Infoprint Manager for Windows NT and Windows 2000

Configuring PSF Direct for the 3174 Communications Controller

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Configuring PSF Direct for the 3174 Communications Controller

Note
Before using this information and the product it supports, be sure to read the general information in "Notices" on page 109.

Second Edition (August 2001)

This publication is one of a set of publications that replaces *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for Infoprint Manager*. The set includes:
- *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 37xx Communications Controller*
- *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 3172 Communications Controller*
- *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 3174 Communications Controller*
- *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for an iSeries System*

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Chapter 1. Overview of PSF Direct and Communication Server for Windows NT®

This chapter contains an overview of the components you need to configure Print Services Facility™ Direct (PSF Direct) on Systems Network Architecture (SNA) networks. It contains the following subtopics:

- "What is PSF Direct?"
- "What is IBM SecureWay Communications Server for Windows NT?" on page 2
- "What are the Available Network Connections?" on page 2

What is PSF Direct?

PSF Direct provides a direct connection between a host system and a printer defined to IBM® Infoprint® Manager for Windows NT and Windows® 2000. The host system can be an OS/390®, VSE, VM, or Operating System/400® (OS/400®) system. PSF Direct gives you control of key print processes from your host system console. An Infoprint physical printer appears to be directly attached to your host system. Jobs print without delay because they are not spooled by the Windows NT workstation. Because the host system controls the print process, it returns job-completion and error messages to the host system.

PSF Direct uses Communication Server LU 6.2 protocols to communicate between the host system and the Windows NT system. Then PSF Direct uses one of several protocols to communicate between the Windows NT system and the printer:

- Transmission Control Protocol/Internet Protocol (TCP/IP)
- Channel
- Parallel/Serial

These protocols provide you with access to TCP/IP, channel, or parallel/serial printers that otherwise you might not be able to attach from the host system.

To use PSF Direct, you need the IBM SecureWay® Communications Server product to communicate between the host system and NT. You create printer definitions on the host system so that print jobs can be directed to the NT printer. Then, you define the printer to the Infoprint server on NT.

After you install PSF Direct, you send the job to the printer, using normal print-submission processes. Because PSF Direct is a direct pipeline to the printer, you need to end the PSF Direct session before you can use the printer to print from another host system or from IBM Infoprint Manager for Windows NT.

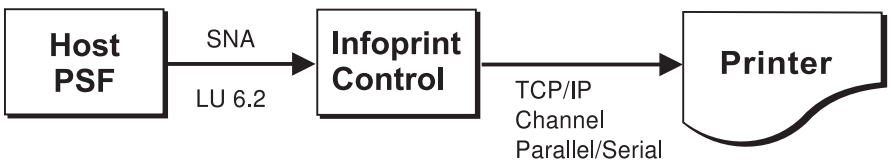

Figure 1. Printing with PSF Direct

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What is IBM SecureWay Communications Server for Windows NT?

You need the IBM SecureWay Communications Server for Windows NT to configure and to use PSF Direct. IBM SecureWay Communications Server is an implementation of SNA for the NT operating system running on the NT workstation. It enables an NT workstation to communicate with other nodes in an SNA network.

PSF Direct requires IBM SecureWay Communications Server for Windows NT system software Version 6, Release 01, with maintenance that includes the following authorized program analysis report (APAR) fixes:

- APAR JR13453
- APAR JR14098
- APAR JR13599

Note that the second APAR (JR13599) is necessary only if you will be creating more than one Communications Server profile for dependent LUs.

Infoprint Manager for Windows NT allows you to create a PSF Direct host receiver whether or not you have completed the IBM SecureWay Communications Server node configuration. Therefore, it does not matter whether you install Infoprint Manager or Communications Server first.

To install IBM SecureWay Communications Server from the CD-ROM:

1. Select the **Install Products** icon that appears on the main window.
2. Choose a **Server** install.
3. From the Communications Server Installation window, select only the **Communications Server for Windows NT** option to use the PSF Direct function.

Once you have completed the installation, create shortcuts for both the SNA Node Configuration interface and the Communications Server Node Operations interface, so that you can easily invoke them from your desktop. (The default path for the SNA Node Configuration interface is *C*:\IBMCS\pcscfg.exe. The default path for the Communications Server Node Operations interface is *C*:\IBMCS\pcsnops.exe. In both paths, *C* is the drive where you installed IBM SecureWay Communications Server for Windows NT.)

What are the Available Network Connections?

This document includes detailed examples and guidelines for several common SNA configurations. The diagrams in this section illustrate the network configurations, with references to more detailed information.

Note: These diagrams, and the other illustrations in this book, show token-ring configurations. Similar Ethernet configurations are also possible.

- Local 37*xx* configuration (Figure 2). This configuration is described in *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 37xx Communications Controller*.

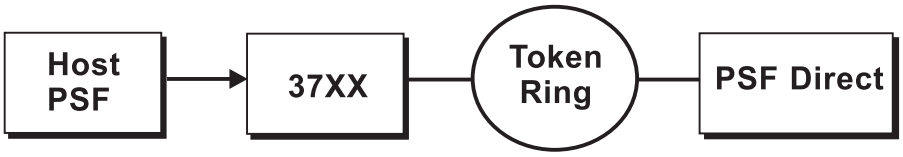

Figure 2. Local 37xx Configuration: Simplified View

- Remote 37*xx* configuration (Figure 3). This configuration is described in *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 37xx Communications Controller*.

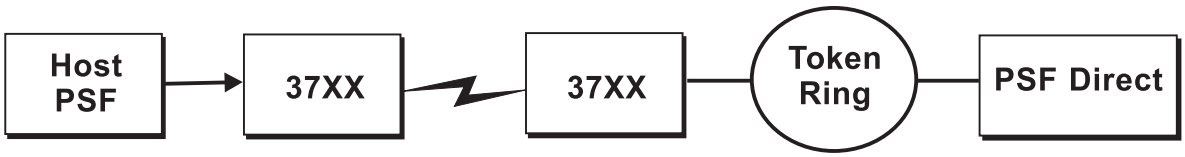

Figure 3. Remote 37xx Configuration: Simplified View

- Local 3172 configuration (Figure 4). This configuration is described in *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for the 3172 Communications Controller*.

Figure 4. Local 3172 Configuration: Simplified View

- Local 3174 configuration (Figure 5). This configuration is described in Chapter 4, "Local 3174 Token-Ring Gateway Configuration" on page 13.

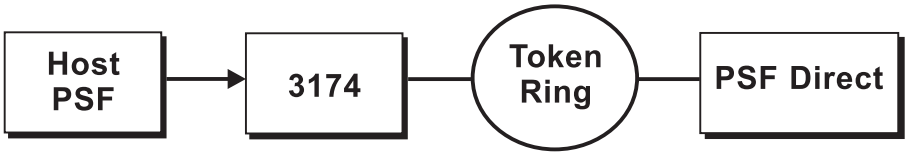

Figure 5. Local 3174 Configuration: Simplified View

- Remote 3174 configuration (Figure 6). This configuration is described in Chapter 5, "Remote 3174 Token-Ring Gateway Configuration" on page 55.

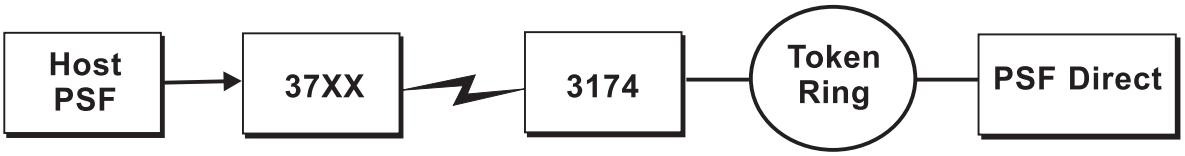

Figure 6. Remote 3174 Configuration: Simplified View

- Local or remote iSeries™ configuration (Figure 7). These configurations are described in *Infoprint Manager for Windows NT and Windows 2000: Configuring PSF Direct for an iSeries System*.

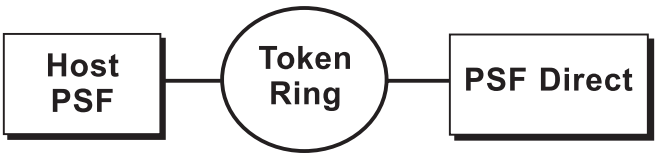

Figure 7. Local or Remote iSeries Configuration: Simplified View

Chapter 2. Understanding PSF Direct Configuration Requirements

An SNA network provides powerful communication capabilities to applications without requiring that the applications be aware of the equipment and transmission facilities that comprise the network. So, an SNA application like PSF Direct can communicate using an SDLC telecommunications link between two continents or a token-ring LAN in a single room.

To configure an SNA application, one normally need only identify the communication partner and the guidelines for exchanging data.

To configure an SNA network, you must describe the internal components of the network and details of their operation.

Considering two views of an SNA network, an application view and a network internals view, aids in understanding PSF Direct configuration requirements. An overview of the key configuration parameter interrelationships when defining logical unit (LU) names follows.

Application View of an SNA Network

An SNA network provides two access points for communication and a logical connection between the two access points. In SNA terminology, the access points are **logical units** (LUs). The connection between them is a **session**. A **mode** describes a session's characteristics, or guidelines for exchanging data.

The application view displayed in Figure 8 illustrates the interface that SNA provides to applications, such as the host PSF program and the PSF Direct component of Infoprint Manager. These applications are isolated from details of the internal components of the SNA network.

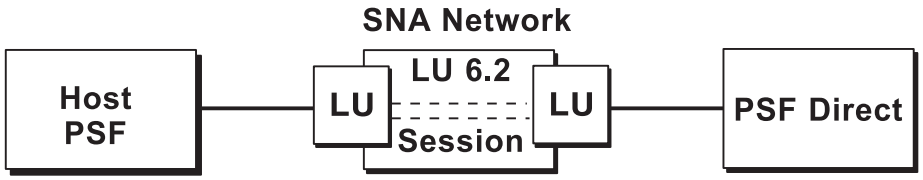

Figure 8. SNA Network: Application View

As the application view suggests, only a few values are required to configure the host PSF program and PSF Direct so they can communicate. Figure 9 on page 6 displays the values used by both applications. Note that each configuration parameter refers to a logical unit or mode provided by the SNA network.

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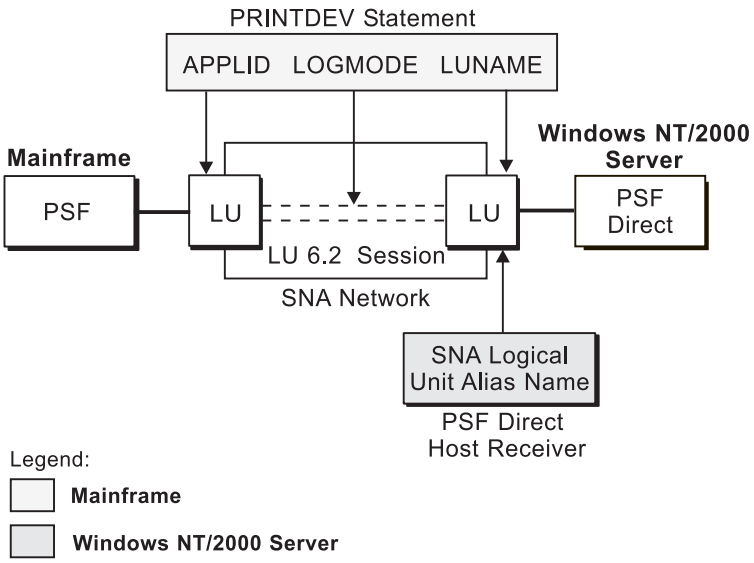

Figure 9. Application View with Configuration Parameters

Host PSF **PRINTDEV** statement parameters:

APPLID
Specifies the name of the logical unit that the host PSF program uses.

LUNAME
Specifies the name of the logical unit that PSF Direct uses.

LOGMODE
Specifies the session characteristics for communication between the two logical units.

Individual modes, or mode entries, are grouped into a table that contains several modes. **LOGMODE** identifies a mode entry. You identify the mode table through the SNA network definitions for the logical unit that PSF Direct uses.

PSF Direct host receiver parameters:

Local LU alias
Specifies the local ID that points to the logical unit that PSF Direct uses on the Windows NT server. For an independent LU, you define this parameter on the **Basic** tab of the Define a Local LU 6.2 notebook. For a dependent LU, it is the same as the LU name.

Because there may be several PSF Direct host receivers on an NT workstation and several NT workstations in an SNA network, each PSF Direct host receiver must have a unique logical unit name.

Network Internals View of an SNA Network

While the application view illustrates the relationship of an SNA network to the applications that use it, the network internals view aids in understanding the components of an SNA network and how they must be configured.

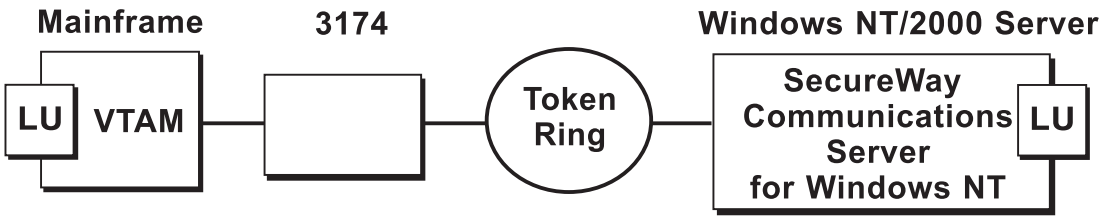

Figure 10. SNA Network: Network Internals View for a Local 3174 Communications Controller

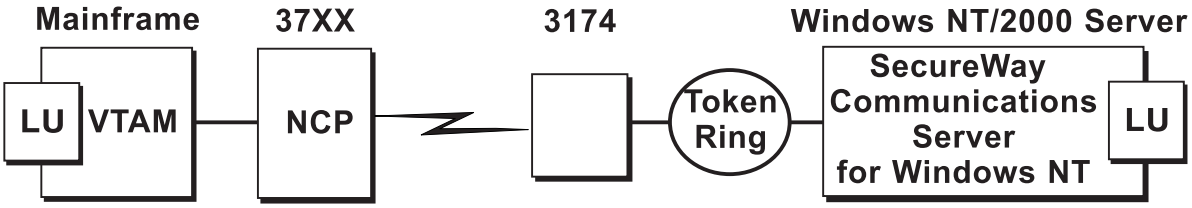

Figure 11. SNA Network: Network Internals View for a Remote 3174 Communications Controller

The network internals views illustrate that many components comprise an SNA network. Most of the components have detailed configuration requirements.

First, however, it is important to understand that several network components have configuration parameters whose values are related to configuration parameters for other network components. You must configure these interrelated parameters consistently to make end-to-end communication possible.

"Key Configuration Parameter Interrelationships" on page 8 contains several figures. They illustrate some of the key interrelationships among configuration parameters for SNA network components.

Key Configuration Parameter Interrelationships

Figure 12 illustrates the interrelationships required when defining logical unit (LU) names.

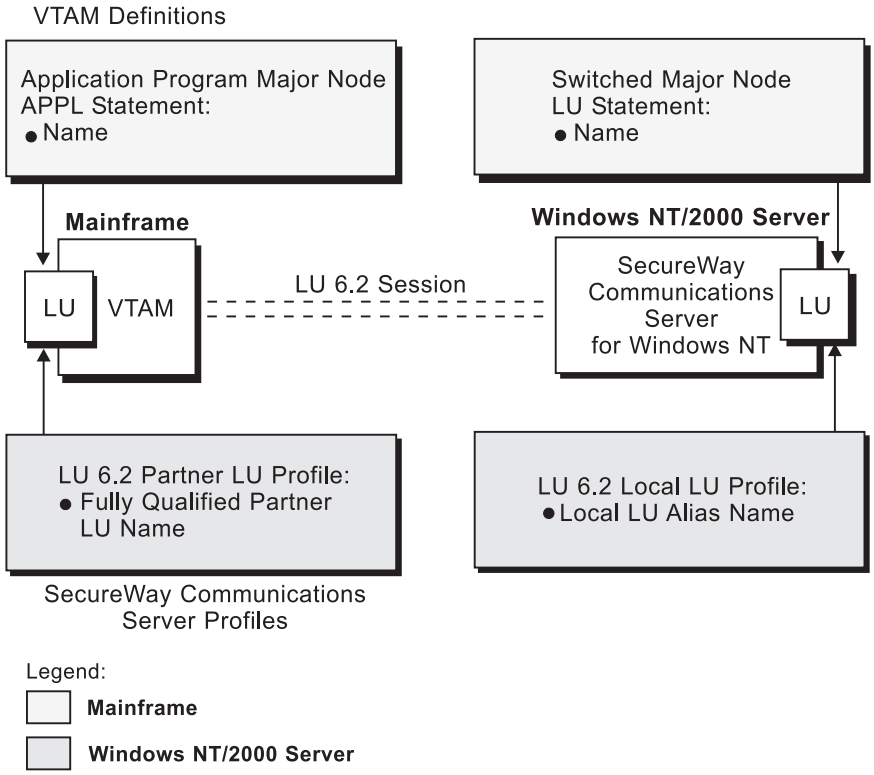

Figure 12. Logical Unit Names

Figure 13 illustrates the interrelationships required when defining the local address of the logical unit provided by SecureWay Communications Server for NT.

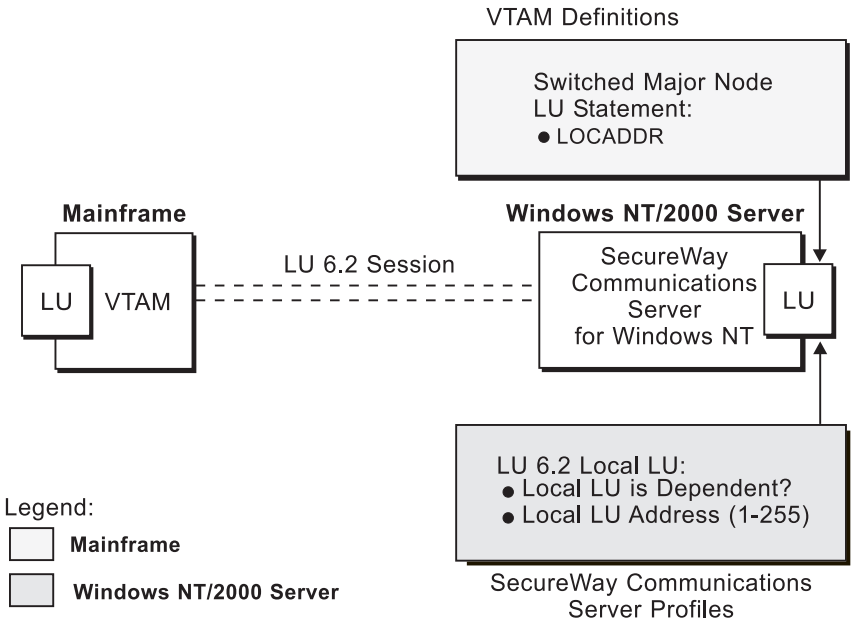

Figure 13. Local Address of Logical Unit

Figure 14 illustrates the interrelationships required when defining session characteristics.

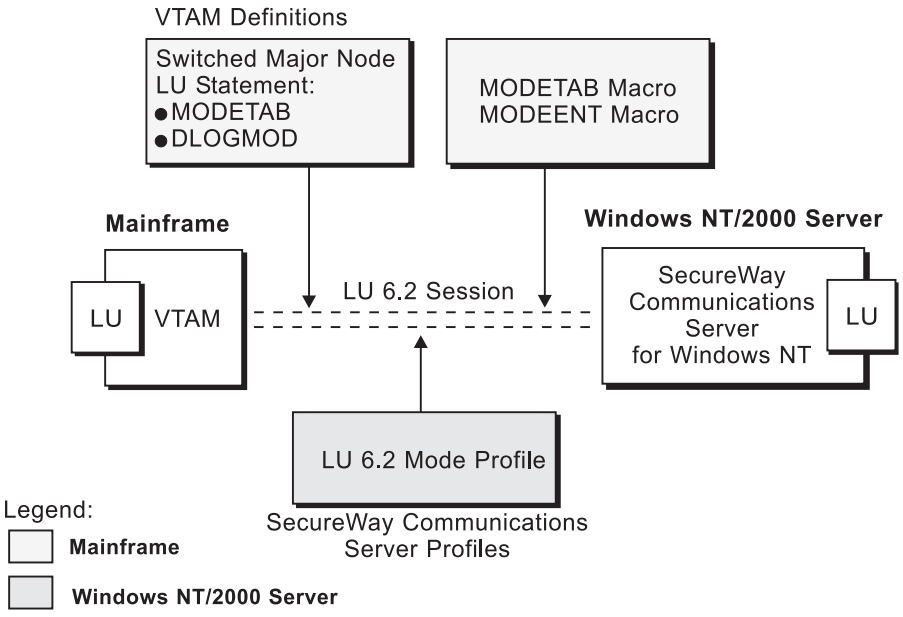

Figure 14. Session Characteristics

Figure 15 illustrates the interrelationships required when defining the names of the physical unit (PU) and control point (CP) provided by SecureWay Communications Server for NT.

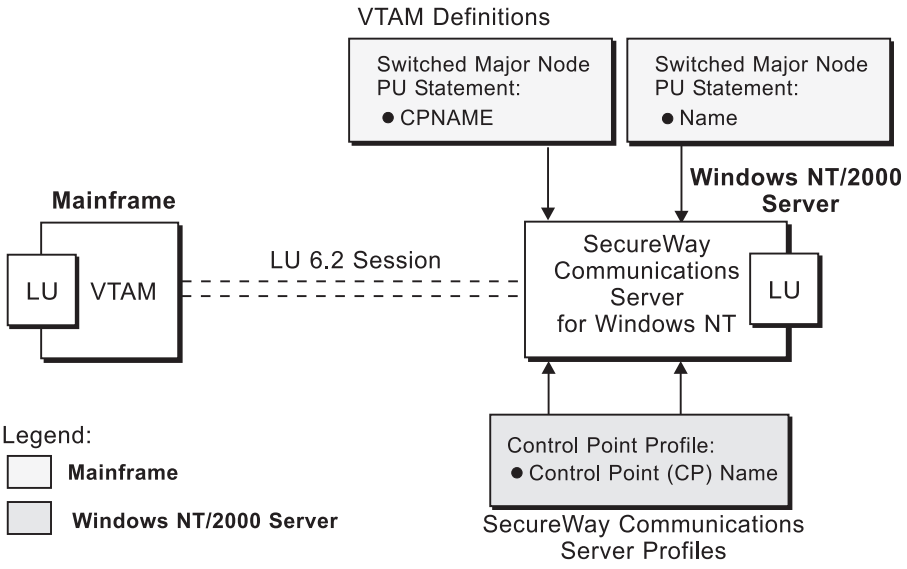

Figure 15. Physical Unit and Control Point Names

Figure 16 illustrates the interrelationships required when defining the network addresses used in either the local or the remote 3174 configuration.

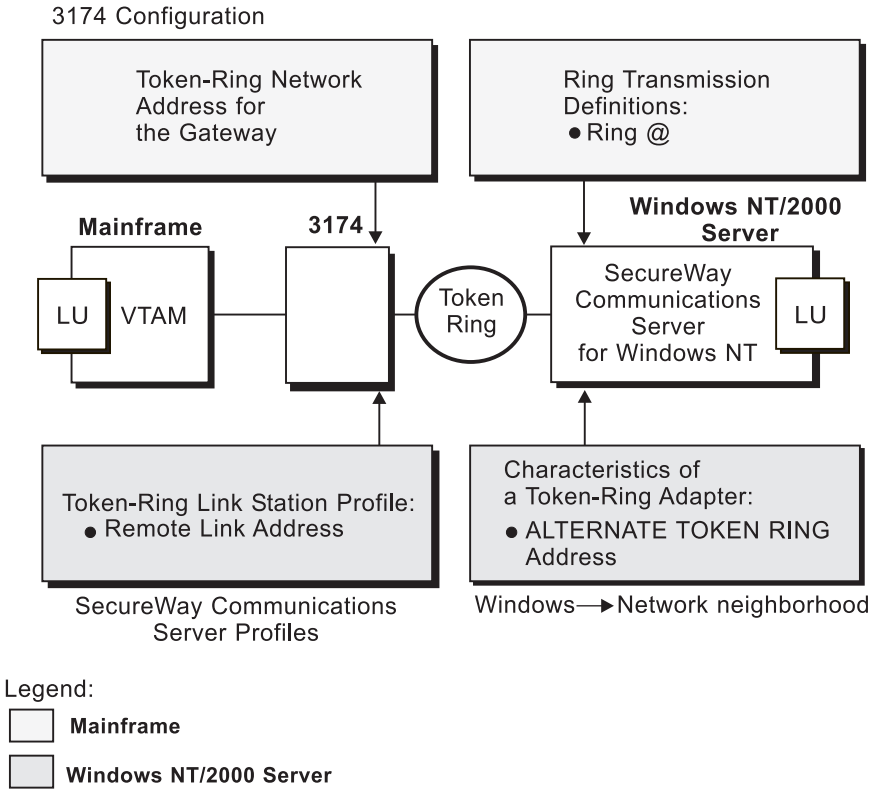

Figure 16. Network Addresses for Local or Remote 3174 Configuration

Chapter 3. Preconfiguration Tasks

Before configuration, perform the following tasks:

- "Defining Devices for IBM SecureWay Communications Server and Infoprint Windows NT"
- "Defining a Local MAC Address for a Windows NT Server"
- "Deciding Whether to Define a Dependent or an Independent LU" on page 12
- "Configuring an LU 6.2 Partner LU on Your Infoprint Windows NT Server" on page 12

Defining Devices for IBM SecureWay Communications Server and Infoprint Windows NT

You must define devices for both Communications Server and Infoprint Manager for Windows NT and Windows 2000, so that the token-ring or Ethernet card can carry the SNA data from the PSF host program. Usually, a device must be made available once. It then remains available, even after Windows NT shuts down and restarts. For each configuration example, you accomplish this task through device configuration, the second of the IBM SecureWay Communications Server for NT configuration profiles in each example.

Defining a Local MAC Address for a Windows NT Server

A token-ring or Ethernet address, often called a **medium access control (MAC) address**, has 12 hexadecimal digits, for example, `10005AC8B0EA`. Each device in a network must have a unique address. To facilitate unique addressing, every manufacturer assigns a distinct address called a **universal MAC address** to each network adapter. By default, an adapter in a Windows NT server uses the address that the manufacturer assigned when the adapter was made. However, Windows NT systems allow you to define an **alternate network address**, also called a **local MAC address**.

In some configurations, an alternate network address is necessary. For example:

- The 3174 Establishment Controller requires an alternate network address for the gateway and prefers alternate network addresses for devices attached to the gateway.
- If the **DIALNO** operand is included in a Virtual Telecommunications Access Method (VTAM®) switched major node **PATH** statement, an alternate network address is generally required. The **DIALNO** operand accepts only digits in the 0–9 range; however, most universal MAC addresses (assigned by the manufacturer) include at least one digit in the A–F range. In these instances, you must use an alternate network address that does not contain any digits in the A–F range.

Generally, the first four digits of alternate network addresses must be `4000`.

To assign an alternate network address to an adapter in a Windows NT server, you must refer to the operating system online help. Different levels of the operating systems can vary.

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For example, if you want to assign an alternate network address to a token-ring adapter on a Microsoft® Windows NT Version 4.00.1381 system, use the following procedure:

1. Specify the **My Computer-->Control Panel-->Network** path.
2. Select the **Adapters** tab.
3. Highlight the token-ring adapter and click the **Properties...** button.
4. From the IBM Auto 16/4 Token-Ring Adapter Card Setup pop-up, specify the local MAC address in the **Network Address** field.
5. Shut down and reboot your Infoprint Windows NT server so the new address can take effect.

Deciding Whether to Define a Dependent or an Independent LU

You will usually add an LU 6.2 Local LU profile for each logical unit used by PSF Direct, whether the logical unit is dependent or independent. Whenever possible, you should define an independent LU, because they are easier to manage. With a dependent LU, you must assign a session ID and track its network addressable unit (NAU) address.

A dependent LU requires you to perform the following tasks from the Communications Server SNA Node Configuration window:

1. Click the plus sign (**+**) next to **Host Resources** to access **Host Connections**.
2. Highlight **Host Connections** and select the **Create** option.
3. Fill in all the values in the Define a LAN Connection notebook, then specify **OK**.
4. At the `Do you wish to create and assign new LUs to this connection?` pop-up dialog, specify **YES**.
5. Fill in the Host LU Definition window, specifying an **LU name** value.

An independent LU requires you to perform the following tasks from the Communications Server SNA Node Configuration window:

1. Select and define **Peer Connections**, while leaving **Host Resources** empty.
2. Select the **Local LU 6.2 LUs** option under the **CPI-C and APPC** heading.
3. Specify the values on the **Basic** tab of the Define a Local LU 6.2 notebook, leaving the **Dependent LU** box unchecked.
4. Specify the values on the **Advanced** tab of the Define a Local LU 6.2 notebook.

Configuring an LU 6.2 Partner LU on Your Infoprint Windows NT Server

You must configure an LU 6.2 Partner LU profile for each logical unit used by a host PSF program. Some IBM SecureWay Communications Server for NT documentation indicates that an LU 6.2 Partner LU profile is not required if the local LU is an independent logical unit. However, because the logical unit used by the host PSF program does not support parallel sessions, IBM SecureWay Communications Server for NT requires an LU 6.2 profile in all PSF Direct configurations.

Chapter 4. Local 3174 Token-Ring Gateway Configuration

Figure 17 shows a local 3174 token-ring gateway configuration.

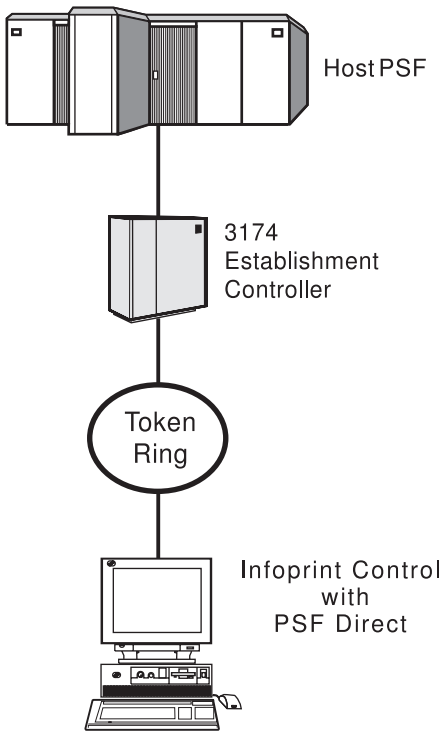

Figure 17. Local 3174 Token-Ring Gateway Configuration

This chapter describes how to create a local 3174 token-ring gateway configuration. It contains guidelines and examples for the following tasks:

- "Local 3174 Host Configuration" on page 14
  - "Specifying the JES2 Initialization Statement" on page 14
  - "Configuring the Host PSF Printer" on page 14
  - "Specifying the VTAM Start Option List (ATCSTRxx)" on page 17
  - "Specifying the VTAM Configuration List (ATCCONnn)" on page 18
  - "Specifying the VTAM Application Program Major Node and Application Program" on page 19
  - "Specifying the VTAM Mode Table and Entry" on page 19
  - "Specifying the VTAM Local Major Node" on page 20
  - "Configuring the 3174 Establishment Controller" on page 21
- "Specifying Communications Server for NT Configuration Profiles" on page 23
  - "Accessing the Communications Server for NT Profiles" on page 23
  - "Local 3174 Node Setup" on page 25
  - "Local 3174 Device Configuration" on page 29
  - "Local 3174 Peer Connections Configuration" on page 34
  - "Local LU 6.2 Configuration for Local 3174" on page 38
  - "Enabling SNA API Clients for Local 3174" on page 41

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- "Partner LU 6.2 Configuration for Local 3174" on page 43
- "Mode Configuration for Local 3174" on page 46
- "Transaction Program Configuration for Local 3174" on page 49

Note: Before performing this configuration, review Chapter 3, "Preconfiguration Tasks" on page 11. You must define an alternate token-ring address (local MAC address) for your Infoprint Windows NT server.

At the end of the chapter, there are two configuration work sheets. The first work sheet (Table 2 on page 53) is filled out with the values from the examples. The second work sheet (Table 3 on page 54) is blank for your own values.

Local 3174 Host Configuration

This section provides guidelines and examples for the following tasks:

- "Specifying the JES2 Initialization Statement"
- "Configuring the Host PSF Printer"
- "Specifying the VTAM Start Option List (ATCSTRxx)" on page 17
- "Specifying the VTAM Configuration List (ATCCONnn)" on page 18
- "Specifying the VTAM Application Program Major Node and Application Program" on page 19
- "Specifying the VTAM Mode Table and Entry" on page 19
- "Specifying the VTAM Local Major Node" on page 20
- "Configuring the 3174 Establishment Controller" on page 21

For each task, this section shows the pertinent parameters. It describes which of these require you to specify *variable_names* and which require a specific name or number, such as **MODETAB=MODEIBM** or **FMPROF=X'13'**. An underlined value (such as **WCONNECT**) indicates that the value is a system default.

Specifying the JES2 Initialization Statement

Define the host PSF printer as you would any other Systems Network Architecture (SNA)-attached printer. For example, on an OS/390 system you must provide either JES2 or JES3 initialization statements.

Figure 18 shows an example.

```
PRT618 CLASS=Y,MARKS=YES,START=NO,MODE=FSS,FSS=WTRES600,   X
  PRMODE=(LINE,PAGE),UCS=0
```

Figure 18. JES2 Initialization Statement Example (Local Configuration)

Configuring the Host PSF Printer

The manner in which a host PSF printer is configured depends on the operating system. You will use one of the following statements:

- Print Services Facility (PSF) for OS/390 **PRINTDEV** statement
- PSF/VSE **PRINTDEV** statement
- Parameters in the PSF/VM **OPTIONS PDM** file

On each operating system, PSF supports specification of both the application program ID (**APPLID**) and the logical unit name (**LUNAME**).

```
.
.
.
APPLID=appl_prog
LUNAME=lu_name
.
.
.
```

Figure 19. Host PSF Printer Guidelines (Local Configuration)

On some operating systems, PSF also supports other configuration parameters. The following text describes these parameters (listed in order of importance) and notes whether they are required or optional:

APPLID (required)
Specifies the application program that is the SNA logical unit provided by Virtual Telecommunications Access Method (VTAM) and used by PSF. The **APPLID** value must match:

- An **APPL** statement name in a VTAM application program major node
- The second part of the **Partner LU name** field on the **Basic** tab of the Define a Partner LU 6.2 notebook (Figure 54 on page 44)

LUNAME (required)
Specifies the SNA logical unit with which PSF tries to initiate a session. The **LUNAME** value must match:

- An **LU** statement name in a VTAM switched major node
- The **LU name** field in the Host LU Definition window (Figure 49 on page 39)

LOGMODE (optional)
Specifies the VTAM logon mode table entry that defines characteristics of the session between the logical units identified by the **APPLID** and **LUNAME** parameters. The **LOGMODE** parameter identifies an entry within a logon mode table. The **MODETAB** operand on the VTAM **LU** statement identifies the logon mode table. If you omit the **LOGMODE** parameter, the **DLOGMOD** operand on the VTAM **LU** statement identifies the entry within the logon mode table.

Note that if the logical unit identified by the **LUNAME** parameter is a cross-domain resource, you must not use the **LOGMODE** parameter.

SETUP (optional)
Specify **SETUP=FORMS** to cause the Job Entry Subsystem (JES) to issue forms setup messages to the operator.

