

Chapter4

Configuring the CiscoWorks NetView Interface

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This chapter contains the following configuration tasks for the CiscoWorks NetView Interface:

- Gathering data for configuration
- Configuring the owner and group IDs of CiscoWorks NetView Interface
- Configuring the IBM SNA configuration
- Running the SNA Peer-to-Peer RTE installation script, *install.snap2p*
- Booting off the rebuilt kernel
- Adding a gateway to the network
- Configuring the SNA Peer-to-Peer configuration input file
- Configuring the Protocol Conversion Application (PCA)
- Comparing the IBM and SunLink configuration files

During the CiscoWorks NetView Interface process, CiscoWorks registers with the SNA Peer-to-Peer gateway to receive network events. The capture and conversion of events is controlled by the instructions found in the SNA Peer-to-Peer event table and machine table.

The SNA Peer-to-Peer RTE consists in part of an SNA Peer-to-Peer gateway. This gateway uses a configuration file (which is used by the *p2pconf* program) that defines the PU definition and the information necessary for establishing IBM connectivity.

The SNA Peer-to-Peer RTE also consists of a PCA gateway which uses an event table and machine table to map and convert the events received by the PCA. The PCA registers itself with SNM to receive all the network traps and events. The session between the System Services Control Point (SSCP) and the physical unit (PU) is called an SSCP-PU session. This session is used to transmit NMVT to SNA NetView.

To complete the tasks described in this chapter, you should be very familiar with SunOS and understand the management issues involved with SNA Peer-to-Peer gateways. You should also be familiar with system administrator tasks such as connecting hosts, adding remote users, and understanding login conventions. If you are not familiar with Sun products, contact your Sun system administrator for assistance with these configuration tasks.

The SNA tasks in this chapter require a knowledge of SNA. If you do not have this type of experience, perform these tasks with the assistance of your IBM VTAM system administrator or support personnel in your organization with the required experience.

This chapter contains overview information on how to configure the SNA Peer-to-Peer RTE product. You will need to refer to the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for detailed instructions. This chapter is provided for you so you can clearly understand what is required to configure the CiscoWorks NetView Interface. Use this chapter along with your Sun documentation.

There is no configuration necessary for the RUNCMD Server. The only requirement is that the RUNCMD Server should be started before a RUNCMD request can be made. Refer to Chapter 5, "Starting and Stopping the CiscoWorks NetView Interface," for information on starting the RUNCMD Server.

Gathering Data for Configuration

Before you configure the CiscoWorks NetView Interface, be prepared to fill in the information necessary found on the Configuration File Parameters Worksheet. This worksheet identifies the configuration requirements for both the IBM host and the SNA Peer-to-Peer software that CiscoWorks NetView Interface uses. Each variable name should match across the columns. For example, `max_btu_rcv` in the SNA Peer-to-Peer configuration file should match the MAXDATA on the PU definition in the IBM VTAM file.

Use the information found in this worksheet when you run the *install.snap2p* script to configure the CiscoWorks NetView Interface and edit your customized *p2pconf* file. Complete all preparations so that you can configure your CiscoWorks software correctly.

Configuration File Parameters Worksheet

Peer-to-Peer Configuration File ¹	IBM VTAM Parameters
pu_name _____	pu_name _____
network_name _____	NETID _____
mode_name _____	DLOGMOD on PU definition _____
snd_max_ru_size _____	RU sizes from logmode table _____
rcv_max_ru_size _____	RU sizes from logmode table _____
frm_size _____	MAXOUT + 17 bytes _____
rxaddr _____	ADDR on PU definition _____
txaddr _____	ADDR on PU definition _____
block_number _____	IDBLK from PU definition _____
id_number _____	IDNUM from PU definition _____
max_btu_rcv _____	MAXDATA on PU definition _____
max_rcv_iframe_size _____	MAXOUT on PU definition _____
remote_addr _____ (for Token Ring only)	MAC for the FEP (ADDR on LINE definition) _____

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¹Use the standard *p2pconf* file defaults for any variables not defined in this worksheet.

If you choose not to use the worksheet, continue to the section “Configuring CiscoWorks Owner and Group IDs” to complete the task of synchronizing the login and passwords allowed to use the CiscoWorks software.

