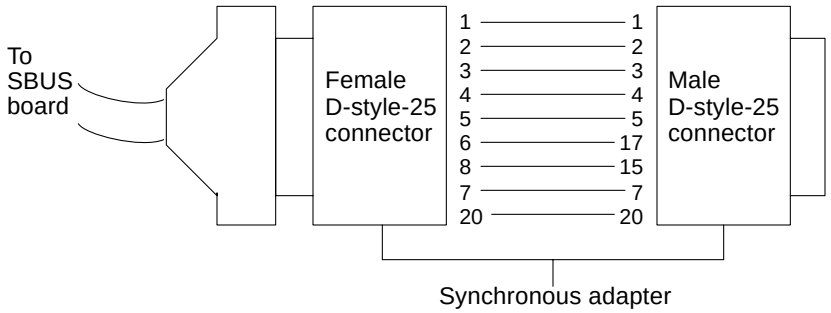

Figure B-3 SBus Port Active Pins

Figure B-4 shows the null-modem cable design for connecting 400/400S cards to synchronous DTE devices.

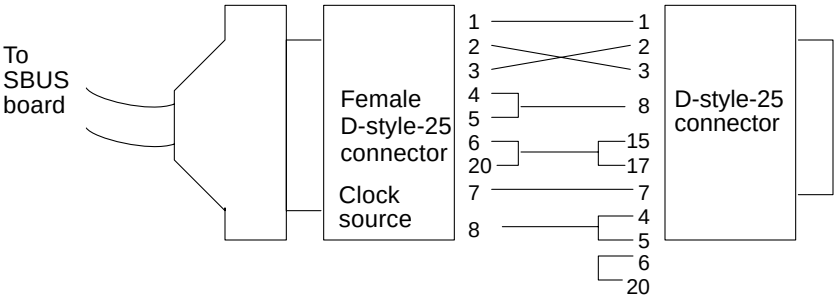

Figure B-4 Synchronous Null-Modem Cable for the 400/400S Cards

B.2.3 Synchronous Null-Modem Cable

The SBus Communications board ports are capable of providing clock to the remote system.

Note – Standard synchronous null-modem cables do not work with SBus communications ports (even with the synchronous adapter). If you construct your own synchronous null-modem cable, check all the cable's connections carefully.

B.2.4 Synchronous Cabling for the 401S+ Card

The Model 401S+ Communications Controller features a new processor that allows all clock signals to be brought out on their standard pins. This simplifies cabling.

Note – A single clock source must supply both ports.

Since all clock signals are brought out on their standard pins, you can use the straight-through cables shown in Figure B-5 to connect synchronous modems to the 401S+ card. No adaptors are necessary.

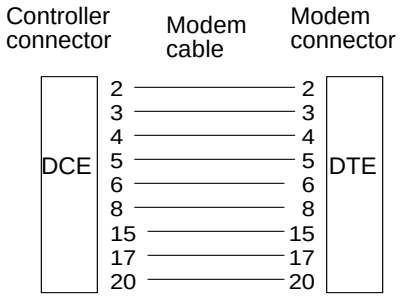

Figure B-5 Straight-through Synchronous Modem Cable

Figure B-6 shows the null-modem cable design for connecting 401S+ cards to synchronous DTE devices.

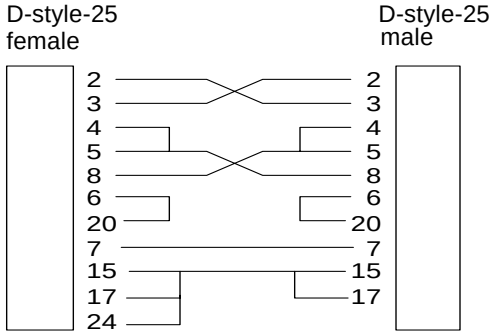

Figure B-6 Null-Modem Cable for the 401S+ Cards

Note – This is a general purpose synchronous cable that can be used for other non-Sun ports.

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