By default, JES issues forms setup messages to the operator for channel-attached printers, but does not issue forms setup messages to the operator for SNA-attached printers.

MGMTMODE ={IMMED | OUTAVAIL | DIALIN} (optional)
Determines how the host PSF program and PSF Direct initiate communication.

IMMED
Causes the host PSF program to initiate communication when it starts.

OUTAVAIL
Causes the host PSF program to initiate communication when there is available output to print.

DIALIN
Causes the host PSF program to initiate communication only after a switched line becomes available. The switched line can become available either when VTAM dials out or when the remote node dials in.

Note that if you specify **DIALIN**:

- Do not use the **LOGMODE** parameter.
- Include the **LOGAPPL** operand on the VTAM **LU** statement.
- Ensure that the **LOGAPPL** operand on the VTAM **LU** statement matches the **APPLID** value.

FAILURE={WCONNECT | STOP} (optional)
Specifies whether or not the host PSF program re-attempts communication after a printer or communication failure. If you do not specify a value for the **FAILURE** parameter, it defaults to **WCONNECT**.

WCONNECT
Specifies that the host PSF program attempts to communicate again.

STOP Specifies that the operator must restart the host PSF program.

DISCINTV (optional)
Specifies the interval (in seconds) that the host PSF program waits for output to become available to print. If no output becomes available, the host PSF program ends communication with the printer.

Specify `0` to cause the host PSF program to maintain communication indefinitely. If you do not specify a value for **DISCINTV**, it defaults to `0`.

Figure 20 on page 17 shows an example of a single **PRTDEV** statement for a device named PRT618. Note that if an installation has multiple printers defined for receiving PSF Direct jobs, you must define a separate **PRTDEV** statement for each printer.

```
//WTRES600 PROC
//*
//STEP01 EXEC PGM=APSPPIEP,REGION=4096K
//*
//STEPLIB DD DSN=SYSTEM.PSF.V220.LINKLIB,DISP=SHR
//*
//JOBHDR OUTPUT PAGEDEF=A06462,    /* JOB HEADER PAGEDEF     */
//              FORMDEF=A10110     /* JOB HEADER FORMDEF     */
//JOBTLR OUTPUT PAGEDEF=A06462,    /* JOB TRAILER PAGEDEF    */
//              FORMDEF=A10110     /* JOB TRAILER FORMDEF    */
//DSHDR OUTPUT  PAGEDEF=A06462,    /* DATA SET HEADER PAGEDEF*/
//              FORMDEF=A10110     /* DATA SET HEADER FORMDEF*/
//MSGDS OUTPUT  PAGEDEF=A06462,    /* MESSAGE DATASET PAGEDEF*/
//              FORMDEF=A10110     /* MESSAGE DATASET FORMDEF*/
//*
//FONT01 DD DSN=SYS1.FONTLIB,DISP=SHR
//OLAY01 DD DSN=SYS1.OVERLIB,DISP=SHR
//PSEG01 DD DSN=SYS1.PSEGLIB,DISP=SHR
//FDEF01 DD DSN=SYS1.FDEFLIB,DISP=SHR
//PDEF01 DD DSN=SYS1.PDEFLIB,DISP=SHR
//*
//PRT618 PRINTDEV FONTDD=*.FONT01, /* FONT LIBRARY DD       */
//                OVLYDD=*.OLAY01, /* OVERLAY LIBRARY DD    */
//                PSEGDD=*.PSEG01, /* SEGMENT LIBRARY DD    */
//                PDEFDD=*.OLAY01, /* PAGEDEF LIBRARY DD    */
//                FDEFDD=*.OLAY01, /* FORMDEF LIBRARY DD    */
//                JOBHDR=*.JOBHDR, /* JOB HEADER DD         */
//                JOBTLR=*.JOBTLR, /* JOB TRAILER DD        */
//                DSHDR=*.DSHDR,   /* DATA SET HEADER DD    */
//                MESSAGE=*.MSGDS, /* MESSAGE DATA DD       */
//                PAGEDEF=A06462,  /* DEFAULT PAGEDEF       */
//                FORMDEF=A10110,  /* DEFAULT FORMDEF       */
//                CHARS=(GT10,GC15,GB10,GR10,), /* DEFAULT FONT SET*/
//                PIMSG=YES,       /* ACCUMULATE DATA SET MESSAGES */
//                SETUP=FORMS,     /* ISSUE FORMS SETUP MESSAGES   */
//                MGMTMODE=OUTAVAIL,/* START WHEN OUTPUT AVAILABLE */
//                DISCINTV=60,      /* DISCONNECT INTERVAL -- SECS */
//                LOGMODE=IBM3820T, /* LOGON MODE TABLE ENTRY      */
//                APPLID=FSAES618,  /*        APPLICATION PGM NAME */
//                LUNAME=PSFDC5LU   /* LOGICAL UNIT NAME           */
//PRT618 ENDCNTL
```

Figure 20. JES2 External Writer Procedure Example (Local Configuration)

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 21 and described below.

```
CONFIG=nn,         ATCCON MEMBER OF VTAMLST     X
NETID=network_id,  NETWORK IDENTIFIER           X
SSCPID=nn,         SSCP IDENTIFIER              X
.
.
.
```

Figure 21. VTAM Start Option List (ATCSTRxx) Guidelines (Local Configuration)

CONFIG
Specifies the **ATCCON***nn* member to use.

NETID
Specifies the network identifier for the host system. The first part of the

Partner LU name field on the **Basic** tab of the Define a Partner LU 6.2 notebook (Figure 54 on page 44) must match the **NETID** value.

SSCPID

Specifies the system services control point (SSCP) at the host. The SSCPID is a decimal integer from 0 to 65535.

The SSCP, normally VTAM, provides several network management functions. They include managing dependent logical units and accepting Network Management Vector Transports, such as alerts. Alerts often include information about devices that are unavailable or require corrective action.

To configure a PSF Direct host receiver to send alerts to this SSCP, the least significant portion of the **SNA System Services Control Point ID** value defined for the PSF Direct host receiver must be the hexadecimal equivalent of the SSCPID value. (For information about configuring the host receiver, see "Defining the PSF Direct Host Receiver" on page 100.) The **SNA System Services Control Point ID** must be in the form **05***xxxxxxxxxx*, where *x* is a hexadecimal digit.

For example, to configure a PSF Direct host receiver to send alerts to an SSCP with an SSCPID value of 283, the host receiver's **SNA System Services Control Point ID** value must be 05000000011B.

Figure 22 shows an example.

```
CONFIG=00,       ATCCON MEMBER OF VTAMLST     X
NETID=USIBMBQ,   NETWORK IDENTIFIER           X
SSCPID=1,        SSCP IDENTIFIER              X
.
.
.
```

Figure 22. VTAM Start Option List (ATCSTRxx) Example (Local Configuration)

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should become available when VTAM starts. Include the application program major node that contains the application program that PSF uses.

```
appl_prog_major_node,          X
.
.
.
```

Figure 23. VTAM Configuration List (ATCCONnn) Guidelines (Local Configuration)

Figure 24 shows an example.

```
PSFAPPLS,                      X
.
.
.
```

Figure 24. VTAM Configuration List (ATCCONnn) Example (Local Configuration)

Specifying the VTAM Application Program Major Node and Application Program

The pertinent operands for the VTAM application program major node and application program are illustrated in Figure 25 and described below.

```
appl_prog_major_node, VBUILD TYPE=APPL                X
appl_prog,            APPL AUTH=ACQ,EAS=1,SONSCIP=YES  X
.
.
.
```

Figure 25. VTAM Application Program Major Node and Application Program Guidelines (Local Configuration)

The host PSF program does not support application programs that use **APPC=YES** or **PARSESS=YES**. The default value for both **APPC** and **PARSESS** is **NO**.

Figure 26 shows an example.

```
PSFAPPLS,   VBUILD TYPE=APPL                          X
FSAES618,   APPL AUTH=ACQ,EAS=1,SONSCIP=YES           X
.
.
.
```

Figure 26. VTAM Application Program Major Node and Application Program Example (Local Configuration)

Specifying the VTAM Mode Table and Entry

The operands for the VTAM mode table are illustrated in Figure 27 and described below.

```
table_name   MODETAB                                              X
entry_name   MODEENT LOGMODE=IBM3820T,FMPROF=X'13',TSPROF=X'07', X
.
.
.
             PRIPROC=X'B0',SECPROT=X'B0',COMPROT=X'D0B1'         X
             PSERVIC=X'060200000000000000000200'                 X
             PSNDPAC=X'10',SRCVPAC=X'10',SSNDPAC=X'00'           X
             RUSIZES=X'8787'
```

Figure 27. VTAM Mode Table and Entry Guidelines (Local Configuration)

PSNDPAC
Specifies the primary send pacing count. This value influences performance and can be adjusted as desired. A value of X'10' produces good throughput in most configurations.

SRCVPAC
Specifies the secondary receive pacing count. This value influences performance and can be adjusted as desired. A value of X'10' produces good throughput in most configurations.

RUSIZES
Specifies the maximum request unit (RU) sizes from the primary and secondary logical units. The RU sizes influence performance and can be adjusted as desired. A value of X'8787' means 1024 bytes for both RU sizes and produces good throughput in most configurations.

The **RUSIZES** specification influences other configuration parameters. These include:

- The **Maximum RU size** field on the **Advanced** tab of the Define a Mode notebook (Figure 58 on page 48)
- The **MAXSTL** operand in the IBM Network Control Program (NCP) **LINE** statement

Figure 28 shows an example.

```
MODEIBM     MODETAB                                              X
IBM3820T    MODEENT  LOGMODE=IBM3820T,FMPROF=X'13',TSPROF=X'07',  X
.
.
.
                     PRIPROC=X'B0',SECPROT=X'B0',COMPROT=X'D0B1'  X
                     PSERVIC=X'060200000000000000000200'          X
                     PSNDPAC=X'10',SRCVPAC=X'10',SSNDPAC=X'00'    X
                     RUSIZES=X'8787'
```

Figure 28. VTAM Mode Table and Entry Example (Local Configuration)

Specifying the VTAM Local Major Node

The operands for the VTAM local major node are illustrated in Figure 29 and described below.

```
.
.
.
node_name    VBUILD TYPE=LOCAL
*
pu_name      PU     CUADDR=nnn,          CHANNEL CONTROL UNIT ADDRESS   X
                    MAXBFRU=nn,          VTAM BUFFERS FOR RECEIVING     X
                    MODETAB=mode_entry,  LOGON MODE TABLE               X
                    DLOGMOD=mode_entry,  LOGON MODE TABLE ENTRY         X
                    VPACING=0,           NO PACING TO BOUNDARY NODE
*
lu_name      LU     LOCADDR=nn,          DEPENDENT LU
```

Figure 29. VTAM Local Major Node Guidelines (Local Configuration)

The following describes the pertinent operands on the **VBUILD** statement:

TYPE Specify **LOCAL** to indicate that the node is a local major node.

The following describes the pertinent operands on the **PU** statement.

Note: The **DLOGMOD**, **MODETAB**, and **VPACING** operands are **LU** operands, but are included here on the **PU** statement. VTAM definitions support a "sift-down effect" that allows you to code an operand on a higher-level statement so you do not need to code it on each lower-level statement for which the same value is desired. There is only one logical unit in the guideline presented here, so the sift-down effect is for demonstration only. If the **DLOGMOD**, **MODETAB**, and **VPACING** operands are specified on the **PU** statement, they do not have to be specified on any of the **LU** statements.

CUADDR
Specifies the 3-digit hexadecimal number that identifies the channel control

unit address used when activating the physical unit. The value must match a channel control unit address supplied when the operating system was generated.

MAXBFRU
Specifies the number of buffer units that VTAM uses to receive data from the physical unit. These buffer units are elements of the IOBUF buffer pool.

Always specify **MAXBFRU** so that the baseno value for the IOBUF multiplied by **MAXBFRU** is equal to or greater than the **maximum RU size** used by the controller:

```
baseno × MAXBFRU ≥ maximum_RU_size
```

For example, a **MAXBFRU** value of 10 is adequate for a baseno value of 128 and a maximum RU size of 1024.

MODETAB
Specifies the name of the logon mode table that contains entries that describe session characteristics.

DLOGMOD
Specifies the name of the logon mode table entry that describes session characteristics.

VPACING
Determines how VTAM paces the flow of data from VTAM to the boundary node that performs pacing for the channel-attached SNA device. A value of zero means that no pacing is performed for sessions with the logical unit, or that the largest possible pacing is used if the session is adaptively paced.

The following describes the pertinent operands on the **LU** statement:

LOCADDR
To use a dependent logical unit, specify a value between 1 and 255 for **LOCADDR**. Also, in the Host LU Definition window (Figure 49 on page 39), specify **Dependent LU 6.2** for the **LU model type** field, and the **LOCADDR** value for the **Host NAU address** field.

Figure 30 shows an example.

```
.
.
.
PSFDC5MJ    VBUILD TYPE=LOCAL
*
PSFDC5PU    PU     CUADDR=790,          CHANNEL CONTROL UNIT ADDRESS   X
                   MAXBFRU=10,          VTAM BUFFERS FOR RECEIVING     X
                   MODETAB=MODEIBM,     LOGON MODE TABLE               X
                   DLOGMOD=IBM3820T,    LOGON MODE TABLE ENTRY         X
                   VPACING=0,           NO PACING TO BOUNDARY NODE
*
PSFDC5LU    LU     LOCADDR=1,           DEPENDENT LU
```

Figure 30. VTAM Local Major Node Example (Local Configuration)

Configuring the 3174 Establishment Controller

The keywords and values for the 3174 establishment controller are illustrated in Figure 31 on page 22 and described below.

```
.
.
.
     CONFIGURATION SUPPORT C RELEASE 3
900: TOKEN-RING ADDRESS FOR THE GATEWAY
          4000 nnnn nnnn
940: RING ADDRESS ASSIGNMENT
     S@   Ring@,             SAP
.
.
.
     nn   4000 nnnn nnnn
     nn   nnnn nnnn nnnn     04
          DLOGMOD=IBM3820T,
941: RING TRANSMISSION DEFINITION
                             F    W
     nn   nnnn nnnn nnnn
     nn   nnnn nnnn nnnn     n    n
```

Figure 31. 3174 Establishment Controller Guidelines (Local Configuration)

900: Token-Ring Address for the Gateway
Specify the token-ring address for the gateway. The address must be a local MAC address in the form **4000** *nnnn nnnn* .

940: Ring Address Assignment
This configuration item includes several pertinent parameters:

S@ Indicates the subchannel address. Values are supplied automatically on the **Ring Address Assignment** panel. The first **S@** value specifies the subchannel address for the gateway. The remaining **S@** values specify subchannel addresses for ring-attached physical units.

Ring@ Indicates the token-ring address. The first **Ring@** value specifies the token-ring address for the gateway and is supplied automatically on the **Ring Address Assignment** panel.

Specify a token-ring address for each ring-attached physical unit. Local MAC addresses are preferable to universal MAC addresses. Local MAC addresses are in the form **4000** *nnnn nnnn*.

SAP Accept the default service access point (SAP) value, `04`.

941: Ring Transmission Definition
This configuration item includes two pertinent parameters:

F Indirectly specifies the transmit I-frame size.

To prevent basic information units (BIUs) from being broken into pieces, choose a transmit I-frame size that is at least 9 bytes larger than the maximum RU size. The maximum RU size is the lesser of the value represented by the VTAM **MODEENT** statement **RUSIZES** operand and the **Maximum RU size** field on the **Advanced** tab of the Define a Mode notebook (Figure 58 on page 48).

W Specifies the transmit window size. The transmit window size is the number of frames that the 3174 sends to the physical unit before waiting for a link-level acknowledgement.

The **Receive window count** field on the **Advanced** tab of the Define a LAN Device notebook (Figure 41 on page 31) specifies the

maximum number of frames that Communications Server for NT receives before sending a link-level acknowledgement.

For optimum performance, the transmit window size (**W**) should be equal to the **Receive window count**. If the transmit window size is less than the **Receive window count**, extremely poor throughput can result. In most cases, the default transmit window size value is 2. The default **Receive window count** value is 8. You must adjust these default values to produce acceptable throughput.

```
.
.
.
     CONFIGURATION SUPPORT C RELEASE 3
900: TOKEN-RING ADDRESS FOR THE GATEWAY
          4000 3000 1001
940: RING ADDRESS ASSIGNMENT
     S@   Ring@,             SAP
.
.
.
     C1   4000 3000 1001
     C2   4000 3000 1002     04
          DLOGMOD=IBM3820T,
941: RING TRANSMISSION DEFINITION
                             F    W
     C1   4000 3000 1001
     C1   4000 3000 1002     2    7
```

Figure 32. 3174 Establishment Controller Example (Local Configuration)

Specifying Communications Server for NT Configuration Profiles

This section contains instructions and guidelines for configuring the Communications Server for NT profiles. It includes the following tasks:

- "Accessing the Communications Server for NT Profiles"
- "Local 3174 Node Setup" on page 25
- "Local 3174 Device Configuration" on page 29
- "Local 3174 Peer Connections Configuration" on page 34
- "Local LU 6.2 Configuration for Local 3174" on page 38
- "Enabling SNA API Clients for Local 3174" on page 41
- "Partner LU 6.2 Configuration for Local 3174" on page 43
- "Mode Configuration for Local 3174" on page 46
- "Transaction Program Configuration for Local 3174" on page 49

Accessing the Communications Server for NT Profiles

Use the following procedure to access the IBM SecureWay Communications Server for NT applications that are described in "What is IBM SecureWay Communications Server for Windows NT?" on page 2.

Note that this procedure assumes that you have dragged the icons for **SNA Node Configuration** and **SNA Node Operations** to your desktop after they were created at installation.

1. From your NT desktop view, double-click the **SNA Node Configuration** icon that resides on your desktop:

2. At the **Welcome to Communications Server Configuration!** pop-up window, select the **New** button for a new configuration) and click the **Next>** button.

   Communications Server creates an *xxx*.acg file (where *xxx* represents the file name you select in this window. This *xxx*.acg file resides in the *C*:\IBMCS\private directory, where *C* is the drive where you installed IBM SecureWay Communications Server for NT. For users migrating from PSF Direct on an OS/2® operating system, this *xxx*.acg file is the equivalent of the OS/2 Communications Manager Communications Server *xxx*.ndf file.

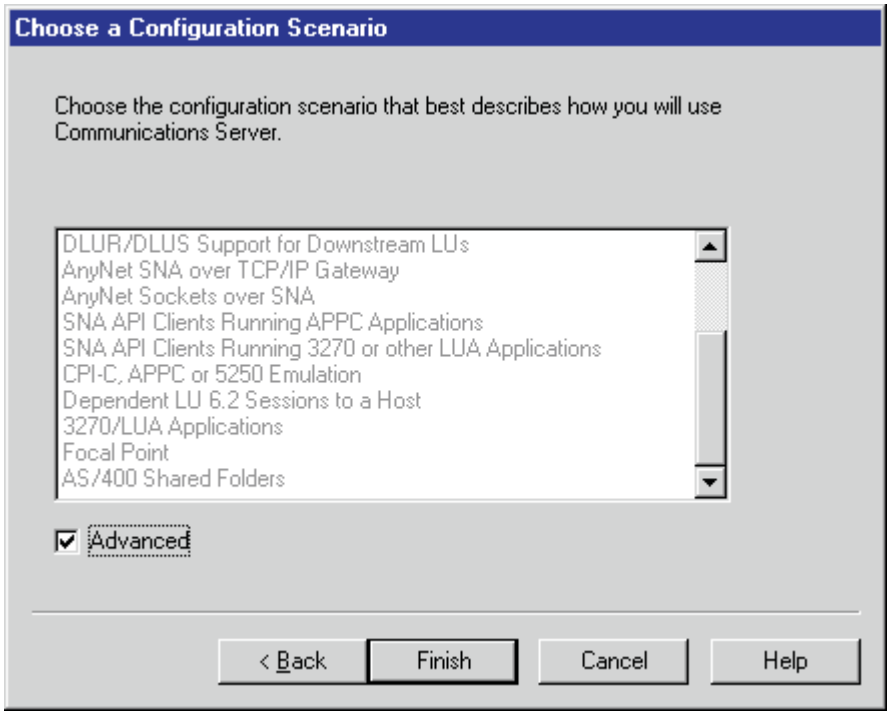

Figure 33. Choose a Configuration Scenario Window (Local Configuration)

3. In the Choose a Configuration Scenario window (Figure 33), check the **Advanced** box, which causes the display to turn gray. Click the **Finish** button.
4. From the Communications Server SNA Node Configuration window (Figure 34 on page 25), you are ready to begin configuring your system for PSF Direct.

Local 3174 Node Setup

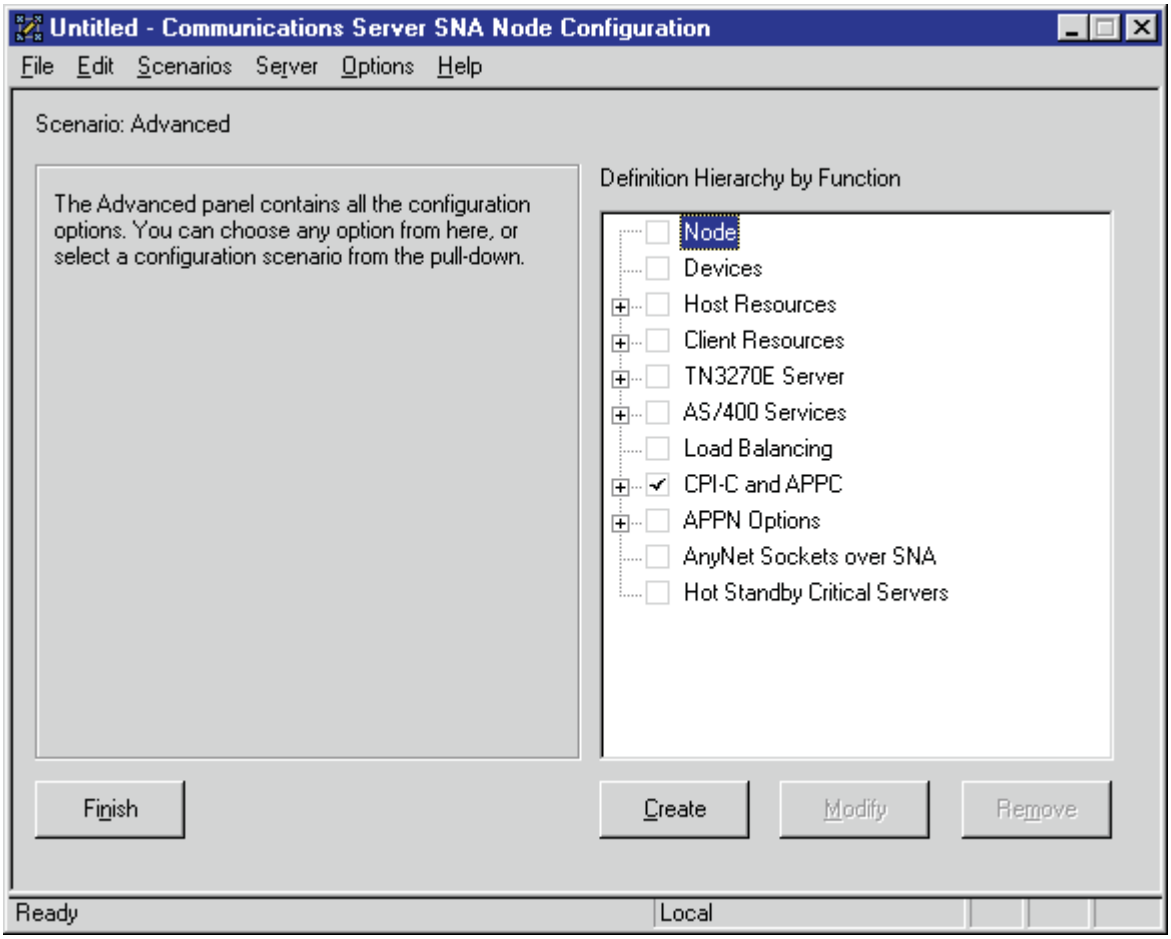

Figure 34. Communications Server SNA Node Configuration Window: Node (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 34), right-click the **Node** box and select the **Create** option. The Define the Node notebook opens at the **Basic** tab.

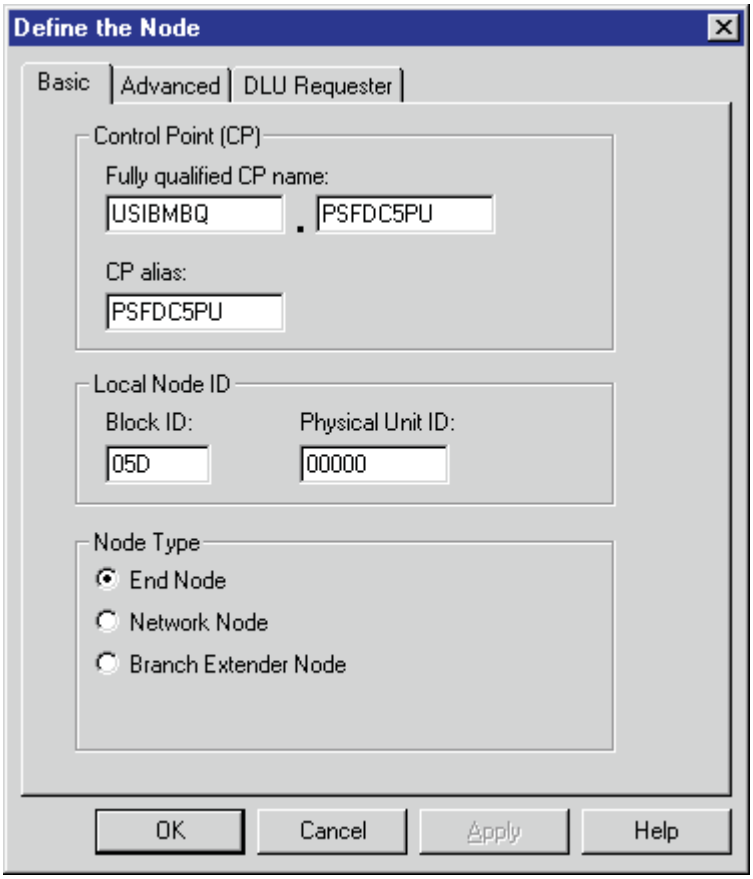

Figure 35. Define the Node Notebook: Basic Tab (Local Configuration)

On the **Basic** tab (Figure 35), specify values for the following parameters:

Fully qualified Control Point (CP) name
Specifies the name of the component that manages the resources of that node. If the **CPNAME** operand is used in the VTAM **PU** statement, then the second part of this value must match the **CPNAME** operand. By convention, the **CPNAME** is usually the same as the **PU** name.

CP alias
Specifies an alternative name for the CP. Local applications can use this name, instead of the **Fully qualified Control Point (CP)** name, to refer to the local CP.

Local Node ID
Specifies both the **Block ID** and the **Physical Unit ID**. The **Block ID** is a 3-digit hexadecimal string that identifies the product type in an SNA network. The **Physical Unit ID** is a 5-digit hexadecimal string that identifies a physical unit (PU).

If the **IDBLK** and **IDNUM** operands are used in the VTAM **PU** statement, then the **Local Node ID** value must match the combined **IDBLK** and **IDNUM** operands. The **IDBLK** operand is normally `071` for Communications Server for NT.

If you are migrating from an AIX® operating system, **Local Node ID** matches the **XID Node ID** parameter.

Node Type

Specifies the type of node. Take the default value, **End node**.

If you are migrating from an AIX operating system, **Node Type** matches the **Control Point Type** parameter.

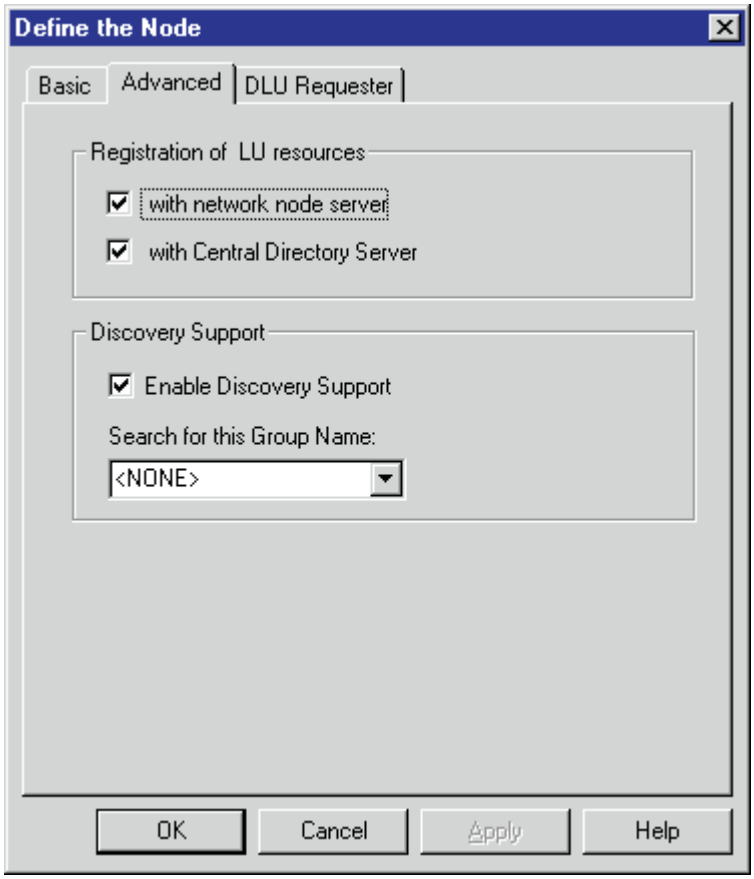

Figure 36. Define the Node Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 36), specify values for the following parameters:

Registration of LU resources

Specifies that directory information about the local logical units (LUs) 6.2 is sent to the server. As the example shows, check both the **Network node server** and the **Central Directory Server**.

Discovery Support

Specifies a LAN address resolution protocol that can be used to find another node that matches given search values. Adjust the search parameter to search for APPN® network nodes, nodes that provide SNA boundary function, or AS/400s. Select the check box to enable discovery support.

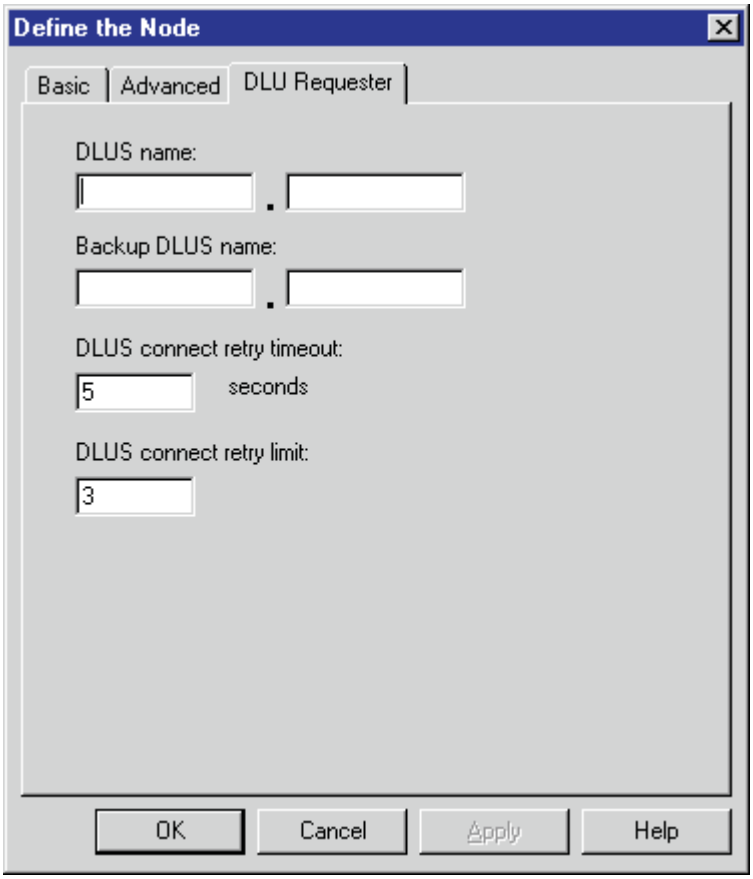

Figure 37. Define the Node Notebook: DLU Requester Tab (Local Configuration)

On the **DLU Requester** tab (Figure 37), accept the default values for the following parameters:

DLUS connect retry timeout
Specifies the time between attempts to reconnect a dependent logical unit server (DLUS). This parameter is based on the **DLUS connect retry limit** parameter. Take the default of 5.

DLUS connect retry limit
Specifies the maximum number of attempts to reconnect a DLUS without receiving an acknowledgment in the time set by the **DLUS connect retry timeout** parameter. Take the default of 3.

Click **OK** to save these configuration settings.

Local 3174 Device Configuration

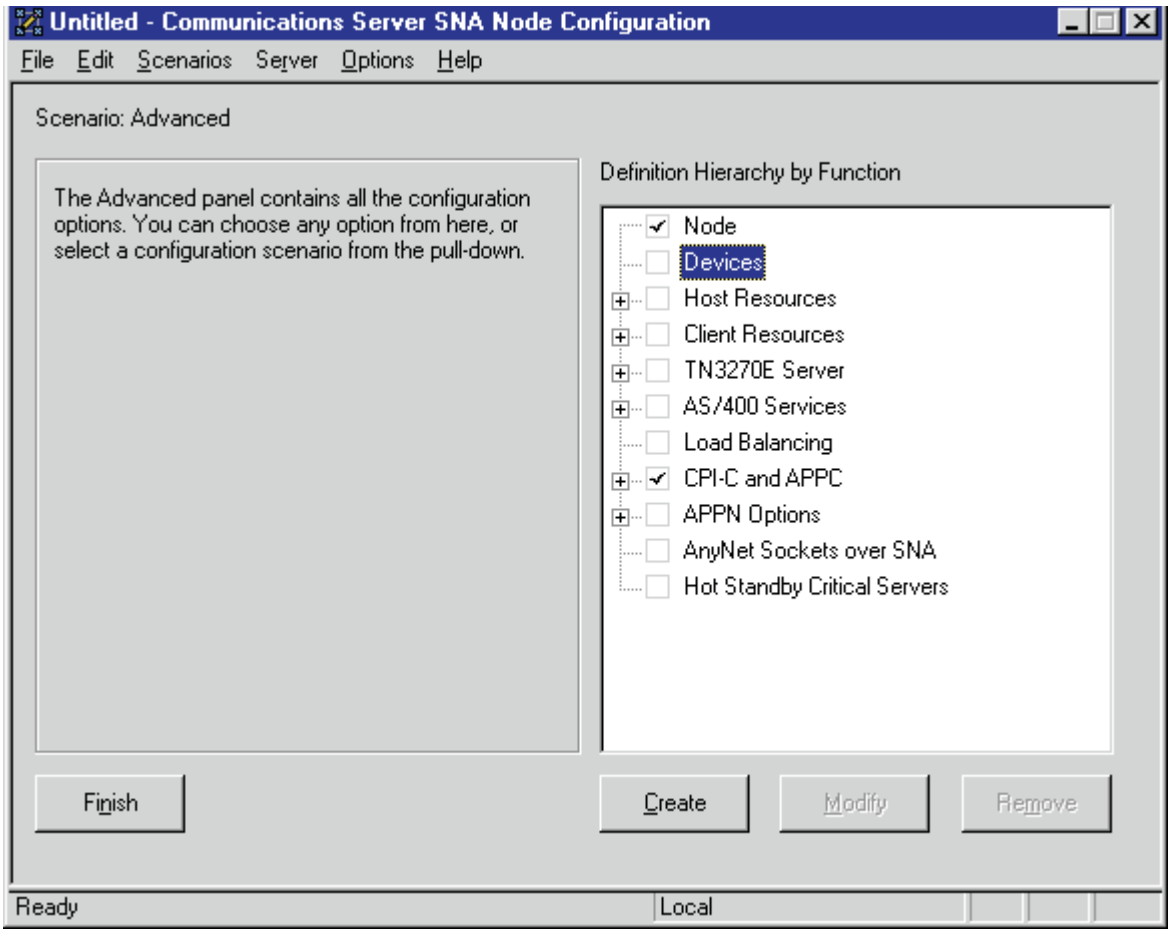

Figure 38. Communications Server SNA Node Configuration Window: Devices (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 38), right-click the **Devices** box and select the **Create** option. The Device Type pop-up window (Figure 39) opens.