For additional information on the configuration variables, refer to the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*.

Configuring CiscoWorks Owner and Group IDs

In order for the CiscoWorks NetView Interface to successfully collect information from CiscoWorks, the owner and group IDs in both programs must match. The *CWNVconfigure* script configures the CiscoWorks NetView Interface to match the CiscoWorks IDs. Run this script after the installation is completed and prior to running the *install.snap2p* script.

To run the *CWNVconfigure* script, perform the following steps:

Step 1: At the command prompt, enter the following commands:

```
hostname% cd /user/tmp/unbundled
hostname% CWNVconfigure
```

Step 2: The *CWNVconfigure* script displays the following script:

```
***** CiscoWorks NetView Interface 1.0 CONFIGURATION *****
```

CONFIGURATION SETUP:

This section of the CiscoWorks NetView Interface 1.0 configuration will ask you the directory path where the CiscoWorks product has been installed. The script sets up the same owner and group id for the CiscoWorks NetView Interface 1.0 software.

Is CiscoWorks installed at your site?[yes]

Step 3: Press **Return** to indicate CiscoWorks is installed.

The following question displays:

What directory does the CiscoWorks software reside in? [/usr/nms]

If CiscoWorks is not installed, you must install it and rerun the *CWNVconfigure* script.

Step 4: Press **Return** to indicate CiscoWorks is installed in the default directory indicated in the brackets.

The following text displays:

Setting the permissions for CiscoWorks NetView Interface 1.0 software ...

```
chown cscworks.CscWorks /usr/nms/bin/cmpconf
chown cscworks.CscWorks /usr/nms/bin/contacts
chown cscworks.CscWorks /usr/nms/bin/getconf
chown cscworks.CscWorks /usr/nms/bin/ifstatus
chown cscworks.CscWorks /usr/nms/bin/neticmp
chown cscworks.CscWorks /usr/nms/bin/netif
chown cscworks.CscWorks /usr/nms/bin/netmenu
chown cscworks.CscWorks /usr/nms/bin/netroute
chown cscworks.CscWorks /usr/nms/bin/netset
chown cscworks.CscWorks /usr/nms/bin/netstatus
chown cscworks.CscWorks /usr/nms/bin/shomibvar
chown cscworks.CscWorks /usr/nms/bin/showif
chown cscworks.CscWorks /usr/nms/bin/tracepath
chown cscworks.CscWorks /usr/nms/bin/showflash
chown cscworks.CscWorks /usr/nms/bin/CWNVversion
chown cscworks.CscWorks /usr/nms/bin/CWevent.table
chown cscworks.CscWorks /usr/nms/bin/CWmachine.table
```

Refer to the CiscoWorks NetView Interface 1.0 configuration chapter for the next step of the configuration.

Continue with the next section to configure the CiscoWorks NetView Interface.

Configuring the IBM SNA Configuration

This section briefly describes what is required to configure the IBM SNA configuration. This section should be completed by the IBM system administrator or NetView operator that has access to the NCP/VTAM configuration file.

Refer to the IBM document *SNA Formats* for more detailed information.

Note: If you have already set up the PU, continue with the next section “Configuration Tasks to Complete for install.snap2p.”

SNA Configuration

An SNA network is a hierarchical network where many end-point devices communicate with a few host systems. To add a new device to the SNA network, an SNA host system administrator must update the SNA host network configuration (NCP/VTAM GEN).

The NCP/VTAM GEN lists all the SNA resources connected to an SNA communications controller. Four macros define the resources associated with a PU 2 device emulated by the SunLink SNA Peer-to-Peer RunTime Environment.

The CiscoWorks NetView Interface requires at least one PU. The following section provides a sample SNA configuration based on a point-to-point, 9600 baud line. Refer to your SunLink documentation for instructions on matching the configurations of your SunLink configuration file and SNA host file.

Note: The SNA resources described in the local SunLink configuration files must mirror the values in the SNA host network configuration.

The four macros that define the PU 2 device to emulate an IBM SNA Server are described in Table 4-1.

Table 4-1 PU 2 Descriptions

Macro Name	Description
GROUP	Specifies certain command characteristics and functions for a group of links and devices.
LINE	Represents the physical line connecting to the PU 2 device. Several PU 2 devices can share one line; this is called a multipoint line. A line with only one PU 2 device is called a point-to-point line. A line which uses a dial-in connection is a switched line.
PU	Represents the PU 2 device. This macro identifies the station address on the line for this PU 2 device.

The SunLink SNA Peer-to-Peer RTE implements PU type 2.0/2.1 and LU 6.2. The gateway is broken into two process: APPC and SDLC.

The SNMP events and traps are converted and forwarded to NetView on an SCCP to PU session. The CiscoWorks NetView Interface, with the use of Sun's SNA Peer-to-Peer RTE, communicates with IBM's Control Point Management Service (CPMS) via NMVT. This enables the Sun running SNA Peer-to-Peer RTE as an SNA boundary-function-attached (BFA) type 2.1 node. This allows the Sun SNA Peer-to-Peer Gateway to be a service point application, which in turn enables the NetView operator to send RUNCMD requests to the Sun.

NCP/VTAM Generation File

The NCP/VTAM generation file defines the information needed to connect to a Sun network.

Your IBM system administrator or NetView administrator will need to edit the NCP/VTAM file to reflect the appropriate macro and operand definitions. Ensure that the Sun SNA Peer-to-Peer configuration file variables match the NCP/VTAM variables.

The following is a section of the NCP/VTAM generation file for the IBM host configuration:

```

** GROUP macro *****
GRPCW01  GROUP      DIAL=NO,
                    LNCTL=SDLC,
                    TYPE=NCP,
                    ISTATUS=ACTIVE,
** LINE operands moved up to GROUP macro *****
                    CLOCKING=EXT,
                    DISCNT=NO,
                    SERVLIM=5,
                    TRANSFER=9,
                    SPDSEL=NO,
** PU operands moved up to GROUP macro *****
                    IRETRY=YES,
                    MAXDATA=521,
                    MAXOUT=7,
                    PASSSLIM=11,
** LU operands moved up to GROUP macro *****
                    MODETAB=ISTINCLM,
                    SSCPFM=USSSCS,
                    USSTAB=HIS3270,
                    PACING=1,
                    VPACING=1
** LINE macro *****
CWLIN01  LINE      ADDRESS=(01,FULL),
                    SPEED=9600
                    NRZI=NO,
                    DUPLEX=FULL
** PU macro *****
CWPU01   PU        ADDR=C1
                    PUTYPE=2
                    IDNUM=017
                    TERMID=12345
** LU macros *****
* None
*****

```

The previous IBM host configuration supports one PU 2 connected to the communications controller with a 9600 baud point-to-point line. The following terms are defined for your line connection and PU 2 designation:

- CWLIN01 is a line name—substitute your own line name.
- ADDRESS=(01,FULL) specifies a physical port on an SNA communications controller.
- CWPU01 is a physical unit name—substitute your own physical unit name. We recommend that this name be defined as something meaningful, since it will be included in SNA alert descriptions.
- ADDR is the station address of the physical unit on this line.

Configuration Tasks to Complete for *install.snap2p*

This section briefly discusses what tasks are required prior to the configuration of the SNA Peer-to-Peer RTE. For more detailed information and instructions, refer to the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*.

Note: The description of the SNA Peer-to-Peer RTE installation in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* may be misleading. You only need to run the *install.snap2p* script. You do not need to run the scripts indicated in Chapter 2 to install for PCA and the Peer-to-Peer agent, unless you are not invoking the *install.snap2p*.

You must complete several tasks before, during, or after you run the installation (*install.snap2p*) script. These tasks are described below:

- Before you run *install.snap2p*, edit the *agent.params* file in */usr/sunlink/snap2p/install*. Set the value of the **FIRSTAGTINSTALL** variable to **false**. For example, `FIRSTAGTINSTALL=FALSE`. Also change the value of the **DESTAGTDIR** variable to the directory where SNM is installed. For example, `DESTAGTDIR=/usr/snm`.
- During the script, answer yes to configure the new kernel.
- Enter the name of the current kernel configuration file.