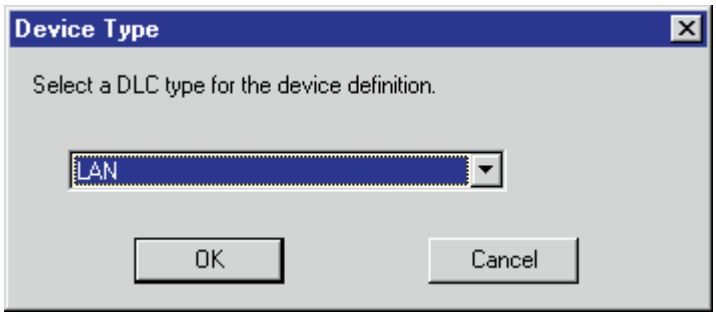

Figure 39. Device Type Window (Local Configuration)

Select **LAN** as your data link control (DLC) type. A DLC is a set of rules that nodes on a data link (such as an SDLC link or a token ring) use to accomplish an orderly exchange of information.

Click **OK** to save this configuration setting.

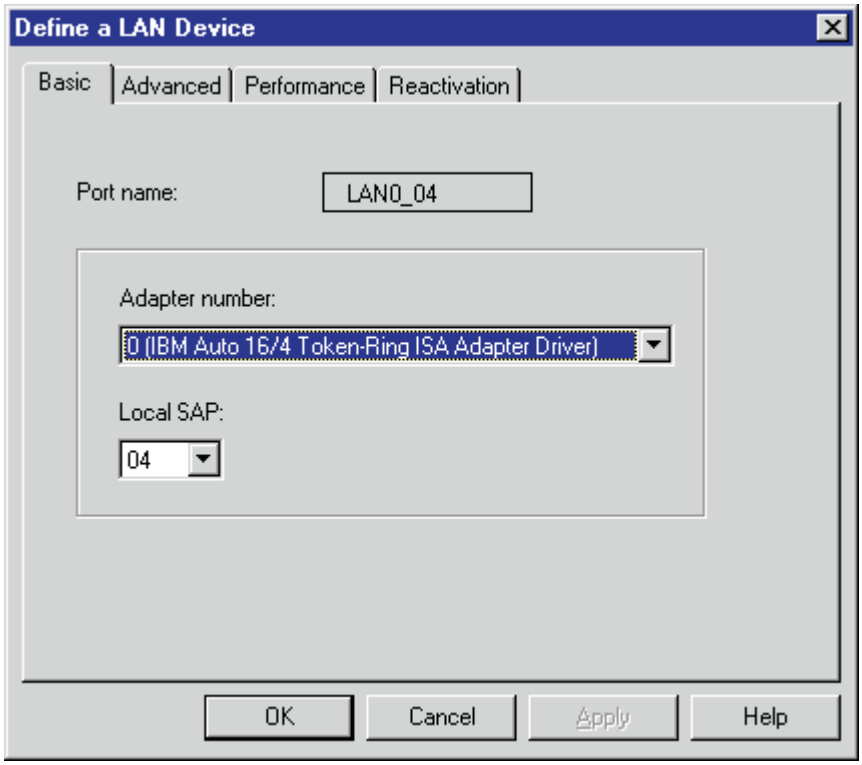

Figure 40. Define a LAN Device Notebook: Basic Tab (Local Configuration)

On the **Basic** tab of the Define a LAN Device notebook (Figure 40), supply the following values:

Port name
Specifies the port name of the physical connection to the link hardware. This value consists of the word **LAN**, the adapter number, and the local SAP number, with an underscore between the adapter number and the local SAP number. Accept the value that is displayed.

Adapter number
Specifies a value from 0 to 7 that uniquely identifies this adapter. You may have both token-ring and ethernet adapters defined at your installation. Ensure that you select the proper token-ring LAN adapter.

Local SAP
Specifies the local service access point (SAP) number of the local port as a hexadecimal value from 04 through FC. Note that this number must be a multiple of four. Take the default of `04`.

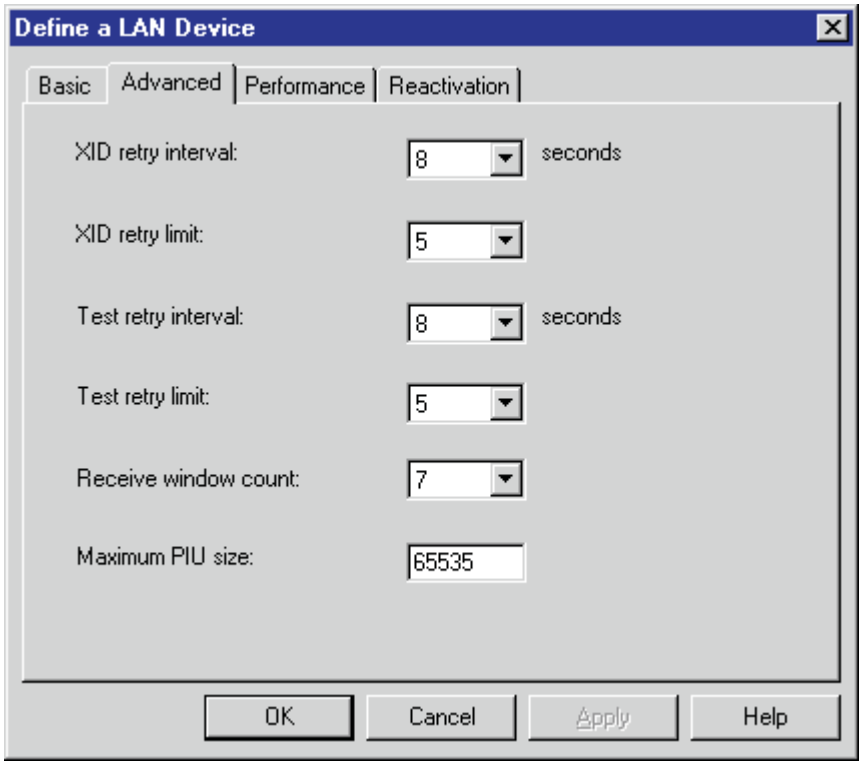

Figure 41. Define a LAN Device Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 41), supply the following values:

XID retry interval
Specifies the time the link station waits for a reply to a previous **XID** command before resending that command. Specify `60`. This value causes the link station to try to establish a link connection with the communication controller every 60 seconds, until a link connection can be established. If you are migrating from an AIX operating system to a Windows NT operating system, this parameter replaces the **Response Timeout** parameter from the **Token-Ring SNA DLC** profile.

XID retry limit
Specifies the maximum number of times an **XID** command will be retransmitted before Communications Server for NT presumes that the link is broken and stops retrying. Specify `0`. This value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the communication controller. The previous parameter defines the interval between the attempts. If you are migrating from an AIX operating system to a Windows NT operating system, this parameter replaces the **XID Retransmit count** parameter from the **Token-Ring SNA DLC** profile.

Test retry interval
Specifies the time between attempts to find the adjacent link station on the LAN. This parameter is needed to establish communication with the network and does not necessarily relate to VTAM or the PSF host system. The number of times an **XID** is sent is based on the configured **XID retry limit**.

Test retry limit
Specifies the number of times Communications Server attempts to find the adjacent link station on the LAN. Specify a value from 3 to 30.

Receive window count
Defines the size of the link-level window. This value specifies the maximum number of frames to receive before sending a link-level acknowledgement.

Maximum PIU size
Specifies a value between 99 and 65535 bytes that represents the maximum number of bytes in the data buffer that SNA sessions use for this link. If the value of the **Maximum PIU size** exceeds the frame size supported by your local device driver, the value will be reduced to match the frame size.

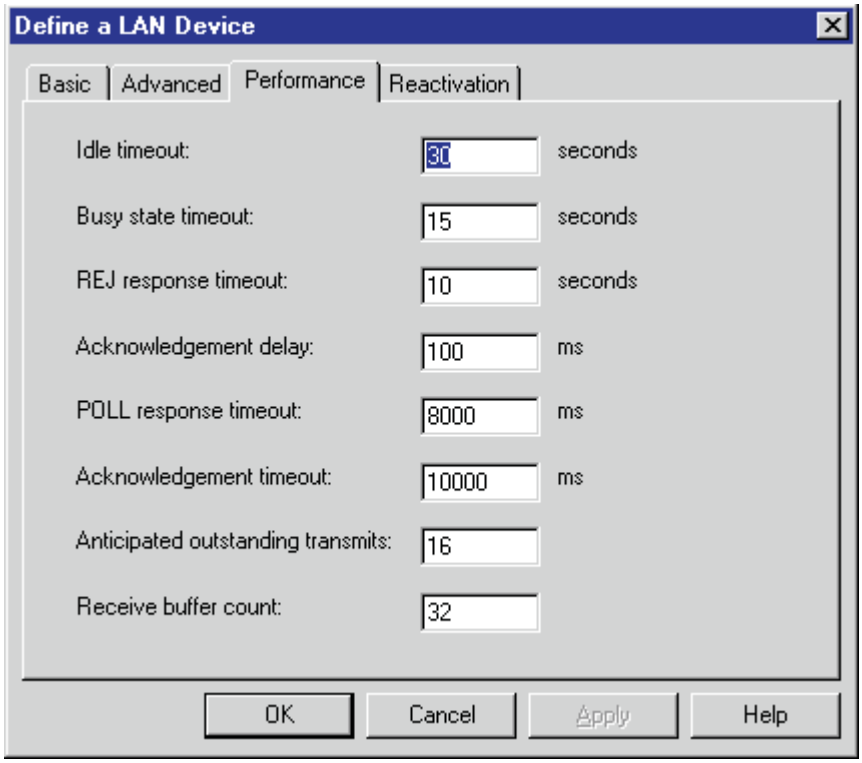

Figure 42. Define a LAN Device Notebook: Performance Tab (Local Configuration)

On the **Performance** tab (Figure 42), accept the default values.

If you are migrating from an AIX operating system to a Windows NT operating system, see Table 1 on page 33 for a map of the parameters on the **Performance** tab to the corresponding AIX values.

Table 1. Windows NT and AIX Parameters for LAN Device Performance (Local Configuration)

Windows NT Parameter	AIX Parameter
Idle timeout	Inactivity time-out
Busy state timeout	n/a
Acknowledgement delay	n/a
Acknowledgement timeout	Acknowledgement timeout
POLL response timeout	n/a
Anticipated outstanding transmits	Transmit window count
Receive buffer count	n/a

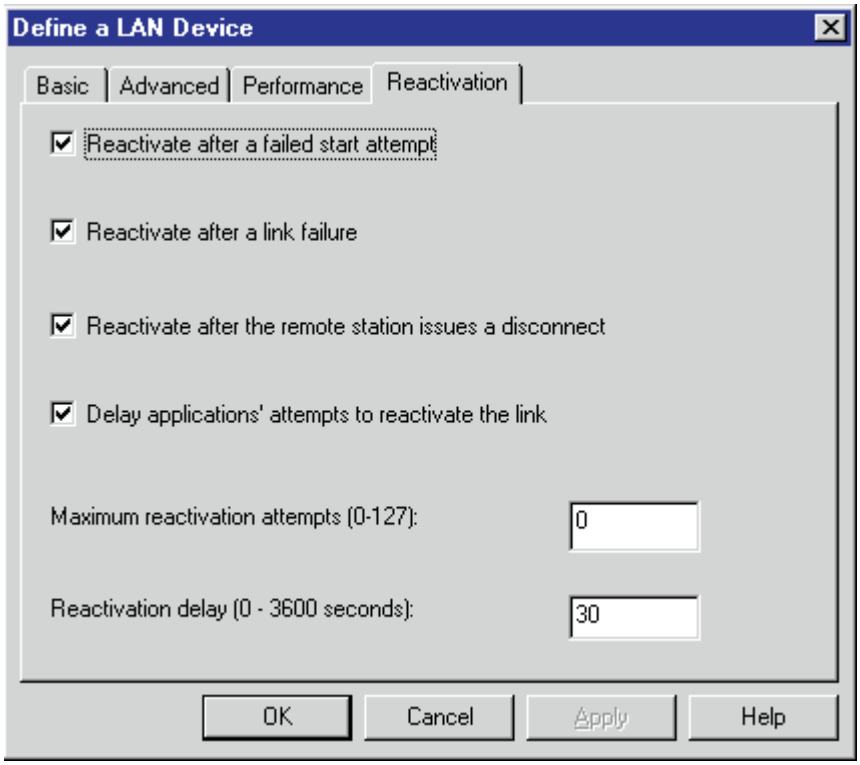

Figure 43. Define a LAN Device Notebook: Reactivation Tab (Local Configuration)

On the **Reactivation** tab (Figure 43), accept the default values.

Click **OK** to save these configuration settings.

Local 3174 Peer Connections Configuration

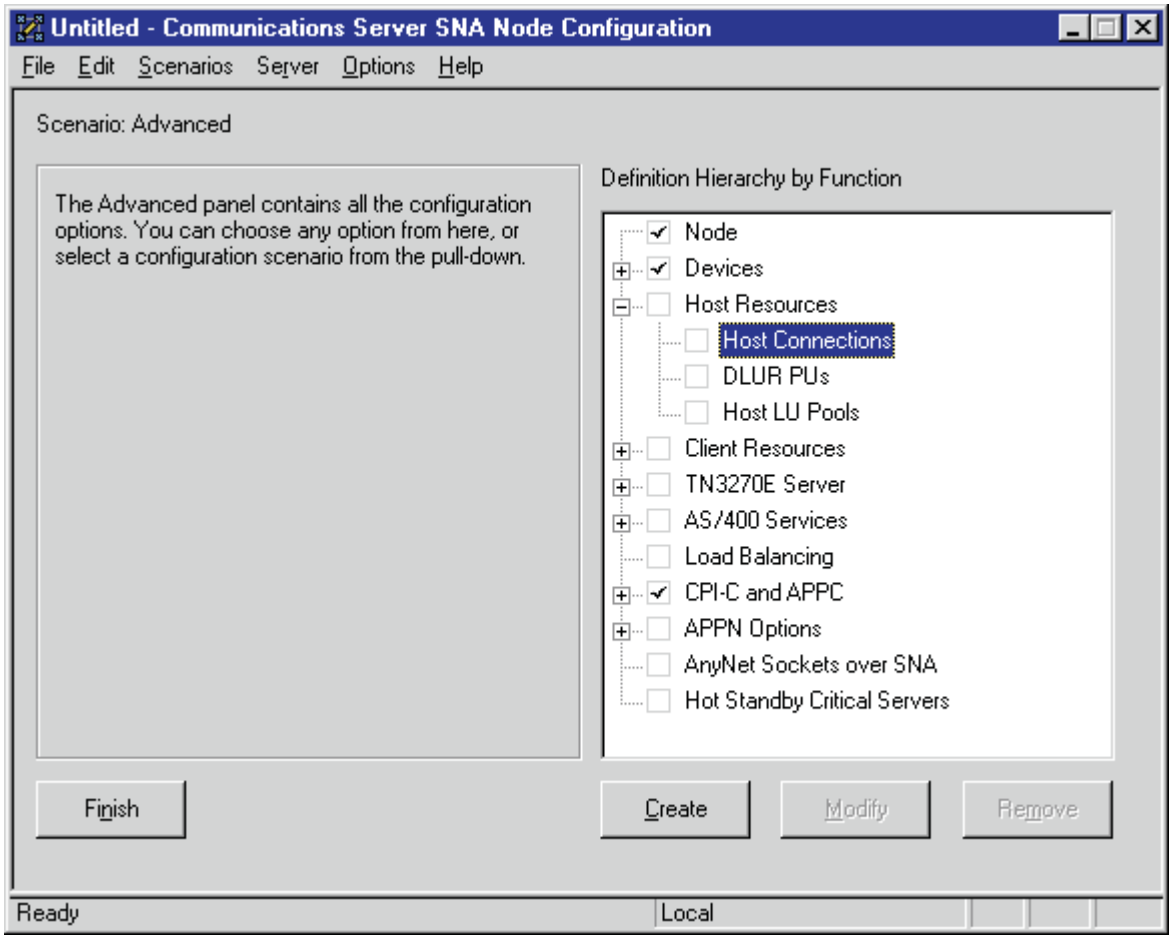

Figure 44. Communications Server SNA Node Configuration Window: Host Connections (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 44), right-click the **Host Resources** box, then the **Host Connections** box. Select the **Create** option. The Define a LAN Connection notebook opens at the **Basic** tab.

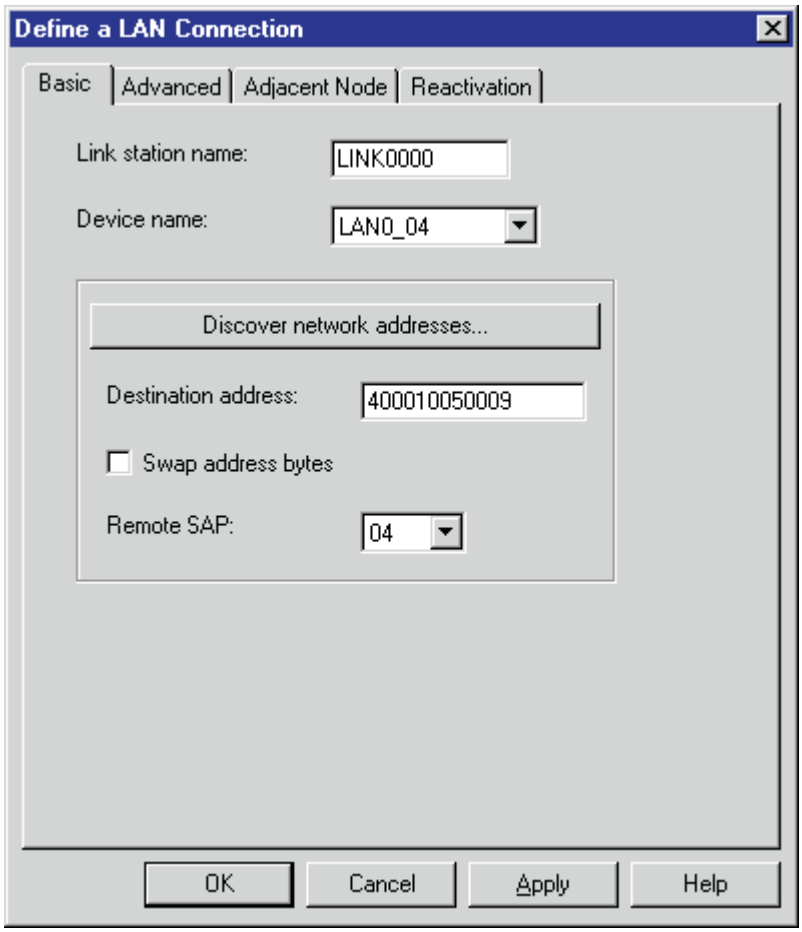

Figure 45. Define a LAN Connection Notebook: Basic Tab (Local Configuration)

On the **Basic** tab (Figure 45), supply the following values:

Link station name
Specifies a 1- to 8-byte character string that is used to identify a connection. The contents of this field will vary, depending on the number of links at your installation.

Device name
Specifies the name of the port associated with this link station. This value must match the **Port name** value specified on the **Basic** tab of the Define a LAN Device notebook (Figure 40 on page 30).

Destination address
Specifies a 12-character hexadecimal string that specifies the address to activate a connection to the destination. This value must be specified so the NT system can search for and call the PSF host program.

Swap address bytes
Check this field to bit-swap the address in the **Destination address** field. You may need to select this check box if the next link in the network is an Ethernet link. If not, you can use the default (unchecked).

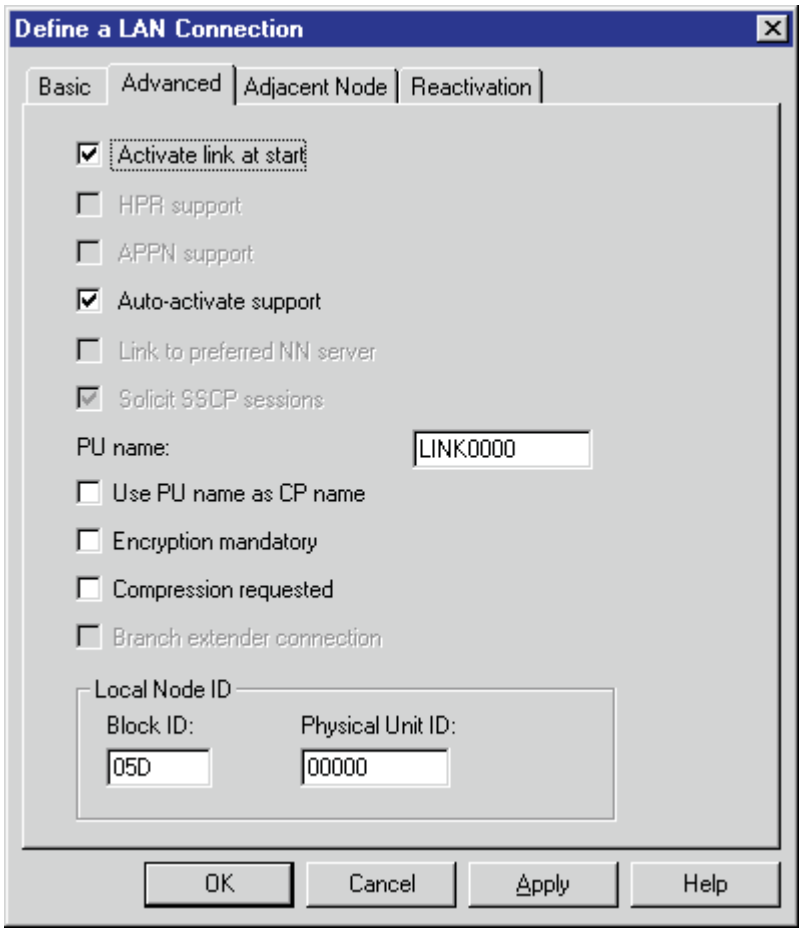

Figure 46. Define a LAN Connection Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 46), supply the following values:

Activate link at start
Specifies that you will use the link reactivation values specified in the port (device) link reactivation definition. Ensure that you select this check box.

APPN support
Specifies whether this connection supports CP-CP sessions. Select the check box to specify APPN support.

PU name
Specifies the physical unit (PU) name is the name of the component that manages and monitors the resources (such as attached links and adjacent link station) associated with a node. The default PU name is automatically created. You can change this definition.

Block ID
Identifies the product type in an SNA network.

Physical Unit ID
Identifies the physical unit (PU) or component that manages and monitors the resources (such as attached links and adjacent link stations) associated with a node.

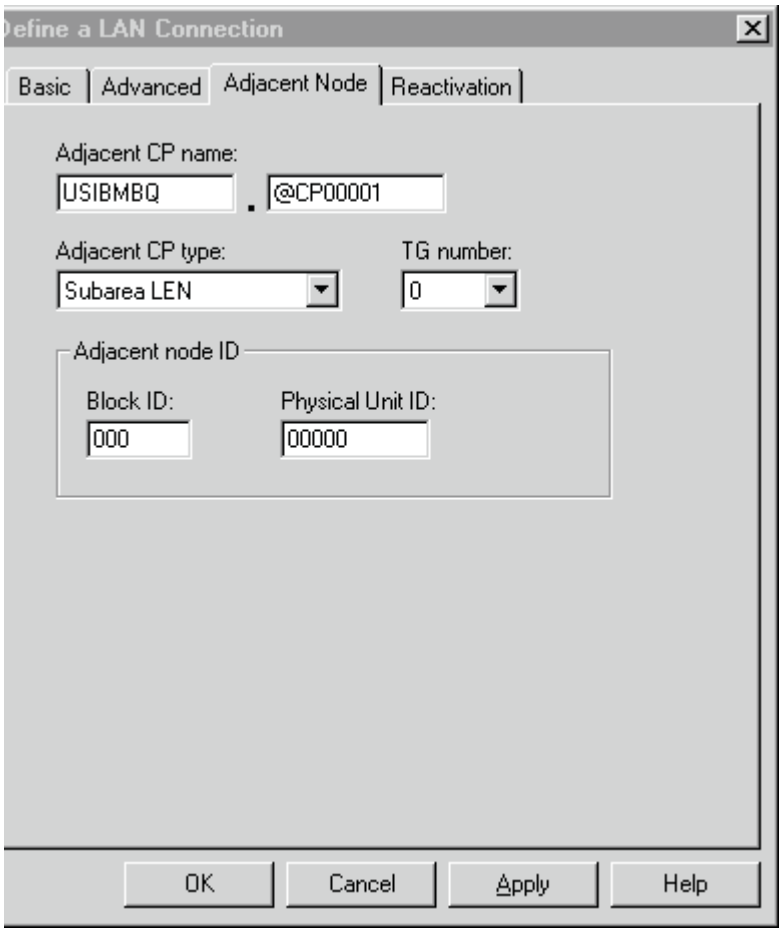

Figure 47. Define a LAN Connection Notebook: Adjacent Node Tab (Local Configuration)

On the **Adjacent Node** tab (Figure 47), accept the default values.

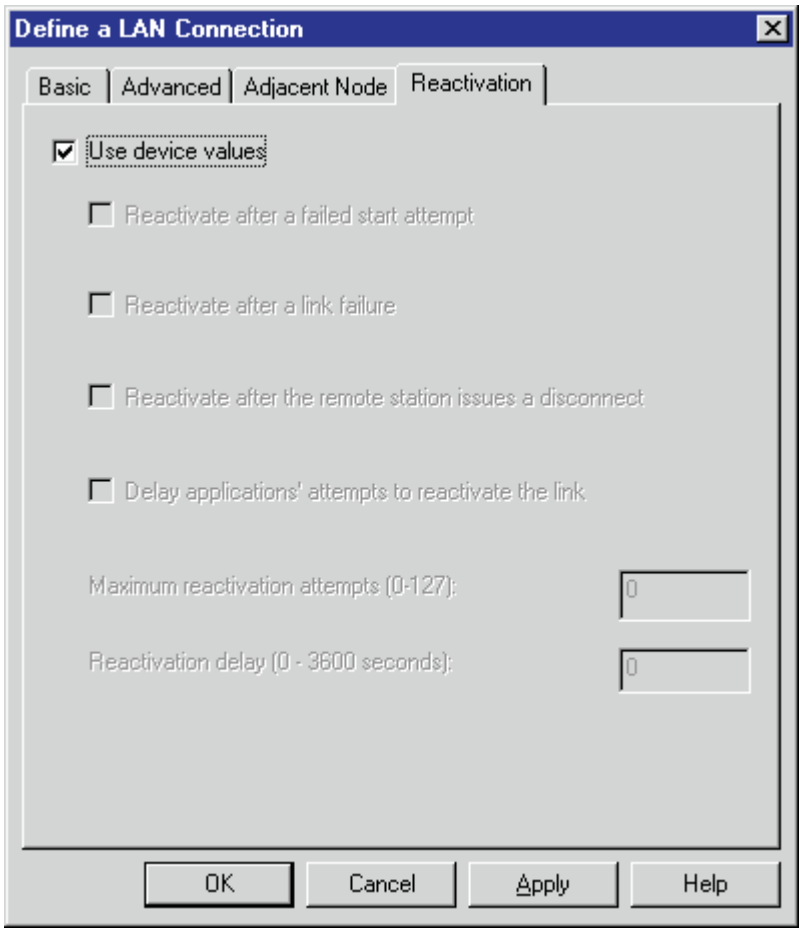

Figure 48. Define a LAN Connection Notebook: Reactivation Tab (Local Configuration)

On the **Reactivation** tab (Figure 48), accept the default values.

Note that after you select **OK**, a pop-up window appears asking:

```
Do you want to automatically route all APPC sessions over this connection?
```

You must reply `yes`. Then, a pop-up window asks:

```
Do you wish to create and assign new LUs to this connection?
```

When you reply `yes`, the Host LU Definition window (Figure 49 on page 39) appears.

Local LU 6.2 Configuration for Local 3174

Dependent or Independent LU?

This procedure configures a *dependent* LU. You cannot use it to configure an *independent* LU. If you require independent LUs, see "Deciding Whether to Define a Dependent or an Independent LU" on page 12.

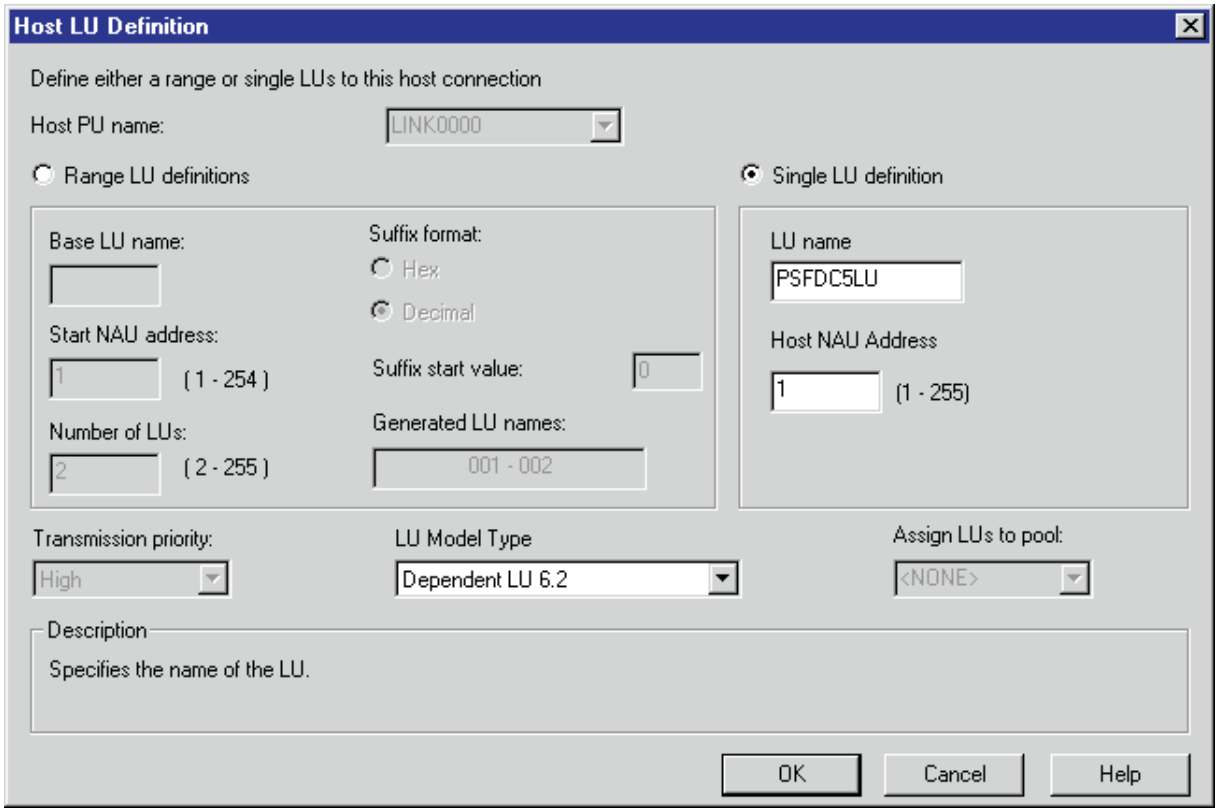

Figure 49. Host LU Definition Window (Local Configuration)

In the Host LU Definition window (Figure 49), supply the following values:

Single LU Definition
Specifies that the host link definition can be assigned a single LU definition. Select this button to indicate that the host LU definition is assigned a single link definition.

LU Name
Specifies a 1- to 8-character name of a type of network addressable unit (NAU) that enables end users to communicate with each other and gain access to network resources. The first character must be an uppercase alphabetic character (A-Z) or a special character (@,#,$). The remaining characters can be alphanumeric characters (A-Z, 0-9) or special characters (@,#,$). This name must match the Partner LU that is defined for the host PSF program.

Host NAU Address
Specifies a value between 1 and 255 for a dependent LU. This value must match the **LOCADDR** value on the VTAM **LU** statement (see "Specifying the VTAM Local Major Node" on page 20).

LU Model Type
Specifies the model type and number of the LU that is used by Infoprint Manager when configuring the PSF Direct host receiver. Select **Dependent LU 6.2**.

Click **OK** to save these specifications to the *xxx*.acg file.

To see this defined LU, click the **Host Connections** box in the Communications Server SNA Node Configuration window (Figure 50) until you display the link (`LINK0000`) and the Dependent LU (`PSDC5LU`).

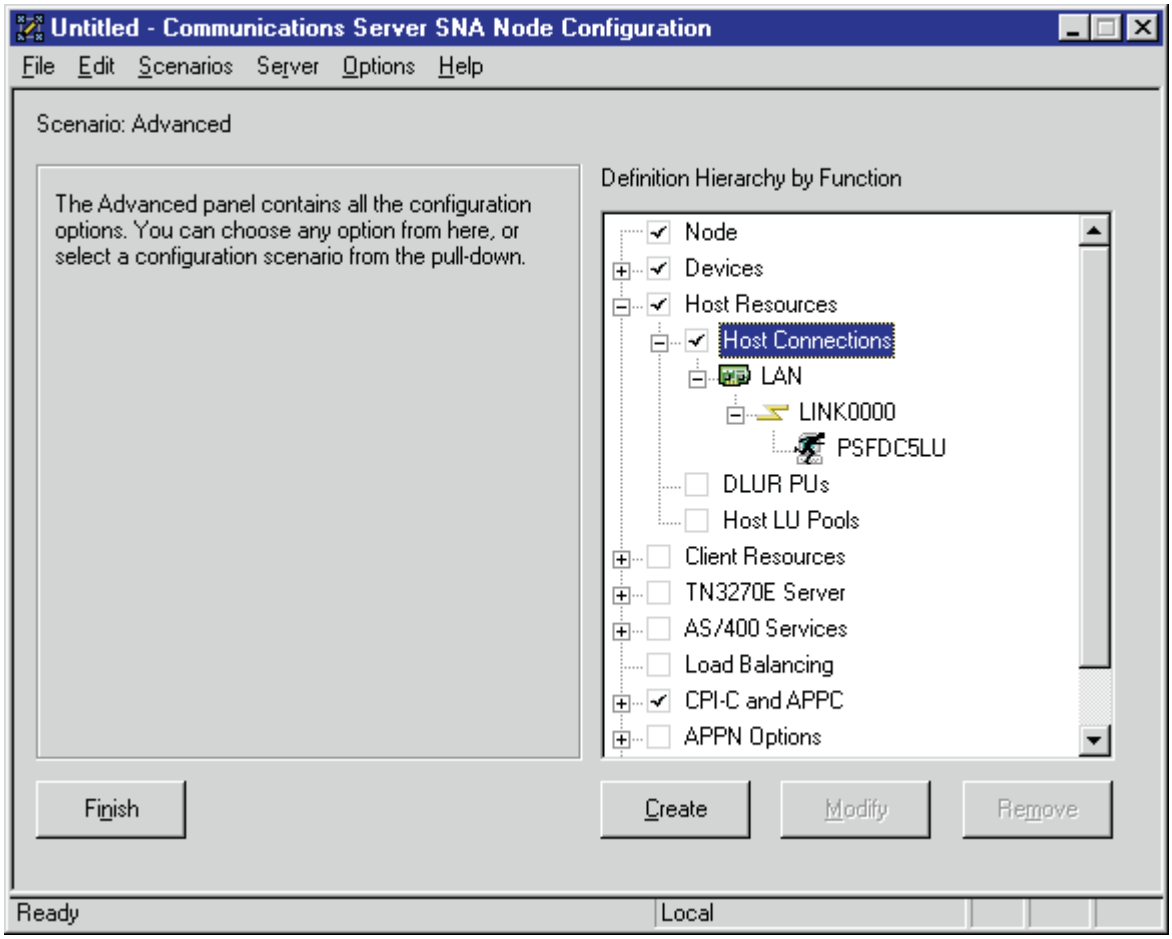

Figure 50. Communications Server SNA Node Configuration Window: Defined LU (Local Configuration)

Enabling SNA API Clients for Local 3174

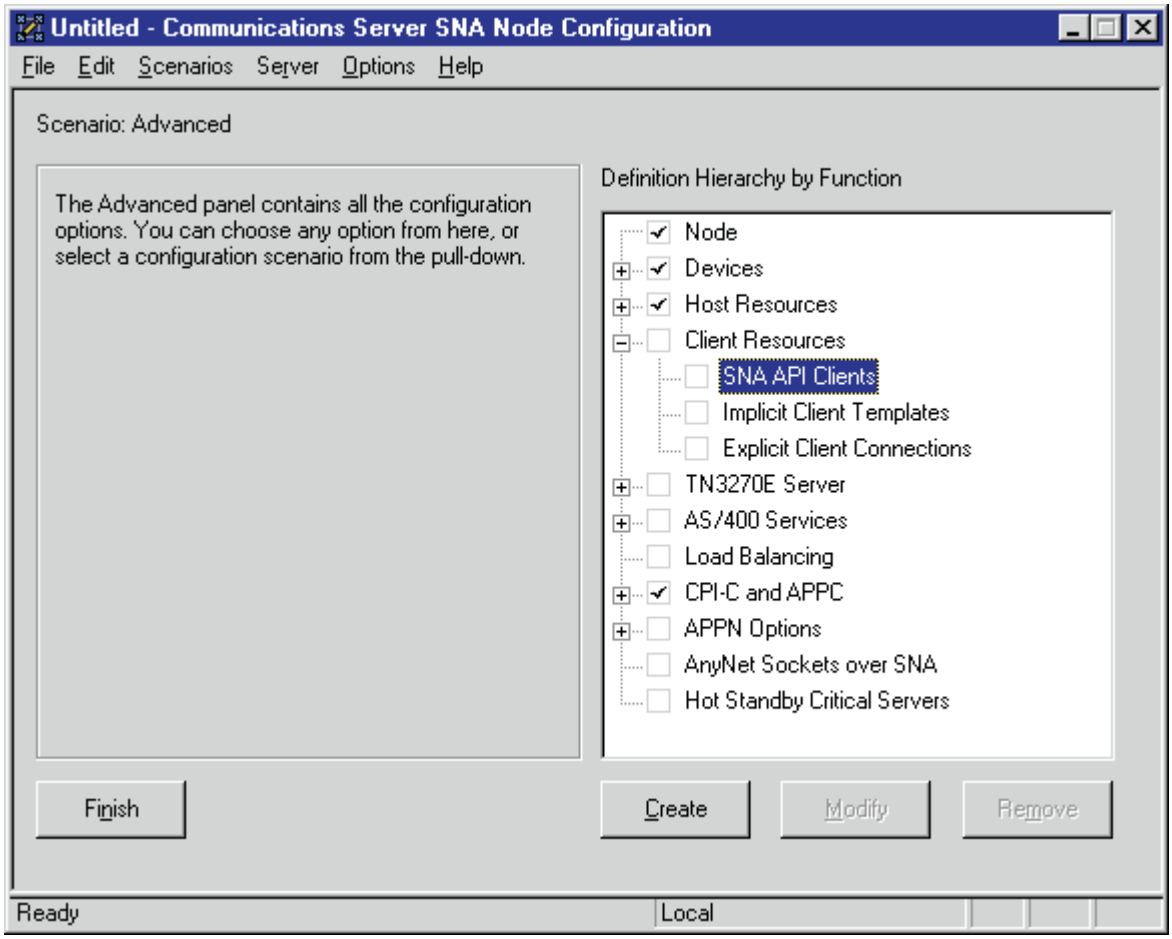

Figure 51. Communications Server SNA Node Configuration Window: SNA API Clients (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 51), right-click the **Client Resources** box, then the **SNA API Clients** box. The SNA Clients window opens.

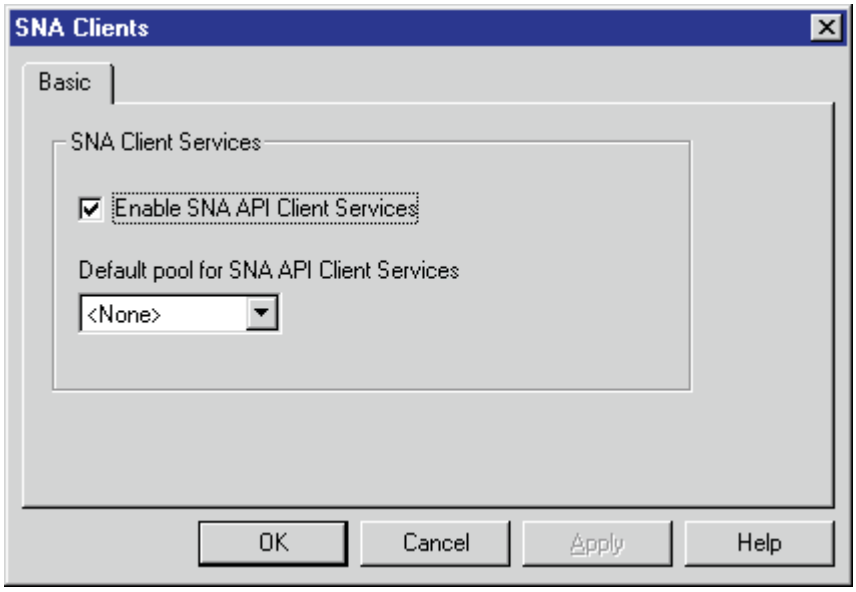

Figure 52. SNA Clients Window (Local Configuration)

In the SNA Clients window (Figure 52), check the **Enable SNA API Client Services** box.

Click **OK** to save these specifications to the *xxx*.acg file.

Partner LU 6.2 Configuration for Local 3174

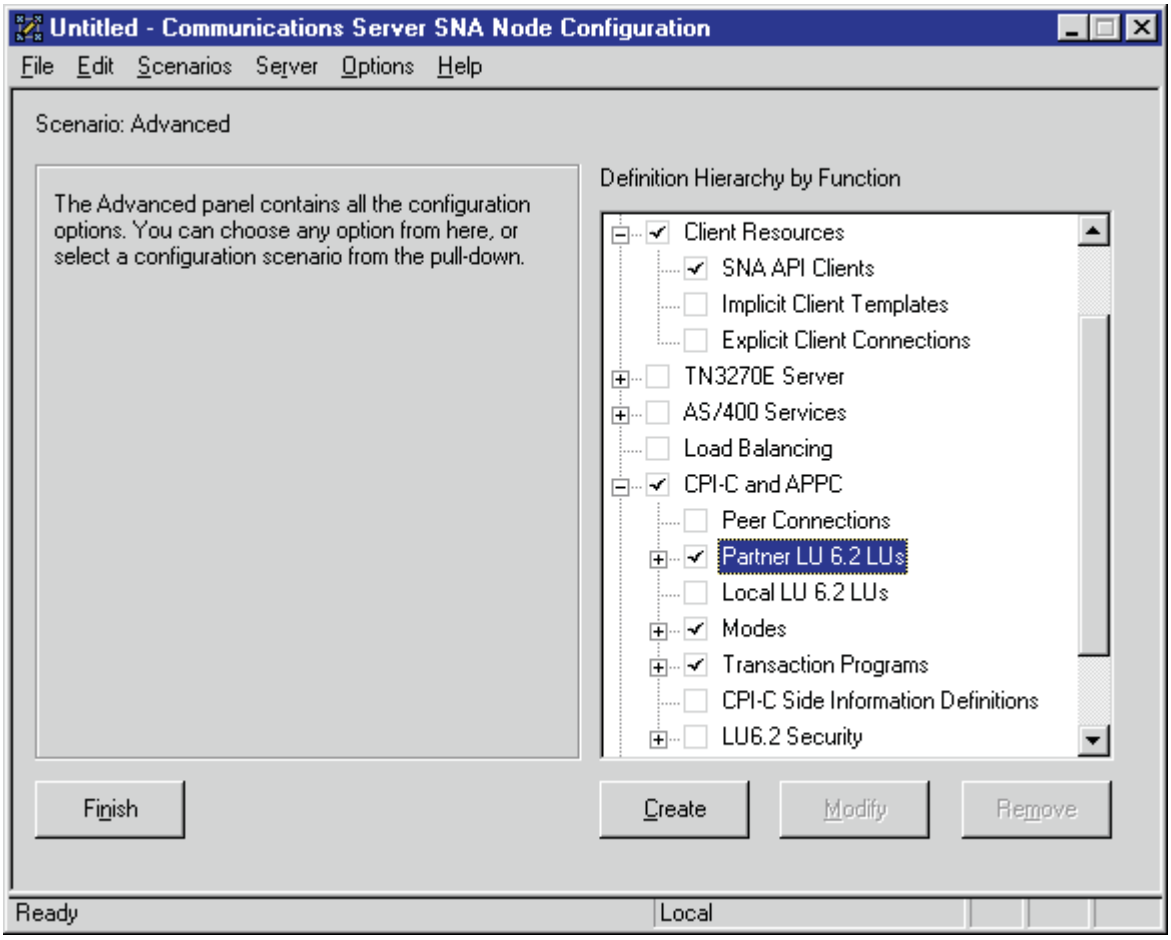

Figure 53. Communications Server SNA Node Configuration Window: Partner LU 6.2 LUs (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 53), right-click the **CPI-C and APPC** box, then the **Partner LU 6.2 LUs** box. Select the **Create** option. The Define a Partner LU 6.2 notebook opens at the **Basic** tab.

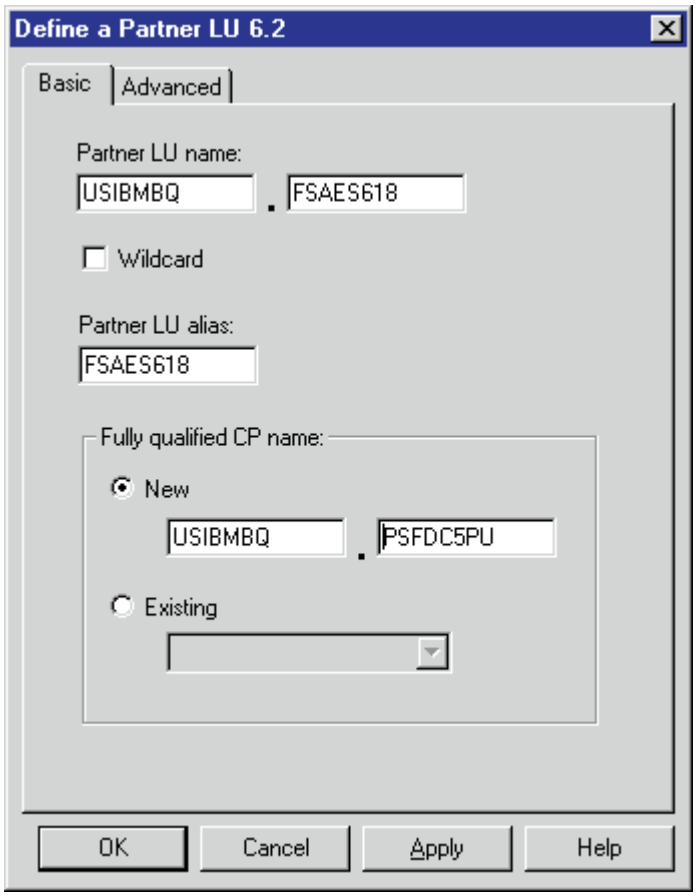

Figure 54. Define a Partner LU 6.2 Notebook: Basic Tab (Local Configuration)

On the **Basic** tab (Figure 54), supply the following values:

Partner LU name
Specifies the network identifier of the network in which the host PSF program resides (followed by a period), and the logical unit name used by the host PSF program. The network identifier portion must match the **NETID** value in the VTAM start option list (ATCSTR*xx*) (see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 17). The logical unit name portion must match the **APPLID** parameter in one of these places:

- The PSF for OS/390 **PRINTDEV** statement
- The PSF/VSE **PRINTDEV** statement
- The PSF/VM **OPTIONS PDM** file

That **APPLID** parameter on the PSF host system must also match an **APPL** statement in a VTAM application program major node. (Do not check the **Wildcard** check box.)

Partner LU alias
Specifies the alternate name for the partner LU. Local applications can use this name, instead of the fully qualified LU name, to refer to the partner LU. While you can choose any meaningful value, IBM recommends specifying the second qualifier of the **Partner LU name**.

Fully qualified CP name
Select **New** to enter the fully qualified CP name of the partner LU's

owning control point. Communications Server for NT requires this field. Infoprint Manager uses this field as the target for any alerts sent by the PSF Direct program.

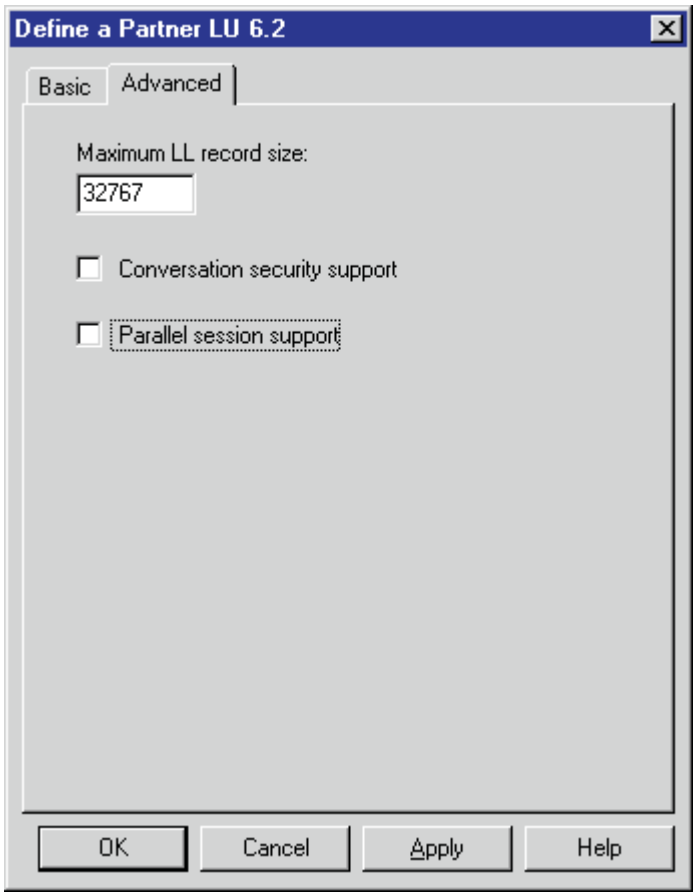

Figure 55. Define a Partner LU 6.2 Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 55), supply the following values:

Maximum LL record size
Specifies a value between 0 and 32767 as the maximum size of the logical record in the data stream for basic conversations. Specify the default (32767), because the PSF host program and the PSF Direct host receiver should both be able to handle the full range.

Conversation security support
Specifies that the partner logical unit (LU) is authorized to validate the user identifiers for the local LUs. Select the check box to specify conversation security support if you have matching support on the host PSF program. If not, leave this box unchecked.

Parallel session support
Specifies whether the partner LU supports two or more currently active sessions between the same two LUs by using different pairs of network addresses or session identifiers. Because neither PSF Direct nor the PSF host programs support two sessions with the same partner LU, do not select this check box.

Click **OK** to save these specifications to the *xxx*.acg file.

Mode Configuration for Local 3174

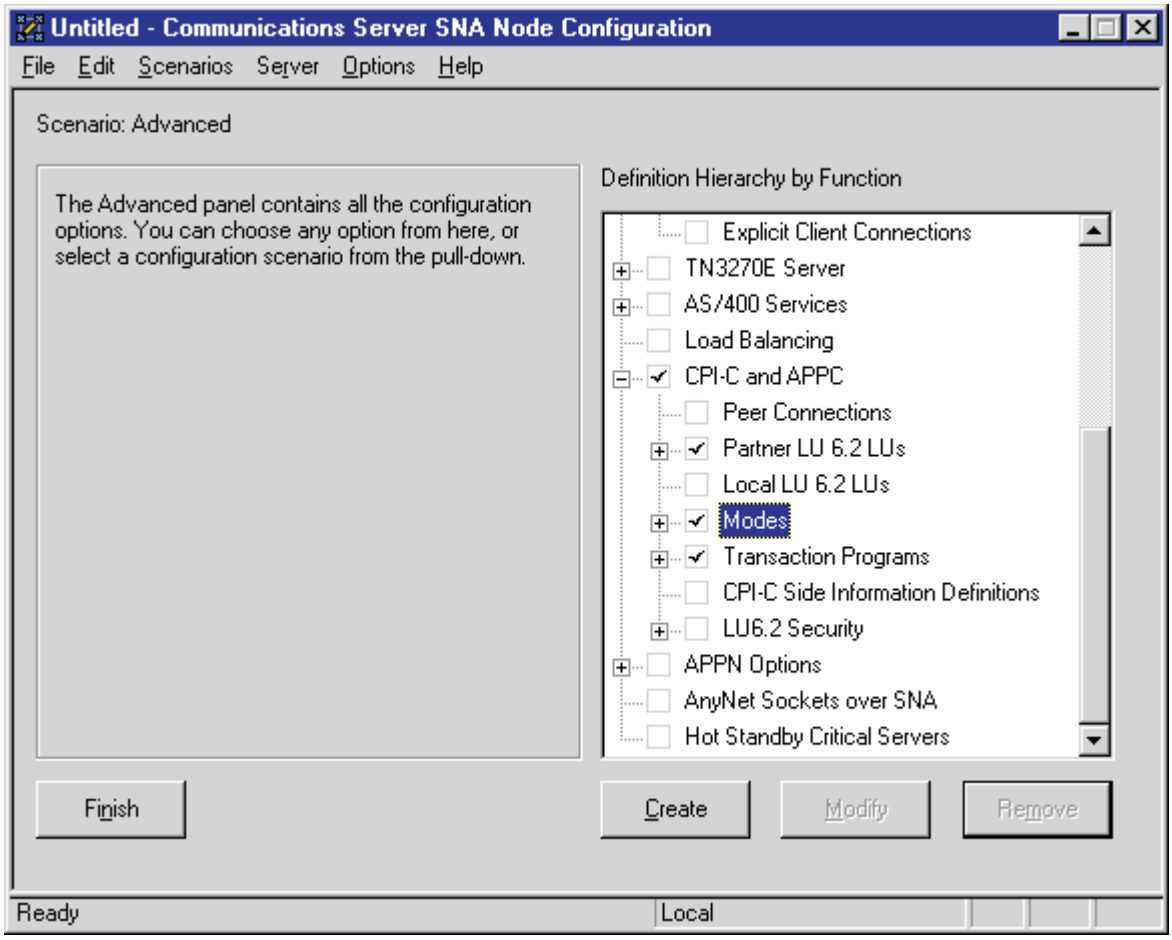

Figure 56. Communications Server SNA Node Configuration Window: Modes (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 56), right-click the **CPI-C and APPC** box, then the **Modes** box. Select the **Create** option. The Define a Mode notebook opens at the **Basic** tab.

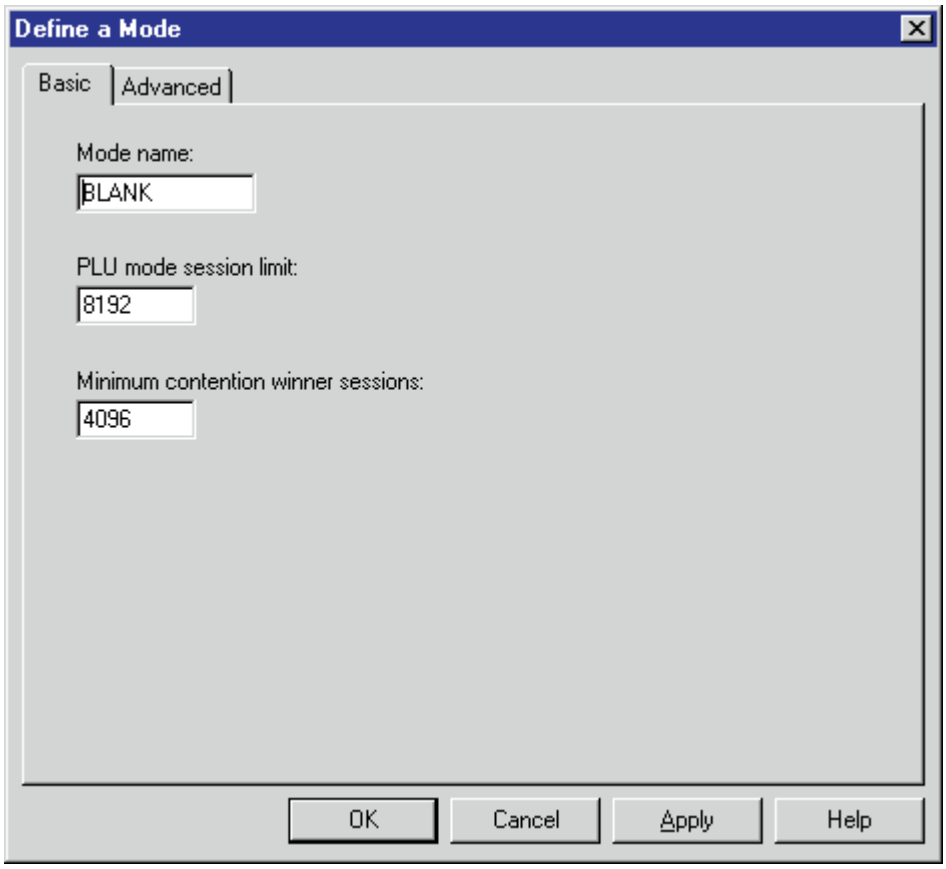

Figure 57. Define a Mode Notebook: Basic Tab (Local Configuration)

On the **Basic** tab (Figure 57), supply the following values:

Mode name
Specifies the characteristics for the session that will be allocated for the conversation. The initiator uses this value. The **Mode name** in the **BLANK** profile is 8 spaces.

PLU mode session limit
Specifies a value between 0 and 32767 as the primary logical unit (PLU) mode session limit, or maximum number of concurrently active LU-LU sessions that a particular LU can support. Take the default.

Minimum contention winner sessions
Specifies a value between 0 and 32767 as the minimum number of sessions that a local LU using this mode can activate to win a contention with a partner. Take the default.

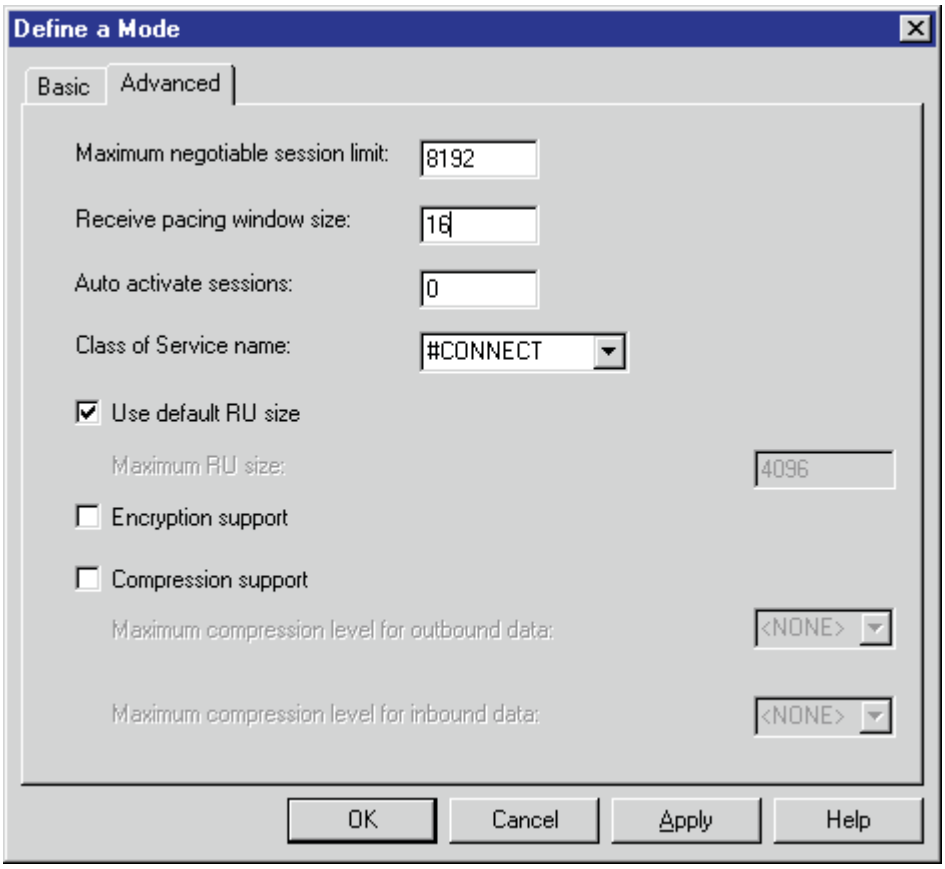

Figure 58. Define a Mode Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 58), supply the following values:

Maximum negotiable session limit
Specifies a value between 0 and 32767 as the maximum number of sessions allowed in this mode between any local logical unit (LU) and partner LU. Take the default.

Receive pacing window size
Specifies the secondary receive pacing count. The lesser of this parameter's value and the **SRCVPAC** value in the VTAM **MODEENT** statement is used. (See "Specifying the VTAM Mode Table and Entry" on page 19.) A value of 16 produces good throughput in most configurations. This parameter influences performance and can be adjusted as desired.

Auto activate sessions
Specifies a value between 0 and 32767 as the number of parallel LU 6.2 sessions to automatically start when an initial session starts using this mode. Specify `0` so that no parallel sessions can start automatically for this application.

Class of Service name
Specifies the name of a set of transport network characteristics. Select the default: **#CONNECT** .

Use default RU size
Instructs the node to use the default maximum size for the request/response unit (RU) sent and received on the sessions. Do not select the check box.

Maximum RU size
Set this value to 1024, if it does not automatically specify that value when you remove the check from the **Use default RU size** parameter above.

Click **OK** to save these specifications to the *xxx*.acg file.

Transaction Program Configuration for Local 3174

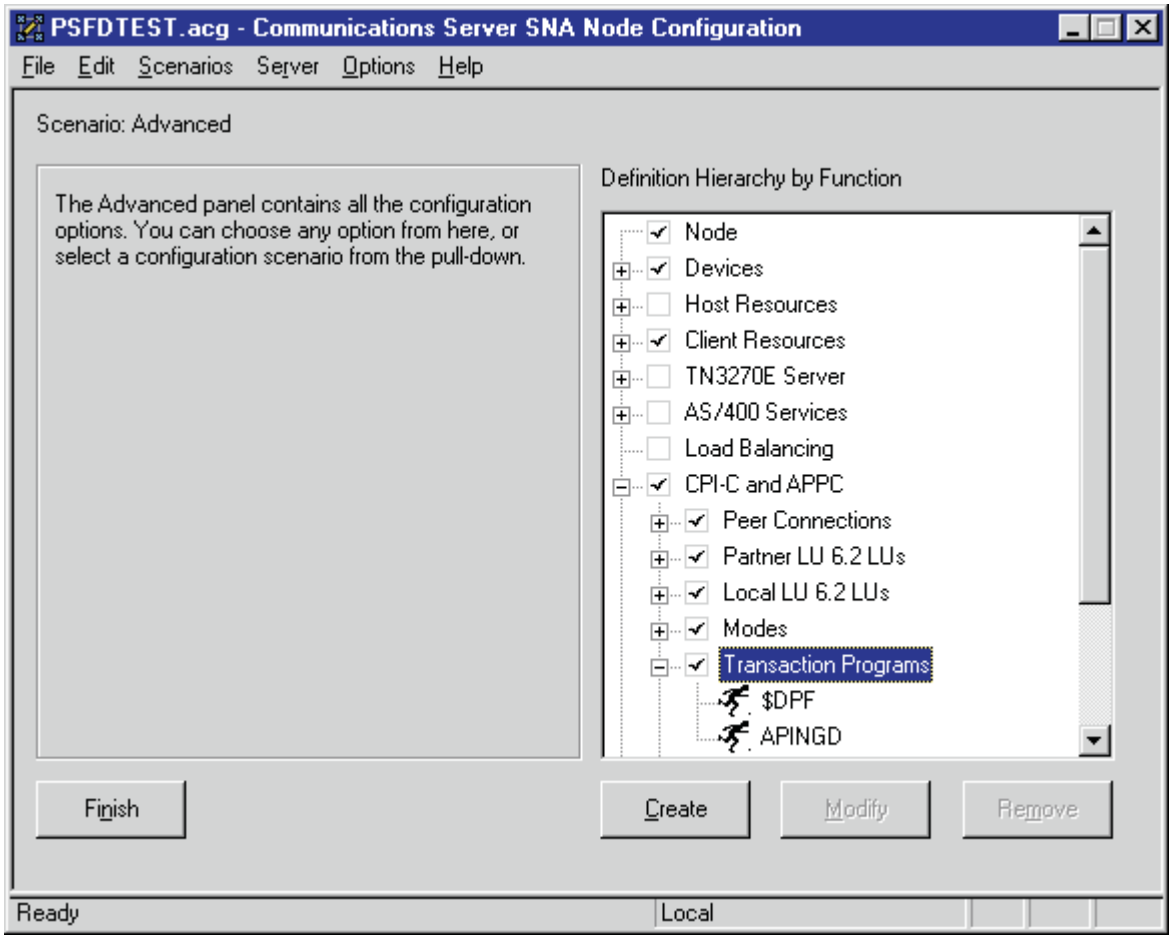

Figure 59. Communications Server SNA Node Configuration Window: Transaction Programs (Local Configuration)

In the Communications Server SNA Node Configuration window (Figure 59), right-click the **CPI-C and APPC** box, then the **Transaction Programs** box. Select the **Create** option. The Define a Transaction Program notebook opens at the **Basic** tab.

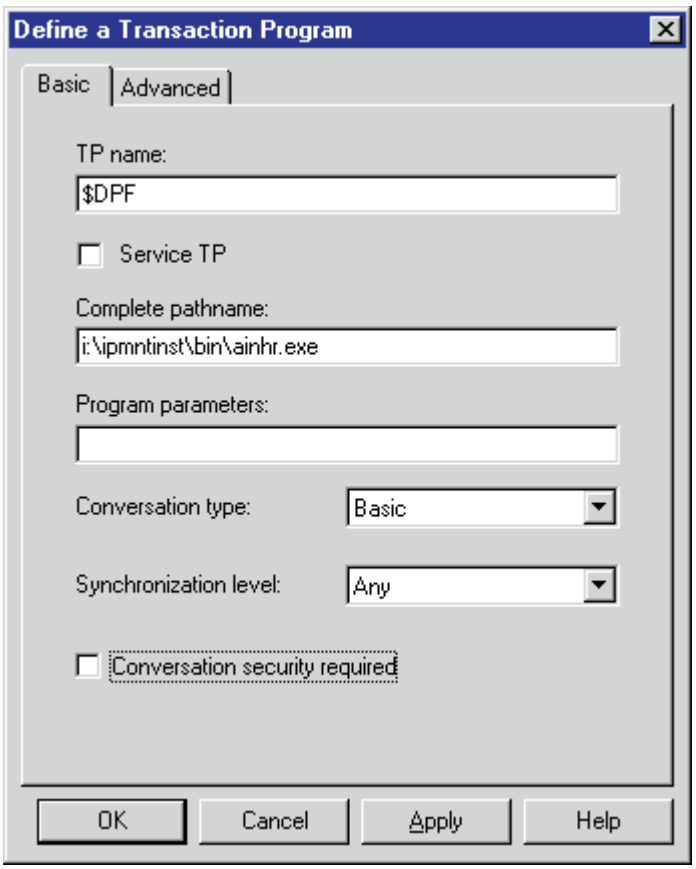

Figure 60. Define a Transaction Program Notebook: Basic Tab (Local Configuration)

On the **Basic** tab (Figure 60), supply the following values:

TP name
Specifies a 1- to 64-byte character string for the program that uses the advanced program-to-program communications (APPC) system to communicate with a partner application program at the partner node. Enter `$DPF`. If you are migrating from an AIX operating system to a Windows NT operating system, note that this value changes from a binary `30F0F0F0` to a non-binary `$DPF`. Ensure that the **Service TP** check box is unchecked because it indicates a non-binary value.

Complete pathname
Specifies an 1- to 255-byte character string that describes the location of the program to run. The location can include the drive, the directory, the subdirectory, and the file name. In this example, `i:\ipmntinst\bin\ainhr.exe` specifies the location where Infoprint Manager for NT is installed on your system.

Conversation type
Specifies the conversation type allowed to start the transaction programs (TPs) that use an LU 6.2 session. Select **Basic**.

Synchronization level
Specifies the level allowed on allocation requests that start the local and remote transaction programs (TPs). Select **Any**.

Conversation security required
Allows controlled access to system resources through security parameters.

If this check box is selected, conversation security information is required to start the TP. Incoming allocation requests for this TP without the conversation security information will be rejected. Do not check this box.

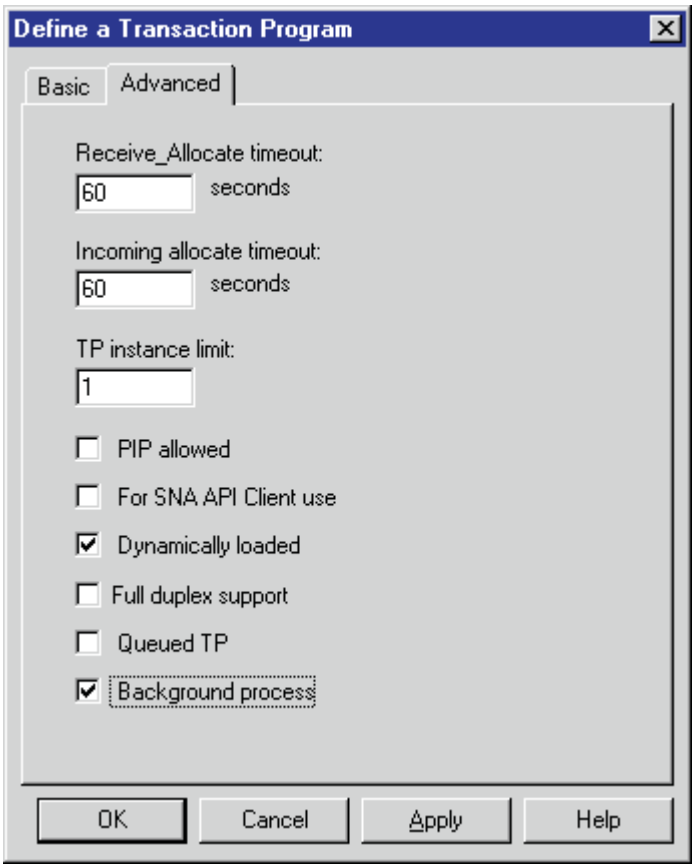

Figure 61. Define a Transaction Program Notebook: Advanced Tab (Local Configuration)

On the **Advanced** tab (Figure 61), supply the following values:

Receive_Allocate timeout
Specifies a value between 0 and 65535 seconds that identifies the time that a **Receive_Allocate** verb will be queued while waiting for an **Attach**. Specify `60`.