While running the *install.snap2p* file, you are prompted for the existing kernel configuration file. Do not use the **GENERIC** name if you have **SYBASE** or anything else configured in your kernel. Use the kernel configuration file that is currently in use, for example, **SYBASE**. For the new kernel configuration file name, use a name such as **Sybase_SNA**. This will indicate that this kernel configuration has both configurations.
- Answer **yes** to create interface device (ifd) entries.
- Answer **yes** if you are using a Token Ring connection.

There are several additional requirements to set up a Token Ring environment; refer to Chapter 2 in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for additional information on using Token Ring. Also refer to your Token Ring hardware manual for more information.
- For Token Ring parameters, the N1 maximum frame size in bytes should match **MAXDATA** macro on the PU definition.

You can use the default parameters for most of these variables, except the N1 frame size. Set the N1 maximum frame size to match the IBM **MAXDATA** variable. For example, if `MAXDATA=265`, `N1=265`.
- Answer **yes** to add configuration commands to *rc.local*.
- Answer **yes** to add *sunlink_mapper* to *rc.local*.
- Answer **yes** to install the SNA Peer-to-Peer agent.
- Answer **yes** to install PCA.

Running the *install.snap2p* Script

The first task is to configure the *snap2p* configuration file. There are two options for configuration:

- Run the *install.snap2p* which covers all the installation tasks.
- Run the following scripts in this order: *install.snap2p.mgr*, *install.snap2p.agent*, and *install_pca*.

This manual describes the *install.snap2p* script option, which is the easiest option. If you prefer not to use the *install.snap2p* script, refer to Appendix A of the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*, for instructions on the proper procedure to follow for the second option.

Basically, the *install.snap2p* file installs three standalone components:

- SNA Peer-to-Peer gateway
- PCA
- SNA Peer-to-Peer agent

You can install these components independently if you choose. This is described in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*. The *install.snap2p* script adds the interface device drivers required for SDLC connection and LLC device entries if Token Ring is used.

Note: While running the *install.snap2p* file, you are prompted for the existing kernel configuration file. Do not use the GENERIC name if you have SYBASE or anything else configured in your kernel. Use the kernel configuration file that is currently in use; for example, SYBASE. For the new kernel configuration filename, use a name such as Sybase_SNA. This will indicate that this kernel configuration has both configurations.

To run the *install.snap2p* script, perform the following steps:

Step 1: Log in as the superuser by entering **su** and the root password.

Step 2: From a UNIX shell, enter the following at the command prompt:

```
hostname# /usr/sunlink/snap2p/install.snap2p
```

The script prompts you to supply a variety of information. Refer to the previous section, “Configuration Tasks to Complete for *install.snap2p*,” for the default answers we recommend. A sample script is located in Appendix F of the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*.

Refer to Chapter 2 of the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for detailed information on the *install.snap2p* script and Token Ring configuration.

Booting Off the Rebuilt Kernel

After the completion of *install.p2p*, you have installed the SNA Peer-to-Peer gateway and rebuilt the kernel, installed PCA and the SNA Peer-to-Peer agent, then you need to reboot off the rebuilt kernel.

To rename your original kernel and copy the new kernel to the new directory, perform the following steps:

Step 1: Become the superuser by entering **su** and the root password.

Step 2: To rename your original kernel, enter the following command:

```
# cp /vmunix /vmunix.old
```

Step 3: To copy the new kernel to the correct directory, enter the following command:

```
# cp /usr/kvm/sys/sun4/NEW_KERNEL/vmunix /vmunix
```

Step 4: Reboot your machine using L1A or other method of rebooting.

For additional detail, refer to the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for instructions on how to rename your original kernel, copy the new kernel to the new directory, and boot the new kernel.

Verifying the SunLink SNA Peer-to-Peer RTE Installation

To verify that the software modules required by SunLink SNA Peer-to-Peer RTE were successfully installed, refer to Chapter 2 in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*. The section entitled "Installation Verification" explains how to verify this installation.

Adding a Gateway to the Network

Before you proceed with the configuration process, you must incorporate the SNA Peer-to-Peer gateway into an existing network of Sun workstation.

The *install.maps* script creates an ASCII file */etc/appcs*. The */etc/appcs* file contains configuration information that identifies a Sun computer running an SNA Peer-to-Peer gateway. The *install.maps* script will also handle if you are running Network Information Services (NIS).