Incoming allocate timeout
Specifies a value between 0 and 65535 seconds that identifies the time that an incoming **Attach** will be queued waiting for a **Receive_Allocate**. Specify `60`.

TP instance limit
Specifies a value between 0 and 65535 seconds that identifies the maximum number of concurrently active TP instances. Specify at least 1 (or the number of LUs that you have defined). 0 means no limit.

Dynamically loaded
Specifies whether the transaction program (TP) can be dynamically started by an allocation request received on a conversation. Select the check box to dynamically load the TP.

Background process
Specifies that the program will run in the background. Only 32-bit programs can multitask in the Windows NT environment. Select the check box to use the background process.

Note: Ensure that **Dynamically loaded** and **Background process** (the two items checked in Figure 61 on page 51) are the only items checked. If you specify other options, this transaction program will not work.

Click **OK** to save these specifications to the *xxx*.acg file.

Once you have completed creating this configuration, go to Chapter 6, "Starting an IBM SecureWay Communications Server for Windows NT Configuration" on page 97.

Local 3174 Token-Ring Gateway Configuration Work Sheets

Use the following work sheets to configure PSF Direct on both the host PSF and Infoprint Manager for NT:

- Use Table 2 to see how Communications Server for NT configuration settings relate to other configuration settings.
- Use Table 3 on page 54 to record your own Communications Server for NT values.

Local 3174 Token-Ring Gateway Configuration Work Sheet Example

Table 2. Local 3174 Token-Ring Gateway Configuration Work Sheet Example

Communication Server	**Value**	**Infoprint Manager**	**VTAM**	**3174**
Define the Node: Fully-qualified CP name	**PSFDC5PU**		PU *name* PU CPNAME	
Define the Node: Local Node ID	**05D00000**		PU IDBLK PU IDNUM	
Define a LAN Device: Receive window count	**7**			Item 941: W
Define a LAN Device: Maximum PIU size	**65535**			
Define a LAN Connection: Destination address	**400030001001**			Item 900 (local MAC address)
Host LU Definition: LU name	**PSFDC5LU**	LUNAME	LU *name*	
Host LU Definition: LU Model Type	**Dependent LU 6.2**		LU LOCADDR	
Host LU Definition: Host NAU Address	**1**		LU LOCADDR	
Define a Partner LU 6.2: Partner LU name	**USIBMBQ.FSAES618**	APPLID	ATCSTR*xx* NETID APPL *name*	
Define a Mode: Mode name	**BLANK**			
Define a Mode: Receive pacing window size	**16**		MODEENT SRCVPAC	
Define a Mode: Maximum RU size	**1024**		MODEENT RUSIZES	

Local 3174 Token-Ring Gateway Configuration Blank Work Sheet

Table 3. Local 3174 Token-Ring Gateway Configuration Blank Work Sheet

Communication Server	**Value**	**Infoprint Manager**	**VTAM**	**3174**
Define the Node: Fully-qualified CP name			PU *name* PU CPNAME	
Define the Node: Local Node ID			PU IDBLK PU IDNUM	
Define a LAN Device: Receive window count				Item 941: W
Define a LAN Device: Maximum PIU size				
Define a LAN Connection: Destination address				Item 900 (local MAC address)
Host LU Definition: LU name		LUNAME	LU *name*	
Host LU Definition: LU Model Type			LU LOCADDR	
Host LU Definition: Host NAU Address			LU LOCADDR	
Define a Partner LU 6.2: Partner LU name		APPLID	ATCSTR*xx* NETID APPL *name*	
Define a Mode: Mode name				
Define a Mode: Receive pacing window size			MODEENT SRCVPAC	
Define a Mode: Maximum RU size			MODEENT RUSIZES	

Chapter 5. Remote 3174 Token-Ring Gateway Configuration

Figure 62 shows a remote 3174 token-ring gateway configuration.

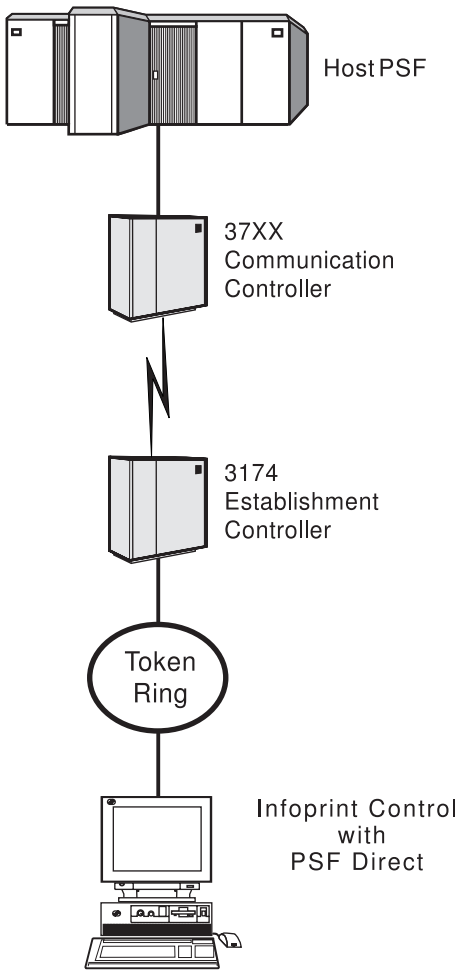

Figure 62. Remote 3174 Token-Ring Gateway Configuration

This chapter describes how to create a remote 3174 token-ring gateway configuration. It contains guidelines and examples for the following tasks:

- "Remote 3174 Host Configuration" on page 56
  - "Specifying the JES2 Initialization Statement" on page 56
  - "Configuring the Host PSF Printer" on page 56
  - "Specifying the VTAM Start Option List (ATCSTRxx)" on page 59
  - "Specifying the VTAM Configuration List (ATCCONnn)" on page 60
  - "Specifying the VTAM Application Program Major Node and Application Program" on page 61
  - "Specifying the VTAM Mode Table and Entry" on page 61
  - "Configuring the 3174 Establishment Controller" on page 62
- "Specifying Communications Server for NT Configuration Profiles" on page 64
  - "Accessing the Communications Server for NT Profiles" on page 64

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- "Remote 3174 Node Setup" on page 66
- "Remote 3174 Device Configuration" on page 70
- "Remote 3174 Peer Connections Configuration" on page 75
- "Local LU 6.2 Configuration for Remote 3174" on page 79
- "Enabling SNA API Clients for Remote 3174" on page 82
- "Partner LU 6.2 Configuration for Remote 3174" on page 84
- "Mode Configuration for Remote 3174" on page 87
- "Transaction Program Configuration for Remote 3174" on page 90

Note: Before performing this configuration, review Chapter 3, "Preconfiguration Tasks" on page 11. You must define an alternate token-ring address (local MAC address) for your Infoprint Windows NT server.

At the end of the chapter, there are two configuration work sheets. The first work sheet (Table 5 on page 94) is filled out with the values from the examples. The second work sheet (Table 6 on page 95) is blank for your own values.

Remote 3174 Host Configuration

This section provides guidelines and examples for the following tasks:

- "Specifying the JES2 Initialization Statement"
- "Configuring the Host PSF Printer"
- "Specifying the VTAM Start Option List (ATCSTRxx)" on page 59
- "Specifying the VTAM Configuration List (ATCCONnn)" on page 60
- "Specifying the VTAM Application Program Major Node and Application Program" on page 61
- "Specifying the VTAM Mode Table and Entry" on page 61
- "Configuring the 3174 Establishment Controller" on page 62

For each task, this section shows the pertinent parameters. It describes which of these require you to specify *variable_names* and which require a specific name or number, such as **MODETAB=MODEIBM** or **FMPROF=X'13'**. An underlined value (such as **WCONNECT**) indicates that the value is a system default.

Specifying the JES2 Initialization Statement

Define the host PSF printer as you would any other Systems Network Architecture (SNA)-attached printer. For example, on an OS/390 system you must provide either JES2 or JES3 initialization statements.

Figure 63 shows an example.

```
PRT618 CLASS=Y,MARKS=YES,START=NO,MODE=FSS,FSS=WTRES600,   X
  PRMODE=(LINE,PAGE),UCS=0
```

Figure 63. JES2 Initialization Statement Example (Remote Configuration)

Configuring the Host PSF Printer

The manner in which a host PSF printer is configured depends on the operating system. You will use one of the following statements:

- Print Services Facility (PSF) for OS/390 **PRINTDEV** statement
- PSF/VSE **PRINTDEV** statement

- Parameters in the PSF/VM **OPTIONS PDM** file

On each operating system, PSF supports specification of both the application program ID (**APPLID**) and the logical unit name (**LUNAME**).

```
.
.
.
APPLID=appl_prog
LUNAME=lu_name
.
.
.
```

Figure 64. Host PSF Printer Guidelines (Remote Configuration)

On some operating systems, PSF also supports other configuration parameters. The following text describes these parameters (listed in order of importance) and notes whether they are required or optional:

APPLID (required)
Specifies the application program that is the SNA logical unit provided by Virtual Telecommunications Access Method (VTAM) and used by PSF. The **APPLID** value must match:

- An **APPL** statement name in a VTAM application program major node
- The second part of the **Partner LU name** field on the **Basic** tab of the Define a Partner LU 6.2 notebook (Figure 97 on page 85)

LUNAME (required)
Specifies the SNA logical unit with which PSF tries to initiate a session. The **LUNAME** value must match:

- An **LU** statement name in a VTAM switched major node
- The **LU name** field in the Host LU Definition window (Figure 92 on page 80)

LOGMODE (optional)
Specifies the VTAM logon mode table entry that defines characteristics of the session between the logical units identified by the **APPLID** and **LUNAME** parameters. The **LOGMODE** parameter identifies an entry within a logon mode table. The **MODETAB** operand on the VTAM **LU** statement identifies the logon mode table. If you omit the **LOGMODE** parameter, the **DLOGMOD** operand on the VTAM **LU** statement identifies the entry within the logon mode table.

Note that if the logical unit identified by the **LUNAME** parameter is a cross-domain resource, you must not use the **LOGMODE** parameter.

SETUP (optional)
Specify **SETUP=FORMS** to cause the Job Entry Subsystem (JES) to issue forms setup messages to the operator.

By default, JES issues forms setup messages to the operator for channel-attached printers, but does not issue forms setup messages to the operator for SNA-attached printers.

MGMTMODE ={IMMED | OUTAVAIL | DIALIN} (optional)
Determines how the host PSF program and PSF Direct initiate communication.

IMMED
Causes the host PSF program to initiate communication when it starts.

OUTAVAIL
Causes the host PSF program to initiate communication when there is available output to print.

DIALIN
Causes the host PSF program to initiate communication only after a switched line becomes available. The switched line can become available either when VTAM dials out or when the remote node dials in.

Note that if you specify **DIALIN**:

- Do not use the **LOGMODE** parameter.
- Include the **LOGAPPL** operand on the VTAM **LU** statement.
- Ensure that the **LOGAPPL** operand on the VTAM **LU** statement matches the **APPLID** value.

FAILURE={WCONNECT | STOP} (optional)
Specifies whether or not the host PSF program re-attempts communication after a printer or communication failure. If you do not specify a value for the **FAILURE** parameter, it defaults to **WCONNECT**.

WCONNECT
Specifies that the host PSF program attempts to communicate again.

STOP Specifies that the operator must restart the host PSF program.

DISCINTV (optional)
Specifies the interval (in seconds) that the host PSF program waits for output to become available to print. If no output becomes available, the host PSF program ends communication with the printer.

Specify `0` to cause the host PSF program to maintain communication indefinitely. If you do not specify a value for **DISCINTV**, it defaults to `0`.

Figure 65 on page 59 shows an example of a single **PRTDEV** statement for a device named PRT618. Note that if an installation has multiple printers defined for receiving PSF Direct jobs, you must define a separate **PRTDEV** statement for each printer.

```
//WTRES600 PROC
//*
//STEP01 EXEC PGM=APSPPIEP,REGION=4096K
//*
//STEPLIB DD DSN=SYSTEM.PSF.V220.LINKLIB,DISP=SHR
//*
//JOBHDR OUTPUT PAGEDEF=A06462,    /* JOB HEADER PAGEDEF     */
//              FORMDEF=A10110     /* JOB HEADER FORMDEF     */
//JOBTLR OUTPUT PAGEDEF=A06462,    /* JOB TRAILER PAGEDEF    */
//              FORMDEF=A10110     /* JOB TRAILER FORMDEF    */
//DSHDR OUTPUT  PAGEDEF=A06462,    /* DATA SET HEADER PAGEDEF*/
//              FORMDEF=A10110     /* DATA SET HEADER FORMDEF*/
//MSGDS OUTPUT  PAGEDEF=A06462,    /* MESSAGE DATASET PAGEDEF*/
//              FORMDEF=A10110     /* MESSAGE DATASET FORMDEF*/
//*
//FONT01 DD DSN=SYS1.FONTLIB,DISP=SHR
//OLAY01 DD DSN=SYS1.OVERLIB,DISP=SHR
//PSEG01 DD DSN=SYS1.PSEGLIB,DISP=SHR
//FDEF01 DD DSN=SYS1.FDEFLIB,DISP=SHR
//PDEF01 DD DSN=SYS1.PDEFLIB,DISP=SHR
//*
//PRT618 PRINTDEV FONTDD=*.FONT01, /* FONT LIBRARY DD       */
//                OVLYDD=*.OLAY01, /* OVERLAY LIBRARY DD    */
//                PSEGDD=*.PSEG01, /* SEGMENT LIBRARY DD    */
//                PDEFDD=*.OLAY01, /* PAGEDEF LIBRARY DD    */
//                FDEFDD=*.OLAY01, /* FORMDEF LIBRARY DD    */
//                JOBHDR=*.JOBHDR, /* JOB HEADER DD         */
//                JOBTLR=*.JOBTLR, /* JOB TRAILER DD        */
//                DSHDR=*.DSHDR,   /* DATA SET HEADER DD    */
//                MESSAGE=*.MSGDS, /* MESSAGE DATA DD       */
//                PAGEDEF=A06462,  /* DEFAULT PAGEDEF       */
//                FORMDEF=A10110,  /* DEFAULT FORMDEF       */
//                CHARS=(GT10,GC15,GB10,GR10,), /* DEFAULT FONT SET*/
//                PIMSG=YES,       /* ACCUMULATE DATA SET MESSAGES */
//                SETUP=FORMS,     /* ISSUE FORMS SETUP MESSAGES   */
//                MGMTMODE=OUTAVAIL,/* START WHEN OUTPUT AVAILABLE */
//                DISCINTV=60,      /* DISCONNECT INTERVAL -- SECS */
//                LOGMODE=IBM3820T, /* LOGON MODE TABLE ENTRY      */
//                APPLID=FSAES618,  /*        APPLICATION PGM NAME */
//                LUNAME=PSFDC5LU   /* LOGICAL UNIT NAME           */
//PRT618 ENDCNTL
```

Figure 65. JES2 External Writer Procedure Example (Remote Configuration)

Specifying the VTAM Start Option List (ATCSTRxx)

You must specify the values illustrated in Figure 66 and described below.

```
CONFIG=nn,         ATCCON MEMBER OF VTAMLST     X
NETID=network_id,  NETWORK IDENTIFIER           X
SSCPID=nn,         SSCP IDENTIFIER              X
.
.
.
```

Figure 66. VTAM Start Option List (ATCSTRxx) Guidelines (Remote Configuration)

CONFIG
Specifies the **ATCCON***nn* member to use.

NETID
Specifies the network identifier for the host system. The first part of the

Partner LU name field on the **Basic** tab of the Define a Partner LU 6.2 notebook (Figure 97 on page 85) must match the **NETID** value.

SSCPID

Specifies the system services control point (SSCP) at the host. The SSCPID is a decimal integer from 0 to 65535.

The SSCP, normally VTAM, provides several network management functions. They include managing dependent logical units and accepting Network Management Vector Transports, such as alerts. Alerts often include information about devices that are unavailable or require corrective action.

To configure a PSF Direct host receiver to send alerts to this SSCP, the least significant portion of the **SNA System Services Control Point ID** value defined for the PSF Direct host receiver must be the hexadecimal equivalent of the SSCPID value. (For information about configuring the host receiver, see "Defining the PSF Direct Host Receiver" on page 100.) The **SNA System Services Control Point ID** must be in the form **05***xxxxxxxxxx*, where *x* is a hexadecimal digit.

For example, to configure a PSF Direct host receiver to send alerts to an SSCP with an SSCPID value of 283, the host receiver's **SNA System Services Control Point ID** value must be 05000000011B.

Figure 67 shows an example.

```
CONFIG=00,       ATCCON MEMBER OF VTAMLST     X
NETID=USIBMBQ,   NETWORK IDENTIFIER           X
SSCPID=1,        SSCP IDENTIFIER              X
.
.
.
```

Figure 67. VTAM Start Option List (ATCSTRxx) Example (Remote Configuration)

Specifying the VTAM Configuration List (ATCCONnn)

The VTAM configuration list indicates the application program major nodes that should become available when VTAM starts. Include the application program major node that contains the application program that PSF uses.

```
appl_prog_major_node,          X
.
.
.
```

Figure 68. VTAM Configuration List (ATCCONnn) Guidelines (Remote Configuration)

Figure 69 shows an example.

```
PSFAPPLS,                      X
.
.
.
```

Figure 69. VTAM Configuration List (ATCCONnn) Example (Remote Configuration)

Specifying the VTAM Application Program Major Node and Application Program

The pertinent operands for the VTAM application program major node and application program are illustrated in Figure 70 and described below.

```
appl_prog_major_node, VBUILD TYPE=APPL                X
appl_prog,            APPL AUTH=ACQ,EAS=1,SONSCIP=YES  X
.
.
.
```

Figure 70. VTAM Application Program Major Node and Application Program Guidelines (Remote Configuration)

The host PSF program does not support application programs that use **APPC=YES** or **PARSESS=YES**. The default value for both **APPC** and **PARSESS** is **NO**.

Figure 71 shows an example.

```
PSFAPPLS,   VBUILD TYPE=APPL                          X
FSAES618,   APPL AUTH=ACQ,EAS=1,SONSCIP=YES           X
.
.
.
```

Figure 71. VTAM Application Program Major Node and Application Program Example (Remote Configuration)

Specifying the VTAM Mode Table and Entry

The operands for the VTAM mode table are illustrated in Figure 72 and described below.

```
table_name   MODETAB                                              X
entry_name   MODEENT LOGMODE=IBM3820T,FMPROF=X'13',TSPROF=X'07', X
.
.
.
             PRIPROC=X'B0',SECPROT=X'B0',COMPROT=X'D0B1'         X
             PSERVIC=X'060200000000000000000200'                 X
             PSNDPAC=X'10',SRCVPAC=X'10',SSNDPAC=X'00'           X
             RUSIZES=X'8787'
```

Figure 72. VTAM Mode Table and Entry Guidelines (Remote Configuration)

PSNDPAC
Specifies the primary send pacing count. This value influences performance and can be adjusted as desired. A value of X'10' produces good throughput in most configurations.

SRCVPAC
Specifies the secondary receive pacing count. This value influences performance and can be adjusted as desired. A value of X'10' produces good throughput in most configurations.

RUSIZES
Specifies the maximum request unit (RU) sizes from the primary and secondary logical units. The RU sizes influence performance and can be adjusted as desired. A value of X'8787' means 1024 bytes for both RU sizes and produces good throughput in most configurations.

The **RUSIZES** specification influences other configuration parameters. These include:

- The **Maximum RU size** field on the **Advanced** tab of the Define a Mode notebook (Figure 101 on page 89)
- The **MAXSTL** operand in the IBM Network Control Program (NCP) **LINE** statement

Figure 73 shows an example.

```
MODEIBM     MODETAB                                              X
IBM3820T    MODEENT  LOGMODE=IBM3820T,FMPROF=X'13',TSPROF=X'07',  X
.
.
.
                     PRIPROC=X'B0',SECPROT=X'B0',COMPROT=X'D0B1'  X
                     PSERVIC=X'060200000000000000000200'          X
                     PSNDPAC=X'10',SRCVPAC=X'10',SSNDPAC=X'00'    X
                     RUSIZES=X'8787'
```

Figure 73. VTAM Mode Table and Entry Example (Remote Configuration)

Configuring the 3174 Establishment Controller

The keywords and values for the 3174 Establishment Controller are illustrated in Figure 74 and described below.

```
.
.
.
     CONFIGURATION SUPPORT C RELEASE 3
900: TOKEN-RING ADDRESS FOR THE GATEWAY
          4000 nnnn nnnn
940: RING ADDRESS ASSIGNMENT
     S@   Ring@,             SAP
.
.
.
     nn   4000 nnnn nnnn
     nn   nnnn nnnn nnnn     04
          DLOGMOD=IBM3820T,
941: RING TRANSMISSION DEFINITION
                             F    W
     nn   nnnn nnnn nnnn
     nn   nnnn nnnn nnnn     n    n
```

Figure 74. 3174 Establishment Controller Guidelines (Remote Configuration)

900: Token-Ring Address for the Gateway

Specify the token-ring address for the gateway. The address must be a local MAC address in the form **4000** *nnnn nnnn* .

940: Ring Address Assignment

This configuration item includes several pertinent parameters:

S@ Indicates the subchannel address. Values are supplied automatically on the **Ring Address Assignment** panel. The first **S@** value specifies the subchannel address for the gateway. The remaining **S@** values specify subchannel addresses for ring-attached physical units.

Ring@ Indicates the token-ring address. The first **Ring@** value specifies

the token-ring address for the gateway and is supplied automatically on the **Ring Address Assignment** panel.

Specify a token-ring address for each ring-attached physical unit. Local MAC addresses are preferable to universal MAC addresses. Local MAC addresses are in the form **4000** *nnnn nnnn*.

SAP Accept the default service access point (SAP) value, `04`.

941: Ring Transmission Definition

This configuration item includes two pertinent parameters:

F Indirectly specifies the transmit I-frame size.

To prevent basic information units (BIUs) from being broken into pieces, choose a transmit I-frame size that is at least 9 bytes larger than the maximum RU size. The maximum RU size is the lesser of the value represented by the VTAM **MODEENT** statement **RUSIZES** operand and the **Maximum RU size** field on the **Advanced** tab of the Define a Mode notebook (Figure 101 on page 89).

W Specifies the transmit window size. The transmit window size is the number of frames that the 3174 sends to the physical unit before waiting for a link-level acknowledgement.

The **Receive window count** field on the **Advanced** tab of the Define a LAN Device notebook (Figure 84 on page 72) specifies the maximum number of frames that Communications Server for NT receives before sending a link-level acknowledgement.

For optimum performance, the transmit window size (**W**) should be equal to the **Receive window count**. If the transmit window size is less than the **Receive window count**, extremely poor throughput can result. In most cases, the default transmit window size value is `2`. The default **Receive window count** value is `8`. You must adjust these default values to produce acceptable throughput.

```
.
.
.
     CONFIGURATION SUPPORT C RELEASE 3
900: TOKEN-RING ADDRESS FOR THE GATEWAY
          4000 3000 1001
940: RING ADDRESS ASSIGNMENT
     S@   Ring@,             SAP
.
.
.
     C1   4000 3000 1001
     C2   4000 3000 1002     04
          DLOGMOD=IBM3820T,
941: RING TRANSMISSION DEFINITION
                             F    W
     C1   4000 3000 1001
     C1   4000 3000 1002     2    7
```

Figure 75. 3174 Establishment Controller Example (Remote Configuration)

Specifying Communications Server for NT Configuration Profiles

This section contains instructions and guidelines for configuring the Communications Server for NT profiles. It includes the following tasks:

- "Accessing the Communications Server for NT Profiles"
- "Remote 3174 Node Setup" on page 66
- "Remote 3174 Device Configuration" on page 70
- "Remote 3174 Peer Connections Configuration" on page 75
- "Local LU 6.2 Configuration for Remote 3174" on page 79
- "Enabling SNA API Clients for Remote 3174" on page 82
- "Partner LU 6.2 Configuration for Remote 3174" on page 84
- "Mode Configuration for Remote 3174" on page 87
- "Transaction Program Configuration for Remote 3174" on page 90

Accessing the Communications Server for NT Profiles

Use the following procedure to access the IBM SecureWay Communications Server for NT applications that are described in "What is IBM SecureWay Communications Server for Windows NT?" on page 2.

Note that this procedure assumes that you have dragged the icons for **SNA Node Configuration** and **SNA Node Operations** to your desktop after they were created at installation.

1. From your NT desktop view, double-click the **SNA Node Configuration** icon that resides on your desktop:

2. At the Welcome to Communications Server Configuration! pop-up window, select the **New** button for a new configuration) and click the **Next>** button.

   Communications Server creates an *xxx*.acg file (where *xxx* represents the file name you select in this window. This *xxx*.acg file resides in the *C*:\IBMCS\private directory, where *C* is the drive where you installed IBM SecureWay Communications Server for NT. For users migrating from PSF Direct on an OS/2 operating system, this *xxx*.acg file is the equivalent of the OS/2 Communications Manager Communications Server *xxx*.ndf file.

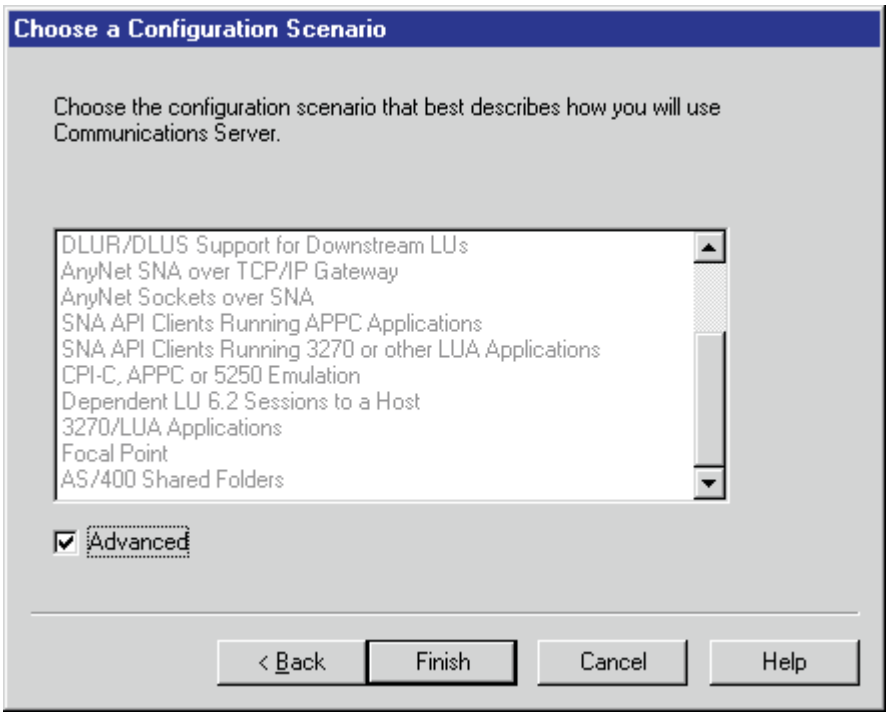

Figure 76. Choose a Configuration Scenario Window (Remote Configuration)

3. In the Choose a Configuration Scenario window (Figure 76), check the **Advanced** box, which causes the display to turn gray. Click the **Finish** button.
4. From the Communications Server SNA Node Configuration window (Figure 77 on page 66), you are ready to begin configuring your system for PSF Direct.

Remote 3174 Node Setup

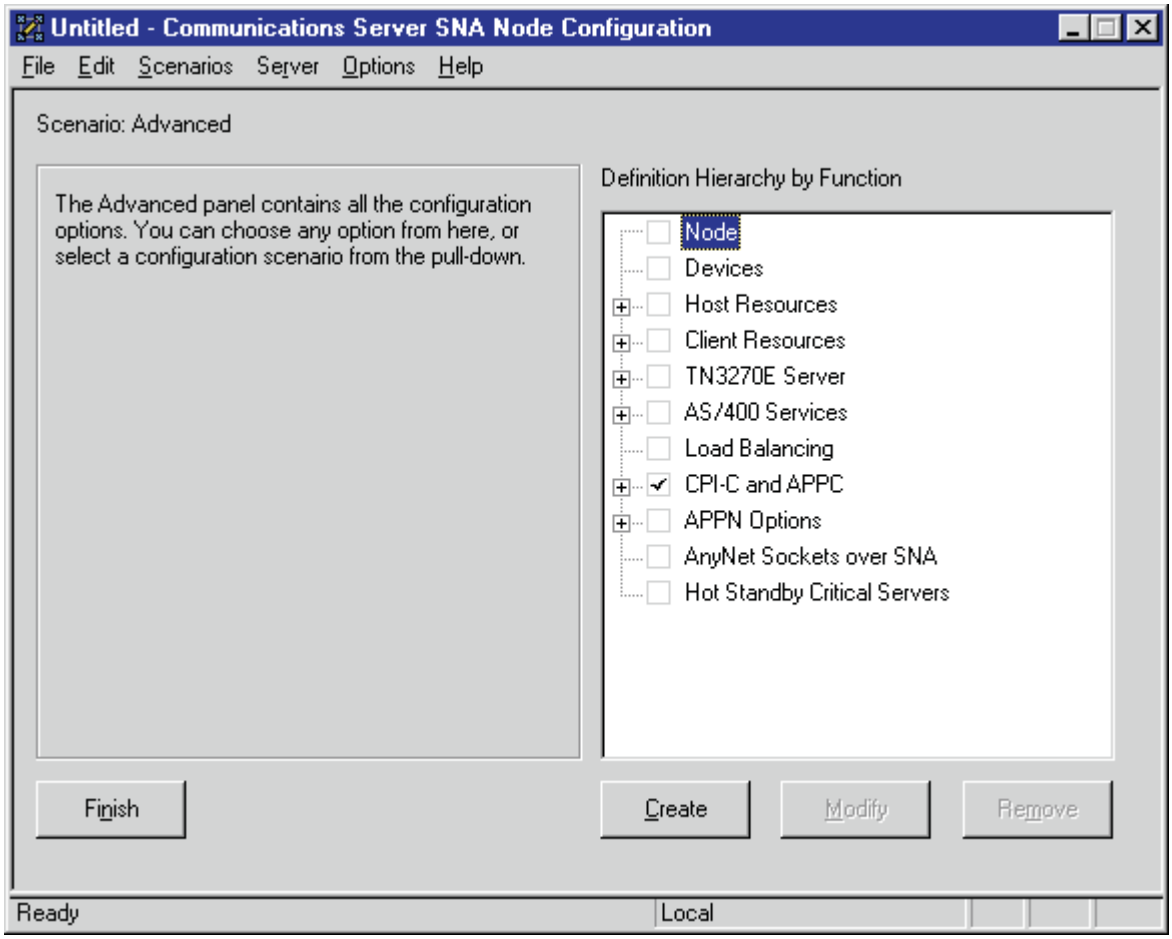

Figure 77. Communications Server SNA Node Configuration Window: Node (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 77), right-click the **Node** box and select the **Create** option. The Define the Node notebook opens at the **Basic** tab.

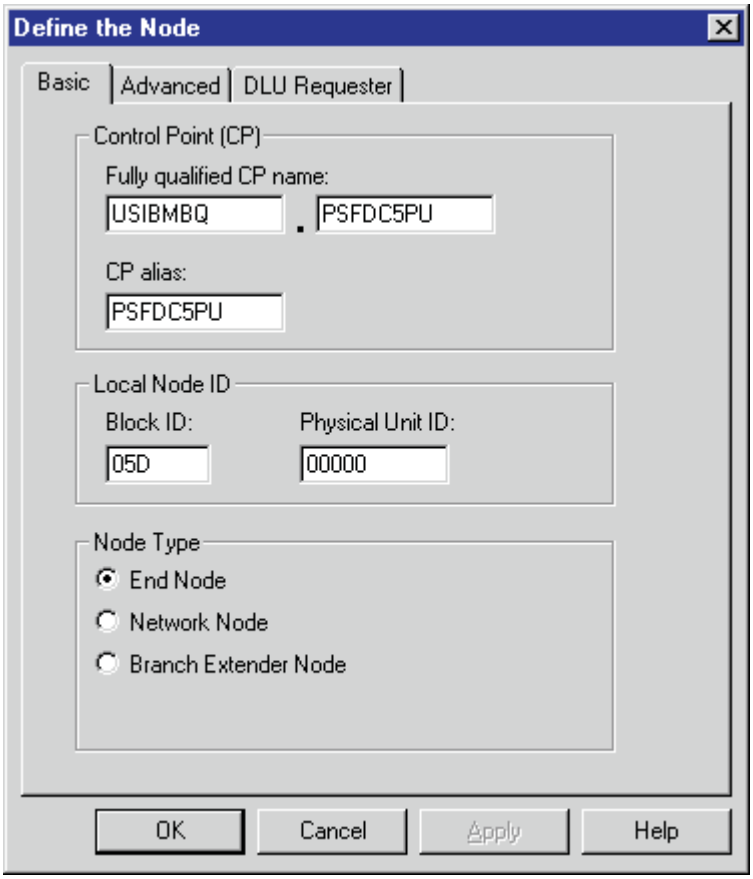

Figure 78. Define the Node Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab (Figure 78), specify values for the following parameters:

Fully qualified Control Point (CP) name
Specifies the name of the component that manages the resources of that node. If the **CPNAME** operand is used in the VTAM **PU** statement, then the second part of this value must match the **CPNAME** operand. By convention, the **CPNAME** is usually the same as the **PU** name.

CP alias
Specifies an alternative name for the CP. Local applications can use this name, instead of the **Fully qualified Control Point (CP)** name, to refer to the local CP.

Local Node ID
Specifies both the **Block ID** and the **Physical Unit ID**. The **Block ID** is a 3-digit hexadecimal string that identifies the product type in an SNA network. The **Physical Unit ID** is a 5-digit hexadecimal string that identifies a physical unit (PU).

If the **IDBLK** and **IDNUM** operands are used in the VTAM **PU** statement, then the **Local Node ID** value must match the combined **IDBLK** and **IDNUM** operands. The **IDBLK** operand is normally `071` for Communications Server for NT.

If you are migrating from an AIX operating system, **Local Node ID** matches the **XID Node ID** parameter.

Node Type

Specifies the type of node. Take the default value, **End node**.

If you are migrating from an AIX operating system, **Node Type** matches the **Control Point Type** parameter.

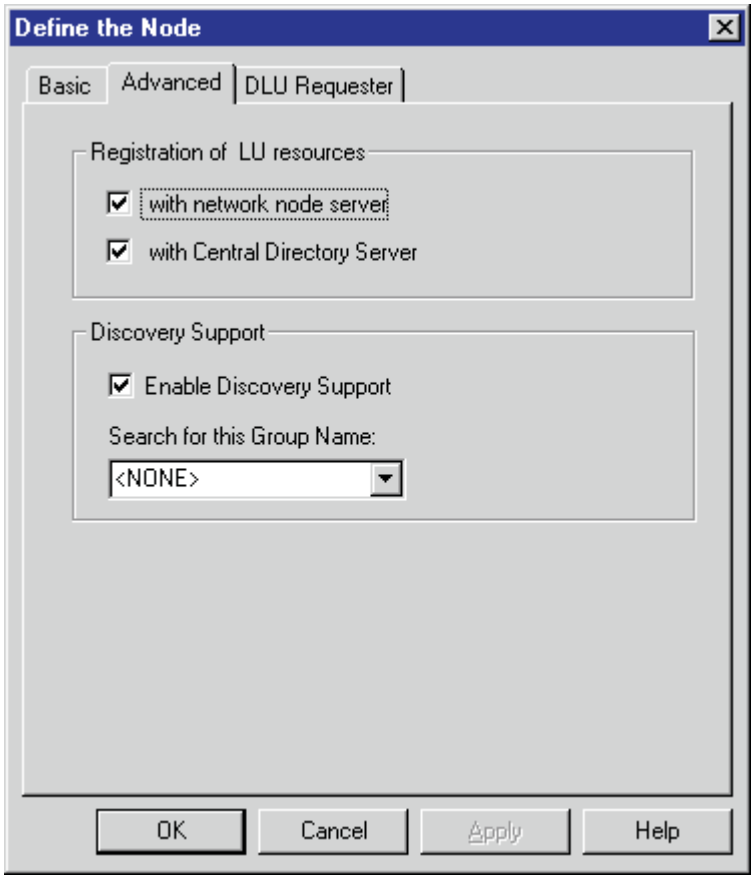

Figure 79. Define the Node Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 79), specify values for the following parameters:

Registration of LU resources

Specifies that directory information about the local logical units (LUs) 6.2 is sent to the server. As the example shows, check both the **Network node server** and the **Central Directory Server**.

Discovery Support

Specifies a LAN address resolution protocol that can be used to find another node that matches given search values. Adjust the search parameter to search for APPN network nodes, nodes that provide SNA boundary function, or AS/400s. Select the check box to enable discovery support.

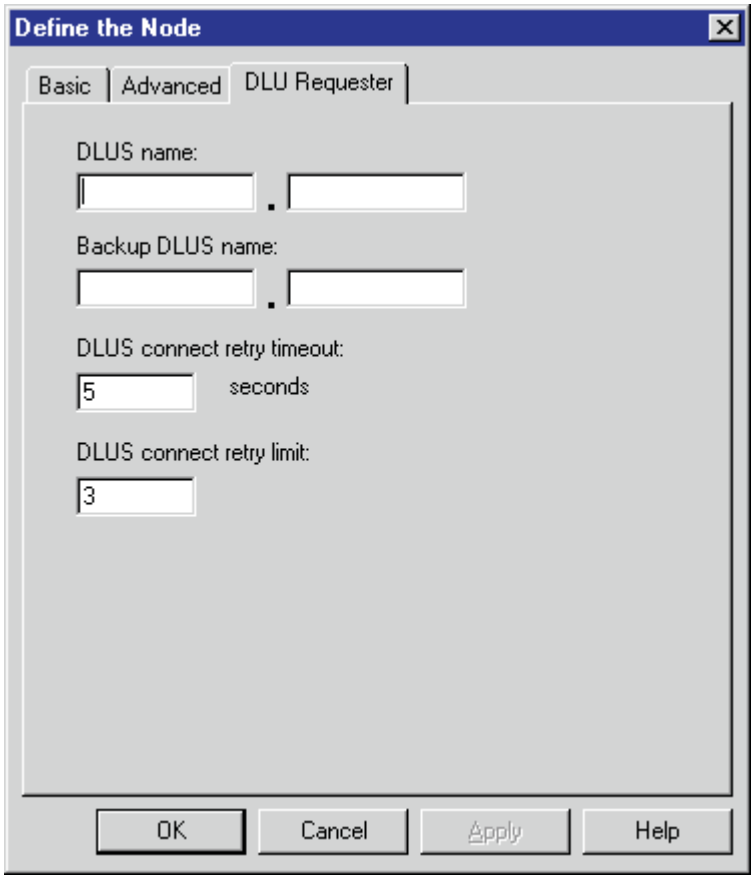

Figure 80. Define the Node Notebook: DLU Requester Tab (Remote Configuration)

On the **DLU Requester** tab (Figure 80), accept the default values for the following parameters:

DLUS connect retry timeout
Specifies the time between attempts to reconnect a dependent logical unit server (DLUS). This parameter is based on the **DLUS connect retry limit** parameter. Take the default of 5.

DLUS connect retry limit
Specifies the maximum number of attempts to reconnect a DLUS without receiving an acknowledgment in the time set by the **DLUS connect retry timeout** parameter. Take the default of 3.

Click **OK** to save these configuration settings.

Remote 3174 Device Configuration

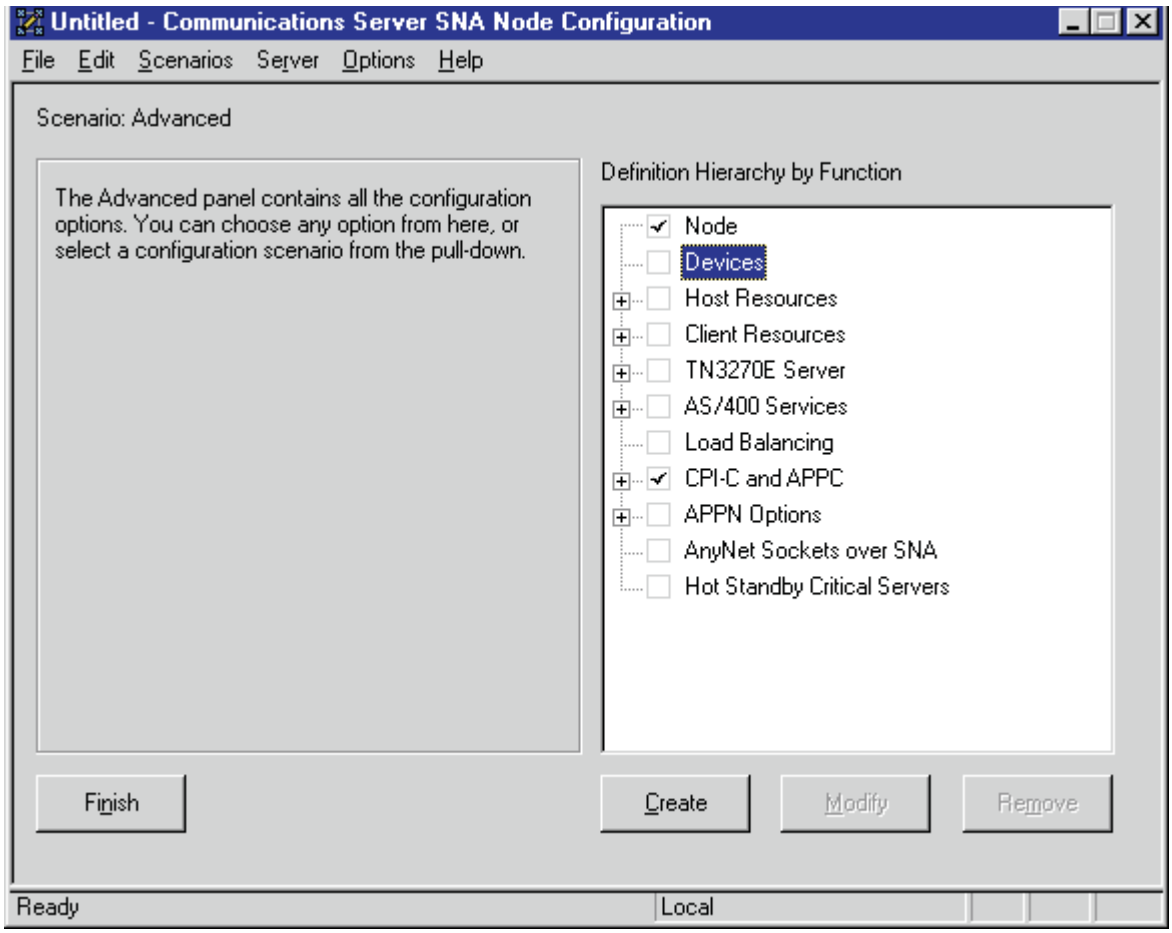

Figure 81. Communications Server SNA Node Configuration Window: Devices (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 81), right-click the **Devices** box and select the **Create** option. The Device Type pop-up notebook (Figure 82) opens.

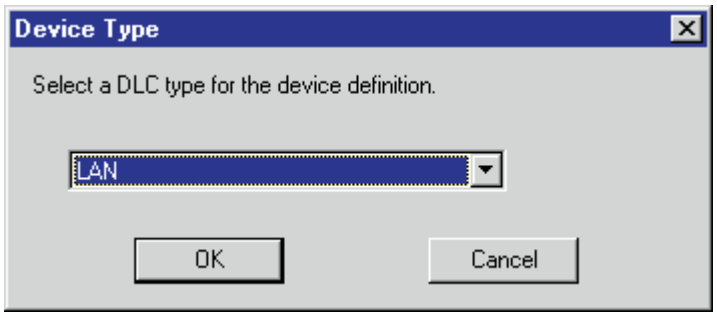

Figure 82. Device Type Window (Remote Configuration)

Select **LAN** as your data link control (DLC) type. A DLC is a set of rules that nodes on a data link (such as an SDLC link or a token ring) use to accomplish an orderly exchange of information.

Click **OK** to save this configuration setting.

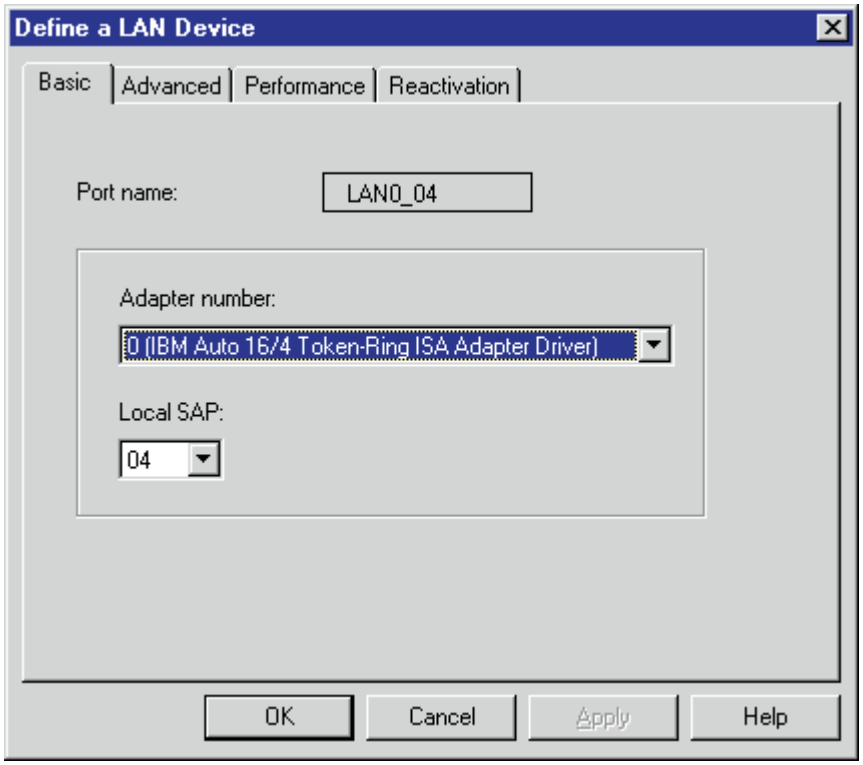

Figure 83. Define a LAN Device Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab of the Define a LAN Device notebook (Figure 83), supply the following values:

Port name
Specifies the port name of the physical connection to the link hardware. This value consists of the word **LAN**, the adapter number, and the local SAP number, with an underscore between the adapter number and the local SAP number. Accept the value that is displayed.

Adapter number
Specifies a value from 0 to 7 that uniquely identifies this adapter. You may have both token-ring and ethernet adapters defined at your installation. Ensure that you select the proper token-ring LAN adapter.

Local SAP
Specifies the local service access point (SAP) number of the local port as a hexadecimal value from 04 through FC. Note that this number must be a multiple of four. Take the default of `04`.

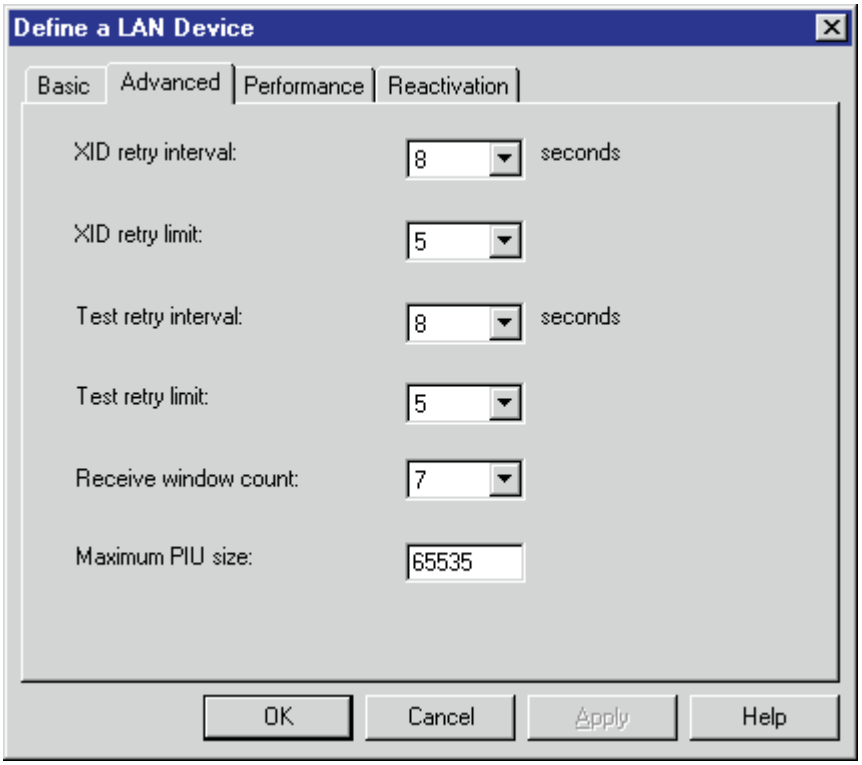

Figure 84. Define a LAN Device Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 84), supply the following values:

XID retry interval
Specifies the time the link station waits for a reply to a previous **XID** command before resending that command. Specify `60`. This value causes the link station to try to establish a link connection with the communication controller every 60 seconds, until a link connection can be established. If you are migrating from an AIX operating system to a Windows NT operating system, this parameter replaces the **Response Timeout** parameter from the **Token-Ring SNA DLC** profile.

XID retry limit
Specifies the maximum number of times an **XID** command will be retransmitted before Communications Server for NT presumes that the link is broken and stops retrying. Specify `0`. This value indicates that there is no limit on the number of attempts the link station makes to establish a link connection with the communication controller. The previous parameter defines the interval between the attempts. If you are migrating from an AIX operating system to a Windows NT operating system, this parameter replaces the **XID Retransmit count** parameter from the **Token-Ring SNA DLC** profile.

Test retry interval
Specifies the time between attempts to find the adjacent link station on the LAN. This parameter is needed to establish communication with the network and does not necessarily relate to VTAM or the PSF host system. The number of times an **XID** is sent is based on the configured **XID retry limit**.

Test retry limit
Specifies the number of times Communications Server attempts to find the adjacent link station on the LAN. Specify a value from 3 to 30.

Receive window count
Defines the size of the link-level window. This value specifies the maximum number of frames to receive before sending a link-level acknowledgement.

Maximum PIU size
Specifies a value between 99 and 65535 bytes that represents the maximum number of bytes in the data buffer that SNA sessions use for this link. If the value of the **Maximum PIU size** exceeds the frame size supported by your local device driver, the value will be reduced to match the frame size.

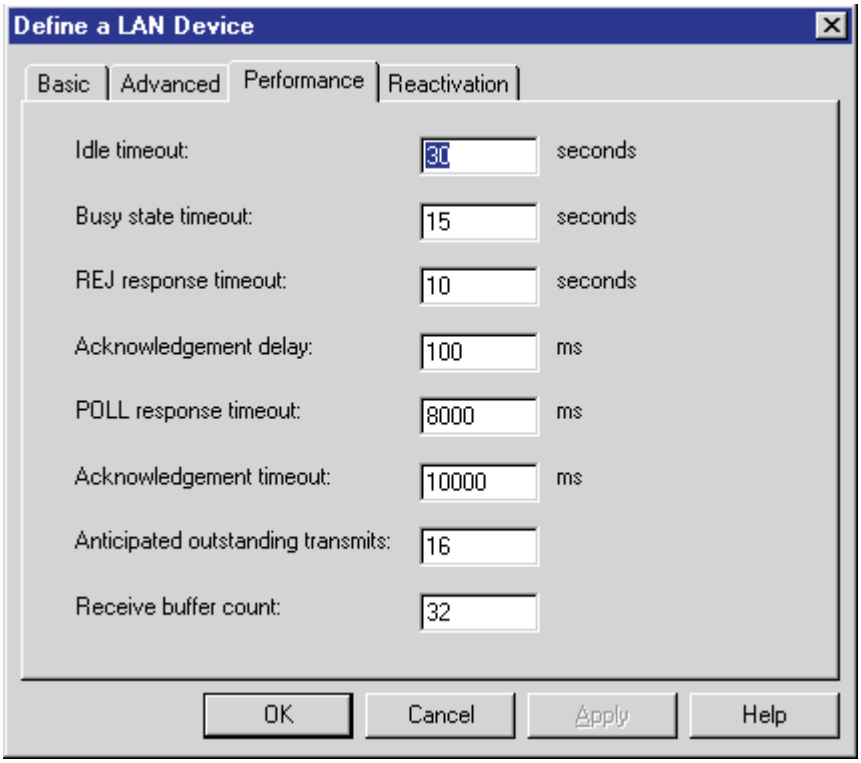

Figure 85. Define a LAN Device Notebook: Performance Tab (Remote Configuration)

On the **Performance** tab (Figure 85), accept the default values.

If you are migrating from an AIX operating system to a Windows NT operating system, see Table 4 on page 74 for a map of the parameters on the **Performance** tab to the corresponding AIX values.

Table 4. Windows NT and AIX Parameters for LAN Device Performance (Remote Configuration)

Windows NT Parameter	AIX Parameter
Idle timeout	Inactivity time-out
Busy state timeout	n/a
Acknowledgement delay	n/a
Acknowledgement timeout	Acknowledgement timeout
POLL response timeout	n/a
Anticipated outstanding transmits	Transmit window count
Receive buffer count	n/a

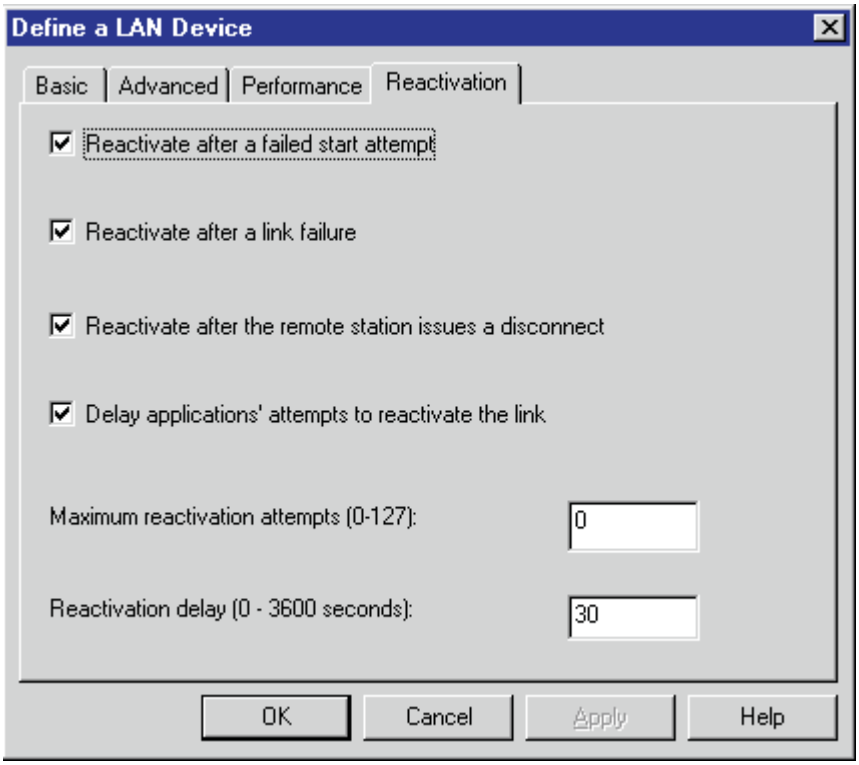

Figure 86. Define a LAN Device Notebook: Reactivation Tab (Remote Configuration)

On the **Reactivation** tab (Figure 86), accept the default values.

Click **OK** to save these configuration settings.

Remote 3174 Peer Connections Configuration

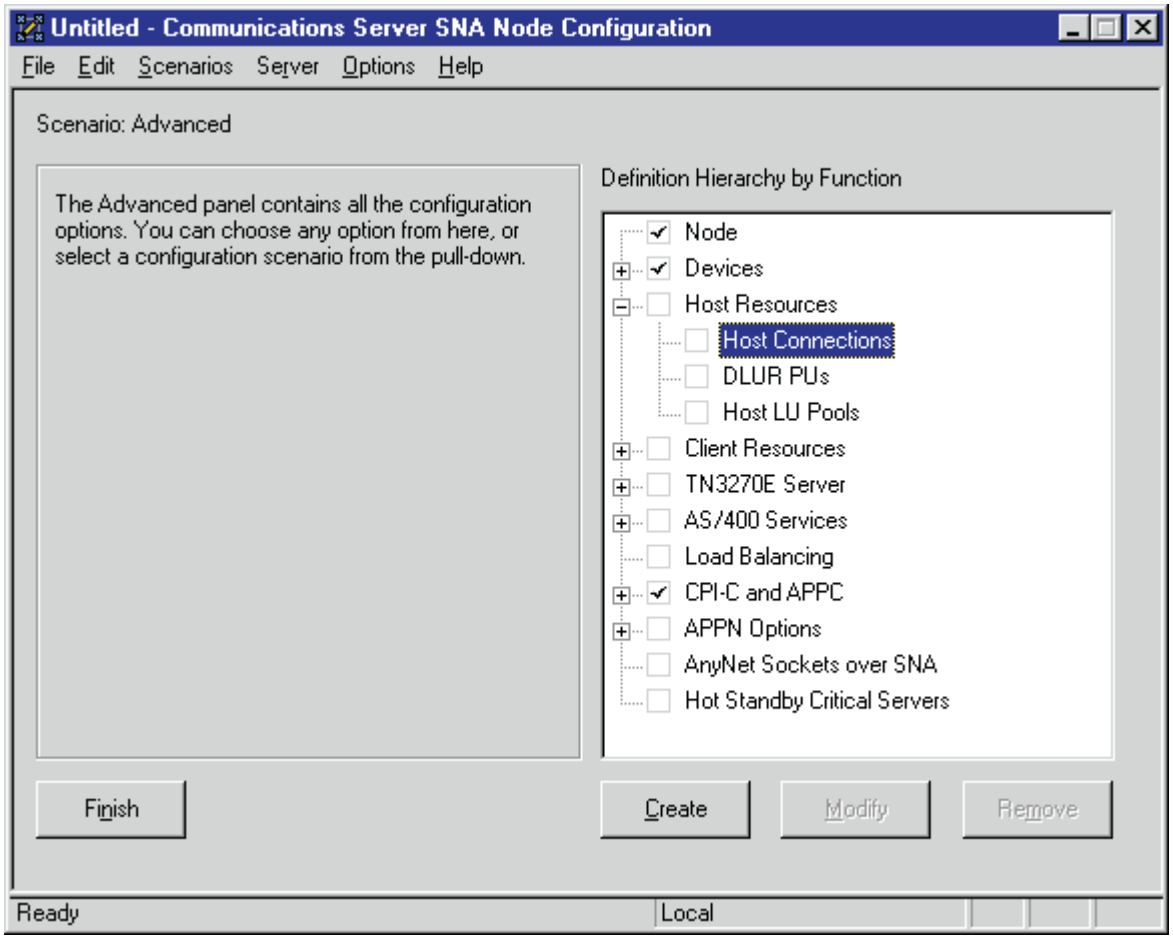

Figure 87. Communications Server SNA Node Configuration Window: Host Connections (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 87), right-click the **Host Resources** box, then the **Host Connections** box. Select the **Create** option. The Define a LAN Connection notebook opens at the **Basic** tab.

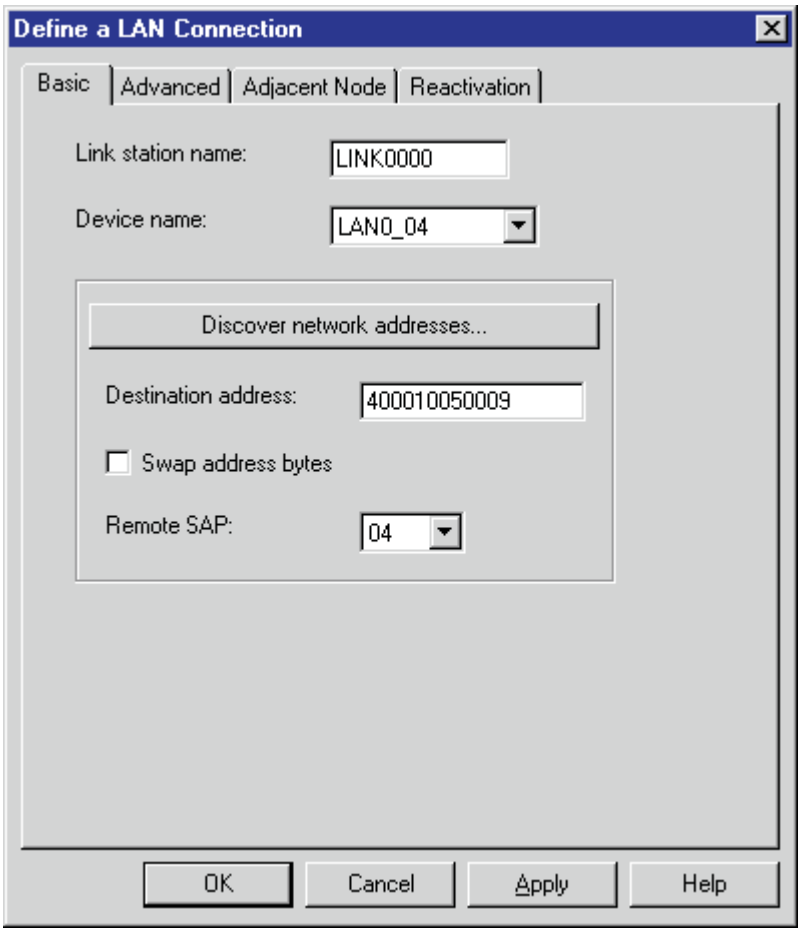

Figure 88. Define a LAN Connection Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab (Figure 88), supply the following values:

Link station name
Specifies a 1- to 8-byte character string that is used to identify a connection. The contents of this field will vary, depending on the number of links at your installation.

Device name
Specifies the name of the port associated with this link station. This value must match the **Port name** value specified on the **Basic** tab of the Define a LAN Device notebook (Figure 83 on page 71).

Destination address
Specifies a 12-character hexadecimal string that specifies the address to activate a connection to the destination. This value must be specified so the NT system can search for and call the PSF host program.

Swap address bytes
Check this field to bit-swap the address in the **Destination address** field. You may need to select this check box if the next link in the network is an Ethernet link. If not, you can use the default (unchecked).

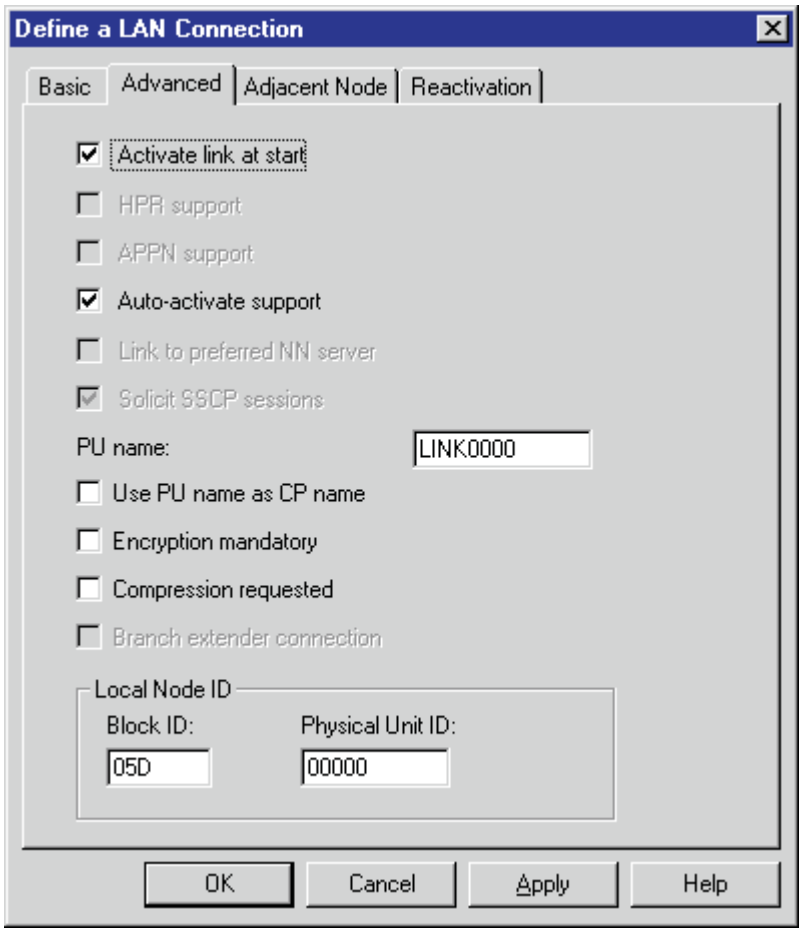

Figure 89. Define a LAN Connection Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 89), supply the following values:

Activate link at start
Specifies that you will use the link reactivation values specified in the port (device) link reactivation definition. Ensure that you select this check box.

APPN support
Specifies whether this connection supports CP-CP sessions. Select the check box to specify APPN support.

PU name
Specifies the physical unit (PU) name is the name of the component that manages and monitors the resources (such as attached links and adjacent link station) associated with a node. The default PU name is automatically created. You can change this definition.

Block ID
Identifies the product type in an SNA network.

Physical Unit ID
Identifies the physical unit (PU) or component that manages and monitors the resources (such as attached links and adjacent link stations) associated with a node.

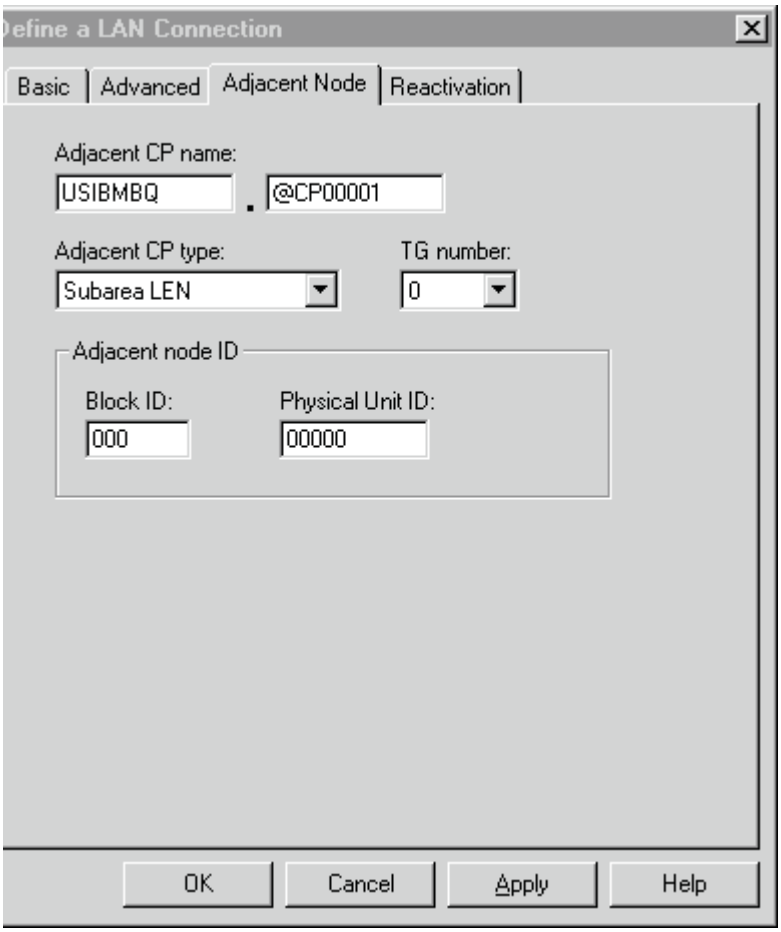

Figure 90. Define a LAN Connection Notebook: Adjacent Node Tab (Remote Configuration)

On the **Adjacent Node** tab (Figure 90), accept the default values.

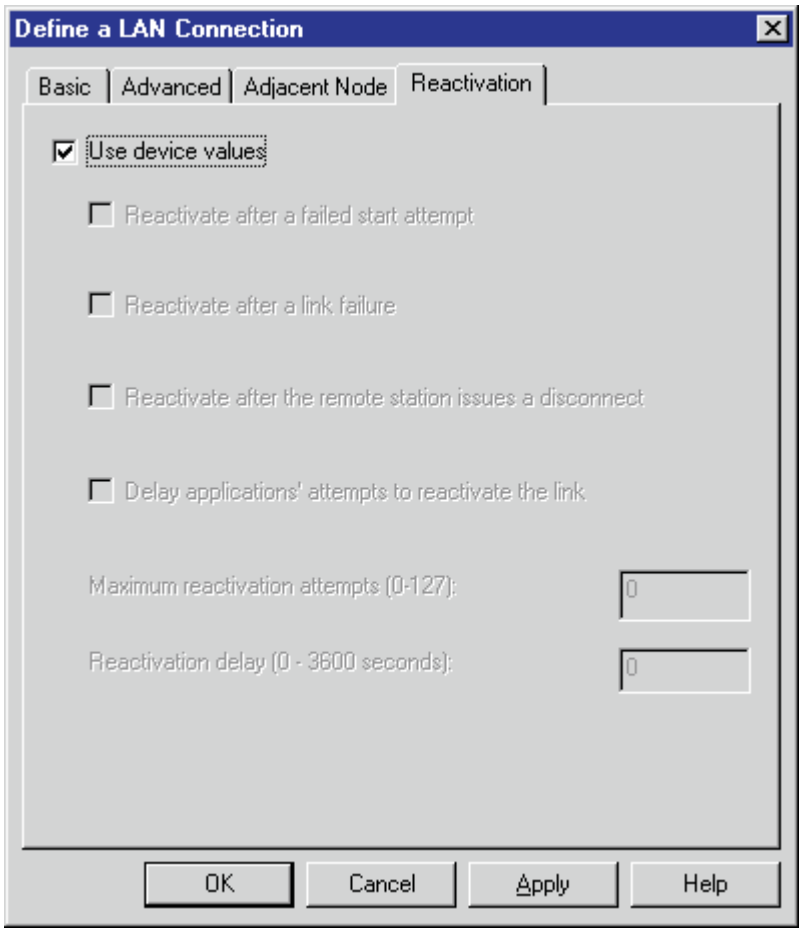

Figure 91. Define a LAN Connection Notebook: Reactivation Tab (Remote Configuration)

On the **Reactivation** tab (Figure 91), accept the default values.