Note: If you are not using NIS, in addition to running *install.maps*, you must create and maintain an *appcs* file on each client computer. Remember, you must run the *install.maps* script regardless of whether you choose NIS or local mapping. Refer to Chapter 2 in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for detailed instructions.

Defining a Gateway if Running NIS

If your network is using NIS, perform the following steps to establish and maintain mappings between gateway names and machine locations:

Step 1: Become the superuser and change directories to the `/usr/sunlink/mapper` directory:

```
% su
Password:
# cd /usr/sunlink/mapper
```

Step 2: Run `install.maps` on the NIS Server.

For more information, refer to the section “Adding a Gateway to the NIS Database” in the *7.0 SunLink SNA Peer-to-Peer Administrator’s Guide*.

Defining a Gateway if Running Local

If your network is using a local server, follow this process to establish and maintain mappings between gateway names and machine locations:

Step 1: Become the superuser and change directories to the `/usr/sunlink/mapper` directory:

```
% su
Password:
# cd /usr/sunlink/mapper
```

Step 2: Run `install.maps` on each client computer.

Step 3: Create and maintain maps in a file called `/etc/appcs` on each of the client computers.

For more information, refer to “The `/etc/appcs` File” section in the *7.0 SunLink SNA Peer-to-Peer Administrator’s Guide*.

Configuring the SNA Peer-to-Peer Configuration File

The SNA Peer-to-Peer configuration file, or `p2pconf` input file, enables the SNA Peer-to-Peer gateway to communicate with a remote SNA node. You need to configure one of the sample input files SunLink ships with the SNA Peer-to-Peer product to provide the parameters to connect to the IBM communication controller. This file is read during initialization of the PU.

Since this file defines SNA resources, these objects must be configured in both the SNA host’s VTAM definition statement in the NCP GEN list and in this SNA Peer-to-Peer configuration file.

The SNA Peer-to-Peer RTE is shipped with several sample *p2pconf* input files. You can use these sample files to create a customized *p2pconf* input file. Refer to Chapter 3 in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for information on modifying your *p2pconf* input file. You can use the Configuration File Parameters Worksheet earlier in this chapter to plan the values for the system configuration file.

To configure your *p2pconf* file, perform the following steps:

Step 1: Change to the directory where the sample files are stored. The file is located in the */snap2p/p2petc* directory:

```
% cd /usr/sunlink/snap2p/p2petc
```

Step 2: Copy one of the sample configurations to your directory. If you are using Token Ring, use *sun_neg_configtr.1* file as your base file to make changes.

If you are using SDLC, use *sun_neg_config* file as your base file to make changes.

For example, to copy the *sun_neg_config*:

```
% cp sun_neg_config new_filename
```

If you do not use the above mentioned file, you must manually set the Token Ring parameters to match the *p2pconf* file.

Step 3: Edit the new file using your favorite text editor.

Refer to the following section “Modifying the SNA Peer-to-Peer Configuration Input File,” for instructions on how to modify your configuration file.

Modifying the SNA Peer-to-Peer Configuration Input File

The SNA Peer-to-Peer configuration file, or *p2pconf* file, requires the following variable definitions:

- PU (physical unit)
- Node
- LU (logical unit)
- Mode
- DLC (data link control layer)
- XID3 (Exchange Identification)
- ALS (adjacent link station)
- DB_MSG (debugging messages)

The configuration file variables are discussed briefly below. For detailed information about variable defaults, formats, and comparable VTAM variables, refer to Chapter 3 in the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide*.

DEFINE_PU:

The PU definition variables define the operating parameters of the PU. Keep in mind the following when you define the variables:

- `pu_name`—Corresponds to the Sun workstation PU name.
- `network_name`—Used with the `node_id` variable, corresponds to the IBM NETID macro.
- `pums_supported`—Specifies whether the PU Management Services are supported. Enter **yes**.

DEFINE_NODE:

The node definition variables define the node ID so the SNA Peer-to-Peer gateway can connect to a type 2.1 node instead of a subarea network.