Note that after you select **OK**, a pop-up window appears asking:

```
Do you want to automatically route all APPC sessions over this connection?
```

You must reply `yes`. Then, a pop-up window asks:

```
Do you wish to create and assign new LUs to this connection?
```

When you reply `yes`, the Host LU Definition window (Figure 92 on page 80) appears.

Local LU 6.2 Configuration for Remote 3174

Dependent or Independent LU?

This procedure configures a *dependent* LU. You cannot use it to configure an *independent* LU. If you require independent LUs, see "Deciding Whether to Define a Dependent or an Independent LU" on page 12.

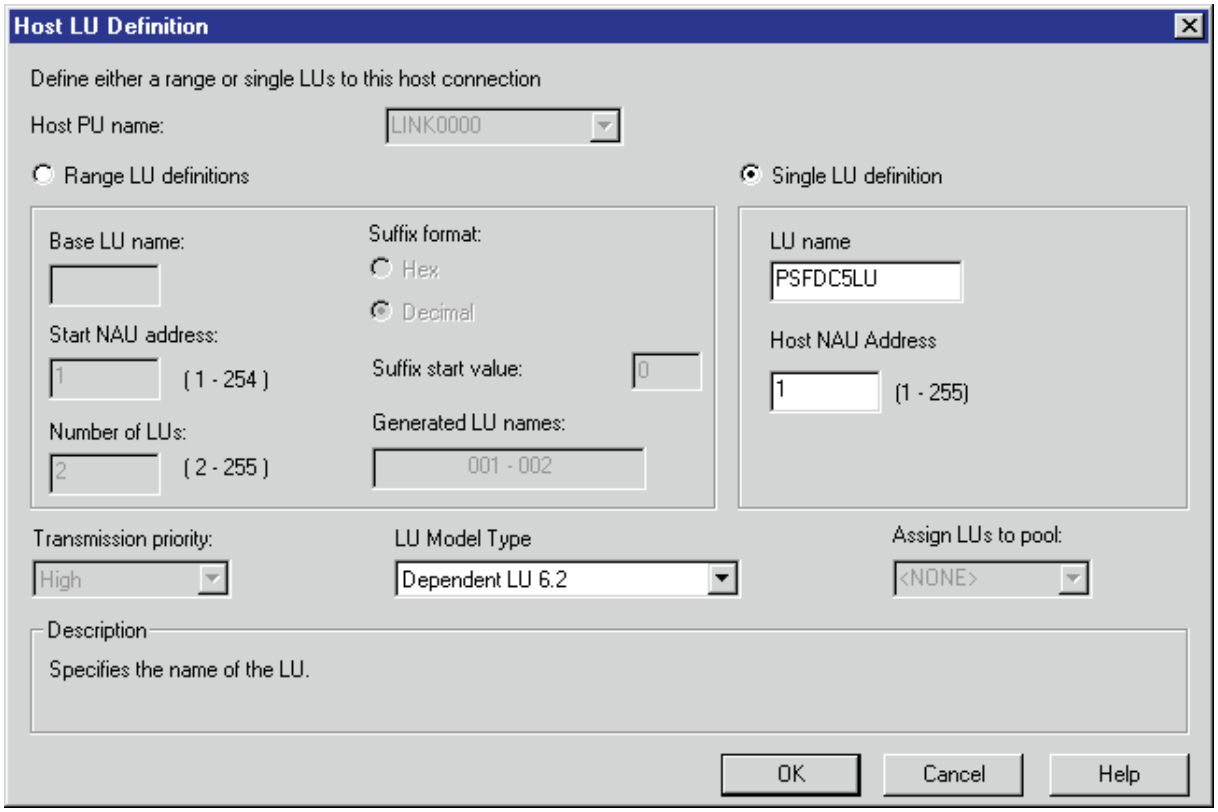

Figure 92. Host LU Definition Window (Remote Configuration)

In the Host LU Definition window (Figure 92), supply the following values:

Single LU Definition
Specifies that the host link definition can be assigned a single LU definition. Select this button to indicate that the host LU definition is assigned a single link definition.

LU Name
Specifies a 1- to 8-character name of a type of network addressable unit (NAU) that enables end users to communicate with each other and gain access to network resources. The first character must be an uppercase alphabetic character (A-Z) or a special character (@,#,$). The remaining characters can be alphanumeric characters (A-Z, 0-9) or special characters (@,#,$). This name must match the Partner LU that is defined for the host PSF program.

Host NAU Address
Specifies a value between 1 and 255 for a dependent LU. This value must match the **LOCADDR** value on the VTAM **LU** statement.

LU Model Type
Specifies the model type and number of the LU that is used by Infoprint Manager when configuring the PSF Direct host receiver. Select **Dependent LU 6.2**.

Click **OK** to save these specifications to the *xxx*.acg file.

To see this defined LU, click the **Host Connections** box in the Communications Server SNA Node Configuration window (Figure 93) until you display the link (`LINK0000`) and the Dependent LU (`PSDC5LU`).

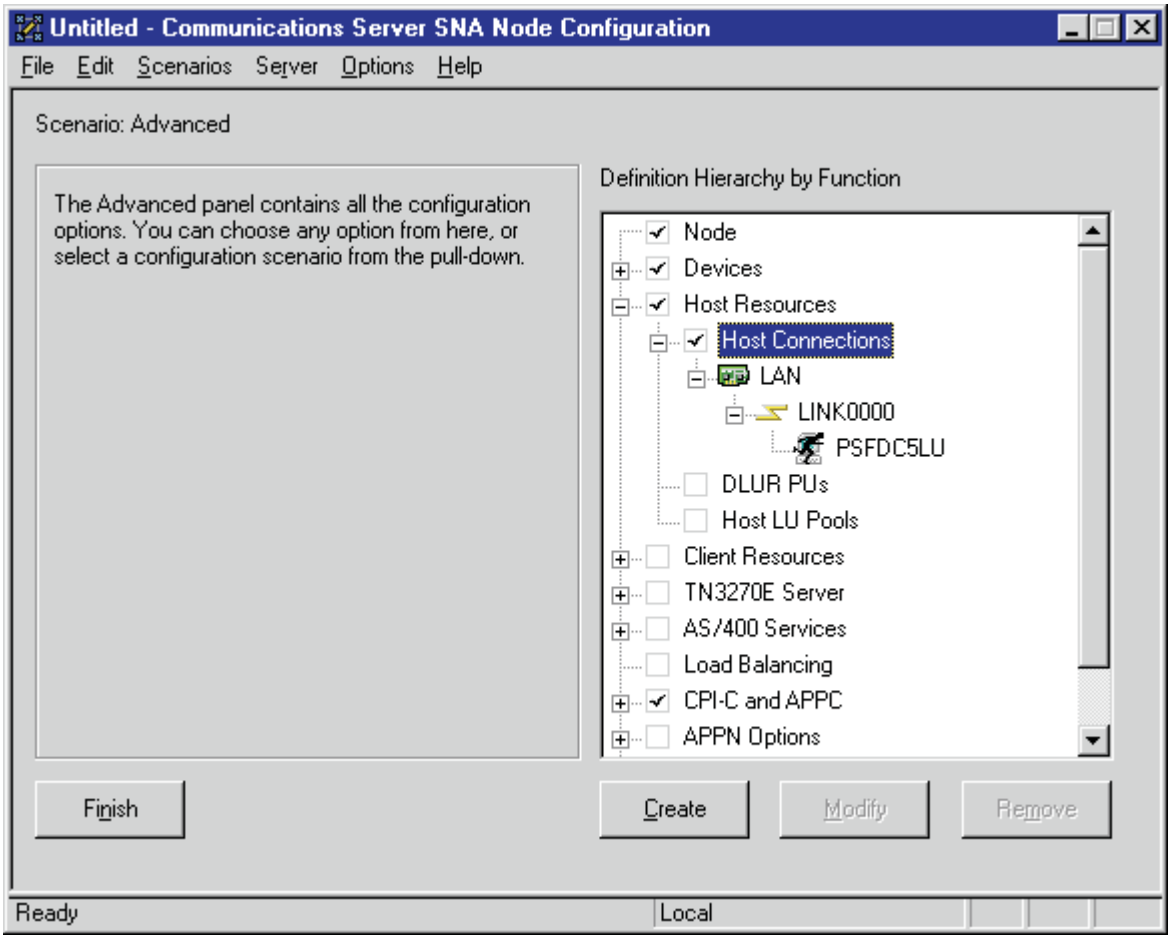

Figure 93. Communications Server SNA Node Configuration Window: Defined LU (Remote Configuration)

Enabling SNA API Clients for Remote 3174

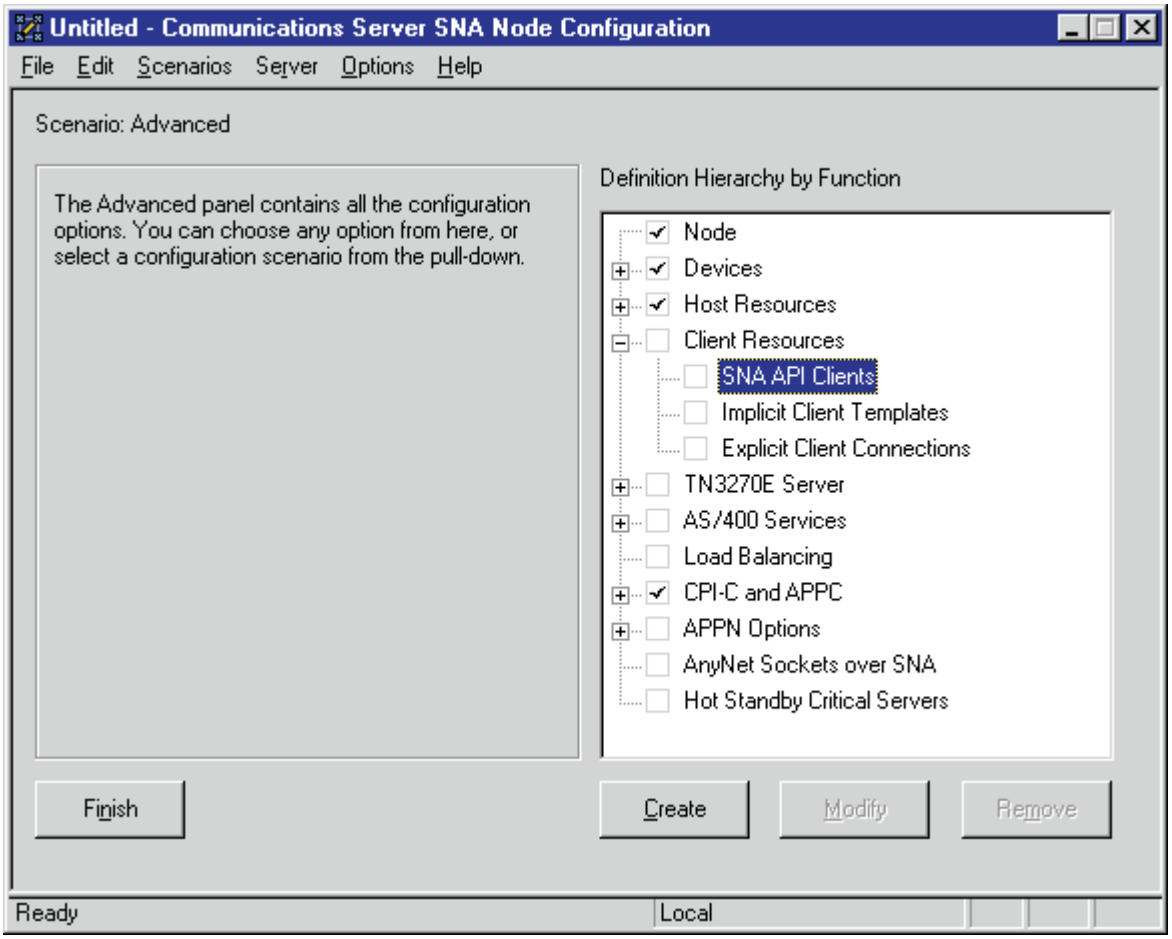

Figure 94. Communications Server SNA Node Configuration Window: SNA API Clients (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 94), right-click the **Client Resources** box, then the **SNA API Clients** box. The SNA Clients window opens.

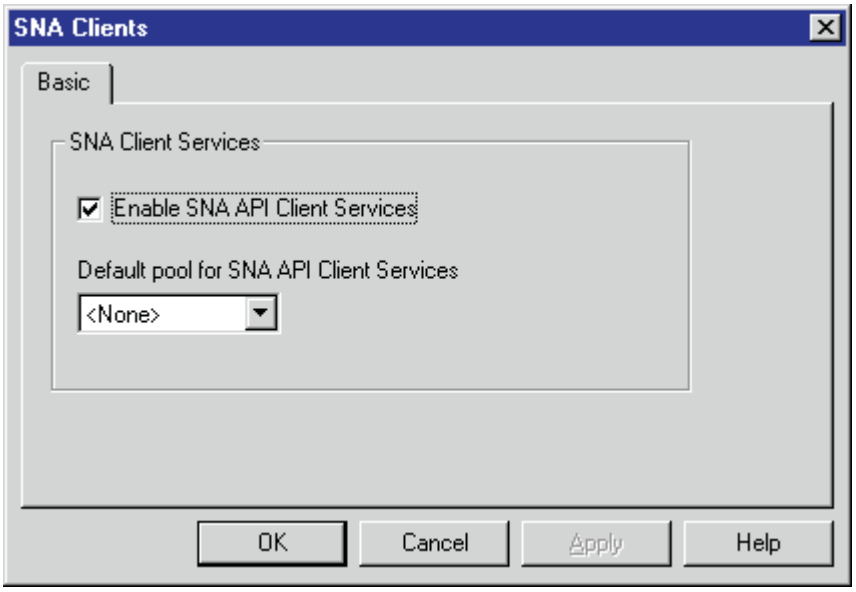

Figure 95. SNA Clients Window (Remote Configuration)

In the SNA Clients window (Figure 95), check the **Enable SNA API Client Services** box.

Click **OK** to save these specifications to the *xxx*.acg file.

Partner LU 6.2 Configuration for Remote 3174

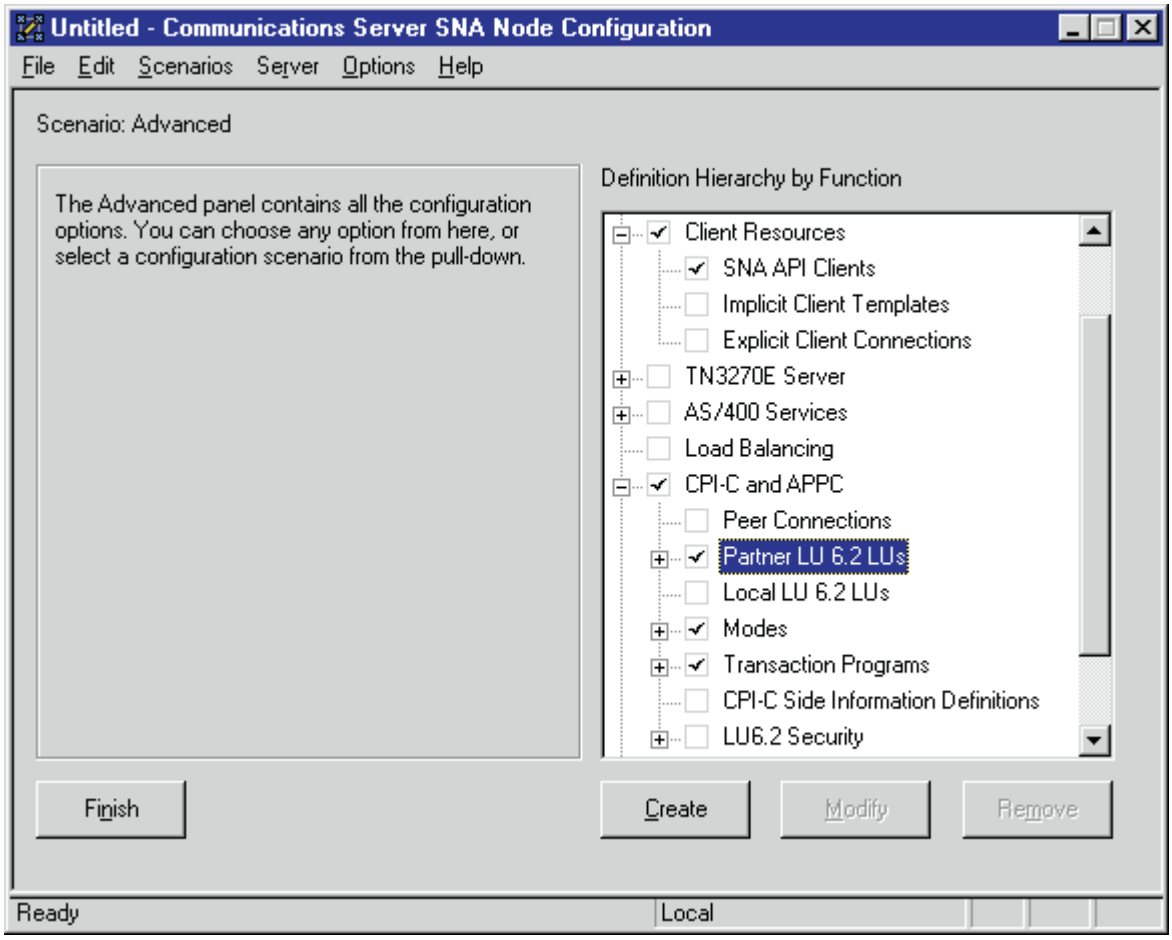

Figure 96. Communications Server SNA Node Configuration Window: Partner LU 6.2 LUs (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 96), right-click the **CPI-C and APPC** box, then the **Partner LU 6.2 LUs** box. Select the **Create** option. The Define a Partner LU 6.2 notebook opens at the **Basic** tab.

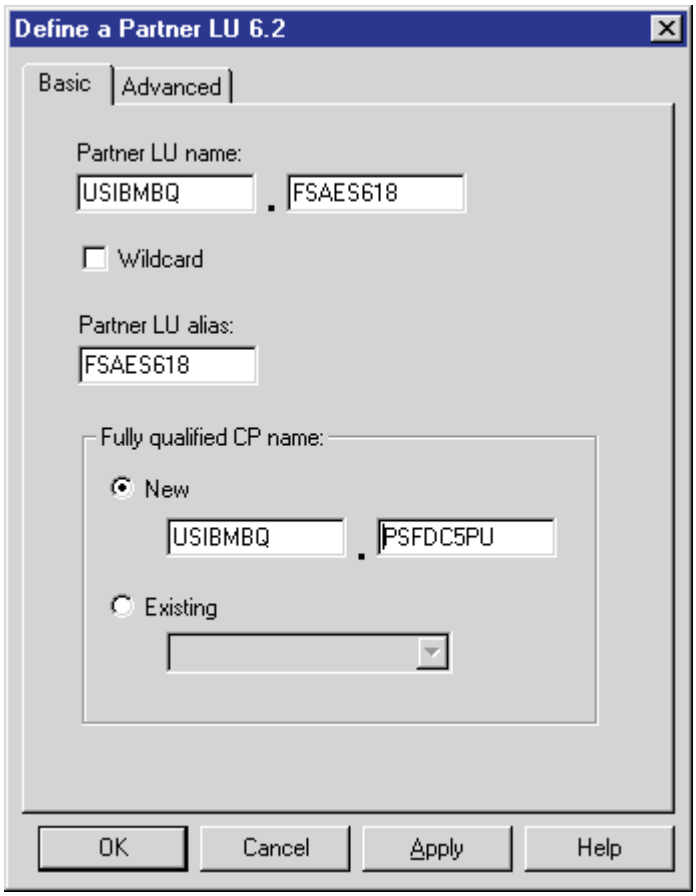

Figure 97. Define a Partner LU 6.2 Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab (Figure 97), supply the following values:

Partner LU name
Specifies the network identifier of the network in which the host PSF program resides (followed by a period), and the logical unit name used by the host PSF program. The network identifier portion must match the **NETID** value in the VTAM start option list (ATCSTR*xx*) (see "Specifying the VTAM Start Option List (ATCSTRxx)" on page 59). The logical unit name portion must match the **APPLID** parameter in one of these places:

- The PSF for OS/390 **PRINTDEV** statement
- The PSF/VSE **PRINTDEV** statement
- The PSF/VM **OPTIONS PDM** file

That **APPLID** parameter on the PSF host system must also match an **APPL** statement in a VTAM application program major node. (Do not check the **Wildcard** check box.)

Partner LU alias
Specifies the alternate name for the partner LU. Local applications can use this name, instead of the fully qualified LU name, to refer to the partner LU. While you can choose any meaningful value, IBM recommends specifying the second qualifier of the **Partner LU name**.

Fully qualified CP name
Select **New** to enter the fully qualified CP name of the partner LU's

owning control point. Communications Server for NT requires this field. Infoprint Manager uses this field as the target for any alerts sent by the PSF Direct program.

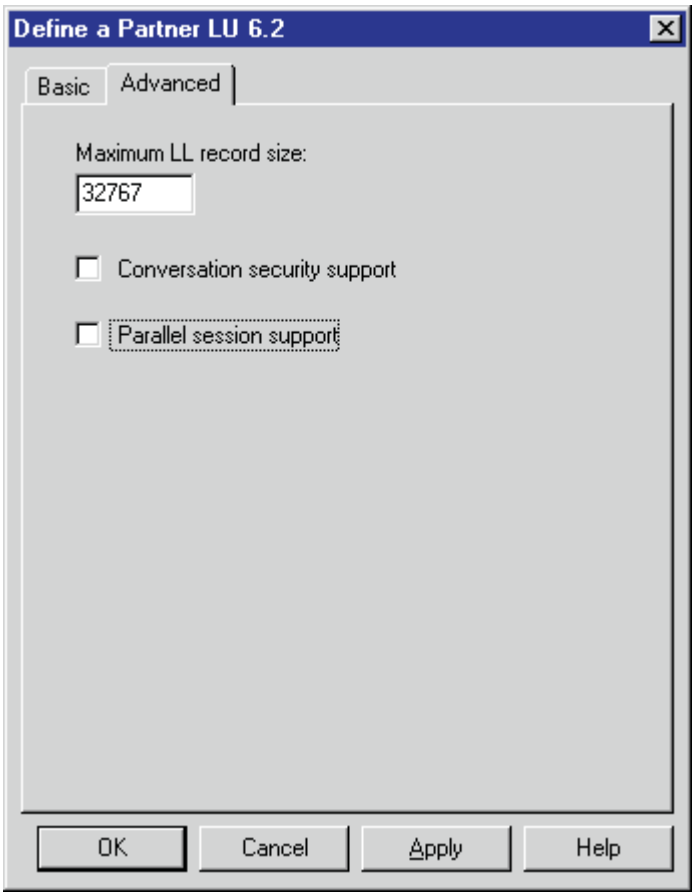

Figure 98. Define a Partner LU 6.2 Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 98), supply the following values:

Maximum LL record size
Specifies a value between 0 and 32767 as the maximum size of the logical record in the data stream for basic conversations. Specify the default (32767), because the PSF host program and the PSF Direct host receiver should both be able to handle the full range.

Conversation security support
Specifies that the partner logical unit (LU) is authorized to validate the user identifiers for the local LUs. Select the check box to specify conversation security support if you have matching support on the host PSF program. If not, leave this box unchecked.

Parallel session support
Specifies whether the partner LU supports two or more currently active sessions between the same two LUs by using different pairs of network addresses or session identifiers. Because neither PSF Direct nor the PSF host programs support two sessions with the same partner LU, do not select this check box.

Click **OK** to save these specifications to the *xxx*.acg file.

Mode Configuration for Remote 3174

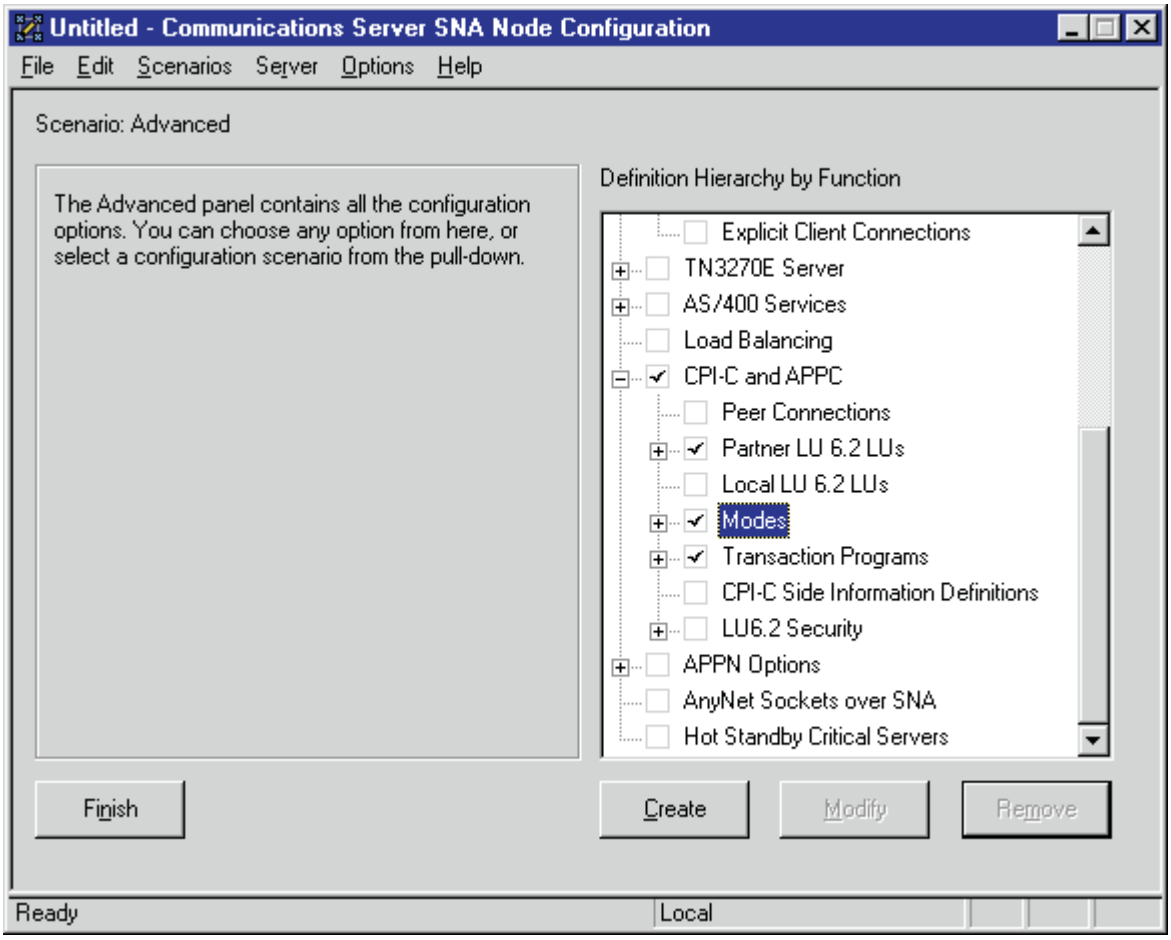

Figure 99. Communications Server SNA Node Configuration Window: Modes (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 99), right-click the **CPI-C and APPC** box, then the **Modes** box. Select the **Create** option. The Define a Mode notebook opens at the **Basic** tab.

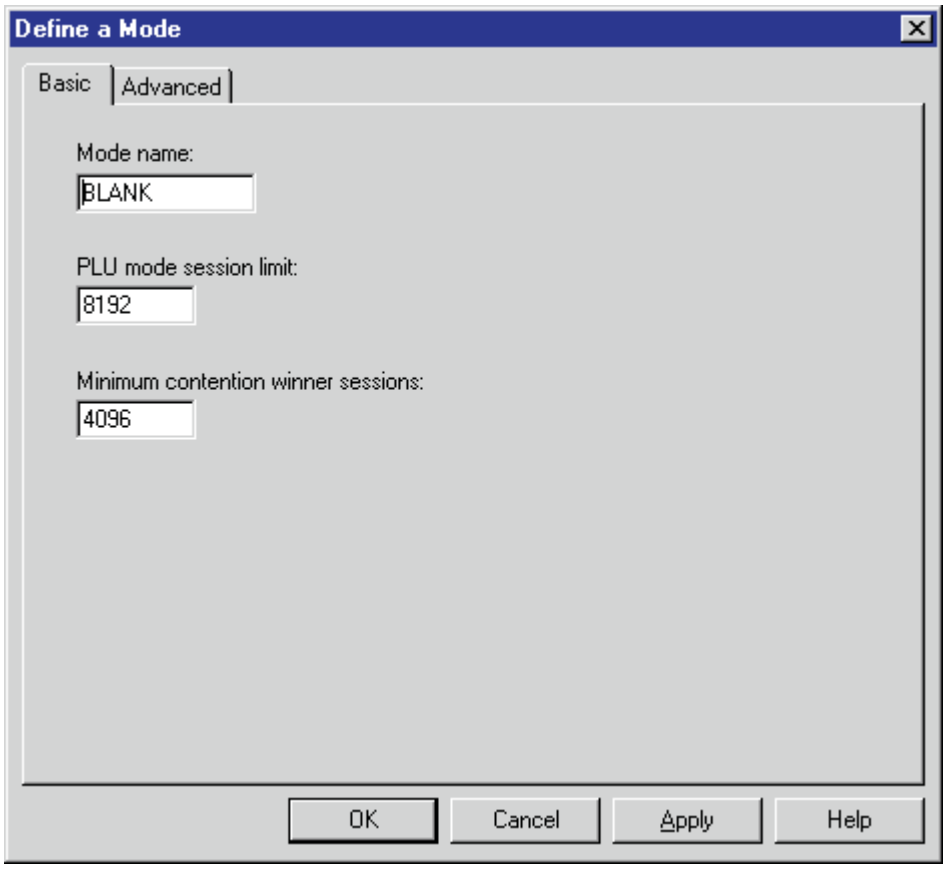

Figure 100. Define a Mode Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab (Figure 100), supply the following values:

Mode name
Specifies the characteristics for the session that will be allocated for the conversation. The initiator uses this value. The **Mode name** in the **BLANK** profile is 8 spaces.

PLU mode session limit
Specifies a value between 0 and 32767 as the primary logical unit (PLU) mode session limit, or maximum number of concurrently active LU-LU sessions that a particular LU can support. Take the default.

Minimum contention winner sessions
Specifies a value between 0 and 32767 as the minimum number of sessions that a local LU using this mode can activate to win a contention with a partner. Take the default.

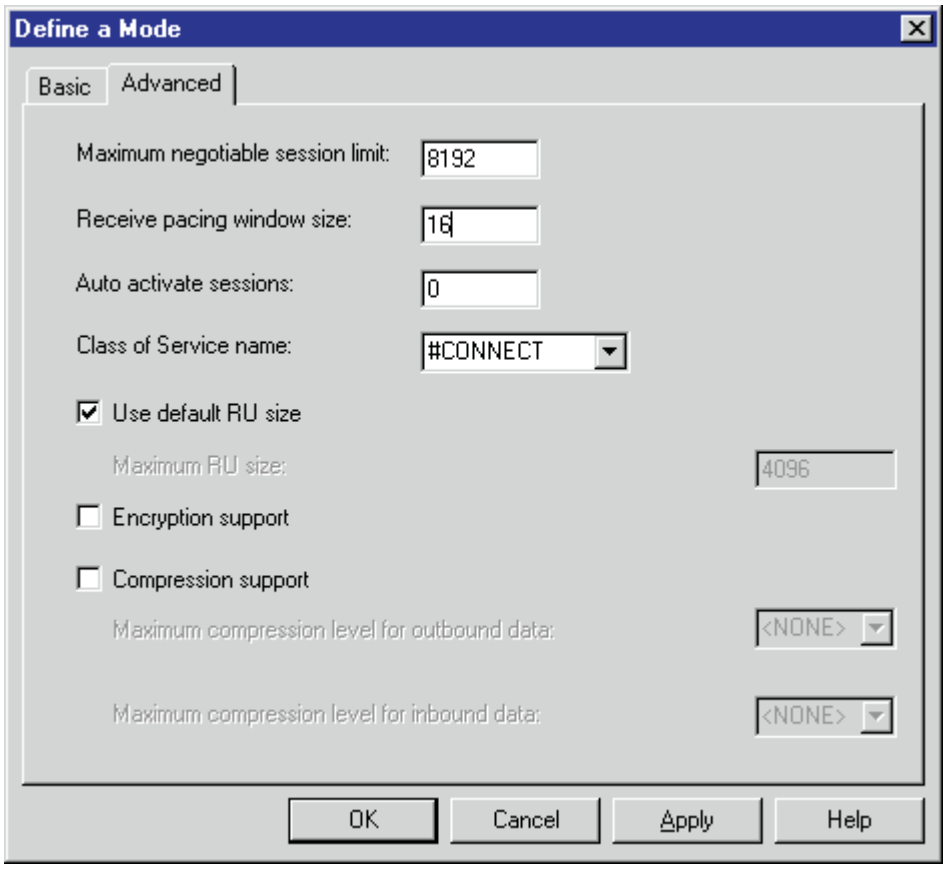

Figure 101. Define a Mode Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 101), supply the following values:

Maximum negotiable session limit
Specifies a value between 0 and 32767 as the maximum number of sessions allowed in this mode between any local logical unit (LU) and partner LU. Take the default.

Receive pacing window size
Specifies the secondary receive pacing count. The lesser of this parameter's value and the **SRCVPAC** value in the VTAM **MODEENT** statement is used. (See "Specifying the VTAM Mode Table and Entry" on page 61.) A value of 16 produces good throughput in most configurations. This parameter influences performance and can be adjusted as desired.

Auto activate sessions
Specifies a value between 0 and 32767 as the number of parallel LU 6.2 sessions to automatically start when an initial session starts using this mode. Specify `0` so that no parallel sessions can start automatically for this application.

Class of Service name
Specifies the name of a set of transport network characteristics. Select the default: **#CONNECT** .

Use default RU size
Instructs the node to use the default maximum size for the request/response unit (RU) sent and received on the sessions. Do not select the check box.

Maximum RU size
Set this value to 1024, if it does not automatically specify that value when you remove the check from the **Use default RU size** parameter above.

Click **OK** to save these specifications to the *xxx*.acg file.