Keep in mind the following when you define the variables:

- `pu_name`—Corresponds to the Sun workstation PU name.
- `node_id`—Used with the `network_name` variable corresponds to the IBM SSCPNAME macro.

DEFINE_LOCAL_LU:/DEFINE_PARTNER_LU:

The LU portion of the definition is not used, but is required by the SNA Peer-to-Peer RTE. The LU definition includes variables that define a local LU and partner LU. Since many of the variables do not have defaults, refer to the SunLink manual for format parameters. Keep in mind the following when you define these variables:

- `parallel_session` and `cnos_supported`—Must be set to 0. This indicates no support for either of these requests.
- `remote_is_sscp`—Must be set to 1. This indicates remote side is a host.
- `initiate_type`—Set to INITIATE_ONLY. This indicates when a partner LU is unavailable, SSCP will reject the session initiation requests targeted for the partner LU.

DEFINE_MODE:

The mode definition variables define a mode. These variables correspond to the IBM MODE entries. Keep in mind the following when you define these variables:

- Several variables do not have defaults. Refer to the SunLink manual for format parameters.
- `mode_name`—Corresponds to the DLOGMOD on PU definition.
- `snd_pac_window`—Corresponds to the IBM SSNDPAC operand.
- `rcv_pac_window`—Corresponds to the IBM SRCVPAC operand.

- `snd_max_ru_size`—Corresponds to the IBM RUSIZES operand.
- `rcv_max_ru_size`—Corresponds to the IBM RUSIZES operand.
- `session_limit`—Specifies only one session is supported between the LU and the partner LU for the specified mode name. Must be set to 1.

DEFINE_DLC:

The DLC definition variables define a Data Link Control (DLC) layer. Depending on your network, you may be defining SDLC or Token Ring connections. Refer to your appropriate DLC variables below.

SDLC

Keep in mind the following when you define the following SDLC variables:

- `dlc_name`—Internal to snap2p. Can be set to anything, for example, DCL0.
- `device_driver_name`—Should be set to `/dev/ifd0`.
- `dlc_type`—SDLC data link must be set to 0.
- `frm_size`—Corresponds to IBM MAXDATA operand plus eight bytes of the GROUP, LINE, and PU definitions. For example, if MAXDATA=265, then the `frm_size` is $8+265=273$.
- `window_size`—Corresponds to the IBM MAXOUT operand of the GROUP, LINE, and PU definitions.
- `rxaddr`—Corresponds to the IBM ADDR operand of the PU definition.
- `txaddr`—Corresponds to the IBM ADDR operand of the PU definition.
- `full duplex`—Corresponds to the DUPLEX operand in the LINE definition.
- `nrzi`—Corresponds to the NRZI operand in the LINE definition. Must be to no.
- `sp_flags`—Must be set to 1.
- `block_number`—Corresponds to BLKNUM on the PU definition. Specifies the block number in the XID. For example, 017 for 3274 cluster controllers, 05D for OS2 PCs.
- `id_number`—Corresponds to IDNUM of the PU definition. Specifies the ID number in the XID.

The XID3 variable defines the format of the information field of the DLC XID command and response. For more detail on the number of bytes and content of the XID formats, refer to the *IBM SNA Formats* publication.

Token Ring

Keep in mind the following when you define the following Token Ring variables:

- `dlc_name`—Internal to snap2p. Can be set to anything, for example, DCL0.
- `device_driver_name`—Should be set to `/dev/ifd0`.
- `dlc_type`—Token Ring data link must be set to 1.

- `frm_size`—Corresponds to IBM MAXDATA operand plus eight bytes of the GROUP, LINE, and PU definitions. For example, if MAXDATA=265, then the `frm_size` is $8+265=273$.
- `nrzi`—Corresponds to the NRZI operand in the LINE definition. Must be to no.
- `block_number`—Corresponds to BLKNUM on the PU definition. Specifies the block number in the XID. For example, 017 for 3274 cluster controllers, 05D for OS2 PCs.
- `id_number`—Corresponds to IDNUM of the PU definition. Specifies the ID number in the XID.

The XID3 variable defines the format of the information field of the DLC XID command and response. For more detail on the number of bytes and content of the XID formats, refer to the *IBM SNA Formats* publication.