Transaction Program Configuration for Remote 3174

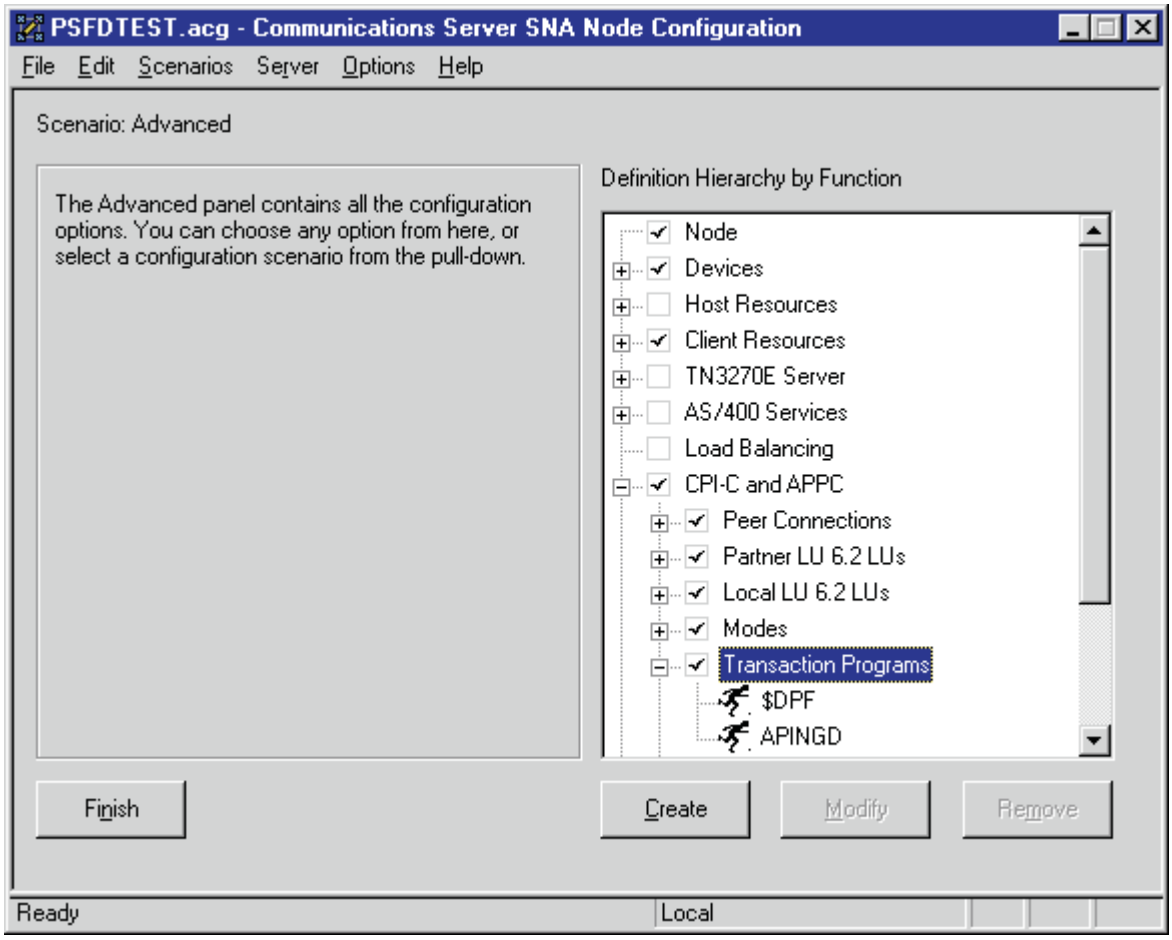

Figure 102. Communications Server SNA Node Configuration Window: Transaction Programs (Remote Configuration)

In the Communications Server SNA Node Configuration window (Figure 102), right-click the **CPI-C and APPC** box, then the **Transaction Programs** box. Select the **Create** option. The Define a Transaction Program notebook opens at the **Basic** tab.

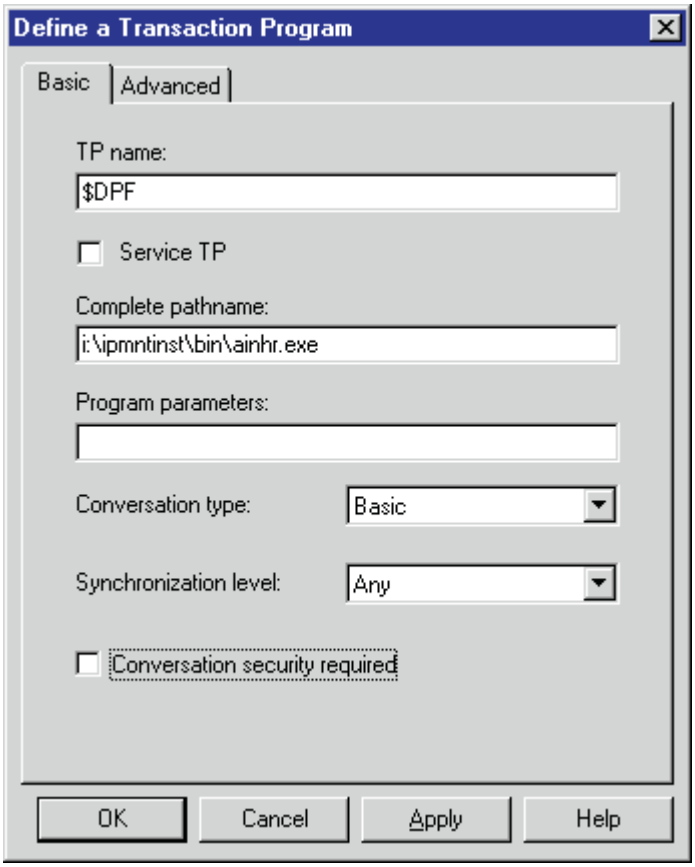

Figure 103. Define a Transaction Program Notebook: Basic Tab (Remote Configuration)

On the **Basic** tab (Figure 103), supply the following values:

TP name
Specifies a 1- to 64-byte character string for the program that uses the advanced program-to-program communications (APPC) system to communicate with a partner application program at the partner node. Enter `$DPF`. If you are migrating from an AIX operating system to a Windows NT operating system, note that this value changes from a binary `30F0F0F0` to a non-binary `$DPF`. Ensure that the **Service TP** check box is unchecked because it indicates a non-binary value.

Complete pathname
Specifies an 1- to 255-byte character string that describes the location of the program to run. The location can include the drive, the directory, the subdirectory, and the file name. In this example, `i:\ipmntinst\bin\ainhr.exe` specifies the location where Infoprint Manager for NT is installed on your system.

Conversation type
Specifies the conversation type allowed to start the transaction programs (TPs) that use an LU 6.2 session. Select **Basic**.

Synchronization level
Specifies the level allowed on allocation requests that start the local and remote transaction programs (TPs). Select **Any**.

Conversation security required
Allows controlled access to system resources through security parameters.

If this check box is selected, conversation security information is required to start the TP. Incoming allocation requests for this TP without the conversation security information will be rejected. Do not check this box.

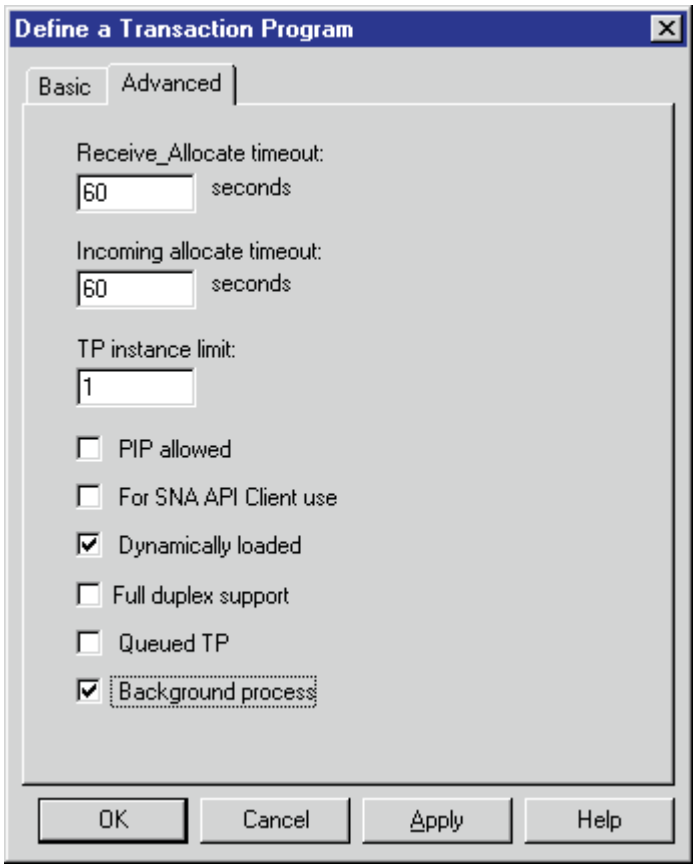

Figure 104. Define a Transaction Program Notebook: Advanced Tab (Remote Configuration)

On the **Advanced** tab (Figure 104), supply the following values:

Receive_Allocate timeout
Specifies a value between 0 and 65535 seconds that identifies the time that a **Receive_Allocate** verb will be queued while waiting for an **Attach**. Specify `60`.

Incoming allocate timeout
Specifies a value between 0 and 65535 seconds that identifies the time that an incoming **Attach** will be queued waiting for a **Receive_Allocate**. Specify `60`.

TP instance limit
Specifies a value between 0 and 65535 seconds that identifies the maximum number of concurrently active TP instances. Specify at least 1 (or the number of LUs that you have defined). 0 means no limit.

Dynamically loaded
Specifies whether the transaction program (TP) can be dynamically started by an allocation request received on a conversation. Select the check box to dynamically load the TP.

Background process
Specifies that the program will run in the background. Only 32-bit programs can multitask in the Windows NT environment. Select the check box to use the background process.

Note: Ensure that **Dynamically loaded** and **Background process** (the two items checked in Figure 104 on page 92) are the only items checked. If you specify other options, this transaction program will not work.

Click **OK** to save these specifications to the *xxx*.acg file.

Once you have completed creating this configuration, go to Chapter 6, "Starting an IBM SecureWay Communications Server for Windows NT Configuration" on page 97.

Remote 3174 Token-Ring Gateway Configuration Work Sheets

Use the following work sheets to configure PSF Direct on both the host PSF and Infoprint Manager for NT:

- Use Table 5 to see how Communications Server for NT configuration settings relate to other configuration settings.
- Use Table 6 on page 95 to record your own Communications Server for NT values.

Remote 3174 Token-Ring Gateway Configuration Work Sheet Example

Table 5. Remote 3174 Token-Ring Gateway Configuration Work Sheet Example

Communication Server	**Value**	**Infoprint Manager**	**VTAM**	**3174**
Define the Node: Fully-qualified CP name	**PSFDC5PU**		PU *name* PU CPNAME	
Define the Node: Local Node ID	**05D00000**		PU IDBLK PU IDNUM	
Define a LAN Device: Receive window count	**7**			Item 941: W
Define a LAN Device: Maximum PIU size	**65535**			
Define a LAN Connection: Destination address	**400030001001**			Item 900 (local MAC address)
Host LU Definition: LU name	**PSFDC5LU**	LUNAME	LU *name*	
Host LU Definition: LU Model Type	**Dependent LU 6.2**		LU LOCADDR	
Host LU Definition: Host NAU Address	**1**		LU LOCADDR	
Define a Partner LU 6.2: Partner LU name	**USIBMBQ.FSAES618**	APPLID	ATCSTR*xx* NETID APPL *name*	
Define a Mode: Mode name	**BLANK**			
Define a Mode: Receive pacing window size	**16**		MODEENT SRCVPAC	
Define a Mode: Maximum RU size	**1024**		MODEENT RUSIZES	

Remote 3174 Token-Ring Gateway Configuration Blank Work Sheet

Table 6. Remote 3174 Token-Ring Gateway Configuration Blank Work Sheet

Communication Server	**Value**	**Infoprint Manager**	**VTAM**	**3174**
Define the Node: Fully-qualified CP name			PU *name* PU CPNAME	
Define the Node: Local Node ID			PU IDBLK PU IDNUM	
Define a LAN Device: Receive window count				Item 941: W
Define a LAN Device: Maximum PIU size				
Define a LAN Connection: Destination address				Item 900 (local MAC address)
Host LU Definition: LU name		LUNAME	LU *name*	
Host LU Definition: LU Model Type			LU LOCADDR	
Host LU Definition: Host NAU Address			LU LOCADDR	
Define a Partner LU 6.2: Partner LU name		APPLID	ATCSTR*xx* NETID APPL *name*	
Define a Mode: Mode name				
Define a Mode: Receive pacing window size			MODEENT SRCVPAC	
Define a Mode: Maximum RU size			MODEENT RUSIZES	

Chapter 6. Starting an IBM SecureWay Communications Server for Windows NT Configuration

Use the following procedure to start all IBM SecureWay Communications Server for Windows NT configurations:

1. From your NT desktop view, double-click the **SNA Node Operations** icon that resides on your desktop:

2. From the Communications Server Node Operations window, click the plus (+) sign next to **Connections**.
3. If your configuration is an independent LU, highlight **Peer Connections**. If it is a dependent LU, highlight **Host Connections**.
4. From the window's main menu, select **Operations-->Start Node**.
5. From the **Open** pop-up window, select the *xxx*.acg file that represents the configuration you wish to start and click **Open**.

   From the right pane of the Communications Server Node Operations window, a lightning bolt icon labeled **Link***xxxx* appears. (*xxxx* represents the number of links on your system.) When the lightning bolt icon turns completely yellow, the link is active. PSF Direct is ready to receive jobs from the host PSF system. If the lightning bolt turns completely red, the link has failed. You need to review your configuration on both the Infoprint Manager Windows NT server and the PSF host program.

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Chapter 7. Configuring PSF Direct

PSF Direct acts as a communication protocol converter. It exchanges data with a host PSF program using an SNA LU 6.2 session and relays the data to an Infoprint actual destination.

From an application perspective, the entire SNA network can be viewed as a black box with two access points that are called **logical units** (LUs). An LU 6.2 session runs through the network and connects the two logical units (Figure 105).

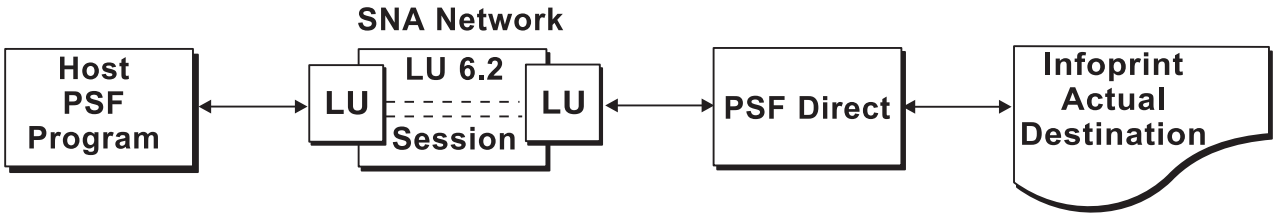

Figure 105. SNA LU 6.2 Session in a PSF Direct Configuration

When you configure a PSF Direct Receiver, you associate a logical unit with an Infoprint actual destination (Figure 106).

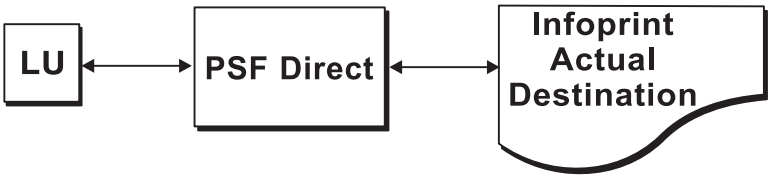

Figure 106. PSF Direct Host Receiver

This chapter contains the following topics:

- "Creating and Configuring an Infoprint PSF Direct Destination (Printer)" on page 100
- "Defining the PSF Direct Host Receiver" on page 100
- "Starting a PSF Direct Host Receiver" on page 101
- "Stopping a PSF Direct Host Receiver" on page 102
- "Displaying the Status of a PSF Direct Destination on the Windows NT System" on page 102
- "Displaying the Status of a PSF Direct Destination on the Host System" on page 104
- "Using One Infoprint Actual Destination to Print Data from Multiple Sources" on page 104

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Creating and Configuring an Infoprint PSF Direct Destination (Printer)

Before creating an actual destination (printer) to send jobs from PSF Direct, you should determine the type of configuration. Refer to *Infoprint Manager for Windows NT and Windows 2000: Getting Started*, G544–5717. When you create an Infoprint actual destination, Infoprint adds the functions that allow Infoprint to communicate with the printer. These include a subdirectory and files in the \var\psf directory.

You can create and configure the Infoprint PSF Direct destination in two ways:

- "Using the Infoprint Manager Administration GUI"
- "Using the Infoprint Manager Management Console"

Using the Infoprint Manager Administration GUI

If you will be using the PSF Direct destination to print data from a PC, you must use the Infoprint Manager Administration GUI to create an actual destination. Use the **Printer-->Create-->PSF** menu to access the Create Printer wizard. Refer to the online help in the Infoprint Manager Administration GUI.

To configure the PSF Direct destination after you create it, you can use the Infoprint Manager Administration GUI. Select the actual destination (printer) you want to configure, then use the **Printer-->Properties** menu to open the Printer Properties notebook. Refer to the online help in the Infoprint Manager Administration GUI.

Using the Infoprint Manager Management Console

If you will be using the PSF Direct destination to print data from PSF host systems only, you can use the Infoprint Manager Management Console to create an actual destination. First, ensure that the Infoprint Windows NT server is running. Then use the **Edit-->New-->Destination** path and select from the range of potential PSF Direct destinations provided. For more information on configuring this destination, see the related Infoprint Manager Management Console help.

To communicate with an Infoprint actual destination, PSF Direct uses the functions that Infoprint created when you added the printer. However, PSF Direct does not accept data from the Infoprint queue that was created for the printer. Instead, PSF Direct uses an SNA LU 6.2 session that you created through IBM SecureWay Communications Server for NT to obtain print data from a host PSF program.

When you add a PSF Direct receiver, you must indicate which Infoprint actual destination the host receiver should use. This procedure is described in "Defining the PSF Direct Host Receiver".

Defining the PSF Direct Host Receiver

IBM recommends setting up the PSF Direct Receiver and managing your PSF Direct operations from the Management Console for Infoprint Manager Server... window. You can then use this window to track server events.

To set up a PSF Direct Receiver, use the following procedure:

1. Open the Management Console for Infoprint Manager Server... window. Then use the **Edit-->PSF Direct Receiver Management...** menu to access the PSF Direct Receiver Manager window.
2. Click on the **Add** button.

3. From the **Add PSF Direct Receiver** pop-up menu, specify a value in the **SNA LUNAME** field. This value must match the SNA Logical Unit name defined through the Secure Way Communication Server configuration.
4. Click on the drop-down menu next to the **Target Destination** field. Highlight the Infoprint logical or actual destination to which you want to default for this PSF Direct Receiver.

   This list consists of all the logical and actual destinations that have been defined in the Infoprint Manager Administration GUI.
5. Allow both numeric values in the **SNA System Services Control Point ID** field and the **NMVT Subsystem name** field to default.
6. Specify a numeric value from 0 to 9999 (in seconds) for the **Inactivity limit** field.

   Setting this value to the system default of 9999 causes the PSF Direct receivers to wait indefinitely if the printer is not available. For more information about the **Inactivity limit** field, see "Automatically Stopping a PSF Direct Host Receiver" on page 105.
7. Specify a numeric value from 0 to 9999 (in seconds) for the **Printer busy limit** field.

   Setting this value to the system default of 9999 causes the PSF Direct receivers to wait indefinitely if the printer is not available. For more information on setting this field, see "Controlling the Wait Period for a PSF Direct Host Receiver" on page 105.
8. Once you are satisfied with the fields on the **Add PSF Direct Receiver** pop-up menu, click on the **OK** button.
9. Infoprint adds a PSF Direct Receiver to the main pane, with a red marker. `STOPPED` displays in the **Status** column.
10. Within a minute or two, the marker for the PSF Direct Receiver that you just created will change from red to green. `RUNNING` will display in the **Status** column. At this point, you can submit jobs from the OS/390 host system for printing directly on Infoprint Manager printers.

Table 7 shows an example of configuration values for a PSF Direct host receiver.

Table 7. PSF Direct Host Receiver Values Example

SNA Logical Unit Name	`MVS1`
Target Destination (actual destination)	`4000wb`
Inactivity limit (seconds)	`9999`
Device busy limit (seconds)	`9999`
SNA System Services Control Point ID	`050000000000`
NMVT Subsystem Name	`NMVT`

Starting a PSF Direct Host Receiver

IBM SecureWay Communications Server for NT starts a PSF Direct receiver automatically when a host PSF program causes an SNA LU 6.2 session to be established and allocates an SNA conversation on that session. As a result, a host system operator indirectly causes a PSF Direct host receiver to be run by starting a host PSF program that establishes a SNA LU 6.2 session.

The operator on the Infoprint Manager Windows NT server does not need to do anything to start a PSF Direct host receiver, as long as IBM SecureWay Communications Server for NT is active on the Windows NT server.

Stopping a PSF Direct Host Receiver

A PSF Direct host receiver can be stopped in several ways:

- The host system operator can end the host PSF program that communicates with the PSF Direct host receiver. When the host PSF program ends the SNA conversation with the PSF Direct host receiver, the PSF Direct host receiver automatically ends.
- The host PSF program's **Disconnect Interval** parameter can be exceeded.

  If the host PSF program is waiting for new print files and none become available within the period specified by the **Disconnect Interval** parameter, the host PSF program ends the SNA session with the PSF Direct host receiver. The PSF Direct host receiver then ends.
- The PSF Direct host receiver **Inactivity Limit** can be exceeded.

  If the PSF Direct host receiver is waiting for data from the host PSF program and no data arrives within the period specified by the **Inactivity Limit** value, the PSF Direct host receiver UNBINDs the SNA session with the host system.

  The **Inactivity Limit** defaults to infinite (9999 seconds). It should only be used in some configurations where a printer is shared.
- If an operator at the Windows NT system stops IBM SecureWay Communications Server for NT, all SNA sessions end, causing all PSF Direct host receivers to end. An operator can also use IBM SecureWay Communications Server for NT to stop an individual SNA session. If a PSF Direct host receiver is using the session, that PSF Direct host receiver ends.

For information about stopping a PSF Direct host receiver that is working with a shared Infoprint actual destination, see "Manually Stopping a PSF Direct Host Receiver" on page 104 and "Automatically Stopping a PSF Direct Host Receiver" on page 105.

Displaying the Status of a PSF Direct Destination on the Windows NT System

Infoprint provides two methods for users to display the status of a PSF Direct host receiver:

- "Using the Infoprint Manager Management Console"
- "Using the psfstat Command" on page 103

Using the Infoprint Manager Management Console

The Infoprint Manager Management Console allows you to view the status of Infoprint actual destinations and PSF Direct Receivers. If you click on **PSF Direct Host Receivers** in the left pane, the PSF Direct Host Receivers view shows up in the right pane. If you are not using the Management Console for Infoprint Manager Server... window to track server events, this is the easiest method to display PSF Direct status. However, if you are using the Management Console for Infoprint Manager Server... window to track server events, you should use the **psfstat** command to display status.

Note that if you click **destinations** in the left pane of the Management Console for Infoprint Manager Server... window, Infoprint displays the status of all your actual destinations.

Using the psfstat Command

The **psfstat** command displays information about the status of Infoprint actual destinations and PSF Direct receivers. It tells you whether each Infoprint printer is receiving data from either the Infoprint Manager Windows NT server or from a PSF Direct receiver. The **psfstat** command provides the source of the display provided by the Infoprint Manager Management Console.

If you specify **psfstat** from a command prompt window, the results are similar to Figure 107.

```
Printer   Attachment   Data   Printer status   Active   Waiting
-------   ----------   ----   --------------   ------   -------
3287      channel      IPDS   --               --       --
4000wa    TCP/IP       IPDS   intervention     [Queue]  --
4000wb    TCP/IP       IPDS   ok               PSFOS41  [Queue],PSFMVS
ps14      direct       PS     ok               [Queue]  --

LU name   Printer   Attachment   Data   Printer status   Receiver status
-------   -------   ----------   ----   --------------   ---------------
PSFMVS    4000wb    TCP/IP       IPDS   ok               sess/prtr_busy
PSFOS41   4000wb    TCP/IP       IPDS   ok               sess/prtr_conn
PSFVSE1   4000wb    TCP/IP       IPDS   ok               idle
```

Figure 107. Printer and Receiver Status Example

Figure 107 indicates that:

- Printer `3827` is not active.
- Printer `4000wa` is printing data from Infoprint Manager (`[Queue]`). The printer requires operator intervention.
- Printer `4000wb` is printing data from a PSF Direct receiver that uses the SNA logical unit name (**LUNAME**) `PSFOS41`. Additional data is also available on the Infoprint actual destination and from a PSF Direct receiver that uses the SNA **LUNAME** `PSFMVS`. The order of the waiting data sources does not indicate which source will access the printer next.
- Printer `ps14` is printing data from Infoprint Manager.
- Receiver `PSFMVS` is in session with the host system and is waiting for printer `4000wb`.
- Receiver `PSFOS41` is in session with the host system and is connected to printer `4000wb`.
- Receiver `PSFVSE1` is in session with the host system and is idle, but connected to printer `4000wb`.

Note that you can use the **psfstat** command to display information about any Infoprint actual destination, not just those are used by PSF Direct host receivers. For the syntax of the **psfstat** command, refer to the *Infoprint Manager: Reference*, S544–5475.

Displaying the Status of a PSF Direct Destination on the Host System

A host system operator can display the status of any printer managed by the host PSF program, including printers that are attached by PSF Direct. For example, an OS/390 operator can use the JES2 **$DU** command to display printer status.

Using One Infoprint Actual Destination to Print Data from Multiple Sources

One Infoprint actual destination can print data from more than one host PSF program and from the IBM Infoprint Windows NT server. At any time, however, the Infoprint actual destination can only be dedicated to printing data from a single source: one host PSF program or the IBM Infoprint Windows NT server.

This section describes how to configure and manage the switching of an Infoprint actual destination between data sources. It contains the following topics:

- "Switching between Data Sources"
- "Sharing an Infoprint Actual Destination: An Example" on page 106
- "Displaying the Status of a Shared Infoprint Actual Destination" on page 108

Switching between Data Sources

Switching an Infoprint actual destination between data sources requires two steps:

1. The process using the Infoprint actual destination must end, whether that process is a PSF Direct host receiver or a print process from the IBM Infoprint Windows NT server. When this process ends, the Infoprint actual destination becomes available to another program. See the following topics:
   - "Manually Stopping a PSF Direct Host Receiver"
   - "Automatically Stopping a PSF Direct Host Receiver" on page 105
   - "Automatically Stopping Printing from the IBM Infoprint Windows NT Server" on page 105
2. A PSF Direct host receiver or Infoprint process that prints from the IBM Infoprint Windows NT server must wait for other programs to stop using the Infoprint actual destination. See the following topics:
   - "Controlling the Wait Period for a PSF Direct Host Receiver" on page 105
   - "Controlling the Wait Period for Printing from an IBM Infoprint Windows NT Server" on page 105

Manually Stopping a PSF Direct Host Receiver

A host system operator can end a PSF Direct host receiver by ending the host PSF program that communicates with the host receiver. For example, an OS/390 host operator can delete all jobs from the printer by using the **$PPRT***nnn* JES2 command; or the operator can cancel the JES writer procedure.

To end the IBM Infoprint Windows NT server process manually from Infoprint, refer to the **pdshutdown** command as described in the *Infoprint Manager: Reference*, S544–5475. If you merely disable the printer through the **pddisable** command, the Infoprint processes are not stopped, and the PSF Direct host receiver cannot establish a session.

For more detail about shutting down a PSF Direct host receiver, see "Stopping a PSF Direct Host Receiver" on page 102.

Automatically Stopping a PSF Direct Host Receiver

Most host PSF programs have a Disconnect Interval configuration parameter, such as the **DISCINTV** parameter of the **PRINTDEV** statement in PSF for OS/390. This parameter causes the host PSF program to end the SNA session with a PSF Direct host receiver if there is no data to print for the specified period. Ending the SNA session with the host receiver causes the host receiver to end.

Some host PSF programs, such as PSF for iSeries, do not offer a Disconnect Interval configuration parameter. To enable PSF Direct host receivers to be automatically ended when they communicate with these host PSF programs, the PSF Direct host receiver configuration panel includes an **Inactivity limit** parameter. The PSF Direct host receiver **Inactivity limit** parameter causes a host receiver to end if it waits for data from the host system for the specified period.

Using the host PSF program's Disconnect Interval, if it is available, is preferable to using the PSF Direct host receiver **Inactivity limit** parameter.

Automatically Stopping Printing from the IBM Infoprint Windows NT Server

Each Infoprint actual destination has an actual destination attribute called the **printer-release-timer** attribute. This attribute causes Infoprint to stop printing from the IBM Infoprint Windows NT Server if it has completed the Infoprint spool data and the specified interval elapses with no new Infoprint data.

Controlling the Wait Period for a PSF Direct Host Receiver

The PSF Direct host receiver **Device busy limit** parameter controls how long a host receiver waits for an Infoprint actual destination to become available. The **Device busy limit** parameter has a default value of `120` seconds. If an Infoprint actual destination is used to print from several sources, increase the **Device busy limit** parameter to `9999`. This value means that the host receiver should wait indefinitely.

While a PSF Direct host receiver is waiting for an Infoprint actual destination to become available, the SNA session with the host system is maintained but no application data is exchanged.

Controlling the Wait Period for Printing from an IBM Infoprint Windows NT Server

By default, the Infoprint program that prints from the IBM Infoprint Windows NT Server waits indefinitely for an Infoprint actual destination to become available. There is no configuration attribute that controls how long the program waits.

Table 8 on page 106 summarizes the time limits for Infoprint printing.

Table 8. Time Limit Parameters

For Device	Function	Option	User Interface	Default Value
PSF Direct Host Receiver	Wait for printer	**Device Busy Limit** field.	PSF Direct Receiver Manager window of Infoprint Manager Management Console	120 seconds
PSF Direct Host Receiver	End program, making printer available	**DISCINTV**	Host PSF configuration program	0 seconds (infinite)
PSF Direct Host Receiver	End program, making printer available	**Inactivity limit** field	PSF Direct Receiver Manager window of Infoprint Manager Management Console	9999 seconds (infinite)
IBM Infoprint Windows NT Server	Wait for printer	none	none	infinite
IBM Infoprint Windows NT Server	End program, making printer available	**printer-release-timer** attribute	On the Infoprint Manager Administration GUI, the **PSF Configuration** tab of the Printer Properties notebook	9999 seconds (infinite)

Sharing an Infoprint Actual Destination: An Example

The example in this section illustrates how to share an Infoprint actual destination between two or more host PSF programs using PSF Direct. The actual destination can also print data from the IBM Infoprint Windows NT Server. The configuration parameters cause the printer to be switched automatically.

This section consists of the following topics:

- "Configuring the Host PSF Programs"
- "Infoprint Actual Destination: PSF Tuning Options" on page 107

Configuring the Host PSF Programs

For two or more host PSF programs to share an Infoprint actual destination, they must be configured in similar ways, like the examples in Figure 108, Figure 109, and Figure 110 on page 107. Note that the complete configurations would contain more parameters.

```
//PRT833 PRINTDEV
  ⋮
//               DISCINTV=60,      /* DISCONNECT INTERVAL -- SECS */
  ⋮
//               LUNAME=PSFDC4LU   /* LOGICAL UNIT NAME           */
// PRT833   ENDCNTL
```

Figure 108. PRINTDEV Statement for PSF for OS/390 Example

```
PRT1000  PRINTDEV
  ⋮
         DISCINTV=60,       DISCONNECT INTERVAL -- SECONDS
  ⋮
         LUNAME=PSFDC5LU    LOGICAL UNIT NAME
PRT1000  ENDCNTL
```

Figure 109. PRINTDEV Statement for PSF/VSE Example

APPC device description:

```
5769SS1 V4R4M0 990521
Device description . . . . . :   DEVD         PRTNT3
   ⋮
Local location . . . . . :   LCLLOCNAME   BLDOS44
   ⋮
```

PSF Direct Receiver Manager window:

```
Inactivity limit: 60
```

Figure 110. Configuration for PSF for iSeries Example

Although all three host PSF programs use different LUs, they must have the same disconnect interval. Setting **DISCINTV** to 60 seconds for both PSF for OS/390 and PSF/VSE causes each host PSF program to end if all spool data from the printer is completed and no additional data becomes available for 60 seconds. When the host PSF program ends, the PSF Direct host receiver ends, and the Infoprint actual destination becomes available to other programs. If additional host data becomes available for the Infoprint actual destination, the host PSF program starts again and waits, if necessary, for the printer to become available.

Because the **DISCINTV** is not valid for PSF for iSeries, you must set the **Inactivity limit** in the PSF Direct Receiver Manager window of Infoprint Manager Management Console to 60 seconds instead.

Infoprint Actual Destination: PSF Tuning Options

To allow Infoprint to share the printer with two or more host PSFs, you must adjust the Infoprint actual destination's PSF tuning options. Use the **Printer Properties** notebook in the Infoprint Manager Administration GUI.

Select the actual destination (printer) you want to configure. Then use the **Printer-->Properties** menu to open the Printer Properties notebook. Select the **Tuning** tab and tune the options described in this section.

- The **Release time (sec)** field specifies the number of seconds that Infoprint waits between jobs before giving up control of an actual destination. (This field is equivalent to the **destination-release-timer** attribute.) Setting this value to 60 seconds causes the Infoprint program that prints from the IBM Infoprint Windows NT server to end if it has printed the files in the printer's queue. No additional files become available for 60 seconds. When the program ends, the Infoprint actual destination becomes available to other programs, such as PSF Direct receivers.

  If additional files are added to the printer's queue on the IBM Infoprint Windows NT server, the Infoprint program that prints from the server starts again. It waits, if necessary, for the printer to become available.
- Accepting the default **intervention-timer** attribute value of 9999 causes the PSF Direct host receivers that use this printer to issue printer intervention messages on the Windows NT system. It does not cause the host receivers to report intervention conditions to the host PSF program.

  If you use an **intervention-timer** value of 3600 instead, the PSF Direct receivers notify the host PSF program if an intervention condition is not addressed within an hour. The host PSF program issues an operator message and ends the SNA session with the PSF Direct receiver. The **intervention-timer** also causes the PSF program that prints from the IBM Infoprint Windows NT server to end if an intervention condition is not addressed within an hour.

- For continuous-forms printers, set the **Non-process-runout timer** field at a lower value than the **Release-time (sec)** attribute. For example, if the **destination-release-timer** attribute value is `60` seconds, reduce the **non-process-runout-timer** attribute value to `30` seconds.

Finally, you must configure the PSF Direct host receivers for each host that will share the printer. This process is described in "Defining the PSF Direct Host Receiver" on page 100.

Displaying the Status of a Shared Infoprint Actual Destination

The **psfstat** command displays information about the status of Infoprint actual destinations and PSF Direct receivers. The information that **psfstat** displays about an Infoprint actual destination includes:

- The program that currently controls the printer
- A list of the programs waiting to gain control of the printer

For example, **psfstat** might display information like Figure 111.

```
Printer   Attachment   Data   Printer status   Active   Waiting
-------   ----------   ----   --------------   ------   -------
4000wb    TCP/IP       IPDS   intervention     MVS1     [Queue],OS4001

LU name   Printer   Attachment   Data   Printer status   Receiver status
-------   -------   ----------   ----   --------------   ---------------
MVS1      4000wb    TCP/IP       IPDS   intervention     sess/prtr_conn
OS4001    4000wb    TCP/IP       IPDS   intervention     sess/prtr_busy
```

Figure 111. Shared Printer Status

Figure 111 shows that the printer is currently dedicated to printing data from the OS/390 spool. The IBM Infoprint Windows NT server (`[Queue]`) and the OS/400 spool also contain data that is waiting to print.

When the OS/390 host system releases the printer, the printer will print data either from the IBM Infoprint Windows NT server or the OS/400 spool. The order in which the two waiting sources are listed does not imply that the IBM Infoprint Windows NT server has been waiting longer or that it will acquire the printer next.

Figure 111 also indicates that the printer requires intervention.

For more information about the **psfstat** command, see "Displaying the Status of a PSF Direct Destination on the Windows NT System" on page 102 and the *Infoprint Manager: Reference*, S544–5475.

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