- `abm_support`—Must be set to yes.
- `local_sap`—Must be set to 04.
- `role`—Must be set to *negotiable*.
- `max_btu_rcv`—Corresponds to MAXDATA on the PU definition.
- `max_rcv_iframe_size`—Corresponds to MAXOUT on the PU definition.

DEFINE_ALS:

The ALS definition variables define an Adjacent Link Station (ALS). You must define ALS variables for each DLC definition in your input file. Depending on your network, you may be defining SDLC or Token Ring connections. Refer to your appropriate ALS variables below.

SDLC

Keep in mind the following when you define these SDLC variables:

- `dlc_name`—Internal to snap2p. Can be set to anything, for example, DCL0.
- `als_name`—Specifies the locally known adjacent link station, for example, LINE00.
- `pu_name`—Corresponds to the Sun workstation PU name.
- `remote_addr`—Corresponds to MAC address for the FEP (37XX). Must be set to 01.

Token Ring

Keep in mind the following when you define these Token Ring variables:

- `dlc_name`—Internal to snap2p. Can be set to anything, for example, DCL0.
- `als_name`—Specifies the locally known adjacent link station, for example, LINE00.
- `pu_name`—Corresponds to the Sun workstation PU name.
- `remote_addr`—Corresponds to MAC address for the FEP (37XX). Must be set to 400011601000.
- `remote_sap`—Must be set to 04.

DB_MSG

The DB_MSG variables define debugging parameters. Use the default of no debugging where all variables are set to zero.

To turn on debugging, change the variables from zero to one. The flags variable must be set to 6. You must also create a debugging file name. For more information on DB_MSG, refer to the section “Performing a Gateway Trace” in Appendix C.

Configuring the Protocol Conversion Application (PCA)

The Protocol Conversion Application (PCA) is an SNM application that converts SNM events and traps into a format readable by the SNA Physical Unit Management Services (PUMS). This format, known as an SNA alert, can then be sent to IBM’s NetView.

PCA enables you to set which events to forward to IBM NetView and what information to place in the SNA alert. For more detailed information about PCA, refer to Chapter 6 in the *7.0 SunLink SNA Peer-to-Peer Administrator’s Guide*.

Note: If you edit the PCA table, you must send PCA a HUP signal to reread the table.

In order for you to start and stop the PCA, it must be represented on your SNM Console with a special glyph, or icon. A glyph represents the device on the console.

To configure the PCA, complete the following tasks. These tasks are described in detail in the subsequent sections; they are not described in this manner in the Sun documentation.

- Step 1:* Add the new software directories to your *.cshrc* path.
- Step 2:* Create a PCA glyph in SNM.
- Step 3:* Create PCA glyph properties in SNM.
- Step 4:* Edit the *CWevent.table* for event conversion support.

Adding Software Directories to Your .cshrc Path

In order for your PCA to start properly and for access to the RUNCMD server, you must add the path information to your *.cshrc* file.

To add new path information to your *.cshrc* file, edit your path statement to include the following directories:

- *\$NMSROOT/bin*—Supporting RUNCMD requests
- */usr/sunlink/snap2p/p2p_etc*—Starting and stopping the SNA Peer-to-Peer gateway

- `/usr/sunlink/snap2p/snm`—Accessing PCA and the *PCA.schema*
- `/usr/snm/bin`—Accessing **snm_cmd**

The **path** command changes your path environment to search for the software directories listed above when executing a command.

Note: Restart SNM after you edit your `.cshrc` file. This causes SNM to read the PCA information necessary.

Creating a PCA Glyph

In order for PCA tasks to be performed, you must have a workstation dedicated to running the PCA software. To make it easier for the network manager, you can assign a unique PCA glyph to your Sun workstation.

This section briefly discusses the steps to create the PCA glyph on your network. Refer to your SunNet Manager documentation for further information on glyph creation.

To create a PCA glyph on your network map, perform one of the following procedures:

- If your workstation is already on your network map, select the **Change Type** command in the SNM Glyph menu. Pull over to **PCA** to designate this workstation as running PCA.
- If your workstation has not been added to your network map, select the **Create** command in the SNM Edit menu. Select the **Component** submenu and continue to pull over to select **PCA**.

Refer to the *SunNet Manager 2.0 User's Guide* for detailed instructions on how to use the **Change Type** and **Create** commands.

Creating PCA Glyph Properties

In order for the PCA glyph you created in the previous section to have meaning, you need to define the element, or device, that the glyph represents. This definition is created using the SunNet Manager's **Properties** command.

To define or modify the PCA glyph properties, perform the following steps:

- Step 1:* Move your mouse over the PCA glyph and select the SNM Glyph menu.
- Step 2:* From the Glyph menu, select **Properties** to open the properties window.
- Step 3:* Add or modify the following options on the Properties window:
- Gateway—Machine name. For example, *SNAP2P*.
 - Machine tb—Full path name location of *CWmachine.table*

- Event tb—Full path name location of *CWevent.table*
- Option—Add a **-d1**. This is required for PCA to be started from the SNM Console.

Step 4: Click on **Apply** to save the changes and close the Properties sheet.

Your PCA glyph now contains the information necessary to complete the protocol conversion of events and traps.



Time Saver: Save the new map. If SNM restarts, the PCA glyph will appear on the map.

Editing Your Cisco Tables for Event Conversion Support

The CiscoWorks NetView Interface ships two tables that define event conversion. The PCA *CWevent.table* and the *CWmachine.table*. These tables define the actions for the CiscoWorks NetView Interface. These actions include which events to convert to SNA alerts and send to NetView.

Refer to the section “Creating a Customized Event Table for PCA” in Chapter 6 for instructions on customizing your event table.



Time Saver: You do not need to edit the machine table or event table to perform customization for the PCA to function. You must add your PU name in the *CWevent.table* for IBM connectivity.

To add your PU name to the *CWevent.table* for IBM connectivity, perform the following steps. Refer to Appendix A, “Sample Configuration Files,” for the *CWevent.table* file.

Step 1: At the UNIX prompt, edit the *CWevent.table* file. This example uses the vi editor:

```
% vi $NMSROOT/bin/CWevent.table
```

Step 2: Press the colon (:) key.

Step 3: Type the following command:

```
1,$:s/puname/your_puname/g
```

This substitutes all cases of the old PU name with the actual PU name of the IBM machine.

Step 4: Press the colon (:) key again and enter **wq**.

This command writes the changes to the file and quits, or exits back to the UNIX prompt.

The defaults for the files are described in the Table 4-2.

Table 4-2 PCA Table Defaults

Filename	Defaults
<i>CWevent.table</i>	All SNMP trap information is mapped. All event information uses the default mapping entry.
<i>CWmachine.table</i>	All device information is recorded.

Note: PCA forwards all trap information. There is no filtering performed on trap-type. If filtering is desired, use the machine table to filter events from a specific device.

Comparing IBM and SunLink Files

This section describes the parameters that should match for the successful communication of events and traps to occur. Refer to Table 4-3 for the comparison of the two file variables.

You can also refer to the *7.0 SunLink SNA Peer-to-Peer Administrator's Guide* for the table that describes the *p2pconf* file variables with matching VTAM parameters.

Table 4-3 CiscoWorks NetView Interface and NCP Configuration Values

SNA Peer-to-Peer Configuration Parameters		NCP Macro	NCP Parameter
DEFINE_PU	pu_name	PU	name
	network_name	MVS startup file	NETID
DEFINE_MODE	mode_name	PU	DLOGMOD
	snd_pac_window		SSNDPAC
	rcv_pac_window		SRCVPAC
	snd_max_ru_size		RUSIZES
	rcv_max_ru_size		RUSIZES
DEFINE_DLC	frm_size	GROUP/LINE/PU	MAXDATA
	window_size	GROUP/LINE/PU	MAXOUT
	rxaddr	PU	ADDR
	txaddr	PU	ADDR
	full duplex	GROUP	DUPLEX
	nrzi	GROUP	NRZI
	block_number	PU	IDBLK
	id_number	PU	IDNUM

If the above variables listed in Table 4-3 do not match, no communication can occur between CiscoWorks NetView Interface and IBM NetView. Contact your IBM system administrator or NetView administrator to make any NCP/VTAM changes required.